# Table of Contents

**Introduction**  
**Endpoints**  

**Working With vSphere Distributed Switches**  
- Working With vSphere Distributed Switches in a Datacenter ........................................ 17  
- Working With a Specific vSphere Distributed Switch .................................................... 18

**Working With Segment ID Pools and Multicast Ranges**  
- Working With Segment ID Pools .................................................................................. 20  
  - Working With a Specific Segment ID Pool ................................................................. 21  
- Working With Multicast Address Ranges ........................................................................ 22  
  - Working With a Specific Multicast Address Range .................................................... 23  
- Working With the VXLAN Port Configuration .............................................................. 24  
  - Update the VXLAN Port Configuration ....................................................................... 25  
  - VXLAN Port Configuration Update Status .................................................................. 25  
  - Resume VXLAN Port Configuration Update ................................................................. 26  
- Working With Allocated Resources .............................................................................. 26  
  - Resolving Missing VXLAN VMKernel Adapters ......................................................... 26

**Working With Transport Zones**  
- Working With a Specific Transport Zone .................................................................... 31  
  - Working With Transport Zone Attributes ................................................................. 34  
  - Working With Transport Zone CDO Mode .................................................................. 35  
  - Testing Multicast Group Connectivity ........................................................................ 35

**Working With Logical Switches in a Specific Transport Zone** ........................................ 37

**Working With Traceflow**  
- Working With a Specific Traceflow ............................................................................. 38  
  - Traceflow Observations .............................................................................................. 39

**Working With Logical Switches in All Transport Zones** ................................................ 43  
- Working Virtual Machine Connections to Logical Switches ........................................ 44  
- Working With a Specific Logical Switch ...................................................................... 45  
  - Resolving Missing Port Groups for a Logical Switch .................................................. 47  
  - Testing Host Connectivity ............................................................................................ 47  
  - Testing Point-to-Point Connectivity ........................................................................... 48  
  - Working With Hardware Gateway Bindings for a Specific Logical Switch .................. 49  
    - Working With Connections Between Hardware Gateways and Logical Switches .... 50

**Working With IP Discovery and MAC Learning for Logical Switches** ............................... 52

**Working With NSX Controllers**  
- Working With Controller Upgrade Availability .............................................................. 55  
- Working With Controller Job Status .............................................................................. 55  
- Working With a Specific Controller ............................................................................... 55  
- Working With NSX Controller System Statistics ............................................................. 56  
- Working With Controller Tech Support Logs .................................................................. 58  
- Working With Controller Syslog .................................................................................... 58
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working With Services Grouping Objects</td>
<td>63</td>
</tr>
<tr>
<td>Retrieve Services from a Specific Scope</td>
<td>63</td>
</tr>
<tr>
<td>Create a Service on a Specific Scope</td>
<td>63</td>
</tr>
<tr>
<td>Working With a Specfied Service</td>
<td>63</td>
</tr>
<tr>
<td>Working With Service Groups Grouping Objects</td>
<td>66</td>
</tr>
<tr>
<td>Creating Service Groups on a Specific Scope</td>
<td>66</td>
</tr>
<tr>
<td>Working With Service Groups on a Specific Scope</td>
<td>66</td>
</tr>
<tr>
<td>Working With a Specific Service Group</td>
<td>66</td>
</tr>
<tr>
<td>Working with a Specific Service Group Member</td>
<td>68</td>
</tr>
<tr>
<td>Working With Service Group Members on a Specific Scope</td>
<td>68</td>
</tr>
<tr>
<td>Working With IP Pool Grouping Objects</td>
<td>69</td>
</tr>
<tr>
<td>Working With IP Pools on a Specific Scope</td>
<td>69</td>
</tr>
<tr>
<td>Working With a Specific IP Pool</td>
<td>70</td>
</tr>
<tr>
<td>Working With IP Pool Address Allocations</td>
<td>72</td>
</tr>
<tr>
<td>Working With Specific IPs Allocated to an IP Pool</td>
<td>73</td>
</tr>
<tr>
<td>Working With Security Tags</td>
<td>75</td>
</tr>
<tr>
<td>Managing Security Tags</td>
<td>75</td>
</tr>
<tr>
<td>Delete a Security Tag</td>
<td>77</td>
</tr>
<tr>
<td>Working With Virtual Machines on a Specific Security Tag</td>
<td>77</td>
</tr>
<tr>
<td>Manage a Security Tag on a Virtual Machine</td>
<td>78</td>
</tr>
<tr>
<td>Working With Virtual Machine Details for a Specific Security Tag</td>
<td>79</td>
</tr>
<tr>
<td>Working With Security Tags on a Specific Virtual Machine</td>
<td>80</td>
</tr>
<tr>
<td>Working With Security Tags Unique ID Selection Criteria</td>
<td>81</td>
</tr>
<tr>
<td>Working With NSX Manager SSO Registration</td>
<td>83</td>
</tr>
<tr>
<td>Working With SSO Configuration Status</td>
<td>83</td>
</tr>
<tr>
<td>Working With User Management</td>
<td>84</td>
</tr>
<tr>
<td>Manage Users on NSX Manager</td>
<td>84</td>
</tr>
<tr>
<td>Working With User Account State</td>
<td>84</td>
</tr>
<tr>
<td>Manage NSX Roles for Users</td>
<td>84</td>
</tr>
<tr>
<td>Working With NSX Manager Role Assignment</td>
<td>86</td>
</tr>
<tr>
<td>Working With Available NSX Manager Roles</td>
<td>86</td>
</tr>
<tr>
<td>Working With Scoping Objects</td>
<td>86</td>
</tr>
<tr>
<td>Working With Security Group Grouping Objects</td>
<td>87</td>
</tr>
<tr>
<td>Creating New Security Groups With Members</td>
<td>87</td>
</tr>
<tr>
<td>Creating New Security Groups Without Members</td>
<td>89</td>
</tr>
<tr>
<td>Updating a Specific Security Group Including Membership</td>
<td>90</td>
</tr>
<tr>
<td>Working With a Specific Security Group</td>
<td>91</td>
</tr>
<tr>
<td>Topic</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Working With Members of a Specific Security Group</td>
<td>92</td>
</tr>
<tr>
<td>Working With Virtual Machines in a Security Group</td>
<td>93</td>
</tr>
<tr>
<td>Working With IP Addresses in a Security Group</td>
<td>94</td>
</tr>
<tr>
<td>Working With MAC Addresses in a Security Group</td>
<td>94</td>
</tr>
<tr>
<td>Working With vNICs in a Security Group</td>
<td>94</td>
</tr>
<tr>
<td>Working With Virtual Machine Security Group Membership</td>
<td>94</td>
</tr>
<tr>
<td>Working With IP Address in a Security Group</td>
<td>95</td>
</tr>
<tr>
<td>Working With Internal Security Groups</td>
<td>96</td>
</tr>
<tr>
<td>Working With Security Groups on a Specific Scope</td>
<td>96</td>
</tr>
<tr>
<td>Working With Security Group Member Types</td>
<td>97</td>
</tr>
<tr>
<td>Working With a Specific Security Group Member Type</td>
<td>97</td>
</tr>
<tr>
<td>Working With IP Set Grouping Objects</td>
<td>98</td>
</tr>
<tr>
<td>Working With IP Sets on a Specific Scope</td>
<td>98</td>
</tr>
<tr>
<td>Creating New IP Sets</td>
<td>98</td>
</tr>
<tr>
<td>Working With a Specific IP Set</td>
<td>98</td>
</tr>
<tr>
<td>Configuring NSX Manager with vCenter Server</td>
<td>100</td>
</tr>
<tr>
<td>Connection Status for vCenter Server</td>
<td>101</td>
</tr>
<tr>
<td>Configuring Index Maintenance</td>
<td>102</td>
</tr>
<tr>
<td>Working With Universal Sync Configuration in Cross-vCenter NSX</td>
<td>104</td>
</tr>
<tr>
<td>Working With Universal Sync Configuration Roles</td>
<td>104</td>
</tr>
<tr>
<td>Working With Universal Sync Configuration of NSX Managers</td>
<td>104</td>
</tr>
<tr>
<td>Universal Sync Configuration of a Specific NSX Manager</td>
<td>105</td>
</tr>
<tr>
<td>NSX Manager Synchronization</td>
<td>106</td>
</tr>
<tr>
<td>Working With Universal Sync Entities</td>
<td>106</td>
</tr>
<tr>
<td>Working With Universal Sync Status</td>
<td>106</td>
</tr>
<tr>
<td>Working With the Appliance Manager</td>
<td>107</td>
</tr>
<tr>
<td>Global Information for NSX Manager</td>
<td>107</td>
</tr>
<tr>
<td>Summary Information for NSX Manager</td>
<td>107</td>
</tr>
<tr>
<td>Component Information for NSX Manager</td>
<td>108</td>
</tr>
<tr>
<td>Reboot NSX Manager</td>
<td>110</td>
</tr>
<tr>
<td>NSX Manager CPU Information</td>
<td>110</td>
</tr>
<tr>
<td>NSX Manager Appliance Uptime Information</td>
<td>110</td>
</tr>
<tr>
<td>NSX Manager Appliance Memory Information</td>
<td>111</td>
</tr>
<tr>
<td>NSX Manager Appliance Storage Information</td>
<td>111</td>
</tr>
<tr>
<td>NSX Manager Appliance Network Settings</td>
<td>112</td>
</tr>
<tr>
<td>Working With DNS Configuration</td>
<td>113</td>
</tr>
<tr>
<td>Working With Security Settings</td>
<td>113</td>
</tr>
<tr>
<td>Working With TLS Settings</td>
<td>114</td>
</tr>
<tr>
<td>Working With Time Settings</td>
<td>115</td>
</tr>
<tr>
<td>Working With NTP Settings</td>
<td>116</td>
</tr>
<tr>
<td>Configure System Locale</td>
<td>116</td>
</tr>
<tr>
<td>Working With Syslog Servers</td>
<td>117</td>
</tr>
<tr>
<td>Working With Components</td>
<td>118</td>
</tr>
<tr>
<td>Working With a Specific Component</td>
<td>119</td>
</tr>
<tr>
<td>Working With Component Dependencies</td>
<td>120</td>
</tr>
</tbody>
</table>
# Working With Data Collection for Activity Monitoring

<table>
<thead>
<tr>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working With Data Collection on a Specific Virtual Machine</td>
<td>156</td>
</tr>
<tr>
<td>Override Data Collection</td>
<td>156</td>
</tr>
<tr>
<td>Retrieve Data Collection Configuration for a Specific Virtual Machine</td>
<td>157</td>
</tr>
</tbody>
</table>

# Working With Activity Monitoring

<table>
<thead>
<tr>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working With Aggregated User Activity</td>
<td>159</td>
</tr>
<tr>
<td>Working With User Details</td>
<td>161</td>
</tr>
<tr>
<td>Working With a Specific User</td>
<td>163</td>
</tr>
<tr>
<td>Working With Applications</td>
<td>163</td>
</tr>
<tr>
<td>Working With a Specific Application</td>
<td>163</td>
</tr>
<tr>
<td>Working With Discovered Host</td>
<td>164</td>
</tr>
<tr>
<td>Working With a Specific Discovered Host</td>
<td>164</td>
</tr>
<tr>
<td>Working With Desktop Pools</td>
<td>164</td>
</tr>
<tr>
<td>Working With a Specific Desktop Pool</td>
<td>164</td>
</tr>
<tr>
<td>Working With Virtual Machines</td>
<td>164</td>
</tr>
<tr>
<td>Working With a Specific Virtual Machine</td>
<td>165</td>
</tr>
<tr>
<td>Working With LDAP Directory Groups</td>
<td>165</td>
</tr>
<tr>
<td>Working With a Specific LDAP Directory Group</td>
<td>165</td>
</tr>
<tr>
<td>Working With a Specific User's Active Directory Groups</td>
<td>165</td>
</tr>
<tr>
<td>Working With Security Groups</td>
<td>166</td>
</tr>
<tr>
<td>Working With a Specific Security Group</td>
<td>166</td>
</tr>
</tbody>
</table>

# Working With Domains

<table>
<thead>
<tr>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registering Domains</td>
<td>167</td>
</tr>
<tr>
<td>Retrieve LDAP Domains</td>
<td>168</td>
</tr>
<tr>
<td>Delete a Specific Domain</td>
<td>169</td>
</tr>
<tr>
<td>Create LDAP Server</td>
<td>169</td>
</tr>
<tr>
<td>Query LDAP Servers for a Domain</td>
<td>169</td>
</tr>
<tr>
<td>Start LDAP Full Sync</td>
<td>169</td>
</tr>
<tr>
<td>Start LDAP Delta Sync</td>
<td>170</td>
</tr>
<tr>
<td>Delete LDAP Server</td>
<td>170</td>
</tr>
<tr>
<td>EventLog Server</td>
<td>170</td>
</tr>
<tr>
<td>Working With EventLog Servers for a Domain</td>
<td>171</td>
</tr>
<tr>
<td>Delete EventLog Server</td>
<td>171</td>
</tr>
</tbody>
</table>

# Working With Mapping Lists

<table>
<thead>
<tr>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working With User to IP Mappings</td>
<td>172</td>
</tr>
<tr>
<td>Working With Host to IP Mappings</td>
<td>172</td>
</tr>
<tr>
<td>Working With IP to User Mappings</td>
<td>172</td>
</tr>
<tr>
<td>Working With User Domain Groups</td>
<td>173</td>
</tr>
<tr>
<td>Working With a Specific Static User Mapping</td>
<td>174</td>
</tr>
<tr>
<td>Working With Static User Mappings</td>
<td>174</td>
</tr>
<tr>
<td>Working With Static User IP Mappings for a Specific User</td>
<td>174</td>
</tr>
<tr>
<td>Working With Static User IP Mappings for a Specific IP</td>
<td>175</td>
</tr>
</tbody>
</table>

# Working With Activity Monitoring Syslog Support

<table>
<thead>
<tr>
<th>Function</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Syslog Support</td>
<td>176</td>
</tr>
<tr>
<td>Disable Syslog Support</td>
<td>176</td>
</tr>
</tbody>
</table>
Working With Solution Integrations 177
  Working With Agents on a Specific Host .................................................. 177
  Working With a Specific Agent ................................................................. 178
  Working With Agents on a Specific Deployment ......................................... 179
  Working With Conflicting Agencies ......................................................... 180

Working With MAC Address Set Grouping Objects 182
  Working With a Specific MAC Address Set ................................................ 182
  Working With MAC Address Sets on a Specific Scope ................................... 183

Working With ESX Agent Manager 186
  Working With EAM Status ........................................................................... 186

Working With Alarms 187
  Working With a Specific System Alarm ...................................................... 190

Working With Alarms from a Specific Source 192

Working With the Task Framework 195
  Working With a Specific Job Instance ....................................................... 195

Working With Guest Introspection and Third-party Endpoint Protection (Anti-virus) Solutions 196
  Register a Vendor and Solution with Guest Introspection ............................ 196
  Working With Registered Guest Introspection Vendors .................................. 197
  Working With Guest Introspection Vendors and Endpoint Protection Solutions .................................................. 197
  Information About Registered Endpoint Protection Solutions ....................... 198
  Endpoint Protection Solution Registration Information .................................. 198
  IP Address and Port For an Endpoint Protection Solution ............................ 199
  Activate an Endpoint Protection Solution .................................................... 200
  Activated Security Virtual Machines ......................................................... 201
  Activate a Registered Endpoint Protection Solution ...................................... 201
  Working With Solution Activation Status .................................................... 202
  Working With Guest Introspection SVM Health Thresholds .......................... 203

Working With Distributed Firewall 205
  Default Firewall Configuration .................................................................... 205
  Distributed Firewall Rules Configuration ..................................................... 205
    Working With Layer 3 Sections in Distributed Firewall ............................... 209
    Working With a Specific Layer 3 Distributed Firewall Section ...................... 213
    Working With Distributed Firewall Rules in a Layer 3 Section ....................... 218
    Working With a Specific Rule in a Specific Layer 3 Section .......................... 220
    Working With Layer 2 Sections in Distributed Firewall ............................... 221
    Working With a Specific Layer 2 Distributed Firewall Section ...................... 223
    Working With Distributed Firewall Rules in a Layer 2 Section ....................... 226
    Working With a Specific Rule in a Specific Layer 2 Section .......................... 227
  Layer 3 Redirect Sections and Rules ........................................................... 229
    Layer 3 Redirect Section ......................................................................... 230
    Working With Layer 3 Redirect Rules for a Specific Section ....................... 231
    Working With a Specific Layer 3 Redirect Rule for a Specific Section ................ 231
  Service Insertion Profiles and Layer 3 Redirect Rules .................................. 232
<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Distributed Firewall After Upgrade</td>
<td>233</td>
</tr>
<tr>
<td>Working With Distributed Firewall Status</td>
<td>233</td>
</tr>
<tr>
<td>Working With a Specific Layer 3 Section Status</td>
<td>235</td>
</tr>
<tr>
<td>Working With a Specific Layer 2 Section Status</td>
<td>235</td>
</tr>
<tr>
<td>Import and Export Firewall Configurations</td>
<td>236</td>
</tr>
<tr>
<td>Working With a Specific Saved Firewall Configuration</td>
<td>237</td>
</tr>
<tr>
<td>Export a Firewall Configuration</td>
<td>238</td>
</tr>
<tr>
<td>Import a Firewall Configuration</td>
<td>238</td>
</tr>
<tr>
<td>Working With Distributed Firewall Session Timers</td>
<td>239</td>
</tr>
<tr>
<td>Working With a Specific Distributed Firewall Session Timer Configuration</td>
<td>242</td>
</tr>
<tr>
<td>Working With Distributed Firewall Thresholds</td>
<td>243</td>
</tr>
<tr>
<td>Working With the Distributed Firewall Global Configuration</td>
<td>244</td>
</tr>
<tr>
<td>Synchronize Firewall</td>
<td>245</td>
</tr>
<tr>
<td>Enable Firewall</td>
<td>245</td>
</tr>
<tr>
<td>Working With IPFIX</td>
<td>246</td>
</tr>
<tr>
<td>Working With SpoofGuard</td>
<td>248</td>
</tr>
<tr>
<td>Working With SpoofGuard Policies</td>
<td>248</td>
</tr>
<tr>
<td>Working With a Specific SpoofGuard Policy</td>
<td>248</td>
</tr>
<tr>
<td>Perform SpoofGuard Operations on IP Addresses in a Specific Policy</td>
<td>249</td>
</tr>
<tr>
<td>Working With Flow Monitoring</td>
<td>251</td>
</tr>
<tr>
<td>Working With Flow Monitoring Statistics</td>
<td>251</td>
</tr>
<tr>
<td>Working With Flow Monitoring Meta-Data</td>
<td>252</td>
</tr>
<tr>
<td>Working With Flow Monitoring Configuration</td>
<td>253</td>
</tr>
<tr>
<td>Working With Flow Configuration for a Specific Context</td>
<td>255</td>
</tr>
<tr>
<td>Exclude Virtual Machines from Firewall Protection</td>
<td>256</td>
</tr>
<tr>
<td>Working With the Exclusion List</td>
<td>256</td>
</tr>
<tr>
<td>Working With NSX Edge</td>
<td>257</td>
</tr>
<tr>
<td>Working With a Specific NSX Edge</td>
<td>267</td>
</tr>
<tr>
<td>Working With DNS Client Configuration</td>
<td>272</td>
</tr>
<tr>
<td>Working With AESNI</td>
<td>272</td>
</tr>
<tr>
<td>Working With Core Dumps</td>
<td>273</td>
</tr>
<tr>
<td>Working With FIPS on NSX Edge</td>
<td>273</td>
</tr>
<tr>
<td>Working With NSX Edge Logs</td>
<td>273</td>
</tr>
<tr>
<td>Working With NSX Edge Summary</td>
<td>274</td>
</tr>
<tr>
<td>Working With NSX Edge Status</td>
<td>281</td>
</tr>
<tr>
<td>Working With NSX Edge Tech Support Logs</td>
<td>283</td>
</tr>
<tr>
<td>Working With NSX Edge CLI Settings</td>
<td>283</td>
</tr>
<tr>
<td>Working With NSX Edge Remote Access</td>
<td>284</td>
</tr>
<tr>
<td>Working With NSX Edge System Control Configuration</td>
<td>284</td>
</tr>
<tr>
<td>Working With NSX Edge Firewall Configuration</td>
<td>286</td>
</tr>
<tr>
<td>Working With Firewall Rules</td>
<td>289</td>
</tr>
<tr>
<td>Working With a Specific Firewall Rule</td>
<td>290</td>
</tr>
<tr>
<td>Working With the NSX Edge Global Firewall Configuration</td>
<td>291</td>
</tr>
<tr>
<td>Working With the Default Firewall Policy for an Edge</td>
<td>293</td>
</tr>
<tr>
<td>Working With Statistics for a Specific Firewall Rule</td>
<td>293</td>
</tr>
<tr>
<td>Working With NAT Configuration</td>
<td>293</td>
</tr>
</tbody>
</table>
Working With NAT Rules ................................................................. 297
  Working With a Specific NAT Rule ............................................. 298
Working With the NSX Edge Routing Configuration ........................ 299
  Working With the NSX Edge Global Configuration ......................... 308
  Working With Static and Default Routes .................................. 309
  Working With OSPF Routing for NSX Edge ................................. 310
  Working With BGP Routes for NSX Edge .................................... 312
Working With Layer 2 Bridging ................................................... 314
Working With NSX Edge Load Balancer ........................................ 315
  Working With Application Profiles .......................................... 324
    Working With a Specific Application Profile ............................ 326
  Working With Application Rules ............................................. 327
    Working With a Specific Application Rule ................................ 328
  Working With Load Balancer Monitors ..................................... 329
    Working With a Specific Load Balancer Monitor ......................... 331
  Working With Virtual Servers ............................................... 332
    Working With a Specific Virtual Server ................................ 333
  Working With Server Pools .................................................... 333
    Working With a Specific Server Pool .................................... 337
  Working With a Specific Load Balancer Member .......................... 338
Working With Load Balancer Statistics ...................................... 338
  Working With Load Balancer Acceleration ................................. 342
Working With NSX Edge DNS Server Configuration ......................... 342
Get DNS server statistics ......................................................... 344
Configure DHCP for NSX Edge .................................................. 345
  Working With DHCP IP Pools .................................................. 349
    Working With a Specific DHCP IP Pool .................................. 350
  Working With DHCP Static Bindings ....................................... 350
    Working With a Specific DHCP Static Binding .......................... 351
  Working With DHCP Relays .................................................... 352
  Working With DHCP Leases .................................................... 354
Working With NSX Edge High Availability .................................. 354
Working With Remote Syslog Server on NSX Edge ......................... 356
Working With SSL VPN ............................................................ 357
  Working With SSL VPN Server ............................................... 357
  Working With Private Networks ............................................. 358
    Working With a Specific Private Network ................................ 359
  Working With IP Pools for SSL VPN ....................................... 360
    Working With a Specific IP Pool for SSL VPN ............................ 362
  Working With Network Extension Client Parameters ..................... 363
  Working With SSL VPN Client Installation Packages ..................... 363
    Working With a Specific SSL VPN Client Installation Package ...... 365
  Working With Portal Layout ................................................... 366
    Working With Image Files for SSL VPN .................................. 367
  Working With Portal Users .................................................... 367
    Working With a Specific Portal User .................................... 369
  Working With Authentication Settings ..................................... 369
    Working With the RSA Config File ....................................... 371
NSX API Guide  Version: 6.3
SSL VPN Advanced Configuration .................................................. 371
Working With Logon and Logoff Scripts for SSL VPN ..................... 372
Working With Uploaded Script Files ............................................. 373
Uploading Script Files for SSL VPN ............................................ 374
Working With SSL VPN Users .................................................... 374
Working With Active Client Sessions ........................................ 375
Working With a Specific Active Client Session ............................. 375
Working With NSX Edge Firewall Dashboard Statistics .................... 376
Working With SSL VPN Dashboard Statistics ................................ 376
Working With Tunnel Traffic Dashboard Statistics .......................... 377
Working With Interface Dashboard Statistics ............................... 377
Working With Interface Statistics .............................................. 377
Working With Uplink Interface Statistics ..................................... 378
Working With Internal Interface Statistics ................................... 378
Working With L2 VPN ............................................................. 378
Working With L2 VPN Statistics ................................................ 383
Working With IPsec VPN .......................................................... 384
Working With IPsec Statistics ................................................... 388
Automatic Configuration of Firewall Rules ................................... 389
Working With NSX Edge Appliance Configuration .......................... 390
Working With NSX Edge Appliance Configuration by Index ............ 393
Working With Edge Services Gateway Interfaces .......................... 395
Working With a Specific Edge Services Gateway Interface .............. 397
Working With Logical Router HA (Management) Interface ............... 398
Working With Logical Router Interfaces ..................................... 399
Working With a Specific Logical Router Interface ........................ 400
Configuring Edge Services in Async Mode .................................. 401
Working With a Specific Edge Job Status .................................... 401

Working With NSX Edge Configuration Publishing ........................ 403
Working With NSX Edge Tuning Configuration .............................. 403

Working With Certificates ......................................................... 405
Working With Certificates and Certificate Chains .......................... 405
Working With Certificates on a Specific Scope ............................. 405
Working With Self-Signed Certificates ....................................... 406
Working With a Specific Certificate .......................................... 406
Working With Certificate Signing Requests ................................ 406
Working With Self-Signed Certificate for CSR ............................... 407
Working With Certificate Signing Requests on a Specific Scope ...... 408
Working With Certificate Revocation Lists on a Specific Scope ...... 408
Working With CRL Certificates in a Specific Scope ........................ 408
Working With a Specific CRL Certificate ..................................... 409

Working With Service Composer ................................................. 410
Working With Security Policies ................................................. 411
Working With a Specific Security Policy ..................................... 413
Working With Security Group Bindings ...................................... 417
Working With Security Actions on a Security Policy ...................... 417
Working with Service Composer Policy Precedence ....................... 417
Working With Service Composer Status ................................................................. 418
Working With All Service Composer Alarms ......................................................... 418
Working With Service Composer Firewall Applied To Setting ............................. 419
Working With Service Composer Configuration Import and Export ..................... 420
Working With Virtual Machines with Security Actions Applied ......................... 421
Working With Security Actions Applicable on a Security Group ....................... 422
Working With Security Actions Applicable on a Virtual Machine ...................... 427
Working With Service Composer Firewall ......................................................... 427
Working With Security Policies Mapped to a Security Group .............................. 429

Working With SNMP ............................................................................................ 432
Working With SNMP Status Settings ................................................................. 432
Working With SNMP Managers .......................................................................... 433
  Working with a Specific SNMP Manager ......................................................... 434
Working With SNMP Traps .................................................................................. 435
  Working With a Specific SNMP Trap ............................................................... 436

Working With the Central CLI ............................................................................ 438

Working with Logical Inventory Details ............................................................ 439
  Communication Status of a Specific Host ....................................................... 439
  Communication Status of a List of Hosts ........................................................ 439
  Detailed Information about Logical Switches .................................................. 440
  Detailed Information about Logical Switches in a Specific Transport Zone .......... 443

Working With Hardware Gateways .................................................................... 446
  Working With a Specific Hardware Gateway ................................................... 447
    Working With Switches on a Specific Hardware Gateway ............................. 448
    Working With a Specific Switch on a Specific Hardware Gateway ................ 449
    Working With Ports on a Specific Switch on a Specific Hardware Gateway .... 449
  Working With the Hardware Gateway Replication Cluster .............................. 450

Working With Hardware Gateway Bindings and BFD ......................................... 453
  Working With Hardware Gateway Bindings ..................................................... 453
    Working With a Specific Hardware Gateway Binding .................................. 454
    Working With Hardware Gateway Binding Statistics .................................... 455
    Working With Hardware Gateway Binding Objects ...................................... 455
  Working With Hardware Gateway BFD (Bidirectional Forwarding Detection) .... 456
    Working With Hardware Gateway BFD Configuration .................................. 457
    Working With Hardware Gateway BFD Tunnel Status .................................. 457

Appendix ............................................................................................................. 460
Introduction
This manual, the NSX for vSphere API Guide, describes how to install, configure, monitor, and maintain the VMware® NSX system by using REST API requests.

Intended Audience
This manual is intended for anyone who wants to use REST API to programmatically control NSX in a VMware vSphere environment. The information in this manual is written for experienced developers who are familiar with virtual machine technology, virtualized datacenter operations, and REST APIs. This manual also assumes familiarity with NSX for vSphere.

VMware Technical Publications Glossary
VMware Technical Publications provides a glossary of terms that might be unfamiliar to you. For definitions of terms as they are used in VMware technical documentation go to http://www.vmware.com/support/pubs.

Technical Documentation and Product Updates
You can find the most up-to-date technical documentation on the VMware Web site at: http://www.vmware.com/support/.
The VMware Web site also provides the latest product updates.
If you have comments about this documentation, submit your feedback to: .

Using the NSX REST API
To use the NSX REST API, you must configure a REST client, verify the required ports are open between your REST client and the NSX Manager, and understand the general RESTful workflow.

Ports Required for the NSX REST API
The NSX Manager requires port 443/TCP for REST API requests.

Configuring REST Clients for the NSX REST API
Some browser-based clients include the Chrome app, Postman, or the Firefox add-on, RESTClient. Curl is a command-line tool that can function as a REST client. The details of REST client configuration will vary from client to client, but this general information should help you configure your REST client correctly.

- **The NSX REST API uses basic authentication.**
  You must configure your REST client to send the NSX Manager authentication credentials using basic authentication.

- **You must use https to send API requests to the NSX Manager.**
  You might need to import the certificate from the NSX Manager to your REST client to allow it to connect to the NSX Manager.

- **When you submit an API request with an XML request body, you must include the Content-Type: application/xml header.**
  Some requests require additional headers, for example, firewall configuration changes require the If-Match header. This is noted on each method description.

- **To ensure you always receive XML response bodies, set the Accept: application/xml header.**
  Some API methods respond with JSON output, which is an experimental feature. Setting the Accept header ensures you always get XML output. **Note:** some methods, for example, the central CLI method, POST /1.0/nsx/cli, might require a different Accept header.

The following API method will return a response on a newly deployed NSX Manager appliance, even if you have not made any configuration changes. You can use this as a test to verify that your REST client is configured correctly to communicate with the NSX Manager API.
GET /api/2.0/services/usermgmt/user/admin

**URI and Query Parameters**

Some methods have URI or query parameters. URI parameters are values that you include in the request URL. You use a question mark (?) to join the request URL and the query parameters. Multiple query parameters can be combined by using ampersands (&).

For example, you can use this method to get a list of logical switches on a transport zone:

GET /api/2.0/vdn/scopes/{scopeId}/virtualwires

**scopeId** is a URI parameter that represents a transport zone.

The **startIndex** and **pageSize** query parameters control how this information is displayed. **startIndex** determines which logical switch to begin the list with, and **pageSize** determines how many logical switches to list.

To view the first 20 logical switches on transport zone vdnscope-1, use the following parameters:
- **scopeId** URI parameter set to vdnscope-1.
- **startIndex** query parameter set to 0.
- **pageSize** query parameter set to 20.

These parameters are combined to create this request:

GET https://192.168.110.42/api/2.0/vdn/scopes/vdnscope-1/virtualwires?startIndex=0&pageSize=20

**RESTful Workflow Patterns**

All RESTful workflows fall into a pattern that includes only two fundamental operations, which you repeat in this order for as long as necessary.

- **Make an HTTP request (GET, PUT, POST, or DELETE).**
  The target of this request is either a well-known URL (such as NSX Manager) or a link obtained from the response to a previous request. For example, a GET request to an Org URL returns links to vDC objects contained by the Org.

- **Examine the response, which can be an XML document or an HTTP response code.**
  If the response is an XML document, it might contain links or other information about the state of an object. If the response is an HTTP response code, it indicates whether the request succeeded or failed, and might be accompanied by a URL that points to a location from which additional information can be retrieved.

**Revision Numbers**

Some API objects include a configuration version number. In some cases, this revision number is used to prevent concurrent changes to an object. As a best practice, before you change the configuration of an object, retrieve the latest configuration using GET. Modify the response body as needed and use it as your PUT request body. If the object has been modified since your GET operation, you might see an error message.

**Finding vCenter Object IDs**

Many API methods reference vCenter object IDs in URI parameters, query parameters, request bodies, and response bodies. You can find vCenter object IDs via the vCenter Managed Object Browser.

**Find Datacenter MOID**

1. In a web browser, enter the vCenter Managed Object Browser URL: http://vCenter-IP-Address/mob.
2. Click **content**.
3. Find **rootFolder** in the Name column, and click the corresponding link in the Value column. For example, **group-d1**.
4. Find the **childEntity** in the Name column, and the corresponding Value column entry is the datacenter MOID. For example, **datacenter-21**.

**Find Cluster or Host MOID**
1. In a web browser, enter the vCenter Managed Object Browser URL: http://vCenter-IP-Address/mob.

2. Click content.

3. Find rootFolder in the Name column, and click the corresponding link in the Value column. For example, group-d1.

4. Find childEntity in the Name column, and click the corresponding link in the Value column. For example, datacenter-21.

5. Find hostFolder in the Name column, and click the corresponding link in the Value column. For example, group-h23.

6. Find childEntity in the Name column. The corresponding Value column lists the host clusters. For example, domain-c33.

7. To find the MOID of a host in a cluster, click the appropriate host cluster link located in the previous step.

8. Find host in the Name column. The corresponding Value column lists the hosts in that cluster by vCenter MOID and hostname. For example, host-32 (esx-02a.corp.local).

---

**Find Portgroup MOID**

1. In a web browser, enter the vCenter Managed Object Browser URL: http://vCenter-IP-Address/mob.

2. Click content.

3. Find rootFolder in the Name column, and click the corresponding link in the Value column. For example, group-d1.

4. Find childEntity in the Name column, and click the corresponding link in the Value column. For example, datacenter-21.

5. Find hostFolder in the Name column, and click the corresponding link in the Value column. For example, group-h23.

6. Find childEntity in the Name column. The corresponding Value column contains links to host clusters. Click the appropriate host cluster link. For example, domain-c33.

7. Find host in the Name column. The corresponding Value column lists the hosts in that cluster by vCenter MOID and hostname. Click the appropriate host link, For example, host-32.

8. Find network in the Name column. The corresponding Value column lists the port groups on that host, For example, dvportgroup-388.

---

**Find VM MOID or VM Instance UUID**

1. In a web browser, enter the vCenter Managed Object Browser URL: http://vCenter-IP-Address/mob.

2. Click content.

3. Find rootFolder in the Name column, and click the corresponding link in the Value column. For example, group-d1.

4. Find childEntity in the Name column, and click the corresponding link in the Value column. For example, datacenter-21.

5. Find hostFolder in the Name column, and click the corresponding link in the Value column. For example, group-h23.

6. Find childEntity in the Name column. The corresponding Value column contains links to host clusters. Click the appropriate host cluster link. For example, domain-c33.

7. Find host in the Name column. The corresponding Value column lists the hosts in that cluster by vCenter MOID and hostname. Click the appropriate host link, For example, host-32.

8. Find vm in the Name column. The corresponding Value column lists the virtual machines by vCenter MOID and hostname. For example, vm-216 (web-01a).

9. To find the instance UUID of a VM, click the VM MOID link located in the previous step. Click the config link in the Value column.
10 Find `instanceUuid` in the Name column. The corresponding Value column lists the VM instance UUID. For example, `502e71fa-1a00-759b-e40f-ce778e915f16`.
Endpoints

https://{nsxmanager}/api

Base URI Parameters:

| nsxmanager  | (required) | Hostname or IP address of the NSX Manager. |

Working With vSphere Distributed Switches

GET /api/2.0/vdn/switches

Description:
Retrieve information about all vSphere Distributed Switches.

Responses:
Status Code: 200
Body: application/xml

```
<vdsContexts>
  <vdsContext>
    <switch>
      <objectId>dvs-35</objectId>
      <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
      <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
      <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
      <revision>10</revision>
      <type>
        <typeName>VmwareDistributedVirtualSwitch</typeName>
      </type>
      <name>vds-site-a</name>
      <scope>
        <id>datacenter-21</id>
        <objectTypeName>Datacenter</objectTypeName>
        <name>Datacenter Site A</name>
      </scope>
      <clientHandle></clientHandle>
      <extendedAttributes></extendedAttributes>
      <isUniversal>false</isUniversal>
      <universalRevision>0</universalRevision>
    </switch>
    <mtu>1600</mtu>
    <teaming>FAILOVER_ORDER</teaming>
    <uplinkPortName>Uplink 4</uplinkPortName>
    <promiscuousMode>false</promiscuousMode>
  </vdsContext>
  <vdsContext>
    <switch>
      <objectId>dvs-47</objectId>
      <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
      ...
    </switch>
  </vdsContext>
</vdsContexts>
```
POST /api/2.0/vdn/switches

**Description:**
Prepare a vSphere Distributed Switch.

The MTU is the maximum amount of data that can be transmitted in one packet before it is divided into smaller packets. VXLAN frames are slightly larger in size because of the traffic encapsulation, so the MTU required is higher than the standard MTU. You must set the MTU for each switch to 1602 or higher.

**Request:**
**Body:** application/xml

```xml
<vdsContext>
  <switch>
    <objectId>dvs-26</objectId>
    <type>
      <typeName>DistributedVirtualSwitch</typeName>
    </type>
    <name></name>
    <revision>0</revision>
    <objectTypeName>DistributedVirtualSwitch</objectTypeName>
  </switch>
  <teaming>ETHER_CHANNEL</teaming>
  <mtu>mtu-value</mtu>
</vdsContext>
```

---

**Working With vSphere Distributed Switches in a Datacenter**

GET /api/2.0/vdn/switches/datacenter/{datacenterID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>datacenterID</td>
<td>A valid datacenter ID (e.g. datacenter-21)</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve information about all vSphere Distributed Switches in the specified datacenter.

**Responses:**

**Status Code:** 200
**Body:** application/xml

```xml
<vdsContexts>
  <vdsContext>
    <switch>
      <objectId>dvs-35</objectId>
      <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
      <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
      <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
      <revision>10</revision>
    </type>
  </vdsContext>
</vdsContexts>
```
Working With a Specific vSphere Distributed Switch

GET /api/2.0/vdn/switches/{vdsId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vdsId</td>
<td>A valid vSphere Distributed Switch ID (e.g. dvs-35)</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified vSphere Distributed Switch.

Responses:
Status Code: 200
Body: application/xml
DELETE /api/2.0/vdn/switches/{vdsId}

**URI Parameters:**

| **vdsId** (required) | A valid vSphere Distributed Switch ID (e.g. dvs-35) |

**Description:**
Delete the specified vSphere Distributed Switch.
Working With Segment ID Pools and Multicast Ranges

Working With Segment ID Pools
Segment ID pools (also called segment ID ranges) provide virtual network identifiers (VNIs) to logical switches. You must configure a segment ID pool for each NSX Manager. You can have more than one segment ID pool. The segment ID pool includes the beginning and ending IDs.

You should not configure more than 10,000 VNIs in a single vCenter server because vCenter limits the number of dvPortgroups to 10,000.

If any of your transport zones will use multicast or hybrid replication mode, you must also configure a multicast address range.

GET /api/2.0/vdn/config/segments

Description:
Retrieve information about all segment ID pools.

Responses:
Status Code: 200
Body: application/xml

```
<segmentRanges>
  <segmentRange>
    <id>1</id>
    <name>Local Segments</name>
    <desc>Local Segment ID pool</desc>
    <begin>5000</begin>
    <end>5999</end>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </segmentRange>
  <segmentRange>
    <id>3</id>
    <name>Universal-Segments</name>
    <desc>Universal segment ID pool</desc>
    <begin>200000</begin>
    <end>201000</end>
    <isUniversal>true</isUniversal>
    <universalRevision>2</universalRevision>
  </segmentRange>
</segmentRanges>
```

POST /api/2.0/vdn/config/segments

Query Parameters:
isUniversal (optional) Set to true when creating a universal segment ID pool.

Description:
Add a segment ID pool.
• **name** - Required property.
• **desc** - Optional property.
• **begin** - Required property. Minimum value is 5000
• **end** - Required property. Maximum value is 16777216

**Request:**
**Body:** application/xml

```xml
<segmentRange>
  <name>Segment 1</name>
  <desc>Segment Range 1</desc>
  <begin>5000</begin>
  <end>12999</end>
</segmentRange>
```

---

**Working With a Specific Segment ID Pool**

GET /api/2.0/vdn/config/segments/{segmentPoolId}

**URI Parameters:**

| segmentPoolId | (required) | A valid segmentPoolId |

**Description:**
Retrieve information about the specified segment ID pool.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```xml
<segmentRange>
  <id>1</id>
  <name>Local Segments</name>
  <desc>Local Segment ID pool</desc>
  <begin>5000</begin>
  <end>5999</end>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
</segmentRange>
```

---

**PUT /api/2.0/vdn/config/segments/{segmentPoolId}**

**URI Parameters:**

| segmentPoolId | (required) | A valid segmentPoolId |

**Description:**
Update the specified segment ID pool.
If the segment ID pool is universal you must send the API request to the primary NSX Manager.

**Request:**
**Body:** application/xml

```xml
<segmentRange>
  <desc>Local Segment ID pool expanded</desc>
  <end>6999</end>
</segmentRange>
```

**DELETE /api/2.0/vdn/config/segments/{segmentPoolId}**

<table>
<thead>
<tr>
<th>URI Parameters:</th>
</tr>
</thead>
<tbody>
<tr>
<td>segmentPoolId   (required)</td>
</tr>
</tbody>
</table>

**Description:**
Delete the specified segment ID pool.
If the segment ID pool is universal you must send the API request to the primary NSX Manager.

---

**Working With Multicast Address Ranges**

If any of your transport zones will use multicast or hybrid replication mode, you must add a multicast address range (also called a multicast address pool). Specifying a multicast address range helps in spreading traffic across your network to avoid overloading a single multicast address.

**GET /api/2.0/vdn/config/multicasts**

**Description:**
Retrieve information about all configured multicast address ranges.
Universal multicast address ranges have the property isUniversal set to true.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```xml
<multicastRanges>
  <multicastRange>
    <id>5</id>
    <name>239.0.0.0-239.255.255.255</name>
    <begin>239.0.0.0</begin>
    <end>239.255.255.255</end>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </multicastRange>
  <multicastRange>
    <id>10</id>
    <name>Range 2</name>
    <begin>237.0.0.0</begin>
  </multicastRange>
</multicastRanges>
```
POST /api/2.0/vdn/config/multicasts

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>isUniversal</td>
<td>(optional) Set to true when creating a universal multicast address range.</td>
</tr>
</tbody>
</table>

Description:
Add a multicast address range for logical switches.
The address range includes the beginning and ending addresses.

Request:

Body: application/xml

```
<multicastRange>
  <name>Range 2</name>
  <begin>237.0.0.0</begin>
  <end>237.255.255.255</end>
</multicastRange>
```

Working With a Specific Multicast Address Range

GET /api/2.0/vdn/config/multicasts/{multicastAddresssRangeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>multicastAddresssRangeId</td>
<td>(required) A valid multicast address range ID</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified multicast address range.

Responses:

Status Code: 200

Body: application/xml

```
<multicastRange>
  <id>5</id>
  <name>239.0.0.0-239.255.255.255</name>
  <begin>239.0.0.0</begin>
  <end>239.255.255.255</end>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
</multicastRange>
```
PUT /api/2.0/vdn/config/multicasts/{multicastAddresssRangeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>multicastAddresssRangeId</td>
<td>A valid multicast address range ID</td>
</tr>
</tbody>
</table>

Description:
Update the specified multicast address range.
If the multicast address range is universal you must send the API request to the primary NSX Manager.

Request:
Body: application/xml

```
<multicastRange>
  <name>Extended range 2</name>
  <desc>Extended range 2</desc>
  <end>238.255.255.255</end>
</multicastRange>
```

DELETE /api/2.0/vdn/config/multicasts/{multicastAddresssRangeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>multicastAddresssRangeId</td>
<td>A valid multicast address range ID</td>
</tr>
</tbody>
</table>

Description:
Delete the specified multicast address range.
If the multicast address range is universal you must send the API request to the primary NSX Manager.

---

**Working With the VXLAN Port Configuration**

GET /api/2.0/vdn/config/vxlan/udp/port

Description:
Retrieve the UDP port configured for VXLAN traffic.

Responses:
Status Code: 200

Body: application/xml

```
<int>4789</int>
```
Update the VXLAN Port Configuration

PUT /api/2.0/vdn/config/vxlan/udp/port/{portNumber}

URI Parameters:

<table>
<thead>
<tr>
<th>portNumber</th>
<th>A valid UDP port for VXLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>(required)</td>
<td></td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>force</th>
<th>Set to true to force the change in VXLAN port.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(optional)</td>
<td>This updates the port configuration on the hosts directly, and might cause a disruption in VXLAN traffic. In a cross-vCenter NSX environment, this does not change the port on all NSX Managers.</td>
</tr>
</tbody>
</table>

Description:
Update the VXLAN port configuration to use port portNumber.

This method changes the VXLAN port in a three phrase process, avoiding disruption of VXLAN traffic. In a cross-vCenter NSX environment, change the VXLAN port on the primary NSX Manager to propagate this change on all NSX Managers and hosts in the cross-vCenter NSX environment.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. Port change is now non-disruptive, and propagates to secondary NSX Managers if performed on the primary NSX Manager. Force parameter added.</td>
</tr>
</tbody>
</table>

VXLAN Port Configuration Update Status

GET /api/2.0/vdn/config/vxlan/udp/port/taskStatus

Description:
Retrieve the status of the VXLAN port configuration update.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

<vxlanPortUpdatingStatus>
<prevPort>8472</prevPort>
Resume VXLAN Port Configuration Update

POST /api/2.0/vdn/config/vxlan/udp/port/resume

Description:
If you update the VXLAN port using the Change button on the Installation > Logical Network Preparation page in the vSphere Web Client, or using PUT /api/2.0/vdn/config/vxlan/udp/port/{portNumber} without the force parameter, and the port update does not complete, you can try resuming the port config change.

You can check the progress of the VXLAN port update with GET /api/2.0/vdn/config/vxlan/udp/port/taskStatus. Only try resuming the port update if it has failed to complete. You should not need to resume the port update under normal circumstances.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Working With Allocated Resources

GET /api/2.0/vdn/config/resources/allocated

Query Parameters:

<table>
<thead>
<tr>
<th>type</th>
<th>set to segmentId or multicastAddress</th>
</tr>
</thead>
<tbody>
<tr>
<td>pagesize</td>
<td>The number of results to return. Range is 1-1024.</td>
</tr>
<tr>
<td>startIndex</td>
<td>The starting point for returning results.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about allocated segment IDs or multicast addresses.

Resolving Missing VXLAN VMKernel Adapters

POST /api/2.0/vdn/config/host/{hostId}/vxlan/vteps

Query Parameters:
<table>
<thead>
<tr>
<th>action</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>remediate:</td>
<td>Use the <em>remediate</em> action to recreate the missing VXLAN VMKernel adapter on the host. This action removes the adapter using the <em>resync</em> action, then recreates the adapter.</td>
</tr>
<tr>
<td>resync:</td>
<td>If the VXLAN VMKernel adapter is no longer needed, you can use the <em>resync</em> action to remove the missing VXLAN VMKernel adapter from the NSX Manager configuration database.</td>
</tr>
</tbody>
</table>

**Description:**
Resolve missing VXLAN VMKernel adapters.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>
Working With Transport Zones

GET /api/2.0/vdn/scopes

Description:
Retrieve information about all transport zones (also known as network scopes).

CDO mode state parameters (read-only)
The CDO mode state shows the most recent CDO operation, and the status of that operation. The status can be: UNKNOWN, PENDING, IN_PROGRESS, COMPLETED, or FAILED.

<table>
<thead>
<tr>
<th>Operation Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENABLE</td>
<td>Enable CDO mode on all distributed switches in the transport zone.</td>
</tr>
<tr>
<td>DISABLE</td>
<td>Disable CDO mode on all distributed switches in the transport zone.</td>
</tr>
<tr>
<td>EXPAND</td>
<td>Enable CDO mode on newly joined distributed switches.</td>
</tr>
<tr>
<td>SHRINK</td>
<td>Disable CDO mode on removed distributed switches.</td>
</tr>
<tr>
<td>CLEAN_UP</td>
<td>Transport zone removed, clean up the CDO mode configuration from all distributed switches in the transport zone.</td>
</tr>
<tr>
<td>SYNC_ENABLE</td>
<td>Repush CDO mode configuration data to all distributed switches in the scope</td>
</tr>
<tr>
<td>SYNC_DISABLE</td>
<td>Remove CDO mode configuration from all distributed switches in the transport zone.</td>
</tr>
</tbody>
</table>

Method history:
Release | Modification
--- | ---
6.3.0 | Method updated. Output includes information about CDO mode. See Working With Transport Zone CDO Mode for more information.

Responses:
Status Code: 200
Body: application/xml

```xml
<vdnScopes>
  <vdnScope>
    <objectId>universalvdnscope</objectId>
    <objectTypeName>VdnScope</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>5</revision>
    <type>
      <typeName>VdnScope</typeName>
    </type>
    <name>Universal-Transport-Zone</name>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>true</isUniversal>
    <universalRevision>0</universalRevision>
  </vdnScope>
</vdnScopes>
```
<id>universalvdnscope</id>
<clusters>
  <cluster>
    <objectId>domain-c33</objectId>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>20</revision>
    <type>
      <typeName>ClusterComputeResource</typeName>
    </type>
    <name>Compute Cluster A</name>
    <scope>
      <id>datacenter-21</id>
      <objectTypeName>Datacenter</objectTypeName>
      <name>Datacenter Site A</name>
    </scope>
    <clientHandle/>
    <extendedAttributes/>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </cluster>
  <cluster>
    <objectId>domain-c41</objectId>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>16</revision>
    <type>
      <typeName>ClusterComputeResource</typeName>
    </type>
    <name>Management & Edge Cluster</name>
    <scope>
      <id>datacenter-21</id>
      <objectTypeName>Datacenter</objectTypeName>
      <name>Datacenter Site A</name>
    </scope>
    <clientHandle/>
    <extendedAttributes/>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </cluster>
</clusters>
<virtualWireCount>5</virtualWireCount>
<controlPlaneMode>UNICAST_MODE</controlPlaneMode>
<cdoModeEnabled>false</cdoModeEnabled>
<cdoModeState>
  <jobId>jobdata-23061</jobId>
  <operationType>SYNC_DISABLE</operationType>
  <status>COMPLETED</status>
  <errorCode>0</errorCode>
</cdoModeState>
</vdnScope>
<vdnScope>
  <objectId>vdnscope-1</objectId>
  <objectTypeName>VdnScope</objectTypeName>
  <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
  <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
</vdnScope>
<revision>1</revision>
<type>
  <typeName>VdnScope</typeName>
</type>
<name>Local-Transport-Zone-A test</name>
<description></description>
$clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
:id>vdnscope-1</id>
<clusters>
  <cluster>
    <objectId>domain-c33</objectId>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E8D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>20</revision>
    <type>
      <typeName>ClusterComputeResource</typeName>
    </type>
    <name>Compute Cluster A</name>
    <scope>
      <id>datacenter-21</id>
      <objectTypeName>Datacenter</objectTypeName>
      <name>Datacenter Site A</name>
    </scope>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </cluster>
  <cluster>
    <objectId>domain-c41</objectId>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E8D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>16</revision>
    <type>
      <typeName>ClusterComputeResource</typeName>
    </type>
    <name>Management &amp; Edge Cluster</name>
    <scope>
      <id>datacenter-21</id>
      <objectTypeName>Datacenter</objectTypeName>
      <name>Datacenter Site A</name>
    </scope>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </cluster>
</clusters>
<virtualWireCount>4</virtualWireCount>
<controlPlaneMode>UNICAST_MODE</controlPlaneMode>
<cdoModeEnabled>false</cdoModeEnabled>
</vdnScope>
</vdnScopes>
POST /api/2.0/vdn/scopes

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>isUniversal</td>
<td>(optional)</td>
<td>Set the <code>isUniversal</code> property to <code>true</code> when creating a universal transport zone.</td>
</tr>
</tbody>
</table>

Description:
Create a transport zone.

Request body parameters:
- **name** - Required. The name of the transport zone.
- **description** - Optional. Description of the transport zone.
- **objectId** - Required. The cluster object ID from vSphere. One or more are required.
- **controlPlaneMode** - Optional. The control plane mode. It can be one of the following:
  - `UNICAST_MODE`
  - `HYBRID_MODE`
  - `MULTICAST_MODE`

Request:
**Body**: application/xml

```xml
<vdnScope>
  <name>Local-Transport-Zone-B</name>
  <clusters>
    <cluster>
      <objectId>domain-c7</objectId>
    </cluster>
  </clusters>
  <controlPlaneMode>UNICAST_MODE</controlPlaneMode>
</vdnScope>
```

---

Working With a Specific Transport Zone

GET /api/2.0/vdn/scopes/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>(required)</td>
<td>A valid transport zone ID (vdnScope objectId)</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified transport zone.

Method history:
Method updated. Output includes information about CDO mode. See Working With Transport Zone CDO Mode for more information.

Responses:
Status Code: 200
Body: application/xml

```xml
<vdnScope>
  <objectId>universalvdnscope</objectId>
  <objectTypeName>VdnScope</objectTypeName>
  <vsmUuid>423A993F-BEE6-1285-54E48D508D90</vsmUuid>
  <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
  <revision>4</revision>
  <type>
    <typeName>VdnScope</typeName>
  </type>
  <name>Universal-Transport-Zone</name>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <isUniversal>true</isUniversal>
  <universalRevision>0</universalRevision>
  <id>universalvdnscope</id>
  <clusters>
    <cluster>
      <objectId>domain-c33</objectId>
      <objectTypeName>ClusterComputeResource</objectTypeName>
      <vsmUuid>423A993F-BEE6-1285-54E48D508D90</vsmUuid>
      <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
      <revision>20</revision>
      <type>
        <typeName>ClusterComputeResource</typeName>
      </type>
      <name>Compute Cluster A</name>
      <scope>
        <id>datacenter-21</id>
        <objectTypeName>Datacenter</objectTypeName>
        <name>Datacenter Site A</name>
      </scope>
      <clientHandle></clientHandle>
      <extendedAttributes></extendedAttributes>
      <isUniversal>false</isUniversal>
      <universalRevision>0</universalRevision>
    </cluster>
    <cluster>
      <objectId>domain-c41</objectId>
      <objectTypeName>ClusterComputeResource</objectTypeName>
      <vsmUuid>423A993F-BEE6-1285-54E48D508D90</vsmUuid>
      <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
      <revision>16</revision>
      <type>
        <typeName>ClusterComputeResource</typeName>
      </type>
      <name>Management & Edge Cluster</name>
      <scope>
        <id>datacenter-21</id>
      </scope>
    </cluster>
  </clusters>
</vdnScope>
```
POST /api/2.0/vdn/scopes/{scopeId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectId)</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>The action parameter values are:</td>
</tr>
<tr>
<td></td>
<td>• expand - add a cluster to a transport zone.</td>
</tr>
<tr>
<td></td>
<td>• shrink - remove a cluster from a transport zone.</td>
</tr>
<tr>
<td></td>
<td>• repair - recreate missing distributed port groups.</td>
</tr>
</tbody>
</table>

**Description:**

Update the specified transport zone.

You can add a cluster to or delete a cluster from a transport zone.
You can also repair missing port groups. For every logical switch created, NSX creates a corresponding port group in vCenter. If the port group is lost for any reason, the logical switch will stop functioning. The repair action recreates any missing port groups.

**Request:**
**Body:** application/xml

```xml
<vdnScope>
<objectId>universalvdnscope</objectId>
<clusters>
    <cluster>
        <objectId>domain-c7</objectId>
    </cluster>
</clusters>
</vdnScope>
```

**DELETE /api/2.0/vdn/scopes/{scopeId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectId)</td>
</tr>
</tbody>
</table>

**Description:**
Delete the specified transport zone.

---

**Working With Transport Zone Attributes**

**PUT /api/2.0/vdn/scopes/{scopeId}/attributes**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectId)</td>
</tr>
</tbody>
</table>

**Description:**
Update the attributes of a transport zone.
For example, you can update the name, description, or control plane mode. You must include the cluster object IDs for the transport zone in the request body.

**Request:**
**Body:** application/xml

```xml
<vdnScope>
<objectId>vdnscope-1</objectId>
<name>Local-Transport-Zone Site-B</name>
<clusters>
    <cluster>
    </cluster>
</clusters>
</vdnScope>
```
Working With Transport Zone CDO Mode

POST /api/2.0/vdn/scopes/{scopeId}/cdo

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectID)</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| action    | • enable to enable CDO mode configuration.  
|           | • disable to disable CDO mode configuration.  
|           | • force_sync to manually push the CDO configuration to all distributed switches in the transport zone. |

Description:
Enable or disable CDO mode for the specified transport zone.
Controller Disconnected Operation (CDO) mode ensures that the data plane connectivity is unaffected when host lose connectivity with the controller.

If you want to enable CDO mode on the universal transport zone in a cross-vCenter NSX environment, you must do this from the primary NSX Manager. The universal synchronization service will propagate the CDO configuration to the secondary NSX Managers.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.2</td>
<td>Method introduced. (Tech preview in 6.3.0).</td>
</tr>
</tbody>
</table>

Testing Multicast Group Connectivity

POST /api/2.0/vdn/scopes/{scopeId}/conn-check/multicast

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectID)</td>
</tr>
</tbody>
</table>

Description:
Test multicast group connectivity.
Test multicast group connectivity between two hosts connected to the specified transport zone.

Parameter packetSizeMode has one of the following values:
• 0 - VXLAN standard packet size  
• 1 - minimum packet size
- 2: customized packet size. If you set `packetSizeMode` to 2, you must specify the size using the `packetSize` parameter.

**Request:**

**Body:** application/xml

```xml
<testParameters>
  <gateway>172.23.233.1</gateway>
  <packetSizeMode>0</packetSizeMode>
  <packetSize>1600</packetSize>
  <sourceHost>
    <hostId>host-9</hostId>
    <switchId>dvs-22</switchId>
    <vlanId>54</vlanId>
  </sourceHost>
  <destinationHost>
    <hostId>host-92</hostId>
    <switchId>dvs-22</switchId>
    <vlanId>54</vlanId>
  </destinationHost>
</testParameters>
```
Working With Logical Switches in a Specific Transport Zone

GET /api/2.0/vdn/scopes/{scopeId}/virtualwires

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectId). For example, vdnScope-1 or universalvdnscope.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startindex</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pagesize</td>
<td>The number of results to return. Range is 1-1024.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about all logical switches in the specified transport zone (network scope).

POST /api/2.0/vdn/scopes/{scopeId}/virtualwires

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectId). For example, vdnScope-1 or universalvdnscope.</td>
</tr>
</tbody>
</table>

Description:
Create a logical switch.

To create a universal logical switch use universalvdnscope as the scopeld in the URI and send the request to the primary NSX Manager. Request body parameters:

- **name** - Optional. The name of the logical switch.
- **description** - Optional. Description of the logical switch.
- **tenantId** - Required.
- **controlPlaneMode** - Optional. The control plane mode. If not specified, the controlPlaneMode of the transport zone is used. It can be one of the following:
  - UNICAST_MODE
  - HYBRID_MODE
  - MULTICAST_MODE
- **guestVlanAllowed** - Optional. Default is false.

Request:

**Body:** application/xml

```xml
<virtualWireCreateSpec>
  <name>Web-Tier-01</name>
  <description>Web tier network</description>
  <tenantId>virtual wire tenant</tenantId>
  <controlPlaneMode>UNICAST_MODE</controlPlaneMode>
  <guestVlanAllowed>false</guestVlanAllowed>
</virtualWireCreateSpec>
```
Working With Traceflow

For Traceflow to work as expected, make sure that the controller cluster is connected and in healthy state. The Traceflow operation requires active communication between vCenter, NSX Manager, controller cluster, and netcpa User World Agents (UWA) on the host. Traceflow observes marked packet as it traverses overlay network. Each packet is delivered to host VM and monitored as it crosses overlay network until it reaches the destination VM. The packet is never delivered to the destination guest VM. This means that Traceflow packet delivery is successful even when the guest VM is powered down. Unknown L2 Packets are always be sent to the bridge. Typically, the bridge forwards these packets to a VLAN and reports the Traceflow packet as delivered. The packet which is reported as delivered need not necessarily mean that the trace packet was delivered to the destination specified. You should conclude only after validating the observations. vdl2 serves ARP proxy for ARP packets coming from VMs. However, Traceflow bypasses this process, hence vdl2 may broadcast the Traceflow packet out.

**POST /api/api/2.0/vdn/traceflow**

**Description:**
Create a traceflow.

**Request:**

**Body:** application/xml

```xml
<traceflowRequest>
  <vnicId>74eb1145-d40b-4061-8e64-1caddf2dbf81.001</vnicId>
  <timeout>10000</timeout>
  <routed>true</routed>
  <packet class="fieldsPacketData">
    <resourceType>FieldsPacketData</resourceType>
    <ethHeader>
      <srcMac>00:50:56:83:7e:87</srcMac>
      <dstMac>00:50:56:83:fa:6c</dstMac>
      <ethType>2048</ethType>
    </ethHeader>
    <ipHeader>
      <ttl>64</ttl>
      <srcIp>172.32.1.5</srcIp>
      <dstIp>172.34.1.5</dstIp>
    </ipHeader>
  </packet>
</traceflowRequest>
```

---

Working With a Specific Traceflow

**GET /api/api/2.0/vdn/traceflow/{traceflowId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>traceflowId (required)</th>
<th>Traceflow ID.</th>
</tr>
</thead>
</table>

**Description:**
Query a specific Traceflow by `traceflowId` which is the value returned after executing the create Traceflow API call.

**Responses:**
Status Code: 200
Body: application/xml

```xml
<traceflowDto>
  <operState>COMPLETE</operState>
  <vnicId>74eb1145-d40b-4061-8e64-1caddf2dbf81.001</vnicId>
  <id>00000000-0000-0000-0000-000056b5dec3</id>
  <receivedCount>2</receivedCount>
  <forwardedCount>1</forwardedCount>
  <deliveredCount>1</deliveredCount>
  <logicalReceivedCount>4</logicalReceivedCount>
  <logicalDroppedCount>0</logicalDroppedCount>
  <logicalForwardedCount>4</logicalForwardedCount>
  <timeout>10000</timeout>
  <completeAvailable>true</completeAvailable>
  <result>SUCCESS</result>
  <resultSummary>Traceflow delivered observation(s) reported</resultSummary>
  <srcIp>172.32.1.5</srcIp>
  <srcMac>00:50:56:83:7e:87</srcMac>
  <dstMac>172.34.1.5</dstMac>
  <lifMac>00:50:56:83:fa:6c</lifMac>
</traceflowDto>
```

### Traceflow Observations

**GET /api/api/2.0/vdn/traceflow/{traceflowId}/observations**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>traceflowId</td>
<td>(required) Traceflow ID.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve traceflow observations.

**Responses:**

**Status Code: 200**

**Body: application/xml**

```xml
<traceflowObservations>
  <traceflowObservationsDataPage>
    <pagingInfo>
      <pageSize>100</pageSize>
      <startIndex>0</startIndex>
      <totalCount>12</totalCount>
      <sortOrderAscending>true</sortOrderAscending>
      <sortBy></sortBy>
    </pagingInfo>
    <traceflowObservationReceived>
      <roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
      <transportNodeId>a02fe610-5358-4a3d-8fef-7be60b7d4ea5</transportNodeId>
      <hostName>10.146.104.42</hostName>
      <hostId>host-22</hostId>
    </traceflowObservationReceived>
  </traceflowObservationsDataPage>
</traceflowObservations>
```
<component>PHYS</component>
<compDisplayName>vNIC</compDisplayName>
<hopCount>0</hopCount>
</traceflowObservationReceived>
<traceflowObservationLogicalReceived>
  <roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
  <transportNodeId>a02fe610-5358-4a3d-8fef-7be60b7d4ea5</transportNodeId>
  <hostName>10.146.104.42</hostName>
  <hostId>host-22</hostId>
  <component>FW</component>
  <compDisplayName>Firewall</compDisplayName>
  <hopCount>1</hopCount>
</traceflowObservationLogicalReceived>
<traceflowObservationLogicalForwarded>
  <roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
  <transportNodeId>a02fe610-5358-4a3d-8fef-7be60b7d4ea5</transportNodeId>
  <hostName>10.146.104.42</hostName>
  <hostId>host-22</hostId>
  <component>LR</component>
  <compDisplayName>1-vm-3</compDisplayName>
  <hopCount>4</hopCount>
</traceflowObservationLogicalForwarded>
<traceflowObservationLogicalForwarded>
	<roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
	<translationNodeId>a02fe610-5358-4a3d-8f6f-7be60b7d4ea5</translationNodeId>
	<hostName>10.146.104.42</hostName>
	<hostId>host-22</hostId>
	<component>LS</component>
	<compDisplayName>3-switch-98</compDisplayName>
	<hopCount>6</hopCount>
	<vni>10002</vni>
	<logicalCompId>universalwire-3</logicalCompId>
	<logicalCompName>3-switch-98</logicalCompName>
</traceflowObservationLogicalForwarded>

<traceflowObservationForwarded>
	<roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
	<translationNodeId>10.146.104.42</translationNodeId>
	<hostName>10.146.104.42</hostName>
	<hostId>host-22</hostId>
	<component>PHYS</component>
	<compDisplayName>10.146.104.42</compDisplayName>
	<hopCount>7</hopCount>
	<remoteIpAddress>172.19.172.142</remoteIpAddress>
	<context>5109430534275084</context>
</traceflowObservationForwarded>

<traceflowObservationReceived>
	<roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
	<translationNodeId>d2fd4b26-a664-423f-b0aa-8ba760cd967f</translationNodeId>
	<hostName>10.146.103.3</hostName>
	<hostId>host-20</hostId>
	<component>PHYS</component>
	<compDisplayName>10.146.103.3</compDisplayName>
	<hopCount>8</hopCount>
</traceflowObservationReceived>

<traceflowObservationLogicalReceived>
	<roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
	<translationNodeId>d2fd4b26-a664-423f-b0aa-8ba760cd967f</translationNodeId>
	<hostName>10.146.103.3</hostName>
	<hostId>host-20</hostId>
	<component>FW</component>
	<compDisplayName>Firewall</compDisplayName>
	<hopCount>9</hopCount>
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<traceflowObservationLogicalForwarded>
	<roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
	<translationNodeId>d2fd4b26-a664-423f-b0aa-8ba760cd967f</translationNodeId>
	<hostName>10.146.103.3</hostName>
	<hostId>host-20</hostId>
	<component>FW</component>
	<compDisplayName>Firewall</compDisplayName>
	<hopCount>10</hopCount>
	<ruleId>1001</ruleId>
</traceflowObservationLogicalForwarded>
<traceflowObservationDelivered>
  <roundId>00000000-0000-0000-0000-000056b5dec3</roundId>
  <transportNodeId>d2fd4b26-a664-423f-b0aa-8ba760cd967f</transportNodeId>
  <hostName>10.146.103.3</hostName>
  <hostId>host-20</hostId>
  <component>PHYS</component>
  <compDisplayName>vNIC</compDisplayName>
  <hopCount>11</hopCount>
  <vlanId>0</vlanId>
</traceflowObservationDelivered>
</traceflowObservationsDataPage>
</traceflowObservations>
Working With Logical Switches in All Transport Zones

GET /api/2.0/vdn/virtualwires

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startindex</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pagesize</td>
<td>The number of results to return. Range is 1-1024.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about all logical switches in all transport zones.

Responses:
Status Code: 200
Body: application/xml

```xml
<virtualWires>
  <dataPage>
    <pagingInfo>
      <pageSize>20</pageSize>
      <startIndex>0</startIndex>
      <totalCount>13</totalCount>
      <sortOrderAscending>true</sortOrderAscending>
    </pagingInfo>
    <virtualWire>
      <objectId>virtualwire-1</objectId>
      <objectTypeName>VirtualWire</objectTypeName>
      <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
      <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
      <revision>3</revision>
      <type>
        <typeName>VirtualWire</typeName>
      </type>
      <name>Transit-Network-01</name>
      <description></description>
      <clientHandle></clientHandle>
      <extendedAttributes></extendedAttributes>
      <isUniversal>false</isUniversal>
      <universalRevision>0</universalRevision>
      <tenantId>virtual wire tenant</tenantId>
      <vdnScopeId>vdnscope-1</vdnScopeId>
      <vdsContextWithBacking>
        <switch>
          <objectId>dvs-47</objectId>
          <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
          <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
          <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
          <revision>29</revision>
          <type>
            <typeName>VmwareDistributedVirtualSwitch</typeName>
          </type>
          <name>vds-mgt-edge</name>
          <scope>
            <id>datacenter-21</id>
            <objectTypeName>Datacenter</objectTypeName>
            <name>Datacenter Site A</name>
          </scope>
        </switch>
      </vdsContextWithBacking>
    </virtualWire>
  </dataPage>
</virtualWires>
```
<clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
</switch>
<mtu>1600</mtu>
<promiscuousMode>false</promiscuousMode>
<backingType>portgroup</backingType>
<backingValue>dvportgroup-355</backingValue>
<missingOnVc>false</missingOnVc>
</vdsContextWithBacking>
<vdsContextWithBacking>
<switch>
<objectId>dvs-35</objectId>
<objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
***
</switch>
<mtu>1600</mtu>
<promiscuousMode>false</promiscuousMode>
<backingType>portgroup</backingType>
<backingValue>dvportgroup-354</backingValue>
<missingOnVc>false</missingOnVc>
</vdsContextWithBacking>
<vdnId>5000</vdnId>
<guestVlanAllowed>false</guestVlanAllowed>
<controlPlaneMode>UNICAST_MODE</controlPlaneMode>
<ctrlLsUuid>7ad8bc71-5857-475c-af2a-a9e5337b0944</ctrlLsUuid>
.macLearningEnabled>false</macLearningEnabled>
</virtualWire>
<virtualWire>
<objectId>virtualwire-2</objectId>
***
</virtualWire>
<virtualWire>
<objectId>virtualwire-3</objectId>
***
</virtualWire>
<virtualWire>
<objectId>virtualwire-4</objectId>
***
</virtualWire>
<virtualWire>
<objectId>universalwire-1</objectId>
***
</virtualWire>
***
<virtualWire>
<objectId>virtualwire-9</objectId>
***
</virtualWire>
</virtualWires>

Working Virtual Machine Connections to Logical Switches
POST /api/2.0/vdn/virtualwires/vm/vnic

Description:
Attach a VM vNIC to, or detach a VM vNIC from a logical switch.

Specify the logical switch ID in the **portgroupId** parameter. To detach a VM vNIC from a logical switch, leave the **portgroupId** parameter empty.

To find the ID of a VM vNIC, do the following:

1. In the vSphere MOB, navigate to the VM you want to connect or disconnect.
2. Click **config** and take note of the **instanceUuid**.
3. Click **hardware** and take note of the last three digits of the appropriate network interface device.

Use these two values to form the VM vNIC ID. For example, if the **instanceUuid** is 502e71fa-1a00-759b-e40f-ce778e915f16 and the appropriate **device** value is device[4000], the **objectId** and **vnicUuid** are both 502e71fa-1a00-759b-e40f-ce778e915f16.000.

Request:
**Body**: application/xml

```xml
<com.vmware.vshield.vsm.inventory.dto.VnicDto>
  <objectId>502e71fa-1a00-759b-e40f-ce778e915f16.000</objectId>
  <vnicUuid>502e71fa-1a00-759b-e40f-ce778e915f16.000</vnicUuid>
  <portgroupId>virtualwire-2</portgroupId>
</com.vmware.vshield.vsm.inventory.dto.VnicDto>
```

**Working With a Specific Logical Switch**

GET /api/2.0/vdn/virtualwires/{virtualWireID}

**URI Parameters:**
- **virtualWireID** (required) A logical switch id, e.g. virtualwire-1002

**Description:**
Retrieve information about the specified logical switch.

If the switch is a universal logical switch the **isUniversal** parameter is set to true in the response body.

**Responses:**
- **Status Code**: 200
- **Body**: application/xml

```xml
<virtualWire>
  <objectId>universalwire-2</objectId>
  <objectTypeName>VirtualWire</objectTypeName>
  <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
  <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
  <revision>3</revision>
  <type>
    <typeName>VirtualWire</typeName>
  </type>
</virtualWire>
```
PUT /api/2.0/vdn/virtualwires/{virtualWireID}

**URI Parameters:**

| virtualWireID (required) | A logical switch id, e.g. virtualwire-1002 |

**Description:**
Update the specified logical switch.

For example, you can update the name, description, or control plane mode.

**Request:**

**Body:** application/xml
<virtualwire>
  <name>ULS-Web-Tier-02</name>
  <description>Universal Web Logical Switch</description>
  <tenantId>virtual wire tenant</tenantId>
  <controlPlaneMode>UNICAST_MODE</controlPlaneMode>
</virtualwire>

DELETE /api/2.0/vdn/virtualwires/{virtualWireID}

URI Parameters:

| virtualWireID (required) | A logical switch id, e.g. virtualwire-1002 |

Description:
Delete the specified logical switch.

Resolving Missing Port Groups for a Logical Switch

POST /api/2.0/vdn/virtualwires/{virtualWireID}/backing

URI Parameters:

| virtualWireID (required) | A logical switch id, e.g. virtualwire-1002 |

Query Parameters:

| action (required) | • remediate: The remediate action performs the resync action and then creates a new backing port group for the logical switch. Under normal operations, you should need the remediate action only. • resync: The resync action removes the association between the backing port group and the logical switch in the NSX Manager configuration. |

Description:
For every logical switch created, NSX creates a corresponding port group in vCenter. If the port group is missing, the logical switch will stop functioning.

If the port group backing a logical switch is deleted, you can recreate a new backing port group for the logical switch.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Testing Host Connectivity

POST /api/2.0/vdn/virtualwires/{virtualWireID}/conn-check/multicast

URI Parameters:
virtualWireID (required) A logical switch id, e.g. virtualwire-1002

**Description:**
Test multicast group connectivity.
Test multicast group connectivity between two hosts connected to the specified logical switch.

Parameter **packetSizeMode** has one of the following values:
- 0 - VXLAN standard packet size
- 1 - minimum packet size
- 2 - customized packet size. If you set **packetSizeMode** to 2, you must specify the size using the **packetSize** parameter.

**Request:**
**Body:** application/xml

```xml
<testParameters>
  <gateway></gateway>
  <packetSizeMode></packetSizeMode>
  <packetSize></packetSize>
  <sourceHost>
    <hostId></hostId>
    <switchId></switchId>
    <vlanId></vlanId>
  </sourceHost>
  <destinationHost>
    <hostId></hostId>
    <switchId></switchId>
    <vlanId></vlanId>
  </destinationHost>
</testParameters>
```

---

**Testing Point-to-Point Connectivity**

**POST** /api/2.0/vdn/virtualwires/{virtualWireID}/conn-check/p2p

**URI Parameters:**

| virtualWireID (required) | A logical switch id, e.g. virtualwire-1002 |

**Description:**
Test point-to-point connectivity.
Test point-to-point connectivity between two hosts connected to the specified logical switch.

Parameter **packetSizeMode** has one of the following values:
- 0 - VXLAN standard packet size
- 1 - minimum packet size
- 2 - customized packet size. If you set **packetSizeMode** to 2, you must specify the size using the **packetSize** parameter.

**Request:**
Working With Hardware Gateway Bindings for a Specific Logical Switch

GET /api/2.0/vdn/virtualwires/{virtualWireID}/hardwaregateways

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtualWireID</td>
<td>A logical switch id, e.g. virtualwire-1002</td>
</tr>
</tbody>
</table>

Description:
Retrieve hardware gateway bindings for the specified logical switch.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200
Body: application/xml

```xml
<list>
  <hardwareGatewayBinding>
    <id>torbinding-2</id>
    <hardwareGatewayId>torgateway-1</hardwareGatewayId>
    <switchName>1-switch-579</switchName>
    <portname>p1</portname>
    <vlan>0</vlan>
    <virtualWire>virtualwire-1</virtualWire>
    <vni>5342</vni>
  </hardwareGatewayBinding>
  <hardwareGatewayBinding>
    <id>torbinding-1</id>
    <hardwareGatewayId>torgateway-2</hardwareGatewayId>
    <switchName>1-switch-104</switchName>
  </hardwareGatewayBinding>
</list>
```
Working With Connections Between Hardware Gateways and Logical Switches

**POST /api/2.0/vdn/virtualwires/{virtualWireID}/hardwaregateways/{hardwareGatewayBindingId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hardwareGatewayBindingId</td>
<td>Hardware Gateway Binding ID.</td>
</tr>
<tr>
<td>virtualWireID (required)</td>
<td>A logical switch id, e.g. virtualwire-1002</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action (optional)</td>
<td>Specify <em>attach</em> to attach a hardware gateway to a logical switch. Specify <em>detach</em> to detach a hardware gateway from a logical switch.</td>
</tr>
</tbody>
</table>

**Description:**
Manage the connection between a hardware gateway and a logical switch.

**Attach a hardware gateway to a logical switch and create a new binding with the information provided**

**POST /api/2.0/vdn/virtualwires/{virtualwireid}/hardwaregateways**

```xml
<hardwareGatewayBinding>
  <hardwareGatewayId>hardwarewgateway1</hardwareGatewayId>
  <vlan>v1</vlan>
  <switchName>s1</switchName>
  <portName>s1</portName>
</hardwareGatewayBinding>
```

**Attach a hardware gateway to a logical switch, specifying an existing binding by ID**

**POST /api/2.0/vdn/virtualwires/{virtualwireId}/hardwaregateways/{bindingId}?action=attach**

```xml
<virtualwire>
  ***
  <hardwareGatewayBindings>
    <hardwareGatewayBinding>
      <id>binding id</id>
    </hardwareGatewayBinding>
  </hardwareGatewayBindings>
</virtualwire>
```
**Detach a hardware gateway from a logical switch**

POST /api/2.0/vdn/virtualwires/<virtualwireId>/hardwaregateways/{bindingId}?action=detach

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<hardwareGatewayBinding>
  <hardwareGatewayId>hardwarewgateway1</hardwareGatewayId>
  <vlan>v1</vlan>
  <switchName>s1</switchName>
  <portName>s1</portName>
</hardwareGatewayBinding>
```
Working With IP Discovery and MAC Learning for Logical Switches

You can enable IP discovery (ARP suppression) and MAC learning for logical switches or dvPortGroup. Enabling MAC learning builds a VLAN - MAC pair learning table on each vNic.

This table is stored as part of the dvfilter data. During vMotion, dvfilter saves/restores the table at the new location. The switch then issues RARPs for all the VLAN - MAC entries in the table.

Enabling this feature avoids possible traffic loss during vMotion in the following cases:
- the vNic is in VLAN trunk mode
- the VM is using more than one unicast MAC address. Since Etherswitch supports only one unicast MAC per vNic, RARP is not processed.

When a logical switch is created using the API, IP discovery is enabled, and MAC learning is disabled.

In cross-vCenter NSX, the following applies:
- The MAC learning setting for a universal logical switch is managed on the primary NSX Manager. Any changes are synchronized to all secondary NSX Managers.
- The IP discovery setting for a universal logical switch is managed separately on each NSX Manager.

Note: In NSX 6.2.2 and earlier you cannot disable IP discovery for universal logical switches on secondary NSX Managers.

GET /api/2.0/xvs/networks/{ID}/features

URI Parameters:

| ID (required) | dvPortGroup MOID or logical switch (virtual wire) ID. |

Description:
Retrieve IP discovery and MAC learning information.

PUT /api/2.0/xvs/networks/{ID}/features

URI Parameters:

| ID (required) | dvPortGroup MOID or logical switch (virtual wire) ID. |

Description:
Enable or disable IP discovery and MAC learning.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. IP discovery can be disabled on secondary NSX Managers.</td>
</tr>
</tbody>
</table>

Request:

**Body:** application/xml

```xml
<networkFeatureConfig>
  <ipDiscoveryConfig>
    <enabled></enabled>
  </ipDiscoveryConfig>
  <macLearningConfig>
    <enabled></enabled>
  </macLearningConfig>
</networkFeatureConfig>
```
</macLearningConfig>
</networkFeatureConfig>
Working With NSX Controllers

For the unicast or hybrid control plane mode, you must add an NSX controller to manage overlay transport and provide East-West routing. The controller optimizes virtual machine broadcast (ARP only) traffic, and the learning is stored on the host and the controller.

**GET /api/2.0/vdn/controller**

**Description:**
Retrieves details and runtime status for all controllers. Runtime status can be one of the following:

- **Deploying** - controller is being deployed and the procedure has not completed yet.
- **Removing** - controller is being removed and the procedure has not completed yet.
- **Running** - controller has been deployed and can respond to API invocation.
- **Unknown** - controller has been deployed but fails to respond to API invocation.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```xml
<controllers>
    <controller>
        <id></id>
        <name></name>
        <description></description>
        <ipAddress></ipAddress>
        <status></status>
    </controller>
</controllers>
```

**POST /api/2.0/vdn/controller**

**Description:**
Add a new NSX Controller on the specified cluster. The `hostId` parameter is optional. The `resourcePoolId` can be either the `clusterId` or `resourcePoolId`.

The IP address of the controller node will be allocated from the specified IP pool.

**Note:** Controller nodes are deployed with 4 GB of memory regardless of which `deployType` value is provided.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method updated. <code>deployType</code> is no longer required.</td>
</tr>
</tbody>
</table>

**Request:**
**Body:** application/xml

```xml
<controllerSpec>
    <name>nsx-controller-node1</name>
    <description>nsx-controller</description>
    <ipPoolId>ipPool-1</ipPoolId>
    <resourcePoolId>domain-c1</resourcePoolId>
    <hostId>host-1</hostId>
</controllerSpec>
```
<datastoreId>datastore-1</datastoreId>
<deployType>medium</deployType>
<networkId>dvportgroup-1</networkId>
<password>MyTestPassword</password>
</controllerSpec>

Working With Controller Upgrade Availability

GET /api/2.0/vdn/controller/upgrade-available

Description:
Retrieve controller upgrade availability.

Working With of Controller Job Status

GET /api/2.0/vdn/controller/progress/{jobId}

URI Parameters:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>jobId</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Specified job Id

Description:
Retrieves status of controller creation or removal, or controller cluster upgrade.

Responses:
Status Code: 200
Body: application/xml

<controllerDeploymentInfo>
<vmId></vmId>
<progress></progress>
<status></status>
<exceptionMessage></exceptionMessage>
</controllerDeploymentInfo>

Working With a Specific Controller

POST /api/2.0/vdn/controller/{controllerId}

URI Parameters:
| controllerId  (required) | Specified controller ID. Retrieve available controller IDs with GET /api/2.0/vdn/controller. In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager. |

**Query Parameters:**

| action  (required) | Specify remediate to recover from controller shutdown or deletion. |

**Description:**
If you power off or delete a controller from vCenter, NSX Manager detects the change in controller status. You can remediate the controller, which will power on a powered off controller, or remove the controller from the NSX Manager database if the controller is deleted.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**DELETE /api/2.0/vdn/controller/{controllerId}**

**URI Parameters:**

| controllerId  (required) | Specified controller ID. Retrieve available controller IDs with GET /api/2.0/vdn/controller. In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager. |

**Query Parameters:**

| forceRemoval  (required) | Specify whether to force removal of controller. Must be set to true to remove last controller of the controller cluster. |

**Description:**
Delete the NSX controller.

---

**Working With NSX Controller System Statistics**

**GET /api/2.0/vdn/controller/{controllerId}/systemStats**

**URI Parameters:**

| controllerId  (required) | Specified controller ID. Retrieve available controller IDs with GET /api/2.0/vdn/controller. In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager. |
**Description:**
Retrieve NSX Controller system statistics.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<controllerNodeStatus>
  <id>controller-2</id>
  <ipAddress>192.168.110.32</ipAddress>
  <syncTime>149099154530</syncTime>
  <cpuCoreCount>2</cpuCoreCount>
  <cpuLoadInfo>
    <interval>1</interval>
    <averageLoad>0.17</averageLoad>
  </cpuLoadInfo>
  <cpuLoadInfo>
    <interval>5</interval>
    <averageLoad>0.6</averageLoad>
  </cpuLoadInfo>
  <cpuLoadInfo>
    <interval>15</interval>
    <averageLoad>0.4</averageLoad>
  </cpuLoadInfo>
  <totalMemory>1924280</totalMemory>
  <usedMemory>1542524</usedMemory>
  <cachedMemory>589196</cachedMemory>
  <totalSwap>4190204</totalSwap>
  <usedSwap>0</usedSwap>
  <systemTime>1490991545521</systemTime>
  <upTime>433880</upTime>
  <nodeFailoverReady>false</nodeFailoverReady>
  <nodeDiskLatencyStatus>
    <deviceName>sda</deviceName>
    <refreshTime>1490991404000</refreshTime>
    <latencyType>w_await</latencyType>
    <lastLatency>97.0</lastLatency>
    <avgLatency>28.572</avgLatency>
    <alertEnabled>false</alertEnabled>
  </nodeDiskLatencyStatus>
  <nodeDiskLatencyStatus>
    <deviceName>sda</deviceName>
    <refreshTime>1490991186000</refreshTime>
    <latencyType>r_await</latencyType>
    <lastLatency>9.18</lastLatency>
    <avgLatency>0.0</avgLatency>
    <alertEnabled>false</alertEnabled>
  </nodeDiskLatencyStatus>
  <nodeDiskLatencyStatus>
    <deviceName>dm-1</deviceName>
    <refreshTime>1490991185000</refreshTime>
    <latencyType>w_await</latencyType>
    <lastLatency>0.0</lastLatency>
  </nodeDiskLatencyStatus>
</controllerNodeStatus>
```
Working With Controller Tech Support Logs

GET /api/2.0/vdn/controller/{controllerId}/techsupportlogs

URI Parameters:

| controllerId (required) | Specified controller ID. Retrieve available controller IDs with GET /api/2.0/vdn/controller. In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager. |

Headers:

| Content-type (required) | application/octet-stream |

Description:
Retrieve controller logs. Response content type is application/octet-stream and response header is filename. This streams a fairly large bundle back (possibly hundreds of MB).

Working With Controller Syslog
GET /api/2.0/vdn/controller/{controllerId}/syslog

URI Parameters:

| controllerId (required) | Specified controller ID. Retrieve available controller IDs with GET /api/2.0/vdn/controller. In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager. |

Description:
Retrieve details about the syslog exporter on the controller.

Responses:
Status Code: 200
Body: application/xml

POST /api/2.0/vdn/controller/{controllerId}/syslog

URI Parameters:

| controllerId (required) | Specified controller ID. Retrieve available controller IDs with GET /api/2.0/vdn/controller. In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager. |

Description:
Add controller syslog exporter on the controller.

Request:
Body: application/xml

DELETE /api/2.0/vdn/controller/{controllerId}/syslog

URI Parameters:
controllerId  (required)  Specified controller ID.

Retrieve available controller IDs with GET /api/2.0/vdn/controller.

In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager.

Description:
Deletes syslog exporter on the specified controller node.

---

**Working With Controller Cluster Snapshots**

GET /api/2.0/vdn/controller/{controllerId}/snapshot

URI Parameters:

controllerId  (required)  Specified controller ID.

Retrieve available controller IDs with GET /api/2.0/vdn/controller.

In a cross-vCenter NSX environment, retrieve the controller IDs from the primary NSX Manager.

Description:
Take a snapshot of the control cluster from the specified controller node.

---

**Working With the NSX Controller Cluster Configuration**

GET /api/2.0/vdn/controller/cluster

Description:
Retrieve cluster wide configuration information for controller.

Responses:

Status Code: 200
Body: application/xml

```
<controllerConfig>
  <sslEnabled></sslEnabled>
</controllerConfig>
```

PUT /api/2.0/vdn/controller/cluster

Description:
Modify cluster wide configuration information for controller.
Working With Controller Cluster Upgrade

POST /api/2.0/vdn/controller/cluster/upgrade

Description:
Start the upgrade of the NSX Controller cluster. The upgrade is performed on one controller node at a time.

Before you start the controller upgrade, use GET /api/2.0/vdn/controller to ensure that all three controllers have status of RUNNING. It can take about 10 minutes after the NSX Manager upgrade and reboot for the controllers to reestablish connectivity to the NSX Manager.

This request returns a jobId, for example, jobdata-22307. You can use GET /api/2.0/vdn/controller/progress/{jobId} to get the status of the NSX Controller cluster upgrade.

Working With the NSX Controller Password

PUT /api/2.0/vdn/controller/credential

Description:
Change the NSX controller password.

Request:
Body: application/xml

<?xml version="1.0" encoding="UTF-8"?>
<controllerCredential>
    <apiPassword>somepassword</apiPassword>
</controllerCredential>

Working With Controller Synchronization

You can resynchronize the NSX Controller cluster with NSX Manager. You might want to do this if you notice that the controller cluster has extra, stale, or missing configuration items.
PUT /api/2.0/vdn/controller/synchronize

Description:
Synchronize the controller cluster with the NSX Manager database.

---

**Working with Controller Synchronization Status**

Retrieve the status of the controller synchronization.

GET /api/2.0/vdn/controller/synchronize/status

Description:
Get the status of the controller synchronization.

If the sync is in progress, the response includes the status *JOB_IN_PROGRESS*, and the jobId. If the sync has finished, the response includes the status *NOT_RUNNING*.

Responses:

**Status Code:** 200  
**Body:** application/xml

```xml
<controllerSyncStatus>
  <status>JOB_IN_PROGRESS</status>
  <jobId>jobdata-201</jobId>
</controllerSyncStatus>
```
Working With Services Grouping Objects

Retrieve Services from a Specific Scope

GET /api/2.0/services/application/scope/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId (required)</td>
<td>Can be <code>globalroot-0</code>, <code>universalroot-0</code> or <code>datacenterId</code> in upgrade use cases.</td>
</tr>
</tbody>
</table>

Description:
Retrieve services that have been created on the specified scope.

Create a Service on a Specific Scope

POST /api/2.0/services/application/{scopeId}

Description:
Create a new service on the specified scope.

Request:
Body: application/xml

```
<application>
  <revision>0</revision>
  <name>TestService</name>
  <clientHandle></clientHandle>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <inheritanceAllowed>true</inheritanceAllowed>
  <element>
    <applicationProtocol>MS_RPC_TCP</applicationProtocol>
    <value>420</value>
  </element>
</application>
```

Working With a Specified Service

GET /api/2.0/services/application/{applicationId}

URI Parameters:
**applicationId** (required)  
Application ID. You can get a list of application IDs from GET /api/2.0/services/application/scope/{scopeId}.

**Description:**  
Retrieve details about the specified service.

**PUT /api/2.0/services/application/{applicationId}**

**URI Parameters:**

| applicationId (required) | Application ID. You can get a list of application IDs from GET /api/2.0/services/application/scope/{scopeId}. |

**Description:**  
Modify the name, description, applicationProtocol, or port value of a service.

**Request:**

**Body:** application/xml

```xml
<application>
  <objectId>application-371</objectId>
  <objectTypeName>Application</objectTypeName>
  <vsmUuid>422A532F-41FA-4388-AC80-12F967B51339</vsmUuid>
  <nodeId>8fd64272-b735-44b8-8b93-525a00a82d5d</nodeId>
  <revision>2</revision>
  <type>
    <typeName>Application</typeName>
  </type>
  <name>TestService-Renamed</name>
  <scope>
    <id>globalroot-0</id>
    <objectTypeName>GlobalRoot</objectTypeName>
    <name>Global</name>
  </scope>
  <clientHandle/>
  <extendedAttributes/>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <inheritanceAllowed>true</inheritanceAllowed>
  <element>
    <applicationProtocol>MS_RPC_UDP</applicationProtocol>
    <value>500</value>
  </element>
</application>
```

**DELETE /api/2.0/services/application/{applicationId}**

**URI Parameters:**

| applicationId (required) | Application ID. You can get a list of application IDs from GET /api/2.0/services/application/scope/{scopeId}. |

**Query Parameters:**
| force  | (optional) | Determines if the delete should be forced or unforced. Default is `false`. If `true`, the object is deleted even if it is in use in other places such as firewall rules, which invalidates other configurations referring to the deleted object. If `false`, the object is deleted only if it is not being used by any other configuration. |

**Description:**
Delete the specified service.
Working With Service Groups Grouping Objects

Creating Service Groups on a Specific Scope

POST /api/2.0/services/applicationgroup/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>scopeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The <code>scopeId</code> can be <code>globalroot-0</code>, <code>universalroot-0</code> or <code>datacenterId</code> in upgrade use cases.</td>
</tr>
</tbody>
</table>

Description:
Create a new service group on the specified scope.

Request:
Body: application/xml

```xml
<applicationGroup>
  <description></description>
  <name></name>
  <revision></revision>
  <inheritanceAllowed></inheritanceAllowed>
</applicationGroup>
```

Working With Service Groups on a Specific Scope

GET /api/2.0/services/applicationgroup/scope/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>scopeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The <code>scopeId</code> can be <code>globalroot-0</code>, <code>universalroot-0</code> or <code>datacenterId</code> in upgrade use cases.</td>
</tr>
</tbody>
</table>

Description:
Retrieve a list of service groups that have been created on the scope.

Working With a Specific Service Group

GET /api/2.0/services/applicationgroup/{applicationgroupId}

URI Parameters:
**applicationgroupId**  (required)  
Application group ID

**Description:**
Retrieve details about the specified service group.

**PUT /api/2.0/services/applicationgroup/{applicationgroupId}**

**URI Parameters:**
| applicationgroupId  (required) | Application group ID |

**Description:**
Modify the name, description, applicationProtocol, or port value of the specified service group.

**Request:**
**Body:** application/xml

```xml
<applicationGroup>
  <objectId></objectId>
  <type>
    <typeName></typeName>
  </type>
  <name></name>
  <description></description>
  <revision></revision>
  <objectTypeName></objectTypeName>
  <scope>
    <id></id>
    <objectTypeName></objectTypeName>
    <name></name>
  </scope>
  <extendedAttributes/>
  <inheritanceAllowed/>
  <member>
    <objectId></objectId>
    <type>
      <typeName></typeName>
    </type>
    <name></name>
    <revision></revision>
    <objectTypeName></objectTypeName>
    <scope>
      <id></id>
      <objectTypeName></objectTypeName>
      <name></name>
    </scope>
  </member>
</applicationGroup>
```

**DELETE /api/2.0/services/applicationgroup/{applicationgroupId}**

**URI Parameters:**
| applicationgroupId  (required) | Application group ID |

**Query Parameters:**
| force (optional) | Determines if the delete should be forced or unforced. Default is false. If true, the object is deleted even if it is in use in other places such as firewall rules, which invalidates other configurations referring to the deleted object. If false, the object is deleted only if it is not being used by any other configuration. |

**Description:**
Delete the specified service group (application group) from a scope.

---

**Working With a Specific Service Group Member**

**PUT /api/2.0/services/applicationgroup/{applicationgroupId}/members/{moref}**

**URI Parameters:**
- moref (required) Managed object reference to the member.
- applicationgroupId (required) Application group ID

**Description:**
Add a member to the service group.

**DELETE /api/2.0/services/applicationgroup/{applicationgroupId}/members/{moref}**

**URI Parameters:**
- moref (required) Managed object reference to the member.
- applicationgroupId (required) Application group ID

**Description:**
Delete a member from the service group.

---

**Working With Service Group Members on a Specific Scope**

**GET /api/2.0/services/applicationgroup/scope/{scopeId}/members**

**URI Parameters:**
- scopeId (required) globalroot-0 or datacenterId in upgrade use cases

**Description:**
Get a list of member elements that can be added to the service groups created on a particular scope.
Working With IP Pool Grouping Objects

Working With IP Pools on a Specific Scope

GET /api/2.0/services/ipam/pools/scope/{scopeId}

URI Parameters:
<table>
<thead>
<tr>
<th>scopeId</th>
<th>(required)</th>
</tr>
</thead>
</table>

For `scopeId` use `globalroot-0` or `datacenterId` in upgrade use cases.

Description:
Retrieves all IP pools on the specified scope where the `scopeId` is the reference to the desired scope. An example of the `scopeId` is `globalroot-0`.

Responses:
Status Code: 200
Body: application/xml

```xml
<ipamAddressPool>
  <objectId>ipaddresspool-1</objectId>
  <objectTypeName>IpAddressPool</objectTypeName>
  <vsmUuid>4237BA90-C373-A71A-9827-1673BFA29498</vsmUuid>
  <revision>1</revision>
  <type>
    <typeName>IpAddressPool</typeName>
  </type>
  <name>rest-ip-pool-1</name>
  <prefixLength>23</prefixLength>
  <gateway>192.168.1.1</gateway>
  <dnsSuffix>example.com</dnsSuffix>
  <dnsServer1>10.11.0.1</dnsServer1>
  <dnsServer2>10.11.0.2</dnsServer2>
  <ipRanges>
    <ipRangeDto>
      <startAddress>192.168.1.2</startAddress>
      <endAddress>192.168.1.3</endAddress>
    </ipRangeDto>
  </ipRanges>
  <totalAddressCount>2</totalAddressCount>
  <usedAddressCount>0</usedAddressCount>
  <usedPercentage>0</usedPercentage>
</ipamAddressPool>
```

POST /api/2.0/services/ipam/pools/scope/{scopeId}

URI Parameters:
scopeId  (required)

For **scopeId** use `globalroot-0` or `datacenterId` in upgrade use cases.

**Description:**
Create a pool of IP addresses. For **scopeId** use `globalroot-0` or the `datacenterId` in upgrade use cases.

**Request:**
**Body:** application/xml

```xml
<ipamAddressPool>
  <name></name>
  <prefixLength></prefixLength>
  <gateway></gateway>
  <dnsSuffix></dnsSuffix>
  <dnsServer1></dnsServer1>
  <dnsServer2></dnsServer2>
  <ipRanges>
    <ipRangeDto>
      <startAddress></startAddress>
      <endAddress></endAddress>
    </ipRangeDto>
  </ipRanges>
</ipamAddressPool>
```

---

**Working With a Specific IP Pool**

**GET /api/2.0/services/ipam/pools/{poolId}**

**URI Parameters:**
| poolId  (required) | Specify the pool ID as `poolId` in the URI. |

**Description:**
Retrieve details about a specific IP pool.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```xml
<ipamAddressPool>
  <objectId>ipaddresspool-1</objectId>
  <objectTypeName>IpAddressPool</objectTypeName>
  <vsmUuid>4237BA90-C373-A71A-9827-1673BFA29498</vsmUuid>
  <revision>1</revision>
  <type>
    <typeName>IpAddressPool</typeName>
  </type>
  <name>rest-ip-pool-1</name>
  <extendedAttributes/>
  <prefixLength>23</prefixLength>
  <gateway>192.168.1.1</gateway>
</ipamAddressPool>
```
PUT /api/2.0/services/ipam/pools/{poolId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>poolId</th>
<th>(required)</th>
</tr>
</thead>
</table>
| Specify the pool ID as **poolId** in the URI.

**Description:**
To modify an IP pool, query the IP pool first. Then modify the output and send it back as the request body.

**Request:**
**Body:** application/xml

```
<ipamAddressPool>
  <objectId></objectId>
  <objectTypeName></objectTypeName>
  <vsmUuid></vsmUuid>
  <revision></revision>
  <type>
    <typeName></typeName>
    <name></name>
  </type>
  <extendedAttributes/>
  <prefixLength></prefixLength>
  <gateway></gateway>
  <dnsSuffix></dnsSuffix>
  <dnsServer1></dnsServer1>
  <dnsServer2></dnsServer2>
  <ipRanges>
    <ipRangeDto>
      <id></id>
      <startAddress></startAddress>
      <endAddress></endAddress>
    </ipRangeDto>
  </ipRanges>
</ipamAddressPool>
```

DELETE /api/2.0/services/ipam/pools/{poolId}

**URI Parameters:**
### Working With IP Pool Address Allocations

**GET /api/2.0/services/ipam/pools/{poolId}/ipaddresses**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>poolId (required)</td>
<td>Specify the pool ID as <code>poolId</code> in the URI.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieves all allocated IP addresses from the specified pool.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<allocatedIpAddresses>
  <allocatedIpAddress>
    <id>allocatedipaddress-4</id>
    <ipAddress>192.168.1.2</ipAddress>
    <gateway>192.168.1.1</gateway>
    <prefixLength>23</prefixLength>
    <dnsServer1>10.112.0.1</dnsServer1>
    <dnsServer2>10.112.0.2</dnsServer2>
    <dnsSuffix>eng.vmware.com</dnsSuffix>
    <allocationNote>sample note</allocationNote>
  </allocatedIpAddress>
</allocatedIpAddresses>
```

**POST /api/2.0/services/ipam/pools/{poolId}/ipaddresses**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>poolId (required)</td>
<td>Specify the pool ID as <code>poolId</code> in the URI.</td>
</tr>
</tbody>
</table>

**Description:**

Allocate an IP address from the pool.

To allocate the next available IP, set `allocationMode` to **ALLOCATE**

```xml
<ipAddressRequest>
  <allocationMode>ALLOCATE</allocationMode>
</ipAddressRequest>
```

To allocate a specific IP, set `allocationMode` to **RESERVE** and pass the IP to reserve in the `ipAddress` parameter.
<ipAddressRequest>
<allocationMode>RESERVE</allocationMode>
<ipAddress>192.168.1.2</ipAddress>
</ipAddressRequest>

Request:
Body: application/xml

<ipAddressRequest>
<allocationMode>RESERVE</allocationMode>
<ipAddress>192.168.1.2</ipAddress>
</ipAddressRequest>

Responses:
Status Code: 200
Body: application/xml

<allocatedIpAddress>
<id>allocatedipaddress-1</id>
<ipAddress>192.168.1.2</ipAddress>
<gateway>192.168.1.1</gateway>
<prefixLength>23</prefixLength>
<dnsServer1>10.112.0.1</dnsServer1>
<dnsServer2>10.112.0.2</dnsServer2>
<dnsSuffix>eng.vmware.com</dnsSuffix>
<allocationNote>sample note</allocationNote>
</allocatedIpAddress>

Working With Specific IPs Allocated to an IP Pool

DELETE /api/2.0/services/ipam/pools/{poolId}/ipaddresses/{ipAddress}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipAddress</td>
<td>The IP address to release, e.g. 192.168.10.10.</td>
</tr>
<tr>
<td>poolId</td>
<td>Specify the pool ID as poolId in the URI.</td>
</tr>
</tbody>
</table>

Description:
Release an IP address allocation in the pool.
Working With Licensing Capacity

The licensing capacity usage API command reports usage of CPUs, VMs and concurrent users for the distributed firewall and VXLAN.

GET /api/2.0/services/licensing/capacityusage

Description:
Retrieve capacity usage information on the usage of CPUs, VMs and concurrent users for the distributed firewall and VXLAN.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<featureCapacityUsageList>
  <featureCapacityUsageInfo>
    <capacityUsageInfo>
      <capacityType>CPU_CAPACITY_TYPE</capacityType>
      <usageCount>16</usageCount>
    </capacityUsageInfo>
    <capacityUsageInfo>
      <capacityType>VM_CAPACITY_TYPE</capacityType>
      <usageCount>3</usageCount>
    </capacityUsageInfo>
    <capacityUsageInfo>
      <capacityType>CONCURRENT_USER_CAPACITY_TYPE</capacityType>
      <usageCount>3</usageCount>
    </capacityUsageInfo>
  </featureCapacityUsageInfo>
  <feature>dfw</feature>
  <featureCapacityUsageInfo>
    <capacityUsageInfo>
      <capacityType>CPU_CAPACITY_TYPE</capacityType>
      <usageCount>16</usageCount>
    </capacityUsageInfo>
    <capacityUsageInfo>
      <capacityType>VM_CAPACITY_TYPE</capacityType>
      <usageCount>3</usageCount>
    </capacityUsageInfo>
    <capacityUsageInfo>
      <capacityType>CONCURRENT_USER_CAPACITY_TYPE</capacityType>
      <usageCount>3</usageCount>
    </capacityUsageInfo>
  </featureCapacityUsageInfo>
  <feature>vxlan</feature>
</featureCapacityUsageList>
```
Working With Security Tags

You can manage security tags and their virtual machine assignments. For example, you can create a user defined security tag, assign tags to a virtual machine, view tags assigned to virtual machines, and view virtual machines that have a specific tag assigned.

Managing Security Tags

GET /api/2.0/services/securitytags/tag

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>isUniversal (optional)</td>
<td>Set to true to view universal security tags only. Set to false to view security tags local to that NSX Manager only. To view all tags (tags local to that NSX Manager plus universal tags), omit the action parameter.</td>
</tr>
<tr>
<td>startIndex (optional)</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pageSize (optional)</td>
<td>The number of results to return. Default is 1024.</td>
</tr>
<tr>
<td>sortOrderAscending (optional)</td>
<td>Sort in ascending order of start time (true or false).</td>
</tr>
<tr>
<td>sortBy (optional)</td>
<td>Parameter to sort by. Default is objectId.</td>
</tr>
<tr>
<td>filterBy (optional)</td>
<td>Parameter type to filter by. Options are objectId or name.</td>
</tr>
<tr>
<td>filterValue (optional)</td>
<td>Value for filterBy. For example, securitytag-1 if filterBy is objectId, or IDS_IPS.threat=medium if filterBy is name.</td>
</tr>
</tbody>
</table>

Description:
Retrieve all security tags.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. Added isUniversal query parameter to filter universal security tags.</td>
</tr>
<tr>
<td>6.3.3</td>
<td>Method updated. Output is now paginated. startIndex, pageSize, sortOrderAscending, sortBy, filterBy, and filterValue query parameters added.</td>
</tr>
</tbody>
</table>

Responses:
- Status Code: 200
- Body: application/xml

<securityTags>
  <pagingInfo>
    <pageSize>1024</pageSize>
    <startIndex>0</startIndex>
    <totalCount>2</totalCount>
    <sortOrderAscending>true</sortOrderAscending>
    <sortBy>objectId</sortBy>
  </pagingInfo>
POST /api/2.0/services/securitytags/tag

**Description:**
Create a new security tag.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. <strong>isUniversal</strong> parameter can be set to create a universal security tag.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```
<securityTag>
<objectTypeName>SecurityTag</objectTypeName>
</securityTag>
```
Delete a Security Tag

DELETE /api/2.0/services/securitytags/tag/{tagId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>tagId</code></td>
<td>Specified security tag.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>force</code></td>
<td>When the tag is in use and you want to delete the tag, provide <code>?force=true</code> in the API.</td>
</tr>
</tbody>
</table>

Description:
Delete the specified security tag.

Working With Virtual Machines on a Specific Security Tag

GET /api/2.0/services/securitytags/tag/{tagId}/vm

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>tagId</code></td>
<td>Specified security tag.</td>
</tr>
</tbody>
</table>

Description:
Retrieve the list of VMs that have the specified tag attached to them.

POST /api/2.0/services/securitytags/tag/{tagId}/vm

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>tagId</code></td>
<td>Specified security tag.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>action</code></td>
<td>Action to perform: attach or detach specified security tag from the VMs listed in the request body.</td>
</tr>
</tbody>
</table>

Description:
Attach or detach a security tag to a virtual machine.
This operation does not check that the virtual machine exists in the local inventory. This allows you to attach a universal security tag to a virtual machine that is connected to a secondary NSX Manager (and therefore is not connected to the primary NSX Manager where the call is sent).

Possible keys for the tagParameter are:
- instance_uuid
- bios_uuid
- vmname

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<securityTagAssignment>
  <tagParameter>
    <key>instance_uuid</key>
    <value>123e4567-e89b-12d3-a456-426655440000</value>
  </tagParameter>
</securityTagAssignment>
```

Manage a Security Tag on a Virtual Machine

**PUT /api/2.0/services/securitytags/tag/{tagId}/vm/{vmId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>vmId</th>
<th>Specify VM using VM managed object ID or VM instance UUID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tagId</td>
<td>Specified security tag.</td>
</tr>
</tbody>
</table>

**Description:**

Apply a security tag to the specified virtual machine.

**Note:** this method can attach a universal security tag to a virtual machine. However, this method checks that the VM exists on the NSX Manager to which the API call is sent. In a cross-vCenter active active environment, the VM might exist on a secondary NSX Manager, and so the call would fail.

You can instead use the **POST /api/2.0/services/securitytags/tag/{tagId}/vm?action=attach** method to attach universal security tags to a VM that is not local to the primary NSX Manager. This method does not check that the VM is local to the NSX Manager.

**DELETE /api/2.0/services/securitytags/tag/{tagId}/vm/{vmId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>vmId</th>
<th>Specify VM using VM managed object ID or VM instance UUID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>tagId</td>
<td>Specified security tag.</td>
</tr>
</tbody>
</table>
Description:
Detach a security tag from the specified virtual machine.

Working With Virtual Machine Details for a Specific Security Tag

GET /api/2.0/services/securitytags/tag/{tagId}/vmDetail

URI Parameters:

| tagId  | (required) | Specified security tag. |

Description:
Retrieve details about the VMs that are attached to the specified security tag.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200
Body: application/xml

```xml
<attachedVMList>
  <attachedVM>
    <objectId>vm-17</objectId>
    <objectTypeName>VirtualMachine</objectTypeName>
    <vsmUuid>564D5E43-1A21-9061-CE62-16E4E64FBC52</vsmUuid>
    <revision>1</revision>
    <type>
      <typeName>VirtualMachine</typeName>
    </type>
    <name>Ubuntu2</name>
    <scope>
      <id>domain-c7</id>
      <objectTypeName>ClusterComputeResource</objectTypeName>
      <name>sp cluster</name>
    </scope>
    <clientHandle></clientHandle>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
    <instanceUUID>520932b3-b531-7b4a-d3fe-76f0fdd82736</instanceUUID>
    <biosUUID>423f7c14-6463-8ebc-d06d-2a284b24cabb</biosUUID>
  </attachedVM>
  <attachedVM>
    <objectId>vm-59</objectId>
    <objectTypeName>VirtualMachine</objectTypeName>
    <vsmUuid>564D5E43-1A21-9061-CE62-16E4E64FBC52</vsmUuid>
    <revision>1</revision>
    <type>
      <typeName>VirtualMachine</typeName>
    </type>
  </attachedVM>
</attachedVMList>
```
Working With Security Tags on a Specific Virtual Machine

GET /api/2.0/services/securitytags/vm/{vmId}

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vmId</td>
<td>Specify VM using VM managed object ID or VM instance UUID.</td>
</tr>
</tbody>
</table>

Description:
Retrieve all security tags associated with the specified virtual machine.

POST /api/2.0/services/securitytags/vm/{vmId}

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vmId</td>
<td>Specify VM using VM managed object ID or VM instance UUID.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Action to perform. ASSIGN_TAGS or CLEAR_ALL_TAGS.</td>
</tr>
</tbody>
</table>

Description:
Update security tags associated with the specified virtual machine.
You can assign multiple tags at a time to the specified VM, or clear all assigned tags from the specified VM.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Working With Security Tags Unique ID Selection Criteria

In NSX versions before 6.3.0, security tags are local to a NSX Manager, and are mapped to VMs using the VM's managed object ID.

In NSX 6.3.0 and later, you can create universal security tags to use in all NSX Managers in a cross-vCenter NSX environment.

In an active standby environment, the managed object ID for a given VM might not be the same in the active and standby datacenters. NSX 6.3.x introduces a Unique ID Selection Criteria on the primary NSX Manager to use to identify VMs when attaching them to universal security tags only. You can use them singly or in combination. The VM instance UUID is the recommended selection criteria. See the descriptions for more information.

The default value for the selection criteria is null and must be set before assigning a universal security tag to a VM. The selection criteria can be set only on the primary NSX manager and is read-only on secondary NSX Managers.

### Security Tag Assignment Metadata Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>instance_uuid</td>
<td>The VM instance UUID is generally unique within a vCenter domain, however there are exceptions such as when deployments are made through snapshots. If the VM instance UUID is not unique, you can use the VM BIOS UUID in combination with the VM name.</td>
</tr>
<tr>
<td>bios_uuid</td>
<td>The BIOS UUID is not guaranteed to be unique within a vCenter domain, but it is always preserved in case of disaster. Use BIOS UUID in combination with VM name to reduce the chance of a duplicate ID.</td>
</tr>
<tr>
<td>vmname</td>
<td>If all of the VM names in an environment are unique, then VM name can be used to identify a VM across vCenters. Use VM name in combination with VM BIOS UUID to reduce the chance of a duplicate ID.</td>
</tr>
</tbody>
</table>

**GET /api/2.0/services/securitytags/selection-criteria**

**Description:**
Retrieve unique ID section criteria configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.3.0 Method introduced.

**PUT /api/2.0/services/securitytags/selection-criteria**

**Description:**
Configure the unique ID section criteria configuration.

If you set the selection criteria and assign security tags to VMs, you must remove all security tags from VMs before you can change the selection criteria.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**
**Body**: application/xml

```xml
<securityTagAssignmentMetadata>
    <metadata>instance_uuid</metadata>
</securityTagAssignmentMetadata>
```
Working With NSX Manager SSO Registration

**GET /api/2.0/services/ssoconfig**

**Description:**
Retrieve SSO Configuration.

**Responses:**
- **Status Code:** 200
- **Body:** application/xml

```xml
<ssoConfig>
  <ssoAdminUsername>administrator@vsphere.local</ssoAdminUsername>
</ssoConfig>
```

**POST /api/2.0/services/ssoconfig**

**Description:**
Register NSX Manager to SSO Services.

**Request:**
- **Body:** application/xml

```xml
<ssoConfig>
  <ssoLookupServiceUrl></ssoLookupServiceUrl>
  <ssoAdminUsername></ssoAdminUsername>
  <ssoAdminUserpassword></ssoAdminUserpassword>
  <certificateThumbprint></certificateThumbprint>
</ssoConfig>
```

**DELETE /api/2.0/services/ssoconfig**

**Description:**
Deletes the NSX Manager SSO Configuration.

Working With SSO Configuration Status

**GET /api/2.0/services/ssoconfig/status**

**Description:**
Retrieve the SSO configuration status of NSX Manager.
Working With User Management

Manage Users on NSX Manager

GET /api/2.0/services/usermgmt/user/{userId}

URI Parameters:

| userId (required) | User ID. To specify a domain user, use user@domain not domain\user. |

Description:
Get information about a user.

DELETE /api/2.0/services/usermgmt/user/{userId}

URI Parameters:

| userId (required) | User ID. To specify a domain user, use user@domain not domain\user. |

Description:
Remove the NSX role for a vCenter user.

Working With User Account State

PUT /api/2.0/services/usermgmt/user/{userId}/enablestate/{value}

URI Parameters:

| value (required) | value can be 0 to disable, or 1 to enable. |
| userId (required) | User ID. To specify a domain user, use user@domain not domain\user. |

Description:
You can disable or enable a user account, either local user or vCenter user. When a user account is created, the account is enabled by default.

Manage NSX Roles for Users

GET /api/2.0/services/usermgmt/role/{userId}

URI Parameters:
userId  (required)  User ID. To specify a domain user, use user@domain not domain\user.

Description:
Retrieve a user’s role (possible roles are super_user, vshield_admin, enterprise_admin, security_admin, and audit).

PUT /api/2.0/services/usermgmt/role/{userId}

URI Parameters:
- userId  (required)  User ID. To specify a domain user, use user@domain not domain\user.

Description:
Change a user’s role.

Request:
Body: application/xml

```
<accessControlEntry>
  <role></role>
  <resource>
    <resourceId></resourceId>
  </resource>
</accessControlEntry>
```

POST /api/2.0/services/usermgmt/role/{userId}

URI Parameters:
- userId  (required)  User ID. To specify a domain user, use user@domain not domain\user.

Query Parameters:
- isGroup  (required)  Set to true to apply to a group; set to false to apply to an individual user.

Description:
Add role and resources for a user.

Request:
Body: application/xml

```
<accessControlEntry>
  <role></role>
  <resource>
    <resourceId></resourceId>
  </resource>
</accessControlEntry>
```
DELETE /api/2.0/services/usermgmt/role/{userId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>userId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>User ID. To specify a domain user, use user@domain not domain\user.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
Delete the role assignment for specified vCenter user. Once this role is deleted, the user is removed from NSX Manager. You cannot delete the role for a local user.

---

**Working With NSX Manager Role Assignment**

**GET /api/2.0/services/usermgmt/users/vsm**

**Description:**
Get information about users who have been assigned a NSX Manager role (local users as well as vCenter users with NSX Manager role).

---

**Working With Available NSX Manager Roles**

**GET /api/2.0/services/usermgmt/roles**

**Description:**
Read all possible roles in NSX Manager

---

**Working With Scoping Objects**

**GET /api/2.0/services/usermgmt/scopingobjects**

**Description:**
Retrieve a list of objects that can be used to define a user's access scope.
Working With Security Group Grouping Objects

A security group is a collection of assets or grouping objects from your vSphere inventory.

Creating New Security Groups With Members

POST /api/2.0/services/securitygroup/bulk/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>scopeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>(required)</td>
</tr>
</tbody>
</table>

For the scopeId use globalroot-0 for non-universal security groups and universalroot-0 for universal security groups.

Description:

Create a new security group on a global scope or universal scope with membership information.

Universal security groups are read-only when querying a secondary NSX manager.

When you create a universal security group (on scope universalroot-0) by default localMembersOnly is set to false which indicates that the universal security group will contain members across the cross-vCenter NSX environment. This is the case in an active active environment. You can add the following objects to a universal security group with localMembersOnly=false (active active):

- IP Address Set
- MAC Address Set
- Universal Security Groups with localMembersOnly=false

When you create a universal security group (on scope universalroot-0) you can set the extendedAttribute localMembersOnly to true to indicate that the universal security group will contain members local to that NSX Manager only. This is the case in an active standby environment, because only one NSX environment is active at a time, and the same VMs are present in each NSX environment. You can add the following objects to a universal security group with localMembersOnly=true (active standby):

- Universal Security Tag
- IP Address Set
- MAC Address Set
- Universal Security Groups with localMembersOnly=true
- Dynamic criteria using VM name

You can set the localMembersOnly attribute only when the universal security group is created, it cannot be modified afterwards.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Extended attribute localMembersOnly introduced.</td>
</tr>
</tbody>
</table>

Request:

**Body**: application/xml

```
<securitygroup>
  <objectId></objectId>
  <objectTypeName></objectTypeName>
  <vsmUuid></vsmUuid>
  <revision></revision>
  <type>
```

[NSX API Guide](#)
<typeName/>
</type>

<name/>

<scope>
  <id/>
  <objectTypeName/>
  <vsmUuid/>
  <name/>
  <revision/>
</scope>

<clientHandle/>

<extendedAttributes>
  <extendedAttribute>
    <name>localMembersOnly</name>
    <value>true</value>
  </extendedAttribute>
</extendedAttributes>

<member>
  <objectId/>
  <objectTypeName/>
  <vsmUuid/>
  <revision/>
  <type>
    <typeName/>
  </type>
  <name/>
  <scope>
    <id/>
    <objectTypeName/>
    <name/>
  </scope>
  <clientHandle/>
  <extendedAttributes/>
</member>

<excludeMember>
  <objectId/>
  <objectTypeName/>
  <vsmUuid/>
  <revision/>
  <type>
    <typeName/>
  </type>
  <name/>
  <scope>
    <id/>
    <objectTypeName/>
    <name/>
  </scope>
  <clientHandle/>
  <extendedAttributes/>
</excludeMember>

<dynamicMemberDefinition>
  <dynamicSet>
    <operator/>
    <dynamicCriteria>
      <operator/>
      <key/>
      <criteria/>
      <value/>
    </dynamicCriteria>
  </dynamicSet>
</dynamicMemberDefinition>
Creating New Security Groups Without Members

POST /api/2.0/services/securitygroup/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| scopeId          | (required)                                                                   | For the scopeId use globalroot-0 for non-universal security groups and universalroot-0 for universal security groups. |}

Description:
Create a new security group, with no membership information specified. You can add members later with PUT /2.0/services/securitygroup/bulk/{objectId}

When you create a universal security group (on scope universalroot-0) by default localMembersOnly is set to false which indicates that the universal security group will contain members across the cross-vCenter NSX environment. This is the case in an active active environment. You can add the following objects to a universal security group with localMembersOnly=false (active active):
- IP Address Set
- MAC Address Set
- Universal Security Groups with localMembersOnly=false

When you create a universal security group (on scope universalroot-0) you can set the extendedAttribute localMembersOnly to true to indicate that the universal security group will contain members local to that NSX Manager only. This is the case in an active standby environment, because only one NSX environment is active at a time, and the same VMs are present in each NSX environment. You can add the following objects to a universal security group with localMembersOnly=true (active standby):
- Universal Security Tag
- IP Address Set
- MAC Address Set
- Universal Security Groups with localMembersOnly=true
- Dynamic criteria using VM name

You can set the localMembersOnly attribute only when the universal security group is created, it cannot be modified afterwards.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Extended attribute localMembersOnly introduced.</td>
</tr>
</tbody>
</table>

Request:

**Body:** application/xml

```xml
<securitygroup>
  <name></name>
  <extendedAttributes>
    <extendedAttribute>
      <name>localMembersOnly</name>
      <value>true</value>
    </extendedAttribute>
  </extendedAttributes>
</securitygroup>
```
Updating a Specific Security Group Including Membership

**PUT /api/2.0/services/securitygroup/bulk/{objectId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectId (required)</td>
<td>Security group ID.</td>
</tr>
</tbody>
</table>

**Description:**
Update configuration for the specified security group, including membership information.

**Request:**
**Body:** application/xml

```xml
<securitygroup>
  <objectId></objectId>
  <objectTypeName></objectTypeName>
  <vsmUuid></vsmUuid>
  <revision></revision>
  <type>
    <typeName></typeName>
  </type>
  <name></name>
  <scope>
    <id></id>
    <objectTypeName></objectTypeName>
    <vsmUuid></vsmUuid>
    <name></name>
    <revision></revision>
  </scope>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <member>
    <objectId></objectId>
    <objectTypeName></objectTypeName>
    <vsmUuid></vsmUuid>
    <revision></revision>
    <type>
      <typeName></typeName>
    </type>
    <name></name>
    <scope>
      <id></id>
      <objectTypeName></objectTypeName>
      <vsmUuid></vsmUuid>
      <name></name>
      <revision></revision>
    </scope>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
  </member>
  <excludeMember>
    <objectId></objectId>
  </excludeMember>
</securitygroup>
```
Working With a Specific Security Group

**GET /api/2.0/services/securitygroup/{objectId}**

**URI Parameters:**

| objectId  | (required) | Security group ID. |

**Description:**
Retrieve all members of the specified security group.

**PUT /api/2.0/services/securitygroup/{objectId}**

**URI Parameters:**

| objectId  | (required) | Security group ID. |

**Description:**
Update configuration for the specified security group. Members are not updated. You must use PUT /2.0/services/securitygroup/bulk/{objectId} to update a security group membership.

**Request:**

**Body:** application/xml
DELETE /api/2.0/services/securitygroup/{objectId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectId</td>
<td>Security group ID.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>force</td>
<td>Use force=true to force removal of security group that is in use in other configurations.</td>
</tr>
</tbody>
</table>

**Description:**
Delete an existing security group.

If force=true is specified, the object is deleted even if used in other configurations, such as firewall rules. If force=true is not specified, the object is deleted only if it is not used by other configuration; otherwise the delete fails.

---

**Working With Members of a Specific Security Group**

PUT /api/2.0/services/securitygroup/{objectId}/members/{memberId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>memberId</td>
<td>Security group member, can be a vSphere managed object ID or NSX object ID.</td>
</tr>
<tr>
<td>objectId</td>
<td>Security group ID.</td>
</tr>
</tbody>
</table>

**Query Parameters:**
failIfExists  (optional)  Default is true.

If failIfExists=false:
- If the member is not already present in the SecurityGroup, the API adds the member to the SecurityGroup.
- If the member is already present in the SecurityGroup, the API will be a no-op and will return silently.

If failIfExists=true:
- If the member is not already present in the SecurityGroup, the API adds the member to the SecurityGroup.
- If the member is already present in the SecurityGroup, the API call fails.

Description:
Add a new member to the specified security group.

DELETE /api/2.0/services/securitygroup/{objectId}/members/{memberId}

URI Parameters:

<table>
<thead>
<tr>
<th>memberId  (required)</th>
<th>Security group member, can be a vSphere managed object ID or NSX object ID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectId  (required)</td>
<td>Security group ID.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>failIfAbsent  (optional)</th>
<th>Default is true.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If failIfAbsent=false:</td>
</tr>
<tr>
<td></td>
<td>- If the member is present in the SecurityGroup, the API removes the member from the SecurityGroup.</td>
</tr>
<tr>
<td></td>
<td>- If the member is not present in the SecurityGroup, the API call will be a no-op and will return silently.</td>
</tr>
<tr>
<td></td>
<td>If failIfExists=true:</td>
</tr>
<tr>
<td></td>
<td>- If the member is present in the SecurityGroup, the API removes the member from the SecurityGroup.</td>
</tr>
<tr>
<td></td>
<td>- If the member is not present in the SecurityGroup, the API call fails.</td>
</tr>
</tbody>
</table>

Description:
Delete member from the specified security group.

---

**Working With Virtual Machines in a Security Group**

GET /api/2.0/services/securitygroup/{objectId}/translation/virtualmachines

URI Parameters:

| objectId  (required) | Security group ID.                                                             |

Description:
Retrieve effective membership of a security group in terms of virtual machines. The effective membership is calculated using all the three membership components of a security group - static include, static exclude, and dynamic using the following formula:

Effective membership virtual machines = \[ (VMs \text{ resulting from static include component} + VMs \text{ resulting from dynamic component}) - (VMs \text{ resulting from static exclude component}) \]
GET /api/2.0/services/securitygroup/lookup/virtualmachine/{virtualMachineId}

URI Parameters:

| virtualMachineId (required) | Specified virtual machine |

Description:
Retrieves the collection of security groups to which a virtual machine is a direct or indirect member. Indirect membership involves nesting of security groups.

---

Working With IP Address in a Security Group

GET /api/2.0/services/securitygroup/lookup/ipaddress/{ipAddress}

URI Parameters:

| ipAddress (required) | Specified IP address |

Description:
Retrieve all the security groups that contain the specified IP address.

Request:
Body: application/xml

```xml
<securityGroups>
  <securityGroups>
    <securitygroup>
      <objectId>securitygroup-654</objectId>
      <objectTypeName>SecurityGroup</objectTypeName>
      <vsmUuid>42013FC7-556D-36E8-EB79-DF359AE8AC70</vsmUuid>
      <nodeId>a51981cd-18e1-4f55-abe8-079d61ca72fb</nodeId>
      <revision>5</revision>
      <type>
        <typeName>SecurityGroup</typeName>
      </type>
      <name>NSBU1-SG-AC-WORKDAY-DEV-XX-STATE-SMB</name>
      <description></description>
      <scope>
        <id>globalroot-0</id>
        <objectTypeName>GlobalRoot</objectTypeName>
        <name>Global</name>
      </scope>
      <clientHandle></clientHandle>
      <extendedAttributes></extendedAttributes>
      <isUniversal>false</isUniversal>
      <universalRevision>0</universalRevision>
      <inheritanceAllowed>false</inheritanceAllowed>
      <member>
        <objectId>vm-156</objectId>
        <objectTypeName>VirtualMachine</objectTypeName>
        <vsmUuid>42013FC7-556D-36E8-EB79-DF359AE8AC70</vsmUuid>
        <nodeId>a51981cd-18e1-4f55-abe8-079d61ca72fb</nodeId>
        <revision>7</revision>
      </member>
    </securitygroup>
  </securityGroups>
</securityGroups>
```
Working With Internal Security Groups

**GET /api/2.0/services/securitygroup/internal/scope/{scopeId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th><strong>scopeId</strong></th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specified transport zone (scope)</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
Retrieve all internal security groups on the NSX Manager. These are used internally by the system and should not be created or modified by end users.

---

Working With Security Groups on a Specific Scope
GET /api/2.0/services/securitygroup/scope/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>(required)</td>
<td>scopeld can be globalroot-0, universalroot-0 or datacenterID / portgroupID in upgrade use cases</td>
</tr>
</tbody>
</table>

Description:
List all the security groups created on a specific scope.

Working With Security Group Member Types

GET /api/2.0/services/securitygroup/scope/{scopeId}/memberTypes

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>(required)</td>
<td>scopeld can be globalroot-0, universalroot-0 or datacenterID / portgroupID in upgrade use cases</td>
</tr>
</tbody>
</table>

Description:
Retrieve a list of valid elements that can be added to a security group.

Working With a Specific Security Group Member Type

GET /api/2.0/services/securitygroup/scope/{scopeId}/members/{memberType}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>memberType</td>
<td>(required)</td>
<td>Specific member type</td>
</tr>
<tr>
<td>scopeId</td>
<td>(required)</td>
<td>scopeld can be globalroot-0, universalroot-0 or datacenterID / portgroupID in upgrade use cases</td>
</tr>
</tbody>
</table>

Description:
Retrieve members of a specific type in the specified scope.
Working With IP Set Grouping Objects

Working With IP Sets on a Specific Scope

GET /api/2.0/services/ipset/scope/{scopeMoref}

URI Parameters:

| scopeMoref (required) | For scopeMoref use globalroot-0 for non-universal IP sets and use universalroot-0 for universal IP sets. |

Description:
Retrieve all configured IPSets

Creating New IP Sets

POST /api/2.0/services/ipset/{scopeMoref}

URI Parameters:

| scopeMoref (required) | For scopeMoref use globalroot-0 for non-universal IP sets and use universalroot-0 for universal IP sets. |

Description:
Create a new IP set.

Request:
Body: application/xml

```xml
<ipset>
  <objectId/>
  <type>
    <typeName/>
  </type>
  <description/>
  <name/>
  <revision/>
  <objectTypeName/>
  <value/>
  <inheritanceAllowed/>
</ipset>
```

Working With a Specific IP Set
GET /api/2.0/services/ipset/{ipsetId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipsetId</td>
<td>The IP set to be queried or changed.</td>
</tr>
</tbody>
</table>

Description:
Retrieve an individual IP set.

PUT /api/2.0/services/ipset/{ipsetId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipsetId</td>
<td>The IP set to be queried or changed.</td>
</tr>
</tbody>
</table>

Description:
Modify an existing IP set.

Request:
Body: application/xml

```
<ipset>
  <objectId/>
  <type>
    <typeName/>
  </type>
  <description/>
  <name/>
  <objectTypeName/>
  <value/>
</ipset>
```

DELETE /api/2.0/services/ipset/{ipsetId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipsetId</td>
<td>The IP set to be queried or changed.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>force</td>
<td>Set to true when forcing the removal of an IP set.</td>
</tr>
</tbody>
</table>

Description:
Delete an IP set.
Configuring NSX Manager with vCenter Server

You can synchronize NSX Manager with a vCenter Server, which enables the Networking and Security tab in the vCenter Web Client to display your VMware Infrastructure inventory.

vCenter Config Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipAddress</td>
<td>FQDN or IP address of vCenter server.</td>
</tr>
<tr>
<td>userName</td>
<td>Required.</td>
</tr>
<tr>
<td>password</td>
<td>Required.</td>
</tr>
<tr>
<td>certificateThumbprint</td>
<td>Required. Must be colon (:) delimited hexadecimal.</td>
</tr>
<tr>
<td>assignRoleToUser</td>
<td>Optional. true or false.</td>
</tr>
<tr>
<td>pluginDownloadServer</td>
<td>Optional.</td>
</tr>
<tr>
<td>pluginDownloadPort</td>
<td>Optional.</td>
</tr>
</tbody>
</table>

GET /api/2.0/services/vcconfig

**Description:**
Get vCenter Server configuration details on NSX Manager.

**Responses:**
- **Status Code:** 200
- **Body:** application/xml

```xml
<vcInfo>
  <ipAddress>vcsa-01a.corp.local</ipAddress>
  <userName>administrator@vsphere.local</userName>
  <assignRoleToUser>true</assignRoleToUser>
  <vcInventoryLastUpdateTime>1492567224920</vcInventoryLastUpdateTime>
</vcInfo>
```

PUT /api/2.0/services/vcconfig

**Description:**
Synchronize NSX Manager with vCenter server.

**Request:**
- **Body:** application/xml

```xml
<vcInfo>
  <ipAddress>vc-l-01a.corp.local</ipAddress>
  <userName>administrator@vsphere.local</userName>
  <password>VMware123</password>
  <assignRoleToUser>true</assignRoleToUser>
  <pluginDownloadServer></pluginDownloadServer>
  <pluginDownloadPort></pluginDownloadPort>
</vcInfo>
```
Connection Status for vCenter Server

GET /api/2.0/services/vcconfig/status

Description:
Get default vCenter Server connection status.

Responses:
Status Code: 200
Body: application/xml

<vcConfigStatus>
  <connected>true</connected>
  <lastInventorySyncTime>1492568145678</lastInventorySyncTime>
</vcConfigStatus>
Configuring Index Maintainance

If you have few tables in the database that is taking up most of the space, you can configure your index maintenance activities. You can reindex the tables and tables with index bloat size greater than 75% are reindexed.

GET /api/2.0/services/housekeeping/management/index_maintenance

Description:
Retrieve the default settings for the index maintenance activities.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<housekeepingModule>
  <moduleName>index_maintenance</moduleName>
  <housekeepingEnabled>true</housekeepingEnabled>
  <scheduleType>cron</scheduleType>
  <scheduleTimeMillis>0</scheduleTimeMillis>
  <cronExpression>0 0 0 1-7 * SAT</cronExpression>
</housekeepingModule>
```

PUT /api/2.0/services/housekeeping/management/index_maintenance

Description:
Update the index maintenance default settings. You can enable or disable the settings and change the CRON configuration. To make the changes effective, you must restart the NSX Manager. To change the CRON expression, make sure the new CRON expression is correct using any CRON evaluators. Note that incorrect CRON expression will not run the reindexing task at the expected frequency.

CRON expression guidelines:
CRON expression pattern is a list of six single space-separated fields, representing second, minute, hour, day, month, weekday. Month and weekday can be given as first three letters of the English names. You can refer to the following Web sites for details:
- https://docs.spring.io/spring/docs/current/javadoc-api/org/springframework/scheduling/support/CronSequenceGenerator.html

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml
POST /api/2.0/services/housekeeping/management/index_maintenance

Query Parameters:

| action   | (required) | Use action=invokenow to trigger the reindexing task. |

Description:
Trigger the reindexing task on demand. Tables with index bloat size greater than 75% are reindexed.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>
Working With Universal Sync Configuration in Cross-vCenter NSX

Working With Universal Sync Configuration Roles

You can set the role of an NSX Manager to primary, secondary, or standalone. If you set an NSX Manager’s role to primary, then use it to create universal objects, and then set the role to standalone, the role will be set as transit. In the transit role, the universal objects will still exist, but cannot be modified, other than being deleted.

GET /api/2.0/universalsync/configuration/role

Description:
Retrieve the universal sync configuration role.

POST /api/2.0/universalsync/configuration/role

Query Parameters:

<table>
<thead>
<tr>
<th>action</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set the role of the NSX manager. Possible values are set-as-standalone, or set-as-primary. To set an NSX Manager as secondary, use the POST /api/2.0/universalsync/configuration/nsxmanagers method on the primary NSX Manager.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Set the universal sync configuration role.

Working With Universal Sync Configuration of NSX Managers

GET /api/2.0/universalsync/configuration/nsxmanagers

Description:
If run on a primary NSX Manager, it will list secondary NSX Managers configured on the primary NSX Manager.
If run on a secondary NSX Manager, it will list information about the secondary NSX Manager and the primary NSX Manager it is associated with.

POST /api/2.0/universalsync/configuration/nsxmanagers

Description:
Add a secondary NSX manager.
Run this method on the primary NSX Manager, providing details of the secondary NSX Manager.
Retrieve the certificate thumbprint of the secondary NSX Manager using the GET /api/1.0/appliance-management/certificatemanager/certificates/nsx method. The sha1Hash parameter contains the thumbprint.
**Request:**
**Body:** application/xml

```
<nsxManagerInfo>
  <nsxManagerIp/>
  <nsxManagerUsername/>
  <nsxManagerPassword/>
  <certificateThumbprint/>
  <isPrimary/>
</nsxManagerInfo>
```

DELETE /api/2.0/universalsync/configuration/nsxmanagers

**Description:**
Delete secondary NSX manager configuration.

---

**Universal Sync Configuration of a Specific NSX Manager**

**GET /api/2.0/universalsync/configuration/nsxmanagers/{nsxManagerID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>nsxManagerID (required)</th>
<th>NSX Manager UUID.</th>
</tr>
</thead>
</table>

**Description:**
Retrieve information about the specified secondary NSX Manager.

**PUT /api/2.0/universalsync/configuration/nsxmanagers/{nsxManagerID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>nsxManagerID (required)</th>
<th>NSX Manager UUID.</th>
</tr>
</thead>
</table>

**Description:**
Update the the specified secondary NSX manager IP or thumbprint in the universal sync configuration.

**Request:**
**Body:** application/xml

```
<nsxManagerInfo>
  <uuid/>
  <nsxManagerIp/>
  <certificateThumbprint/>
</nsxManagerInfo>
```

DELETE /api/2.0/universalsync/configuration/nsxmanagers/{nsxManagerID}

**URI Parameters:**
**nsxManagerID** *(required)*  
NSX Manager UUID.

**Query Parameters:**

| forceRemoval (optional) | Force removal of a secondary NSX manager. Options are true and false. |

**Description:**  
Delete the specified secondary NSX Manager.

---

**NSX Manager Synchronization**

**POST /api/2.0/universalsync/sync**

**Query Parameters:**

| action (required) | Use `invoke` to sync all objects on the NSX Manager. |

**Description:**  
Sync all objects on the NSX Manager.

---

**Working With Universal Sync Entities**

**GET /api/2.0/universalsync/entitystatus**

**Query Parameters:**

| objectType (required) | Specify the object type. For example `VdnScope`. |
| objectId (required) | Specify the objectID. For example `globalvdnscope`. |

**Description:**  
Retrieve the status of a universal sync entity.

---

**Working With Universal Sync Status**

**GET /api/2.0/universalsync/status**

**Description:**  
Retrieve the universal sync status.
Working With the Appliance Manager

With the appliance management tool, you can manage:

- System configurations like network configuration, syslog, time settings, and certificate management etc.
- Components of appliance such as NSX Manager, Postgres, SSH component, RabbitMQ service.
- Overall support related features such as tech support logs, backup restore, status, and summary reports of appliance health.

Global Information for NSX Manager

GET /api/1.0/appliance-management/global/info

Description:
Retrieve global information containing version information as well as current logged in user.

Responses:
Status Code: 200
Body: application/xml

```
<globalInfo>
  <currentLoggedInUser>admin</currentLoggedInUser>
  <versionInfo>
    <majorVersion>6</majorVersion>
    <minorVersion>2</minorVersion>
    <patchVersion>5</patchVersion>
    <buildNumber>4818372</buildNumber>
  </versionInfo>
</globalInfo>
```

Summary Information for NSX Manager

GET /api/1.0/appliance-management/summary/system

Description:
Retrieve system summary info such as address, DNS name, version, CPU, memory and storage.

Responses:
Status Code: 200
Body: application/xml

```
<systemSummary>
  <ipv4Address>192.168.110.15</ipv4Address>
  <dnsName>nsxmgr-01a</dnsName>
  <hostName>nsxmgr-01a</hostName>
  <applianceName>vShield Virtual Appliance Management</applianceName>
  <versionInfo>
```

### Component Information for NSX Manager

**GET /api/1.0/appliance-management/summary/components**

**Description:**
Retrieve summary of all available components and their status info.

**Responses:**
- **Status Code:** 200
- **Body:** application/xml

```xml
<componentsSummary>
  <componentsByGroup class="tree-map">
    <entry>
      <string>COMMON</string>
      <components>
        <component>
          <componentId>VPOSTGRES</componentId>
          <name>vPostgres</name>
          <description>vPostgres - Database service</description>
          <status>RUNNING</status>
          <enabled>true</enabled>
          <showTechSupportLogs>false</showTechSupportLogs>
          <usedBy>
            <string>NSX</string>
          </usedBy>
        </component>
      </components>
    </entry>
  </componentsByGroup>
</componentsSummary>
```
<componentGroup>COMMON</componentGroup>

<component>
  <componentId>RABBITMQ</componentId>
  <name>RabbitMQ</name>
  <description>RabbitMQ - Messaging service</description>
  <status>RUNNING</status>
  <enabled>true</enabled>
  <showTechSupportLogs>false</showTechSupportLogs>
  <usedBy>
    <string>NSX</string>
  </usedBy>
  <componentGroup>COMMON</componentGroup>
</component>

<entry>
  <string>NSXGRP</string>
  <components>
    <component>
      <componentId>NSXREPLICATOR</componentId>
      <name>NSX Replicator</name>
      <description>NSX Replicator</description>
      <status>RUNNING</status>
      <enabled>true</enabled>
      <showTechSupportLogs>false</showTechSupportLogs>
      <uses>
        <string>NSX</string>
      </uses>
      <usedBy/>
      <componentGroup>NSXGRP</componentGroup>
      <versionInfo>
        <majorVersion>6</majorVersion>
        <minorVersion>2</minorVersion>
        <patchVersion>5</patchVersion>
        <buildNumber>4818383</buildNumber>
      </versionInfo>
    </component>
    
    <component>
      <componentId>NSX</componentId>
      <name>NSX Manager</name>
      <description>NSX Manager</description>
      <status>RUNNING</status>
      <enabled>true</enabled>
      <showTechSupportLogs>true</showTechSupportLogs>
      <uses>
        <string>VPOSTGRES</string>
        <string>RABBITMQ</string>
      </uses>
      <usedBy>
        <string>NSXREPLICATOR</string>
      </usedBy>
      <componentGroup>NSXGRP</componentGroup>
      <versionInfo>
        <majorVersion>6</majorVersion>
        <minorVersion>2</minorVersion>
        <patchVersion>5</patchVersion>
        <buildNumber>4818372</buildNumber>
      </versionInfo>
    </component>
  </components>
</entry>
Reboot NSX Manager

POST /api/1.0/appliance-management/system/restart

Description:
Reboot the NSX Manager appliance.

NSX Manager CPU Information

GET /api/1.0/appliance-management/system/cpuinfo

Description:
Retrieve NSX Manager CPU information.

Responses:
Status Code: 200
Body: application/xml

<cpuInfo>
<totalNoOfCPUs>4</totalNoOfCPUs>
<capacity>2799 MHZ</capacity>
<usedCapacity>47 MHZ</usedCapacity>
<freeCapacity>2752 MHZ</freeCapacity>
<usedPercentage>2</usedPercentage>
</cpuInfo>
NSX Manager Appliance Uptime Information

GET /api/1.0/appliance-management/system/uptime

Description:
Retrieve NSX Manager uptime information.

Example response:
25 days, 22 hours, 11 minutes

NSX Manager Appliance Memory Information

GET /api/1.0/appliance-management/system/meminfo

Description:
Retrieve NSX Manager memory information.

Responses:
Status Code: 200
Body: application/xml

<memInfo>
  <totalMemory>16025 MB</totalMemory>
  <usedMemory>5633 MB</usedMemory>
  <freeMemory>10392 MB</freeMemory>
  <usedPercentage>35</usedPercentage>
</memInfo>

NSX Manager Appliance Storage Information

GET /api/1.0/appliance-management/system/storageinfo

Description:
Retrieve NSX Manager storage information.

Responses:
Status Code: 200
Body: application/xml
NSX Manager Appliance Network Settings

**GET /api/1.0/appliance-management/system/network**

**Description:**
Retrieve network information for the NSX Manager appliance. i.e. host name, IP address, DNS settings.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```
<network>
  <hostName>nsxmgr-01a</hostName>
  <networkIPv4AddressDto>
    <ipv4Address>192.168.110.15</ipv4Address>
    <ipv4NetMask>255.255.255.0</ipv4NetMask>
    <ipv4Gateway>192.168.110.1</ipv4Gateway>
  </networkIPv4AddressDto>
  <dns>
    <ipv4Address>192.168.110.10</ipv4Address>
    <domainList>corp.local</domainList>
  </dns>
</network>
```

**PUT /api/1.0/appliance-management/system/network**

**Description:**
Update network information for the NSX Manager appliance.

**Request:**
**Body:** application/xml

```
<network>
  <hostName>nsxmgr-01a</hostName>
  <networkIPv4AddressDto>
    <ipv4Address>192.168.110.15</ipv4Address>
    <ipv4NetMask>255.255.255.0</ipv4NetMask>
    <ipv4Gateway>192.168.110.1</ipv4Gateway>
  </networkIPv4AddressDto>
  <networkIPv6AddressDto>
    <ipv6Address>fdd1:0ebc:b724:d2f1:0000:8a7e:0360:5332</ipv6Address>
  </networkIPv6AddressDto>
</network>
```
<ipv6PrefixLength>64</ipv6PrefixLength>
<ipv6Gateway>fdd1:0ebc:b724:d2f1:0000:8a7e:0360:0002</ipv6Gateway>
</networkIPv6AddressDto>
<ipv4Address>192.168.110.10</ipv4Address>
<ipv6Address>fdd1:0ebc:b724:d2f1:0000:8a7e:0360:0010</ipv6Address>
<domainList>corp.local</domainList>
</dns>
</network>

Working With DNS Configuration

PUT /api/1.0/appliance-management/system/network/dns

Description:
Configure DNS.

Request:
Body: application/xml

<dns>
  <ipv4Address></ipv4Address>
  <ipv6Address></ipv6Address>
  <domainList></domainList>
</dns>

DELETE /api/1.0/appliance-management/system/network/dns

Description:
Delete DNS server configuration.

Working With Security Settings

GET /api/1.0/appliance-management/system/securitysettings

Description:
Retrieve the NSX Manager FIPS and TLS settings.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<securitySettings>
  <fipsEnabled>false</fipsEnabled>
  <tlsSettings>
    <serverEnabledProtocols>TLSv1,TLSv1.1,TLSv1.2</serverEnabledProtocols>
    <clientEnabledProtocols>TLSv1,TLSv1.1,TLSv1.2</clientEnabledProtocols>
  </tlsSettings>
</securitySettings>
```

POST /api/1.0/appliance-management/system/securitysettings

Description:
Update the NSX Manager security settings, including FIPS and TLS.

Do not enable FIPS until you have upgraded all NSX components to NSX 6.3.0 or later. Enable FIPS on NSX Edges before enabling it on the NSX Manager.

Changing the FIPS mode will reboot the NSX Manager appliance.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<securitySettings>
  <fipsEnabled>true</fipsEnabled>
  <tlsSettings>
    <serverEnabledProtocols>TLSv1.1,TLSv1.2</serverEnabledProtocols>
    <clientEnabledProtocols>TLSv1.1,TLSv1.2</clientEnabledProtocols>
  </tlsSettings>
</securitySettings>
```

Working With TLS Settings

GET /api/1.0/appliance-management/system/tlssettings

Description:
Retrieve TLS settings.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<tlsSettings>
  <serverEnabledProtocols>TLSv1,TLSv1.1,TLSv1.2</serverEnabledProtocols>
  <clientEnabledProtocols>TLSv1,TLSv1.1,TLSv1.2</clientEnabledProtocols>
</tlsSettings>
```

**POST /api/1.0/appliance-management/system/tlssettings**

**Description:**
Update TLS settings.
Include a comma separated list of the TLS versions you want to enable, for both server and client.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**

*Body: application/xml*

```xml
<tlsSettings>
  <serverEnabledProtocols>TLSv1.1,TLSv1.2</serverEnabledProtocols>
  <clientEnabledProtocols>TLSv1.1,TLSv1.2</clientEnabledProtocols>
</tlsSettings>
```

---

**Working With Time Settings**

You can either configure time or specify the NTP server to be used for time synchronization.

**GET /api/1.0/appliance-management/system/timesettings**

**Description:**
Retrieve time settings, like timezone or current date and time with NTP server, if configured.

**Responses:**

*Status Code: 200*

*Body: application/xml*

```xml
<timeSettings>
  <ntpServer>
    <string>192.168.110.1</string>
  </ntpServer>
  <datetime>04/19/2017 06:53:57</datetime>
  <timezone>UTC</timezone>
</timeSettings>
```
PUT /api/1.0/appliance-management/system/timesettings

Description:
Configure time or specify the NTP server to use for time synchronization.

Request:
Body: application/xml

```xml
<timeSettings>
  <ntpServer>
    <string>192.168.110.1</string>
  </ntpServer>
  <datetime>04/19/2017 06:53:57</datetime>
  <timezone>UTC</timezone>
</timeSettings>
```

Working With NTP Settings

DELETE /api/1.0/appliance-management/system/timesettings/ntp

Description:
Delete NTP server.

Configure System Locale

GET /api/1.0/appliance-management/system/locale

Description:
Retrieve locale info.

Responses:
Status Code: 200
Body: application/xml

```xml
<locale>
  <language>en</language>
  <country>US</country>
</locale>
```

PUT /api/1.0/appliance-management/system/locale
Description:
Configure locale.

Request:
Body: application/xml

```
<locale>
  <language>ja</language>
  <country>JP</country>
</locale>
```

Working With Syslog Servers

GET /api/1.0/appliance-management/system/syslogserver

Description:
Retrieve syslog servers.

Responses:
Status Code: 200
Body: application/xml

```
<syslogserver>
  <syslogServer>192.168.110.20</syslogServer>
  <port>514</port>
  <protocol>UDP</protocol>
</syslogserver>
```

PUT /api/1.0/appliance-management/system/syslogserver

Description:
Configure syslog servers.

Request:
Body: application/xml

```
<syslogserver>
  <syslogServer>192.168.110.20</syslogServer>
  <port>514</port>
  <protocol>UDP</protocol>
</syslogserver>
```

DELETE /api/1.0/appliance-management/system/syslogserver

Description:
Delete syslog servers.

Working With Components

The NSX Manager appliance has the following components.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSX</td>
<td>NSX Manager</td>
</tr>
<tr>
<td>NSXREPLICATOR</td>
<td>Universal Synchronization Service</td>
</tr>
<tr>
<td>RABBITMQ</td>
<td>RabbitMQ - Messaging service</td>
</tr>
<tr>
<td>SSH</td>
<td>SSH Service</td>
</tr>
<tr>
<td>VPOSTGRES</td>
<td>vPostgres - Database service</td>
</tr>
</tbody>
</table>

GET /api/1.0/appliance-management/components

Description:
Retrieve all appliance manager components.

Responses:
Status Code: 200
Body: application/xml

```xml
<components>
  <component>
    <componentId>SSH</componentId>
    <name>SSH Service</name>
    <description>Secure Shell</description>
    <status>RUNNING</status>
    <enabled>true</enabled>
    <showTechSupportLogs>false</showTechSupportLogs>
    <usedBy/>
    <componentGroup>SYSTEM</componentGroup>
  </component>
  <component>
    <componentId>VPOSTGRES</componentId>
    <name>vPostgres</name>
    <description>vPostgres - Database service</description>
    <status>RUNNING</status>
    <enabled>true</enabled>
    <showTechSupportLogs>false</showTechSupportLogs>
    <usedBy>
      <string>NSX</string>
    </usedBy>
    <componentGroup>COMMON</componentGroup>
  </component>
  <component>
    <componentId>NSXREPLICATOR</componentId>
    <name>NSX Replicator</name>
    <description>NSX Replicator</description>
    <status>RUNNING</status>
    <enabled>true</enabled>
    <showTechSupportLogs>false</showTechSupportLogs>
  </component>
</components>
```
Working With a Specific Component

GET /api/1.0/appliance-management/components/component/{componentID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>componentID</td>
<td>(required) Specified component ID.</td>
</tr>
</tbody>
</table>
Description:
Retrieve details for the specified component.

Responses:
Status Code: 200
Body: application/xml

```xml
<component>
  <componentId>NSX</componentId>
  <name>NSX Manager</name>
  <description>NSX Manager</description>
  <status>RUNNING</status>
  <enabled>true</enabled>
  <showTechSupportLogs>true</showTechSupportLogs>
  <uses>
    <string>VPOSTGRES</string>
    <string>RABBITMQ</string>
  </uses>
  <usedBy>
    <string>NSXREPLICATOR</string>
  </usedBy>
  <componentGroup>NSXGRP</componentGroup>
  <versionInfo>
    <majorVersion>6</majorVersion>
    <minorVersion>2</minorVersion>
    <patchVersion>5</patchVersion>
    <buildNumber>4818372</buildNumber>
  </versionInfo>
</component>
```

---

**Working With Component Dependencies**

GET
/api/1.0/appliance-management/components/component/{componentID}/dependencies

**URI Parameters:**
<table>
<thead>
<tr>
<th>componentID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specified component ID.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
Retrieve dependency details for the specified component.

**Responses:**
Status Code: 200
Body: application/xml

```xml
<list>
  <string>VPOSTGRES</string>
  <string>RABBITMQ</string>
</list>
```
Working With Component Dependents

GET /api/1.0/appliance-management/components/component/{componentID}/dependents

URI Parameters:

<table>
<thead>
<tr>
<th>componentID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specified component ID.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Retrieve dependents for the specified component.

Responses:
Status Code: 200
Body: application/xml

```
<list>
  <string>NSXREPLICATOR</string>
</list>
```

Working With Component Status

GET /api/1.0/appliance-management/components/component/{componentID}/status

URI Parameters:

<table>
<thead>
<tr>
<th>componentID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specified component ID.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Retrieve current status for the specified component.

Responses:
Status Code: 200
Body: application/xml

```
<result>
  <result class="status">RUNNING</result>
  <operationStatus>SUCCESS</operationStatus>
</result>
```

Toggle Component Status

---

[NSX API Guide](#) Version: 6.3
POST /api/1.0/appliance-management/components/component/{componentID}/toggleStatus/{command}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>command (required)</td>
<td>Use command parameter start or stop.</td>
<td></td>
</tr>
<tr>
<td>componentID (required)</td>
<td>Specified component ID.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

Start or stop a component.

---

**Working With the Appliance Management Web Application**

POST /api/1.0/appliance-management/components/component/APPMGMT/restart

**Description:**

Restart the appliance management web application.

---

**NSX Manager Appliance Backup Settings**

You can back up and restore your NSX Manager data, which can include system configuration, events, and audit log tables. Configuration tables are included in every backup. Backups are saved to a remote location that must be accessible by the NSX Manager.

**FTP parameters for backup and restore**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>transferProtocol</td>
<td>Transfer protocol.</td>
<td>Required. SFTP or FTP.</td>
</tr>
<tr>
<td>hostNameIPAddress</td>
<td>Backup server hostname or IP address.</td>
<td>Required.</td>
</tr>
<tr>
<td>port</td>
<td>Transfer protocol port.</td>
<td>Required. Determined by backup server</td>
</tr>
<tr>
<td>userName</td>
<td>User name to log in to backup server.</td>
<td>Required.</td>
</tr>
<tr>
<td>password</td>
<td>Password for user on backup server.</td>
<td>Required.</td>
</tr>
<tr>
<td>backupDirectory</td>
<td>Directory location to save backup files on backup server.</td>
<td>Required.</td>
</tr>
<tr>
<td>fileNamePrefix</td>
<td>Prefix for backup files.</td>
<td>Required.</td>
</tr>
<tr>
<td>passPhrase</td>
<td>Passphrase to encrypt and decrypt backups.</td>
<td>Required.</td>
</tr>
<tr>
<td>passiveMode</td>
<td>Use passive mode.</td>
<td>Optional. Default is true.</td>
</tr>
<tr>
<td>useEPRT</td>
<td>Use EPRT.</td>
<td>Optional. Default is false.</td>
</tr>
</tbody>
</table>
useEPSV | Use EPSV. | Optional. Default is true.

### Backup frequency parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>frequency</td>
<td>Frequency to run backups</td>
<td>WEEKLY, DAILY, or HOURLY.</td>
</tr>
<tr>
<td>dayOfWeek</td>
<td>Day of week to run backups</td>
<td>Required for WEEKLY backups. SUNDAY, MONDAY, ...</td>
</tr>
<tr>
<td>hourOfDay</td>
<td>Hour of day to run backups</td>
<td>Required for WEEKLY and DAILY backups. [0-23].</td>
</tr>
<tr>
<td>minuteOfHour</td>
<td>Minute of hour to run backups</td>
<td>Required for WEEKLY, DAILY, and HOURLY backups.</td>
</tr>
<tr>
<td>excludeTable</td>
<td>Table to exclude from backups</td>
<td>Optional if excludeTables section is omitted. Specify AUDIT_LOGS, SYSTEM_EVENTS, or FLOW_RECORDS. You can provide multiple excludeTable parameters.</td>
</tr>
</tbody>
</table>

GET /api/1.0/appliance-management/backuprestore/backupsettings

**Description:**
Retrieve backup settings.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```xml
<backupRestoreSettings>
  <ftpSettings>
    <transferProtocol>SFTP</transferProtocol>
    <hostNameIPAddress>10.2.56.199</hostNameIPAddress>
    <port>22</port>
    <userName>backup-user</userName>
    <backupDirectory>backups</backupDirectory>
    <filenamePrefix>SiteA_</filenamePrefix>
    <passiveMode>true</passiveMode>
    <useEPRT>false</useEPRT>
    <useEPSV>true</useEPSV>
  </ftpSettings>
  <backupFrequency>
    <frequency>WEEKLY</frequency>
    <dayOfWeek>SUNDAY</dayOfWeek>
    <hourOfDay>2</hourOfDay>
    <minuteOfHour>15</minuteOfHour>
  </backupFrequency>
  <excludeTables>
    <excludeTable>AUDIT_LOGS</excludeTable>
  </excludeTables>
</backupRestoreSettings>
```

PUT /api/1.0/appliance-management/backuprestore/backupsettings

**Description:**
Configure backups on the appliance manager.

You must set a **passPhrase** for the backups. The passphrase is used to encrypt and decrypt backup files. If you do not set a passphrase, backups will fail. If you forget the passphrase set on a backup file, you cannot restore that backup file.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method updated. Parameters <strong>passiveMode</strong> and <strong>useEPSV</strong> previously defaulted to <em>false</em>, now default to <em>true</em>.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** `application/xml`

```xml
<backupRestoreSettings>
    <ftpSettings>
        <transferProtocol>SFTP</transferProtocol>
        <hostNameIPAddress>10.2.56.199</hostNameIPAddress>
        <port>22</port>
        <userName>backup-user</userName>
        <password>testing123</password>
        <backupDirectory>backups</backupDirectory>
        <filenamePrefix>SiteA_</filenamePrefix>
        <passPhrase>testing456</passPhrase>
        <passiveMode>true</passiveMode>
        <useEPRT>false</useEPRT>
        <useEPSV>true</useEPSV>
    </ftpSettings>
    <backupFrequency>
        <frequency>WEEKLY</frequency>
        <dayOfWeek>SUNDAY</dayOfWeek>
        <hourOfDay>2</hourOfDay>
        <minuteOfHour>15</minuteOfHour>
    </backupFrequency>
    <excludeTables>
        <excludeTable>AUDIT_LOGS</excludeTable>
    </excludeTables>
</backupRestoreSettings>
```

**DELETE /api/1.0/appliance-management/backuprestore/backupsettings**

**Description:**
Delete appliance manager backup configuration.

---

**NSX Manager Appliance Backup FTP Settings**

See *NSX Manager Appliance Backup Settings* for details.

**PUT /api/1.0/appliance-management/backuprestore/backupsettings/ftpsettings**

**Description:**
Configure FTP settings.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method updated. Parameters <code>passiveMode</code> and <code>useEPSV</code> previously defaulted to false, now default to true.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<ftpSettings>
  <transferProtocol>SFTP</transferProtocol>
  <hostNameIPAddress>10.2.56.199</hostNameIPAddress>
  <port>22</port>
  <userName>backup-user</userName>
  <password>testing123</password>
  <backupDirectory>backups</backupDirectory>
  <filenamePrefix>SiteA_</filenamePrefix>
  <passPhrase>testing456</passPhrase>
  <passiveMode>true</passiveMode>
  <useEPRT>false</useEPRT>
  <useEPSV>true</useEPSV>
</ftpSettings>
```

NSX Manager Appliance Backup Exclusion Settings

See NSX Manager Appliance Backup Settings for details.

PUT /api/1.0/appliance-management/backuprestore/backupsettings/excludedata

Description:
Specify tables that need not be backed up.

Request:

Body: application/xml

```xml
<excludeTables>
  <excludeTable>AUDIT_LOGS</excludeTable>
</excludeTables>
```

NSX Manager Appliance Backup Schedule Settings

See NSX Manager Appliance Backup Settings for details.

PUT /api/1.0/appliance-management/backuprestore/backupsettings/schedule
Description:
Set backup schedule.

Request:
Body: application/xml

```
<backupFrequency>
  <frequency>WEEKLY</frequency>
  <dayOfWeek>SUNDAY</dayOfWeek>
  <hourOfDay>2</hourOfDay>
  <minuteOfHour>15</minuteOfHour>
</backupFrequency>
```

DELETE /api/1.0/appliance-management/backuprestore/backupsettings/schedule

Description:
Delete backup schedule.

---

NSX Manager Appliance On-Demand Backup

POST /api/1.0/appliance-management/backuprestore/backup

Headers:
| Content-Type (required) | Specify application/xml. |

Description:
Start an on-demand NSX backup.

You must set the Content-Type header to application/xml for the backup to run successfully.

---

Working With NSX Manager Appliance Backup Files

GET /api/1.0/appliance-management/backuprestore/backups

Description:
Retrieve list of all backups available at configured backup location.

Responses:
Status Code: 200
Body: application/xml
<list>
  <backupFileProperties>
    <fileName>SiteA_00_27_58_Thu08Jun2017</fileName>
    <fileSize>3645472</fileSize>
    <creationTime>1496881678000</creationTime>
  </backupFileProperties>
  <backupFileProperties>
    <fileName>SiteA_01_06_16_Wed07Jun2017</fileName>
    <fileSize>3604512</fileSize>
    <creationTime>1496797576000</creationTime>
  </backupFileProperties>
</list>

Restoring Data from an NSX Manager Appliance Backup File

POST /api/1.0/appliance-management/backuprestore/restore

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>restoreFile</td>
<td>(required) File name of restore file.</td>
</tr>
</tbody>
</table>

Description:
Restore data from a backup file.
Retrieve a list of restore files using GET /api/1.0/appliance-management/backuprestore/backups.

Working With Tech Support Logs by Component

POST /api/1.0/appliance-management/techsupportlogs/{componentID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>componentID</td>
<td>(required) Specified component to generate tech support logs. For example, NSX.</td>
</tr>
</tbody>
</table>

Description:
Generate tech support logs. The location response header contains the location of the created tech support file.

Working With Tech Support Log Files

GET /api/1.0/appliance-management/techsupportlogs/{filename}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>filename</td>
<td>(required) Name of log file to download.</td>
</tr>
</tbody>
</table>
Description:
Download tech support logs.

---

## Working With Support Notifications

**GET /api/1.0/appliance-management/notifications**

**Description:**
Retrieve all system generated notifications.

**DELETE /api/1.0/appliance-management/notifications**

**Description:**
Delete all notifications.

---

## Acknowledge Notifications

**POST /api/1.0/appliance-management/notifications/{ID}/acknowledge**

**URI Parameters:**

<table>
<thead>
<tr>
<th>ID</th>
<th>Notification ID.</th>
</tr>
</thead>
</table>

**Description:**
Acknowledge a notification. The notification is then deleted from the system.

---

### Upgrading NSX Manager Appliance

To upgrade NSX Manager, you must do the following:
- upload an upgrade bundle
  - **POST /api/1.0/appliance-management/upgrade/uploadbundle/{componentID}**
- retrieve the upgrade information
  - **GET /api/1.0/appliance-management/upgrade/information/{componentID}**
- edit the **preUpgradeQuestionsAnswers** section of the upgrade information response to include answers
- start the upgrade, providing the edited **preUpgradeQuestionsAnswers** section as the request body
  - **POST /api/1.0/appliance-management/upgrade/start/{componentID}**

---

### Upload an NSX Manager Upgrade Bundle

You must upload the upgrade bundle using the form-data content-type. Consult the documentation for your REST client for instructions.

Do not set other Content-type headers in your request, for example, **Content-type: application/xml**.
When you upload a file as form-data, you must provide a **key** and a **value** for the file. The **key** is `file`, and the **value** is the location of the upgrade bundle file.

**Example using curl**

```bash
/usr/bin/curl -v -k -i -F file=@/tmp/VMware-NSX-Manager-upgrade-bundle-6.2.7-5343628.tar.gz -H 'Authorization: Basic YWRtaW46ZGXXXXXXXX=='
https://192.168.110.42/api/1.0/appliance-management/upgrade/uploadbundle/NSX
```

**POST /api/1.0/appliance-management/upgrade/uploadbundle/{componentID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>componentID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component ID. Specify NSX.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

Upload upgrade bundle.

---

**Upload an NSX Manager Upgrade Bundle from URL**

You can upload the upgrade bundle using the URL. Supported protocols are HTTP, and HTTPS.

You must provide the URL of the upgrade bundle file. **For example:**


**POST /api/1.0/appliance-management/upgrade/uploadbundlefromurl**

**Description:**

Upload upgrade bundle from URL.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

---

**Prepare for NSX Manager Upgrade**

**GET /api/1.0/appliance-management/upgrade/information/{componentID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>componentID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component ID. Specify NSX.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

Once you have uploaded an upgrade bundle, you must retrieve information about the upgrade. This request contains pre-upgrade validation warnings and error messages, along with pre-upgrade questions.

You use the `preUpgradeQuestionsAnswers` section with the addition of your answers to create the request body for the POST /api/1.0/appliance-management/upgrade/start/{componentID} request to start the backup. See *Start the NSX Manager Upgrade* for more information.
Responses:
Status Code: 200
Body: application/xml

```xml
<upgradeInformation>
  <fromVersion>6.2.5</fromVersion>
  <toVersion>6.2.7.5343628</toVersion>
  <upgradeBundleDescription>Upgrade to 6.2.7 5343628</upgradeBundleDescription>
  <preUpgradeQuestionsAnswers>
    <preUpgradeQuestionAnswer>
      <questionId>preUpgradeChecks1:Q1</questionId>
      <question>Do you want to enable SSH ?</question>
      <questionAnserType>YESNO</questionAnserType>
    </preUpgradeQuestionAnswer>
    <preUpgradeQuestionAnswer>
      <questionId>preUpgradeChecks1:Q2</questionId>
      <question>This product participates in VMware's Customer Experience Improvement Program ("CEIP"). The CEIP provides VMware with information that enables VMware to improve its products and services, to fix problems, and to advise you on how best to deploy and use our products. As part of the CEIP, VMware collects technical information about your organization's use of VMware products and services on a regular basis in association with your organization's VMware license key(s). This information does not personally identify any individual. For additional information regarding the CEIP, please see the Trust and Assurance Center at http://www.vmware.com/trustvmware/ceip.html. You can select your participation preferences below. Do you want to join the VMware Customer Experience Improvement Program ?</question>
      <questionAnserType>YESNO</questionAnserType>
    </preUpgradeQuestionAnswer>
  </preUpgradeQuestionsAnswers>
  <upgradeStepsDto>
    <step>
      <stepId>ValidationStep</stepId>
      <stepLabel>Upgrade Bundle Validation</stepLabel>
      <description>Upgrade bundle will be validated before the actual upgrade process.</description>
    </step>
    <step>
      <stepId>UpgradeStep</stepId>
      <stepLabel>Upgrade NSX manager</stepLabel>
      <description>Upgrade process for NSX Manager will begin.</description>
    </step>
  </upgradeStepsDto>
</upgradeInformation>
```

---

**Start the NSX Manager Upgrade**

**POST /api/1.0/appliance-management/upgrade/start/{componentID}**

**URI Parameters:**

| componentID (required) | Component ID. Specify NSX. |

NSX API Guide Version: 6.3
Description:
Start upgrade process.

If you want to enable SSH or join the VMware CEIP program, you must specify Yes (not YES) for the answer parameter.

Request:
Body: application/xml

```
<preUpgradeQuestionsAnswers>
  <preUpgradeQuestionAnswer>
    <questionId>preUpgradeChecks1:Q1</questionId>
    <question>Do you want to enable SSH ?</question>
    <questionAnserType>YESNO</questionAnserType>
    <answer>Yes</answer>
  </preUpgradeQuestionAnswer>
  <preUpgradeQuestionAnswer>
    <questionId>preUpgradeChecks1:Q2</questionId>
    <question>This product participates in VMware's Customer Experience Improvement Program ("CEIP"). The CEIP provides VMware with information that enables VMware to improve its products and services, to fix problems, and to advise you on how best to deploy and use our products. As part of the CEIP, VMware collects technical information about your organization's use of VMware products and services on a regular basis in association with your organization's VMware license key(s). This information does not personally identify any individual. For additional information regarding the CEIP, please see the Trust and Assurance Center at http://www.vmware.com/trustvmware/ceip.html. You can select your participation preferences below. Do you want to join the VMware Customer Experience Improvement Program ?</question>
    <questionAnserType>YESNO</questionAnserType>
    <answer>Yes</answer>
  </preUpgradeQuestionAnswer>
</preUpgradeQuestionsAnswers>
```

---

### NSX Manager Upgrade Status

**GET /api/1.0/appliance-management/upgrade/status/{componentID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>componentID</td>
<td>Component ID. Specify NSX.</td>
</tr>
</tbody>
</table>

**Description:**
Query upgrade status.

---

### Working With Certificates on the NSX Manager Appliance
Working With Keystore Files

POST /api/1.0/appliance-management/certificatemanager/pkcs12keystore/nsx

Query Parameters:

| password | Password. |

Description:
Upload keystore file.
Input is PKCS#12 formatted NSX file along with password.

NSX Manager Certificate Manager

GET /api/1.0/appliance-management/certificatemanager/certificates/nsx

Description:
Retrieve certificate information from NSX Manager.

Responses:
Status Code: 200
Body: application/xml

```xml
<x509Certificates>
  <x509Certificate>
    <subjectCn/></subjectCn>
    <issuerCn/></issuerCn>
    <version/></version>
    <serialNumber/></serialNumber>
    <signatureAlgo/></signatureAlgo>
    <signature/></signature>
    <notBefore/></notBefore>
    <notAfter/></notAfter>
    <issuer/></issuer>
    <subject/></subject>
    <publicKeyAlgo/></publicKeyAlgo>
    <publicKeyLength/></publicKeyLength>
    <rsaPublicKeyModulus/></rsaPublicKeyModulus>
    <rsaPublicKeyExponent/></rsaPublicKeyExponent>
    <sha1Hash/></sha1Hash>
    <md5Hash/></md5Hash>
    <isCa/></isCa>
    <isValid/></isValid>
  </x509Certificate>
  ***
</x509Certificates>
```
Working With Certificate Signing Requests

**GET /api/1.0/appliance-management/certificatemanager/csr/nsx**

**Description:**
Retrieve generated certificate signing request (CSR).

**POST /api/1.0/appliance-management/certificatemanager/csr/nsx**

**Description:**
Create a certificate signing request (CSR) for NSX Manager.
The response header contains the created file location.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced. Replaces PUT /api/1.0/appliance-management/certificatemanager/csr/nsx.</td>
</tr>
</tbody>
</table>

**Request:**
**Body:** application/xml

```
<csr>
  <algorithm></algorithm>
  <keySize></keySize>
  <subjectDto>
    <commonName></commonName>
    <organizationUnit></organizationUnit>
    <organizationName></organizationName>
    <localityName></localityName>
    <stateName></stateName>
    <countryCode></countryCode>
  </subjectDto>
</csr>
```

---

Working With Certificate Chains

**POST /api/1.0/appliance-management/certificatemanager/uploadchain/nsx**

**Description:**
Upload certificate chain.

Input is certificate chain file which is a PEM encoded chain of certificates received from the CA after signing a CSR.
Working With NSX Manager System Events

GET /api/2.0/systemevent

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startIndex</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pageSize</td>
<td>The number of results to return. Range is 1-1024.</td>
</tr>
</tbody>
</table>

Description:
Get NSX Manager system events
### Working With NSX Manager Audit Logs

You can retrieve NSX Manager audit logs. The following table translates the names used for modules in the API and the vSphere Web Client UI.

Navigate to **Networking & Security > NSX Managers > NSX Manager > Monitor > Audit Logs** to view the logs in the vSphere Web Client UI.

#### Module Names for Audit Logs in API and UI

<table>
<thead>
<tr>
<th>API Names for Audit Log Modules</th>
<th>UI Names for Audit Log Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNKNOWN</td>
<td>Unknown</td>
</tr>
<tr>
<td>ZONES_FIREWALL</td>
<td>App Firewall</td>
</tr>
<tr>
<td>EDGE_FIREWALL</td>
<td>Edge Firewall</td>
</tr>
<tr>
<td>EDGE</td>
<td>Edge</td>
</tr>
<tr>
<td>EDGE_NAT</td>
<td>Edge NAT</td>
</tr>
<tr>
<td>EDGE_SNAT</td>
<td>Edge SNAT</td>
</tr>
<tr>
<td>EDGE_DNAT</td>
<td>Edge DNAT</td>
</tr>
<tr>
<td>EDGE_DHCP</td>
<td>Edge DHCP</td>
</tr>
<tr>
<td>EDGE_VPN</td>
<td>Edge VPN</td>
</tr>
<tr>
<td>EDGE_LB</td>
<td>Edge Load Balancer</td>
</tr>
<tr>
<td>EDGE_SYSLOG</td>
<td>Edge Syslog</td>
</tr>
<tr>
<td>EDGE_STATIC_ROUTING</td>
<td>Edge Static Routing</td>
</tr>
<tr>
<td>EDGE_TRAFFICSTATS</td>
<td>Edge Traffic Stats</td>
</tr>
<tr>
<td>EDGE_SUPPORT</td>
<td>Edge Support</td>
</tr>
<tr>
<td>EDGE_CERTIFICATE</td>
<td>Edge Certificate</td>
</tr>
<tr>
<td>EPSEC</td>
<td>Guest Introspection</td>
</tr>
<tr>
<td>NETWORK_ISOLATION</td>
<td>Port Group Isolation</td>
</tr>
<tr>
<td>INVENTORY</td>
<td>Inventory</td>
</tr>
<tr>
<td>SDD</td>
<td>Data Security</td>
</tr>
<tr>
<td>SHIELD</td>
<td>vShield</td>
</tr>
<tr>
<td>SYSTEM</td>
<td>System</td>
</tr>
<tr>
<td>UPGRADE</td>
<td>Upgrade</td>
</tr>
<tr>
<td>ACCESS_CONTROL</td>
<td>Access Control</td>
</tr>
<tr>
<td>DLP</td>
<td>Data Recovery</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Application</td>
</tr>
<tr>
<td>IP_SET</td>
<td>IP Addresses</td>
</tr>
<tr>
<td>MAC_SET</td>
<td>MAC Addresses</td>
</tr>
<tr>
<td>SECURITY_GROUP</td>
<td>Security Group</td>
</tr>
<tr>
<td>SPOOFGUARD</td>
<td>SpoofGuard</td>
</tr>
<tr>
<td>APP_FAIL_SAFE</td>
<td>App Fail Safe Config</td>
</tr>
<tr>
<td>APP_EXCLUDE_LIST</td>
<td>App Exclude List</td>
</tr>
</tbody>
</table>
### GET /api/2.0/auditlog

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startIndex (optional)</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pageSize (optional)</td>
<td>The number of results to return. Range is 1-1024.</td>
</tr>
<tr>
<td>sortOrderAscending (optional)</td>
<td>Sort audit logs in ascending order. Use <code>true</code> for ascending order, and <code>false</code> for descending order.</td>
</tr>
<tr>
<td>sortBy (optional)</td>
<td>Sort audit logs by <code>timestamp</code>. Example <code>auditlog?sortOrderAscending=false&amp;sortBy=timestamp</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Get NSX Manager audit logs.
Working With the VMware Customer Experience Improvement Program

NSX participates in VMware’s Customer Experience Improvement Program (CEIP).
See "Customer Experience Improvement Program" in the NSX Administration Guide for more information.

Working With the VMware CEIP Configuration

You can join or leave the CEIP at any time. You can also define the frequency and the days the information is collected.

CEIP Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Enable status of data collection</td>
<td>true or false.</td>
</tr>
<tr>
<td>frequency</td>
<td>Frequency of data collection</td>
<td>daily, weekly, or monthly.</td>
</tr>
<tr>
<td>dayOfWeek</td>
<td>Day to collect data</td>
<td>SUNDAY, MONDAY, ... SATURDAY.</td>
</tr>
<tr>
<td>hourOfDay</td>
<td>Hour to collect data</td>
<td>0-23.</td>
</tr>
<tr>
<td>minutes</td>
<td>Minute to collect data</td>
<td>0-59.</td>
</tr>
<tr>
<td>lastCollectionTime</td>
<td>Time of last collection.</td>
<td>Timestamp in milliseconds. Read only.</td>
</tr>
</tbody>
</table>

GET /api/1.0/telemetry/config

Description:
Retrieve the CEIP configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<telemetryConfiguration>
  <enabled>true</enabled>
  <frequency>weekly</frequency>
  <dayOfWeek>MONDAY</dayOfWeek>
  <hourOfDay>2</hourOfDay>
  <minutes>0</minutes>
  <lastCollectionTime>1499369743000</lastCollectionTime>
</telemetryConfiguration>
```

PUT /api/1.0/telemetry/config
Description:
Update the CEIP configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
<tr>
<td>6.3.3</td>
<td>Method updated. minutes parameter is configurable.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<telemetryConfiguration>
  <enabled>true</enabled>
  <frequency>daily</frequency>
  <hourOfDay>2</hourOfDay>
  <minutes>0</minutes>
</telemetryConfiguration>
```

Working With Proxy Setting for VMware CEIP

If your NSX Manager appliance does not have a direct connection to the internet, you can configure a proxy server for the purpose of sending information collected by CEIP to VMware.

CEIP Proxy Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>scheme</td>
<td>Proxy scheme.</td>
<td>Required if enabled is set to MANUAL. Valid value: http. Default is http.</td>
</tr>
<tr>
<td>hostname</td>
<td>Hostname of proxy server</td>
<td>Required if enabled is set to MANUAL.</td>
</tr>
<tr>
<td>port</td>
<td>Port used for proxy server</td>
<td>Required if enabled is set to MANUAL. Default is 0.</td>
</tr>
<tr>
<td>username</td>
<td>Proxy server username</td>
<td>Optional.</td>
</tr>
<tr>
<td>password</td>
<td>Proxy server password</td>
<td>Optional. Not included in GET response.</td>
</tr>
</tbody>
</table>

GET /api/1.0/telemetry/proxy

Description:
Retrieve the NSX Manager proxy settings for CEIP.

Method history:
Responses:
Status Code: 200
Body: application/xml

PUT /api/1.0/telemetry/proxy

Description:
Retrieve the NSX Manager proxy settings for CEIP.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<telemetryProxy>
  <enabled>manual</enabled>
  <scheme>http</scheme>
  <hostname>proxy.example.com</hostname>
  <port>3128</port>
  <username>nsxadmin</username>
  <password>testing123</password>
</telemetryProxy>
```
Working With Network Fabric Configuration

Working With Network Virtualization Components and VXLAN

Cluster preparation can be broken down into the following:
- Install VIB and non-VIB related action: Before any per-host config a VIB must be installed on the host. The feature can use this time to perform other bootstrapping tasks which do not depend on VIB-installation. e.g. VXLAN creates the vmknic-pg and sets up some opaque data.
- Post-VIB install: Prepare each host for the feature. In the case of VXLAN, create vmknics.

PUT /api/2.0/nwfabric/configure

Description:
Upgrade Network virtualization components.
This API call can be used to upgrade network virtualization components. After NSX Manager is upgraded, previously prepared clusters must have the 6.x network virtualization components installed.

Request:
Body: application/xml

```xml
<nwFabricFeatureConfig>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
  </resourceConfig>
</nwFabricFeatureConfig>
```

POST /api/2.0/nwfabric/configure

Query Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>(optional) Specify synchronize to reset communication between NSX Manager and a host or cluster.</td>
</tr>
</tbody>
</table>

Description:
Install network fabric or VXLAN.
This method can be used to perform the following tasks:
- Install Network Virtualization Components
- Configure VXLAN
- Configure VXLAN with LACPv2
- Reset Communication Between NSX Manager and a Host or Cluster

Parameter Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>resourceId</td>
<td>vCenter MOB ID of cluster. For example, domain-c7. A host can be specified when resetting communication. For example, host-24.</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ipPoolId</td>
<td>Used for VXLAN installation. If not specified, DHCP is used for VTEP address assignment.</td>
</tr>
<tr>
<td>teaming</td>
<td>Used for VXLAN installation. Options are <code>FAILOVER_ORDER</code>, <code>ETHER_CHANNEL</code>, <code>LACP_ACTIVE</code>, <code>LACP_PASSIVE</code>, <code>LOADBALANCE_LOADBASED</code>, <code>LOADBALANCE_SRCID</code>, <code>LOADBALANCE_SRMCAM</code>, <code>LACP_V2</code></td>
</tr>
<tr>
<td>uplinkPortName</td>
<td>The <code>uplinkPortName</code> as specified in vCenter.</td>
</tr>
</tbody>
</table>

**Install Network Virtualization Components**

POST /api/2.0/nwfabric/configure

```xml
<nwFabricFeatureConfig>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
  </resourceConfig>
</nwFabricFeatureConfig>
```

**Configure VXLAN**

POST /api/2.0/nwfabric/configure

```xml
<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.vsm.vxlan</featureId>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
    <configSpec class="clusterMappingSpec">
      <switch>
        <objectId>DVS MOID</objectId>
        <vlanId>0</vlanId>
        <vmknicCount>1</vmknicCount>
        <ipPoolId>IPADDRESSPOOL ID</ipPoolId>
      </switch>
    </configSpec>
  </resourceConfig>
  <resourceConfig>
    <resourceId>DVS MOID</resourceId>
    <configSpec class="vdsContext">
      <switch>
        <objectId>DVS MOID</objectId>
      </switch>
      <mtu>1600</mtu>
      <teaming>ETHER_CHANNEL</teaming>
    </configSpec>
  </resourceConfig>
</nwFabricFeatureConfig>
```

**Configure VXLAN with LACPv2**

```xml
<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.vsm.vxlan</featureId>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
    <configSpec class="clusterMappingSpec">
      <switch>
        <objectId>DVS MOID</objectId>
        <vlanId>0</vlanId>
        <vmknicCount>1</vmknicCount>
        <ipPoolId>IPADDRESSPOOL ID</ipPoolId>
      </switch>
    </configSpec>
  </resourceConfig>
  <resourceConfig>
    <resourceId>DVS MOID</resourceId>
    <configSpec class="vdsContext">
      <switch>
        <objectId>DVS MOID</objectId>
      </switch>
      <mtu>1600</mtu>
    </configSpec>
  </resourceConfig>
</nwFabricFeatureConfig>
```
POST /api/2.0/nwfabric/configure

<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.nsxmgr.vxlan</featureId>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
    <configSpec class="clusterMappingSpec">
      <switch>
        <objectId>DVS MOID</objectId>
      </switch>
      <vlanId>0</vlanId>
      <vmknicCount>1</vmknicCount>
    </configSpec>
  </resourceConfig>
  <resourceConfig>
    <resourceId>DVS MOID</resourceId>
    <configSpec class="vdsContext">
      <switch>
        <objectId>DVS MOID</objectId>
      </switch>
      <mtu>1600</mtu>
      <teaming>LACP_V2</teaming>
      <uplinkPortName>LAG NAME</uplinkPortName>
    </configSpec>
  </resourceConfig>
</nwFabricFeatureConfig>

**Reset Communication Between NSX Manager and a Host or Cluster**

POST /api/2.0/nwfabric/configure?action=synchronize

<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.vsm.messagingInfra</featureId>
  <resourceConfig>
    <resourceId>resourceId</resourceId>
  </resourceConfig>
</nwFabricFeatureConfig>

**Request:**

**Body:** application/xml

<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.vsm.vxlan</featureId>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
    <configSpec class="clusterMappingSpec">
      <switch>
        <objectId>DVS MOID</objectId>
      </switch>
      <vlanId>0</vlanId>
      <vmknicCount>1</vmknicCount>
      <ipPoolId>IPADDRESSPOOL ID</ipPoolId>
    </configSpec>
  </resourceConfig>
</nwFabricFeatureConfig>
DELETE /api/2.0/nwfabric/configure

**Description:**
Remove VXLAN or network virtualization components.

Removing network virtualization components removes previously installed VIBs, tears down NSX Manager to ESXi messaging, and removes any other network fabric dependent features such as logical switches. If a feature such as logical switches is being used in your environment, this call fails.

Removing VXLAN does not remove the network virtualization components from the cluster.

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>resourceId</td>
<td>vCenter MOB ID of cluster. For example, domain-c7.</td>
</tr>
<tr>
<td>featureId</td>
<td>Feature to act upon. Omit for network virtualization components operations. Use com.vmware.vshield.vsm.vxlan for VXLAN operations.</td>
</tr>
</tbody>
</table>

**Remove Network Virtualization Components**

```xml
<nwFabricFeatureConfig>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
  </resourceConfig>
</nwFabricFeatureConfig>
```

**Remove VXLAN**

```xml
<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.vsm.vxlan</featureId>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
  </resourceConfig>
</nwFabricFeatureConfig>
```

**Remove VXLAN with vDS context**

```xml
<nwFabricFeatureConfig>
  <featureId>com.vmware.vshield.vsm.vxlan</featureId>
  <resourceConfig>
    <resourceId>CLUSTER MOID</resourceId>
    <configSpec class="map">
      <entry>
        <keyclass="java.lang.String">vxlan</key>
        <valueclass="java.lang.String">cascadeDeleteVdsContext</value>
      </entry>
    </configSpec>
  </resourceConfig>
</nwFabricFeatureConfig>
```

**Request:**
Resolving Host Preparation Issues

POST /api/2.0/nwfabric/resolveIssues/{clusterID}

URI Parameters:

<table>
<thead>
<tr>
<th>clusterID</th>
<th>MOID of the cluster to resolve. For example, domain-c27.</th>
</tr>
</thead>
</table>

Description:
Resolve all issues associated with host preparation (VIB installation). You can resolve issues only at the cluster level.

Working With Network Fabric Features

GET /api/2.0/nwfabric/features

Description:
Retrieves all network fabric features available on the cluster. Multiple featureInfo sections may be returned.

Responses:
Status Code: 200
Body: application/xml

Working With Network Fabric Status
GET /api/2.0/nwfabric/status

Query Parameters:

| resource  | (required) | Set resource to the correct resourceId which is a valid vCenter MOID (e.g. domain-c34 for a cluster). |

Description:
Retrieve the network fabric status of the specified resource.

Responses:

**Status Code: 200**

**Body:** application/xml

```xml
<resourceStatuses>
  <resourceStatus>
    <resource>
      <objectId>resource-id</objectId>
      <objectTypeName>ClusterComputeResource</objectTypeName>
      <nsxmgrUuid>jfldj</nsxmgrUuid>
      <revision>2</revision>
      <type>
        <typeName>ClusterComputeResource</typeName>
      </type>
      <name>c-1</name>
      <scope>
        <id>datacenter-2</id>
        <objectTypeName>Datacenter</objectTypeName>
        <name>dc-1</name>
      </scope>
      <clientHandle></clientHandle>
      <extendedAttributes></extendedAttributes>
    </resource>
    <nwFabricFeatureStatus>
      <featureId>com.vmware.vshield.nsxmgr.nwfabric.hostPrep</featureId>
      <featureVersion>5.5</featureVersion>
      <updateAvailable>false</updateAvailable>
      <status>RED</status>
      <message></message>
      <installed>true</installed>
    </nwFabricFeatureStatus>
    <nwFabricFeatureStatus>
      <featureId>com.vmware.vshield.nsxmgr.vxlan</featureId>
      <featureVersion>5.5</featureVersion>
      <updateAvailable>false</updateAvailable>
      <status>UNKNOWN</status>
      <installed>false</installed>
    </nwFabricFeatureStatus>
    <nwFabricFeatureStatus>
      <featureId>com.vmware.vshield.nsxmgr.messagingInfra</featureId>
      <featureVersion>5.5</featureVersion>
      <updateAvailable>false</updateAvailable>
      <status>UNKNOWN</status>
      <installed>false</installed>
    </nwFabricFeatureStatus>
    <nwFabricFeatureStatus>
      <featureId>com.vmware.vshield.firewall</featureId>
      <featureVersion>5.5</featureVersion>
      <updateAvailable>false</updateAvailable>
    </nwFabricFeatureStatus>
  </resourceStatus>
</resourceStatuses>
```
Working With Network Fabric Status of Child Resources

GET /api/2.0/nwfabric/status/child/{parentResourceID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>parentResourceID</td>
<td>Parent resource ID</td>
</tr>
</tbody>
</table>

Description:
Retrieve the network fabric status of child resources of the specified resource.

Responses:
Status Code: 200
Body: application/xml

```xml
<resourceStatuses>
  <resourceStatus>
    <resource>
      <objectId>host-9</objectId>
      <objectTypeName>HostSystem</objectTypeName>
      <nsxmgrUuid>jfldj</nsxmgrUuid>
      <revision>4</revision>
      <type>
        <typeName>HostSystem</typeName>
        <type>
          <name>10.135.14.186</name>
          <scope>
            <id>domain-c34</id>
            <objectTypeName>ClusterComputeResource</objectTypeName>
            <name>c-1</name>
            <scope>
              <clientHandle></clientHandle>
              <extendedAttributes></extendedAttributes>
            </scope>
          </type>
          <nwFabricFeatureStatus>
            <featureId>com.vmware.vshield.nsxmgr.nwfabric.hostPrep</featureId>
            <featureVersion>5.5</featureVersion>
            <updateAvailable>false</updateAvailable>
            <status>RED</status>
            <message></message>
            <installed>true</installed>
          </nwFabricFeatureStatus>
          <nwFabricFeatureStatus>
            <featureId>com.vmware.vshield.nsxmgr.vxlan</featureId>
            <featureVersion>5.5</featureVersion>
            <updateAvailable>false</updateAvailable>
            <status>UNKNOWN</status>
          </nwFabricFeatureStatus>
        </type>
      </resource>
    </resourceStatus>
  </resourceStatuses>
```
<installed>false</installed>
</nwFabricFeatureStatus>
<nwFabricFeatureStatus>
    <featureId>com.vmware.vshield.messagingInfra</featureId>
    <featureVersion>5.5</featureVersion>
    <updateAvailable>false</updateAvailable>
    <status>UNKNOWN</status>
    <installed>false</installed>
</nwFabricFeatureStatus>
<nwFabricFeatureStatus>
    <featureId>com.vmware.vshield.firewall</featureId>
    <featureVersion>5.5</featureVersion>
    <updateAvailable>false</updateAvailable>
    <status>UNKNOWN</status>
    <installed>false</installed>
</nwFabricFeatureStatus>
</resourceStatus>
</resourceStatuses>

Working With Status of Resources by Criterion

GET /api/2.0/nwfabric/status/alleligible/{resourceType}

URI Parameters:

<table>
<thead>
<tr>
<th>resourceType</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid resource type. Valid resourceType is clusters. You can also use ClusterComputeResource, if required.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Retrieve status of resources by criterion.

Responses:
Status Code: 200
Body: application/xml

<resourceStatuses>
<resourceStatus>
    <resource>
        <objectId>domain-c34</objectId>
        <objectTypeName>ClusterComputeResource</objectTypeName>
        <nsxmgrUuid>jfldj</nsxmgrUuid>
        <revision>2</revision>
        <type>
            <typeName>ClusterComputeResource</typeName>
        </type>
        <name>c-1</name>
        <scope>
            <id>datacenter-2</id>
            <objectTypeName>Datacenter</objectTypeName>
            <name>dc-1</name>
        </scope>
        <clientHandle></clientHandle>
        <extendedAttributes></extendedAttributes>
</resource>
<nwFabricFeatureStatus>
  <featureId>com.vmware.vshield.nsxmgr.nwfabric.hostPrep</featureId>
  <featureVersion>5.5</featureVersion>
  <updateAvailable>false</updateAvailable>
  <status>RED</status>
  <message></message>
  <installed>true</installed>
</nwFabricFeatureStatus>
<nwFabricFeatureStatus>
  <featureId>com.vmware.vshield.nsxmgr.vxlan</featureId>
  <featureVersion>5.5</featureVersion>
  <updateAvailable>false</updateAvailable>
  <status>UNKNOWN</status>
  <installed>false</installed>
</nwFabricFeatureStatus>
<nwFabricFeatureStatus>
  <featureId>com.vmware.vshield.nsxmgr.messagingInfra</featureId>
  <featureVersion>5.5</featureVersion>
  <updateAvailable>false</updateAvailable>
  <status>UNKNOWN</status>
  <installed>false</installed>
</nwFabricFeatureStatus>
<nwFabricFeatureStatus>
  <featureId>com.vmware.vshield.firewall</featureId>
  <featureVersion>5.5</featureVersion>
  <updateAvailable>false</updateAvailable>
  <status>UNKNOWN</status>
  <installed>false</installed>
</nwFabricFeatureStatus>
</resourceStatus>
<resourceStatus>
  <resource>
    <objectId>domain-c32</objectId>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <nsxmgrUuid>jfldj</nsxmgrUuid>
    <revision>1</revision>
    <type>
      <typeName>ClusterComputeResource</typeName>
    </type>
    <name>c-2</name>
    <scope>
      <id>datacenter-12</id>
      <objectTypeName>Datacenter</objectTypeName>
      <name>dc-2</name>
    </scope>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
  </resource>
  <nwFabricFeatureStatus>
    <featureId>com.vmware.vshield.nsxmgr.nwfabric.hostPrep</featureId>
    <updateAvailable>false</updateAvailable>
    <status>UNKNOWN</status>
    <installed>false</installed>
  </nwFabricFeatureStatus>
  <nwFabricFeatureStatus>
    <featureId>com.vmware.vshield.nsxmgr.vxlan</featureId>
    <updateAvailable>false</updateAvailable>
    <status>UNKNOWN</status>
    <installed>false</installed>
  </nwFabricFeatureStatus>
</resourceStatus>
Working With Locale ID Configuration For Clusters

GET /api/2.0/nwfabric/clusters/{clusterID}

URI Parameters:

| clusterID  | (required) | Cluster ID. |

Description:
Retrieve the locale ID for the specified cluster.

PUT /api/2.0/nwfabric/clusters/{clusterID}

URI Parameters:

| clusterID  | (required) | Cluster ID. |

Description:
Update the locale ID for the specified cluster.

Request:
Body: application/xml

<nwFabricClusterConfig>
<localeId></localeId>
</nwFabricClusterConfig>

DELETE /api/2.0/nwfabric/clusters/{clusterID}

URI Parameters:

| clusterID  | (required) | Cluster ID. |
Description:
Delete locale ID for the specified cluster.

Working With Locale ID Configuration for Hosts

GET /api/2.0/nwfabric/hosts/{hostID}

URI Parameters:

| hostID  | (required) | Host ID. |

Description:
Retrieve the locale ID for the specified host.

PUT /api/2.0/nwfabric/hosts/{hostID}

URI Parameters:

| hostID  | (required) | Host ID. |

Description:
Update the locale ID for the specified host.

Request:
Body: application/xml

```
<nwFabricHostConfig>
  <localeId></localeId>
</nwFabricHostConfig>
```

DELETE /api/2.0/nwfabric/hosts/{hostID}

URI Parameters:

| hostID  | (required) | Host ID. |

Description:
Delete the locale ID for the specified host.
Working With Security Fabric and Security Services

The security fabric simplifies and automates deployment of security services and provide a platform for configuration of the elements that are required to provide security to workloads. These elements include:

Internal components:
- Guest Introspection Universal Service Virtual Machine
- Guest Introspection Mux
- Logical Firewall

External components:
- Partner OVF/VIBs
- Partner vendor policy templates

For partner services, the overall workflow begins with registration of services by partner consoles, followed by deployment of the services by the administrator.

Subsequent workflow is as follows:

1. Select the clusters on which to deploy the security fabric (Mux, Traffic filter, USVM).
2. Specify an IP pool to be used with the SVMs (available only if the partner registration indicates requirement of static IPs).
3. Select portgroup (DVPG) to be used for each cluster (a default is pre-populated for the user).
4. Select datastore to be used for each cluster (a default is pre-populated for the user).
5. NSX Manager deploys the components on all hosts of the selected clusters.

Once you deploy the security fabric, an agency defines the configuration needed to deploy agents (host components and appliances). An agency is created per cluster per deployment spec associated with services. Agents are deployed on the selected clusters, and events/hooks for all the relevant actions are generated.

Request parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dataStore</td>
<td>Needs to be specified only in POST call. In PUT call, it should be left empty.</td>
</tr>
<tr>
<td>dvPortGroup</td>
<td>Optional. If not specified, then user will set the Agent using vCenter Server.</td>
</tr>
<tr>
<td>ipPool</td>
<td>Optional. If not specified, IP address is assigned through DHCP.</td>
</tr>
</tbody>
</table>

PUT /api/2.0/si/deploy

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startTime</td>
<td>Specify time to start upgrade.</td>
</tr>
</tbody>
</table>

Description:
Upgrade service to recent version.

The datastore, dvPortGroup, and ipPool variables should either not be specified or have same value as provided at time of deployment.

Request:
Body: application/xml

```xml
<clusterDeploymentConfigs>
  <clusterDeploymentConfig>
  </clusterDeploymentConfig>
</clusterDeploymentConfigs>
<clusterId></clusterId>  
<datastore></datastore>  
<services>  
  <serviceDeploymentConfig>  
    <serviceId></serviceId>  
    <serviceInstanceId></serviceInstanceId>  
    <dvPortGroup></dvPortGroup>  
    <ipPool></ipPool>  
  </serviceDeploymentConfig>  
  </services>  
</clusterDeploymentConfig>  
</clusterDeploymentConfigs>  

POST /api/2.0/si/deploy

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startTime</td>
<td>Time to start deployment task. If not specified, deploy immediately.</td>
</tr>
</tbody>
</table>

Description:
Deploy security fabric.

Request:
Body: application/xml

Working With a Specified Service

GET /api/2.0/si/deploy/service/{serviceID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>serviceID</td>
<td>Specified service.</td>
</tr>
</tbody>
</table>

Description:
Retrieve all clusters on which the service is installed.
DELETE /api/2.0/si/deploy/service/{serviceID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>serviceID (required)</th>
<th>Specified service.</th>
</tr>
</thead>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>clusters</th>
<th>Comma-separated list of cluster IDs from which to uninstall the service.</th>
</tr>
</thead>
<tbody>
<tr>
<td>startTime</td>
<td>Time for uninstall to be scheduled. If not specified, uninstall immediately.</td>
</tr>
</tbody>
</table>

**Description:**
Uninstall specified service from specified clusters.

---

**Working With Service Dependencies**

Services installed through the security fabric may be dependent on other services. When an internal service is registered, a dependencyMap is maintained with the service-id and implementation type of the internal service.

When partner registers a new service, the security fabric looks up its implementation type in the dependencyMap to identify the service it depends on, if any. Accordingly, a new field in Service object called dependsOn-service-id is populated.

GET /api/2.0/si/deploy/service/{serviceID}/dependsOn

**URI Parameters:**

<table>
<thead>
<tr>
<th>serviceID (required)</th>
<th>Specified service.</th>
</tr>
</thead>
</table>

**Description:**
Retrieve service on which the specified service depends.

---

**Working With Installed Services on a Cluster**

GET /api/2.0/si/deploy/cluster/{clusterID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>clusterID (required)</th>
<th>Cluster ID</th>
</tr>
</thead>
</table>

**Description:**
Retrieve all services deployed along with their status.

**Responses:**

<table>
<thead>
<tr>
<th>Status Code: 200</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Body: application/xml</th>
</tr>
</thead>
</table>
```xml
<deployedServices>
  <deployedService>
    <deploymentUnitId>deploymentunit-1</deploymentUnitId>
    <serviceId>service-3</serviceId>
    <cluster>
      <objectId>domain-c41</objectId>
      <objectTypeName>ClusterComputeResource</objectTypeName>
      <nsxmgrUuid>42036483-6CF3-4F0F-B356-2EB1E6369C6F</nsxmgrUuid>
      <revision>2</revision>
      <type>
        <typeName>ClusterComputeResource</typeName>
      </type>
      <name>Cluster-1</name>
      <scope>
        <id>datacenter-21</id>
        <objectTypeName>Datacenter</objectTypeName>
        <name>nasingh-dc</name>
      </scope>
      <extendedAttributes></extendedAttributes>
    </cluster>
    <serviceName>domain-c41_service-3</serviceName>
    <datastore>
      <objectId>datastore-29</objectId>
      <objectTypeName>Datastore</objectTypeName>
      <nsxmgrUuid>42036483-6CF3-4F0F-B356-2EB1E6369C6F</nsxmgrUuid>
      <revision>1</revision>
      <type>
        <typeName>Datastore</typeName>
      </type>
      <name>datastore1</name>
      <extendedAttributes></extendedAttributes>
    </datastore>
    <dvPortGroup>
      <objectId>dvportgroup-45</objectId>
      <objectTypeName>DistributedVirtualPortgroup</objectTypeName>
      <nsxmgrUuid>42036483-6CF3-4F0F-B356-2EB1E6369C6F</nsxmgrUuid>
      <revision>2</revision>
      <type>
        <typeName>DistributedVirtualPortgroup</typeName>
      </type>
      <name>dvPortGroup</name>
      <scope>
        <id>datacenter-21</id>
        <objectTypeName>Datacenter</objectTypeName>
        <name>nasingh-dc</name>
      </scope>
      <extendedAttributes></extendedAttributes>
    </dvPortGroup>
    <serviceStatus>SUCCEEDED</serviceStatus>
  </deployedService>
</deployedServices>

DELETE /api/2.0/si/deploy/cluster/{clusterID}

URI Parameters:

<table>
<thead>
<tr>
<th>clusterID</th>
<th>(required)</th>
<th>Cluster ID</th>
</tr>
</thead>
</table>

Query Parameters:
**services (optional)**
Comma-separated list of service IDs to specify which services to uninstall. If this is not specified then all the services are uninstalled.

**startTime**
Time for uninstall to be scheduled. If not specified, do immediately.

**Description:**
Uninstall a service. Fails if you try to remove a service that another service depends on. In order to uninstall services in any order, set parameter ignoreDependency to true.

---

**Working With a Specific Service on a Cluster**

GET /api/2.0/si/deploy/cluster/{clusterID}/service/{serviceID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>serviceID</td>
<td>Service ID on cluster</td>
</tr>
<tr>
<td>clusterID</td>
<td>Cluster ID</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve detailed information about the service.
Working With Data Collection for Activity Monitoring

Activity Monitoring provides visibility into your virtual network to ensure that security policies at your organization are being enforced correctly.

A Security policy may mandate who is allowed access to what applications. The Cloud administrator can generate Activity Monitoring reports to see if the IP based firewall rule that they set is doing the intended work. By providing user and application level detail, Activity Monitoring translates high level security policies to low level IP address and network based implementation.

Once you enable data collection for Activity Monitoring, you can run reports to view inbound traffic (such as virtual machines being accessed by users) as well as outbound traffic (resource utilization, interaction between inventory containers, and AD groups that accessed a server).

You must enable data collection for one or more virtual machines on a vCenter Server before running an Activity Monitoring report. Before running a report, ensure that the enabled virtual machines are active and are generating network traffic.

You should also register NSX Manager with the AD Domain Controller. See "Working With Domains".

Note that only active connections are tracked by Activity Monitoring. Virtual machine traffic blocked by firewall rules at the vNIC level is not reflected in reports.

In case of an emergency such as a network overload, you can turn off data collection at a global level. This overrides all other data collection settings.

Some API calls may require the VMID, which is the MOID of the guest virtual machine. You can retrieve this by queuing the vCenter mob structure (https://VC-IP-Address/mob). The VMID is listed under host structure.

Working With Data Collection on a Specific Virtual Machine

You must enable data collection at least five minutes before running an Activity Monitoring report.

**POST /api/1.0/eventcontrol/vm/{vmID}/request**

**URI Parameters:**

<table>
<thead>
<tr>
<th>vmID</th>
<th>(required)</th>
<th>MOID of the guest vm</th>
</tr>
</thead>
</table>

**Description:**

Enable or disable data collection on a virtual machine

Set **value** to *enabled* or *disabled*.

**Request:**

**Body:** application/xml

```
<perVmConfig>
  <actions>
    <action>
      <type>per_vm_config</type>
      <value>enabled</value>
    </action>
  </actions>
</perVmConfig>
```
Override Data Collection

**POST /api/1.0/eventcontrol/eventcontrol-root/request**

**Description:**
Turn data collection on or off at the global level.

In case of an emergency such as a network overload, you can turn off data collection at a global level (kill switch). This overrides all other data collection settings.

Set value to **enabled** or **disabled**.

**Request:**
**Body:** application/xml

```xml
<request>
<actions>
    <action>
        <type>global_switch</type>
        <value>disabled</value>
    </action>
</actions>
</request>
```

Retrieve Data Collection Configuration for a Specific Virtual Machine

When reporting per virtual machine configuration, current kill switch status is also reported too. The effective configuration of a virtual machine is determined by both kill switch config and per virtual machine configuration. If kill switch is on, event collection is effectively disabled regardless of what its per virtual machine configuration is; if kill switch is off, per virtual machine configuration determines whether event collection should be performed for this virtual machine.

**GET /api/1.0/eventcontrol/config/vm/{vmID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vmID</td>
<td>MOID of the guest vm</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve per VM configuration for data collection.

**Responses:**
**Status Code:** 200
**Body:** application/xml

```xml
<perVmConfig>
    <actions>
        <action>
            <type>global_switch</type>
            <value>disabled</value>
        </action>
    </actions>
</perVmConfig>
```
</action>

<action>
    <type>per_vm_config</type>
    <value>enabled</value>
</action>

</perVmConfig>
Working With Activity Monitoring

Working With Aggregated User Activity
Get aggregated user activity (action records) using parameters. Requires that NSX Guest Introspection is configured, NSX Manager must be registered with Active Directory, and data collection is enabled on one or more VMs.

GET /api/3.0/ai/records

Query Parameters:

- query (required) Name of report (resource,adg,containers,sam,vma).
- interval (required) Relative time to current time (number followed by either m,h,d,s).
- stime (optional) Start time for query. interval is used if stime and etime are not specified.
- etime (optional) End time for query. interval is used if stime and etime are not specified. example: 2012-02-29T21:00
- param Parameter to be applied to query <param-name>;<param-type>;<comma-separated-values>;<operator>
- pagesize The number of results to return. Recommended range is 100-2000.
- startindex The starting point for returning results.

Description:

View Outbound Activity
You can view what applications are being run by a security group or desktop pool and then drill down into the report to find out which client applications are making outbound connections by a particular group of users. You can also discover all user groups and users who are accessing a particular application, which can help you determine if you need to adjust identity firewall in your environment.

- query=resource
- param=<param-name>;<param-type>;<comma-separated-values>;<operator>, where:
  - <param-name> is one of: src (required), dest (required), app
  - <param-type> is one of: for src: SECURITY_GROUP, DIRECTORY_GROUP, DESKTOP_POOL, for dest: VIRTUAL_MACHINE, for app: SRC_APP
  - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
  - <operator> is one of INCLUDE, EXCLUDE (default is INCLUDE).

Example: View user activities to VM ID 1 originating from application ID 1
GET /api/3.0/ai/records?query=resource&interval=60m&param=src:DIRECTORY_GROUP&param=dest:VIRTUAL_MACHINE:1&param=app:SRC_APP:1

View Inbound Activity
You can view all inbound activity to a server by desktop pool, security group, or AD group.
• query=sam
• param=<param-name>:<param-type>:<comma-separated-values>:<operator>, where:
  - <param-name> is one of:
    • src (required)
    • dest (required)
    • app
  - <param-type> is one of:
    • for src: SECURITY_GROUP, DIRECTORY_GROUP, DESKTOP_POOL
    • for dest: VIRTUAL_MACHINE
    • for app: DEST_APP
  - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
  - <operator> is one of INCLUDE, EXCLUDE, NOT (default is INCLUDE).

Example: View user activities to VM ID 1 originating from application ID 1
GET /api/3.0/ai/records?query=containers&interval=60m&param=dest:SECURITY_GROUP:1:EXCLUDE &param=src:SECURITY_GROUP:1

View Interaction between Inventory Containers
You can view the traffic passing between defined containers such as AD groups, security groups and/or desktop pools. This can help you identify and configure access to shared services and to resolve misconfigured relationships between Inventory container definitions, desktop pools and AD groups.
• query=containers
• param=<param-name>:<param-type>:<comma-separated-values>:<operator>, where:
  - <param-name> is one of:
    • src (required)
    • dest (required)
  - <param-type> is one of:
    • for src: SECURITY_GROUP, DIRECTORY_GROUP, DESKTOP_POOL
    • for dest: SECURITY_GROUP, DESKTOP_POOL
  - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
  - <operator> is one of INCLUDE, EXCLUDE, or NOT (default is INCLUDE*).

Example: View interaction between inventory containers
GET /api/3.0/ai/records?query=containers&interval=60m&param=dest:SECURITY_GROUP:1:EXCLUDE &param=src:SECURITY_GROUP:1

View Outbound AD Group Activity
You can view the traffic between members of defined Active Directory groups and can use this data to fine tune your firewall rules.
• query=adg
• param=<param-name>:<param-type>:<comma-separated-values>:<operator>, where:
  - <param-name> is one of:
    • src (required)
    • adg
  - <param-type> is one of:
    • for src: SECURITY_GROUP, DESKTOP_POOL
    • for adg: USER
  - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
  - <operator> is one of INCLUDE, EXCLUDE (default is INCLUDE*).

Example: View outbound AD group activity
GET https://NSX-Manager-IP-Address/api/3.0/ai/records?query=adg&interval=24h&param=adg: USER:
Working With User Details

GET /api/3.0/ai/userdetails

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>query</td>
<td>Name of report (resource, adg, containers, sam, vma)</td>
</tr>
<tr>
<td>interval</td>
<td>Relative time to current time (number followed by either m, h, d, s)</td>
</tr>
<tr>
<td>stime</td>
<td>Start time for query</td>
</tr>
<tr>
<td>etime</td>
<td>End time for query</td>
</tr>
<tr>
<td>param</td>
<td>Parameter to be applied to query</td>
</tr>
<tr>
<td>pagesize</td>
<td>The number of results to return. Recommended range is 100-2000.</td>
</tr>
<tr>
<td>startindex</td>
<td>The starting point for returning results.</td>
</tr>
</tbody>
</table>

Description:

View Outbound Activity

You can view what applications are being run by a security group or desktop pool and then drill down into the report to find out which client applications are making outbound connections by a particular group of users. You can also discover all user groups and users who are accessing a particular application, which can help you determine if you need to adjust identity firewall in your environment.

- query=resource
- param=<param-name><param-type><comma-separated-values><operator>, where:
  - <param-name> is one of:
    - src (required)
    - dest (required)
    - app
  - <param-type> is one of:
    - for src: SECURITY_GROUP, DIRECTORY_GROUP, DESKTOP_POOL
    - for dest: IP - a valid IP address in dot notation, xx.xx.xx.xx
    - for app: SRC_APP
  - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
  - <operator> is one of INCLUDE, EXCLUDE (default is INCLUDE).

Example: View user activities to VM ID 1 originating from application ID 1
GET /api/3.0/ai/userdetails?query=resource&stime=2012-10-15T00:00:00&etime=2012-10-20T0:00:00&param=src:DIRECTORY_GROUP:2&param=app:SRC_APP:16&param=dest:IP:172.16.4.52

View Inbound Activity

You can view all inbound activity to a server by desktop pool, security group, or AD group.

- query=sam
- param=<param-name><param-type><comma-separated-values><operator>, where:
  - <param-name> is one of:
    - src (required)
    - dest (required)
app (required)
- <param-type> is one of:
  - for src: SECURITY_GROUP, DIRECTORY_GROUP, DESKTOP_POOL
  - for dest: VIRTUAL_MACHINE
  - for app: DEST_APP
- <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
- <operator> is one of INCLUDE, EXCLUDE, NOT (default is INCLUDE).

Example: View user activities to VM ID 1 originating from application ID 1
GET /api/3.0/userdetails?query=sam&interval=60m&param=app:DEST_APP:1:EXCLUDE

View Interaction between Inventory Containers
You can view the traffic passing between defined containers such as AD groups, security groups and/or desktop pools. This can help you identify and configure access to shared services and to resolve misconfigured relationships between Inventory container definitions, desktop pools and AD groups.
- query=containers
- param=<param-name><param-type><comma-separated-values><operator>, where:
  - <param-name> is one of:
    - src (required)
    - dest (required)
  - <param-type> is one of:
    - for src: SECURITY_GROUP, DIRECTORY_GROUP, DESKTOP_POOL
    - for dest: SECURITY_GROUP, DESKTOP_POOL
    - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
    - <operator> is one of INCLUDE, EXCLUDE, or NOT (default is INCLUDE).

Example: View interaction between inventory containers
GET /api/3.0/ai/userdetails?query=containers&interval=60m&param=dest:SECURITY_GROUP:1:EXCLUDE
&param=src:SECURITY_GROUP:1

View Outbound AD Group Activity
You can view the traffic between members of defined Active Directory groups and can use this data to fine tune your firewall rules.
- query=adg
- param=<param-name><param-type><comma-separated-values><operator>, where:
  - <param-name> is one of:
    - src (required)
    - adg
  - <param-type> is one of:
    - for src: SECURITY_GROUP, DESKTOP_POOL
    - for adg: USER
    - <comma-separated-values> is a comma-separated numbers (optional). If none specified then no filter is applied.
    - <operator> is one of INCLUDE, EXCLUDE (default is INCLUDE).

Example: View outbound AD group activity
GET /api/3.0/ai/userdetails?query=adg&interval=24h&param=adg:USER:1:INCLUDE
&param=src:SECURITY_GROUP:1:EXCLUDE

View Virtual Machine Activity Report
- query=vma
- param=<param-name><param-type><comma-separated-values><operator>, where:
  - <param-name> is one of:
If no parameters are passed, then this would show all SAM activities
- `<param-type>` is one of:
  - for src: `SECURITY_GROUP, DESKTOP_POOL`
  - for dst: `VIRTUAL_MACHINE, VM_UUID`
  - for app: `SRC_APP` or `DEST_APP`
- `<comma-separated-values>` is a comma-separated numbers (optional). If none specified then no filter is applied.
- `<operator>` is one of `INCLUDE, EXCLUDE` (default is `INCLUDE`).

**Example:** View outbound AD group activity
GET /api/3.0/ai/userdetails?query=vma&interval=60m&param=dest:VIRTUAL_MACHINE:1&param=app:DEST_APP:16

### Working With a Specific User

GET /api/3.0/ai/user/{userID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>userID</th>
<th>(required)</th>
<th>User ID</th>
</tr>
</thead>
</table>

**Description:**
Retrieve details for a specific user.

### Working With Applications

GET /api/3.0/ai/app

**Description:**
Retrieve app details.

### Working With a Specific Application

GET /api/3.0/ai/app/{appID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>appID</th>
<th>(required)</th>
<th>Specified app ID.</th>
</tr>
</thead>
</table>

**Description:**
Retrieve details for specific app.
Working With Discovered Hosts

GET /api/3.0/ai/host

Description:
Retrieve list of all discovered hosts (both by agent introspection and LDAP Sync) and their detail.

Working With a Specific Discovered Host

GET /api/3.0/ai/host/{hostID}

URI Parameters:

| hostID  | (required) | Specified host ID. |

Description:
Get host details.

Working With Desktop Pools

GET /api/3.0/ai/descktoppool

Description:
Retrieve list of all discovered desktop pools by agent introspection.

Working With a Specific Desktop Pool

GET /api/3.0/ai/descktoppool/{descktoppoolID}

URI Parameters:

| descktoppoolID  | (required) | Specified desktop pool. |

Description:
Retrieve specific desktop pool details.
Working With Virtual Machines

GET /api/3.0/ai/vm

Description:
Retrieve list of all discovered VMs.

Working With a Specific Virtual Machine

GET /api/3.0/ai/vm/{vmID}

URI Parameters:
| vmID   | (required) | VM ID |

Description:
Retrieve details about a specific virtual machine.

Working With LDAP Directory Groups

GET /api/3.0/ai/directorygroup

Description:
Retrieve list of all discovered (and configured) LDAP directory groups.

Working With a Specific LDAP Directory Group

GET /api/3.0/ai/directorygroup/{directorygroupID}

URI Parameters:
| directorygroupID | (required) | Specified directory group. |

Description:
Retrieve details about a specific directory group.

Working With a Specific User's Active Directory Groups

GET /api/3.0/ai/directorygroup/user/{userID}
URI Parameters:

<table>
<thead>
<tr>
<th>userID</th>
<th>(required)</th>
<th>User ID</th>
</tr>
</thead>
</table>

Description:
Retrieve Active Directory groups that user belongs to.

Working With Security Groups

GET /api/3.0/ai/securitygroup

Description:
Retrieve list of all observed security groups.
Observed entities are the ones that are reported by the agents. For example, if a host activity is reported by an agent and if that host belongs to a security group then that security group would reported as observed in SAM database.

Working With a Specific Security Group

GET /api/3.0/ai/securitygroup/{secgroupID}

URI Parameters:

<table>
<thead>
<tr>
<th>secgroupID</th>
<th>(required)</th>
<th>Specified security group</th>
</tr>
</thead>
</table>

Description:
Retrieve details about specific security group.
Working With Domains

After you create a domain, you can apply a security policy to it and run queries to view the applications and virtual machines being accessed by the users of a domain.

Registering Domains

You can register one or more Windows domains with an NSX Manager and associated vCenter server. NSX Manager gets group and user information as well as the relationship between them from each domain that it is registered with. NSX Manager also retrieves Active Directory credentials. You can apply security policies on an Active Directory domain and run queries to get information on virtual machines and applications accessed by users within an Active Directory domain.

Parameter Values for Registering or Updating a Domain

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Domain id. If you want to create a new domain, do not provide this value. Otherwise, the system will find an existing domain object by this ID and update it.</td>
<td>Required if updating existing domain</td>
</tr>
<tr>
<td>name</td>
<td>Domain name. This should be the domain's fully qualified name. If it's agent discovered, this will be the NetBIOS name, so you need to update it to FQN in order to support LDAP sync and event log reader.</td>
<td>Required if creating a new domain.</td>
</tr>
<tr>
<td>description</td>
<td>Domain description</td>
<td>Optional.</td>
</tr>
<tr>
<td>type</td>
<td>Domain type. Valid values include: AGENT_DISCOVERED, ACTIVE_DIRECTORY, SPECIAL (Do NOT modify SPECIAL domain). For LDAP sync and event log reader work, this need to be set to ACTIVE_DIRECTORY.</td>
<td>Optional. Default is ACTIVE_DIRECTORY.</td>
</tr>
<tr>
<td>netbiosName</td>
<td>NetBIOS name of domain. This is the domain's NetBIOS name. Normally Agent reported domain name is the NetBIOS name. Confirm from Windows domain settings.</td>
<td>Optional.</td>
</tr>
<tr>
<td>baseDn</td>
<td>Domain's Base DN (for LDAP sync). Base DN is required for LDAP Sync. If you have a domain like: w2k3.vshield.vmware.com, the base DN is very likely to be: DC=w2k3,DC=vshield,DC=vmware,DC=com. Another example is: domain name is: vs4.net, the base DN should be: DC=vs4,DC=net. You can use a LDAP client and connect to domain controller to find the domain's base DN.</td>
<td>Optional. Required for LDAP sync.</td>
</tr>
<tr>
<td>rootDn</td>
<td>LDAP Sync root DN. Specify where should LDAP sync start from LDAP tree. This could be an absolute path, for example: OU=Engineer,DC=vs4,DC=net, or a relative path (relative to Base DN), for example: OU=Engineer.</td>
<td>Optional.</td>
</tr>
</tbody>
</table>
### securityId

Domain's Security ID (SID). This should be filled by LDAP sync process, and should not need to be modified.

Optional.

### username

Domain's User name (Used for LDAP Sync and/or Event Log reader)

Optional.

### password

User password

Optional.

### eventLogUsername

Domain's event log reader username (will use above username if this is NULL)

Optional.

### eventLogPassword

Domain's event log reader password

Optional.

---

**POST /api/1.0/directory/updateDomain**

**Description:**
Register or update a domain with NSX Manager

**Request:**

**Body:** application/xml

```xml
<DirectoryDomain>
  <name>example.com</name>
  <netbiosName>Example</netbiosName>
  <username>Administrator</username>
  <password>xxx</password>
</DirectoryDomain>
```

---

**Retrieve LDAP Domains**

**GET /api/1.0/directory/listDomains**

**Description:**
Retrieve all agent discovered (or configured) LDAP domains.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<DirectoryDomains>
  <DirectoryDomain>
    <id>2</id>
    <name>vs4.net</name>
    <type>ActiveDirectory</type>
    <netbiosName>VS4</netbiosName>
    <username>Administrator</username>
    <baseDn>DC=vs4,DC=net</baseDn>
  </DirectoryDomain>
</DirectoryDomains>
```
Delete a Specific Domain

DELETE /api/1.0/directory/deleteDomain/{ID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>ID</th>
<th>Domain ID.</th>
</tr>
</thead>
</table>

**Description:**
Delete domain.

Create LDAP Server

POST /api/1.0/directory/updateLdapServer

**Description:**
Create LDAP server.

**Request:**
**Body:** application/xml

```xml
<LDAPServer>
  <domainId>4</domainId>
  <hostName>10.142.72.70</hostName>
  <enabled>true</enabled>
</LDAPServer>
```

Query LDAP Servers for a Domain

GET /api/1.0/directory/listLdapServersForDomain/{domainID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>domainID</th>
<th>Specified domain.</th>
</tr>
</thead>
</table>

**Description:**
Query LDAP servers for a domain.

Start LDAP Full Sync
PUT /api/1.0/directory/fullSync/{domainID}

URI Parameters:
| domainID               | (required)       | Specified domain.       |

Description:
Start LDAP full sync.

---

Start LDAP Delta Sync

PUT /api/1.0/directory/deltaSync/{domainID}

URI Parameters:
| domainID               | (required)       | Specified domain.       |

Description:
Start LDAP delta sync.

---

Delete LDAP Server

DELETE /api/1.0/directory/deleteLdapServer/{serverID}

URI Parameters:
| serverID               | (required)       | Specified LDAP server.       |

Description:
Delete LDAP server.

---

EventLog Server

POST /api/1.0/directory/updateEventLogServer

Description:
Create EventLog server.

Request:
Body: application/xml
Working With EventLog Servers for a Domain

GET /api/1.0/directory/listEventLogServersForDomain/{domainID}

URI Parameters:

<table>
<thead>
<tr>
<th>domainID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specified domain.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Query EventLog servers for a domain.

Delete EventLog Server

DELETE /api/1.0/directory/deleteEventLogServer/{serverID}

URI Parameters:

<table>
<thead>
<tr>
<th>serverID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specified EventLog server ID.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Delete EventLog server.
Working With Mapping Lists

Working With User to IP Mappings

GET /api/1.0/identity/userIpMapping

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>domainId</td>
<td>Filter results on specified domain ID. Use GET /api/1.0/directory/listDomains to retrieve all domain IDs.</td>
</tr>
<tr>
<td>userId</td>
<td>Filter results on specified user ID. Use GET /api/3.0/ai/user to retrieve all user IDs.</td>
</tr>
<tr>
<td>ip</td>
<td>Filter results on specified IP address.</td>
</tr>
<tr>
<td>time</td>
<td>Filter results on specified time. Specify time in format yyyy-MM-dd'T'HH:mm:ss. For example, 2018-12-08T11:26:21.</td>
</tr>
</tbody>
</table>

Description:
Query user-to-ip mapping list from database.

Working With Host to IP Mappings

GET /api/1.0/identity/hostIpMapping

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>domainId</td>
<td>Filter results on specified domain ID. Use GET /api/1.0/directory/listDomains to retrieve all domain IDs.</td>
</tr>
<tr>
<td>userId</td>
<td>Filter results on specified user ID. Use GET /api/3.0/ai/user to retrieve all user IDs.</td>
</tr>
<tr>
<td>ip</td>
<td>Filter results on specified IP address.</td>
</tr>
<tr>
<td>time</td>
<td>Filter results on specified time. Specify time in format yyyy-MM-dd'T'HH:mm:ss. For example, 2018-12-08T11:26:21.</td>
</tr>
</tbody>
</table>

Description:
Query host-to-ip mapping list from database.

Working With IP to User Mappings
GET /api/1.0/identity/ipToUserMapping

<table>
<thead>
<tr>
<th>Query Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipStringCsv (optional)</td>
<td>Filter on one or more IP addresses. Specify IPv4 IP addresses in a comma separated list.</td>
</tr>
<tr>
<td>startTime (optional)</td>
<td>Start of the time period of interest. Specify time in format yyyy-MM-dd'T'HH:mm:ss. For example, 2018-12-08T11:26:21.</td>
</tr>
<tr>
<td>endTime (optional)</td>
<td>End of the time period of interest. Specify time in format yyyy-MM-dd'T'HH:mm:ss. For example, 2018-12-08T11:26:21.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve set of users associated with a given set of IP addresses during a specified time period. Since more than one user can be associated with a single IP address during the specified time period, each IP address can be associated with zero or more (i.e a SET of) users.

---

**Working With User Domain Groups**

GET /api/1.0/identity/directoryGroupsForUser

<table>
<thead>
<tr>
<th>Query Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>loginName (optional)</td>
<td>Specify the Active Directory username.</td>
</tr>
<tr>
<td>domainName (optional)</td>
<td>Specify the full domain name (not the NetBIOS name).</td>
</tr>
</tbody>
</table>

**Description:**
Query set of Windows Domain Groups (AD Groups) to which the specified user belongs.

**Request:**
**Body:** application/xml

```xml
<basicinfolist>
  <basicinfo>
    <objectId>directory_group-36</objectId>
    <objectTypeName>DirectoryGroup</objectTypeName>
    <vsmUuid>42337BA1-12CA-32EB-7616-98503466FE1B</vsmUuid>
    <nodeId>522b6528-be75-46c2-8ab5-8b9bbb9c7712</nodeId>
    <revision>0</revision>
    <type>
      <typeName>DirectoryGroup</typeName>
    </type>
    <name>AD-NSBU-Solution-Architects</name>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </basicinfo>
  <basicinfo>
    <objectId>directory_group-6</objectId>
    <objectTypeName>DirectoryGroup</objectTypeName>
  </basicinfo>
</basicinfolist>
```
Working With a Specific Static User Mapping

**POST /api/1.0/identity/staticUserMapping/{userID}/{IP}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>userID</td>
<td>User ID</td>
</tr>
<tr>
<td>IP</td>
<td>IP address</td>
</tr>
</tbody>
</table>

**Description:**
Create static user IP mapping.

---

Working With Static User Mappings

**GET /api/1.0/identity/staticUserMappings**

**Description:**
Query static user IP mapping list.

Working With Static User IP Mappings for a Specific User

GET /api/1.0/identity/staticUserMappingsbyUser/{userID}

URI Parameters:

<table>
<thead>
<tr>
<th>userID</th>
<th>User ID</th>
</tr>
</thead>
</table>

Description:
Query static user IP mapping for specified user.

DELETE /api/1.0/identity/staticUserMappingsbyUser/{userID}

URI Parameters:

<table>
<thead>
<tr>
<th>userID</th>
<th>User ID</th>
</tr>
</thead>
</table>

Description:
Delete static user IP mapping for specified user.

Working With Static User IP Mappings for a Specific IP

GET /api/1.0/identity/staticUserMappingsbyIP/{IP}

URI Parameters:

<table>
<thead>
<tr>
<th>IP</th>
<th>IP address</th>
</tr>
</thead>
</table>

Description:
Query static user IP mapping for specified IP.

DELETE /api/1.0/identity/staticUserMappingsbyIP/{IP}

URI Parameters:

<table>
<thead>
<tr>
<th>IP</th>
<th>IP address</th>
</tr>
</thead>
</table>

Description:
Delete static user IP mapping for specified IP.
Working With Activity Monitoring Syslog Support

Enable Syslog Support

POST /api/1.0/sam/syslog/enable

Description:
Enable syslog support.

Disable Syslog Support

POST /api/1.0/sam/syslog/disable

Description:
Disable syslog support.
Working With Solution Integrations

Working With Agents on a Specific Host

GET /api/2.0/si/host/{hostID}/agents

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostID</td>
<td>Specified host</td>
</tr>
</tbody>
</table>

Description:
Retrieves all agents on the specified host. The response body contains agent IDs for each agent, which you can use to retrieve details about that agent.

Responses:
Status Code: 200
Body: application/xml

```xml
<fabricAgents>
  <agent>
    <agentId>nsxmgragent-1</agentId>
    <agentName>agent name</agentName>
    <serviceId>service-6</serviceId>
    <serviceName>EndpointService</serviceName>
    <operationalStatus>ENABLED</operationalStatus>
    <progressStatus>IN_PROGRESS</progressStatus>
    <vmId>vm-92</vmId>
    <host>host-10</host>
    <allocatedIpAddress>
      <id>2</id>
      <ipAddress>10.112.5.182</ipAddress>
      <gateway>10.112.5.253</gateway>
      <prefixLength>23</prefixLength>
      <dnsServer1>10.112.0.1</dnsServer1>
      <dnsServer2>10.112.0.2</dnsServer2>
      <dnsSuffix></dnsSuffix>
      <subnetId>subnet-1</subnetId>
    </allocatedIpAddress>
    <serviceStatus>
      <status>WARNING</status>
      <errorId>partner_error</errorId>
      <errorDescription>partner_error</errorDescription>
    </serviceStatus>
    <hostInfo>
      <objectId>host-10</objectId>
      <objectTypeName>HostSystem</objectTypeName>
      <nsxmgrUuid>420369CD-2311-F1F7-D4AA-1158EA688E54</nsxmgrUuid>
      <revision>1</revision>
      <type>
        <typeName>HostSystem</typeName>
      </type>
      <name>10.112.5.173</name>
      <scope>
```

Working With a Specific Agent

GET /api/2.0/si/agent/{agentID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>agentID</td>
<td>Specified agent</td>
</tr>
</tbody>
</table>

Description:
Retrieve agent (host components and appliances) details.

Responses:

Status Code: 200

Body: application/xml
Working With Agents on a Specific Deployment

GET /api/2.0/si/deployment/{deploymentunitID}/agents

URI Parameters:

| deploymentunitID  | (required) | Specified deployment. |

Description:
Retrieve all agents for the specified deployment.

Responses:
Status Code: 200

Body: application/xml
Working With Conflicting Agencies

When the NSX Manager database backup is restored to an older point in time, it is possible that deployment units for some EAM Agencies are missing. These methods help the administrator identify such EAM Agencies and take appropriate action.

GET /api/2.0/si/fabric/sync/conflicts

Description:
Retrieve conflicting deployment units and EAM agencies, if any, and the allowed operations on them.

Responses:
Status Code: 200
Body: application/xml
PUT /api/2.0/si/fabric-sync/conflicts

Description:
Create deployment units for conflicting EAM Agencies, delete conflicting EAM agencies, or delete deployment units for conflicting EAM agencies.

Create deployment units for conflicting EAM agencies

<conflictResolverInfo>
<agencyAction>RESTORE</agencyAction>
</conflictResolverInfo>

Delete conflicting EAM agencies

<conflictResolverInfo>
<agencyAction>DELETE</agencyAction>
</conflictResolverInfo>

Delete deployment units for conflicting EAM agencies

<conflictResolverInfo>
<deploymentUnitAction>DELETE</deploymentUnitAction>
</conflictResolverInfo>

Request:
Body: application/xml

<conflictResolverInfo>
<agencyAction></agencyAction>
</conflictResolverInfo>
Working With MAC Address Set Grouping Objects

You can create a MAC address set on the specified scope. On success, the API returns a string identifier for the new MAC address set.

Working With a Specific MAC Address Set

GET /api/2.0/services/macset/{macsetId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>macsetId</td>
<td>(required)</td>
<td>Specified MAC address set ID (can be retrieved by listing the MAC address set on a scope).</td>
</tr>
</tbody>
</table>

Description:
Retrieve details about a MAC address set.

Responses:
Status Code: 200
Body: application/xml

```xml
<macset>
  <objectId>macset-1</objectId>
  <objectTypeName>MACSet</objectTypeName>
  <vsmUuid>4226CACF-0558-AFF3-5D92-279B201C40E2</vsmUuid>
  <nodeId>72ee9ab-bb75-49ba-a782-d7dffedd180a</nodeId>
  <revision>4</revision>
  <type>
    <typeName>MACSet</typeName>
  </type>
  <name>system-generated-broadcast-macset</name>
  <scope>
    <id>globalroot-0</id>
    <objectTypeName>GlobalRoot</objectTypeName>
    <name>Global</name>
  </scope>
  <clientHandle/>
  <extendedAttributes>
    <extendedAttribute>
      <name>isReadOnly</name>
      <value>true</value>
    </extendedAttribute>
    <extendedAttribute>
      <name>isHidden</name>
      <value>true</value>
    </extendedAttribute>
    <extendedAttribute>
      <name>facadeHidden</name>
      <value>true</value>
    </extendedAttribute>
  </extendedAttributes>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <inheritanceAllowed>false</inheritanceAllowed>
</macset>
```
<macset>
  <objectId></objectId>
  <type>
    <typeName></typeName>
  </type>
  <description></description>
  <name></name>
  <revision></revision>
  <objectTypeName></objectTypeName>
  <value></value>
</macset>

PUT /api/2.0/services/macset/{macsetId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>macsetId</td>
<td>Specified MAC address set ID (can be retrieved by listing the MAC address set on a scope).</td>
</tr>
</tbody>
</table>

Description:
Modify an existing MAC address set.

Request:
Body: application/xml

DELETE /api/2.0/services/macset/{macsetId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>macsetId</td>
<td>Specified MAC address set ID (can be retrieved by listing the MAC address set on a scope).</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>force (optional)</td>
<td>Indicates forced or unforced delete. With forced delete, the object is deleted even if used in other places such as firewall rules, causing invalid referrals. For unforced delete, the object is deleted only if it is no used by other configurations; otherwise the delete fails.</td>
</tr>
</tbody>
</table>

Description:
Delete a MAC address set.

---

Working With MAC Address Sets on a Specific Scope

GET /api/2.0/services/macset/scope/{scopeId}
URI Parameters:

| scopeId          | (required) | Can be `globalroot-0`, `universalroot-0` or `datacenterId` in upgrade use cases. |

Description:
List MAC address sets on the specified scope.

Responses:

Status Code: 200
Body: `application/xml`

```xml
<list>
  <macset>
    <objectId>macset-1</objectId>
    <objectTypeName>MACSet</objectTypeName>
    <vsmUuid>4226CACF-0558-AFF3-5D92-279B201C40E2</vsmUuid>
    <nodeId>72ee9ab-bb75-49ba-a782-d7dffedd180a</nodeId>
    <revision>4</revision>
    <type>
      <typeName>MACSet</typeName>
    </type>
    <name>system-generated-broadcast-macset</name>
    <scope>
      <id>globalroot-0</id>
      <objectTypeName>GlobalRoot</objectTypeName>
      <name>Global</name>
    </scope>
    <clientHandle></clientHandle>
    <extendedAttributes>
      <extendedAttribute>
        <name>isReadOnly</name>
        <value>true</value>
      </extendedAttribute>
      <extendedAttribute>
        <name>isHidden</name>
        <value>true</value>
      </extendedAttribute>
      <extendedAttribute>
        <name>facadeHidden</name>
        <value>true</value>
      </extendedAttribute>
      <isUniversal>false</isUniversal>
      <universalRevision>0</universalRevision>
      <inheritanceAllowed>false</inheritanceAllowed>
    </extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
    <inheritanceAllowed>false</inheritanceAllowed>
    <value>FF:FF:FF:FF:FF:FF</value>
  </macset>
</list>
```

POST /api/2.0/services/macset/scope/{scopeId}
Create a MAC address set on the specified scope.

The value parameter can include a single MAC identifier or a comma separated set of MAC identifiers. Universal MAC address sets are read-only from secondary managers.

**Request:**

**Body:** application/xml

```xml
<macset>
  <objectId></objectId>
  <type>
    <typeName></typeName>
  </type>
  <description></description>
  <name></name>
  <revision></revision>
  <objectTypeName></objectTypeName>
  <value></value>
</macset>
```
Working With ESX Agent Manager

vSphere ESX Agent Manager (EAM) automates the process of deploying and managing NSX networking and security services.

Working With EAM Status

GET /api/2.0/eam/status

Description:
Retrieve EAM status from vCenter.
You can verify the status is UP before proceeding with an NSX install or upgrade.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.5</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<eamStatusInfo>
<status>UP</status>
<vcName>vcsa-01a.corp.local</vcName>
<eamServiceName>VMware ESX Agent Manager</eamServiceName>
</eamStatusInfo>
```
Working With Alarms

Alarms are notifications that are activated in response to an event, a set of conditions, or the state of an object. Alarms, along with other alerts, are displayed on the NSX Dashboard and other screens on the vSphere Web Client UI.

See “Alarms” in the NSX Logging and System Events Guide for more information.

Generally, an alarm gets automatically deleted by the system when the error condition is rectified. Some alarms are not automatically cleared on a configuration update. Once the issue is resolved, you have to clear the alarms manually.

Alarm Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>resolutionAttempted</td>
<td>Was resolution of the alarm was attempted?</td>
<td>true or false.</td>
</tr>
<tr>
<td>resolvable</td>
<td>Can the alarm be resolved?</td>
<td>true or false</td>
</tr>
<tr>
<td>alarmId</td>
<td>ID of the alarm.</td>
<td></td>
</tr>
<tr>
<td>alarmCode</td>
<td>Event code which uniquely identifies the system event.</td>
<td>For example, 79965.</td>
</tr>
<tr>
<td>alarmSource</td>
<td>The domain object identifier of the source where you can resolve the reported alarm.</td>
<td>For example, edge-3.</td>
</tr>
<tr>
<td>totalCount</td>
<td>The total number of unresolved alarms.</td>
<td></td>
</tr>
</tbody>
</table>

GET /api/2.0-services/systemalarms

Query Parameters:

- sortBy (optional): Parameter to sort by. Default is eventId.
- pageSize (optional): The number of results to return.
- sortOrderAscending (optional): Set to true to sort ascending or false to sort descending. Default is false.
- startIndex (optional): The starting point for returning results.

Description:
Retrieve all unresolved alarms on NSX Manager.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200

Body: application/xml

```xml
<pagedSystemAlarmList>
<dataPage>
  <pagingInfo>
    <pageSize>256</pageSize>
    <startIndex>0</startIndex>
    <totalCount>2</totalCount>
  </pagingInfo>
</dataPage>
</pagedSystemAlarmList>
```
<systemAlarm>
  <eventId>1390</eventId>
  <timestamp>1501114563913</timestamp>
  <severity>High</severity>
  <eventSource>edge-5</eventSource>
  <eventCode>130033</eventCode>
  <message>NSX Edge VM (vmId : vm-435) is not responding to NSX manager health check. Please check NSX manager logs for details.</message>
  <module>NSX Edge Health Check</module>
  <objectId>edge-5</objectId>
  <reporterName>vShield Manager</reporterName>
  <reporterType>4</reporterType>
  <sourceType>4</sourceType>
  <isResourceUniversal>false</isResourceUniversal>
  <eventMetadata>
    <data>
      <key>edgeId</key>
      <value>edge-5</value>
    </data>
    <data>
      <key>edgeVmVcUUId</key>
      <value>502ecb37-306e-8cf9-4919-16bdf053bd06</value>
    </data>
    <data>
      <key>edgeVmName</key>
      <value>Perimeter-Gateway-02-0</value>
    </data>
    <data>
      <key>edgeVmId</key>
      <value>vm-435</value>
    </data>
  </eventMetadata>
  <resolutionAttempted>false</resolutionAttempted>
  <resolvable>true</resolvable>
  <alarmId>1390</alarmId>
  <alarmCode>130033</alarmCode>
  <alarmSource>edge-5</alarmSource>
  <target>
    <objectId>vm-435</objectId>
    <objectTypeName>VirtualMachine</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>13</revision>
    <type>
      <typeName>VirtualMachine</typeName>
    </type>
    <name>Perimeter-Gateway-02-0</name>
    <scope>
      <id>domain-c41</id>
      <objectTypeName>ClusterComputeResource</objectTypeName>
      <name>Management &amp; Edge Cluster</name>
    </scope>
  </target>
  <alarmBeingResolved>false</alarmBeingResolved>
  <alarmMetadata>
<data>
  <key>edgeId</key>
  <value>edge-5</value>
</data>
<data>
  <key>edgeVmVcUUId</key>
  <value>502ecb37-306e-8cf9-4919-16bdf053bd06</value>
</data>
<data>
  <key>edgeVmName</key>
  <value>Perimeter-Gateway-02-0</value>
</data>
<data>
  <key>edgeVmId</key>
  <value>vm-435</value>
</data>
<alarmMetadata>
</systemAlarm>
<systemAlarm>
  <eventId>1388</eventId>
  <timestamp>1501114563865</timestamp>
  <severity>High</severity>
  <eventSource>edge-5</eventSource>
  <eventCode>130027</eventCode>
  <message>NSX Edge VM (vmId : vm-435) is powered off. Please use vsphere client to power on Edge VM</message>
  <module>NSX Edge Communication Agent</module>
  <objectId>edge-5</objectId>
  <reporterName>vShield Manager</reporterName>
  <reporterType>4</reporterType>
  <sourceType>4</sourceType>
  <isResourceUniversal>false</isResourceUniversal>
  <eventMetadata>
    <data>
      <key>edgeVmVcUUId</key>
      <value>502ecb37-306e-8cf9-4919-16bdf053bd06</value>
    </data>
    <eventMetadata>
      <resolutionAttempted>false</resolutionAttempted>
      <resolvable>true</resolvable>
      <alarmId>1388</alarmId>
      <alarmCode>130027</alarmCode>
      <alarmSource>edge-5</alarmSource>
      <target>
        <objectId>vm-435</objectId>
        <objectType>VirtualMachine</objectType>
        <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
        <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
        <revision>13</revision>
        <type>
          <typeName>VirtualMachine</typeName>
        </type>
        <name>Perimeter-Gateway-02-0</name>
        <scope>
          <id>domain-c41</id>
          <objectType>ClusterComputeResource</objectType>
          <name>Management & Edge Cluster</name>
        </scope>
      </target>
    </eventMetadata>
  </systemAlarm>
Working With a Specific System Alarm

You can view and resolve alarms by alarm ID.

GET /api/2.0/services/systemalarms/{alarmId}

URI Parameters:

| alarmId | Alarm ID. |

Description:
Retrieve information about the specified alarm. Both resolved and unresolved alarms can be retrieved.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

<systemAlarm>
  <eventId>262</eventId>
  <timestamp>1479121141922</timestamp>
  <severity>High</severity>
  <eventSource>Policy</eventSource>
  <eventCode>300006</eventCode>
  <message>Service Composer is out of sync due to failure on sync on reboot operation</message>
  <module>Policy</module>
  <objectId>servicecomposer</objectId>
  <reporterName>NSX Manager</reporterName>
  <reporterType>1</reporterType>
  <sourceType>1</sourceType>
  <displayName>Service Composer</displayName>
  <isResourceUniversal>false</isResourceUniversal>
  <eventMetadata>
  </eventMetadata>
  <resolutionAttempted>true</resolutionAttempted>
  <resolvable>true</resolvable>
  <alarmId>262</alarmId>
  <alarmCode>300006</alarmCode>
</systemAlarm>
POST /api/2.0/services/systemalarms/{alarmId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>alarmId</th>
<th>Alarm ID.</th>
</tr>
</thead>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>action</th>
<th>Use action=resolve to resolve the specified alarm.</th>
</tr>
</thead>
</table>

**Description:**
Resolve the specified alarm.

System alarms resolve automatically when the cause of the alarm is resolved. For example, if an NSX Edge appliance is powered off, this triggers a alarm. If you power the NSX Edge appliance back on, the alarm resolves. If however, you delete the NSX Edge appliance, the alarm persists, because the alarm cause was never resolved. In this case, you might want to manually resolve the alarm. Resolving the alarm will clear it from the NSX Dashboard.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>
Working With Alarms from a Specific Source

You can view and resolve alarms from a specific source.

GET /api/2.0/services/alarms/{sourceId}

| URI Parameters: |
|-----------------|-------------------------------------------------|
| sourceId        | ID of the object for which you want to manage alarms.
| sourceId        | sourceId can be the ID of a cluster, host, resource pool, security group, or edge. |

**Description:**
Retrive all alarms from the specified source.

POST /api/2.0/services/alarms/{sourceId}

| URI Parameters: |
|-----------------|-------------------------------------------------|
| sourceId        | ID of the object for which you want to manage alarms.
| sourceId        | sourceId can be the ID of a cluster, host, resource pool, security group, or edge. |

| Query Parameters: |
|-------------------|-------------------------------------------------|
| action            | Use action=resolve to resolve alarms. |

**Description:**
Resolve all alarms for the specified source.

Alarms will resolve automatically when the cause of the alarm is resolved. For example, if an NSX Edge appliance is powered off, this will trigger an alarm. If you power the NSX Edge appliance back on, the alarm will resolve. If however, you delete the NSX Edge appliance, the alarm will persist, because the alarm cause was never resolved. In this case, you may want to manually resolve the alarm. Resolving the alarms will clear them from the NSX Dashboard.

Use GET /api/2.0/services/alarms/{sourceId} to retrieve the list of alarms for the source. Use this response as the request body for the POST call.

**Request:**
**Body:** application/xml

```
<systemAlarms>
  <systemAlarm>
    <eventId>79965</eventId>
    <timestamp>148556529744</timestamp>
    <severity>High</severity>
    <eventSource>edge-3</eventSource>
    <eventCode>130027</eventCode>
    <message>NSX Edge VM (vmId : vm-430) is powered off. Please use vsphere client to power on Edge VM</message>
    <module>NSX Edge Communication Agent</module>
    <objectId>edge-3</objectId>
    <reporterName>vShield Manager</reporterName>
    <reporterType>4</reporterType>
    <sourceType>4</sourceType>
    <isResourceUniversal>false</isResourceUniversal>
    <eventMetadata>
```

---

[Image 490x802 to 590x837]
<data>
  <key>edgeVmVcUUId</key>
  <value>502e05c2-380f-998c-35ec-1f48991fe7e0</value>
</data>
</eventMetadata>
<resolutionAttempted>false</resolutionAttempted>
<resolvable>true</resolvable>
<alarmId>79965</alarmId>
<alarmCode>130027</alarmCode>
<alarmSource>edge-3</alarmSource>
<target>
  <objectId>vm-430</objectId>
  <objectTypeName>VirtualMachine</objectTypeName>
  <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
  <nodeId>916287b3-761d-430b-8ab2-83878de3e7f</nodeId>
  <revision>18</revision>
  <type>
    <typeName>VirtualMachine</typeName>
  </type>
  <name>Perimeter-Gateway-01-0</name>
  <scope>
    <id>domain-c41</id>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <name>Management & Edge Cluster</name>
  </scope>
</target>
<alarmBeingResolved>false</alarmBeingResolved>
<alarmMetadata>
  <data>
    <key>edgeVmVcUUId</key>
    <value>502e05c2-380f-998c-35ec-1f48991fe7e0</value>
  </data>
</alarmMetadata>
</systemAlarm>
</systemAlarm>
<eventId>79967</eventId>
<timestamp>1485556529774</timestamp>
<severity>High</severity>
<eventSource>edge-3</eventSource>
<eventCode>130033</eventCode>
<message>NSX Edge VM (vmId : vm-430) is not responding to NSX manager health check. Please check NSX manager logs for details.</message>
<module>NSX Edge Health Check</module>
<objectId>edge-3</objectId>
<reporterName>vShield Manager</reporterName>
<reporterType>4</reporterType>
<sourceType>4</sourceType>
<isResourceUniversal>false</isResourceUniversal>
<eventMetadata>
  <data>
    <key>edgeVmVcUUId</key>
    <value>502e05c2-380f-998c-35ec-1f48991fe7e0</value>
  </data>
</eventMetadata>
<key>edgeVmName</key>
  <value>Perimeter-Gateway-01-0</value>
</data>
<data>
  <key>edgeVmId</key>
  <value>vm-430</value>
</data>
</eventMetadata>
<resolutionAttempted>false</resolutionAttempted>
<resolvable>true</resolvable>
<alarmId>79967</alarmId>
<alarmCode>130033</alarmCode>
<alarmSource>edge-3</alarmSource>
<target>
  <objectId>vm-430</objectId>
  <objectTypeName>VirtualMachine</objectTypeName>
  <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
  <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
  <revision>18</revision>
  <type>
    <typeName>VirtualMachine</typeName>
  </type>
  <name>Perimeter-Gateway-01-0</name>
  <scope>
    <id>domain-c41</id>
    <objectTypeName>ClusterComputeResource</objectTypeName>
    <name>Management &amp; Edge Cluster</name>
  </scope>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
</target>
<alarmBeingResolved>false</alarmBeingResolved>
<alarmMetadata>
  <data>
    <key>edgeVmVcUUId</key>
    <value>502e05c2-380f-998c-35ec-1f48991fe7e0</value>
  </data>
  <data>
    <key>edgeId</key>
    <value>edge-3</value>
  </data>
  <data>
    <key>edgeVmName</key>
    <value>Perimeter-Gateway-01-0</value>
  </data>
  <data>
    <key>edgeVmId</key>
    <value>vm-430</value>
  </data>
</alarmMetadata>
</systemAlarm>
</systemAlarms>
Working With the Task Framework

Working with filtering criteria and paging information for jobs on the task framework.

GET /api/2.0/services/taskservice/job

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>startIndex (optional)</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pageSize (optional)</td>
<td>The number of results to return.</td>
</tr>
<tr>
<td>sortBy (optional)</td>
<td>Always sorted by &quot;startTime&quot;</td>
</tr>
<tr>
<td>sortOrderAscending (optional)</td>
<td>Sort in ascending order of start time (true/false)</td>
</tr>
</tbody>
</table>

Description:
Query job instances by criterion.

Working With a Specific Job Instance

GET /api/2.0/services/taskservice/job/{jobId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>jobId (required)</td>
<td>Specified job ID.</td>
</tr>
</tbody>
</table>

Description:
Retrieve all job instances for the specified job ID.
Working With Guest Introspection and Third-party Endpoint Protection (Anti-virus) Solutions

About Guest Introspection and Endpoint Protection Solutions

VMware's Guest Introspection Service enables vendors to deliver an introspection-based, endpoint protection (anti-virus) solution that uses the hypervisor to scan guest virtual machines from the outside, with only a thin agent on each guest virtual machine.

Version Compatibility

Note: The management APIs listed in this section are to be used only with partner endpoint protection solutions that were developed with EPSec Partner Program 3.0 or earlier (for vShield 5.5 or earlier). These partner solutions are also supported on NSX 6.0 and need the APIs listed below. These APIs should not be used with partner solutions developed specifically for NSX 6.0 or later, as these newer solutions automate the registration and deployment process by using the new features introduced in NSX. Using these with newer NSX 6.0 based solutions could result in loss of features.

Register a Solution

To register a third-party solution with Guest Introspection, clients can use four REST calls to do the following:

1. Register the vendor.
2. Register one or more solutions.
3. Set the solution IP address and port (for all hosts).
4. Activate registered solutions per host.

Note: Steps 1 through 3 need to be performed once per solution. Step 4 needs to be performed for each host.

Unregister a Solution

To unregister a solution, clients perform these steps in reverse:

1. Deactivate solutions per host.
2. Unset a solution's IP address and port.
3. Unregister solutions.
4. Unregister the vendor.

Updating Registration Information

To update registration information for a vendor or solution, clients must:

1. Unregister the vendor or solution.
2. Reregister the vendor or solution.

Register a Vendor and Solution with Guest Introspection

POST /api/2.0/endpointsecurity/registration
Description:
Register the vendor of an endpoint protection solution. Specify the following parameters in the request.

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>vendorId</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
<tr>
<td>vendorTitle</td>
<td>Vendor-specified title.</td>
</tr>
<tr>
<td>vendorDescription</td>
<td>Vendor-specified description.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<VendorInfo>
  <id>vendorId</id>
  <title>vendorTitle</title>
  <description>vendorDescription</description>
</VendorInfo>
```

Working With Registered Guest Introspection Vendors

GET /api/2.0/endpointsecurity/registration/vendors

Description:
Retrieve the list of all registered Guest Introspection vendors.

Working With Guest Introspection Vendors and Endpoint Protection Solutions

GET /api/2.0/endpointsecurity/registration/{vendorID}

URI Parameters:

| vendorID (required) | VMware-assigned ID for the vendor. |

Description:
Retrieve registration information for a Guest Introspection vendor.

POST /api/2.0/endpointsecurity/registration/{vendorID}

URI Parameters:

| vendorID (required) | VMware-assigned ID for the vendor. |

Description:
Register an endpoint protection solution. Specify the following parameters in the request.
<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>solutionAltitude</td>
<td>VMware-assigned altitude for the solution. <em>Altitude</em> is a number that VMware assigns to uniquely identify the solution. The altitude describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
<tr>
<td>solutionTitle</td>
<td>Vendor-specified title for the solution.</td>
</tr>
<tr>
<td>solutionDescription</td>
<td>Vendor-specified description of the solution.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<SolutionInfo>
  <altitude>solutionAltitude</altitude>
  <title>solutionTitle</title>
  <description>solutionDescription</description>
</SolutionInfo>
```

**DELETE /api/2.0/endpointsecurity/registration/{vendorID}**

**URI Parameters:**

| vendorID (required) | VMware-assigned ID for the vendor. |

**Description:**

Unregister a Guest Introspection vendor.

### Information About Registered Endpoint Protection Solutions

**GET /api/2.0/endpointsecurity/registration/{vendorID}/solutions**

**URI Parameters:**

| vendorID (required) | VMware-assigned ID for the vendor. |

**Description:**

Get registration information for all endpoint protection solutions for a Guest Introspection vendor.

### Endpoint Protection Solution Registration Information

**GET /api/2.0/endpointsecurity/registration/{vendorID}/{altitude}**

**URI Parameters:**
<table>
<thead>
<tr>
<th>field</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>altitude</td>
<td>VMware-assigned number that uniquely identifies a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
</tbody>
</table>

**Description:**
Get registration information for an endpoint protection solution.

**DELETE /api/2.0/endpointsecurity/registration/{vendorID}/{altitude}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>field</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>altitude</td>
<td>VMware-assigned number that uniquely identifies a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
</tbody>
</table>

**Description:**
Unregister an endpoint protection solution.

---

**IP Address and Port For an Endpoint Protection Solution**

To change the location of an endpoint protection solution:

1. Deactivate all security virtual machines.
2. Change the location.
3. Reactivate all security virtual machines.

**GET /api/2.0/endpointsecurity/registration/{vendorID}/{altitude}/location**

**URI Parameters:**

<table>
<thead>
<tr>
<th>field</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>altitude</td>
<td>VMware-assigned number that uniquely identifies a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
</tbody>
</table>

**Description:**
Get the IP address and port on the vNIC host for an endpoint protection solution.

**POST /api/2.0/endpointsecurity/registration/{vendorID}/{altitude}/location**

**URI Parameters:**

<table>
<thead>
<tr>
<th>field</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>altitude</td>
<td>VMware-assigned number that uniquely identifies a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
</tbody>
</table>
Description:
Set the IP address and port on the vNIC host for an endpoint protection solution.

Request:
Body: application/xml

```xml
<LocationInfo>
  <ip>solutionIpAddress</ip>
  <port>solutionIPPort</port>
</LocationInfo>
```

DELETE /api/2.0/endpointsecurity/registration/{vendorID}/{altitude}/location

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>altitude</td>
<td>VMware-assigned number that uniquely identifies a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
</tbody>
</table>

Description:
Unset the IP address and port for an endpoint protection solution.

---

**Activate an Endpoint Protection Solution**

You can activate a solution that has been registered and located.

GET /api/2.0/endpointsecurity/activation

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostId</td>
<td>Host ID associated with activated security VMs.</td>
</tr>
</tbody>
</table>

Description:
Retrieve activation information for all activated security VMs on the specified host.

Responses:
Status Code: 200
Body: application/xml

```xml
<ActivatedSVMs>
  <ActivationInfo>
    <moid>vm-819</moid>
    <hostMoid>host-9</hostMoid>
    <vmName>VMWARE-Solution-Name-XXX.XXX.XXX.XXX</vmName>
    <hostName>10.24.130.174</hostName>
  </ActivationInfo>
</ActivatedSVMs>
```
Activated Security Virtual Machines

**GET /api/2.0/endpointsecurity/activation/{vendorID}/{solutionID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
<tr>
<td>solutionID</td>
<td>solution ID for the endpoint protection solution.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve a list of activated security VMs for an endpoint protection solution.

**Responses:**

- **Status Code: 200**
- **Body:** application/xml

```xml
<ActivatedSVMs>
  <ActivationInfo>
    <moid>vm-819</moid>
    <hostMoid>host-9</hostMoid>
    <vmName>VMWARE-Solution-Name-XXX.XXX.XXX.XXX</vmName>
    <hostName>10.24.130.174</hostName>
    <clusterName>Dev</clusterName>
    <dcName>dev</dcName>
    <vendorId>VMWARE</vendorId>
    <solutionId>6341068275337723904</solutionId>
  </ActivationInfo>
  ***
</ActivatedSVMs>
```

Activate a Registered Endpoint Protection Solution

**POST /api/2.0/endpointsecurity/activation/{vendorID}/{altitude}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vendorID</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
</tbody>
</table>
### altitude

VMware-assigned number to uniquely identify a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.

### Description:
Activate an endpoint protection solution that has been registered and located. Specify the following parameter in the request body.

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>svmMoid</td>
<td>Managed object ID of the virtual machine of the activated endpoint protection solution.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<ActivationInfo>
  <moid>svmMoid</moid>
</ActivationInfo>
```

---

### Working With Solution Activation Status

GET /api/2.0/endpointsecurity/activation/{vendorID}/{altitude}/{moid}

**URI Parameters:**

<table>
<thead>
<tr>
<th>moid (required)</th>
<th>Managed object reference of a VM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>vendorID (required)</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
<tr>
<td>altitude</td>
<td>VMware-assigned number to uniquely identify a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve the endpoint protection solution activation status, either true (activated) or false (not activated).

DELETE /api/2.0/endpointsecurity/activation/{vendorID}/{altitude}/{moid}

**URI Parameters:**

<table>
<thead>
<tr>
<th>moid (required)</th>
<th>Managed object reference of a VM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>vendorID (required)</td>
<td>VMware-assigned ID for the vendor.</td>
</tr>
<tr>
<td>altitude</td>
<td>VMware-assigned number to uniquely identify a solution. Describes the type of solution and the order in which the solution receives events relative to other solutions on the same host.</td>
</tr>
</tbody>
</table>

**Description:**
Deactivate an endpoint protection solution on a host.

Working With Guest Introspection SVM Health Thresholds

System events are generated when the Guest Introspection service VM memory and CPU usage reach the defined thresholds.

GET /api/2.0/endpointsecurity/usvmstats/usvmhealththresholds

Description:
Retrieve Guest Introspection service VM CPU and memory usage thresholds.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.5</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200
Success

Body: application/xml

```xml
<UsvmHealthStats>
  <memThreshold>75</memThreshold>
  <cpuThreshold>75</cpuThreshold>
</UsvmHealthStats>
```

PUT /api/2.0/endpointsecurity/usvmstats/usvmhealththresholds

Description:
Update Guest Introspection service VM CPU and memory usage thresholds.

Valid values are 0-100. The default value is 75.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.5</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<UsvmHealthStats>
  <memThreshold>70</memThreshold>
  <cpuThreshold>70</cpuThreshold>
</UsvmHealthStats>
```
Responses:
Status Code: 200
Success

Status Code: 400
Bad Request
Working With Distributed Firewall

Default Firewall Configuration

GET /api/4.0/firewall/globalroot-0/defaultconfig

Description:
Retrieve the default firewall configuration.

The output of this method can be used to restore the firewall config back to default. For example, to replace the layer 2 or layer 3 default section, use the relevant default section from the GET /api/4.0/firewall/globalroot-0/defaultconfig response body to create the request body of PUT /api/4.0/firewall/globalroot-0/config/layer2sections|layer3sections/{sectionId}.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Distributed Firewall Rules Configuration

The following table lists the elements that can be used in firewall rules.

<table>
<thead>
<tr>
<th>Element</th>
<th>Keyword for API</th>
<th>Used in</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Edges</td>
<td>ALL_EDGES</td>
<td>appliedTo</td>
</tr>
<tr>
<td>application</td>
<td>Application</td>
<td>service</td>
</tr>
<tr>
<td>application group</td>
<td>ApplicationGroup</td>
<td>service</td>
</tr>
<tr>
<td>cluster</td>
<td>compute resource</td>
<td>ClusterComputeResource appliedTo</td>
</tr>
<tr>
<td>datacenter</td>
<td>Datacenter</td>
<td>source/destination</td>
</tr>
<tr>
<td>distributed firewall</td>
<td>DISTRIBUTED_FIREWALL</td>
<td>appliedTo</td>
</tr>
<tr>
<td>distributed virtual port group</td>
<td>DistributedVirtualPortgroup</td>
<td>source/destination</td>
</tr>
<tr>
<td>Edge ID</td>
<td>Edge</td>
<td>appliedTo</td>
</tr>
<tr>
<td>global root</td>
<td>GlobalRoot</td>
<td>source/destination</td>
</tr>
<tr>
<td>host</td>
<td>HostSystem</td>
<td>appliedTo</td>
</tr>
<tr>
<td>IP set</td>
<td>IPSet</td>
<td>source/destination</td>
</tr>
<tr>
<td>IPv4 addresses</td>
<td>ipv4Address</td>
<td>source/destination</td>
</tr>
<tr>
<td>IPv6 addresses</td>
<td>ipv6Address</td>
<td>source/destination</td>
</tr>
<tr>
<td>logical switch</td>
<td>VirtualWire</td>
<td>source/destination</td>
</tr>
<tr>
<td>MAC address set</td>
<td>MACSet</td>
<td>source/destination</td>
</tr>
</tbody>
</table>
GET /api/4.0/firewall/globalroot-0/config

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleType (optional)</td>
<td>ruleType can be LAYER3, LAYER2, L3REDIRECT. ruleType is mandatory if other query parameters are sent. Note: Filtering is not supported for layer 2 rules, so specifying LAYER2 will return all rule types.</td>
</tr>
<tr>
<td>source (optional)</td>
<td>source can contain IPv4/v6 address or vm-id.</td>
</tr>
<tr>
<td>destination (optional)</td>
<td>destination can contain IPv4/v6 address or vm-id.</td>
</tr>
<tr>
<td>ruleId (optional)</td>
<td>filter by ruleId</td>
</tr>
<tr>
<td>comment (optional)</td>
<td>comment can contain any portion of the comment entered for the rules. Search is case insensitive.</td>
</tr>
<tr>
<td>name (optional)</td>
<td>name can contain any portion of the rule name entered for the rules. Search is case insensitive.</td>
</tr>
<tr>
<td>siProfile (optional)</td>
<td>siProfile can contain any portion of the service profile name associated with L3 redirect rule. Search is case insensitive.</td>
</tr>
<tr>
<td>edgeId (optional)</td>
<td>Filter for rules applicable to the Edge specified by edgeId.</td>
</tr>
<tr>
<td>action (optional)</td>
<td>Filter for specific action (allow, deny)</td>
</tr>
</tbody>
</table>

Description:
Retrieve distributed firewall rule configuration.

If no query parameters are used, all rule configuration is retrieved. Use the query parameters to filter the rule configuration information.

Responses:
Status Code: 200
Body: application/xml

<firewallConfiguration timestamp="1360144793284">
  <contextId>globalroot-0</contextId>
  <layer3Sections>
    <section generationNumber="1360144793284" id="2" name="defaultSectionLayer3" timestamp="1360144793284">
      <rule disabled="false" id="2" logged="false">
        <name>Default Rule</name>
        <action>DENY</action>
      </rule>
    </section>
  </layer3Sections>
</firewallConfiguration>
PUT /api/4.0/firewall/globalroot-0/config

Headers:

| If-Match (required) | The Etag value from the response headers from a GET of the firewall configuration you want to modify. |

Description:
Update the complete firewall configuration in all sections.
- Retrieve the configuration with GET /api/4.0/firewall/globalroot-0/config.
- Retrieve the Etag value from the response headers.
- Extract and modify the configuration from the response body as needed.
- Set the If-Match header to the Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

When updating the firewall configuration:
- IDs for new objects (rule/section) should be removed or set to zero.
- If new entities (sections/rules) have been sent in the request, the response will contain the system-generated IDs, which are assigned to these new entities.
- appliedTo can be any valid firewall rule element.
- action can be ALLOW, BLOCK, or REJECT. REJECT sends reject message for unaccepted packets; RST packets are sent for TCP connections and ICMP unreachable code packets are sent for UDP, ICMP, and other IP connections
- source and destination can have an exclude flag. For example, if you add an exclude tag for 1.1.1.1 in the source parameter, the rule looks for traffic originating from all IPs other than 1.1.1.1.
Request:
Body: application/xml

```xml
<firewallConfiguration timestamp="1359979620727">
  <contextId>globalroot-0</contextId>
  <layer3Sections>
    <section generationNumber="1359979620727" id="2" name="defaultSectionLayer3" timestamp="1359979620727">
      <rule disabled="false" logged="true">
        <name>okn-1</name>
        <action>ALLOW</action>
        <sources excluded="false">
          <source>
            <value>datacenter-57</value>
            <type>Datacenter</type>
          </source>
          <source>
            <value>domain-c62</value>
            <type>ClusterComputeResource</type>
          </source>
          <source>
            <value>10.112.1.1</value>
            <type>Ipv4Address</type>
          </source>
        </sources>
        <services>
          <service>
            <destinationPort>80</destinationPort>
            <protocol>6</protocol>
            <subProtocol>6</subProtocol>
          </service>
          <service>
            <value>application-161</value>
            <type>Application</type>
          </service>
        </services>
        <appliedToList>
          <appliedTo>
            <value>5013bcd8-c666-1e28-c7a9-600da945954f.000</value>
            <type>Vnic</type>
          </appliedTo>
          <appliedTo>
            <value>vm-126</value>
            <type>VirtualMachine</type>
          </appliedTo>
        </appliedToList>
      </rule>
      <rule disabled="true" logged="true">
        <name>Matru-1</name>
        <action>ALLOW</action>
      </rule>
      <rule disabled="true" logged="true">
        <name>Matru-2</name>
        <action>ALLOW</action>
      </rule>
    </section>
  </layer3Sections>
</firewallConfiguration>
```
DELETE /api/4.0/firewall/globalroot-0/config

Description:
Restores default configuration, which means one defaultLayer3 section with three default allow rules and one defaultLayer2Section with one default allow rule.

Working With Layer 3 Sections in Distributed Firewall

You can use sections in the firewall table to group logical rules based on AppliedTo or for a tenant use case. A firewall section is the smallest unit of configuration which can be updated independently. Section types are as follows:
- Layer3Section contains layer3 rules
- Layer2Section contains layer2 rules
- Layer3RedirectSection contains traffic redirect rules.

When Distributed Firewall is used with Service Composer, firewall sections created by Service Composer contain an additional attribute in the XML called managedBy. You should not modify Service Composer firewall sections using Distributed Firewall REST APIs.

GET /api/4.0/firewall/globalroot-0/config/layer3sections

Query Parameters:

<table>
<thead>
<tr>
<th>name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Name of the section to retrieve.</td>
</tr>
</tbody>
</table>

Description:
Retrieve rules from the layer 3 section specified by section name.

Responses:
Status Code: 200
Body: application/xml
<sections>
  <section generationNumber="1360149234572" id="4" name="TestSection" timestamp="1360149234572">
    <rule disabled="false" id="16" logged="true">
      <name>okn-2</name>
      <action>ALLOW</action>
      <appliedToList>
        <appliedTo>
          <name>vm1 - Network adapter 1</name>
          <value>5013bcd8-c666-1e28-c7a9-600da945954f.000</value>
          <type>Vnic</type>
          <isValid>true</isValid>
        </appliedTo>
        <appliedTo>
          <name>Small XP-2</name>
          <value>vm-126</value>
          <type>VirtualMachine</type>
          <isValid>true</isValid>
        </appliedTo>
      </appliedToList>
      <sectionId>4</sectionId>
      <sources excluded="false">
        <source>
          <name>Site B Datacenter</name>
          <value>datacenter-57</value>
          <type>Datacenter</type>
          <isValid>true</isValid>
        </source>
        <source>
          <name>Computer Cluster 6</name>
          <value>domain-c62</value>
          <type>ClusterComputeResource</type>
          <isValid>true</isValid>
        </source>
        <source>
          <value>10.112.1.1</value>
          <type>Ipv4Address</type>
          <isValid>true</isValid>
        </source>
      </sources>
      <services>
        <service>
          <destinationPort>80</destinationPort>
          <protocol>6</protocol>
          <subProtocol>6</subProtocol>
        </service>
        <service>
          <name>VMware-VDM2.x-Ephemeral</name>
          <value>application-161</value>
          <isValid>true</isValid>
        </service>
      </services>
      <appliedToList>
        <appliedTo>
          <name>DISTRIBUTED_FIREWALL</name>
          <value>DISTRIBUTED_FIREWALL</value>
          <type>DISTRIBUTED_FIREWALL</type>
          <isValid>true</isValid>
        </appliedTo>
      </appliedToList>
    </rule>
    <rule disabled="true" id="15" logged="true">
      <name>Matru-3</name>
    </rule>
  </section>
</sections>
<action>ALLOW</action>
<appliedToList>
  <appliedTo>
    <name>DISTRIBUTED_FIREWALL</name>
    <value>DISTRIBUTED_FIREWALL</value>
    <type>DISTRIBUTED_FIREWALL</type>
    <isValid>true</isValid>
  </appliedTo>
</appliedToList>
<sectionId>4</sectionId>
</rule>

<rule disabled="true" id="14" logged="true">
    <name>test-3</name>
    <action>ALLOW</action>
    <appliedToList>
      <appliedTo>
        <name>DISTRIBUTED_FIREWALL</name>
        <value>DISTRIBUTED_FIREWALL</value>
        <type>DISTRIBUTED_FIREWALL</type>
        <isValid>true</isValid>
      </appliedTo>
    </appliedToList>
    <sectionId>4</sectionId>
</rule>

<rule disabled="true" id="13" logged="true">
    <name>test-2</name>
    <action>ALLOW</action>
    <appliedToList>
      <appliedTo>
        <name>DISTRIBUTED_FIREWALL</name>
        <value>DISTRIBUTED_FIREWALL</value>
        <type>DISTRIBUTED_FIREWALL</type>
        <isValid>true</isValid>
      </appliedTo>
    </appliedToList>
    <sectionId>4</sectionId>
</rule>

<rule disabled="true" id="12" logged="false">
    <name>test-1</name>
    <action>DENY</action>
    <appliedToList>
      <appliedTo>
        <name>DISTRIBUTED_FIREWALL</name>
        <value>DISTRIBUTED_FIREWALL</value>
        <type>DISTRIBUTED_FIREWALL</type>
        <isValid>true</isValid>
      </appliedTo>
    </appliedToList>
    <sectionId>4</sectionId>
</rule>

</sections>

POST /api/4.0/firewall/globalroot-0/config/layer3sections

Query Parameters:

<table>
<thead>
<tr>
<th>operation (optional)</th>
<th>operation can be insert_after, insert_before, insert_top, or insert_before_default.</th>
</tr>
</thead>
</table>

NSX API Guide  Version: 6.3  Page 211
anchorId  (optional)  

Specify the section ID to use for reference with `insert_before` or `insert_after` operations.

**Description:**
Create a layer 3 distributed firewall section.

By default, the section is created at the top of the firewall table. You can specify a location for the section with the `operation` and `anchorId` query parameters.

**Request:  
Body:** application/xml

```xml
<section name="TestSection">
  <rule disabled="false" logged="true">
    <name>okn-2</name>
    <action>ALLOW</action>
    <appliedToList>
      <appliedTo>
        <name>vml - Network adapter 1</name>
        <value>5013bdc8-c666-1e28-c7a9-600da945954f.000</value>
        <type>Vnic</type>
        <isValid>true</isValid>
      </appliedTo>
      <appliedTo>
        <name>Small XP-2</name>
        <value>vm-126</value>
        <type>VirtualMachine</type>
        <isValid>true</isValid>
      </appliedTo>
    </appliedToList>
    <sources excluded="false">
      <source>
        <name>Site B Datacenter</name>
        <value>datacenter-57</value>
        <type>Datacenter</type>
        <isValid>true</isValid>
      </source>
      <source>
        <name>Compute Cluster 6</name>
        <value>domain-c62</value>
        <type>ClusterComputeResource</type>
        <isValid>true</isValid>
      </source>
      <source>
        <value>10.112.1.1</value>
        <type>Ipv4Address</type>
        <isValid>true</isValid>
      </source>
    </sources>
    <services>
      <service>
        <destinationPort>80</destinationPort>
        <protocol>6</protocol>
        <subProtocol>6</subProtocol>
      </service>
      <service>
        <name>VMware-VDM2.x-Ephemeral</name>
        <value>application-161</value>
        <isValid>true</isValid>
      </service>
    </services>
</section>
```
<service>
  <services>
    <rule disabled="true" logged="true">
      <name>Matru-3</name>
      <action>ALLOW</action>
    </rule>
    <rule disabled="true" logged="true">
      <name>test-3</name>
      <action>ALLOW</action>
    </rule>
    <rule disabled="true" logged="true">
      <name>test-2</name>
      <action>ALLOW</action>
    </rule>
    <rule disabled="true" logged="false">
      <name>test-1</name>
      <action>DENY</action>
    </rule>
  </services>
</service>

---

**Working With a Specific Layer 3 Distributed Firewall Section**

GET /api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>sectionId</th>
<th>(required)</th>
<th>The ID of the section to modify.</th>
</tr>
</thead>
</table>

**Description:**
Retrieve information about the specified layer 3 section.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<rule disabled="false" id="16" logged="true">
  <name>okn-2</name>
  <action>ALLOW</action>
  <appliedToList>
    <appliedTo>
      <name>vm1 - Network adapter 1</name>
      <value>5013bcd8-c666-1e28-c7a9-600da945954f.000</value>
      <type>Vnic</type>
      <isValid>true</isValid>
    </appliedTo>
    <appliedTo>
      <name>Small XP-2</name>
      <value>vm-126</value>
      <type>VirtualMachine</type>
      <isValid>true</isValid>
    </appliedTo>
  </appliedToList>
</rule>
```
<sectionId>4</sectionId>
<sources excluded="false">
  <source>
    <name>Site B Datacenter</name>
    <value>datacenter-57</value>
    <type>Datacenter</type>
    <isValid>true</isValid>
  </source>
  <source>
    <name>Compute Cluster 6</name>
    <value>domain-c62</value>
    <type>ClusterComputeResource</type>
    <isValid>true</isValid>
  </source>
  <source>
    <value>10.112.1.1</value>
    <type>Ipv4Address</type>
    <isValid>true</isValid>
  </source>
</sources>

<services>
  <service>
    <destinationPort>80</destinationPort>
    <protocol>6</protocol>
    <subProtocol>6</subProtocol>
  </service>
  <service>
    <name>VMware-VDM2.x-Ephemeral</name>
    <value>application-161</value>
    <isValid>true</isValid>
  </service>
</services>

<appliedToList>
  <appliedTo>
    <name>DISTRIBUTED_FIREWALL</name>
    <value>DISTRIBUTED_FIREWALL</value>
    <type>DISTRIBUTED_FIREWALL</type>
    <isValid>true</isValid>
  </appliedTo>
</appliedToList>

<rule disabled="true" id="15" logged="true">
  <name>Matru-3</name>
  <action>ALLOW</action>
  <appliedToList>
    <appliedTo>
      <name>DISTRIBUTED_FIREWALL</name>
      <value>DISTRIBUTED_FIREWALL</value>
      <type>DISTRIBUTED_FIREWALL</type>
      <isValid>true</isValid>
    </appliedTo>
  </appliedToList>
</rule>

<rule disabled="true" id="14" logged="true">
  <name>test-3</name>
  <action>ALLOW</action>
  <appliedToList>
    <appliedTo>
      <name>DISTRIBUTED_FIREWALL</name>
      <value>DISTRIBUTED_FIREWALL</value>
      <type>DISTRIBUTED_FIREWALL</type>
      <isValid>true</isValid>
    </appliedTo>
  </appliedToList>
</rule>
PUT /api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}

**URI Parameters:**

| sectionId (required) | The ID of the section to modify. |

**Headers:**

| If-Match (required) | The Etag value from the response headers from a GET of the firewall configuration you want to modify. |

**Description:**

Update the specified layer 3 section in distributed firewall.
- Retrieve the configuration for the specified section.
- Retrieve the Etag value from the response headers.
- Extract and modify the configuration from the response body as needed.
- Set the If-Match header to the Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

When updating the firewall configuration:
- IDs for new objects (rule/section) should be removed or set to zero.
- If new entities (sections/rules) have been sent in the request, the response will contain the system-generated IDs, which are assigned to these new entities.
- **appliedTo** can be any valid firewall rule element.
• **action** can be *ALLOW*, *BLOCK*, or *REJECT*. *REJECT* sends reject message for unaccepted packets; RST packets are sent for TCP connections and ICMP unreachable code packets are sent for UDP, ICMP, and other IP connections.

• source and destination can have an exclude flag. For example, if you add an exclude tag for 1.1.1.1 in the source parameter, the rule looks for traffic originating from all IPs other than 1.1.1.1.

When Distributed Firewall is used with Service Composer, firewall sections created by Service Composer contain an additional attribute in the XML called managedBy. You should not modify Service Composer firewall sections using Distributed Firewall REST APIs. If you do, you must synchronize firewall rules from Service Composer using the GET /api/2.0/services/policy/serviceprovider/firewall API.

Request:

**Body:** application/xml

```xml
<section generationNumber="1336034461743" id="4" name="TestSectionRenamed"
  timestamp="1360149234572">
  <rule disabled="false" id="16" logged="false">
    <action>ALLOW</action>
    <appliedToList>
      <appliedTo>
        <name>vm1 - Network adapter 1</name>
        <value>5013bcd8-c666-1e28-c7a9-600da945954f.000</value>
        <type>Vnic</type>
        <isValid>true</isValid>
      </appliedTo>
      <appliedTo>
        <name>Small XP-2</name>
        <value>vm-126</value>
        <type>VirtualMachine</type>
        <isValid>true</isValid>
      </appliedTo>
    </appliedToList>
    <sectionId>4</sectionId>
    <sources excluded="false">
      <source>
        <name>Site B Datacenter</name>
        <value>datacenter-57</value>
        <type>Datacenter</type>
        <isValid>true</isValid>
      </source>
      <source>
        <name>Compute Cluster 6</name>
        <value>domain-c62</value>
        <type>ClusterComputeResource</type>
        <isValid>true</isValid>
      </source>
      <source>
        <value>10.112.1.1</value>
        <type>Ipv4Address</type>
        <isValid>true</isValid>
      </source>
    </sources>
    <services>
      <service>
        <destinationPort>80</destinationPort>
        <protocol>6</protocol>
        <subProtocol>6</subProtocol>
      </service>
    </services>
  </rule>
</section>
```
POST /api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>sectionId</strong> (required)</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Query Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>action</strong> (required)</td>
<td>Set action to revise to change the position of the firewall rule section.</td>
</tr>
<tr>
<td><strong>operation</strong> (optional)</td>
<td>operation can be insert_after, insert_before, insert_top, or insert_before_default.</td>
</tr>
<tr>
<td><strong>anchorId</strong> (optional)</td>
<td>Specify the section ID to use for reference with insert_before or insert_after operations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Headers:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>If-Match</strong> (required)</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

**Description:**
Move the specified layer 3 section.

Use the **action**, **operation**, and optionally **anchorId** query parameters to specify the destination for the section.

```plaintext
POST /api/4.0/firewall/globalroot-0/config/layer3sections/1007
?action=revise&operation=insert_before&anchorId=1006
If-Match: 1477989118875
```

```xml
<section id="1007" name="Web Section" generationNumber="1477989118875" timestamp="1477989118875" type="LAYER3"/>
```
Request:
Body: application/xml

 DELETE /api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}

URI Parameters:
| sectionId  (required) | The ID of the section to modify. |

Description:
Delete the specified layer 3 distributed firewall section.

If the default layer 3 firewall section is selected, the request is rejected. See GET /api/4.0/firewall/globalroot-0/defaultconfig for information on resetting the default firewall section.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. When deleting the default firewall rule section, the method previously removed all rules except for the default rule. The method now returns status 400 and the message Cannot delete default section &lt;sectionId&gt;.</td>
</tr>
</tbody>
</table>

Working With Distributed Firewall Rules in a Layer 3 Section

POST /api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}/rules

URI Parameters:
| sectionId  (required) | The ID of the section to modify. |

Headers:
Description:
Add rules to the specified layer 2 section in distributed firewall.

You add firewall rules at the global scope. You can then narrow down the scope (datacenter, cluster, distributed virtual port group, network, virtual machine, vNIC, or logical switch) at which you want to apply the rule. Firewall allows you to add multiple objects at the source and destination levels for each rule, which helps reduce the total number of firewall rules to be added. To add a identity based firewall rule, first create a security group based on Directory Group objects. Then create a firewall rule with the security group as the source or destination. Rules that direct traffic to a third part service are referred to as layer3 redirect rules, and are displayed in the layer3 redirect tab.

When Distributed Firewall is used with Service Composer, firewall rules created by Service Composer contain an additional attribute in the XML called managedBy.

Follow this procedure to add a rule:

- Retrieve the configuration for the specified section.
- Retrieve the Etag value from the response headers. Note: Each section contains its own Etag, generationNumber, and timestamp. When adding a new rule, you must use the Etag value of the firewall section to which you wish to add the rule.
- Extract and modify the configuration from the response body as needed.
- Set the If-Match header to the section Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

When updating the firewall configuration:
- IDs for new rules should be removed or set to zero.
- If new rules have been sent in the request, the response will contain the system-generated IDs, which are assigned to these new entities.
- appliedTo can be any valid firewall rule element.
- action can be ALLOW, BLOCK, or REJECT. REJECT sends reject message for unaccepted packets; RST packets are sent for TCP connections and ICMP unreachable code packets are sent for UDP, ICMP, and other IP connections
- source and destination can have an exclude flag. For example, if you add an exclude tag for 1.1.1.1 in the source parameter, the rule looks for traffic originating from all IPs other than 1.1.1.1.

Request:
Body: application/xml

```xml
<rule disabled="false" logged="false">
  <name>AddRuleTest</name>
  <action>allow</action>
  <notes></notes>
  <appliedToList>
    <appliedTo>
      <value>datacenter-26</value>
      <type>Datacenter</type>
    </appliedTo>
  </appliedToList>
  <sectionId>2</sectionId>
  <sources excluded="true">
    <source>
      <value>datacenter-26</value>
      <type>Datacenter</type>
    </source>
  </sources>
  <services>
    ...
  </services>
</rule>
```
Working With a Specific Rule in a Specific Layer 3 Section

GET
/api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}/rules/{ruleId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>The ID of the rule being read, updated or deleted</td>
</tr>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified distributed firewall rule.

PUT
/api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}/rules/{ruleId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>The ID of the rule being read, updated or deleted</td>
</tr>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

Headers:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

Description:
Update a distributed firewall rule in a layer 3 section.
- Retrieve the configuration for the section that contains the rule you want to modify.
- Retrieve the Etag value from the response headers. **Note**: This is the Etag value of the firewall section to which you want to add the rule. If you are keeping this rule in the same section, you must keep the same Etag number.
- Extract and modify the rule configuration from the response body as needed.
- Set the If-Match header to the section Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

Request:

**Body**: application/xml

```xml
<rule disabled="false" id="23" logged="true">
  <name>AddRuleTestUpdated</name>
  <action>allow</action>
  <notes/>
  <appliedToList>
    <appliedTo>
      </appliedTo>
    </appliedToList>
</rule>
```
DELETE
/api/4.0/firewall/globalroot-0/config/layer3sections/{sectionId}/rules/{ruleId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>The ID of the rule being read, updated or deleted</td>
</tr>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

Headers:

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

Description:
Delete the specified distributed firewall rule.

---

Working With Layer 2 Sections in Distributed Firewall

You can use sections in the firewall table to group logical rules based on AppliedTo or for a tenant use case. A firewall section is the smallest unit of configuration which can be updated independently. Section types are as follows:

- Layer3Section contains layer3 rules
- Layer2Section contains layer2 rules
- Layer3RedirectSection contains traffic redirect rules.

When Distributed Firewall is used with Service Composer, firewall sections created by Service Composer contain an additional attribute in the XML called managedBy. You should not modify Service Composer firewall sections using Distributed Firewall REST APIs.

GET /api/4.0/firewall/globalroot-0/config/layer2sections

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>Name of the Section to read</td>
</tr>
</tbody>
</table>

Description:
Retrieve rules from the layer 2 section specified by section name.

Responses:
Status Code: 200
Body: application/xml

```
<sections>
  <section class="section" generationNumber="1554090322751" id="1001" name="Default Section Layer2" timestamp="1554090322751" type="LAYER2">
    <rule disabled="false" id="1004" logged="false">
      <name>Default Rule</name>
      <action>allow</action>
      <appliedToList>
        <appliedTo>
          <name>DISTRIBUTED_FIREWALL</name>
          <value>DISTRIBUTED_FIREWALL</value>
          <type>DISTRIBUTED_FIREWALL</type>
        </appliedTo>
        <sectionId>1001</sectionId>
      </appliedToList>
      <precedence>default</precedence>
      <direction>inout</direction>
      <packetType>any</packetType>
    </rule>
  </section>
</sections>
```

POST /api/4.0/firewall/globalroot-0/config/layer2sections

Query Parameters:

<table>
<thead>
<tr>
<th>operation (optional)</th>
<th>operation can be insert_after, insert_before, insert_top, or insert_before_default.</th>
</tr>
</thead>
<tbody>
<tr>
<td>anchorId (optional)</td>
<td>Specify the section ID to use for reference with insert_before or insert_after operations.</td>
</tr>
</tbody>
</table>

Description:
Create a layer 2 distributed firewall section.

By default, the section is created at the top of the firewall table. You can specify a location for the section with the operation and anchorId query parameters.

Request:
Body: application/xml

```
<section managedBy="" name="" type="">
  <rule disabled="" logged="">
    <name></name>
    <action></action>
    <appliedToList>
      <appliedTo>
        <name></name>
        <value></value>
        <type></type>
      </appliedTo>
      <sectionId>1001</sectionId>
    </appliedToList>
    <precedence>default</precedence>
    <direction>inout</direction>
    <packetType>any</packetType>
  </rule>
</section>
```
<isValid></isValid>
</appliedTo>
</appliedToList>
<sources excluded="">
<source>
  <name></name>
  <value></value>
  <type></type>
  <isValid></isValid>
</source>
</sources>
<destinations excluded="">
<destination>
  <name></name>
  <value></value>
  <type></type>
  <isValid></isValid>
</destination>
</destinations>
<services>
  <service>
    <destinationPort></destinationPort>
    <protocol></protocol>
    <subProtocol></subProtocol>
  </service>
</services>
</rule>
</section>

## Working With a Specific Layer 2 Distributed Firewall Section

**GET /api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve information about the specified layer 2 section.

**PUT /api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

**Headers:**

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

**Description:**

Update the specified layer 2 section in distributed firewall.

- Retrieve the configuration for the specified section.
Retrieve the Etag value from the response headers.

Extract and modify the configuration from the response body as needed.

Set the If-Match header to the Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

When updating the firewall configuration:

- IDs for new objects (rule/section) should be removed or set to zero.
- If new entities (sections/rules) have been sent in the request, the response will contain the system-generated IDs, which are assigned to these new entities.
- **appliedTo** can be any valid firewall rule element.
- **action** can be **ALLOW**, **BLOCK**, or **REJECT**. **REJECT** sends reject message for unaccepted packets; RST packets are sent for TCP connections and ICMP unreachable code packets are sent for UDP, ICMP, and other IP connections
- source and destination can have an exclude flag. For example, if you add an exclude tag for 1.1.1.1 in the source parameter, the rule looks for traffic originating from all IPs other than 1.1.1.1.

When Distributed Firewall is used with Service Composer, firewall sections created by Service Composer contain an additional attribute in the XML called managedBy. You should not modify Service Composer firewall sections using Distributed Firewall REST APIs. If you do, you must synchronize firewall rules from Service Composer using the GET /api/2.0/services/policy/serviceprovider/firewall API.

Request:

**Body**: application/xml

```
<section generationNumber="" id="" name="" timestamp="">
  <rule disabled="" id="" logged="">
    <name></name>
    <action></action>
    <appliedToList>
      <appliedTo>
        <name></name>
        <value></value>
        <type></type>
        <isValid></isValid>
      </appliedTo>
    </appliedToList>
  </rule>
</section>
```

POST /api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}
URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Set action to revise to change the position of the firewall rule section.</td>
</tr>
<tr>
<td>operation</td>
<td>operation can be insert_after, insert_before, insert_top, or insert_before_default.</td>
</tr>
<tr>
<td>anchorId</td>
<td>Specify the section ID to use for reference with insert_before or insert_after operations.</td>
</tr>
</tbody>
</table>

Headers:

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

Description:
Move the specified layer 2 section.

Use the action, operation, and optionally anchorId query parameters to specify the destination for the section.

POST /api/4.0/firewall/globalroot-0/config/layer2sections/1009
?action=revise&operation=insert_before&anchorId=1008

If-Match: 1478307787160

Request:

Body: application/xml

```
<section>
  <name></name>
  <action></action>
  <appliedToList>
    <appliedTo>
      <name></name>
      <value></value>
      <type></type>
      <isValid></isValid>
    </appliedTo>
  </appliedToList>
  <sectionId></sectionId>
</section>
```

DELETE /api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>
Description:
Delete the specified layer 2 section and its contents.

If the default layer 2 firewall section is selected, the request is rejected. See GET /api/4.0/firewall/globalroot-0/defaultconfig for information on resetting the default firewall section.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. When deleting the default firewall rule section, the method previously removed all rules except for the default rule. The method now returns status 400 and the message Cannot delete default section &lt;sectionId&gt;.</td>
</tr>
</tbody>
</table>

Working With Distributed Firewall Rules in a Layer 2 Section

POST /api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}/rules

URI Parameters:

| sectionId (required) | The ID of the section to modify. |

Headers:

| If-Match (required) | The Etag value from the response headers from a GET of the firewall configuration you want to modify. |

Description:
Add rules to the specified layer 2 section in distributed firewall.

You add firewall rules at the global scope. You can then narrow down the scope (datacenter, cluster, distributed virtual port group, network, virtual machine, vNIC, or logical switch) at which you want to apply the rule. Firewall allows you to add multiple objects at the source and destination levels for each rule, which helps reduce the total number of firewall rules to be added. To add a identity based firewall rule, first create a security group based on Directory Group objects. Then create a firewall rule with the security group as the source or destination. Rules that direct traffic to a third part service are referred to as layer3 redirect rules, and are displayed in the layer3 redirect tab.

When Distributed Firewall is used with Service Composer, firewall rules created by Service Composer contain an additional attribute in the XML called managedBy.

Follow this procedure to add a rule:

- Retrieve the configuration for the specified section.
- Retrieve the Etag value from the response headers. Note: Each section contains its own Etag, generationNumber, and timestamp. When adding a new rule, you must use the Etag value of the firewall section to which you wish to add the rule.
- Extract and modify the configuration from the response body as needed.
- Set the If-Match header to the section Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

When updating the firewall configuration:

- IDs for new rules should be removed or set to zero.
- If new rules have been sent in the request, the response will contain the system-generated IDs, which are assigned to these new entities.
• **appliedTo** can be any valid firewall rule element.
• **action** can be **ALLOW**, **BLOCK**, or **REJECT**. **REJECT** sends reject message for unaccepted packets; RST packets are sent for TCP connections and ICMP unreachable code packets are sent for UDP, ICMP, and other IP connections.
• source and destination can have an exclude flag. For example, if you add an exclude tag for 1.1.1.1 in the source parameter, the rule looks for traffic originating from all IPs other than 1.1.1.1.

**Request:**
**Body:** application/xml

```
<rule disabled="" logged="">
  <name></name>
  <action></action>
  <notes></notes>
  <appliedToList>
    <appliedTo>
      <value></value>
      <type></type>
    </appliedTo>
  </appliedToList>
  <sources excluded="">
    <source>
      <name></name>
      <value></value>
      <type></type>
      <isValid></isValid>
    </source>
  </sources>
  <destinations excluded="">
    <destination>
      <name></name>
      <value></value>
      <type></type>
      <isValid></isValid>
    </destination>
  </destinations>
  <services>
    <service>
      <value></value>
    </service>
  </services>
</rule>
```

**Working With a Specific Rule in a Specific Layer 2 Section**

**GET**
/api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}/rules/{ruleId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>The ID of the rule.</td>
</tr>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve the configuration of the specified rule.

**PUT**

/api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}/rules/{ruleId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>The ID of the rule.</td>
</tr>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

**Headers:**

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

**Description:**

Update a distributed firewall rule in a layer 2 section.
- Retrieve the configuration for the section that contains the rule you want to modify.
- Retrieve the Etag value from the response headers. **Note:** This is the Etag value of the firewall section to which you want to add the rule. If you are keeping this rule in the same section, you must keep the same Etag number.
- Extract and modify the rule configuration from the response body as needed.
- Set the If-Match header to the section Etag value, and submit the request.

Not all fields are required while sending the request. All the optional fields are safe to be ignored while sending the configuration to server. For example, if an IP set is referenced in the rule only IPSet and Type is needed in the Source/Destination objects and not Name and isValid tags.

**Request:**

**Body:** application/xml

```
<rule disabled="" id="" logged="">
  <name></name>
  <action></action>
  <notes></notes>
  <sources excluded="">
    <source>
      <value></value>
      <type></type>
      <isValid></isValid>
    </source>
  </sources>
  <destinations excluded="">
    <destination>
      <name></name>
      <value></value>
      <type></type>
      <isValid></isValid>
    </destination>
  </destinations>
  <services>
    <service>
      <name></name>
      <value></value>
      <type></type>
      <isValid></isValid>
    </service>
  </services>
  <appliedToList>
```

DELETE
/api/4.0/firewall/globalroot-0/config/layer2sections/{sectionId}/rules/{ruleId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>The ID of the rule.</td>
</tr>
<tr>
<td>sectionId</td>
<td>The ID of the section to modify.</td>
</tr>
</tbody>
</table>

**Headers:**

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

**Description:**
Delete the specified distributed firewall rule.

---

### Layer 3 Redirect Sections and Rules

**POST** /api/4.0/firewall/globalroot-0/config/layer3redirectsections

**Description:**
Add L3 redirect section

**Request:**

**Body:** application/xml

```xml
  <section>
    <name></name>
    <action></action>
    <appliedToList>
      <appliedTo>
        <name></name>
        <value></value>
        <type></type>
        <isValid></isValid>
      </appliedTo>
    </appliedToList>
    <sectionId></sectionId>
  </section>
```
Layer 3 Redirect Section

GET /api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}

URI Parameters:

| section | (required) | Specify section by ID or name |

Description:
Get L3 redirect section configuration

PUT /api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}

URI Parameters:

| section | (required) | Specify section by ID or name |

Headers:

| If-Match | (required) | The Etag value from the response headers from a GET of the firewall configuration you want to modify. |

Description:
Modify layer 3 redirect section. You will need to get the Etag value out of the GET first. Then pass the modified version of the whole redirect section configuration in the GET body.

Request:
Body: application/xml

```xml
<section generationNumber="" id="" name="" timestamp="">
  <rule disabled="" id="" logged="">
    <name></name>
    <action></action>
    <appliedToList>
      <appliedTo>
        <name></name>
        <value></value>
        <type></type>
        <isValid></isValid>
      </appliedTo>
    </appliedToList>
    <sectionId></sectionId>
  </rule>
</section>
```

DELETE /api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}

URI Parameters:

| section | (required) | Specify section by ID or name |

Description:
Delete specified L3 redirect section

## Working With Layer 3 Redirect Rules for a Specific Section

**POST**
/api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}/rules

**URI Parameters:**

| section  | (required) | Specify section by ID or name |

**Description:**
Add L3 redirect rule

**Request:**
**Body:** application/xml

```
<section generationNumber="" id="" name="" timestamp="">
  <name/>
  <action/>
  <appliedToList>
    <appliedTo>
      <name/>
      <value/>
      <type/>
      <isValid/>
    </appliedTo>
  </appliedToList>
  <sectionId/>
</section>
```

## Working With a Specific Layer 3 Redirect Rule for a Specific Section

**GET** /api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}/rules/{ruleID}

**URI Parameters:**

| ruleID   | (required) | Specified redirect rule |
| section  | (required) | Specify section by ID or name |

**Description:**
Get L3 redirect rule

**PUT** /api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}/rules/{ruleID}
URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleID</td>
<td>Specified redirect rule</td>
</tr>
<tr>
<td>section</td>
<td>Specify section by ID or name</td>
</tr>
</tbody>
</table>

Headers:

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>The Etag value from the response headers from a GET of the firewall configuration you want to modify.</td>
</tr>
</tbody>
</table>

Description:

Modify L3 redirect rule. You will need Etag value from the response header of GET call. Then, pass Etag value as the if-match header in PUT call.

Request:

Body: application/xml

```
<rule disabled="" id="" logged="">
    <name></name>
    <action></action>
    <appliedToList>
        <appliedTo>
            <name></name>
            <value></value>
            <type></type>
            <isValid></isValid>
        </appliedTo>
    </appliedToList>
</rule>
```

DELETE /api/4.0/firewall/globalroot-0/config/layer3redirectsections/{section}/rules/{ruleID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleID</td>
<td>Specified redirect rule</td>
</tr>
<tr>
<td>section</td>
<td>Specify section by ID or name</td>
</tr>
</tbody>
</table>

Description:

Delete specified L3 redirect rule.

---

**Service Insertion Profiles and Layer 3 Redirect Rules**

GET /api/4.0/firewall/globalroot-0/config/layer3redirect/profiles

Description:

Retrieve the Service Insertion profiles that can be applied to layer3 redirect rules.
Enable Distributed Firewall After Upgrade

After upgrading NSX Manager, controllers, and network virtualization components, check the status of distributed firewall. If it is ready to enable, you can enable distributed firewall.

<table>
<thead>
<tr>
<th>State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>backwardCompatible</td>
<td>This is the default state after an upgrade from vCloud Networking and Security to NSX, which means that vShield App is being used for protection instead of distributed firewall.</td>
</tr>
<tr>
<td>backwardCompatibleReadyForSwitch</td>
<td>Once the clusters are prepared with NSX binaries, this state is enabled. You can enable distributed firewall only after firewall is in this state.</td>
</tr>
<tr>
<td>switchingToForward</td>
<td>This is an intermediate state when you change firewall to distributed firewall.</td>
</tr>
<tr>
<td>forward</td>
<td>This is the default state for green field deployments or after you have switched from vShield App to distributed firewall.</td>
</tr>
<tr>
<td>switchFailed</td>
<td>This state is unlikely, but may be present if NSX Manager failed to switch to distributed firewall.</td>
</tr>
</tbody>
</table>

**GET /api/4.0/firewall/globalroot-0/state**

**Description:**
Retrieve current state of firewall functioning after NSX upgrade.

**PUT /api/4.0/firewall/globalroot-0/state**

**Description:**
Enable distributed firewall.

Working With Distributed Firewall Status

Retrieve status of last publish action for each cluster in the NSX environment.

The status output displays a generation number (\texttt{generationNumber}) for each rule set, which can be used to verify whether a change in rule sets has propagated to a host. In 6.2.4, a generation number for objects (\texttt{generationNumberObjects}) has been added to the status API. This allows you to verify whether a change in objects consumed in firewall rules has propagated to a host. Note that the object generation number may change frequently and will always be equal to or greater than the ruleset generation number.

Starting in NSX 6.2.4, clusters (and hosts inside the cluster) are no longer included in the firewall status output if distributed firewall is disabled at the cluster level, or if the cluster is not prepared (NSX VIBs are not installed). In earlier versions of NSX these clusters and hosts are included in the output. However, because they are not configured for firewall, after a firewall rule publish their status is \texttt{inprogress}.

**GET /api/4.0/firewall/globalroot-0/status**

**Description:**
Get firewall configuration status

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.4</td>
<td>Method updated. Parameter <code>generationNumberObjects</code> added. Clusters not configured for firewall are excluded from the status output.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200  
**Body:** application/xml

```xml
<firewallStatus>  
<startTime>1478235234617</startTime>  
<status>published</status>  
<generationNumber>1478235234617</generationNumber>  
<generationNumberObjects>1478235234617</generationNumberObjects>  
<clusterList>  
<clusterStatus>  
<clusterId>domain-c33</clusterId>  
<status>published</status>  
<generationNumber>1478235234617</generationNumber>  
<generationNumberObjects>1478235234617</generationNumberObjects>  
<hostStatusList>  
<hostStatus>  
<hostId>host-32</hostId>  
<hostName>esx-02a.corp.local</hostName>  
<status>published</status>  
<errorCode>0</errorCode>  
<startTime>1478235235421</startTime>  
<endTime>1478235235429</endTime>  
<generationNumber>1478235234617</generationNumber>  
<clusterId>domain-c33</clusterId>  
<generationNumberObjects>1478235234617</generationNumberObjects>  
</hostStatus>  
<hostStatus>  
<hostId>host-28</hostId>  
<hostName>esx-01a.corp.local</hostName>  
<status>published</status>  
<errorCode>0</errorCode>  
<startTime>1478235235421</startTime>  
<endTime>1478235235431</endTime>  
<generationNumber>1478235234617</generationNumber>  
<clusterId>domain-c33</clusterId>  
<generationNumberObjects>1478235234617</generationNumberObjects>  
</hostStatus>  
</hostStatusList>  
</clusterStatus>  
<clusterStatus>  
<clusterId>domain-c41</clusterId>  
<status>published</status>  
<generationNumber>1478235234617</generationNumber>  
<generationNumberObjects>1478235234617</generationNumberObjects>  
</clusterStatus>  
<clusterStatus>  
<clusterId>domain-c20</clusterId>  
<status>published</status>  
<generationNumber>1478235234617</generationNumber>  
<generationNumberObjects>1478235234617</generationNumberObjects>  
</clusterStatus>  
</clusterList>  
</firewallStatus>
```
Working With a Specific Layer 3 Section Status

GET /api/4.0/firewall/globalroot-0/status/layer3sections/{sectionID}

URI Parameters:

<table>
<thead>
<tr>
<th>sectionID</th>
<th>(required)</th>
<th>Section ID</th>
</tr>
</thead>
</table>

Description:
Retrieve status of the last publish action for the specified layer 3 section.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.4</td>
<td>Method updated. Parameter generationNumberObjects added. Clusters not configured for firewall are excluded from the status output.</td>
</tr>
</tbody>
</table>

Working With a Specific Layer 2 Section Status

GET /api/4.0/firewall/globalroot-0/status/layer2sections/{sectionID}

URI Parameters:
### sectionID (required)

**Description:**
Retrieve status of the last publish action for the specified layer 2 section.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.4</td>
<td>Method updated. Parameter generationNumberObjects added. Clusters not configured for firewall are excluded from the status output.</td>
</tr>
</tbody>
</table>

---

**Import and Export Firewall Configurations**

**GET /api/4.0/firewall/globalroot-0/drafts**

**Description:**
Displays the draft IDs of all saved configurations.

**POST /api/4.0/firewall/globalroot-0/drafts**

**Description:**
Save a firewall configuration.

**Request:**

**Body:** application/xml

```xml
<firewallDraft name="">
  <description></description>
  <preserve></preserve>
  <mode></mode>
  <config>
    <contextId></contextId>
    <layer3Sections>
      <section name="">
        <rule disabled="true|false" id="" logged="true|false">
          <name></name>
          <action></action>
          <precedence></precedence>
        </rule>
      </section>
    </layer3Sections>
    <layer2Sections>
      <section name="">
        <rule disabled="true|false" id="" logged="true|false">
          <name></name>
          <action></action>
          <precedence></precedence>
        </rule>
      </section>
    </layer2Sections>
  </config>
</firewallDraft>
```
Working With a Specific Saved Firewall Configuration

GET /api/4.0/firewall/globalroot-0/drafts/{draftID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>draftID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Specified draft ID. Use GET /4.0/firewall/globalroot-0/drafts to retrieve all drafts.</td>
</tr>
</tbody>
</table>

**Description:**
Get a saved firewall configuration.

PUT /api/4.0/firewall/globalroot-0/drafts/{draftID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>draftID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Specified draft ID. Use GET /4.0/firewall/globalroot-0/drafts to retrieve all drafts.</td>
</tr>
</tbody>
</table>

**Description:**
Update a saved firewall configuration.

**Request:**

**Body:** application/xml

```xml
<firewallDraft name="">
  <description/>
  <preserve/>
  <mode/>
  <config>
    <contextId/>
    <layer3Sections>
      <section name="">
        <rule disabled="true|false" id="" logged="true|false">
          <name/>
          <action/>
          <precedence/>
        </rule>
      </section>
    </layer3Sections>
    </config>
</firewallDraft>
```
DELETE /api/4.0/firewall/globalroot-0/drafts/{draftID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>draftID (required)</td>
<td>Specified draft ID. Use GET /4.0/firewall/globalroot-0/drafts to retrieve all drafts.</td>
</tr>
</tbody>
</table>

**Description:**
Delete a configuration.

---

**Export a Firewall Configuration**

GET /api/4.0/firewall/globalroot-0/drafts/{draftID}/action/export

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>draftID (required)</td>
<td>Specified draft ID. Use GET /4.0/firewall/globalroot-0/drafts to retrieve all drafts.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>getLatestForUniversal (optional)</td>
<td>Set to true to export the latest universal draft from a secondary NSX manager.</td>
</tr>
</tbody>
</table>

**Description:**
Export a configuration.

---

**Import a Firewall Configuration**

POST /api/4.0/firewall/globalroot-0/drafts/action/import

**Description:**
Import a configuration.

**Request:**

**Body:** application/xml
Working With Distributed Firewall Session Timers

You can configure session timers (session timeouts) for TCP, UDP, and ICMP. There is a default configuration, which applies to all VMs protected by Distributed Firewall. You can modify the session timers values of the default configuration, but not the appliedTo values.

You can add additional session timer configurations with different appliedTo configurations.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>appliedTo &gt; value</td>
<td>The ID of the object on which to apply the timeout settings.</td>
<td>Required. For example VM ID vm-216.</td>
</tr>
<tr>
<td>appliedTo &gt; type</td>
<td>The type of object on which to apply the timeout settings.</td>
<td>Required. Can be VirtualMachine or Vnic</td>
</tr>
<tr>
<td>generationNumber</td>
<td>Generation number for the configuration.</td>
<td>When updating session timers, you must ensure the latest generation number is included in the request body.</td>
</tr>
<tr>
<td>tcpFirstPacket</td>
<td>The timeout value for the connection after the first packet has been sent.</td>
<td>Valid timer values: 10-4320000 seconds. Default is 120.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Valid timer values: 10-4320000 seconds. Default is</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>tcpOpen</td>
<td>The timeout value for the connection after a second packet has been transferred.</td>
<td>30</td>
</tr>
<tr>
<td>tcpEstablished</td>
<td>The timeout value for the connection once the connection has become fully established.</td>
<td>4320000</td>
</tr>
<tr>
<td>tcpClosing</td>
<td>The timeout value for the connection after the first FIN has been sent.</td>
<td>120</td>
</tr>
<tr>
<td>tcpFinWait</td>
<td>The timeout value for the connection after both FINs have been exchanged and the connection is closed.</td>
<td>10</td>
</tr>
<tr>
<td>tcpClosed</td>
<td>The timeout value for the connection after one endpoint sends an RST.</td>
<td>20</td>
</tr>
<tr>
<td>udpFirstPacket</td>
<td>The timeout value for the connection after the first packet. This will be the initial timeout for the new UDP flow.</td>
<td>60</td>
</tr>
<tr>
<td>udpSingle</td>
<td>The timeout value for the connection if the source host sends more than one packet but the destination host has never sent one back.</td>
<td>30</td>
</tr>
<tr>
<td>udpMultiple</td>
<td>The timeout value for the connection if both hosts have sent packets.</td>
<td>60</td>
</tr>
<tr>
<td>icmpFirstPacket</td>
<td>The timeout value for the connection after the first packet. This will be the initial timeout for the new ICMP flow.</td>
<td>20</td>
</tr>
<tr>
<td>icmpErrorReply</td>
<td>The timeout value for the connection after an ICMP error came back in response to an ICMP packet.</td>
<td>10</td>
</tr>
</tbody>
</table>

**GET /api/4.0/firewall/globalroot-0/timeouts**

**Description:**
Retrieve Distributed Firewall session timer configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced</td>
</tr>
</tbody>
</table>

**Responses:**

- **Status Code:** 200
- **Body:** application/xml

```xml
<firewallTimeoutConfigurations>
  <firewallTimeoutConfiguration id="1001">
    <name>Default Session Timers</name>
    <description>Default Session Timers</description>
    <appliedToList>
      <appliedTo>
        <name>DISTRIBUTED_FIREWALL</name>
        <value>DISTRIBUTED_FIREWALL</value>
        <type>DISTRIBUTED_FIREWALL</type>
      </appliedTo>
    </appliedToList>
  </firewallTimeoutConfiguration>
</firewallTimeoutConfigurations>
```
POST /api/4.0/firewall/globalroot-0/timeouts

Description:
Create a Distributed Firewall session timer configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<firewallTimeoutConfiguration>
  <name>new VM timeout</name>
  <appliedToList>
    <appliedTo>
      <value>vm-217</value>
      <type>VirtualMachine</type>
    </appliedTo>
  </appliedToList>
  <isDefault>false</isDefault>
  <tcpFirstPacket>180</tcpFirstPacket>
  <tcpOpen>30</tcpOpen>
  <tcpEstablished>43200</tcpEstablished>
  <tcpClosing>180</tcpClosing>
  <tcpFinWait>45</tcpFinWait>
  <tcpClosed>40</tcpClosed>
  <udpFirstPacket>60</udpFirstPacket>
  <udpSingle>30</udpSingle>
  <udpMultiple>60</udpMultiple>
  <icmpFirstPacket>30</icmpFirstPacket>
  <icmpErrorReply>15</icmpErrorReply>
</firewallTimeoutConfiguration>
```
Working With a Specific Distributed Firewall Session Timer Configuration

**GET /api/4.0/firewall/globalroot-0/timeouts/{configId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>configId (required)</td>
<td>Session timer configuration ID (firewallTimeoutConfiguration id). For example, 1004.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve the specified Distributed Firewall session timer configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**PUT /api/4.0/firewall/globalroot-0/timeouts/{configId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>configId (required)</td>
<td>Session timer configuration ID (firewallTimeoutConfiguration id). For example, 1004.</td>
</tr>
</tbody>
</table>

**Description:**
Update the specified Distributed Firewall session timer configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```
<firewallTimeoutConfiguration id="1004">
  <name>new VM timeout</name>
  <appliedToList>
    <appliedTo>
      <value>vm-217</value>
      <type>VirtualMachine</type>
      <isValid>true</isValid>
    </appliedTo>
    <appliedTo>
      <value>vm-218</value>
      <type>VirtualMachine</type>
      <isValid>true</isValid>
    </appliedTo>
  </appliedToList>
  <generationNumber>1490768692562</generationNumber>
  <isDefault>false</isDefault>
  <tcpFirstPacket>180</tcpFirstPacket>
```
<tcpOpen>30</tcpOpen>
<tcpEstablished>43200</tcpEstablished>
<tcpClosing>180</tcpClosing>
<tcpFinWait>45</tcpFinWait>
<tcpClosed>40</tcpClosed>
<udpFirstPacket>60</udpFirstPacket>
<udpSingle>30</udpSingle>
<udpMultiple>60</udpMultiple>
<icmpFirstPacket>30</icmpFirstPacket>
<icmpErrorReply>15</icmpErrorReply>
</firewallTimeoutConfiguration>

DELETE /api/4.0/firewall/globalroot-0/timeouts/{configId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>configId</td>
<td>Session timer configuration ID (firewallTimeoutConfiguration id). For example, 1004.</td>
</tr>
</tbody>
</table>

**Description:**
Delete the specified Distributed Firewall session timer configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Working With Distributed Firewall Thresholds**

Configure memory, CPU, and connections per second (CPS) thresholds for distributed firewall.

The firewall module generates system events when the memory and CPU usage crosses these thresholds.

**GET /api/4.0/firewall/stats/eventthresholds**

**Description:**
Retrieve threshold configuration for distributed firewall.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```
<eventThresholds>
  <cpu>
    <percentValue>80</percentValue>
  </cpu>
  <memory>
    <percentValue>90</percentValue>
  </memory>
  <connectionsPerSecond>
    <value>250000</value>
  </connectionsPerSecond>
</eventThresholds>
```
PUT /api/4.0/firewall/stats/eventthresholds

Description:
Update threshold configuration for distributed firewall.

Request:
Body: application/xml

<eventThresholds>
  <cpu>
    <percentValue>80</percentValue>
  </cpu>
  <memory>
    <percentValue>90</percentValue>
  </memory>
  <connectionsPerSecond>
    <value>250000</value>
  </connectionsPerSecond>
</eventThresholds>

Working With the Distributed Firewall Global Configuration

You can use the following parameters to improve firewall performance:
- `layer3RuleOptimize` and `layer2RuleOptimize` to turn on/off rule optimization.
- `tcpStrictOption` determines whether or not to drop an established TCP connection when the firewall does not see the initial three-way handshake. If set to true, the connection will be dropped.
- `autoDraftDisabled` improves performances when making large numbers of changes to firewall rules.

You can disable the auto draft feature by setting `autoDraftDisabled` to true. Distributed Firewall saves up to 100 configurations, including manually saved drafts (preserve parameter can be set to true or false) and auto saved drafts (preserve parameter is set to false). Once 100 configurations are saved, older drafts with the preserve parameter set to false will be deleted in order to save new configurations. You might want to disable the auto drafts feature before making large numbers of changes to the firewall rules, to improve performance, and to prevent previously saved drafts from being overwritten.

Note: The `autoDraftDisabled` parameter does not appear in a GET of the global configuration.

GET /api/4.0/firewall/config/globalconfiguration

Description:
Retrieve performance configuration for distributed firewall.

Responses:
Status Code: 200
Body: application/xml

<globalConfiguration>
  <layer3RuleOptimize>false</layer3RuleOptimize>
</globalConfiguration>
PUT /api/4.0/firewall/config/globalconfiguration

Description:
Update the distributed firewall performance configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <strong>autoDraftDisabled</strong> parameter added.</td>
</tr>
</tbody>
</table>

Request:

**Body:** application/xml

```xml
<globalConfiguration>
  <layer3RuleOptimize>false</layer3RuleOptimize>
  <layer2RuleOptimize>true</layer2RuleOptimize>
  <tcpStrictOption>false</tcpStrictOption>
  <autoDraftDisabled>true</autoDraftDisabled>
</globalConfiguration>
```

**Synchronize Firewall**

Synchronize hosts and clusters with the last good configuration in NSX Manager database.

**POST /api/4.0/firewall/forceSync/{ID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>ID</th>
<th>(required)</th>
<th>Specified host or cluster to synchronize</th>
</tr>
</thead>
</table>

**Description:**
Force sync host or cluster.

**Enable Firewall**

Enable or disable firewall components on a cluster.

**PUT /api/4.0/firewall/{domainID}/enable/{truefalse}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>domainID</th>
<th>(required)</th>
<th>Specified cluster</th>
</tr>
</thead>
</table>
truefalse  (required)  Set parameter to true/false to enable/disable

Description:
Enable or disable firewall components on a cluster

Working With IPFIX
Configuring IPFIX exports specific flows directly from Distributed Firewall to a flow collector.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ipfixEnabled</td>
<td>Enabled status of IPFIX</td>
<td>Valid values: true or false.</td>
</tr>
<tr>
<td>observationDomainId</td>
<td>Observation domain ID for IPFIX</td>
<td>Required. Must be greater than 0.</td>
</tr>
<tr>
<td>flowTimeout</td>
<td>Flow timeout</td>
<td>Required. Valid values: 1-60.</td>
</tr>
<tr>
<td>collector</td>
<td>IPFIX collector configuration</td>
<td>Can define multiple.</td>
</tr>
<tr>
<td>collector &gt; ip</td>
<td>IPFIX collector IP address</td>
<td></td>
</tr>
<tr>
<td>collector &gt; port</td>
<td>IPFIX collector port</td>
<td>Valid values: 0-65535. Default is 4739.</td>
</tr>
</tbody>
</table>

GET /api/4.0/firewall/globalroot-0/config/ipfix

Description:
Retrieve IPFIX configuration.

PUT /api/4.0/firewall/globalroot-0/config/ipfix

Description:
Update IPFIX configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.5</td>
<td>Default value for collector port changed from 0 to 4739.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<ipfixConfiguration>
  <contextId>globalroot-0</contextId>
  <ipfixEnabled>true</ipfixEnabled>
  <observationDomainId>1234</observationDomainId>
  <flowTimeout>50</flowTimeout>
  <collector>
    <ip>11.11.12.14</ip>
    <port>8087</port>
  </collector>
</ipfixConfiguration>
```
DELETE /api/4.0/firewall/globalroot-0/config/ipfix

Description:
Deleting IPFIX configuration resets the configuration to default values.
Working With SpoofGuard

After synchronizing with the vCenter Server, NSX Manager collects the IP addresses of all vCenter guest virtual machines. If a virtual machine has been compromised, the IP address can be spoofed and malicious transmissions can bypass firewall policies.

You create a SpoofGuard policy for specific networks that allows you to authorize the reported IP addresses and alter them if necessary to prevent spoofing. SpoofGuard inherently trusts the MAC addresses of virtual machines collected from the VMX files and vSphere SDK. Operating separately from Firewall rules, you can use SpoofGuard to block traffic determined to be spoofed.

Working With SpoofGuard Policies

You can create a SpoofGuard policy to specify the operation mode for specific networks. The system generated policy applies to port groups and logical switches not covered by existing SpoofGuard policies.

The operationMode for a SpoofGuard policy can be set to one of the following:

- **TOFU** - Automatically trust IP assignments on their first use
- **MANUAL** - Manually inspect and approve all IP assignments before first use
- **DISABLE** - Disable the SpoofGuard policy

GET /api/4.0/services/spoofguard/policies/

Description:
Retrieve information about all SpoofGuard policies.

**Note:** you must include the trailing slash for this URI: /api/4.0/services/spoofguard/policies/.

POST /api/4.0/services/spoofguard/policies/

Description:
Create a SpoofGuard policy to specify the operation mode for networks.

**Note:** you must include the trailing slash for this URI: /api/4.0/services/spoofguard/policies/.

Request:

**Body:** application/xml

```
<spoofguardPolicy>
  <name></name>
  <description></description>
  <operationMode></operationMode>
  <enforcementPoint>
    <id></id>
    <name></name>
    <type></type>
  </enforcementPoint>
  <allowLocalIPs></allowLocalIPs>
</spoofguardPolicy>
```
Working With a Specific SpoofGuard Policy

GET /api/4.0/services/spoofguard/policies/{policyID}

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>policyID (required)</td>
<td>SpoofGuard policy ID.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified SpoofGuard policy.

PUT /api/4.0/services/spoofguard/policies/{policyID}

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>policyID (required)</td>
<td>SpoofGuard policy ID.</td>
</tr>
</tbody>
</table>

Description:
Modify the specified SpoofGuard policy.

Request:
Body: application/xml

```xml
<spoofguardPolicy>
  <policyId></policyId>
  <name></name>
  <description></description>
  <operationMode></operationMode>
  <enforcementPoint>
    <id></id>
    <name></name>
    <type></type>
  </enforcementPoint>
  <allowLocalIPs></allowLocalIPs>
</spoofguardPolicy>
```

DELETE /api/4.0/services/spoofguard/policies/{policyID}

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>policyID (required)</td>
<td>SpoofGuard policy ID.</td>
</tr>
</tbody>
</table>

Description:
Delete the specified SpoofGuard policy.

Perform SpoofGuard Operations on IP Addresses in a Specific Policy

GET /api/4.0/services/spoofguard/{policyID}

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>policyID</td>
<td>(required)</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>list</th>
<th>(optional)</th>
<th>Specify one of the following states: ACTIVE, INACTIVE, PUBLISHED, UNPUBLISHED, REVIEW_PENDING, DUPLICATE.</th>
</tr>
</thead>
</table>

**Description:**
Retrieve IP addresses for the specified state.

**POST /api/4.0/services/spoofguard/{policyID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>policyID</th>
<th>(required)</th>
<th>SpoofGuard policy ID.</th>
</tr>
</thead>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>vnicId</th>
<th>(optional)</th>
<th>Perform the specified action on IP addresses for the specified vNIC ID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>(required)</td>
<td>Set to approve along with specified IP addresses in body to approve them, or set to publish to publish approved IP addresses.</td>
</tr>
</tbody>
</table>

**Description:**
Approve or publish IP addresses.

**Request:**
**Body:** application/xml

```xml
<spoofguardList>
  <spoofguard>
    <id></id>
    <vnicUuid></vnicUuid>
    <approvedIpAddress>
      <ipAddress></ipAddress>
    </approvedIpAddress>
    <approvedMacAddress></approvedMacAddress>
    <approvedBy></approvedBy>
    <approvedOn></approvedOn>
    <publishedIpAddress>
      <ipAddress></ipAddress>
    </publishedIpAddress>
    <publishedMacAddress></publishedMacAddress>
    <publishedBy></publishedBy>
    <publishedOn></publishedOn>
  </spoofguard>
</spoofguardList>
```
Working With Flow Monitoring

Working With Flow Monitoring Statistics

GET /api/2.1/app/flow/flowstats

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contextId</td>
<td>vCenter MOB ID of the datacenter, portgroup, vm, or UUID of the vNIC for which traffic flow is to be retrieved.</td>
</tr>
<tr>
<td>flowType</td>
<td>Type of flow to be retrieved. Possible values are: TCP_UDP, LAYER2, LAYER3.</td>
</tr>
<tr>
<td>startTime</td>
<td>Flows with start time greater than specified time are retrieved.</td>
</tr>
<tr>
<td>endTime</td>
<td>Flows with start time less than specified time are retrieved.</td>
</tr>
<tr>
<td>startIndex</td>
<td>The starting point for returning results.</td>
</tr>
<tr>
<td>pageSize</td>
<td>The number of results to return. Range is 1-1024.</td>
</tr>
</tbody>
</table>

Description:
Retrieve flow statistics for a datacenter, port group, VM, or vNIC.

Response values for flow statistics:
- **blocked** - indicates whether traffic is blocked:
  - 0 - flow allowed
  - 1 - flow blocked
  - 2 - flow blocked by SpoofGuard
- **protocol** - protocol in flow:
  - 0 - TCP
  - 1 - UDP
  - 2 - ICMP
- **direction** - direction of flow:
  - 1 - from virtual machine
  - 2 - to virtual machine
- **controlDirection** - control direction for dynamic TCP traffic:
  - 0 - source -> destination
  - 1 - destination -> source

Responses:
Status Code: 200
Body: application/xml

```xml
<FlowStatsPage>
  <pagingInfo>
    <contextId>datacenter-2538</contextId>
    <flowType>TCP_UDP</flowType>
    <startTime>1327405883000</startTime>
  </pagingInfo>
</FlowStatsPage>
```
Working With Flow Monitoring Meta-Data

```
GET /api/2.1/app/flow/flowstats/info
```

Description:
Retrieve flow statistics meta-data.

This method retrieves the following information for each flow type:
- minimum start time
- maximum end time
- total flow count

Responses:
Status Code: 200
Body: application/xml

```
<FlowStatsInfo>
  <flowStatsInfoTcpUdp>
    <minimumStartTime>1327405883000</minimumStartTime>
    <maximumEndTime>1327482600000</maximumEndTime>
    <totalCount>817</totalCount>
  </flowStatsInfoTcpUdp>
  <flowStatsInfoLayer3>
    <minimumStartTime>1327405883000</minimumStartTime>
    <maximumEndTime>1327482600000</maximumEndTime>
    <totalCount>21</totalCount>
  </flowStatsInfoLayer3>
  <flowStatsInfoLayer2>
    <minimumStartTime>1327405883000</minimumStartTime>
    <maximumEndTime>1327482600000</maximumEndTime>
    <totalCount>531</totalCount>
  </flowStatsInfoLayer2>
</FlowStatsInfo>
```

Working With Flow Monitoring Configuration

Flow records generated on all hosts are sent to NSX Manager, which consumes the records and displays aggregated information. Hosts can generate large numbers of flow records. You can configure flow monitoring to exclude certain records from collection. The flow configuration applies to all hosts.

- `collectFlows` - if true, flow collection is enabled.
- `ignoreBlockedFlows` - if true, ignore blocked flows.
- `ignoreLayer2Flows` - if true, ignore layer 2 flows.
- `sourceIPs` - source IPs to exclude. For example: 10.112.3.14, 10.112.3.15-10.112.3.18,192.168.1.1/24.
- `sourceContainer` - source containers to exclude. Containers can contain VM, vNic, IP Set, MAC Set.
- `destinationIPs` - destination IPs to exclude.
- `destinationContainer` - destination containers to exclude. Containers can contain VM, vNic, IP Set, MAC Set.
- `destinationPorts` - destination ports to exclude.
- `serviceContainers` - service containers to exclude. Container can contain application or application group.

Flow exclusion happens at the host. The following flows are discarded by default:
- Broadcast IP (255.255.255.255)
- Local multicast group (224.0.0.0/24)
- Broadcast MAC address (FF:FF:FF:FF:FF:FF)

**GET /api/2.1/app/flow/config**

Description:
Retrieve flow monitoring configuration.

Responses:
PUT /api/2.1/app/flow/config

Description:
Update flow monitoring configuration.

Request:
Body: application/xml

<FlowConfiguration>
  <collectFlows>true</collectFlows>
  <ignoreBlockedFlows>false</ignoreBlockedFlows>
  <ignoreLayer2Flows>false</ignoreLayer2Flows>
  <sourceIPs>10.112.3.14, 10.112.3.15-10.112.3.18,192.168.1.1/24</sourceIPs>
  <sourceContainer>
    <name>vml - Network adapter 1</name>
    <id>5013bcd8-c666-1e28-c7a9-600da945954f.000</id>
    <type>Vnic</type>
  </sourceContainer>
  <sourceContainer>
    <name>Large XP-1</name>
    <id>vm-126</id>
    <type>VirtualMachine</type>
  </sourceContainer>
  <destinationIPs>10.112.3.14, 10.112.3.15-10.112.3.18,192.168.1.1/24</destinationIPs>
  <destinationContainer>
    <name>vm2 - Network adapter 2</name>
    <id>5013bcd8-c666-1e28-c7a9-600da945954f.000</id>
    <type>Vnic</type>
  </destinationContainer>
  <destinationContainer>
    <name>Small XP-2</name>
    <id>vm-226</id>
    <type>VirtualMachine</type>
  </destinationContainer>
  <destinationPorts>22, 40-50, 60</destinationPorts>
  <service>
    <name>VMware-VDM2.x-Ephemeral</name>
    <id>application-161</id>
  </service>
</FlowConfiguration>
Working With Flow Configuration for a Specific Context

DELETE /api/2.1/app/flow/{contextId}

**URI Parameters:**

| contextId  (required) | Context ID. |

**Description:**
Delete flow records for the specified context.
Exclude Virtual Machines from Firewall Protection

GET /api/2.1/app/excludelist

Description:
Retrieve the set of VMs in the exclusion list.

Working With the Exclusion List

PUT /api/2.1/app/excludelist/{memberID}

URI Parameters:
memberID (required)  vc-moref-id of a virtual machine.

Description:
Add a vm to the exclusion list.

DELETE /api/2.1/app/excludelist/{memberID}

URI Parameters:
memberID (required)  vc-moref-id of a virtual machine.

Description:
Delete a vm from exclusion list.
Working With NSX Edge

There are two types of NSX Edge: Edge services gateway and logical (distributed) router.

Edge Services Gateway

The services gateway gives you access to all NSX Edge services such as firewall, NAT, DHCP, VPN, load balancing, and high availability. You can install multiple Edge services gateway virtual appliances in a datacenter. Each Edge service gateway virtual appliance can have a total of ten uplink and internal network interfaces.

The internal interfaces connect to secured port groups and act as the gateway for all protected virtual machines in the port group. The subnet assigned to the internal interface can be a publicly routed IP space or a NATed/routed RFC 1918 private space. Firewall rules and other NSX Edge services are enforced on traffic between network interfaces.

Uplink interfaces of NSX Edge connect to uplink port groups that have access to a shared corporate network or a service that provides access layer networking. Multiple external IP addresses can be configured for load balancer, site-to-site VPN, and NAT services.

Logical (Distributed) Router

The logical router provides East-West distributed routing with tenant IP address space and data path isolation. Virtual machines or workloads that reside on the same host on different subnets can communicate with one another without having to traverse a traditional routing interface.

A logical router can have up to 9 uplink interfaces and up to 990 internal interfaces.

GET /api/4.0/edges

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>datacenter</td>
<td>Retrieve Edges by datacenter MoId.</td>
</tr>
<tr>
<td>tenant</td>
<td>Retrieve Edges on specified tenant (by tenant ID).</td>
</tr>
<tr>
<td>pg</td>
<td>Retrieve Edges with one interface on specified port group (by port group MoId).</td>
</tr>
</tbody>
</table>

Description:
Retrieve a list of all NSX Edges in your inventory. You can use the query parameters to filter results.

POST /api/4.0/edges

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>isUniversal</td>
<td>Set to true when creating a universal logical router. Note the type in the request body must be distributedRouter.</td>
</tr>
</tbody>
</table>

Description:
You can install NSX Edge as a services gateway or as a logical router.

The type parameter determines which type of NSX Edge is deployed: distributedRouter or gatewayServices. If no type is specified, the type is gatewayServices.

Other parameters for this method will differ depending on which type of NSX Edge you are deploying. See the examples and parameter tables for more information.

NSX Edge: Service Gateway

The NSX Edge installation API copies the NSX Edge OVF from the Edge Manager to the specified datastore and deploys an NSX Edge on the given datacenter. After the NSX Edge is installed, the virtual machine powers on and
initializes according to the given network configuration. If an appliance is added, it is deployed with the specified configuration.

Installing an NSX Edge instance adds a virtual machine to the vCenter Server inventory, you must specify an IP address for the management interface, and you may name the NSX Edge instance.

The configuration you specify when you install an NSX Edge is stored in the database. If an appliance is added, the configuration is applied to it and it is deployed.

NOTE: Do not use hidden/system resource pool IDs as they are not supported on the UI.

Request Body to Create Edge Services Gateway

```xml
<edge>
  <datacenterMoid>datacenter-2</datacenterMoid>
  <name>org1-edge</name>
  <description>Description for the edge gateway</description>
  <tenant>org1</tenant>
  <fqdn>org1edge1</fqdn>
  <vseLogLevel>info</vseLogLevel>
  <enableAesni>false</enableAesni>
  <enableFips>true</enableFips>
  <appliances>
    <applianceSize>compact</applianceSize>
    <enableCoreDump>true</enableCoreDump>
    <appliance>
      <resourcePoolId>resgroup-53</resourcePoolId>
      <datastoreId>datastore-29</datastoreId>
      <hostId>host-28</hostId>
      <vmFolderId>group-v38</vmFolderId>
      <customField>
        <key>system.service.vmware.vsla.main01</key>
        <value>string</value>
      </customField>
      <cpuReservation>
        <limit>2399</limit>
        <reservation>500</reservation>
        <shares>500</shares>
      </cpuReservation>
      <memoryReservation>
        <limit>5000</limit>
        <reservation>500</reservation>
        <shares>20480</shares>
      </memoryReservation>
    </appliance>
  </appliances>
  <vnics>
    <vnic>
      <index>0</index>
      <name>internal0</name>
      <type>internal</type>
      <portgroupId>dvportgroup-114</portgroupId>
      <addressGroups>
        <addressGroup>
          <primaryAddress>192.168.3.1</primaryAddress>
          <secondaryAddresses>
            <ipAddress>192.168.3.2</ipAddress>
            <ipAddress>192.168.3.3</ipAddress>
          </secondaryAddresses>
          <subnetMask>255.255.255.0</subnetMask>
        </addressGroup>
        <addressGroup>
```
<primaryAddress>192.168.4.1</primaryAddress>
<secondaryAddresses>
<ipAddress>192.168.4.2</ipAddress>
<ipAddress>192.168.4.3</ipAddress>
</secondaryAddresses>
<subnetPrefixLength>24</subnetPrefixLength>
</addressGroup>
<addressGroup>
<primaryAddress>ffff::1</primaryAddress>
<secondaryAddresses>
<ipAddress>ffff::2</ipAddress>
</secondaryAddresses>
<subnetPrefixLength>64</subnetPrefixLength>
</addressGroup>
</addressGroups>
<macAddress>
<edgeVmHaIndex>0</edgeVmHaIndex>
<value>00:50:56:01:03:23</value>
</macAddress>
<fenceParameter>
<key>ethernet0.filter1.param1</key>
<value>1</value>
</fenceParameter>
<mtu>1500</mtu>
<enableProxyArp>false</enableProxyArp>
<enableSendRedirects>true</enableSendRedirects>
<isConnected>true</isConnected>
<inShapingPolicy>
<averageBandwidth>200000000</averageBandwidth>
<peakBandwidth>200000000</peakBandwidth>
<burstSize>0</burstSize>
<enabled>true</enabled>
<inherited>false</inherited>
</inShapingPolicy>
<outShapingPolicy>
<averageBandwidth>400000000</averageBandwidth>
<peakBandwidth>400000000</peakBandwidth>
<burstSize>0</burstSize>
<enabled>true</enabled>
<inherited>false</inherited>
</outShapingPolicy>
</vnic>
</vnics>
<cliSettings>
<userName>test</userName>
<password>test123!</password>
<remoteAccess>false</remoteAccess>
</cliSettings>
<autoConfiguration>
<enabled>true</enabled>
<rulePriority>high</rulePriority>
</autoConfiguration>
<dnsClient>
<primaryDns>10.117.0.1</primaryDns>
<secondaryDns>10.117.0.2</secondaryDns>
<domainName>vmware.com</domainName>
<domainName>foo.com</domainName>
</dnsClient>
<queryDaemon>
<enabled>true</enabled>
<port>5666</port>
</queryDaemon>

NSX API Guide

Version: 6.3

Page 259


NSX Edge: Logical (Distributed) Router

Before installing a logical router, you must prepare the hosts on the appropriate clusters. The user specified configuration is stored in the database and Edge identifier is returned to the user. This identifier must be used for future configurations on the given Edge. If any appliance(s) are specified and at least one connected interface/vnic is specified, then the appliance(s) are deployed and configuration is applied to them.

It is not possible to set the true property upon creation of a distributed logical router Edge and a subsequent API call is required to enable ECMP.

DHCP relay settings are not able to be used when creating a distributed logical router Edge and a subsequent API call is required to configure DHCP relay properties.

Request Body to Create Logical (Distributed) Router

```
<edge>
  <datacenterMoid>datacenter-2</datacenterMoid>
  <type>distributedRouter</type>
  <appliances>
    <appliance>
      <resourcePoolId>resgroup-20</resourcePoolId>
      <datastoreId>datastore-23</datastoreId>
    </appliance>
  </appliances>
  <mgmtInterface>
    <connectedToId>dvportgroup-38</connectedToId>
    <addressGroups>
      <addressGroup>
        <primaryAddress>10.112.196.165</primaryAddress>
        <subnetMask>255.255.252.0</subnetMask>
      </addressGroup>
    </addressGroups>
  </mgmtInterface>
  <interfaces>
    <interface>
      <type>uplink</type>
      <mtu>1500</mtu>
      <isConnected>true</isConnected>
      <addressGroups>
        <addressGroup>
          <primaryAddress>192.168.10.1</primaryAddress>
          <subnetMask>255.255.255.0</subnetMask>
        </addressGroup>
      </addressGroups>
      <connectedToId>dvportgroup-39</connectedToId>
    </interface>
    <interface>
      <type>internal</type>
      <mtu>1500</mtu>
      <isConnected>true</isConnected>
      <addressGroups>
        <addressGroup>
          <primaryAddress>192.168.20.1</primaryAddress>
          <subnetMask>255.255.255.0</subnetMask>
        </addressGroup>
      </addressGroups>
      <connectedToId>dvportgroup-40</connectedToId>
    </interface>
  </interfaces>
</edge>
```
**Request and Response Body Parameters for NSX Edge**

### General Request Body Parameters: Edge Services Gateway and Logical (Distributed) Router

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>datacenterMoid</td>
<td>Specify vCenter Managed Object Identifier of data center on which edge has to be deployed</td>
<td>Required.</td>
</tr>
<tr>
<td>type</td>
<td>Specify which kind of NSX Edge to deploy. Choice of distributedRouter or gatewayServices.</td>
<td>Optional. Default is gatewayServices.</td>
</tr>
<tr>
<td>name</td>
<td>Specify a name for the new NSX Edge.</td>
<td>Optional. Default is NSX-&lt;edgeId&gt;. Used as a VM name on vCenter appended by -&lt;haIndex&gt;.</td>
</tr>
<tr>
<td>description</td>
<td>NSX Edge description.</td>
<td>Optional.</td>
</tr>
<tr>
<td>tenant</td>
<td>Specify the tenant. Used for syslog messages.</td>
<td>Optional.</td>
</tr>
<tr>
<td>fqdn</td>
<td>Fully Qualified Domain Name for the edge.</td>
<td>Optional. Default is NSX-&lt;edgeId&gt; Used to set hostname on the VM. Appended by -&lt;haIndex&gt;</td>
</tr>
<tr>
<td>vseLogLevel</td>
<td>Defines the log level for log messages captured in the log files.</td>
<td>Optional. Choice of: emergency, alert, critical, error, warning, notice, debug. Default is info.</td>
</tr>
<tr>
<td>enableCoreDump</td>
<td>Deploys a new NSX Edge for debug/core-dump purpose.</td>
<td>Optional. Default is false. Enabling core-dump will deploy an extra disk for core-dump files.</td>
</tr>
</tbody>
</table>

### Appliances Configuration: Edge Services Gateway and Logical (Distributed) Router

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>applianceSize</td>
<td>Edge form factor, it determines the NSX Edge size and capability.</td>
<td>Required. Choice of: compact, large, quadlarge, xlarge. Default is compact.</td>
</tr>
<tr>
<td>deployAppliances</td>
<td>Determine whether to deploy appliances.</td>
<td>Default is true.</td>
</tr>
<tr>
<td>appliance</td>
<td>Appliance configuration details.</td>
<td>Required. Can configure a maximum of two appliances. Until one appliance is configured and NSX Edge VM is deployed successfully, none of the configured features will serve the network.</td>
</tr>
<tr>
<td><strong>resourcePoolId</strong></td>
<td>Details of resource pool on which to deploy NSX Edge.</td>
<td>Required. Can be resource pool ID, e.g. <code>resgroup-15</code> or cluster ID, e.g. <code>domain-c41</code>.</td>
</tr>
<tr>
<td><strong>datastoreId</strong></td>
<td>Details of datastore on which to deploy NSX Edge.</td>
<td>Required.</td>
</tr>
<tr>
<td><strong>hostId</strong></td>
<td>ID of the host on which to deploy the NSX Edge.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>vmFolderId</strong></td>
<td>The folder in which to save the NSX Edge.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>customField</strong></td>
<td>Custom key-value attributes.</td>
<td>Optional. Use custom attributes to associate user-specific meta-information with VMs and managed hosts, stored on vCenter Server.</td>
</tr>
<tr>
<td><strong>customField &gt; key</strong></td>
<td>Meta information Key.</td>
<td>Required if customField is specified.</td>
</tr>
<tr>
<td><strong>customField &gt; value</strong></td>
<td>Meta information Value.</td>
<td>Required if customField is specified.</td>
</tr>
<tr>
<td><strong>cpuReservation &gt; limit</strong></td>
<td>Maximum CPU capacity the NSX Edge can use, specified in MHz.</td>
<td>Optional. -1 (unlimited), any positive integer</td>
</tr>
<tr>
<td><strong>cpuReservation &gt; reservation</strong></td>
<td>CPU capacity reserved for NSX Edge in MHz.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>cpuReservation &gt; shares</strong></td>
<td>Higher value implies NSX Edge has priority when accessing resources.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>memoryReservation &gt; limit</strong></td>
<td>Maximum memory the NSX Edge can use, specified in MB.</td>
<td>Optional. -1 (unlimited), any positive integer</td>
</tr>
<tr>
<td><strong>memoryReservation &gt; reservation</strong></td>
<td>Memory capacity reserved for NSX Edge in MB.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>memoryReservation &gt; shares</strong></td>
<td>Higher value implies NSX Edge has priority when accessing resources.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>cliSettings &gt; userName</strong></td>
<td>User name.</td>
<td>Required. length 1-33.</td>
</tr>
<tr>
<td><strong>cliSettings &gt; password</strong></td>
<td>Password.</td>
<td>Required. The password must be at least 12 characters long. Must contain at least 1 uppercase, 1 lowercase, 1 special character and 1 digit. In addition, a character cannot be repeated 3 or more times consecutively.</td>
</tr>
<tr>
<td><strong>cliSettings &gt; remoteAccess</strong></td>
<td>Enables or disables remote access through SSH.</td>
<td>Required. Relevant firewall rules to allow traffic on port 22 must be opened by user/client</td>
</tr>
</tbody>
</table>
### autoConfiguration > enabled
Enable/Disable status of autoConfiguration
Optional. True/False. Default is true. If autoConfiguration is enabled, firewall rules are automatically created to allow control traffic. Rules to allow data traffic are not created. For example, if you are using IPsec VPN, and **autoConfiguration** is true, firewall rules will automatically be configured to allow IKE traffic. However, you will need to add additional rules to allow the data traffic for the IPsec tunnel. If HA is enabled, firewall rules are always created, even if **autoConfiguration** is false, otherwise both HA appliances will become active.

### autoConfiguration > rulePriority
Defines the priority of system-defined rules over user-defined rules.
Optional. High, Low. Default is high.

### queryDaemon > enabled
Configure the communication between server load balancer and NSX Edge VM.
Default is false.

### queryDaemon > port
Defines the port through which the communication happens.
Integer 1-65535. Default is 5666.

## DNS Client: Edge Services Gateway and Logical (Distributed) Router

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>dnsClient</td>
<td>Configures the DNS settings of the Edge Services Gateway.</td>
<td>Optional. If the primary/secondary are specified and the DNS service is not specified, the primary/secondary will be used as the default of the DNS service.</td>
</tr>
<tr>
<td>primaryDns</td>
<td>Primary DNS IP</td>
<td></td>
</tr>
<tr>
<td>secondaryDns</td>
<td>Secondary DNS IP</td>
<td></td>
</tr>
<tr>
<td>domainName</td>
<td>Domain Name of Edge</td>
<td></td>
</tr>
<tr>
<td>secondaryDomainName</td>
<td>Secondary Domain Name of Edge</td>
<td></td>
</tr>
</tbody>
</table>

## vNIC Parameters: Edge Services Gateway Only

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>vnic</td>
<td>Configure interface (vNic).</td>
<td>Required. Until one connected vNic is configured, none of the configured features will serve the network.</td>
</tr>
<tr>
<td>index</td>
<td>Index of vNic to be configured. Value varies from 0-9. 4094 sub-interfaces can be configured in trunk mode.</td>
<td>Required.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the vNic.</td>
<td>Optional. System provides default names: vnic0...vnic9.</td>
</tr>
<tr>
<td>label</td>
<td>Label for the vNic.</td>
<td>Optional. System provides default labels: vnic_0...vnic_9.</td>
</tr>
<tr>
<td><strong>type</strong></td>
<td>Type of interface connected to vNic.</td>
<td>Optional. Choice of: <em>Uplink, Internal, TRUNK</em>. Default is <em>Internal</em>. TRUNK should be specified when sub-interfaces are configured.</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>portgroupId</strong></td>
<td>Connect NSX Edge to the network through this port group.</td>
<td>Required. Choice of: portgroupId or virtualWireId. portgroupId needs to be defined if isConnected=true.</td>
</tr>
<tr>
<td><strong>addressGroup</strong></td>
<td>Address Group assigned to vNic.</td>
<td>Required. More than one addressGroup/subnets can be assigned to the vNic.</td>
</tr>
<tr>
<td><strong>primaryAddress</strong></td>
<td>Primary Address of Edge Interface.</td>
<td>Required. IPv4 and IPv6 addresses are supported.</td>
</tr>
<tr>
<td><strong>secondaryAddresses &gt; ipAddress</strong></td>
<td>IP assigned to interface.</td>
<td>Optional. One or more ipAddress parameters are allowed, to enable assigning multiple IP addresses to a vNic, for example, for load balancing, NAT, VPN. At least one is required if secondaryAddresses is specified.</td>
</tr>
<tr>
<td><strong>subnetMask</strong> or <strong>subnetPrefixLength</strong></td>
<td>Subnet mask or prefix value.</td>
<td>Required. Either subnetMask or subnetPrefixLength should be provided. When both are provided then subnetprefixLength is ignored.</td>
</tr>
<tr>
<td><strong>macAddress</strong></td>
<td>Option to manually specify the MAC address.</td>
<td>Optional. Managed by vCenter if not provided.</td>
</tr>
<tr>
<td><strong>macAddress &gt; edgeVmHaIndex</strong></td>
<td>HA index of the Edge VM.</td>
<td>Required. 0 or 1.</td>
</tr>
<tr>
<td><strong>macAddress &gt; value</strong></td>
<td>Value of the MAC address.</td>
<td>Optional. Ensure that MAC addresses provided are unique within the given layer 2 domain.</td>
</tr>
<tr>
<td><strong>vnic &gt; mtu</strong></td>
<td>The maximum transmission value for the data packets.</td>
<td>Optional. Default is 1500.</td>
</tr>
<tr>
<td><strong>enableProxyArp</strong></td>
<td>Enables proxy ARP. Do not use this flag unless you want NSX Edge to proxy ARP for all configured subnets.</td>
<td>Optional. True/False. Default is false.</td>
</tr>
<tr>
<td><strong>enableSendRedirects</strong></td>
<td>Enables ICMP redirect.</td>
<td>Optional. True/False. Default is true.</td>
</tr>
<tr>
<td><strong>isConnected</strong></td>
<td>Sets if the interface is connected to the port group network.</td>
<td>Optional. True/False. Default is false. portgroupId needs to be defined if isConnected=true.</td>
</tr>
<tr>
<td><strong>inShapingPolicy</strong></td>
<td>Configure Incoming Traffic.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>outShapingPolicy</strong></td>
<td>Configure Outgoing Traffic.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>averageBandwidth</strong> (inShapingPolicy or outShapingPolicy)</td>
<td>Sets average bandwidth for traffic.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>peakBandwidth</strong> (inShapingPolicy or outShapingPolicy)</td>
<td>Sets peak bandwidth for traffic.</td>
<td>Required.</td>
</tr>
<tr>
<td><strong>burstSize</strong> (inShapingPolicy or outShapingPolicy)</td>
<td>Sets the burst size of the interface.</td>
<td>Required.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>mgmtInterface</td>
<td>High availability interface configuration. Interface index 0 is assigned.</td>
<td>Required.</td>
</tr>
<tr>
<td>interface</td>
<td>Interface configuration. 1-9 are reserved for uplinks, 10-999 are used for internal interfaces.</td>
<td>Optional. Can be added after logical router creation.</td>
</tr>
<tr>
<td>connectedToId</td>
<td>Managed Object ID of logical switch or port group.</td>
<td>For example, virtualwire-1 or dvportgroup-50. Logical router interfaces do not support legacy port groups.</td>
</tr>
<tr>
<td>name</td>
<td>Name assigned to interface.</td>
<td>Optional.</td>
</tr>
<tr>
<td>addressGroup</td>
<td>Address Group assigned to interface.</td>
<td>Required. Only one addressGroup can be configured on each logical router mgmtInterface or interface.</td>
</tr>
<tr>
<td>primaryAddress</td>
<td>Primary Address of interface.</td>
<td>Required. Secondary Addresses are not supported on logical routers. Address must be IPv4.</td>
</tr>
<tr>
<td>subnetMask or subnetPrefixLength</td>
<td>Subnet mask or prefix value.</td>
<td>Required. Either subnetMask or subnetPrefixLength should be provided. When both are provided then subnetPrefixLength is ignored.</td>
</tr>
<tr>
<td>mtu</td>
<td>The maximum transmission value for the data packets.</td>
<td>Optional. Default is 1500.</td>
</tr>
<tr>
<td>type</td>
<td>Type of interface.</td>
<td>Required. Choice of uplink or internal.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<edge>
  <datacenterMoid>datacenter-2</datacenterMoid>
  <name>org1-edge</name>
  <description>Description for the edge gateway</description>
  <tenant>org1</tenant>
  <fqdn>org1edge1</fqdn>
  <vseLogLevel>info</vseLogLevel>
  <enableAesni>false</enableAesni>
  <enableFips>true</enableFips>
  <appliances>
    <applianceSize>compact</applianceSize>
```
<enableCoreDump>true</enableCoreDump>

<appliance>
  <resourcePoolsId>resgroup-53</resourcePoolsId>
  <datastoreId>datastore-29</datastoreId>
  <hostId>host-28</hostId>
  <vmFolderId>group-v38</vmFolderId>
  <customField>
    <key>system.service.vmware.vsla.main01</key>
    <value>string</value>
  </customField>
  <cpuReservation>
    <limit>2399</limit>
    <reservation>500</reservation>
    <shares>500</shares>
  </cpuReservation>
  <memoryReservation>
    <limit>5000</limit>
    <reservation>500</reservation>
    <shares>20480</shares>
  </memoryReservation>
</appliance>

<appliances>
  <vnics>
    <vnic>
      <index>0</index>
      <name>internal0</name>
      <type>internal</type>
      <portgroupId>dvportgroup-114</portgroupId>
      <addressGroups>
        <addressGroup>
          <primaryAddress>192.168.3.1</primaryAddress>
          <secondaryAddresses>
            <ipAddress>192.168.3.2</ipAddress>
            <ipAddress>192.168.3.3</ipAddress>
          </secondaryAddresses>
          <subnetMask>255.255.255.0</subnetMask>
        </addressGroup>
        <addressGroup>
          <primaryAddress>192.168.4.1</primaryAddress>
          <secondaryAddresses>
            <ipAddress>192.168.4.2</ipAddress>
            <ipAddress>192.168.4.3</ipAddress>
          </secondaryAddresses>
          <subnetPrefixLength>24</subnetPrefixLength>
        </addressGroup>
        <addressGroup>
          <primaryAddress>ffff::1</primaryAddress>
          <secondaryAddresses>
            <ipAddress>ffff::2</ipAddress>
          </secondaryAddresses>
          <subnetPrefixLength>64</subnetPrefixLength>
        </addressGroup>
      </addressGroups>
      <macAddress>
        <edgeVmHaIndex>0</edgeVmHaIndex>
        <value>00:50:56:01:03:23</value>
      </macAddress>
      <fenceParameter>
        <key>ethernet0.filter1.param1</key>
        <value>1</value>
      </fenceParameter>
      <mtu>1500</mtu>
    </vnic>
  </vnics>
</appliances>
Working With a Specific NSX Edge

GET /api/4.0/edges/{edgeId}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>isUniversal</td>
<td>Filter output to display only universal logical routers.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified NSX Edge.

Method history:
PUT /api/4.0/edges/{edgeId}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Specify the ID of the edge in `edgeId`.

**Description:**
Update the NSX Edge configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>haAdminState</code>, <code>configuredResourcePool</code>, <code>configuredDataStore</code>, <code>configuredHost</code>, <code>configuredVmFolder</code> parameters added.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>dnatMatchSourceAddress</code>, <code>snatMatchDestinationAddress</code>, <code>dnatMatchSourcePort</code>, <code>snatMatchDestinationPort</code> parameters added. <code>protocol</code>, <code>originalPort</code>, and <code>translatedPort</code> now supported in SNAT rules.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```
<edge>
  <id></id>
  <description></description>
  <datacenterMoid></datacenterMoid>
  <name></name>
  <type></type>
  <fqdn></fqdn>
  <enableAesni></enableAesni>
  <enableFips></enableFips>
  <vseLogLevel></vseLogLevel>
  <vnics>
    <vnic>
      <index></index>
      <name></name>
      <type></type>
      <portgroupId></portgroupId>
      <addressGroups>
        <addressGroup>
          <primaryAddress></primaryAddress>
          <secondaryAddresses>
            <ipAddress></ipAddress>
          </secondaryAddresses>
          <subnetMask></subnetMask>
        </addressGroup>
      </addressGroups>
    </vnic>
  </vnics>
</edge>
```
<defaultRoute>
  <vnic/>
  <gatewayAddress/>
  <description/>
</defaultRoute>
<staticRoutes>
  <route>
    <vnic/>
    <network/>
    <nextHop/>
    <type/>
  </route>
</staticRoutes>
</staticRouting>
<ospf>
  <enabled/>
</ospf>
</routing>
<highAvailability>
  <enabled/>
  <declareDeadTime/>
  <logging>
    <enable/>
    <logLevel/>
  </logging>
</highAvailability>
<syslog>
  <protocol/>
  <serverAddresses>
    <ipAddress/>
  </serverAddresses>
  <enabled/>
</syslog>
<ipsec>
  <enabled/>
  <logging>
    <enable/>
    <logLevel/>
  </logging>
</ipsec>
<sites>
  <site>
    <enabled/>
    <name/>
    <localId/>
    <localIp/>
    <peerId/>
    <encryptionAlgorithm/>
    <mtu/>
    <enablePfs/>
    <dhGroup/>
    <localSubnets>
      <subnet/>
    </localSubnets>
    <peerSubnets>
      <subnet/>
    </peerSubnets>
    <psk>
      <authenticationMode/>
    </psk>
  </site>
</sites>
<global>
  <caCertificates/>
  <crlCertificates/>
</global>
POST /api/4.0/edges/{edgeId}

URI Parameters:
edgeId (required)  Specify the ID of the edge in `edgeId`.

<table>
<thead>
<tr>
<th>Query Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>action (required)</td>
<td>Options include:</td>
</tr>
<tr>
<td></td>
<td>- forcesync - Force sync the NSX Edge</td>
</tr>
<tr>
<td></td>
<td>- redeploy - Redeploy the NSX Edge</td>
</tr>
<tr>
<td></td>
<td>- upgrade - Upgrade the NSX Edge to a newer version</td>
</tr>
</tbody>
</table>

**Description:**
Manage NSX Edge.

DELETE /api/4.0/edges/{edgeId}

**URI Parameters:**
| edgeId (required) | Specify the ID of the edge in `edgeId`.  |

**Description:**
Delete specified NSX Edge configuration. Associated appliances are also deleted.

---

**Working With DNS Client Configuration**

PUT /api/4.0/edges/{edgeId}/dnsclient

**URI Parameters:**
| edgeId (required) | Specify the ID of the edge in `edgeId`.  |

**Description:**
Update Edge DNS settings.

**Request:**
**Body:** application/xml

```xml
<dnsClient>
  <primaryDns></primaryDns>
  <secondaryDns></secondaryDns>
  <domainName></domainName>
</dnsClient>
```

---

**Working With AESNI**

POST /api/4.0/edges/{edgeId}/aesni

**URI Parameters:**
edgeId (required)

Specify the ID of the edge in `edgeId`.

Query Parameters:

enable (required)

Description:
Modify AESNI setting.

---

### Working With Core Dumps

Enabling core-dump feature results in deployment of built-in extra disk to save core-dump files. Disabling detaches the disk.

**POST** /api/4.0/edges/{edgeId}/coredump

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

enable (required)

Enter value as `true` or `false`. Use `coredump?enable={true | false}`.

Description:
Modify core dump setting.

---

### Working With FIPS on NSX Edge

**POST** /api/4.0/edges/{edgeId}/fips

<table>
<thead>
<tr>
<th>URI Parameters:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

enable (required)

Choice of `true` or `false`. Changing the FIPS mode will reboot the NSX Edge appliance.

Description:
Modify FIPS setting.

---

### Working With NSX Edge Logs

**POST** /api/4.0/edges/{edgeId}/logging
URI Parameters:

- **edgeId (required)** Specify the ID of the edge in *edgeId*.

Query Parameters:

- **level** Logging level.

Description:

Modify log setting.

---

## Working With NSX Edge Summary

**GET** /api/4.0/edges/{edgeId}/summary

**URI Parameters:**

- **edgeId (required)** Specify the ID of the edge in *edgeId*.

**Description:**

Retrieve details about the specified NSX Edge.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>enableFips</code> parameter added to <code>appliancesSummary</code>.</td>
</tr>
</tbody>
</table>

**Responses:**

- **Status Code:** 200
- **Body:** application/xml

```xml
<edgeSummary>
    <objectId>edge-3</objectId>
    <objectTypeName>Edge</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>9</revision>
    <type>
        <typeName>Edge</typeName>
    </type>
    <name>Perimeter-Gateway-01</name>
    <clientHandle>
        <extendedAttributes/>
        <isUniversal>false</isUniversal>
        <universalRevision>0</universalRevision>
    </clientHandle>
    <id>edge-3</id>
    <state>deployed</state>
    <edgeType>gatewayServices</edgeType>
    <datacenterMoid>datacenter-21</datacenterMoid>
    <datacenterName>Datacenter Site A</datacenterName>
    <tenantId>default</tenantId>
    <apiVersion>4.0</apiVersion>
</edgeSummary>
```
<recentJobInfo>
  <jobId>jobdata-35884</jobId>
  <status>SUCCESS</status>
</recentJobInfo>
<edgeStatus>GREEN</edgeStatus>
<numberofConnectedVnics>2</numberofConnectedVnics>
<appliancesSummary>
  <vmVersion>6.2.4</vmVersion>
  <vmBuildInfo>6.2.4-4259031</vmBuildInfo>
  <applianceSize>compact</applianceSize>
  <fqdn>Perimeter-Gateway-01</fqdn>
  <numberOfDeployedVms>1</numberOfDeployedVms>
  <activeVseHaIndex>0</activeVseHaIndex>
  <vmNameOfActiveVse>vm-391</vmNameOfActiveVse>
  <hostMoidOfActiveVse>host-203</hostMoidOfActiveVse>
  <hostNameOfActiveVse>esxmgt-02a.corp.local</hostNameOfActiveVse>
  <resourcePoolNameOfActiveVse>Resources</resourcePoolNameOfActiveVse>
  <dataStoreNameOfActiveVse>ds-site-a-nfs01</dataStoreNameOfActiveVse>
  <statusFromVseUpdatedOn>1487375637539</statusFromVseUpdatedOn>
  <communicationChannel>msgbus</communicationChannel>
  <deployAppliances>true</deployAppliances>
  <enableFips>false</enableFips>
</appliancesSummary>
<featureCapabilities>
  <featureCapability>
    <service>dhcp</service>
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    <permission>
      <accessPermission>
        <viewPermission>true</viewPermission>
        <managePermission>true</managePermission>
      </accessPermission>
      <isLicensed>true</isLicensed>
    </permission>
    <configurationLimit>
      <key>MAX_POOL_AND_BINDINGS</key>
      <value>2048</value>
    </configurationLimit>
  </featureCapability>
  <featureCapability>
    <service>syslog</service>
    <isSupported>true</isSupported>
    <permission>
      <accessPermission>
        <viewPermission>true</viewPermission>
        <managePermission>true</managePermission>
      </accessPermission>
      <isLicensed>true</isLicensed>
    </permission>
    <configurationLimit>
      <key>MAX_SERVER_IPS</key>
      <value>2</value>
    </configurationLimit>
  </featureCapability>
  <featureCapability>
    <service>bridging</service>
    <isSupported>true</isSupported>
    <permission>
      <accessPermission>
        <viewPermission>true</viewPermission>
        <managePermission>true</managePermission>
      </accessPermission>
      <isLicensed>true</isLicensed>
    </permission>
    <configurationLimit>
      <key>MAX_POOL_AND_BINDINGS</key>
      <value>2048</value>
    </configurationLimit>
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</featureCapabilities>
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  <viewPermission>true</viewPermission>
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</accessPermission>
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<configurationLimit>
  <key>MAX_BRIDGES</key>
  <value>500</value>
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    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_RULES</key>
    <value>2048</value>
  </configurationLimit>
</featureCapability>
<featureCapability>
  <service>l2vpn</service>
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  <permission>
    <accessPermission>
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      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>false</isLicensed>
  </permission>
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    <accessPermission>
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      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
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    <value>64</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_TUNNELS_COMPACT</key>
    <value>512</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_TUNNELS_LARGE</key>
    <value>1600</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_TUNNELS_QUADLARGE</key>
    <value>4096</value>
  </configurationLimit>
</featureCapability>
</configurationLimit>
<configurationLimit>
  <key>MAX_TUNNELS_XLARGE</key>
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</configurationLimit>
</featureCapability>
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  <service>systemControl</service>
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  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
</featureCapability>
<featureCapability>
  <service>gslb</service>
  <isSupported>true</isSupported>
  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
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    <value>10</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_GSLB_IPS</key>
    <value>32</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_GSLB_POOLS</key>
    <value>32</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_MEMBERS_PER_POOL</key>
    <value>10</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_GSLB_MONITORS</key>
    <value>128</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_MONITOR_INSTANCES</key>
    <value>320</value>
  </configurationLimit>
</featureCapability>
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  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
<configurationLimit>
  <key>MAX_APPLIANCES</key>
  <value>2</value>
</configurationLimit>

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  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_RULES</key>
    <value>2048</value>
  </configurationLimit>
</featureCapability>

<featureCapability>
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  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_SSLVPN_IPPOOLS</key>
    <value>4</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_SSLVPN_PRIVATE_NETWORK</key>
    <value>16</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_SSLVPN_USERS</key>
    <value>1024</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_SSLVPN_AUTH_SERVERS</key>
    <value>4</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_SSLVPN_INSTALLATION_PACKAGES</key>
    <value>2</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_SSLVPN_WEB_RESOURCE</key>
    <value>16</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_SSLVPN_SCRIPTS</key>
    <value>4</value>
  </configurationLimit>
</featureCapability>

<featureCapability>
  <service>highAvailability</service>
  <isSupported>true</isSupported>
</featureCapability>
<permission>
  <accessPermission>
    <viewPermission>true</viewPermission>
    <managePermission>true</managePermission>
  </accessPermission>
  <isLicensed>true</isLicensed>
</permission>

<configurationLimit>
  <key>MAX_MANAGEMENT_IPS</key>
  <value>2</value>
</configurationLimit>

<featureCapability>
  <service>dns</service>
  <isSupported>true</isSupported>
  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_SERVER_IPS</key>
    <value>2</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_CACHE_SIZE</key>
    <value>8192</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_VIEWS</key>
    <value>100</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_ZONES_PER_VIEW</key>
    <value>1000</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_RECORDS_PER_ZONE</key>
    <value>1000</value>
  </configurationLimit>
  <configurationLimit>
    <key>MAX_VALUES_PER_RECORD</key>
    <value>100</value>
  </configurationLimit>
</featureCapability>

<featureCapability>
  <service>loadBalancer</service>
  <isSupported>true</isSupported>
  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_MEMBERS_IN_POOL</key>
    <value>32</value>
  </configurationLimit>
</featureCapability>
<key>MAX_MONITOR_INSTANCES</key>
  <value>320</value>
</configurationLimit>

<configurationLimit>
  <key>MAX_POOLS</key>
  <value>64</value>
</configurationLimit>

<configurationLimit>
  <key>MAX_VIRTUAL_SERVERS</key>
  <value>64</value>
</configurationLimit>

</featureCapability>

<featureCapability>
  <service>routing</service>
  <isSupported>true</isSupported>
  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_ROUTES</key>
    <value>2048</value>
  </configurationLimit>
</featureCapability>

<featureCapability>
  <service>vnics</service>
  <isSupported>true</isSupported>
  <permission>
    <accessPermission>
      <viewPermission>true</viewPermission>
      <managePermission>true</managePermission>
    </accessPermission>
    <isLicensed>true</isLicensed>
  </permission>
  <configurationLimit>
    <key>MAX_SUB_INTERFACES</key>
    <value>200</value>
  </configurationLimit>
</featureCapability>

</featureCapabilities>

<hypervisorAssist>false</hypervisorAssist>

<allowedActions>
  <string>Change Log Level</string>
  <string>Add Edge Appliance</string>
  <string>Delete Edge Appliance</string>
  <string>Edit Edge Appliance</string>
  <string>Edit CLI Credentials</string>
  <string>Change edge appliance size</string>
  <string>Force Sync</string>
  <string>Redeploy Edge</string>
  <string>Change Edge Appliance Core Dump Configuration</string>
  <string>Enable hypervisorAssist</string>
  <string>Edit Highavailability</string>
  <string>Edit Dns</string>
  <string>Edit Syslog</string>
  <string>Edit Automatic Rule Generation Settings</string>
  <string>Disable SSH</string>
  <string>Download Edge TechSupport Logs</string>
</allowedActions>
Working With NSX Edge Status

GET /api/4.0/edges/{edgeId}/status

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>getlatest (optional)</td>
<td>If true: retrieve the status live from NSX Edge.</td>
</tr>
<tr>
<td>detailed (optional)</td>
<td>If true: retrieve detailed status per feature.</td>
</tr>
<tr>
<td>preRulesStatus (optional)</td>
<td>If true: retrieve detailed output for pre rules in addition to the regular output.</td>
</tr>
</tbody>
</table>

Description:
Retrieve the status of the specified Edge.

The edgeStatus has the following possible states:
- **GREEN**: Health checks are successful, status is good.
- **YELLOW**: Intermittent health check failure. If health check fails for five consecutive times for all appliances, status will turn **RED**.
- **GREY**: unknown status.
- **RED**: None of the appliances for this NSX Edge are in a serving state.

Responses:
Status Code: 200
Body: application/xml

```
<edgeStatus>
  <timestamp>1343739873000</timestamp>
  <systemStatus>good</systemStatus>
  <activeVseHaIndex>0</activeVseHaIndex>
  <edgeStatus>GREEN</edgeStatus>
  <publishStatus>APPLIED</publishStatus>
  <version>8</version>
  <edgeVmStatus>
    <edgeVMStatus>GREEN</edgeVMStatus>
    <haState>active</haState>
    <index>0</index>
    <id>vm-358</id>
    <name>test2-0</name>
  </edgeVmStatus>
</edgeStatus>
```
<haState>active</haState>
</edgeVmStatus>
</edgeVmStatus>
<featureStatuses>
  <featureStatus>
    <service>loadBalancer</service>
    <configured>false</configured>
    <serverStatus>down</serverStatus>
  </featureStatus>
  <featureStatus>
    <service>dhcp</service>
    <configured>true</configured>
    <publishStatus>Applied</publishStatus>
    <serverStatus>up</serverStatus>
  </featureStatus>
  <featureStatus>
    <service>sslvpn</service>
    <configured>false</configured>
    <serverStatus>down</serverStatus>
  </featureStatus>
  <featureStatus>
    <service>syslog</service>
    <configured>false</configured>
    <serverStatus>up</serverStatus>
  </featureStatus>
  <featureStatus>
    <service>nat</service>
    <configured>false</configured>
  </featureStatus>
  <featureStatus>
    <service>dns</service>
    <configured>false</configured>
    <serverStatus>down</serverStatus>
  </featureStatus>
  <featureStatus>
    <service>ipsec</service>
    <configured>false</configured>
    <serverStatus>down</serverStatus>
  </featureStatus>
  <featureStatus>
    <service>firewall</service>
    <configured>true</configured>
    <publishStatus>Applied</publishStatus>
  </featureStatus>
  <featureStatus>
    <service>staticRouting</service>
    <configured>false</configured>
  </featureStatus>
  <featureStatus>
    <service>highAvailability</service>
    <configured>true</configured>
    <publishStatus>Applied</publishStatus>
    <serverStatus>up</serverStatus>
  </featureStatus>
</featureStatuses>
</edgeStatus>
Working With NSX Edge Tech Support Logs

GET /api/4.0/edges/{edgeId}/techsupportlogs

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve the tech support logs for the specified NSX Edge.

The response status for the tech support logs API request is **303 See Other**, and the **Location** header contains the file location of the tech support logs on the NSX Manager web server.

If your REST client is configured to not follow redirects, see the Location header to find the location of the tech support logs on the NSX Manager web server. You can retrieve the logs from https://<nsxmgr-address>/<location>.

Example in curl:

```
https://192.168.110.42/api/4.0/edges/edge-4/techsupportlogs
```

In this example, the log location is https://192.168.110.42/tech_support_logs/vse/NSX_Edge_Support_edge-4_050217_155853GMT+00:00.log.gz

If your REST client is configured to follow redirects, the request retrieves the tech support log file from the file location in the **Location** field. Consult your REST client documentation for information on saving binary file responses.

Example in curl:

```
> NSX_Edge_Support_edge-4.log.gz
```

---

Working With NSX Edge CLI Settings

PUT /api/4.0/edges/{edgeId}/clisettings

URI Parameters:
Working With NSX Edge Remote Access

POST /api/4.0/edges/{edgeId}/cliremoteaccess

**URI Parameters:**
- **edgeId** *(required)*  
  Specify the ID of the edge in `edgeId`.

**Query Parameters:**
- enable *(required)*

**Description:**
Change CLI remote access

Working With NSX Edge System Control Configuration

GET /api/4.0/edges/{edgeId}/systemcontrol/config

**URI Parameters:**
- **edgeId** *(required)*  
  Specify the ID of the edge in `edgeId`.

**Description:**
Retrieve all NSX Edge system control configuration.
If no system control parameters are configured, the response is empty.

PUT /api/4.0/edges/{edgeId}/systemcontrol/config

**URI Parameters:**
edgeId (required) Specify the ID of the edge in `edgeId`.

Description:
Update the NSX Edge system control (sysctl) configuration.

Available System Control Properties

<table>
<thead>
<tr>
<th>Description</th>
<th>Properties</th>
</tr>
</thead>
</table>
| Determine the IP address to be sent in ARP | sysctl.net.ipv4.conf.all.arp_announce  
sysctl.net.ipv4.conf.default.arp_announce |
| TCP timeout values for conntrack to fine tune NAT performance | sysctl.net.netfilter.nf_conntrack_tcp_timeout_fin_wait  
sysctl.net.netfilter.nf_conntrack_tcp_timeout_close_wait  
sysctl.net.netfilter.nf_conntrack_tcp_timeout_max_retrans  
sysctl.net.netfilter.nf_conntrack_tcp_timeout_unacknowledged  
sysctl.net.netfilter.nf_conntrack_tcp_max_retrans |
| Disable uRPF check | sysctl.net.ipv4.conf.all.rp_filter  
sysctl.net.ipv4.conf.default.rp_filter  
sysctl.net.ipv4.conf.vNic_[0-4094].rp_filter |
| Modify ARP limits in cache | sysctl.net.ipv4.neigh.default.gc_thresh1  
sysctl.net.ipv4.neigh.default.gc_thresh1  
sysctl.net.ipv4.neigh.default.gc_thresh2  
sysctl.net.ipv6.neigh.default.gc_thresh2  
sysctl.net.ipv4.neigh.default.gc_thresh3  
sysctl.net.ipv6.neigh.default.gc_thresh3 |
| TIME_WAIT socket connections configuration | sysctl.net.ipv4.tcp_tw_reuse  
sysctl.net.ipv4.tcp_tw_recycle |
| Load balancer tuning parameters | lb.global.tune.bufsize  
lb.global.tune.maxrewrite  
sysctl.net.ipv4.vs.expire_nodest_conn  
sysctl.net.ipv4.tcp_max_orphans  
sysctl.net.ipv4.tcp_mem |
| Bridge tuning parameters | sysctl.net.bridge.bridge-nf-call-iptables  
sysctl.net.bridge.bridge-nf-call-ip6tables |

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.2</td>
<td>Properties added: <code>sysctl.net.ipv4.tcp_max_orphans</code>, <code>sysctl.net.ipv4.tcp_mem</code></td>
</tr>
<tr>
<td>6.3.7</td>
<td>Properties added: <code>sysctl.net.bridge.bridge-nf-call-iptables</code>, <code>sysctl.net.bridge.bridge-nf-call-ip6tables</code></td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```
<systemControl>
  <property>sysctl.net.ipv4.conf.vNic_1.rp_filter=2</property>
  <property>sysctl.net.ipv4.conf.vNic_2.rp_filter=2</property>
  <property>sysctl.net.ipv4.conf.vNic_3.rp_filter=2</property>
  <property>sysctl.net.netfilter.nf_conntrack_tcp_timeout_syn_sent=30</property>
  <property>sysctl.net.netfilter.nf_conntrack_tcp_timeout_syn_recv=20</property>
</systemControl>
```
DELETE /api/4.0/edges/{edgeId}/systemcontrol/config

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>rebootNow</td>
<td>(required) You must specify the <code>rebootNow</code> query parameter to delete the system control configuration. The NSX Edge appliance is rebooted.</td>
</tr>
</tbody>
</table>

**Description:**

Delete all NSX Edge system control configuration.

Deleting the system control configuration requires a reboot of the NSX Edge appliance.

---

**Working With NSX Edge Firewall Configuration**

Configures firewall for an Edge and stores the specified configuration in database. If any appliances are associated with this Edge, applies the configuration to them. While using this API, you should send the `globalConfig`, `defaultPolicy` and the rules. If either of them are not sent, the previous config if any on those fields will be removed and will be changed to the system defaults.

`ruleId` uniquely identifies a rule and should be specified only for rules that are being updated. If `ruleTag` is specified, the rules on Edge are configured using this user input. Otherwise, Edge is configured using `ruleIds` generated by NSX Manager.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>tcpPickOngoingConnections</td>
<td>Boolean, optional, default: false.</td>
</tr>
<tr>
<td>tcpAllowOutOfWindowPackets</td>
<td>Boolean, optional, default: false.</td>
</tr>
<tr>
<td>tcpSendResetForClosedVsePorts</td>
<td>Boolean, optional, default: true.</td>
</tr>
<tr>
<td>dropInvalidTraffic</td>
<td>Boolean, optional, default: true.</td>
</tr>
<tr>
<td>logInvalidTraffic</td>
<td>Boolean, optional, default: false.</td>
</tr>
<tr>
<td>tcpTimeoutOpen</td>
<td>Integer, optional, default: 30.</td>
</tr>
<tr>
<td>tcpTimeoutEstablished</td>
<td>Integer, optional, default: 21600.</td>
</tr>
<tr>
<td>tcpTimeoutClose</td>
<td>Integer, optional, default: 30.</td>
</tr>
<tr>
<td>udpTimeout</td>
<td>Integer, optional, default: 60.</td>
</tr>
<tr>
<td>icmpTimeout</td>
<td>Integer, optional, default: 10.</td>
</tr>
<tr>
<td>icmp6Timeout</td>
<td>Integer, optional, default: 10.</td>
</tr>
<tr>
<td>ipGenericTimeout</td>
<td>Integer, optional, default: 120.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>enableSynFloodProtection</td>
<td>Protect against SYN flood attacks by detecting bogus TCP connections and terminating them without consuming firewall state tracking resources. Boolean, optional, default: false.</td>
</tr>
<tr>
<td>logIcmpErrors</td>
<td>Boolean, optional, default false.</td>
</tr>
<tr>
<td>dropIcmpReplays</td>
<td>Boolean, optional, default false.</td>
</tr>
<tr>
<td>defaultPolicy</td>
<td>Optional. Default is deny.</td>
</tr>
<tr>
<td>action</td>
<td>String, values: accept, deny.</td>
</tr>
<tr>
<td>loggingEnabled</td>
<td>Boolean, optional, default: false.</td>
</tr>
<tr>
<td>firewallRules</td>
<td>Optional.</td>
</tr>
<tr>
<td>action</td>
<td>String. Valid values: accept, deny.</td>
</tr>
<tr>
<td>source</td>
<td>Optional. Default is any.</td>
</tr>
<tr>
<td>destination</td>
<td>Optional. Default is any.</td>
</tr>
<tr>
<td>exclude</td>
<td>(source or destination) Boolean. Exclude the specified source or destination.</td>
</tr>
<tr>
<td>ipAddress</td>
<td>(source or destination) List of string. Can specify single IP address, range of IP address, or in CIDR format. Can define multiple.</td>
</tr>
<tr>
<td>groupingObjectId</td>
<td>(source or destination) List of string. Id of cluster, datacenter, distributedPortGroup, legacyPortGroup, VirtualMachine, vApp, resourcePool, logicalSwitch, IPSet, securityGroup. Can defined multiple.</td>
</tr>
<tr>
<td>vnicGroupId</td>
<td>(source or destination) List of string. Possible values are vnic-index-[1-9], vse, external or internal. Can define multiple.</td>
</tr>
<tr>
<td>application</td>
<td>Optional. When absent its treated as any.</td>
</tr>
<tr>
<td>applicationId</td>
<td>List of string. Id of service or serviceGroup groupingObject.</td>
</tr>
<tr>
<td>service</td>
<td>List.</td>
</tr>
<tr>
<td>protocol</td>
<td>String.</td>
</tr>
<tr>
<td>port</td>
<td>List of string.</td>
</tr>
<tr>
<td>sourcePort</td>
<td>List of string.</td>
</tr>
<tr>
<td>icmpType</td>
<td>String.</td>
</tr>
<tr>
<td>name</td>
<td>String.</td>
</tr>
<tr>
<td>description</td>
<td>String.</td>
</tr>
<tr>
<td>enabled</td>
<td>Boolean, optional. Default true.</td>
</tr>
<tr>
<td>loggingEnabled</td>
<td>Boolean, optional. Default false.</td>
</tr>
<tr>
<td>matchTranslated</td>
<td>Boolean.</td>
</tr>
<tr>
<td>direction</td>
<td>String, optional. Possible values in or out. When absent its treated as any.</td>
</tr>
<tr>
<td>ruleTag</td>
<td>Long, optional. This can be used to specify user controlled ruleId. If not specified, NSX Manager will generate ruleId. Valid values: 1-65536.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/firewall/config

URI Parameters:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>
Description:
Retrieve the NSX Edge firewall configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>enableSynFloodProtection</code> parameter added.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>logIcmpErrors</code> and <code>dropIcmpReplays</code> parameters added.</td>
</tr>
</tbody>
</table>

PUT /api/4.0/edges/{edgeId}/firewall/config

URI Parameters:

| `edgeId` (required) | Specify the ID of the edge in `edgeId`. |

Description:
Configure NSX Edge firewall.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>enableSynFloodProtection</code> parameter added. Default value of <code>tcpTimeoutEstablished</code> increased from 3600 to 21600 seconds (6 hours).</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>logIcmpErrors</code> and <code>dropIcmpReplays</code> parameters added.</td>
</tr>
</tbody>
</table>

Request:

**Body**: `application/xml`

```xml
<firewall>
  <defaultPolicy>
    <action>deny</action>
    <loggingEnabled>false</loggingEnabled>
  </defaultPolicy>
  <globalConfig>
    <tcpPickOngoingConnections>false</tcpPickOngoingConnections>
    <tcpAllowOutOfWindowPackets>false</tcpAllowOutOfWindowPackets>
    <tcpSendResetForClosedVsePorts>true</tcpSendResetForClosedVsePorts>
    <dropInvalidTraffic>true</dropInvalidTraffic>
    <logInvalidTraffic>false</logInvalidTraffic>
    <tcpTimeoutOpen>30</tcpTimeoutOpen>
    <tcpTimeoutClose>30</tcpTimeoutClose>
    <udpTimeout>60</udpTimeout>
    <icmpTimeout>10</icmpTimeout>
    <icmp6Timeout>10</icmp6Timeout>
    <ipGenericTimeout>120</ipGenericTimeout>
    <enableSynFloodProtection>false</enableSynFloodProtection>
    <logIcmpErrors>false</logIcmpErrors>
    <dropIcmpReplays>false</dropIcmpReplays>
  </globalConfig>
</firewall>
```
DELETE /api/4.0/edges/{edgeId}/firewall/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete NSX Edge firewall configuration.

Working With Firewall Rules

POST /api/4.0/edges/{edgeId}/firewall/config/rules

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>aboveRuleId</td>
<td>rule Id.</td>
</tr>
</tbody>
</table>

Description:
Add one or more rules. You can add a rule above a specific rule using the query parameter, indicating the desired ruleID.

Request:

Body: application/xml

```xml
<firewallRules>
<firewallRule>
  <ruleTag/>
  <name/>
  <source>
    <ipAddress/>
    <groupingObjectId/>
    <vnicGroupId/>
  </source>
  <destination>
    <ipAddress/>
    <groupingObjectId/>
    <vnicGroupId/>
  </destination>
  <application>
    <applicationId/>
    <service>
      <protocol/>
      <port/>
      <sourcePort/>
    </service>
    <matchTranslated/>
    <direction/>
    <action/>
    <enabled/>
    <loggingEnabled/>
    <description/>
  </application>
  <matchTranslated/>
  <direction/>
  <action/>
  <enabled/>
  <loggingEnabled/>
  <description/>
</firewallRule>
</firewallRules>
```

**Working With a Specific Firewall Rule**

**GET /api/4.0/edges/{edgeId}/firewall/config/rules/{ruleId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>Rule ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve specific rule.

**PUT /api/4.0/edges/{edgeId}/firewall/config/rules/{ruleId}**

**URI Parameters:**

---
ruleId  (required)  |  Rule ID.
edgeId  (required)  |  Specify the ID of the edge in edgelId.

Description:
Modify a specific firewall rule.

Request:
Body: application/xml

```xml
<firewallRule>
  <ruleTag/>
  <name/>
  <source>
    <vnicGroupId/>
    <groupingObjectId/>
    <ipAddress/>
  </source>
  <destination>
    <groupingObjectId/>
    <vnicGroupId/>
    <ipAddress/>
  </destination>
  <application>
    <applicationId/>
    <service>
      <protocol/>
      <port/>
      <sourcePort/>
    </service>
  </application>
  <matchTranslated/>
  <direction/>
  <action/>
  <enabled/>
  <loggingEnabled/>
  <description/>
</firewallRule>
```

DELETE /api/4.0/edges/{edgeId}/firewall/config/rules/{ruleId}

URI Parameters:
ruleId  (required)  |  Rule ID.
edgeId  (required)  |  Specify the ID of the edge in edgelId.

Description:
Delete firewall rule

Working With the NSX Edge Global Firewall Configuration
GET /api/4.0/edges/{edgeId}/firewall/config/global

URI Parameters:

| edgeId  (required) | Specify the ID of the edge in edgeId. |

Description:
Retrieve the firewall default policy for an Edge.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>enableSynFloodProtection</code> parameter added.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>logIcmpErrors</code> and <code>dropIcmpReplays</code> parameters added.</td>
</tr>
</tbody>
</table>

PUT /api/4.0/edges/{edgeId}/firewall/config/global

URI Parameters:

| edgeId  (required) | Specify the ID of the edge in edgeId. |

Description:
Configure firewall global config for an Edge.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>enableSynFloodProtection</code> parameter added. Default value of <code>tcpTimeoutEstablished</code> increased from 3600 to 21600 seconds (6 hours).</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>logIcmpErrors</code> and <code>dropIcmpReplays</code> parameters added.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<globalConfig>
  <tcpPickOngoingConnections/>
  <tcpAllowOutOfWindowPackets/>
  <tcpSendResetForClosedVsePorts/>
  <dropInvalidTraffic/>
  <logInvalidTraffic/>
  <tcpTimeoutOpen/>
  <tcpTimeoutEstablished/>
  <tcpTimeoutClose/>
  <udpTimeout/>
  <icmpTimeout/>
  <icmp6Timeout/>
  <ipGenericTimeout/>
  <enableSynFloodProtection/>
  <logIcmpErrors/>
  <dropIcmpReplays/>
</globalConfig>
```
Working With the Default Firewall Policy for an Edge

GET /api/4.0/edges/{edgeId}/firewall/config/defaultpolicy

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Retrieve default firewall policy

PUT /api/4.0/edges/{edgeId}/firewall/config/defaultpolicy

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Configure default firewall policy

Request:
Body: application/xml

```xml
<firewallDefaultPolicy>
  <action/>
  <loggingEnabled/>
</firewallDefaultPolicy>
```

Working With Statistics for a Specific Firewall Rule

GET /api/4.0/edges/{edgeId}/firewall/statistics/{ruleId}

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleId</td>
<td>Specified rule.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Retrieve stats for firewall rule.
Working With NAT Configuration

NSX Edge provides network address translation (NAT) service to protect the IP addresses of internal (private) networks from the public network.

You can configure NAT rules to provide access to services running on privately addressed virtual machines. There are two types of NAT rules that can be configured: SNAT and DNAT.

For the data path to work, you need to add firewall rules to allow the required traffic for IP addresses and port per the NAT rules.

### NAT Parameter Table

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Enable rule.</td>
<td>Boolean. Optional. Default is <code>true</code>.</td>
</tr>
<tr>
<td>ruleTag</td>
<td>Rule tag.</td>
<td>This can be used to specify user-controlled <code>ruleId</code>. If not specified, NSX Manager will generate <code>ruleId</code>. Optional. Must be between 65537-131072.</td>
</tr>
<tr>
<td>ruleId</td>
<td>Identifier for the rule.</td>
<td>Read-only. Long.</td>
</tr>
<tr>
<td>ruleType</td>
<td>Rule type.</td>
<td>Read-only. Values: <code>user</code>, <code>internal_high</code>.</td>
</tr>
<tr>
<td>action</td>
<td>Type of NAT.</td>
<td>Valid values: <code>snat</code> or <code>dnat</code>.</td>
</tr>
<tr>
<td>vnic</td>
<td>Interface on which the translating is applied.</td>
<td>String. Optional.</td>
</tr>
<tr>
<td>originalAddress</td>
<td>Original address or address range. This is the source address for SNAT rules, and the destination address for DNAT rules.</td>
<td>String. Specify <code>any</code>, an IP address (e.g. 192.168.10.10), an IP range (e.g. 192.168.10.10-192.168.10.19), or a subnet in CIDR notation (e.g. 192.168.10.1/24). Default is <code>any</code>.</td>
</tr>
<tr>
<td>translatedAddress</td>
<td>Translated address or address range.</td>
<td>String. Specify <code>any</code>, an IP address (e.g. 192.168.10.10), an IP range (e.g. 192.168.10.10-192.168.10.19), or a subnet in CIDR notation (e.g. 192.168.10.1/24). Default is <code>any</code>.</td>
</tr>
<tr>
<td>dnatMatchSourceAddress</td>
<td>Source address to match in DNAT rules.</td>
<td>String. Specify <code>any</code>, an IP address (e.g. 192.168.10.10), an IP range (e.g. 192.168.10.10-192.168.10.19), or a subnet in CIDR notation (e.g. 192.168.10.1/24). Default is <code>any</code>. Not valid for SNAT rules.</td>
</tr>
<tr>
<td>snatMatchDestinationAddress</td>
<td>Destination address to match in SNAT rules.</td>
<td>String. Specify <code>any</code>, an IP address (e.g. 192.168.10.10), an IP range (e.g. 192.168.10.10-192.168.10.19), or a subnet in CIDR notation (e.g. 192.168.10.1/24). Default is <code>any</code>. Not valid for DNAT rules.</td>
</tr>
<tr>
<td>icmpType</td>
<td>ICMP type.</td>
<td>String. Only supported when protocol is <code>icmp</code>. Default is <code>any</code>.</td>
</tr>
<tr>
<td>originalPort</td>
<td>Original port. This is the source port for SNAT rules, and the destination port for DNAT rules.</td>
<td>String. Optional. Specify <code>any</code>, a port (e.g. 1234) or port range (1234-1239). Default is <code>any</code>.</td>
</tr>
</tbody>
</table>
translatedPort | Translated port. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>dnatMatchSourcePort</td>
<td>Source port in DNAT rules.</td>
</tr>
<tr>
<td>snatMatchDestinationPort</td>
<td>Destination port in SNAT rules.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/nat/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve SNAT and DNAT rules for the specified NSX Edge.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>dnatMatchSourceAddress</code>, <code>snatMatchDestinationAddress</code>, <code>dnatMatchSourcePort</code>, <code>snatMatchDestinationPort</code> parameters added. <code>protocol</code>, <code>originalPort</code>, and <code>translatedPort</code> now supported in SNAT rules.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<nat>
  <natRules>
    <natRule>
      <ruleTag>196609</ruleTag>
      <ruleId>196609</ruleId>
      <action>dnat</action>
      <vnic>0</vnic>
      <originalAddress>10.112.196.116</originalAddress>
      <translatedAddress>172.16.1.10</translatedAddress>
      <loggingEnabled>true</loggingEnabled>
      <enabled>true</enabled>
      <description>my comments</description>
      <protocol>tcp</protocol>
      <translatedPort>3389</translatedPort>
      <originalPort>3389</originalPort>
      <ruleType>user</ruleType>
    </natRule>
    <natRule>
      <ruleTag>196609</ruleTag>
      <ruleId>196609</ruleId>
      <action>snat</action>
      <vnic>1</vnic>
    </natRule>
  </natRules>
</nat>
```
PUT /api/4.0/edges/{edgeId}/nat/config

URI Parameters:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
<tr>
<td></td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Configure SNAT and DNAT rules for an Edge.

If you use this method to add new NAT rules, you must include all existing rules in the request body. Any rules that are omitted will be deleted.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>vnic</code> parameter is now optional. The <code>originalAddress</code> for DNAT rules, and the <code>translatedAddress</code> for SNAT rules is no longer required to be a IP configured on one of the NSX Edge vNics.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>dnatMatchSourceAddress</code>, <code>snatMatchDestinationAddress</code>, <code>dnatMatchSourcePort</code>, <code>snatMatchDestinationPort</code> parameters added. <code>protocol</code>, <code>originalPort</code>, and <code>translatedPort</code> now supported in SNAT rules.</td>
</tr>
</tbody>
</table>

Request:

**Body**: application/xml

```xml
<nat>
  <natRules>
    <natRule>
      <ruleTag>65537</ruleTag>
      <action>dnat</action>
      <vnic>0</vnic>
      <originalAddress>10.112.196.116</originalAddress>
      <translatedAddress>172.16.1.10</translatedAddress>
      <dnatMatchSourceAddress>any</dnatMatchSourceAddress>
      <snatMatchDestinationAddress>any</snatMatchDestinationAddress>
      <dnatMatchSourcePort>any</dnatMatchSourcePort>
      <snatMatchDestinationPort>any</snatMatchDestinationPort>
      <loggingEnabled>true</loggingEnabled>
      <enabled>true</enabled>
      <description>my comments</description>
      <protocol>tcp</protocol>
    </natRule>
  </natRules>
</nat>
```
DELETE /api/4.0/edges/{edgeId}/nat/config

URI Parameters:

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete all NAT rules for the specified NSX Edge. The auto plumbed rules continue to exist.

---

**Working With NAT Rules**

POST /api/4.0/edges/{edgeId}/nat/config/rules

URI Parameters:

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>aboveRuleId</td>
<td>Specified rule ID. If no NAT rules exist, you can specify rule ID 0.</td>
</tr>
</tbody>
</table>

Description:
Add a NAT rule above a specific rule in the NAT rules table (using `aboveRuleId` query parameter) or append NAT rules to the bottom.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>vnic</code> parameter is now optional. The <code>originalAddress</code> for DNAT rules, and the <code>translatedAddress</code> for SNAT rules is no longer required to be a IP configured on one of the NSX Edge vNics.</td>
</tr>
</tbody>
</table>
Request:
Body: application/xml

```xml
<natRules>
  <natRule>
    <action>dnat</action>
    <vnic>0</vnic>
    <originalAddress>10.112.196.116</originalAddress>
    <translatedAddress>172.16.1.10</translatedAddress>
    <loggingEnabled>true</loggingEnabled>
    <enabled>true</enabled>
    <description>my comments</description>
    <protocol>tcp</protocol>
    <translatedPort>3389</translatedPort>
    <originalPort>3389</originalPort>
  </natRule>
</natRules>
```

## Working With a Specific NAT Rule

**PUT /api/4.0/edges/{edgeId}/nat/config/rules/{ruleID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleID (required)</td>
<td>Specified rule ID.</td>
</tr>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Update the specified NAT rule.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>vnic</code> parameter is now optional. The <code>originalAddress</code> for DNAT rules, and the <code>translatedAddress</code> for SNAT rules is no longer required to be a IP configured on one of the NSX Edge vNics.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. <code>dnatMatchSourceAddress</code>, <code>snatMatchDestinationAddress</code>, <code>dnatMatchSourcePort</code>, <code>snatMatchDestinationPort</code> parameters added. <code>protocol</code>, <code>originalPort</code>, and <code>translatedPort</code> now supported in SNAT rules.</td>
</tr>
</tbody>
</table>
Request:
Body: application/xml

```xml
<natRule>
  <action>dnat</action>
  <vnic>0</vnic>
  <translatedAddress>172.16.1.10</translatedAddress>
</natRule>
```

DELETE /api/4.0/edges/{edgeId}/nat/config/rules/{ruleID}

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ruleID (required)</td>
<td>Specified rule ID.</td>
<td></td>
</tr>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Delete the specified NAT rule.

---

Working With the NSX Edge Routing Configuration

You can specify static and dynamic routing for each NSX Edge.

Dynamic routing provides the necessary forwarding information between layer 2 broadcast domains, thereby allowing you to decrease layer 2 broadcast domains and improve network efficiency and scale. NSX extends this intelligence to where the workloads reside for doing East-West routing. This allows more direct virtual machine to virtual machine communication without the costly or timely need to extend hops. At the same time, NSX also provides North-South connectivity, thereby enabling tenants to access public networks.

**Global Routing Configuration**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>routerId</td>
<td>The first uplink IP address of the NSX Edge that pushes routes to the kernel for dynamic routing</td>
<td>Optional. RouterId is set only when configuring the dynamic routing protocols OSPF and BGP.</td>
</tr>
<tr>
<td>logging</td>
<td>Logging configuration.</td>
<td>Optional.</td>
</tr>
</tbody>
</table>
### Default Route Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>description</td>
<td>A description for the default route.</td>
<td></td>
</tr>
<tr>
<td>type</td>
<td>Specifies whether the static route was created by the system as an auto-generated route or the default route (internal); or whether it is a local (user) route.</td>
<td>Default is 1500. The MTU value cannot be higher than the MTU value set on the NSX Edge interface. By default, mtu is the MTU value of the interface on which the route is configured.</td>
</tr>
<tr>
<td>mtu</td>
<td>The maximum transmission value for the data packets</td>
<td></td>
</tr>
<tr>
<td>vnic</td>
<td>Interface on which the default route is added.</td>
<td></td>
</tr>
<tr>
<td>gatewayAddress</td>
<td>Default gateway IP used for routing.</td>
<td></td>
</tr>
<tr>
<td>adminDistance</td>
<td>Admin distance. Used to determine which routing protocol to use if two protocols provide route information for the same destination.</td>
<td>Optional. Default value is 1.</td>
</tr>
</tbody>
</table>

### Static Route Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>vnic</td>
<td>Interface on which the route is added.</td>
<td></td>
</tr>
<tr>
<td>description</td>
<td>A description for the static route.</td>
<td>Default is 1500. By default, mtu is the MTU value of the interface on which the route is configured.</td>
</tr>
<tr>
<td>mtu</td>
<td>The maximum transmission value for the data packet.</td>
<td></td>
</tr>
<tr>
<td>network</td>
<td>The network in CIDR notation.</td>
<td></td>
</tr>
<tr>
<td>nextHop</td>
<td>Next hop IP address.</td>
<td>The router must be able to directly reach the next hop. When ECMP is enabled, multiple next hops can be displayed.</td>
</tr>
<tr>
<td><strong>adminDistance</strong></td>
<td>Admin distance. Used to determine which routing protocol to use if two protocols provide route information for the same destination.</td>
<td>Optional. Default value is 1.</td>
</tr>
<tr>
<td><strong>type</strong></td>
<td>Specifies whether the static route was created by the system as an auto-generated route or the default route (internal); or whether it is a local (user) route.</td>
<td></td>
</tr>
</tbody>
</table>

**OSPF Configuration**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>enabled</strong></td>
<td>OSPF enabled status.</td>
<td>When not specified, it will be treated as false. When false, it will delete the existing config.</td>
</tr>
<tr>
<td><strong>gracefulRestart</strong></td>
<td>For packet forwarding to be uninterrupted during restart of services.</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>defaultOriginate</strong></td>
<td>Allows the Edge Services Gateway to advertise itself as a default gateway to its peers.</td>
<td>Optional. Default is false. Not allowed on a logical distributed router.</td>
</tr>
<tr>
<td><strong>forwardingAddress</strong></td>
<td>The IP address of one of the uplink interfaces.</td>
<td>Logical (distributed) router only.</td>
</tr>
<tr>
<td><strong>protocolAddress</strong></td>
<td>An IP address on the same subnet as the forwarding address.</td>
<td>Logical (distributed) router only.</td>
</tr>
<tr>
<td><strong>areaid</strong></td>
<td>The area ID. The NSX Edge supports an area ID in the form of a decimal number. Valid values are 0-4294967295.</td>
<td>Required. The value for areaid must be a unique number.</td>
</tr>
<tr>
<td><strong>translateType7ToType5</strong></td>
<td>Configure whether this NSX Edge should be used for translating Type 7 to Type 5 LSAs for this OSPF area. If not set, the router with highest router ID is used for translating.</td>
<td>Valid values: true or false. Optional, default is false. Only configurable for OSPF areas of type NSSA.</td>
</tr>
<tr>
<td><strong>type</strong></td>
<td>Gives whether the type is normal or nssa.</td>
<td>Optional. Default type is normal. NSSAs (the not-so-stubby areas feature described in RFC 3101) prevents the flooding of AS-external link-state advertisements (LSAs). They rely on default routing to external destinations. Therefore, NSSAs are placed at the edge of an OSPF routing domain. NSSA can import external routes into the OSPF routing domain, thereby providing transit service to small routing domains that are not part of the OSPF routing domain.</td>
</tr>
<tr>
<td>authentication &gt; type</td>
<td>Authentication type.</td>
<td>Choice of none, password, or md5. If authentication information isn’t provided, type is none. Type password: a password is included in the transmitted packet. Type md5: an MD5 checksum is included in the transmitted packet.</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>authentication &gt; value</td>
<td>The password or MD5 key, respectively</td>
<td>Required. The interface specifies the external network that both NSX Edges are connected to.</td>
</tr>
<tr>
<td>vnic</td>
<td>The interface that is mapped to OSPF Area</td>
<td></td>
</tr>
<tr>
<td>areaId</td>
<td>An area ID. Can be in the form of an IP address or decimal number.</td>
<td>Required.</td>
</tr>
<tr>
<td>helloInterval</td>
<td>The default interval between hello packets that are sent on the interface</td>
<td>Optional. By default, set to 10 seconds with valid values 1-255.</td>
</tr>
<tr>
<td>deadInterval</td>
<td>The default interval during which at least one hello packet must be received from a neighbor before the router declares that neighbor down.</td>
<td>Optional. By default, set to 40 seconds. Valid values are 1-65535.</td>
</tr>
<tr>
<td>priority</td>
<td>The default priority of the interface. The interface with the highest priority is the designated router.</td>
<td>Optional. By default, set to 128 with valid values 0-255.</td>
</tr>
<tr>
<td>cost</td>
<td>The default overhead required to send packets across that interface</td>
<td>Optional. Integer. The cost of an interface is inversely proportional to the bandwidth of that interface. The larger the bandwidth, the smaller the cost. Valid values are 1-65535.</td>
</tr>
<tr>
<td>mtuiIgnore</td>
<td>Ignore interface MTU setting</td>
<td>true or false.</td>
</tr>
</tbody>
</table>

**BGP Configuration**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>BGP routing enable/disable status.</td>
<td>Optional. By default, enabled is set to false.</td>
</tr>
<tr>
<td>gracefulRestart</td>
<td>For packet forwarding to be uninterrupted during restart of services.</td>
<td>Optional.</td>
</tr>
<tr>
<td>defaultOriginate</td>
<td>Allows the Edge Services Gateway to advertise itself as a default gateway to its peers.</td>
<td>Optional. Default is false. Not allowed on a logical distributed router.</td>
</tr>
<tr>
<td>localAS</td>
<td>The 2 byte local Autonomous System number that is assigned to the NSX Edge. The path of autonomous systems that a route traverses is used as one metric when selecting the best path to a destination.</td>
<td>Integer. A value (a globally unique number between 1-65535) for the local AS. This local AS is advertised when the NSX Edge peers with routers in other autonomous systems. Either localAS or localASNumber is required.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Type</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td><code>localASNumber</code></td>
<td>The 2 or 4 byte local Autonomous System number that is assigned to the NSX Edge. The path of autonomous systems that a route traverses is used as one metric when selecting the best path to a destination.</td>
<td>Integer. A value (a globally unique number between 1-4294967295) for the Local AS. This local AS is advertised when the NSX Edge peers with routers in other autonomous systems. Can be in plain or dotted format (e.g. 2 byte: 65001 or 0.65001, 4 byte: 65545 or 1.9). Either <code>localAS</code> or <code>localASNumber</code> is required.</td>
</tr>
<tr>
<td><code>bgpNeighbour.ipAddress</code></td>
<td>The IP address of the on-premises border device.</td>
<td>Required. String. IPv4 only. IPv6 is not supported. Should not be the same as any of the NSX Edge interfaces's IPs, forwardingAddress, protocolAddress.</td>
</tr>
<tr>
<td><code>bgpNeighbour.forwardingAddress</code></td>
<td>The IP address of one of the uplink interfaces.</td>
<td>Logical (distributed) router only.</td>
</tr>
<tr>
<td><code>bgpNeighbour.protocolAddress</code></td>
<td>An IP address on the same subnet as the forwarding address.</td>
<td>Logical (distributed) router only.</td>
</tr>
<tr>
<td><code>bgpNeighbour.remoteAS</code></td>
<td>The 2 byte remote Autonomous System number that is assigned to the border device you are creating the connection for.</td>
<td>Integer. A value (a globally unique number between 1-65535) for the remote AS. Either <code>remoteAS</code> or <code>remoteASNumber</code> is required.</td>
</tr>
<tr>
<td><code>bgpNeighbour.remoteASNumber</code></td>
<td>The 2 or 4 byte remote Autonomous System number that is assigned to the border device you are creating the connection for.</td>
<td>Integer. A value (a globally unique number between 1-4294967295) for the remote AS. Can be in plain or dotted format (e.g. 2 byte: 65001 or 0.65001, 4 byte: 65545 or 1.9). Either <code>remoteAS</code> or <code>remoteASNumber</code> is required.</td>
</tr>
<tr>
<td><code>bgpNeighbour.removePrivateAS</code></td>
<td>Determines whether to remove private AS number while redistributing routes.</td>
<td>Boolean. You can set to <code>true</code> only when remote and local AS are different.</td>
</tr>
<tr>
<td><code>bgpNeighbour.weight</code></td>
<td>Weight for the neighbor connection</td>
<td>Optional. Integer. By default, weight is set to 60.</td>
</tr>
<tr>
<td><code>bgpNeighbour.holdDownTimer</code></td>
<td>Interval for the hold down timer</td>
<td>Optional. Integer. The NSX Edge uses the standard, default values for the keep alive timer (60 seconds) and the hold down timer. The default value for the hold down timer is 3x keepalive or 180 seconds. Once peering between two neighbors is achieved, the NSX Edge starts a hold down timer. Every keep alive message it receives from the neighbor resets the hold down timer to 0. When the NSX Edge fails to receive three consecutive keep alive messages, so that the hold down timer reaches 180 seconds, the NSX Edge considers the neighbor down and deletes the routes from this neighbor.</td>
</tr>
<tr>
<td><code>bgpNeighbour.keepAliveTimer</code></td>
<td>Interval for the keep alive timer.</td>
<td>Optional. Integer. Default is 60. Valid values are 1-65534.</td>
</tr>
</tbody>
</table>
### bgpNeighbour > password
The authentication password.
Optional. String. Each segment sent on the connection between the neighbors is verified. MD5 authentication must be configured with the same password on both BGP neighbors, otherwise, the connection between them will not be made.

### bgpFilter > direction
Indicate whether you are filtering traffic to or from the neighbor
Optional. Choice of in or out.

### bgpFilter > action
Permit or deny traffic.
Optional. Choice of permit or deny.

### bgpFilter > network
The network that you want to filter to or from the neighbor.
CIDR format. IPv4 only. IPv6 is not supported.

### bgpFilter > ipPrefixGe
The IP prefixes that are to be filtered. Filter prefixes greater than or equal to this value.

### bgpFilter > ipPrefixLe
The IP prefixes that are to be filtered. Filter prefixes less than or equal to this value.

**Note:** New parameters localASNumber and remoteASNumber have been added in NSX 6.3.0 to allow configuration of 4 byte AS numbers. The previous parameters, localAS and remoteAS are still valid.

When you configure BGP, you must provide a local AS number parameter (localAS or localASNumber) and a remote AS number parameter (remoteAS or remoteASNumber). If you provide both forms of either local or remote AS number (for example, localAS and localASNumber), the values must be the same.

You can use any combination of remote and local AS parameters, as long as the values are valid. For example, localAS of 65501 and remoteASNumber of 70000.

If you configure a 2 byte number, both forms of the AS number parameters are returned with a GET request (for example, localAS and localASNumber). If you configure a 4 byte number, only the 4 byte parameter is returned (localASNumber).

If both parameters are present (for example localAS and localASNumber), and you update one parameter (localAS) subsequent GET requests will show both parameters updated.

### Route Redistribution Configuration for OSPF or BGP

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Enabled status of route redistribution for the parent protocol (OSFP or BGP).</td>
<td>Optional. Default is false.</td>
</tr>
<tr>
<td>rule</td>
<td>Route redistribution rule.</td>
<td></td>
</tr>
<tr>
<td>id</td>
<td>The ID for the rule.</td>
<td>Required. Number.</td>
</tr>
<tr>
<td>prefixName</td>
<td>The name for the IP prefix to add for route redistribution</td>
<td>Optional. String. Default is any. prefixName is set using routingGlobalConfig &gt; ipPrefixes. By default, the value of prefixName is set to any.</td>
</tr>
<tr>
<td>from &gt; ospf</td>
<td>Whether OSPF is a learner protocol (it learns routes from other protocols).</td>
<td>Optional. By default set to false for ospf.</td>
</tr>
<tr>
<td>from &gt; bgp</td>
<td>Whether BGP is a learner protocol (it learns routes from other protocols).</td>
<td>Optional. By default set to false for bgp.</td>
</tr>
<tr>
<td>from &gt; static</td>
<td>Whether routes can be learned from static networks.</td>
<td>Optional. By default set to false for static.</td>
</tr>
<tr>
<td>----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>from &gt; connected</td>
<td>Whether routes can be learned from connected networks.</td>
<td>Optional. By default set to false for connected.</td>
</tr>
<tr>
<td>action</td>
<td>Whether to permit or deny redistribution from the selected types of networks.</td>
<td>Required. Choice of deny or permit.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/routing/config

URI Parameters:

| edgeId (required) | Specify the ID of the edge in edgeId. |

Description:
Retrieve routes.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. isis configuration section removed.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. Parameter defaultOriginate removed for logical router NSX Edges. Parameter translateType7ToType5 added to OSPF section. Parameters localASNumber and remoteASNumber added to BGP section.</td>
</tr>
<tr>
<td>6.3.6</td>
<td>Method updated. Parameter removePrivateAS added.</td>
</tr>
</tbody>
</table>

PUT /api/4.0/edges/{edgeId}/routing/config

URI Parameters:

| edgeId (required) | Specify the ID of the edge in edgeId. |

Description:
Configure NSX Edge global routing configuration, static routing, and dynamic routing (OSPF and BGP).

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. isis configuration section removed.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. Parameter defaultOriginate removed for logical router NSX Edges. Parameter translateType7ToType5 added to OSPF section. Parameters localASNumber and remoteASNumber added to BGP section.</td>
</tr>
<tr>
<td>6.3.6</td>
<td>Method updated. Parameter removePrivateAS added.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml
<routing>
  <routingGlobalConfig>
    <routerId>1.1.1.1</routerId>
    <logging>
      <enable>false</enable>
      <logLevel>info</logLevel>
    </logging>
    <ipPrefixes>
      <ipPrefix>
        <name>a</name>
        <ipAddress>192.168.10.0/24</ipAddress>
      </ipPrefix>
    </ipPrefixes>
  </routingGlobalConfig>
  <staticRouting>
    <staticRoutes>
      <route>
        <description>route1</description>
        <vnic>0</vnic>
        <network>3.1.1.0/22</network>
        <nextHop>172.16.1.14</nextHop>
        <mtu>1500</mtu>
      </route>
    </staticRoutes>
    <defaultRoute>
      <description>defaultRoute</description>
      <vnic>0</vnic>
      <gatewayAddress>172.16.1.12</gatewayAddress>
      <mtu>1500</mtu>
    </defaultRoute>
  </staticRouting>
  <ospf>
    <enabled>true</enabled>
    <forwardingAddress>192.168.10.2</forwardingAddress>
    <protocolAddress>192.168.10.3</protocolAddress>
    <ospfAreas>
      <ospfArea>
        <areaId>100</areaId>
        <translateType7ToType5>true</translateType7ToType5>
        <type>normal</type>
        <authentication>
          <type>password</type>
          <value>vmware123</value>
        </authentication>
      </ospfArea>
    </ospfAreas>
    <ospfInterfaces>
      <ospfInterface>
        <vnic>0</vnic>
        <areaId>100</areaId>
        <helloInterval>10</helloInterval>
        <deadInterval>40</deadInterval>
        <priority>128</priority>
        <cost>10</cost>
        <mtuIgnore>false</mtuIgnore>
      </ospfInterface>
    </ospfInterfaces>
    <redistribution>
      <enabled>true</enabled>
      <rules>
        <rule>
          <prefixName>a</prefixName>
        </rule>
      </rules>
    </redistribution>
  </ospf>
</routing>
<from>
  <ospf>false</ospf>
  <bgp>false</bgp>
  <static>false</static>
  <connected>true</connected>
</from>
<action>deny</action>
</rule>

<rule>
  <prefixName>b</prefixName>
  <from>
    <ospf>false</ospf>
    <bgp>true</bgp>
    <static>false</static>
    <connected>false</connected>
  </from>
  <action>permit</action>
</rule>

</rules>
</redistribution>
</bgp>

<bgp>
  <enabled>true</enabled>
  <localAS>65535</localAS>
  <localASNumber>65535</localASNumber>
  <bgpNeighbours>
    <bgpNeighbour>
      <ipAddress>192.168.10.10</ipAddress>
      <forwardingAddress>192.168.1.10</forwardingAddress>
      <protocolAddress>192.168.1.11</protocolAddress>
      <remoteAS>65500</remoteAS>
      <remoteASNumber>65500</remoteASNumber>
      <weight>60</weight>
      <holdDownTimer>180</holdDownTimer>
      <keepAliveTimer>60</keepAliveTimer>
      <password>vmware123</password>
      <bgpFilters>
        <bgpFilter>
          <direction>in</direction>
          <action>permit</action>
          <network>10.0.0.0/8</network>
          <ipPrefixGe>17</ipPrefixGe>
          <ipPrefixLe>32</ipPrefixLe>
        </bgpFilter>
      </bgpFilters>
    </bgpNeighbour>
  </bgpNeighbours>
  <redistribution>
    <enabled>true</enabled>
    <rules>
      <rule>
        <from>
          <ospf>true</ospf>
          <bgp>false</bgp>
          <static>true</static>
          <connected>false</connected>
        </from>
        <action>deny</action>
      </rule>
    </rules>
  </redistribution>
</bgp>
DELETE /api/4.0/edges/{edgeId}/routing/config

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Delete the routing config stored in the NSX Manager database and the default routes from the specified NSX Edge appliance.

---

**Working With the NSX Edge Global Configuration**

GET /api/4.0/edges/{edgeId}/routing/config/global

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Retrieve routing info from NSX Manager database (default route settings, static route configurations).

PUT /api/4.0/edges/{edgeId}/routing/config/global

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Configure global route.

**Request:**
**Body:** application/xml

```xml
<routingGlobalConfig>
  <routerId></routerId>
  <ecmp></ecmp>
  <logging>
    <enable></enable>
    <logLevel></logLevel>
  </logging>
  <ipPrefixes>
    <ipPrefix>
      <name></name>
      <ipAddress></ipAddress>
    </ipPrefix>
  </ipPrefixes>
</routingGlobalConfig>
```
Working With Static and Default Routes

GET /api/4.0/edges/{edgeId}/routing/config/static

URI Parameters:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Description:
Read static and default routes.

PUT /api/4.0/edges/{edgeId}/routing/config/static

URI Parameters:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Description:
Configure static and default routes.

Request:
Body: application/xml

```xml
<staticRouting>
  <staticRoutes>
    <route>
      <description></description>
      <vnic></vnic>
      <network></network>
      <nextHop></nextHop>
      <mtu></mtu>
    </route>
  </staticRoutes>
  <defaultRoute>
    <description></description>
    <vnic></vnic>
    <gatewayAddress></gatewayAddress>
    <mtu></mtu>
  </defaultRoute>
</staticRouting>
```

DELETE /api/4.0/edges/{edgeId}/routing/config/static

URI Parameters:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Description:
Delete both static and default routing config stored in the NSX Manager database.
Working With OSPF Routing for NSX Edge

NSX Edge supports OSPF, an interior gateway protocol that routes IP packets only within a single routing domain. It gathers link state information from available routers and constructs a topology map of the network. The topology determines the routing table presented to the Internet Layer, which makes routing decisions based on the destination IP address found in IP packets.

OSPF routing policies provide a dynamic process of traffic load balancing between routes of equal cost. An OSPF network is divided into routing areas to optimize traffic. An area is a logical collection of OSPF networks, routers, and links that have the same area identification.

Areas are identified by an Area ID.

GET /api/4.0/edges/{edgeId}/routing/config/ospf

URI Parameters:

| edgeId     | (required) | Specify the ID of the edge in edgeId. |

Description:
Retrieve OSPF configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <strong>isis</strong> configuration section removed.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. Parameter <strong>defaultOrigin</strong> removed for logical router NSX Edges. Parameter <strong>translateType7ToType5</strong> added to OSPF section.</td>
</tr>
</tbody>
</table>

PUT /api/4.0/edges/{edgeId}/routing/config/ospf

URI Parameters:

| edgeId     | (required) | Specify the ID of the edge in edgeId. |

Description:
Configure OSPF.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <strong>isis</strong> configuration section removed.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. Parameter <strong>defaultOrigin</strong> removed for logical router NSX Edges. Parameter <strong>translateType7ToType5</strong> added to OSPF section.</td>
</tr>
</tbody>
</table>

Request:
**Body**: application/xml
<ospf>
   <enabled>true</enabled>
   <ospfAreas>
      <ospfArea>
         <areaId>100</areaId>
         <translateType7ToType5></translateType7ToType5>
         <type>normal</type>
         <authentication>
            <type>password</type>
            <value>vmware123</value>
         </authentication>
      </ospfArea>
   </ospfAreas>
   <ospfInterfaces>
      <ospfInterface>
         <vnic>0</vnic>
         <areaId>100</areaId>
         <helloInterval>10</helloInterval>
         <deadInterval>40</deadInterval>
         <priority>128</priority>
         <cost>10</cost>
      </ospfInterface>
   </ospfInterfaces>
   <redistribution>
      <enabled>true</enabled>
      <rules>
         <rule>
            <prefixName>a</prefixName>
            <from>
               <ospf>false</ospf>
               <bgp>false</bgp>
               <static>false</static>
               <connected>true</connected>
            </from>
            <action>deny</action>
         </rule>
         <rule>
            <prefixName>b</prefixName>
            <from>
               <ospf>false</ospf>
               <bgp>true</bgp>
               <static>false</static>
               <connected>false</connected>
            </from>
            <action>permit</action>
         </rule>
      </rules>
   </redistribution>
</ospf>

DELETE /api/4.0/edges/{edgeId}/routing/config/ospf

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Delete OSPF routing.
Working With BGP Routes for NSX Edge

Border Gateway Protocol (BGP) makes core routing decisions. It includes a table of IP networks or prefixes which designate network reachability among autonomous systems. An underlying connection between two BGP speakers is established before any routing information is exchanged. Keep alive messages are sent out by the BGP speakers in order to keep this relationship alive. Once the connection is established, the BGP speakers exchange routes and synchronize their tables.

GET /api/4.0/edges/{edgeId}/routing/config/bgp

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Retrieve BGP configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. isis configuration section removed.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. Parameter defaultOriginate removed for logical router NSX Edges. Parameters localASNumber and remoteASNumber added to BGP section.</td>
</tr>
<tr>
<td>6.3.6</td>
<td>Method updated. Parameter removePrivateAS added.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200

Body: application/xml

```xml
<bgp>
  <enabled>true</enabled>
  <localAS>65535</localAS>
  <bgpNeighbours>
    <bgpNeighbour>
      <ipAddress>192.168.1.10</ipAddress>
      <remoteAS>65500</remoteAS>
      <weight>60</weight>
      <holdDownTimer>180</holdDownTimer>
      <keepAliveTimer>60</keepAliveTimer>
      <password>vmware123</password>
    </bgpFilter>
    <bgpFilter>
      <direction>in</direction>
      <action>permit</action>
      <network>10.0.0.0/8</network>
      <ipPrefixGe>17</ipPrefixGe>
      <ipPrefixLe>32</ipPrefixLe>
    </bgpFilter>
    <bgpFilter>
      <direction>out</direction>
      <action>deny</action>
      <network>20.0.0.0/26</network>
    </bgpFilter>
  </bgpNeighbours>
</bgp>
```
PUT /api/4.0/edges/{edgeId}/routing/config/bgp

URI Parameters:

<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Configure BGP.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. isis configuration section removed.</td>
</tr>
<tr>
<td>6.3.0</td>
<td>Method updated. Parameter defaultOriginate removed for logical router NSX Edges. Parameters localASNumber and remoteASNumber added to BGP section.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<bgp>
  <disabled>true</disabled>
</bgp>
```
DELETE /api/4.0/edges/{edgeId}/routing/config/bgp

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Delete BGP Routing

---

Working With Layer 2 Bridging

GET /api/4.0/edges/{edgeId}/bridging/config

URI Parameters:
edgeId (required) Specify the ID of the edge in edgeId.

**Description:**
Retrieve bridge configuration. The value of the enabled field is always true for a Distributed Logical Router.

**PUT /api/4.0/edges/{edgeId}/bridging/config**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

**Description:**
Configure a bridge. Note that the bridging is always enabled for Distributed Logical Router and is unsupported for Edge Services Gateway. You cannot disable the bridging by setting the enable field to false. The value for the enable field is not honored.

**Request:**

**Body:** application/xml

```xml
<bridges>
  <version>9</version>
  <enabled>true</enabled>
  <bridge>
    <name>br001</name>
    <virtualWire>1s001_03</virtualWire>
    <dvportGroup>dvportgroup-32</dvportGroup>
  </bridge>
</bridges>
```

**DELETE /api/4.0/edges/{edgeId}/bridging/config**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

**Description:**
Delete bridges.

---

**Working With NSX Edge Load Balancer**

The NSX Edge load balancer enables network traffic to follow multiple paths to a specific destination. It distributes incoming service requests evenly among multiple servers in such a way that the load distribution is transparent to users. Load balancing thus helps in achieving optimal resource utilization, maximizing throughput, minimizing response time, and avoiding overload. NSX Edge provides load balancing up to Layer 7.

You map an external, or public, IP address to a set of internal servers for load balancing. The load balancer accepts TCP, HTTP, or HTTPS requests on the external IP address and decides which internal server to use. Port 8090 is the default listening port for TCP, port 80 is the default port for HTTP, and port 443 is the default port for HTTPS.

**GET /api/4.0/edges/{edgeId}/loadbalancer/config**

**URI Parameters:**
**edgeId** *(required)*

Specify the ID of the edge in `edgeId`.

**Description:**
Get load balancer configuration.

**PUT /api/4.0/edges/{edgeId}/loadbalancer/config**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td></td>
<td><em>(required)</em> Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Configure load balancer.

The input contains five parts: application profile, virtual server, pool, monitor and application rule.

For the data path to work, you need to add firewall rules to allow required traffic as per the load balancer configuration.

**General Load Balancer Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>logging</td>
<td>Load balancer logging setting.</td>
<td>Optional.</td>
</tr>
<tr>
<td>enable</td>
<td>Whether logging is enabled.</td>
<td>Optional. Options are <code>True</code> or <code>False</code>. Default is <code>False</code>.</td>
</tr>
<tr>
<td>logLevel</td>
<td>Logging level.</td>
<td></td>
</tr>
<tr>
<td>accelerationEnabled</td>
<td>Whether <code>accelerationEnabled</code> is enabled.</td>
<td>Optional. Options are <code>True</code> or <code>False</code>. Default is <code>False</code>.</td>
</tr>
<tr>
<td>enabled</td>
<td>Whether load balancer is enabled.</td>
<td>Optional. Options are <code>True</code> or <code>False</code>. Default is <code>True</code>.</td>
</tr>
</tbody>
</table>

**Parameter Table for Monitors**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>monitor</td>
<td>Monitor list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>monitorId</td>
<td>Generated monitor identifier.</td>
<td>Optional. Required if it is used in a pool.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the monitor.</td>
<td>Required.</td>
</tr>
<tr>
<td>type</td>
<td>Monitor type.</td>
<td>Required. Options are: <code>HTTP</code>, <code>HTTPS</code>, <code>TCP</code>, <code>ICMP</code>, <code>UDP</code>.</td>
</tr>
<tr>
<td>interval</td>
<td>Interval in seconds in which a server is to be tested.</td>
<td>Optional. Default is 5.</td>
</tr>
<tr>
<td>timeout</td>
<td>Timeout value is the maximum time in seconds within which a response from the server must be received.</td>
<td>Optional. Default is 15.</td>
</tr>
<tr>
<td>maxRetries</td>
<td>Maximum number of times the server is tested before it is declared DOWN.</td>
<td>Optional. Default is 3.</td>
</tr>
</tbody>
</table>
### Parameter Table for Virtual Servers

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtualServer</td>
<td>Virtual server list.</td>
<td>Optional. 0-64 virtualServer items can be added</td>
</tr>
<tr>
<td>name</td>
<td>Name of the virtual server.</td>
<td>Required. Unique virtualServer name per NSX Edge.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the virtual server.</td>
<td>Optional.</td>
</tr>
<tr>
<td>enabled</td>
<td>Whether the virtual server is enabled.</td>
<td>Optional. Boolean. Options are True or False. Default is True.</td>
</tr>
<tr>
<td>ipAddress</td>
<td>IP address that the load balancer is listening on.</td>
<td>Required. A valid Edge vNic IP address (IPv4 or IPv6).</td>
</tr>
<tr>
<td>protocol</td>
<td>Virtual server protocol.</td>
<td>Required. Options are: HTTP, HTTPS, TCP, UDP.</td>
</tr>
<tr>
<td>port</td>
<td>Port number or port range.</td>
<td>Required. Port number such as 80, port range such as 80,443 or 1234-1238, or a combination such as 443,6000-7000. Valid range: 1-65535.</td>
</tr>
<tr>
<td>connectionLimit</td>
<td>Maximum concurrent connections.</td>
<td>Optional. Long. Default is 0.</td>
</tr>
<tr>
<td>connectionRateLimit</td>
<td>Maximum incoming new connection requests per second.</td>
<td>Optional. Long. Default is null.</td>
</tr>
<tr>
<td>defaultPoolId</td>
<td>Default pool ID.</td>
<td>Optional.</td>
</tr>
<tr>
<td>applicationProfileId</td>
<td>Application profile ID.</td>
<td>Optional.</td>
</tr>
<tr>
<td>accelerationEnabled</td>
<td>Use the faster L4 load balancer engine rather than L7 load balancer engine.</td>
<td>Optional. Boolean. Options are True or False. Default is False. If a virtual server configuration such as application rules, HTTP type, or cookie persistence, is using the L7 load balancer engine, then the L7 load balancer engine is used, even if accelerationEnabled is not set to true.</td>
</tr>
<tr>
<td>applicationRuleId</td>
<td>Application rule ID list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Comments</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>pool</td>
<td>Pool list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>poolId</td>
<td>Generated pool identifier.</td>
<td>Optional. Required if you specify pool object.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the pool.</td>
<td>Required.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the pool.</td>
<td>Optional.</td>
</tr>
<tr>
<td>algorithm</td>
<td>Pool member balancing algorithm.</td>
<td></td>
</tr>
<tr>
<td>transparent</td>
<td>Whether client IP addresses are visible to the backend servers.</td>
<td>Optional. Options are True or False. Default is False.</td>
</tr>
<tr>
<td>monitorId</td>
<td>Monitor identifier list.</td>
<td>Optional. Only one monitor is supported.</td>
</tr>
<tr>
<td>member</td>
<td>Pool member list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>memberId</td>
<td>Generated member identifier.</td>
<td>Optional. Required if you specify member object.</td>
</tr>
<tr>
<td>name</td>
<td>Member name.</td>
<td>Optional. Required when it is used in ACL rule.</td>
</tr>
<tr>
<td>ipAddress</td>
<td>Member IP address (IPv4/IPv6).</td>
<td>Optional. Required if $groupingObjectId$ is null.</td>
</tr>
<tr>
<td>groupingObjectId</td>
<td>Member grouping object identifier.</td>
<td>Optional. Required if $ipAddress$ is null.</td>
</tr>
<tr>
<td>groupingObjectName</td>
<td>Member grouping object name.</td>
<td>Optional.</td>
</tr>
<tr>
<td>weight</td>
<td>Member weight.</td>
<td>Optional. Default is 1.</td>
</tr>
<tr>
<td>monitorPort</td>
<td>Monitor port.</td>
<td>Optional. Long. Either $monitorPort$ or $port$ must be configured.</td>
</tr>
<tr>
<td>port</td>
<td>Member port.</td>
<td>Optional. Long. Either $monitorPort$ or $port$ must be configured.</td>
</tr>
<tr>
<td>maxConn</td>
<td>Maximum number of concurrent connections a member can handle.</td>
<td>Optional. Default is 0 which means unlimited.</td>
</tr>
<tr>
<td>minConn</td>
<td>Minimum number of concurrent connections a member can handle.</td>
<td>Optional. Default is 0 which means unlimited.</td>
</tr>
<tr>
<td>condition</td>
<td>Whether the member is enabled or disabled.</td>
<td>Optional. Options are: enabled or disabled. Default is enabled.</td>
</tr>
</tbody>
</table>

Parameter Table for Application Profiles

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>applicationProfile</td>
<td>Application profile list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>applicationProfileId</td>
<td>Generated application profile identifier.</td>
<td>Optional. Required if it is used in virtual server.</td>
</tr>
<tr>
<td>name</td>
<td>Name of application profile.</td>
<td>Required.</td>
</tr>
<tr>
<td>persistence</td>
<td>Persistence setting.</td>
<td>Optional.</td>
</tr>
<tr>
<td>method</td>
<td>Persistent method.</td>
<td>Required. Options are: cookie, $ssl_sessionid$, $sourceip$, msrdp.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Comments</td>
</tr>
<tr>
<td>----------------------------</td>
<td>------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>cookieName</td>
<td>Cookie name.</td>
<td>Optional.</td>
</tr>
<tr>
<td>cookieMode</td>
<td>Cookie mode.</td>
<td>Optional. Options are: insert, prefix, app.</td>
</tr>
<tr>
<td>expire</td>
<td>Expire time.</td>
<td>Optional.</td>
</tr>
<tr>
<td>insertXForwardedFor</td>
<td>Whether <code>insertXForwardedFor</code> is enabled.</td>
<td>Optional. Boolean. Options are True or False. Default is False.</td>
</tr>
<tr>
<td>sslPassthrough</td>
<td>Whether <code>sslPassthrough</code> is enabled.</td>
<td>Optional. Boolean. Options are True or False. Default is False.</td>
</tr>
<tr>
<td>httpRedirect</td>
<td>HTTP redirect setting.</td>
<td>Optional.</td>
</tr>
<tr>
<td>to</td>
<td>HTTP redirect to.</td>
<td>Required. Required if <code>httpRedirect</code> is specified.</td>
</tr>
<tr>
<td>serverSsEnabled</td>
<td>Whether <code>serverSsl</code> offloading is enabled.</td>
<td>Optional. Boolean. Options are True or False.</td>
</tr>
<tr>
<td>serverSsl</td>
<td>Server SSL setting.</td>
<td>Optional.</td>
</tr>
<tr>
<td>ciphers</td>
<td>Cipher suites.</td>
<td>Optional. Options are: DEFAULT ECDHE-RSA-AES128-GCM-SHA256, ECDHE-RSA-AES256-GCM-SHA384, ECDHE-RSA-AES256-SHA, ECDHE-ECDSA-AES256-SHA, ECDH-ECDSA-AES256-SHA, ECDH-RSA-AES256-SHA, AES256-SHA AES128-SHA, DES-CBC3-SHA. Default is DEFAULT.</td>
</tr>
<tr>
<td>serviceCertificate</td>
<td>Service certificate identifier list.</td>
<td>Optional. Only one certificate is supported.</td>
</tr>
<tr>
<td>caCertificate</td>
<td>CA identifier list.</td>
<td>Optional. Required if <code>serverAuth</code> is required.</td>
</tr>
<tr>
<td>crlCertificate</td>
<td>CRL identifier list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>serverAuth</td>
<td>Whether peer certificate should be verified.</td>
<td>Optional. Options are Required or Ignore. Default is Ignore.</td>
</tr>
<tr>
<td>clientSsl</td>
<td>Client SSL setting.</td>
<td>Optional.</td>
</tr>
<tr>
<td>ciphers</td>
<td>Cipher suites.</td>
<td>Optional. Options are: DEFAULT ECDHE-RSA-AES128-GCM-SHA256, ECDHE-RSA-AES256-GCM-SHA384, ECDHE-RSA-AES256-SHA, ECDHE-ECDSA-AES256-SHA, ECDH-ECDSA-AES256-SHA, ECDH-RSA-AES256-SHA, AES256-SHA AES128-SHA, DES-CBC3-SHA. Default is DEFAULT.</td>
</tr>
<tr>
<td>serviceCertificate</td>
<td>Service certificate identifier list.</td>
<td>Required. Only one certificate is supported.</td>
</tr>
<tr>
<td>caCertificate</td>
<td>CA identifier list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>crlCertificate</td>
<td>CRL identifier list.</td>
<td>Optional.</td>
</tr>
<tr>
<td>clientAuth</td>
<td>Whether peer certificate should be verified.</td>
<td>Optional. Options are Required or Ignore. Default is Ignore.</td>
</tr>
</tbody>
</table>

Parameter Table for Application Rules

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>applicationRule</td>
<td>Application rule list.</td>
<td>Optional.</td>
</tr>
</tbody>
</table>
applicationRuleId  |  Generated application rule identifier. |  Optional.
--- | --- | ---
name  |  Name of application rule. |  Required.
script  |  Application rule script. |  Required.

For the data path to work, you need to add firewall rules to allow required traffic as per the load balancer configuration.

**Request:**

**Body:** application/xml

```xml
<loadBalancer>
  <enabled>true</enabled>
  <enableServiceInsertion>false</enableServiceInsertion>
  <accelerationEnabled>true</accelerationEnabled>
  <logging>
    <enable>true</enable>
    <logLevel>debug</logLevel>
  </logging>
  <virtualServer>
    <virtualServerId>virtualServer-1</virtualServerId>
    <name>http_vip</name>
    <description>http virtualServer</description>
    <enabled>true</enabled>
    <ipAddress>10.117.35.172</ipAddress>
    <protocol>http</protocol>
    <port>80</port>
    <connectionLimit>123</connectionLimit>
    <connectionRateLimit>123</connectionRateLimit>
    <applicationProfileId>applicationProfile-1</applicationProfileId>
    <defaultPoolId>pool-1</defaultPoolId>
    <enableServiceInsertion>false</enableServiceInsertion>
    <accelerationEnabled>true</accelerationEnabled>
    <vendorProfile>
      <vendorTemplateId>577</vendorTemplateId>
      <vendorTemplateName>F5</vendorTemplateName>
      <profileAttributes>
        <attribute>
          <key>abcd</key>
          <name>abcd</name>
          <value>1234</value>
        </attribute>
      </profileAttributes>
    </vendorProfile>
  </virtualServer>
  <virtualServer>
    <virtualServerId>virtualServer-2</virtualServerId>
    <name>https_vip</name>
    <description>https virtualServer</description>
    <enabled>true</enabled>
    <ipAddress>10.117.35.172</ipAddress>
    <protocol>https</protocol>
    <port>443</port>
    <connectionLimit>123</connectionLimit>
    <connectionRateLimit>123</connectionRateLimit>
    <applicationProfileId>applicationProfile-2</applicationProfileId>
    <defaultPoolId>pool-2</defaultPoolId>
    <enableServiceInsertion>false</enableServiceInsertion>
    <accelerationEnabled>false</accelerationEnabled>
  </virtualServer>
</loadBalancer>
```
<virtualServer>
  <virtualServerId>virtualServer-3</virtualServerId>
  <name>tcp_transparent_vip</name>
  <description>tcp virtualServer</description>
  <enabled>true</enabled>
  <ipAddress>10.117.35.172</ipAddress>
  <protocol>tcp</protocol>
  <port>1234</port>
  <connectionLimit>123</connectionLimit>
  <applicationProfileId>applicationProfile-3</applicationProfileId>
  <defaultPoolId>pool-3</defaultPoolId>
  <enableServiceInsertion>false</enableServiceInsertion>
  <accelerationEnabled>true</accelerationEnabled>
</virtualServer>

<virtualServer>
  <virtualServerId>virtualServer-4</virtualServerId>
  <name>tcp_snat_vip</name>
  <description>tcp snat virtualServer</description>
  <enabled>true</enabled>
  <ipAddress>10.117.35.172</ipAddress>
  <protocol>tcp</protocol>
  <port>1235</port>
  <connectionLimit>123</connectionLimit>
  <applicationProfileId>applicationProfile-3</applicationProfileId>
  <defaultPoolId>pool-4</defaultPoolId>
  <enableServiceInsertion>false</enableServiceInsertion>
  <accelerationEnabled>true</accelerationEnabled>
</virtualServer>

<applicationProfile>
  <applicationProfileId>applicationProfile-1</applicationProfileId>
  <name>http_application_profile</name>
  <insertXForwardedFor>true</insertXForwardedFor>
  <sslPassthrough>true</sslPassthrough>
  <persistence>
    <method>cookie</method>
    <cookieName>SESSIONID</cookieName>
    <cookieMode>insert</cookieMode>
  </persistence>
</applicationProfile>

<applicationProfile>
  <applicationProfileId>applicationProfile-2</applicationProfileId>
  <name>https_application_profile</name>
  <insertXForwardedFor>true</insertXForwardedFor>
  <sslPassthrough>true</sslPassthrough>
  <persistence>
    <method>ssl_sessionid</method>
  </persistence>
</applicationProfile>

<applicationProfile>
  <applicationProfileId>applicationProfile-3</applicationProfileId>
  <name>tcp_application_profile</name>
  <insertXForwardedFor>false</insertXForwardedFor>
  <sslPassthrough>true</sslPassthrough>
</applicationProfile>

<pool>
  <poolId>pool-1</poolId>
  <name>pool-http</name>
  <description>pool-http</description>
  <transparent>false</transparent>
  <algorithm>round-robin</algorithm>
  <monitorId>monitor-1</monitorId>
</pool>
<memberId>member-1</memberId>
<ipAddress>192.168.101.201</ipAddress>
<groupingObjectId>vm-24</groupingObjectId>
<weight>1</weight>
,port>80</port>
<minConn>10</minConn>
<maxConn>100</maxConn>
<name>m1</name>
</member>

<member>
<memberId>member-2</memberId>
<ipAddress>192.168.101.202</ipAddress>
<weight>1</weight>
,port>80</port>
<minConn>10</minConn>
<maxConn>100</maxConn>
<name>m2</name>
<condition>enabled</condition>
</member>
</pool>
<pool>
<poolId>pool-2</poolId>
<name>pool-https</name>
<description>pool-https</description>
<transparent>false</transparent>
<algorithm>round-robin</algorithm>
<monitorId>monitor-2</monitorId>
<member>
<memberId>member-3</memberId>
<ipAddress>192.168.101.201</ipAddress>
<weight>1</weight>
,port>443</port>
<minConn>10</minConn>
<maxConn>100</maxConn>
<name>m3</name>
</member>

<member>
<memberId>member-4</memberId>
<ipAddress>192.168.101.202</ipAddress>
<weight>1</weight>
,port>443</port>
<minConn>10</minConn>
<maxConn>100</maxConn>
<name>m4</name>
</member>
</pool>
<pool>
<poolId>pool-3</poolId>
<name>pool-tcp</name>
<description>pool-tcp</description>
<transparent>true</transparent>
<algorithm>round-robin</algorithm>
<monitorId>monitor-3</monitorId>
<member>
<memberId>member-5</memberId>
<ipAddress>192.168.101.201</ipAddress>
<weight>1</weight>
,port>1234</port>
<minConn>10</minConn>
<maxConn>100</maxConn>
<name>m5</name>
</member>
<monitorPort>80</monitorPort>
<member>
  <memberId>member-6</memberId>
  <ipAddress>192.168.101.202</ipAddress>
  <weight>1</weight>
  <port>1234</port>
  <minConn>10</minConn>
  <maxConn>100</maxConn>
  <name>m6</name>
  <monitorPort>80</monitorPort>
</member>
</pool>
<pool>
  <poolId>pool-4</poolId>
  <name>pool-tcp-snat</name>
  <description>pool-tcp-snat</description>
  <transparent>false</transparent>
  <algorithm>round-robin</algorithm>
  <monitorId>monitor-3</monitorId>
  <member>
    <memberId>member-7</memberId>
    <ipAddress>192.168.101.201</ipAddress>
    <weight>1</weight>
    <port>1234</port>
    <minConn>10</minConn>
    <maxConn>100</maxConn>
    <name>m7</name>
    <monitorPort>80</monitorPort>
  </member>
  <member>
    <memberId>member-8</memberId>
    <ipAddress>192.168.101.202</ipAddress>
    <weight>1</weight>
    <port>1234</port>
    <minConn>10</minConn>
    <maxConn>100</maxConn>
    <name>m8</name>
    <monitorPort>80</monitorPort>
  </member>
</pool>
<monitor>
  <monitorId>monitor-1</monitorId>
  <type>http</type>
  <interval>5</interval>
  <timeout>15</timeout>
  <maxRetries>3</maxRetries>
  <method>GET</method>
  <url>http://</url>
  <name=http-monitor</name>
  <expected>HTTP/1</expected>
  <send>hello</send>
  <receive>ok</receive>
  <extension>no-body max-age=3h content-type=Application/xml</extension>
</monitor>
<monitor>
  <monitorId>monitor-2</monitorId>
  <type>https</type>
  <interval>5</interval>
  <timeout>15</timeout>
  <maxRetries>3</maxRetries>
  <method>GET</method>
  <url>http://</url>
### Working With Application Profiles

You create an application profile to define the behavior of a particular type of network traffic. After configuring a profile, you associate the profile with a virtual server. The virtual server then processes traffic according to the values specified in the profile. Using profiles enhances your control over managing network traffic, and makes traffic-management tasks easier and more efficient.

See [Working With NSX Edge Load Balancer](#) for `applicationProfiles` parameter information.

#### GET /api/4.0/edges/{edgeId}/loadbalancer/config/applicationprofiles

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve all application profiles on the specified Edge.

**Responses:**

- **Status Code:** 200
- **Body:** application/xml

```xml
<loadBalancer>
  <applicationProfile>
    <applicationProfileId>applicationProfile-2</applicationProfileId>
    <name>HTTPS-Application-Profile</name>
    <insertXForwardedFor>true</insertXForwardedFor>
    <sslPassthrough>false</sslPassthrough>
    <template>HTTPS</template>
    <serverSslEnabled>false</serverSslEnabled>
  </applicationProfile>
  <applicationProfile>
    <applicationProfileId>applicationProfile-3</applicationProfileId>
  </applicationProfile>
</loadBalancer>
```
<persistence>
  <method>cookie</method>
  <cookieName>JSESSIONID</cookieName>
  <cookieMode>insert</cookieMode>
</persistence>

<name>HTTP-Application-Profile</name>
<insertXForwardedFor>true</insertXForwardedFor>
<sslPassthrough>false</sslPassthrough>
<template>HTTP</template>
<serverSslEnabled>false</serverSslEnabled>
</applicationProfile>

<applicationProfile>
  <applicationProfileId>applicationProfile-4</applicationProfileId>
  <persistence>
    <method>sourceip</method>
  </persistence>
  <name>TCP-Application-Profile</name>
  <insertXForwardedFor>false</insertXForwardedFor>
  <sslPassthrough>false</sslPassthrough>
  <template>TCP</template>
  <serverSslEnabled>false</serverSslEnabled>
</applicationProfile>
</loadBalancer>

POST /api/4.0/edges/{edgeId}/loadbalancer/config/applicationprofiles

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Add an application profile.

**Request:**

**Body:** application/xml

```
<applicationProfile>
  <name>http_application_profile_2</name>
  <insertXForwardedFor>true</insertXForwardedFor>
  <sslPassthrough>true</sslPassthrough>
  <persistence>
    <method>cookie</method>
    <cookieName>JSESSIONID</cookieName>
    <cookieMode>insert</cookieMode>
  </persistence>
</applicationProfile>
```

DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/applicationprofiles

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Delete all application profiles on the specified Edge.

## Working With a Specific Application Profile

### GET

/api/4.0/edges/{edgeId}/loadbalancer/config/applicationprofiles/{appProfileID}

<table>
<thead>
<tr>
<th>URI Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>appProfileID</td>
<td>Specified application profile.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve an application profile.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<applicationProfile>
  <applicationProfileId>applicationProfile-2</applicationProfileId>
  <name>HTTPS-Application-Profile</name>
  <insertXForwardedFor>true</insertXForwardedFor>
  <sslPassthrough>false</sslPassthrough>
  <template>HTTPS</template>
  <serverSslEnabled>false</serverSslEnabled>
</applicationProfile>
```

### PUT

/api/4.0/edges/{edgeId}/loadbalancer/config/applicationprofiles/{appProfileID}

<table>
<thead>
<tr>
<th>URI Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>appProfileID</td>
<td>Specified application profile.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

**Description:**
Modify an application profile.

**Request:**

**Body:** application/xml

```xml
<applicationProfile>
  <name>http_application_profile_2</name>
  <insertXForwardedFor>true</insertXForwardedFor>
  <sslPassthrough>true</sslPassthrough>
  <persistence>
    <method>cookie</method>
  </persistence>
</applicationProfile>
```
### DELETE
/api/4.0/edges/{edgeId}/loadbalancer/config/applicationprofiles/{appProfileID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>appProfileID</td>
<td>Specified application profile.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Delete an application profile.

---

### Working With Application Rules

You can write an application rule to directly manipulate and manage IP application traffic.

See *Working With NSX Edge Load Balancer* for `applicationRule` parameter information.

#### GET /api/4.0/edges/{edgeId}/loadbalancer/config/applicationrules

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve all application rules.

**Responses:**

- **Status Code:** 200
- **Body:** application/xml

```xml
<applicationRule>
  <name>redirection_rule</name>
  <script>acl vmware_page url_beg / vmware redirect location https://www.vmware.com/ if vmware_page</script>
</applicationRule>
```

#### POST /api/4.0/edges/{edgeId}/loadbalancer/config/applicationrules

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Add an application rule.
Request:
Body: application/xml

```xml
<applicationRule>
 <name>redirection_rule</name>
 <script>acl vmware_page url_beg / vmware redirect location https://www.vmware.com/ if vmware_page</script>
</applicationRule>
```

DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/applicationrules

URI Parameters:
- `edgeId` (required)
  Specify the ID of the edge in `edgeId`.

Description:
Delete all application rules.

Working With a Specific Application Rule

GET /api/4.0/edges/{edgeId}/loadbalancer/config/applicationrules/{appruleID}

URI Parameters:
- `appruleID` (required)
  Specified application rule.
- `edgeId` (required)
  Specify the ID of the edge in `edgeId`.

Description:
Retrieve an application rule.

Responses:
Status Code: 200
Body: application/xml

```xml
<applicationRule>
 <name>redirection_rule</name>
 <script>acl vmware_page url_beg / vmware redirect location https://www.vmware.com/ if vmware_page</script>
</applicationRule>
```

PUT /api/4.0/edges/{edgeId}/loadbalancer/config/applicationrules/{appruleID}

URI Parameters:
- `appruleID` (required)
  Specified application rule.
- `edgeId` (required)
  Specify the ID of the edge in `edgeId`.
Description:
Modify an application rule.

Request:
Body: application/xml

```xml
<applicationRule>
  <name>redirection_rule</name>
  <script>acl vmware_page url_beg / vmware redirect location https://www.vmware.com/ if
  vmware_page</script>
</applicationRule>
```

DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/applicationrules/{appruleID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>appruleID</td>
<td>Specified application rule.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete an application rule.

Working With Load Balancer Monitors

You create a service monitor to define health check parameters for a particular type of network traffic. When you associate a service monitor with a pool, the pool members are monitored according to the service monitor parameters. See *Working With NSX Edge Load Balancer* for `monitor` parameter information.

GET /api/4.0/edges/{edgeId}/loadbalancer/config/monitors

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve all load balancer monitors.

Responses:
Status Code: 200
Body: application/xml

```xml
<loadBalancer>
  <monitor>
    <monitorId>monitor-1</monitorId>
    <type>http</type>
    <interval>5</interval>
    <timeout>15</timeout>
    <maxRetries>3</maxRetries>
    <method>GET</method>
  </monitor>
</loadBalancer>
```
<url></url>
<name>http-monitor</name>
</monitor>
<monitor>
  <monitorId>monitor-2</monitorId>
  <type>https</type>
  <interval>5</interval>
  <timeout>15</timeout>
  <maxRetries>3</maxRetries>
  <method>GET</method>
  <url></url>
  <name>https-monitor</name>
</monitor>
<monitor>
  <monitorId>monitor-3</monitorId>
  <type>tcp</type>
  <interval>5</interval>
  <timeout>15</timeout>
  <maxRetries>3</maxRetries>
  <name>tcp-monitor</name>
</monitor>
</loadBalancer>

POST /api/4.0/edges/{edgeId}/loadbalancer/config/monitors

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Add a load balancer monitor.

Request:

Body: application/xml

<monitor>
  <type>http</type>
  <interval>5</interval>
  <timeout>15</timeout>
  <maxRetries>3</maxRetries>
  <method>GET</method>
  <url></url>
  <name>http-monitor-2</name>
</monitor>

DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/monitors

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete all load balancer monitors.
Working With a Specific Load Balancer Monitor

GET /api/4.0/edges/{edgeId}/loadbalancer/config/monitors/{monitorID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>monitorID</td>
<td>Specified monitor.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve a load balancer monitor.

Responses:
Status Code: 200
Body: application/xml

```
<monitor>
  <type>http</type>
  <interval>5</interval>
  <timeout>15</timeout>
  <maxRetries>3</maxRetries>
  <method>GET</method>
  <url>/</url>
  <name>http-monitor-2</name>
</monitor>
```

PUT /api/4.0/edges/{edgeId}/loadbalancer/config/monitors/{monitorID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>monitorID</td>
<td>Specified monitor.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Modify a load balancer monitor.

Request:
Body: application/xml

```
<monitor>
  <type>http</type>
  <interval>15</interval>
  <timeout>25</timeout>
  <maxRetries>3</maxRetries>
  <method>GET</method>
  <url>/</url>
  <name>http-monitor-2</name>
</monitor>
```
DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/monitors/{monitorID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>monitorID</td>
<td>Specified monitor.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Delete a load balancer monitor.

---

**Working With Virtual Servers**

GET /api/4.0/edges/{edgeId}/loadbalancer/config/virtualservers

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve all virtual servers.

POST /api/4.0/edges/{edgeId}/loadbalancer/config/virtualservers

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Add a virtual server.
You can add an NSX Edge internal or uplink interface as a virtual server.
See *Working With NSX Edge Load Balancer* for `virtualServer` parameter information.

**Request:**

**Body:** application/xml

```xml
<virtualServer>
  <name>http_vip_2</name>
  <description>http virtualServer 2</description>
  <enabled>true</enabled>
  <ipAddress>10.117.35.172</ipAddress>
  <protocol>http</protocol>
  <port>443,6000-7000</port>
  <connectionLimit>123</connectionLimit>
  <connectionRateLimit>123</connectionRateLimit>
  <applicationProfileId>applicationProfile-1</applicationProfileId>
  <defaultPoolId>pool-1</defaultPoolId>
  <enableServiceInsertion>false</enableServiceInsertion>
  <accelerationEnabled>true</accelerationEnabled>
</virtualServer>
```
DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/virtualservers

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete all virtual servers.

---

Working With a Specific Virtual Server

GET /api/4.0/edges/{edgeId}/loadbalancer/config/virtualservers/{virtualserverID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtualserverID</td>
<td>Specified virtual server ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve details for the specified virtual server.

DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/virtualservers/{virtualserverID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtualserverID</td>
<td>Specified virtual server ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete the specified virtual server.

---

Working With Server Pools

You can add a server pool to manage and share backend servers flexibly and efficiently. A pool manages load balancer distribution methods and has a service monitor attached to it for health check parameters.

See Working With NSX Edge Load Balancer for pools parameter information.

GET /api/4.0/edges/{edgeId}/loadbalancer/config/pools

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Get all server pools on the specified NSX Edge.
Responses:
Status Code: 200
Body: application/xml

```xml
<loadBalancer>
  <pool>
    <type>slb</type>
    <poolId>pool-1</poolId>
    <name>pool-http</name>
    <description>pool-http</description>
    <algorithm>round-robin</algorithm>
    <transparent>true</transparent>
    <monitorId>monitor-1</monitorId>
    <member>
      <memberId>member-1</memberId>
      <ipAddress>192.168.101.201</ipAddress>
      <weight>1</weight>
      <port>80</port>
      <maxConn>100</maxConn>
      <minConn>10</minConn>
      <condition>enabled</condition>
      <name>m1</name>
    </member>
    <member>
      <memberId>member-2</memberId>
      <ipAddress>192.168.101.202</ipAddress>
      <weight>1</weight>
      <port>80</port>
      <maxConn>100</maxConn>
      <minConn>10</minConn>
      <condition>enabled</condition>
      <name>m2</name>
    </member>
  </pool>
  <pool>
    <type>slb</type>
    <poolId>pool-2</poolId>
    <name>pool-https</name>
    <description>pool-https</description>
    <algorithm>round-robin</algorithm>
    <transparent>false</transparent>
    <monitorId>monitor-2</monitorId>
    <member>
      <memberId>member-11</memberId>
      <ipAddress>192.168.101.201</ipAddress>
      <weight>1</weight>
      <port>443</port>
      <maxConn>100</maxConn>
      <minConn>10</minConn>
      <condition>enabled</condition>
      <name>m3</name>
    </member>
    <member>
      <memberId>member-4</memberId>
      <ipAddress>192.168.101.202</ipAddress>
      <weight>1</weight>
      <port>443</port>
      <maxConn>100</maxConn>
      <minConn>10</minConn>
  </pool>
</loadBalancer>
```
<condition>enabled</condition>
<name>m4</name>
</member>
</pool>
<pool>
<type>slb</type>
<poolId>pool-3</poolId>
<name>pool-tcp</name>
<description>pool-tcp</description>
<algorithm>round-robin</algorithm>
<transparent>true</transparent>
<monitorId>monitor-3</monitorId>
<member>
  <memberId>member-5</memberId>
  <ipAddress>192.168.101.201</ipAddress>
  <weight>1</weight>
  <monitorPort>80</monitorPort>
  <port>1234</port>
  <maxConn>100</maxConn>
  <minConn>10</minConn>
  <condition>enabled</condition>
  <name>m5</name>
</member>
<member>
  <memberId>member-6</memberId>
  <ipAddress>192.168.101.202</ipAddress>
  <weight>1</weight>
  <monitorPort>80</monitorPort>
  <port>1234</port>
  <maxConn>100</maxConn>
  <minConn>10</minConn>
  <condition>enabled</condition>
  <name>m6</name>
</member>
</pool>
<pool>
<type>slb</type>
<poolId>pool-4</poolId>
<name>pool-tcp-snat</name>
<description>pool-tcp-snat</description>
<algorithm>round-robin</algorithm>
<transparent>false</transparent>
<monitorId>monitor-3</monitorId>
<member>
  <memberId>member-7</memberId>
  <ipAddress>192.168.101.201</ipAddress>
  <weight>1</weight>
  <monitorPort>80</monitorPort>
  <port>1234</port>
  <maxConn>100</maxConn>
  <minConn>10</minConn>
  <condition>enabled</condition>
  <name>m7</name>
</member>
<member>
  <memberId>member-8</memberId>
  <ipAddress>192.168.101.202</ipAddress>
  <weight>1</weight>
  <monitorPort>80</monitorPort>
  <port>1234</port>
  <maxConn>100</maxConn>
  <minConn>10</minConn>
POST /api/4.0/edges/{edgeId}/loadbalancer/config/pools

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Add a load balancer server pool to the Edge.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. Member <code>condition</code> can be set to <code>drain</code>.</td>
</tr>
</tbody>
</table>

Request:

**Body:** application/xml

```
<pool>
  <name>pool-tcp-snat-2</name>
  <description>pool-tcp-snat-2</description>
  <transparent>false</transparent>
  <algorithm>round-robin</algorithm>
  <monitorId>monitor-3</monitorId>
  <member>
    <ipAddress>192.168.101.201</ipAddress>
    <weight>1</weight>
    <port>80</port>
    <minConn>10</minConn>
    <maxConn>100</maxConn>
    <name>m5</name>
    <monitorPort>80</monitorPort>
  </member>
  <member>
    <ipAddress>192.168.101.202</ipAddress>
    <weight>1</weight>
    <port>80</port>
    <minConn>10</minConn>
    <maxConn>100</maxConn>
    <name>m6</name>
    <monitorPort>80</monitorPort>
  </member>
</pool>
```

DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/pools

URI Parameters:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>
Description:
Delete all server pools configured on the specified NSX Edge.

---

**Working With a Specific Server Pool**

**GET /api/4.0/edges/{edgeId}/loadbalancer/config/pools/{poolID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>poolID</td>
<td>Specified pool ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified server pool.

**PUT /api/4.0/edges/{edgeId}/loadbalancer/config/pools/{poolID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>poolID</td>
<td>Specified pool ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Update the specified server pool.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.0</td>
<td>Method updated. Member <code>condition</code> can be set to <code>drain</code>.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<pool>
  <name>pool-tcp-snat-2</name>
  <description>pool-tcp-snat-3</description>
  <transparent>false</transparent>
  <algorithm>round-robin</algorithm>
  <monitorId>monitor-3</monitorId>
  <member>
    <ipAddress>192.168.101.201</ipAddress>
    <weight>1</weight>
    <port>1234</port>
    <minConn>10</minConn>
    <maxConn>100</maxConn>
    <name>m5</name>
    <condition>enabled|disabled</condition>
    <monitorPort>80</monitorPort>
  </member>
  <member>
```

---
DELETE /api/4.0/edges/{edgeId}/loadbalancer/config/pools/{poolID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>poolID</td>
<td>Specified pool ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Delete the specified server pool.

---

**Working With a Specific Load Balancer Member**

POST /api/4.0/edges/{edgeId}/loadbalancer/config/members/{memberID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>memberId</td>
<td>Member ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>Set to <code>true</code> to enable member, <code>false</code> to disable member.</td>
</tr>
</tbody>
</table>

**Description:**
Update enabled status of the specified member.

---

**Working With Load Balancer Statistics**

Retrieves load balancer statistics.

**Load Balancer Statistics Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtualServer</td>
<td>Virtual server list.</td>
</tr>
<tr>
<td>virtualServerId</td>
<td>Virtual server identifier.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>name</td>
<td>Name of the virtual server.</td>
</tr>
<tr>
<td>description</td>
<td>Description of virtual server.</td>
</tr>
<tr>
<td>ipAddress</td>
<td>IP address that the load balancer is listening on.</td>
</tr>
<tr>
<td>status</td>
<td>Virtual server status.</td>
</tr>
<tr>
<td>bytesIn</td>
<td>Number of bytes in.</td>
</tr>
<tr>
<td>bytesOut</td>
<td>Number of bytes out.</td>
</tr>
<tr>
<td>curSessions</td>
<td>Number of current sessions.</td>
</tr>
<tr>
<td>httpReqTotal</td>
<td>Total number of HTTP requests received.</td>
</tr>
<tr>
<td>httpReqRate</td>
<td>HTTP requests per second over last elapsed second.</td>
</tr>
<tr>
<td>httpReqRateMax</td>
<td>Maximum number of HTTP requests per second observed.</td>
</tr>
<tr>
<td>maxSession</td>
<td>Number of maximum sessions.</td>
</tr>
<tr>
<td>rate</td>
<td>Number of sessions per second over last elapsed second.</td>
</tr>
<tr>
<td>rateLimit</td>
<td>Configured limit on new sessions per second.</td>
</tr>
<tr>
<td>rateMax</td>
<td>Maximum number of new sessions per second.</td>
</tr>
<tr>
<td>totalSession</td>
<td>Total number of sessions.</td>
</tr>
<tr>
<td>pool</td>
<td>Pool list.</td>
</tr>
<tr>
<td>poolId</td>
<td>Generated pool identifier.</td>
</tr>
<tr>
<td>name</td>
<td>Name of the pool.</td>
</tr>
<tr>
<td>description</td>
<td>Description of the pool.</td>
</tr>
<tr>
<td>status</td>
<td>Pool status.</td>
</tr>
<tr>
<td>bytesIn</td>
<td>Number of bytes in.</td>
</tr>
<tr>
<td>bytesOut</td>
<td>Number of bytes out.</td>
</tr>
<tr>
<td>curSessions</td>
<td>Number of current sessions.</td>
</tr>
<tr>
<td>httpReqTotal</td>
<td>Total number of HTTP requests received.</td>
</tr>
<tr>
<td>httpReqRate</td>
<td>HTTP requests per second over last elapsed second.</td>
</tr>
<tr>
<td>httpReqRateMax</td>
<td>Maximum number of HTTP requests per second observed.</td>
</tr>
<tr>
<td>maxSession</td>
<td>Number of maximum sessions.</td>
</tr>
<tr>
<td>rate</td>
<td>Number of sessions per second over last elapsed second.</td>
</tr>
<tr>
<td>rateLimit</td>
<td>Configured limit on new sessions per second.</td>
</tr>
<tr>
<td>rateMax</td>
<td>Maximum number of new sessions per second.</td>
</tr>
<tr>
<td>totalSession</td>
<td>Total number of sessions.</td>
</tr>
<tr>
<td>member</td>
<td>Pool member list.</td>
</tr>
<tr>
<td>memberId</td>
<td>Generated member identifier.</td>
</tr>
<tr>
<td>name</td>
<td>Member name.</td>
</tr>
<tr>
<td>ipAddress</td>
<td>Member IP address.</td>
</tr>
<tr>
<td>groupingObjectId</td>
<td>Member grouping object identifier.</td>
</tr>
<tr>
<td>status</td>
<td>Member status.</td>
</tr>
<tr>
<td>bytesIn</td>
<td>Number of bytes in.</td>
</tr>
<tr>
<td>bytesOut</td>
<td>Number of bytes out.</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>curSessions</td>
<td>Number of current sessions.</td>
</tr>
<tr>
<td>httpReqTotal</td>
<td>Total number of HTTP requests received.</td>
</tr>
<tr>
<td>httpReqRate</td>
<td>HTTP requests per second over last elapsed second.</td>
</tr>
<tr>
<td>httpReqRateMax</td>
<td>Maximum number of HTTP requests per second observed.</td>
</tr>
<tr>
<td>maxSession</td>
<td>Number of maximum sessions.</td>
</tr>
<tr>
<td>rate</td>
<td>Number of sessions per second over last elapsed second.</td>
</tr>
<tr>
<td>rateLimit</td>
<td>Configured limit on new sessions per second.</td>
</tr>
<tr>
<td>rateMax</td>
<td>Maximum number of new sessions per second.</td>
</tr>
<tr>
<td>totalSession</td>
<td>Total number of sessions.</td>
</tr>
<tr>
<td>timestamp</td>
<td>Timestamp to fetch load balancer statistics.</td>
</tr>
<tr>
<td>serverStatus</td>
<td>Load balancer server status.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/loadbalancer/statistics

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

Retrieve load balancer statistics.

**Responses:**

**Status Code: 200**

**Body:** application/xml

```xml
<loadBalancerStatusAndStats>
   <timeStamp>1359722922</timeStamp>
   <pool>
      <poolId>pool-1</poolId>
      <name>pool-http</name>
      <member>
         <memberId>member-1</memberId>
         <name>m1</name>
         <ipAddress>192.168.101.201</ipAddress>
         <status>UP</status>
         <bytesIn>70771</bytesIn>
         <bytesOut>74619</bytesOut>
         <curSessions>0</curSessions>
         <maxSessions>1</maxSessions>
         <rate>0</rate>
         <rateMax>17</rateMax>
         <totalSessions>142</totalSessions>
      </member>
      <member>
         <memberId>member-2</memberId>
         <name>m2</name>
         <ipAddress>192.168.101.202</ipAddress>
         <status>UP</status>
         <bytesIn>70823</bytesIn>
         <bytesOut>70605</bytesOut>
      </member>
   </pool>
</loadBalancerStatusAndStats>
```
<curSessions>0</curSessions>
<maxSessions>1</maxSessions>
<rate>0</rate>
<rateMax>17</rateMax>
<totalSessions>141</totalSessions>
</member>
<status>UP</status>
<bytesIn>141594</bytesIn>
<bytesOut>145224</bytesOut>
<curSessions>0</curSessions>
<maxSessions>2</maxSessions>
<rate>0</rate>
<rateMax>34</rateMax>
<totalSessions>283</totalSessions>
</pool>
<virtualServer>
    <virtualServerId>virtualServer-9</virtualServerId>
    <name>http_vip</name>
    <ipAddress>10.117.35.172</ipAddress>
    <status>OPEN</status>
    <bytesIn>141594</bytesIn>
    <bytesOut>145224</bytesOut>
    <curSessions>1</curSessions>
    <httpReqTotal>283</httpReqTotal>
    <httpReqRate>0</httpReqRate>
    <httpReqRateMax>34</httpReqRateMax>
    <maxSessions>2</maxSessions>
    <rate>0</rate>
    <rateLimit>0</rateLimit>
    <rateMax>2</rateMax>
    <totalSessions>13</totalSessions>
</virtualServer>
<globalSite>
    <name>BJ site</name>
    <globalSiteId>site-3</globalSiteId>
    <msgSent>3</msgSent>
    <msgRecv>747</msgRecv>
    <msgRate>0</msgRate>
    <dnsReq>0</dnsReq>
    <dnsResolved>0</dnsResolved>
</globalSite>
<globalIp>
    <fqdn>www.company.com</fqdn>
    <globalIpId>gip-3</globalIpId>
    <dnsReq>0</dnsReq>
    <dnsResolved>0</dnsResolved>
    <dnsMiss>0</dnsMiss>
</globalIp>
<globalPool>
    <name>www-primary</name>
    <poolId>pool-1</poolId>
    <dnsReq>0</dnsReq>
    <dnsResolved>0</dnsResolved>
    <dnsMiss>0</dnsMiss>
    <member>
        <name>10.117.7.110</name>
        <memberId>member-3</memberId>
        <status>up</status>
        <dnsHit>0</dnsHit>
        <cpuUsage>3</cpuUsage>
        <memUsage>91</memUsage>
        <sessions>0</sessions>
    </member>
Working With Load Balancer Acceleration

POST /api/4.0/edges/{edgeId}/loadbalancer/acceleration

URI Parameters:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>(required) Set to true to enable or false to disable load balancer acceleration mode.</td>
</tr>
</tbody>
</table>

Description:
Configure load balancer acceleration mode.

---

Working With NSX Edge DNS Server Configuration

You can configure external DNS servers to which NSX Edge can relay name resolution requests from clients. NSX Edge will relay client application requests to the DNS servers to fully resolve a network name and cache the response from the servers.
The DNS server list allows two addresses – primary and secondary. The default cache size is 16 MB where the minimum can be 1 MB, and the maximum 8196 MB. The default listeners is any, which means listen on all NSX Edge interfaces. If provided, the listener's IP address must be assigned to an internal interface. Logging is disabled by default.

GET /api/4.0/edges/{edgeId}/dns/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve DNS configuration.

PUT /api/4.0/edges/{edgeId}/dns/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Configure DNS servers.

Request:
Body: application/xml

```xml
<dns>
  <version>2</version>
  <enabled>true</enabled>
  <cacheSize>128</cacheSize>
  <listeners>
    <ipAddress>192.168.100.1</ipAddress>
    <ipAddress>192.168.100.2</ipAddress>
  </listeners>
  <dnsViews>
    <dnsView>
      <viewId>view-0</viewId>
      <name>vsm-default-view</name>
      <enabled>true</enabled>
      <viewMatch>
        <ipAddress>any</ipAddress>
        <vnic>any</vnic>
      </viewMatch>
      <recursion>false</recursion>
      <forwarders>
        <ipAddress>10.117.0.1</ipAddress>
      </forwarders>
    </dnsView>
  </dnsViews>
  <logging>
    <enable>true</enable>
    <logLevel>info</logLevel>
  </logging>
</dns>
```

DELETE /api/4.0/edges/{edgeId}/dns/config
URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete DNS configuration

---

Get DNS server statistics

**GET /api/4.0/edges/{edgeId}/dns/statistics**

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:

**Get DNS server statistics**

DNS Server Statistics Parameters

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Parameter Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>requests &gt; total</td>
<td>Indicates all of the incoming requests to the DNS server, including DNS query and other types of requests such as transfers, and updates.</td>
</tr>
<tr>
<td>requests &gt; queries</td>
<td>Indicates all of the DNS queries the server received.</td>
</tr>
<tr>
<td>responses &gt; success</td>
<td>Indicates all of the successful DNS responses.</td>
</tr>
<tr>
<td>responses &gt; nxrrset</td>
<td>Indicates the count of no existent resource record.</td>
</tr>
<tr>
<td>responses &gt; servFail</td>
<td>Indicates the count of the SERVFAIL responses.</td>
</tr>
<tr>
<td>responses &gt; formErr</td>
<td>Indicates the count of the format error responses.</td>
</tr>
<tr>
<td>responses &gt; nxdomain</td>
<td>Indicates the count of no-such-domain answer</td>
</tr>
<tr>
<td>responses &gt; others</td>
<td>Indicates the count of other types of responses.</td>
</tr>
</tbody>
</table>

Responses:

**Status Code: 200**

**Body:** `application/xml`

```xml
<dns>
  <stats>
    <timeStamp>2011-10-10 12:12:12</timeStamp>
    <requests>
      <total>120000</total>
      <queries>110000</queries>
    </requests>
    <responses>
      <success></success>
      <nxrrset></nxrrset>
      <servFail></servFail>
      <formErr></formErr>
      <nxdomain></nxdomain>
      <others></others>
    </responses>
  </stats>
</dns>
```
NSX Edge provides DHCP service to bind assigned IP addresses to MAC addresses, helping to prevent MAC spoofing attacks. All virtual machines protected by a NSX Edge can obtain IP addresses dynamically from the NSX Edge DHCP service.

NSX Edge supports IP address pooling and one-to-one static IP address allocation based on the vCenter managed object ID (vmlid) and interface ID (interfaceId) of the requesting client.

If either bindings or pools are not included in the PUT call, existing bindings or pools are deleted.

If the NSX Edge autoConfiguration flag and autoConfigureDNS is true, and the primaryNameServer or secondaryNameServer parameters are not specified, NSX Manager applies the DNS settings to the DHCP configuration.

NSX Edge DHCP service adheres to the following rules:
- Listens on the NSX Edge internal interface (non-uplink interface) for DHCP discovery.
- As stated above, vmlid specifies the vc-moref-id of the virtual machine, and vnicId specifies the index of the vNic for the requesting client. The hostname is an identification of the binding being created. This hostName is not pushed as the specified host name of the virtual machine.
- By default, all clients use the IP address of the internal interface of the NSX Edge as the default gateway address. To override it, specify defaultGateway per binding or per pool. The client’s broadcast and subnetMask values are from the internal interface for the container network.
- leaseTime can be infinite, or a number of seconds. If not specified, the default lease time is 1 day.
- Logging is disabled by default.
- Setting the parameter enable to true starts the DHCP service while setting enable to false stops the service.
- Both staticBinding and ipPools must be part of the PUT request body. If either bindings or pools are not included in the PUT call, existing bindings or pools are deleted.

### DHCP Configuration Parameters

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Parameter Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Default is true.</td>
</tr>
<tr>
<td>staticBinding</td>
<td>Assign an IP address via DHCP statically rather than dynamically. You can either specify macAddress directly, or specify vmlid and vnicId. In case both are specified, only macAddress will be used; vmlid and vnicId will be ignored.</td>
</tr>
<tr>
<td>staticBinding &gt; macAddress</td>
<td>Optional.</td>
</tr>
<tr>
<td>staticBinding &gt; vmlid</td>
<td>Optional. The VM must be connected to the specified vnicId.</td>
</tr>
<tr>
<td>staticBinding &gt; vnicId</td>
<td>Optional. Possible values 0 to 9.</td>
</tr>
<tr>
<td>staticBinding &gt; hostname</td>
<td>Optional. Disallow duplicate.</td>
</tr>
<tr>
<td><strong>staticBinding &gt; ipAddress</strong></td>
<td>The IP can either belong to a subnet of one of Edge's vNics or it can be any valid IP address, but the IP must not overlap with any primary/secondary IP addresses associated with any of Edge's vNics. If the IP does not belong to any Edge vNic subnets, you must ensure that the default gateway and subnetMask are configured via this API call.</td>
</tr>
<tr>
<td><strong>ipPool &gt; ipRange</strong></td>
<td>Required. The IP range can either fall entirely within one of the Edge vNIC subnets, or it can be a valid IP range outside any Edge subnets. The IP range, however, cannot contain an IP that is defined as a vNic primary secondary IP. If the range does not fall entirely within one of the Edge vNIC subnets, you must provide correct subnetMask and defaultGateway.</td>
</tr>
<tr>
<td><strong>defaultGateway</strong> (staticBinding and ipPool)</td>
<td>Optional. If the ipRange (for ipPool) or assigned IP (for staticBinding) falls entirely within one of the Edge vNIC subnets, defaultGateway is set to the primary IP of the vNIC configured with the matching subnet. Otherwise, you must provide the correct gateway IP. If an IP is not provided, the client host may not get default gateway IP from the DHCP server.</td>
</tr>
<tr>
<td><strong>subnetMask</strong> (staticBinding and ipPool)</td>
<td>Optional. If not specified, and the the ipRange (for ipPool) or assigned IP (for staticBinding) belongs to an Edge vNic subnet, it is defaulted to the subnet mask of this vNic subnet. Otherwise, it is defaulted to a minimum subnet mask which is figured out with the IP range itself, e.g. the mask of range 192.168.5.2-192.168.5.20 is 255.255.255.224. You can edit this range, if required. <strong>Note:</strong> If you do not specify a subnet mask when configuring DHCP, subnetMask is not included in the output of GET /api/4.0/edges/{edgeId}/dhcp/config or GET /api/4.0/edges/{edgeId}/dhcp/config/bindings/{bindingID}. You can run show configuration dhcp on the Edge VM CLI to view the subnet mask.</td>
</tr>
<tr>
<td><strong>domainName</strong> (staticBinding and ipPool)</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>primaryNameServer</strong> (staticBinding and ipPool)</td>
<td>Optional. If autoConfigureDNS is true, the DNS primary/secondary IPs will be generated from DNS service (if configured).</td>
</tr>
<tr>
<td><strong>secondaryNameServer</strong> (staticBinding and ipPool)</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>leaseTime</strong> (staticBinding and ipPool)</td>
<td>Optional. In seconds, default is 86400. Valid leaseTime is a valid number or infinite.</td>
</tr>
<tr>
<td><strong>autoConfigureDns</strong> (staticBinding and ipPool)</td>
<td>Optional. Default is true.</td>
</tr>
<tr>
<td><strong>nextServer</strong> (staticBinding and ipPool)</td>
<td>Global TFTP server setting. If an IP pool or static binding has a TFTP server configured via option66 or option150, that server will be used instead.</td>
</tr>
<tr>
<td><strong>dhcpOptions</strong> (staticBinding and ipPool)</td>
<td>Optional.</td>
</tr>
<tr>
<td><strong>dhcpOptions &gt; option121</strong> (staticBinding and ipPool)</td>
<td>Add a static route.</td>
</tr>
<tr>
<td><strong>dhcpOptions &gt; option121 &gt; destinationSubnet</strong> (staticBinding and ipPool)</td>
<td>Destination network, for example 1.1.1.4/30.</td>
</tr>
<tr>
<td><strong>dhcpOptions &gt; option121 &gt; router</strong> (staticBinding and ipPool)</td>
<td>Router IP address.</td>
</tr>
<tr>
<td><strong>dhcpOptions &gt; option66</strong> (staticBinding and ipPool)</td>
<td>Hostname or IP address of a single TFTP server for this IP pool.</td>
</tr>
<tr>
<td><strong>dhcpOptions &gt; option67</strong> (staticBinding and ipPool)</td>
<td>Filename to be downloaded from TFTP server.</td>
</tr>
<tr>
<td><strong>dhcpOptions &gt; option150</strong> (staticBinding and ipPool)</td>
<td>IP address of TFTP server.</td>
</tr>
<tr>
<td>dhcpOptions &gt; option150 &gt; server (staticBinding and ipPool)</td>
<td>Use to specify more than one TFTP server by IP address for this IP Pool.</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>dhcpOptions &gt; option26 (staticBinding and ipPool)</td>
<td>MTU.</td>
</tr>
<tr>
<td>dhcpOptions &gt; other (staticBinding and ipPool)</td>
<td>Add DHCP options other than 26, 66, 67, 121, 150.</td>
</tr>
<tr>
<td>dhcpOptions &gt; other &gt; code (staticBinding and ipPool)</td>
<td>Use the DHCP option number only. For example, to specify dhcp option 80, enter 80.</td>
</tr>
<tr>
<td>dhcpOptions &gt; other &gt; value (staticBinding and ipPool)</td>
<td>The DHCP option value, in hex. For example, 2F766172.</td>
</tr>
<tr>
<td>logging</td>
<td>Optional. Logging is disabled by default.</td>
</tr>
<tr>
<td>logging &gt; enable</td>
<td>Optional, default is false.</td>
</tr>
<tr>
<td>logging &gt; logLevel</td>
<td>Optional, default is info.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/dhcp/config

**URI Parameters:**

| edgeId (required) | Specify the ID of the edge in edgeId. |

**Description:**

Retrieve DHCP configuration.

**Method History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. DHCP options added.</td>
</tr>
</tbody>
</table>

PUT /api/4.0/edges/{edgeId}/dhcp/config

**URI Parameters:**

| edgeId (required) | Specify the ID of the edge in edgeId. |

**Description:**

Configure DHCP service.

**Method History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. DHCP options added.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<dhcp>
  <enabled>true</enabled>
  <staticBindings>
    <staticBinding>
      <macAddress>12:34:56:78:90:AB</macAddress>
      <vmId>vm-111</vmId>
    </staticBinding>
  </staticBindings>
</dhcp>
```
DELETE /api/4.0/edges/{edgeId}/dhcp/config
URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete the DHCP configuration, restoring it to factory default.

---

## Working With DHCP IP Pools

**POST** /api/4.0/edges/{edgeId}/dhcp/config/ippools

### URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

### Description:
Add an IP pool to the DHCP configuration. Returns a pool ID within a Location HTTP header.

### Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. DHCP options added.</td>
</tr>
</tbody>
</table>

### Request:

**Body**: application/xml

```
<ipPool>
  <ipRange>192.168.5.2-192.168.5.20</ipRange>
  <defaultGateway>192.168.5.1</defaultGateway>
  <domainName>eng.vmware.com</domainName>
  <primaryNameServer>1.2.3.4</primaryNameServer>
  <secondaryNameServer>4.3.2.1</secondaryNameServer>
  <leaseTime>3600</leaseTime>
  <autoConfigureDNS>true</autoConfigureDNS>
  <nextServer>11.11.18.105</nextServer>
  <dhcpOptions>
    <option121>
      <staticRoute>
        <destinationSubnet>1.1.1.4/30</destinationSubnet>
        <router>10.10.10.254</router>
      </staticRoute>
    </option121>
    <option66>boot.tftp.org</option66>
    <option67>/opt/tftpServer</option67>
    <option150>
      <server>10.10.10.1</server>
      <server>100.100.100.1</server>
    </option150>
    <option26>2048</option26>
  </dhcpOptions>
</ipPool>
```
Working With a Specific DHCP IP Pool

DELETE /api/4.0/edges/{edgeId}/dhcp/config/ippools/{poolID}

URI Parameters:

<table>
<thead>
<tr>
<th>poolID (required)</th>
<th>Specified DHCP IP pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Delete a pool specified by pool ID

Working With DHCP Static Bindings

POST /api/4.0/edges/{edgeId}/dhcp/config/bindings

URI Parameters:

| edgeId (required) | Specify the ID of the edge in edgeId. |

Description:
Append a static-binding to DHCP config. A static-binding ID is returned within a Location HTTP header.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. DHCP options added.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

<staticBinding>
<vmId></vmId>
<vnicId></vnicId>
<hostname></hostname>
Working With a Specific DHCP Static Binding

GET /api/4.0/edges/{edgeId}/dhcp/config/bindings/{bindingID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>bindingID</td>
<td>Specified static-binding ID</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve the specified static binding.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**
DELETE /api/4.0/edges/{edgeId}/dhcp/config/bindings/{bindingID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>bindingID</td>
<td>Specified static-binding ID</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Delete the specified static binding.

Working With DHCP Relays

Dynamic Host Configuration Protocol (DHCP) relay enables you to leverage your existing DHCP infrastructure from within NSX without any interruption to the IP address management in your environment. DHCP messages are relayed from virtual machine(s) to the designated DHCP server(s) in the physical world. This enables IP addresses within NSX to continue to be in sync with IP addresses in other environments.

DHCP configuration is applied on the logical router port and can list several DHCP servers. Requests are sent to all listed servers. While relaying the DHCP request from the client, the relay adds a Gateway IP Address to the request. The external DHCP server uses this gateway address to match a pool and allocate an IP address for the request. The gateway address must belong to a subnet of the NSX port on which the relay is running.

You can specify a different DHCP server for each logical switch and can configure multiple DHCP servers on each logical router to provide support for multiple IP domains.

NOTE DHCP relay does not support overlapping IP address space (option 82).

DHCP Relay and DHCP service cannot run on a port/vNic at the same time. If a relay agent is configured on a port, a DHCP pool cannot be configured on the subnet(s) of this port.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>relay</td>
<td>You can configure ipPool, static-binding and relay at the same time if there is not any overlap on vnic.</td>
</tr>
<tr>
<td>relayServer</td>
<td>Required. There must be at least one external server.</td>
</tr>
<tr>
<td>groupingObjectId</td>
<td>A list of dhcp server IP addresses. There can be multiple sever group objects, the maximum groupObject is 4, the maximum number of server IP addresses is 16.</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ipAddress</td>
<td>Supports both IP address and FQDN.</td>
</tr>
<tr>
<td>fqdn</td>
<td>Specify the IP of the fqdn, and add a Firewall rule to allow the response from the server represented by the fqdn such as: src - the IP; dest - any; service - udp:67:any.</td>
</tr>
<tr>
<td>relayAgents</td>
<td>Required. There must be at least one relay agent.</td>
</tr>
<tr>
<td>vnicIndex</td>
<td>Required. No default. Specify the vNic that proxy the dhcp request.</td>
</tr>
<tr>
<td>giAddress</td>
<td>Optional. Defaults to the vNic primary address. Only one giAddress allowed.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/dhcp/config/relay

URI Parameters:
| edgeId (required) | Specify the ID of the edge in edgeId. |

Description:
Retrieve DHCP relay information.

Responses:
Status Code: 200
Body: application/xml

```
<relay>
  <relayServer>
    <groupingObjectId>IPset1</groupingObjectId>
    <groupingObjectId>IPset2</groupingObjectId>
  </relayServer>
  <relayAgents>
    <relayAgent>
      <vnicIndex>1</vnicIndex>
      <giAddress>192.168.1.254</giAddress>
    </relayAgent>
    <relayAgent>
      <vnicIndex>3</vnicIndex>
      <giAddress>192.168.3.254</giAddress>
    </relayAgent>
  </relayAgents>
</relay>
```

PUT /api/4.0/edges/{edgeId}/dhcp/config/relay

URI Parameters:
| edgeId (required) | Specify the ID of the edge in edgeId. |

Description:
Configure DHCP relay.
Request:
Body: application/xml

```
<relay>
  <relayServer>
    <groupingObjectId>IPset1</groupingObjectId>
    <groupingObjectId>IPset2</groupingObjectId>
    <ipAddress>10.117.35.202</ipAddress>
    <fqdn>www.dhcpserver</fqdn>
  </relayServer>
  <relayAgents>
    <relayAgent>
      <giAddress>192.168.1.254</giAddress>
    </relayAgent>
    <relayAgent>
      <vnicIndex>3</vnicIndex>
      <giAddress>192.168.3.254</giAddress>
    </relayAgent>
  </relayAgents>
</relay>
```

DELETE /api/4.0/edges/{edgeId}/dhcp/config/relay

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId (required)</th>
<th>Specify the ID of the edge in <strong>edgeId</strong>.</th>
</tr>
</thead>
</table>

**Description:**
Delete DHCP relay configuration.

---

**Working With DHCP Leases**

GET /api/4.0/edges/{edgeId}/dhcp/leaseInfo

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId (required)</th>
<th>Specify the ID of the edge in <strong>edgeId</strong>.</th>
</tr>
</thead>
</table>

**Description:**
Get DHCP lease information.

---

**Working With NSX Edge High Availability**

High Availability (HA) ensures that a NSX Edge appliance is always available on your virtualized network. You can enable HA either when installing NSX Edge or on an installed NSX Edge instance.

If a single appliance is associated with NSX Edge, the appliance configuration is cloned for the standby appliance. If two appliances are associated with NSX Edge and one of them is deployed, this REST call deploys the remaining appliance and push HA configuration to both.
HA relies on an internal interface. If an internal interface does not exist, this call will not deploy the secondary appliance, or push HA config to appliance. The enabling of HA will be done once an available internal interface is added. If the PUT call includes an empty <highAvailability/> or enabled=false, it acts as a DELETE call.

GET /api/4.0/edges/{edgeId}/highavailability/config

URI Parameters:

| edgeId       | (required) | Specify the ID of the edge in edgeId. |

Description:
Get high availability configuration.

Responses:
Status Code: 200
Body: application/xml

```
<highAvailability>
  <vnic>1</vnic>
  <ipAddresses>
    <ipAddress>192.168.10.1/30</ipAddress>
    <ipAddress>192.168.10.2/30</ipAddress>
  </ipAddresses>
  <declareDeadTime>6</declareDeadTime>
</highAvailability>
```

PUT /api/4.0/edges/{edgeId}/highavailability/config

URI Parameters:

| edgeId       | (required) | Specify the ID of the edge in edgeId. |

Description:
Configure high availability.

- **ipAddress** - Optional. A pair of ipAddresses with /30 subnet mandatory, one for each appliance. If provided, they must NOT overlap with any subnet defined on the Edge vNics. If not specified, a pair of IPs will be picked up from the reserved subnet, 169.254.0.0/16.
- **declareDeadTime** Optional. The default is 6 seconds.
- **enabled** - Optional. The default is set to true. The enabled flag will cause the HA appliance to be deployed or destroyed.

Request:
Body: application/xml

```
<highAvailability>
  <ipAddresses>
    <ipAddress>192.168.10.1/30</ipAddress>
    <ipAddress>192.168.10.2/30</ipAddress>
  </ipAddresses>
  <declareDeadTime>6</declareDeadTime>
  <enabled>true</enabled>
</highAvailability>
```
DELETE /api/4.0/edges/{edgeId}/highavailability/config

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
NSX Manager deletes the standby appliance and removes the HA config from the active appliance. You can also delete the HA configuration by using a PUT call with empty `<highAvailability/>` or with `<highAvailability><enabled>false</enabled></highAvailability>.

---

**Working With Remote Syslog Server on NSX Edge**

You can configure one or two remote syslog servers. Edge events and logs related to firewall events that flow from Edge appliances are sent to the syslog servers.

GET /api/4.0/edges/{edgeId}/syslog/config

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Retrieve syslog servers information.

PUT /api/4.0/edges/{edgeId}/syslog/config

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Configure syslog servers.

**Request:**

**Body:** application/xml

```xml
<syslog>
  <protocol>udp</protocol>
  <serverAddresses>
    <ipAddress>1.1.1.1</ipAddress>
    <ipAddress>1.1.1.2</ipAddress>
  </serverAddresses>
</syslog>
```

DELETE /api/4.0/edges/{edgeId}/syslog/config

**URI Parameters:**

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Delete syslog servers.

## Working With SSL VPN

With SSL VPN-Plus, remote users can connect securely to private networks behind a NSX Edge gateway. Remote users can access servers and applications in the private networks.

**GET /api/4.0/edges/{edgeId}/sslvpn/config**

**URI Parameters:**

| edgeId       | (required) | Specify the ID of the edge in edgeId. |

**Description:**
Retrieve SSL VPN details.

**PUT /api/4.0/edges/{edgeId}/sslvpn/config**

**URI Parameters:**

| edgeId       | (required) | Specify the ID of the edge in edgeId. |

**Description:**
Update the entire SSL VPN configuration to the specified NSX Edge in a single call.

**POST /api/4.0/edges/{edgeId}/sslvpn/config**

**URI Parameters:**

| edgeId       | (required) | Specify the ID of the edge in edgeId. |

**Query Parameters:**

| enableService | (required) | Set to true to enable, false to disable. |

**Description:**
Enable or disable SSL VPN on the NSX Edge appliance.

**DELETE /api/4.0/edges/{edgeId}/sslvpn/config**

**URI Parameters:**

| edgeId       | (required) | Specify the ID of the edge in edgeId. |

**Description:**
Delete the SSL VPN configurations on the Edge.

## Working With SSL VPN Server
GET /api/4.0/edges/{edgeId}/sslvpn/config/server

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Retrieve server settings.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/server

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Update server settings.

Request:
Body: application/xml

```xml
<serverSettings>
  <serverAddresses>
    <ipAddress>10.112.243.109</ipAddress>
  </serverAddresses>
  <port>443</port>
  <certificateId>certificate-1</certificateId>
  <cipherList>
    <cipher>AES128-SHA</cipher>
    <cipher>AES256-SHA</cipher>
  </cipherList>
</serverSettings>
```

---

**Working With Private Networks**

You can use a private network to expose to remote users over SSL VPN tunnel.

GET
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Retrieve all private network profiles in the SSL VPN instance.

PUT
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks

URI Parameters:
edgeId  (required) | Specify the ID of the edge in `edgeId`.

**Description:**
Update all private network configs of NSX Edge with the given list of private network configs. If the config is present, it is updated; otherwise, a new private network config is created. Existing configs not included in the call body are deleted.

**POST**
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks

**URI Parameters:**
| edgeId  (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Configure a private network.

**Request:**
**Body:** application/xml

```xml
<privateNetwork>
  <description></description>
  <network></network>
  <sendOverTunnel>
    <ports></ports>
    <optimize></optimize>
  </sendOverTunnel>
  <enabled></enabled>
</privateNetwork>
```

**DELETE**
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks

**URI Parameters:**
| edgeId  (required) | Specify the ID of the edge in `edgeId`. |

**Description:**
Delete all private networks from the SSL VPN instance.

---

**Working With a Specific Private Network**

**GET** /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks/{networkID}

**URI Parameters:**
| networkID  (required) | Specified private network |
| edgeId  (required) | Specify the ID of the edge in `edgeId`. |
Description:
Retrieve the specified private network in the SSL VPN service.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks/{networkID}

URI Parameters:
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkID</td>
<td>Specified private network</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Update the specified private network in the SSL VPN service.

Request:
Body: application/xml

```xml
<privateNetwork>
  <description></description>
  <network></network>
  <sendOverTunnel>
    <ports></ports>
    <optimize></optimize>
  </sendOverTunnel>
  <enabled></enabled>
</privateNetwork>
```

DELETE /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/privatenetworks/{networkID}

URI Parameters:
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>networkID</td>
<td>Specified private network</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Delete private network

---

Working With IP Pools for SSL VPN

GET /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools

URI Parameters:
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Retrieve all IP pools configured on SSL VPN.
PUT /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:

Update all IP pools with the given list of pools. If the pool is present, it is updated; otherwise, a new pool is created. Existing pools not in the body are deleted.

Request:

**Body:** application/xml

```
<ipAddressPool>
  <description></description>
  <ipRange></ipRange>
  <netmask></netmask>
  <gateway></gateway>
  <primaryDns></primaryDns>
  <secondaryDns></secondaryDns>
  <dnsSuffix></dnsSuffix>
  <winsServer></winsServer>
  <enabled></enabled>
</ipAddressPool>
```

POST /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:

Create an IP pool.

Request:

**Body:** application/xml

```
<ipAddressPool>
  <description>description</description>
  <ipRange>10.112.243.11-10.112.243.57</ipRange>
  <netmask>255.0.0.0</netmask>
  <gateway>192.168.1.1</gateway>
  <primaryDns>192.168.10.1</primaryDns>
  <secondaryDns>4.2.2.2</secondaryDns>
  <dnsSuffix>dnsSuffix</dnsSuffix>
  <winsServer>10.112.243.201</winsServer>
  <enabled>true</enabled>
</ipAddressPool>
```

DELETE /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools

URI Parameters:
edgeId (required)  Specify the ID of the edge in `edgeId`.

**Description:**
Delete all IP pools configured on SSL VPN

---

**Working With a Specific IP Pool for SSL VPN**

**GET /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools/{ippoolID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ippoolID</td>
<td>Specified IP pool ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code></td>
</tr>
</tbody>
</table>

**Description:**
Retrieve details of specified IP pool.

**PUT /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools/{ippoolID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ippoolID</td>
<td>Specified IP pool ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code></td>
</tr>
</tbody>
</table>

**Description:**
Update specified IP pool.

**Request:**

**Body:** application/xml

```xml
<ipAddressPool>
  <description>description</description>
  <ipRange>10.112.243.11-10.112.243.57</ipRange>
  <netmask>255.0.0.0</netmask>
  <gateway>192.168.1.1</gateway>
  <primaryDns>192.168.10.1</primaryDns>
  <secondaryDns>4.2.2.2</secondaryDns>
  <dnsSuffix></dnsSuffix>
  <winsServer>10.112.243.201</winsServer>
  <enabled>true</enabled>
</ipAddressPool>
```

**DELETE /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/ippools/{ippoolID}**

**URI Parameters:**
Working With Network Extension Client Parameters

GET /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/clientconfig

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>edgeId</strong></td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve client configuration.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/clientconfig

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>edgeId</strong></td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Set advanced parameters for full access client configurations, such as whether client should auto-reconnect in case of network failures or network unavailability, or whether the client should be uninstalled after logout.

Request:

Body: application/xml

```xml
<clientConfiguration>
  <autoReconnect>true</autoReconnect>
  <fullTunnel>
    <excludeLocalSubnets>false</excludeLocalSubnets>
    <gatewayIp>10.112.243.11</gatewayIp>
  </fullTunnel>
  <upgradeNotification>false</upgradeNotification>
</clientConfiguration>
```

Working With SSL VPN Client Installation Packages

GET /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages

URI Parameters:
**edgeId (required)**
Specify the ID of the edge in `edgeId`.

**Description:**
Retrieve information about all installation packages.

PUT
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId (required)</th>
<th>Specify the ID of the edge in <code>edgeId</code>.</th>
</tr>
</thead>
</table>

**Description:**
Update all installation packages with the given list. If the package is present, it is updated; otherwise a new installation package is created. Existing packages not included in the body are deleted.

POST
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId (required)</th>
<th>Specify the ID of the edge in <code>edgeId</code>.</th>
</tr>
</thead>
</table>

**Description:**
Creates setup executables (installers) for full access network clients. These setup binaries are later downloaded by remote clients and installed on their systems. The primary parameters needed to configure this setup are hostname of the gateway, and its port and a profile name which is shown to the user to identify this connection. The Administrator can also set other parameters such as whether to automatically start the application on windows login, or hide the system tray icon.

**Request:**

**Body:** application/xml

```
<clientInstallPackage>
  <profileName/>
  <gatewayList>
    <gateway>
      <hostName/>
      <port/>
    </gateway>
  </gatewayList>
  <startClientOnLogon/>
  <hideSystrayIcon/>
  <rememberPassword/>
  <silentModeOperation/>
  <silentModeInstallation/>
  <hideNetworkAdaptor/>
  <createDesktopIcon/>
  <createLinuxClient/>
  <createMacClient/>
  <description/>
  <enabled/>
</clientInstallPackage>
```
DELETE
/api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete all client installation packages.

---

Working With a Specific SSL VPN Client Installation Package

GET /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages/{packageID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>packageID</td>
<td>Specified installation package ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Get information about the specified installation package.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages/{packageID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>packageID</td>
<td>Specified installation package ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Modify the specified installation package.

Request:

**Body**: application/xml

```xml
<clientInstallPackage>
  <profileName></profileName>
  <gatewayList>
    <gateway>
      <hostName></hostName>
      <port></port>
    </gateway>
  </gatewayList>
  <startClientOnLogon></startClientOnLogon>
  <hideSystrayIcon></hideSystrayIcon>
  <rememberPassword></rememberPassword>
  <silentModeOperation></silentModeOperation>
  <silentModeInstallation></silentModeInstallation>
</clientInstallPackage>
```
DELETE /api/4.0/edges/{edgeId}/sslvpn/config/client/networkextension/installpackages/{packageID}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>packageID</td>
<td>Specified installation package ID.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Delete the specified installation package.

---

**Working With Portal Layout**

GET /api/4.0/edges/{edgeId}/sslvpn/config/layout

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Retrieve layout configuration.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/layout

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Update the portal layout.

Request:
**Body**: application/xml

```xml
<layout>
  <portalTitle></portalTitle>
  <companyName></companyName>
  <logoBackgroundColor></logoBackgroundColor>
  <titleColor></titleColor>
  <topFrameColor></topFrameColor>
</layout>
```
Working With Image Files for SSL VPN

POST /api/4.0/edges/{edgeId}/sslvpn/config/layout/images/{imageType}

URI Parameters:

<table>
<thead>
<tr>
<th>imageType</th>
<th>(required)</th>
<th>Type of image to upload. Choice of portallogo, phatbanner, connecticon, disconnecticon, desktopicon, or erroricon.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Upload images for use with SSL VPN portal and client.
You can upload a logo to use in the SSL VPN portal, and a banner and icons to use in the SSL VPN client.
You must upload the image files using the form-data content-type. Consult the documentation for your REST client for instructions.
Do not set other Content-type headers in your request, for example, Content-type: application/xml.

When you upload a file as form-data, you must provide a key and a value for the file. See the table below for the form-data key to use for each image type. The value is the path to the image file.

<table>
<thead>
<tr>
<th>Image Type</th>
<th>form-data key</th>
<th>Image format requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>portallogo</td>
<td>layoutFile</td>
<td>n/a</td>
</tr>
<tr>
<td>phatbanner</td>
<td>banner</td>
<td>bmp</td>
</tr>
<tr>
<td>connecticon</td>
<td>icon</td>
<td>ico</td>
</tr>
<tr>
<td>disconnecticon</td>
<td>icon</td>
<td>ico</td>
</tr>
<tr>
<td>erroricon</td>
<td>icon</td>
<td>ico</td>
</tr>
<tr>
<td>desktopicon</td>
<td>icon</td>
<td>ico</td>
</tr>
</tbody>
</table>

Example using curl

```
/usr/bin/curl -v -k -i -F layoutFile=@/tmp/portalLogo.jpg -H 'Authorization: Basic YWRtaW46ZGXXXXXXXX='
https://192.168.110.42/api/4.0/edges/edge-3/sslvpn/config/layout/images/portallogo
```

Working With Portal Users
PUT /api/4.0/edges/{edgeId}/sslvpn/config/auth/localserver/users

URI Parameters:

| edgeId  (required) | Specify the ID of the edge in `edgeId`. |

Description:
Modify the portal user specified in the request body.

Request:

Body: application/xml

```
<user>
  <userId/></userId>
  <password/></password>
  <firstName/></firstName>
  <lastName/></lastName>
  <description/></description>
  <disableUserAccount/></disableUserAccount>
  <passwordNeverExpires/></passwordNeverExpires>
  <allowChangePassword>
    <changePasswordOnNextLogin/></changePasswordOnNextLogin>
    </allowChangePassword>
  </user>
```

POST /api/4.0/edges/{edgeId}/sslvpn/config/auth/localserver/users

URI Parameters:

| edgeId  (required) | Specify the ID of the edge in `edgeId`. |

Description:
Add a new portal user.

Request:

Body: application/xml

```
<user>
  <userId/></userId>
  <password/></password>
  <firstName/></firstName>
  <lastName/></lastName>
  <description/></description>
  <disableUserAccount/></disableUserAccount>
  <passwordNeverExpires/></passwordNeverExpires>
  <allowChangePassword>
    <changePasswordOnNextLogin/></changePasswordOnNextLogin>
    </allowChangePassword>
  </user>
```

DELETE /api/4.0/edges/{edgeId}/sslvpn/config/auth/localserver/users

URI Parameters:
edgeId (required) Specify the ID of the edge in edgeId.

Description:
Delete all users on the specified SSL VPN instance

Working With a Specific Portal User

GET /api/4.0/edges/{edgeId}/sslvpn/config/auth/localserver/users/{userID}

URI Parameters:
<table>
<thead>
<tr>
<th>userID</th>
<th>User ID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Get information about the specified user.

DELETE /api/4.0/edges/{edgeId}/sslvpn/config/auth/localserver/users/{userID}

URI Parameters:
<table>
<thead>
<tr>
<th>userID</th>
<th>User ID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Delete the specified user.

Working With Authentication Settings

GET /api/4.0/edges/{edgeId}/sslvpn/config/auth/settings

URI Parameters:
<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about authentication settings.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/auth/settings

URI Parameters:
<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Update authentication settings for remote users. Specify username/password authentication, active directory, ldap, radius, client certificate based authentication.

Request:
Body: application/xml

```
<authenticationConfig>
  <passwordAuthentication>
  </passwordAuthentication>
  <authenticationTimeout/>
  <primaryAuthServers>
    <com.vmware.vshield.edge.sslvpn.dto.LdapAuthServerDto>
      <ip>IP</ip>
      <port>PORT</port>
      <timeOut>TIMEOUT</timeOut>
      <enableSsl>ENABLESSL</enableSsl>
      <searchBase>SEARCHBASE</searchBase>
      <bindDomainName>BINDDOMAINNAME</bindDomainName>
      <bindPassword>BINDPASSWORD</bindPassword>
      <loginAttributeName>LOGINATTRIBUTE</loginAttributeName>
      <searchFilter>SEARCHFILTER</searchFilter>
      <enabled>ENABLED</enabled>
    </com.vmware.vshield.edge.sslvpn.dto.LdapAuthServerDto>
    <com.vmware.vshield.edge.sslvpn.dto.RadiusAuthServerDto>
      <ip>IP</ip>
      <port>PORT</port>
      <timeOut>TIMEOUT</timeOut>
      <secret>SECRET</secret>
      <nasIp>NASIP</nasIp>
      <retryCount>RETRYCOUNT</retryCount>
    </com.vmware.vshield.edge.sslvpn.dto.RadiusAuthServerDto>
    <com.vmware.vshield.edge.sslvpn.dto.LocalAuthServerDto>
      <enabled>ENABLED</enabled>
      <passwordPolicy>
        <minLength>MINLENGTH</minLength>
        <maxLength>MAXLENGTH</maxLength>
        <minAlphabets>MINALPHABETS</minAlphabets>
        <minDigits>MINDIGITS</minDigits>
        <minSpecialChar>MINSPECIALCHAR</minSpecialChar>
        <allowUserIdWithinPassword>ALLOWUSERIDWITHINPASSWORD</allowUserIdWithinPassword>
        <passwordLifeTime>PASSWORDLIFE</passwordLifeTime>
        <expiryNotification>EXPIRYNOTIFICATION</expiryNotification>
      </passwordPolicy>
      <accountLockoutPolicy>
        <retryCount>RETRYCOUNT</retryCount>
        <retryDuration>RETRYDURATION</retryDuration>
        <lockoutDuration>LOCKOUTDURATION</lockoutDuration>
      </accountLockoutPolicy>
    </com.vmware.vshield.edge.sslvpn.dto.LocalAuthServerDto>
    <com.vmware.vshield.edge.sslvpn.dto.RsaAuthServerDto>
      <timeOut>TIMEOUT</timeOut>
      <sourceIp>SOURCEIP</sourceIp>
    </com.vmware.vshield.edge.sslvpn.dto.RsaAuthServerDto>
  </primaryAuthServers>
  <secondaryAuthServer>
    <com.vmware.vshield.edge.sslvpn.dto.AdAuthServerDto>
      <ip>1.1.1.1</ip>
      <port>90</port>
      <timeOut>20</timeOut>
      <enableSsl>FALSE</enableSsl>
    </com.vmware.vshield.edge.sslvpn.dto.AdAuthServerDto>
  </secondaryAuthServer>
</authenticationConfig>
```
Working With the RSA Config File

POST /api/4.0/edges/{edgeId}/sslvpn/config/auth/settings/rsaconfigfile

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Upload RSA config file (See "Generate the Authentication Manager Configuration File" section of the RSA Authentication Manager Administrator's guide for instructions on how to configure and download the RSA config file from RSA Authentication Manager).

SSL VPN Advanced Configuration

GET /api/4.0/edges/{edgeId}/sslvpn/config/advancedconfig

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Retrieve SSL VPN advanced configuration.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/advancedconfig

URI Parameters:

| edgeId  | (required) | Specify the ID of the edge in `edgeId`. |

Description:
Update SSL VPN advanced configuration.

Request:
Working With Logon and Logoff Scripts for SSL VPN

GET /api/4.0/edges/{edgeId}/sslvpn/config/script

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve all script configurations.

PUT /api/4.0/edges/{edgeId}/sslvpn/config/script

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Update all script configurations with the given list of configurations. If the config is present, its is updated; otherwise, a new config is created. Existing configs not included in the body are deleted.

Request:
Body: application/xml

```xml
<logonLogoffScript>
  <scriptId></scriptId>
  <type></type>
  <description></description>
  <enabled></enabled>
</logonLogoffScript>
```

POST /api/4.0/edges/{edgeId}/sslvpn/config/script

URI Parameters:
edgeId (required)

Specify the ID of the edge in `edgeId`.

**Description:**
Configure parameters associated with the uploaded script file.

**Request:**
**Body:** application/xml

```
<logonLogoffScript>
  <scriptFileId></scriptFileId>
  <type></type>
  <description></description>
  <enabled></enabled>
</logonLogoffScript>
```

**DELETE /api/4.0/edges/{edgeId}/sslvpn/config/script**

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId (required)</th>
<th>Specify the ID of the edge in <code>edgeId</code>.</th>
</tr>
</thead>
</table>

**Description:**
Delete all script configurations

---

**Working With Uploaded Script Files**

**GET /api/4.0/edges/{edgeId}/sslvpn/config/script/{fileID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>fileId (required)</th>
<th>Specified script file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve parameters associated with the specified script file.

**PUT /api/4.0/edges/{edgeId}/sslvpn/config/script/{fileID}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>fileId (required)</th>
<th>Specified script file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Update parameters associated with the specified script file.

**Request:**
Body: application/xml

```xml
<logonLogoffScript>
    <scriptId></scriptId>
    <type></type>
    <description></description>
    <enabled></enabled>
</logonLogoffScript>
```

DELETE /api/4.0/edges/{edgeId}/sslvpn/config/script/{fileID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>fileID (required)</th>
<th>Specified script file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

**Description:**
Delete script parameters.

---

**Uploading Script Files for SSL VPN**

POST /api/4.0/edges/{edgeId}/sslvpn/config/script/file/

**URI Parameters:**

| edgeId (required) | Specify the ID of the edge in edgeId. |

**Description:**
You can add multiple login or logoff scripts. For example, you can bind a login script for starting Internet Explorer with gmail.com. When the remote user logs in to the SSL client, Internet Explorer opens up gmail.com. This method returns a scriptFileId which can be used to update parameters associated with the script file.

You must upload the script files using the form-data content-type. Consult the documentation for your REST client for instructions.

Do not set other Content-type headers in your request, for example, Content-type: application/xml.

When you upload a file as form-data, you must provide a key and a value for the file. The key is file, and the value is the location of the script file.

**Example using curl**

```
/usr/bin/curl -v -k -i -F file=@/tmp/script.sh -H 'Authorization: Basic YWRtaW46ZGXXXXXXXX=='
https://192.168.110.42/api/4.0/edges/edge-3/sslvpn/config/script/file/
```

---

**Working With SSL VPN Users**
PUT /api/4.0/edges/{edgeId}/sslvpn/auth/localusers/users

URI Parameters:

| edgeId   | (required) | Specify the ID of the edge in \textit{edgeId}. |

Description:
Update all users with the given list of users. If the user is present, it is updated. Otherwise, and new user is created. Existing users not included in the body are deleted.

Request:
Body: application/xml

```xml
<users>
  <user>
    <userId></userId>
    <password></password>
    <firstName></firstName>
    <lastName></lastName>
    <description></description>
    <disableUserAccount></disableUserAccount>
    <passwordNeverExpires></passwordNeverExpires>
    <allowChangePassword>
      <changePasswordOnNextLogin></changePasswordOnNextLogin>
    </allowChangePassword>
  </user>
</users>
```

Working With Active Client Sessions

GET /api/4.0/edges/{edgeId}/sslvpn/activesessions

URI Parameters:

| edgeId   | (required) | Specify the ID of the edge in \textit{edgeId}. |

Description:
Retrieve a list of active clients for the SSL VPN session.

Working With a Specific Active Client Session

DELETE /api/4.0/edges/{edgeId}/sslvpn/activesessions/{sessionID}

URI Parameters:

| sessionID | (required) | Specified client session. |
| edgeId    | (required) | Specify the ID of the edge in \textit{edgeId}. |
Description:
Disconnect an active client.

Working With NSX Edge Firewall Dashboard Statistics

GET /api/4.0/edges/{edgeId}/statistics/dashboard/firewall

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interval</td>
<td>60 min by default, can be given as 1 - 60 min, <code>oneDay</code>, <code>oneWeek</code>, <code>oneMonth</code>, <code>oneYear</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve number of ongoing connections for the firewall configuration.

Responses:
Status Code: 200
Body: application/xml

```xml
<dashboardStatistics>
  <meta>
    <startTime>1509754620</startTime>
    <endTime>1509758200</endTime>
    <interval>20</interval>
  </meta>
  <data>
    <firewall>
      <connections>
        <dashboardStatistic>
          <timestamp>1509754620</timestamp>
          <value>15.0</value>
        </dashboardStatistic>
        <dashboardStatistic>
          <timestamp>1509754640</timestamp>
          <value>15.0</value>
        </dashboardStatistic>
        <dashboardStatistic>
          <timestamp>1509754660</timestamp>
          <value>15.0</value>
        </dashboardStatistic>
      </connections>
    </firewall>
  </data>
</dashboardStatistics>
```
Working With SSL VPN Dashboard Statistics

GET /api/4.0/edges/{edgeId}/statistics/dashboard/sslvpn

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <em>edgeId</em>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interval</td>
<td>Specify a range; can be 1 - 60 minutes, or oneDay, oneWeek, oneMonth, or oneYear. Default is 60 minutes.</td>
</tr>
</tbody>
</table>

Description:
Retrieve SSL VPN statistics on the specified NSX Edge.

Working With Tunnel Traffic Dashboard Statistics

GET /api/4.0/edges/{edgeId}/statistics/dashboard/ipsec

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <em>edgeId</em>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interval</td>
<td>Specify a range; can be 1 - 60 minutes, or oneDay, oneWeek, oneMonth, or oneYear. Default is 60 minutes.</td>
</tr>
</tbody>
</table>

Description:
Retrieve tunnel traffic statistics for specified time interval.

Working With Interface Dashboard Statistics

GET /api/4.0/edges/{edgeId}/statistics/dashboard/interface

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <em>edgeId</em>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>interval</td>
<td>Specify a start and end time range in seconds.</td>
</tr>
</tbody>
</table>

Description:
Retrieve dashboard statistics between the specified start and end times. When start and end time are not specified, all statistics since the Edge deployed are displayed. When no end time is specified, the current Edge Manager time is set as endTime. Each record has the stats of 5 minutes granularity.
Working With Interface Statistics

**GET /api/4.0/edges/{edgeId}/statistics/interfaces**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve interface statistics.

---

Working With Uplink Interface Statistics

**GET /api/4.0/edges/{edgeId}/statistics/interfaces/uplink**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve uplink interface statistics.

---

Working With Internal Interface Statistics

**GET /api/4.0/edges/{edgeId}/statistics/interfaces/internal**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve internal interface statistics.

---

Working With L2 VPN

L2 VPN allows you to configure a tunnel between two sites. VMs can move between the sites and stay on the same subnet, enabling you to extend your datacenter. An NSX Edge at one site can provide all services to VMs on the other site.

**GET /api/4.0/edges/{edgeId}/l2vpn/config**

**URI Parameters:**
**edgeId** *(required)*

Specify the ID of the edge in `edgeId`.

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>showSensitiveData</td>
<td>Set to <code>true</code> to enable, <code>false</code> to disable. L2 VPN passwords are displayed in the response body if the <code>showSensitiveData</code> query parameter is <code>true</code>. Example <code>config?showSensitiveData=true</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Retrieve the current L2VPN configuration for NSX Edge.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.5</td>
<td>Method updated. <code>showSensitiveData</code> query parameter added.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<l2Vpn>
  <version>4</version>
  <enabled>true</enabled>
  <logging>
    <enable>false</enable>
    <logLevel>info</logLevel>
  </logging>
  <l2VpnSites>
    <l2VpnSite>
      <client>
        <configuration>
          <serverAddress>192.168.15.23</serverAddress>
          <serverPort>443</serverPort>
          <caCertificate>certificate-4</caCertificate>
          <vnic>10</vnic>
          <egressOptimization>
            <gatewayIpAddress>192.168.15.1</gatewayIpAddress>
          </egressOptimization>
          <encryptionAlgorithm>AES128-SHA</encryptionAlgorithm>
        </configuration>
        <l2VpnUser>
          <userId>apple</userId>
          <password>apple</password>
        </l2VpnUser>
        <proxySetting>
          <type>https</type>
          <address>10.112.243.202</address>
          <port>443</port>
          <userName>root</userName>
        </proxySetting>
      </client>
    </l2VpnSite>
  </l2VpnSites>
</l2Vpn>
```
PUT /api/4.0/edges/{edgeId}/l2vpn/config

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>edgeId</strong></td>
<td>(required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Configure L2VPN for server or client.

You first enable the L2 VPN service on the NSX Edge instance and then configure a server and a client.

**L2 VPN Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Whether L2 VPN is enabled.</td>
<td>Optional. Boolean. Options are <code>True</code> or <code>False</code>. Default is <code>True</code>.</td>
</tr>
<tr>
<td>logging</td>
<td>L2 VPN logging setting.</td>
<td>Optional. Disable by default.</td>
</tr>
<tr>
<td>logging &gt; enable</td>
<td></td>
<td>Optional. Boolean. Options are <code>True</code> or <code>False</code>. Default is <code>False</code>.</td>
</tr>
<tr>
<td>logging &gt; logLevel</td>
<td></td>
<td>Optional. Options are: EMERGENCY, ALERT, CRITICAL, ERROR, WARNING, NOTICE, INFO, and DEBUG. Default is <code>INFO</code>.</td>
</tr>
<tr>
<td>listenerIp</td>
<td>IP of external interface on which L2VPN service listens to.</td>
<td>Required.</td>
</tr>
<tr>
<td>listenerPort</td>
<td>Port on which L2VPN service listens to.</td>
<td>Optional. Default is 443.</td>
</tr>
<tr>
<td>encryptionAlgorithm</td>
<td>Encryption algorithm for communication between the server and the client.</td>
<td>Mandatory. Supported ciphers are RC4-MD5, AES128-SHA, AES256-SHA, DES-CBC3-SHA, AES128-GCM-SHA256, and NULL-MD5.</td>
</tr>
<tr>
<td>serverCertificate</td>
<td>Select the certificate to be bound to L2 VPN server.</td>
<td>Optional. If not specified server will use its default (self-signed) certificate.</td>
</tr>
</tbody>
</table>

**Peer Site Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>peerSites</td>
<td>To connect multiple sites to the L2 VPN server.</td>
<td>Required. Minimum one peer site must be configured to enable L2 VPN server service.</td>
</tr>
<tr>
<td>name</td>
<td>Unique name for the site getting configured.</td>
<td>Required.</td>
</tr>
<tr>
<td>description</td>
<td>Description about the site.</td>
<td>Optional.</td>
</tr>
<tr>
<td>l2VpnUser</td>
<td>Every peer site must have a user configuration.</td>
<td>Required.</td>
</tr>
<tr>
<td>l2VpnUser &gt; userId</td>
<td></td>
<td>Required.</td>
</tr>
<tr>
<td>l2VpnUser &gt; password</td>
<td>Password for L2 VPN user.</td>
<td>Required.</td>
</tr>
<tr>
<td>vnics</td>
<td>List of vNICs to be stretched over the tunnel.</td>
<td>Required.</td>
</tr>
</tbody>
</table>
vnics > index

Select the virtual machine NIC to bind to the IP address.

Required.

egressOptimization > gatewayIpAddress

The gateway IP addresses for which the traffic should be locally routed or for which traffic is to be blocked over the tunnel.

Optional.

enabled

Whether the peer site is enabled.

Optional. Boolean. Options are True or False. Default is True.

Example to configure L2 VPN for Client

```xml
<l2vpn>
  <enabled>true</enabled>
  <logging>
    <enable>false</enable>
    <logLevel>info</logLevel>
  </logging>
  <l2vpnSites>
    <l2vpnSite>
      <client>
        <configuration>
          <serverAddress>192.168.15.23</serverAddress>
          <serverPort>443</serverPort>
          <vnic>10</vnic>
          <encryptionAlgorithm>AES128-SHA</encryptionAlgorithm>
          <caCertificate>certificate-4</caCertificate>
          <egressOptimization>
            <gatewayIpAddress>192.168.15.1</gatewayIpAddress>
          </egressOptimization>
        </configuration>
        <proxySetting>
          <type>https</type>
          <address>10.112.243.202</address>
          <port>443</port>
          <userName>root</userName>
          <password>java123</password>
        </proxySetting>
        <l2vpnUser>
          <userId>apple</userId>
          <password>apple</password>
        </l2vpnUser>
      </client>
    </l2vpnSite>
  </l2vpnSites>
</l2vpn>
```

Example to configure L2 VPN for Server

```xml
<l2vpn>
  <enabled>true</enabled>
  <logging>
    <enable>false</enable>
    <logLevel>info</logLevel>
  </logging>
  <l2vpnSites>
    <l2vpnSite>
      <server>
        <configuration>
          <listenerIp>192.168.15.65</listenerIp>
        </configuration>
      </server>
    </l2vpnSite>
  </l2vpnSites>
</l2vpn>
```
<listenerPort>443</listenerPort>
<encryptionAlgorithm>RC4-MD5</encryptionAlgorithm>

<peerSites>
   <peerSite>
      <name>PeerSite1</name>
      <description>description</description>
      <l2VpnUser>
         <userId>apple</userId>
         <password>apple</password>
      </l2VpnUser>
      <vnics>
         <index>10</index>
      </vnics>
      <egressOptimization>
         <gatewayIpAddress>192.168.15.1</gatewayIpAddress>
      </egressOptimization>
      <enabled>true</enabled>
   </peerSite>
</peerSites>
</configuration>
</server>
</l2VpnSites>
</l2Vpn>
POST /api/4.0/edges/{edgeId}/l2vpn/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enableService</td>
<td>(required) Enable (true) or disable (false) L2 VPN.</td>
</tr>
</tbody>
</table>

Description:
Enable or disable L2 VPN service.

DELETE /api/4.0/edges/{edgeId}/l2vpn/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Delete the L2 VPN configuration.

---

Working With L2 VPN Statistics

GET /api/4.0/edges/{edgeId}/l2vpn/config/statistics

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

Description:
Retrieve L2 VPN statistics, which has information such as tunnel status, sent bytes, received bytes for the specified Edge.

Responses:
Status Code: 200
Body: application/xml

```
<l2vpnStatusAndStats>
  <timeStamp>1403285853</timeStamp>
  <siteStats>
    <l2vpnStats>
      <name>site-1</name>
      <tunnelStatus>up</tunnelStatus>
      <establishedDate>1403285827</establishedDate>
    </l2vpnStats>
  </siteStats>
</l2vpnStatusAndStats>
```
Working With IPsec VPN

NSX Edge supports site-to-site IPsec VPN between an NSX Edge instance and remote sites. NSX Edge supports certificate authentication, preshared key mode, IP unicast traffic, and no dynamic routing protocol between the NSX Edge instance and remote VPN routers. Behind each remote VPN router, you can configure multiple subnets to connect to the internal network behind an NSX Edge through IPsec tunnels. These subnets and the internal network behind a NSX Edge must have address ranges that do not overlap.

You can deploy an NSX Edge agent behind a NAT device. In this deployment, the NAT device translates the VPN address of an NSX Edge instance to a publicly accessible address facing the Internet. Remote VPN routers use this public address to access the NSX Edge instance.

You can place remote VPN routers behind a NAT device as well. You must provide the VPN native address and the VPN Gateway ID to set up the tunnel. On both ends, static one-to-one NAT is required for the VPN address.

You can have a maximum of 64 tunnels across a maximum of 10 sites.

### IPsec VPN Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>logging</td>
<td>IPsec VPN logging setting.</td>
<td>Optional. Disable by default.</td>
</tr>
<tr>
<td>logging &gt; logLevel</td>
<td>Logging level.</td>
<td>Optional. Options are: EMERGENCY, ALERT, CRITICAL, ERROR, WARNING, NOTICE, INFO, and DEBUG. Default is INFO.</td>
</tr>
<tr>
<td>logging &gt; enable</td>
<td>Whether logging is enabled.</td>
<td>Optional. Boolean. Options are True or False. Default is False.</td>
</tr>
<tr>
<td>psk</td>
<td>Indicates that the secret key shared between NSX Edge and the peer site is to be used for authentication.</td>
<td>Optional. Required only when peerIp is specified as Any in site configuration.</td>
</tr>
<tr>
<td>site &gt; encryptionAlgorithm</td>
<td>Encryption algorithm for communication.</td>
<td>Mandatory. Supported ciphers are AES, AES256, Triple DES, and AES-GCM.</td>
</tr>
<tr>
<td>serviceCertificate</td>
<td>Select the certificate to be bound to IPsec VPN server.</td>
<td>Optional. Required when x.509 certificate mode is selected.</td>
</tr>
<tr>
<td>caCertificate</td>
<td>List of CA certificates.</td>
<td>Optional.</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
<td>Default/Optional/Required</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>site &gt; enablePfs</td>
<td>Perfect Forward Secrecy (PFS) ensures that each new cryptographic key is unrelated to any previous key.</td>
<td>Optional. Boolean. Options are True or False. Default is True.</td>
</tr>
<tr>
<td>site &gt; authenticationMode</td>
<td>Select authentication mode as psk or x.509.</td>
<td>Required. Minimum one site must be configured to enable IPsec VPN server service.</td>
</tr>
<tr>
<td>site &gt; enabled</td>
<td>Whether site is enabled.</td>
<td>Optional. Boolean. Options are True or False. Default is True.</td>
</tr>
<tr>
<td>site &gt; name</td>
<td>Unique name for the site getting configured.</td>
<td>Optional.</td>
</tr>
<tr>
<td>site &gt; description</td>
<td>Description about the site.</td>
<td>Optional.</td>
</tr>
<tr>
<td>site &gt; localId</td>
<td>Type the IP address of the NSX Edge instance.</td>
<td>Required.</td>
</tr>
<tr>
<td>site &gt; localIp</td>
<td>Type the IP address of the local endpoint.</td>
<td>Required.</td>
</tr>
<tr>
<td>site &gt; localSubnets</td>
<td>Type the subnets to share between the sites.</td>
<td>Required.</td>
</tr>
<tr>
<td>site &gt; peerId</td>
<td>Enter the peer ID to uniquely identify the peer site. This should be a Distinguishing Name (DN) if authentication mode is x.509.</td>
<td>Required.</td>
</tr>
<tr>
<td>site &gt; peerIp</td>
<td>Enter the IP address of the peer endpoint.</td>
<td>Required.</td>
</tr>
<tr>
<td>site &gt; peerSubnets</td>
<td>Enter the subnets to share between the sites in CIDR format.</td>
<td>Required.</td>
</tr>
<tr>
<td>site &gt; dhGroup</td>
<td>In Diffie-Hellman (DH) Group, select the cryptography scheme that will allow the peer site and the NSX Edge to establish a shared secret over an insecure communications channel.</td>
<td>Optional. dh2 is selected by default.</td>
</tr>
<tr>
<td>extension</td>
<td>When add_spd is set to on, security policies are installed regardless of whether the tunnel is established. ike_fragment_size is used to avoid failure in the IKE negotiation when the link MTU size is small. For example, ike_fragment_size=900.</td>
<td>Optional. Global extensions: add_spd and ike_fragment_size. add_spd options are off or on. The default is on.</td>
</tr>
<tr>
<td>site &gt; extension</td>
<td>To disable this value, replace with securelocaltrafficbyip=0. Users can explicitly set this value to one of the other local IP addresses configured in the local subnets of Edge. passthroughSubnets is used to exclude specific subnets from VPN policy enforcement if they overlap with the peerSubnets configured for the same site.</td>
<td>Optional. Configurable per site level: securelocaltrafficbyip and passthroughSubnets. By default, securelocaltrafficbyip is enabled and set to one of the local IP addresses configured on the local subnets of Edge.</td>
</tr>
</tbody>
</table>
GET /api/4.0/edges/{edgeId}/ipsec/config

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>showSensitiveData</td>
<td>Set to <code>true</code> to enable, <code>false</code> to disable. PSK passwords are displayed in</td>
</tr>
<tr>
<td></td>
<td>the response body in a plain text if the <code>showSensitiveData</code> query parameter</td>
</tr>
<tr>
<td></td>
<td>is <code>true</code>. Example <code>config?showSensitiveData=true</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve IPsec configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.5</td>
<td>Method updated. <code>showSensitiveData</code> query parameter added.</td>
</tr>
</tbody>
</table>

**Responses:**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Body: application/xml</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td></td>
</tr>
</tbody>
</table>

```xml
<ipsec>
  <enabled>true</enabled>
  <logging>
    <logLevel>debug</logLevel>
    <enable>true</enable>
  </logging>
  <global>
    <psk>hello123</psk>
    <serviceCertificate>certificate-4</serviceCertificate>
    <caCertificates>
      <caCertificate>certificate-3</caCertificate>
    </caCertificates>
    <crlCertificates>
      <crlCertificate>crl-1</crlCertificate>
    </crlCertificates>
  </global>
  <sites>
    <site>
      <enabled>true</enabled>
      <name>VPN to edge-pa-1</name>
      <description>psk VPN to edge-pa-1 192.168.11.0/24 == 192.168.1.0/24</description>
      <localId>11.0.0.11</localId>
      <localIp>11.0.0.11</localIp>
      <peerId>11.0.0.1</peerId>
      <peerIp>any</peerIp>
      <encryptionAlgorithm>aes256</encryptionAlgorithm>
      <authenticationMode>psk</authenticationMode>
      <enablePfs>true</enablePfs>
      <dhGroup>dh2</dhGroup>
      <localSubnets>
        <subnet>192.168.11.0/24</subnet>
      </localSubnets>
      <peerSubnets>
      </peerSubnets>
    </site>
  </sites>
</ipsec>
```
<subnet>192.168.1.0/24</subnet>
</peerSubnets>
</site>

<site>
  <name>VPN to edge-right</name>
  <description>certificate VPN to edge-right 192.168.22.0/24 == 192.168.2.0/24</description>
  <localId>11.0.0.12</localId>
  <localIp>11.0.0.12</localIp>
  <peerId>C=CN, ST=BJ, L=BJ, O=VMware, OU=DEV, CN=Right</peerId>
  <peerIp>11.0.0.2</peerIp>
  <encryptionAlgorithm>aes256</encryptionAlgorithm>
  <authenticationMode>x.509</authenticationMode>
  <enablePfs>true</enablePfs>
  <dhGroup>dh2</dhGroup>
  <localSubnets>
    <subnet>192.168.22.0/24</subnet>
  </localSubnets>
  <peerSubnets>
    <subnet>192.168.2.0/24</subnet>
  </peerSubnets>
</site>

</sites>
</ipsec>

PUT /api/4.0/edges/{edgeId}/ipsec/config

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Update IPsec VPN configuration.

Request:
Body: application/xml

```xml
<ipsec>
  <enabled>true</enabled>
  <logging>
    <logLevel>debug</logLevel>
    <enable>true</enable>
  </logging>

  <global>
    <psk>hello123</psk>
    <serviceCertificate>certificate-4</serviceCertificate>
    <caCertificates>
      <cacertificate>certificate-3</cacertificate>
    </caCertificates>
    <crlCertificates>
      <crlCertificate>crl-1</crlCertificate>
    </crlCertificates>
  </global>

  <sites>
    <site>
      <enabled>true</enabled>
      <name>VPN to edge-pa-1</name>
    </site>
  </sites>
</ipsec>
```
<description>psk VPN to edge-pa-1 192.168.11.0/24 == 192.168.1.0/24</description>
<localId>11.0.0.11</localId>
<localIp>11.0.0.11</localIp>
<peerId>11.0.0.1</peerId>
<peerIp>any</peerIp>
<encryptionAlgorithm>aes256</encryptionAlgorithm>
<authenticationMode>psk</authenticationMode>
<enablePfs>true</enablePfs>
<dhGroup>dh2</dhGroup>
<localSubnets>
  <subnet>192.168.11.0/24</subnet>
</localSubnets>
<peerSubnets>
  <subnet>192.168.1.0/24</subnet>
</peerSubnets>
</site>

<site>
  <name>VPN to edge-right</name>
  <description>certificate VPN to edge-right 192.168.22.0/24 == 192.168.2.0/24</description>
  <localId>11.0.0.12</localId>
  <localIp>11.0.0.12</localIp>
  <peerId>C=CN, ST=BJ, L=BJ, O=VMware, OU=DEV, CN=Right</peerId>
  <peerIp>11.0.0.2</peerIp>
  <encryptionAlgorithm>aes256</encryptionAlgorithm>
  <authenticationMode>x.509</authenticationMode>
  <enablePfs>true</enablePfs>
  <dhGroup>dh2</dhGroup>
  <localSubnets>
    <subnet>192.168.22.0/24</subnet>
  </localSubnets>
  <peerSubnets>
    <subnet>192.168.2.0/24</subnet>
  </peerSubnets>
  <extension>securelocaltrafficbyip=192.168.11.1</extension>
</site>
</sites>

DELETE /api/4.0/edges/{edgeId}/ipsec/config

URI Parameters:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Delete the IPsec configuration.

---

Working With IPsec Statistics

GET /api/4.0/edges/{edgeId}/ipsec/statistics

URI Parameters:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>
Description:
Retrieve IPsec statistics.

Responses:
Status Code: 200
Body: application/xml

```xml
<ipsecStatusAndStats>
  <siteStatistics>
    <ikeStatus>
      <channelStatus>up</channelStatus>
      <channelState>STATE_MAIN_I4 (ISAKMP SA established)</channelState>
      <lastInformationalMessage></lastInformationalMessage>
      <localIpAddress>10.0.0.12</localIpAddress>
      <peerId>11.0.0.12</peerId>
      <peerIpAddress>10.0.0.2</peerIpAddress>
    </ikeStatus>
    <tunnelStats>
      <tunnelState>up</tunnelState>
      <tunnelState>STATE_QUICK_I2 (sent QI2, IPsec SA established)</tunnelState>
      <lastInformationalMessage></lastInformationalMessage>
      <localSubnet>192.168.2.0/24</localSubnet>
      <peerSubnet>192.168.22.0/24</peerSubnet>
    </tunnelStats>
  </siteStatistics>

  <siteStatistics>
    <ikeStatus>
      <channelStatus>up</channelStatus>
      <channelState>STATE_MAIN_I4 (ISAKMP SA established)</channelState>
      <lastInformationalMessage></lastInformationalMessage>
      <localIpAddress>10.0.0.11</localIpAddress>
      <peerId>11.0.0.11</peerId>
      <peerIpAddress>10.0.0.1</peerIpAddress>
    </ikeStatus>
    <tunnelStats>
      <tunnelState>up</tunnelState>
      <tunnelState>STATE_QUICK_I2 (sent QI2, IPsec SA established)</tunnelState>
      <lastInformationalMessage></lastInformationalMessage>
      <localSubnet>192.168.1.0/24</localSubnet>
      <peerSubnet>192.168.11.0/24</peerSubnet>
    </tunnelStats>
  </siteStatistics>

  <timeStamp>1325766138</timeStamp>
</ipsecStatusAndStats>
```

Automatic Configuration of Firewall Rules

If autoConfiguration is enabled, firewall rules are automatically created to allow control traffic. Rules to allow data traffic are not created. For example, if you are using IPsec VPN, and autoConfiguration is true, firewall rules will automatically be configured to allow IKE traffic. However, you will need to add additional rules to allow the data traffic for the IPsec tunnel. If HA is enabled, firewall rules are always created, even if autoConfiguration is false, otherwise both HA appliances will become active.

```
GET /api/4.0/edges/{edgeId}/autoconfiguration
```
URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Retrieve the auto configuration settings for the NSX Edge.

PUT /api/4.0/edges/{edgeId}/autoconfiguration

 URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Update the auto configuration settings for the NSX Edge.

Request:
Body: application/xml

```xml
<autoConfiguration>
  <enabled/>
  <rulePriority/>
</autoConfiguration>
```

Working With NSX Edge Appliance Configuration

See Working With NSX Edge for additional parameters used to configure appliances.

When you create an NSX Edge, you define parameters that determine how the appliance is deployed, including `resourcePoolId`, `dataStoreId`, `hostId`, and `vmFolderId`. After the appliance is deployed, these deployment details may change, and the appliance parameters are updated to reflect the current, live location.

You can view the originally configured parameters by using the `configuredResourcePool`, `configuredDataStore`, `configuredHost`, and `configuredVmFolder` parameters.

You can trigger a high availability failover on the active NSX Edge appliance by changing the `haAdminState` value to `down` as part of appliance configuration for an NSX Edge. The `haAdminState` parameter determines whether or not an NSX Edge appliance is participating in high availability. Both appliances in an NSX Edge high availability configuration normally have an `haAdminState` of `up`. When you set the `haAdminState` of the active appliance to be `down`, it stops participating in high availability, and informs the standby appliance of its status. The standby appliance becomes active immediately.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>highAvailabilityIndex</td>
<td>Index number of the appliance</td>
<td>Read only.</td>
</tr>
<tr>
<td>haAdminState</td>
<td>Indicates whether appliance is participating in high availability.</td>
<td>If the active appliance <code>haAdminState</code> is set to <code>down</code>, it stops participating in HA, and informs the standby appliance of its status. The standby appliance becomes active immediately.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Readability</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>configuredResourcePool &gt; id</td>
<td>ID of resource pool on which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredResourcePool &gt; name</td>
<td>Name of resource pool on which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredResourcePool &gt; isValid</td>
<td>True if resource pool on which NSX Edge was originally deployed currently exists.</td>
<td>Read only. true or false.</td>
</tr>
<tr>
<td>configuredDataStore &gt; id</td>
<td>ID of data store on which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredDataStore &gt; name</td>
<td>Name of data store on which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredDataStore &gt; isValid</td>
<td>True if resource pool on which NSX Edge was originally deployed currently exists.</td>
<td>Read only. true or false.</td>
</tr>
<tr>
<td>configuredHost &gt; id</td>
<td>ID of host on which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredHost &gt; name</td>
<td>Name of host on which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredHost &gt; isValid</td>
<td>True if resource pool on which NSX Edge was originally deployed currently exists.</td>
<td>Read only. true or false.</td>
</tr>
<tr>
<td>configuredVmFolder &gt; id</td>
<td>ID of folder in which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredVmFolder &gt; name</td>
<td>Name of folder in which NSX Edge was originally deployed.</td>
<td>Read only.</td>
</tr>
<tr>
<td>configuredVmFolder &gt; isValid</td>
<td>True if resource pool on which NSX Edge was originally deployed currently exists.</td>
<td>Read only. true or false.</td>
</tr>
</tbody>
</table>

GET /api/4.0/edges/{edgeId}/appliances

**URI Parameters:**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required) Specify the ID of the edge in edgeId.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve appliance configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. haAdminState, configuredResourcePool, configuredDataStore, configuredHost, configuredVmFolder parameters added.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<appliances>
  <applianceSize>compact</applianceSize>
  <appliance>
```

---

NSX API Guide  Version: 6.3  Page 391
<highAvailabilityIndex>0</highAvailabilityIndex>
<haAdminState>up</haAdminState>
<vcUuid>502e2dd9-3df7-4820-6925-29832a1c0b79</vcUuid>
<vmId>vm-417</vmId>
<haAdminState>up</haAdminState>
<resourcePoolId>domain-c41</resourcePoolId>
<resourcePoolName>Management &amp; Edge Cluster</resourcePoolName>
<datastoreId>datastore-29</datastoreId>
<datastoreName>ds-site-a-nfs01</datastoreName>
<hostId>host-202</hostId>
<hostName>esxmgt-01a.corp.local</hostName>
<vmFolderId>group-v242</vmFolderId>
<vmFolderName>NSX Edges</vmFolderName>
<vmName>Perimeter-Gateway-02-0</vmName>
<deployed>true</deployed>
<cpuReservation>
  <reservation>1000</reservation>
</cpuReservation>
<memoryReservation>
  <reservation>512</reservation>
</memoryReservation>
<edgeId>edge-5</edgeId>
<configuredResourcePool>
  <id>domain-c41</id>
  <name>Management &amp; Edge Cluster</name>
  <isValid>true</isValid>
</configuredResourcePool>
<configuredDataStore>
  <id>datastore-29</id>
  <name>ds-site-a-nfs01</name>
  <isValid>true</isValid>
</configuredDataStore>
<configuredHost>
  <id>host-202</id>
  <name>esxmgt-01a.corp.local</name>
  <isValid>true</isValid>
</configuredHost>
<configuredVmFolder>
  <id>group-v242</id>
  <name>NSX Edges</name>
  <isValid>true</isValid>
</configuredVmFolder>
</appliance>

<highAvailabilityIndex>1</highAvailabilityIndex>
<haAdminState>up</haAdminState>
<vcUuid>502e3ebf-02cb-dcd2-9701-91db1e0e3bd8</vcUuid>
<vmId>vm-429</vmId>
<haAdminState>up</haAdminState>
<resourcePoolId>domain-c41</resourcePoolId>
<resourcePoolName>Management &amp; Edge Cluster</resourcePoolName>
<datastoreId>datastore-29</datastoreId>
<datastoreName>ds-site-a-nfs01</datastoreName>
<hostId>host-202</hostId>
<hostName>esxmgt-01a.corp.local</hostName>
<vmFolderId>group-v242</vmFolderId>
<vmFolderName>NSX Edges</vmFolderName>
<vmName>Perimeter-Gateway-02-1</vmName>
<deployed>true</deployed>
<edgeId>edge-5</edgeId>
PUT /api/4.0/edges/{edgeId}/appliances

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
You can retrieve the configuration of both appliances by using the GET call and replace the size, resource pool, datastore, and custom parameters of the appliances by using a PUT call. If there were two appliances earlier and you PUT only one appliance, the other appliance is deleted.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>haAdminState</code> parameter added.</td>
</tr>
</tbody>
</table>

POST /api/4.0/edges/{edgeId}/appliances

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>size</td>
<td>set to compact</td>
</tr>
</tbody>
</table>

Description:
Change the size of both appliances.
Working With NSX Edge Appliance Configuration by Index

GET /api/4.0/edges/{edgeId}/appliances/{haIndex}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>haIndex (required)</td>
<td>Specified appliance HA index</td>
</tr>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve the configuration of the specified appliance.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>haAdminState</code>, <code>configuredResourcePool</code>, <code>configuredDataStore</code>, <code>configuredHost</code>, <code>configuredVmFolder</code> parameters added.</td>
</tr>
</tbody>
</table>

PUT /api/4.0/edges/{edgeId}/appliances/{haIndex}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>haIndex (required)</td>
<td>Specified appliance HA index</td>
</tr>
<tr>
<td>edgeId (required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Update the configuration of the specified appliance.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. <code>haAdminState</code> parameter added.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<appliance>
  <haAdminState>up</haAdminState>
  <resourcePoolId>domain-c41</resourcePoolId>
  <datastoreId>datastore-29</datastoreId>
  <hostId>host-203</hostId>
  <vmFolderId>group-v242</vmFolderId>
  <cpuReservation>
    <limit>-1</limit>
    <reservation>1000</reservation>
  </cpuReservation>
  <memoryReservation>
    <limit>-1</limit>
    <reservation>512</reservation>
  </memoryReservation>
  <edgeId>edge-3</edgeId>
</appliance>
```
POST /api/4.0/edges/{edgeId}/appliances/{haIndex}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>haIndex</td>
<td>Specified appliance HA index</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Used to send CLI Commands to the Edge Gw. Use <code>action=execute</code> to send the command.</td>
</tr>
</tbody>
</table>

**Headers:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept</td>
<td>Required for CLI commands, specify <code>text/plain</code> when sending CLI Commands to the Edge Gw.</td>
</tr>
</tbody>
</table>

**Description:**

Used to send CLI Commands to the Edge Gateway. To use CLI commands you also need to add an additional `Accept` Header with type `text/plain`, as well as the query parameter `action=execute`.

VMware recommends using the Central CLI instead of this method. See *Working With the Central CLI*.

**Request:**

**Body:** application/xml

```xml
<cliCmd>
  <cmdStr>show ip ospf neighbours</cmdStr>
</cliCmd>
```

DELETE /api/4.0/edges/{edgeId}/appliances/{haIndex}

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>haIndex</td>
<td>Specified appliance HA index</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Delete the appliance

---

**Working With Edge Services Gateway Interfaces**

See *Working With NSX Edge* for descriptions of parameters used to configure Edge Service Gateway interfaces.

GET /api/4.0/edges/{edgeId}/vnics

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve all interfaces for the specified Edge Services Gateway.

**POST /api/4.0/edges/{edgeId}/vnics**

**URI Parameters:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>edgeId</code></td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>action</code></td>
<td>Set to <code>patch</code>.</td>
</tr>
</tbody>
</table>

**Description:**

Add an interface or sub interface.

**Request:**

**Body:** `application/xml`

```xml
<nics>
  <vnic>
    <name></name>
    <addressGroups>
      <addressGroup>
        <primaryAddress></primaryAddress>
        <secondaryAddresses>
          <ipAddress></ipAddress>
          <subnetMask></subnetMask>
        </secondaryAddresses>
      </addressGroup>
    </addressGroups>
    <mtu></mtu>
    <type></type>
    <index></index>
    <portgroupId></portgroupId>
    <portgroupName></portgroupName>
    <macAddress>
      <edgeVmHaIndex></edgeVmHaIndex>
    </macAddress>
    <fenceParameter>
      <key></key>
    </fenceParameter>
    <enableProxyArp>
      <enableSendRedirects></enableSendRedirects>
      <enableBridgeMode></enableBridgeMode>
      <isConnected></isConnected>
      <inShapingPolicy>
        <averageBandwidth></averageBandwidth>
        <peakBandwidth></peakBandwidth>
        <burstSize></burstSize>
        <enabled></enabled>
        <inherited></inherited>
      </inShapingPolicy>
      <outShapingPolicy>
        <averageBandwidth></averageBandwidth>
        <peakBandwidth></peakBandwidth>
        <burstSize></burstSize>
      </outShapingPolicy>
    </enableProxyArp>
  </vnic>
</nics>
```
Working With a Specific Edge Services Gateway Interface

See Working With NSX Edge for descriptions of parameters used to configure Edge Service Gateway interfaces.

GET /api/4.0/edges/{edgeId}/vnics/{index}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>Specified interface</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Retrieve the specified interface.

PUT /api/4.0/edges/{edgeId}/vnics/{index}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>Specified interface</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in edgeId</td>
</tr>
</tbody>
</table>

Description:
Update the specified interface.

Request:

Body: application/xml
DELETE /api/4.0/edges/{edgeId}/vnics/{index}

URI Parameters:

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>Specified interface</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <em>edgeId</em>.</td>
</tr>
</tbody>
</table>

Description:
Delete interface

---

Working With Logical Router HA (Management) Interface

GET /api/4.0/edges/{edgeId}/mgmtinterface

URI Parameters:

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <em>edgeId</em>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve the management interface configuration for the logical router.

PUT /api/4.0/edges/{edgeId}/mgmtinterface

URI Parameters:

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <em>edgeId</em>.</td>
</tr>
</tbody>
</table>

Description:
Configure high availability (management) interface for logical (distributed) router. See *Working With NSX Edge* for descriptions of parameters used to configure the logical router HA interface.

**Request:**  
**Body:** application/xml

```xml
<mgmtInterface>
  <addressGroups>
    <addressGroup>
      <primaryAddress></primaryAddress>
      <subnetMask></subnetMask>
    </addressGroup>
  </addressGroups>
  <mtu></mtu>
  <connectedToId></connectedToId>
</mgmtInterface>
```

### Working With Logical Router Interfaces

Configure interfaces for logical (distributed) router. See *Working with NSX Edge* for descriptions of parameters used to configure the logical router interfaces.

**GET /api/4.0/edges/{edgeId}/interfaces**

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**  
Retrieve all interfaces on the logical router.

**POST /api/4.0/edges/{edgeId}/interfaces**

**URI Parameters:**

<table>
<thead>
<tr>
<th>edgeId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>action</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>Set to <code>patch</code>.</td>
</tr>
</tbody>
</table>

**Description:**  
Add interfaces for a logical router.

**Request:**  
**Body:** application/xml

```xml
<intefaces>
  <interface>
    <name></name>
    <addressGroups>
      ...
    </addressGroups>
  </interface>
</interfaces>
```
DELETE /api/4.0/edges/{edgeId}/interfaces

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>Specify index of interface to delete (e.g. ?index=index1&amp;index2). If no indices specified, all interfaces are deleted.</td>
</tr>
</tbody>
</table>

Description:
Delete all interfaces on the logical router.

Working With a Specific Logical Router Interface

GET /api/4.0/edges/{edgeId}/interfaces/{index}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>Specified router interface.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the specified logical router interface.

PUT /api/4.0/edges/{edgeId}/interfaces/{index}

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>Specified router interface.</td>
</tr>
<tr>
<td>edgeId</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

Description:
Update interface configuration for the specified logical router interface.

DELETE /api/4.0/edges/{edgeId}/interfaces/{index}

URI Parameters:
<table>
<thead>
<tr>
<th>index</th>
<th>(required)</th>
<th>Specified router interface.</th>
</tr>
</thead>
<tbody>
<tr>
<td>edgeId</td>
<td>(required)</td>
<td>Specify the ID of the edge in <code>edgeId</code>.</td>
</tr>
</tbody>
</table>

**Description:**
Delete interface configuration and reset to factory default.

---

**Configuring Edge Services in Async Mode**

You can configure NSX Edge to work in async mode. In the async mode, accepted commands return an Accepted status and a taskid. To know the status of the task, you can check the status of that taskid. The advantage of the async mode is that APIs are returned very fast and actions like vm deployment, reboots, publish to NSX Edge appliance, are done behind the scene under the taskid. To configure async mode, ?async=true at the end of any 4.0 service configuration URL for POST, PUT, and DELETE calls. Without async mode, the location header in HTTP response has the resource ID whereas in async mode, location header has the job ID.

The job status response includes the job status (`SUCCESS`, `FAILED`, `QUEUED`, `RUNNING`, `ROLLBACK`), URI of the resource, and ID of the resource.

**GET /api/4.0/edges/jobs**

**Query Parameters:**

| status | (optional) | status can be all or active. |

**Description:**
Retrieve NSX Edge job status.

**Responses:**

**Status Code: 200**

**Body:** application/xml

```xml
<edgeJobs>
  <edgeJob>
    <jobId>jobdata-917</jobId>
    <status>COMPLETED</status>
    <result>
      <key>edgeId</key>
      <value>edge-4</value>
    </result>
  </edgeJob>
  <edgeJob>
    <jobId>jobdata-915</jobId>
    <status>COMPLETED</status>
    <result>
      <key>edgeId</key>
      <value>edge-4</value>
    </result>
  </edgeJob>
</edgeJobs>
```
Working With a Specific Edge Job Status

GET /api/4.0/edges/jobs/{jobId}

URI Parameters:

<table>
<thead>
<tr>
<th>jobId</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job ID</td>
<td></td>
</tr>
</tbody>
</table>

Description:
Retrieve job status for the specified job.

Responses:
Status Code: 200
Body: application/xml

```xml
<edgeJob>
  <jobId>jobdata-2128</jobId>
  <message>Deploying vShield Edge Virtual Machine TestEdge11-0</message>
  <status>RUNNING</status>
  <result>
    <key>ResultURI</key>
    <value>/api/4.0/edges/edge-4</value>
  </result>
  <result>
    <key>edgeId</key>
    <value>edge-4</value>
  </result>
</edgeJob>
```
Working With NSX Edge Configuration Publishing

Working With NSX Edge Tuning Configuration

Starting in 6.2.3 you can configure default values for NSX Edge configuration parameters, including publishing and health check timeouts, and CPU and memory reservation, which are applicable to all NSX Edges. The values for the tuning configuration parameters have been set to sensible defaults and may not require any changes. However, based on datacenter capacity and requirements, you can change the default CPU and memory resource reservation percentages using this API. This percentage is applied across all Edge VM Sizes (COMPACT, LARGE, QUADLARGE, XLARGE). The default values are:

- 100% for CPU reservation
- 100% for Memory reservation
- 1000 MHz per CPU

<table>
<thead>
<tr>
<th>Name</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>lockUpdatesOnEdge</td>
<td>Default value is false. Serialize specific Edge operations related to DHCP and vnic configuration to avoid concurrency errors when too many configuration change requests arrive at the same time.</td>
</tr>
<tr>
<td>aggregatePublishing</td>
<td>Default value is true (enabled). Speed up configuration change publishing to the NSX Edge by aggregating over the configuration versions.</td>
</tr>
<tr>
<td>edgeVMHealthCheckIntervalInMin</td>
<td>Default value for time interval between NSX Edge VM's health check is 0, where NSX Manager manages the interval based on the number of NSX Edge VM's. A positive integer value overrides the default behavior.</td>
</tr>
<tr>
<td>healthCheckCommandTimeoutInMs</td>
<td>Default timeout value for health check command is 120000.</td>
</tr>
<tr>
<td>maxParallelVixCallsForHealthCheck</td>
<td>The maximum concurrent health check calls that can be made for NSX Edge VM's based on VIX communication channel is 25.</td>
</tr>
<tr>
<td>publishingTimeoutInMs</td>
<td>The timeout value to publish a configuration change on NSX Edge appliance. Default is 1200000 (20 minutes).</td>
</tr>
<tr>
<td>edgeVcpuReservationPercentage</td>
<td>Integer value [0-100], specifying the CPU reservation percentage which will be applied to the NSX Edge appliance. To disable this resource reservation, enter 0.</td>
</tr>
<tr>
<td>edgeMemoryReservationPercentage</td>
<td>Integer value [0-100], specifying the memory reservation percentage which will be applied to the NSX Edge appliance. To disable this resource reservation, enter 0.</td>
</tr>
<tr>
<td>megaHertzPerVcpu</td>
<td>Integer value specifying the megahertz per each vCPU (1000, 1500, 2000)</td>
</tr>
</tbody>
</table>

GET /api/4.0/edgePublish/tuningConfiguration

Description:
Retrieve the NSX Edge tuning configuration.

Method history:
PUT /api/4.0/edgePublish/tuningConfiguration

Description:
Update the NSX Edge tuning configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<tuningConfiguration>
    <lockUpdatesOnEdge>false</lockUpdatesOnEdge>
    <aggregatePublishing>true</aggregatePublishing>
    <edgeVMHealthCheckIntervalInMin>0</edgeVMHealthCheckIntervalInMin>
    <healthCheckCommandTimeoutInMs>120000</healthCheckCommandTimeoutInMs>
    <maxParallelVixCallsForHealthCheck>25</maxParallelVixCallsForHealthCheck>
    <publishingTimeoutInMs>1200000</publishingTimeoutInMs>
    <edgeVCpuReservationPercentage>100</edgeVCpuReservationPercentage>
    <edgeMemoryReservationPercentage>100</edgeMemoryReservationPercentage>
    <megaHertzPerVCpu>1000</megaHertzPerVCpu>
</tuningConfiguration>
```
Working With Certificates
NSX Edge supports self-signed certificates, certificates signed by a Certification Authority (CA), and certificates generated and signed by a CA.

Working With Certificates and Certificate Chains

POST /api/2.0/services/truststore/certificate

Query Parameters:
- csrId (required)
  Specify the ID of a CSR.

Description:
Import a certificate or a certificate chain against a certificate signing request.

Request:
Body: application/xml

```xml
<trustObject>
  <pemEncoding/>
</trustObject>
```

Working With Certificates on a Specific Scope

GET /api/2.0/services/truststore/certificate/scope/{scopeId}

URI Parameters:
- scopeId (required)
  Scope ID. Specify the ID of an NSX Edge, e.g. edge-5, or globalroot-0.

Description:
Retrieve all certificates on the specified scope.

Responses:
Status Code: 200
Body: application/xml

```xml
<csrs>
  <csr/>
  <csr/>
  <csr/>
</csrs>
```
Working With Self-Signed Certificates

**POST /api/2.0/services/truststore/certificate/{scopeId}**

**URI Parameters:**

| scopeId  | (required) | Scope ID. Specify the ID of an NSX Edge, e.g. edge-5, or globalroot-0. |

**Description:**
Create a single certificate
You can create a certificate for a specific NSX Edge, or if you specify a scope of globalroot-0 you can create a global certificate in NSX Manager which is available to all NSX Edges.

**Request:**
**Body:** application/xml

```xml
<trustObject>
<pemEncoding></pemEncoding>
<privateKey></privateKey>
<passphrase></passphrase>
</trustObject>
```

---

Working With a Specific Certificate

**GET /api/2.0/services/truststore/certificate/{certificateId}**

**URI Parameters:**

| certificateId  | (required) | Certificate ID |

**Description:**
Retrieve the certificate object specified by ID. If the ID specifies a chain, multiple certificate objects are retrieved.

**DELETE /api/2.0/services/truststore/certificate/{certificateId}**

**URI Parameters:**

| certificateId  | (required) | Certificate ID |

**Description:**
Delete the specified certificate.
Working With Certificate Signing Requests

POST /api/2.0/services/truststore/csr/{scopeId}

URI Parameters:

<table>
<thead>
<tr>
<th>scopeId</th>
<th>(required)</th>
<th>Specified scope ID</th>
</tr>
</thead>
</table>

Description:
Create a certificate signing request (CSR).

Request:
Body: application/xml

```xml
<csr>
  <subject>
    <attribute>
      <key>CN</key>
      <value>VSM</value>
    </attribute>
    <attribute>
      <key>O</key>
      <value>VMware</value>
    </attribute>
    <attribute>
      <key>OU</key>
      <value>IN</value>
    </attribute>
    <attribute>
      <key>C</key>
      <value>IN</value>
    </attribute>
  </subject>
  <algorithm>RSA</algorithm>
  <keySize>1024</keySize>
</csr>
```

Working With Self-Signed Certificate for CSR

GET /api/2.0/services/truststore/csr/{csrId}

URI Parameters:

<table>
<thead>
<tr>
<th>csrId</th>
<th>(required)</th>
<th>CSR ID</th>
</tr>
</thead>
</table>

Description:
Retrieve the specified certificate signing request (CSR).

PUT /api/2.0/services/truststore/csr/{csrId}

URI Parameters:
Working With Certificate Signing Requests on a Specific Scope

GET /api/2.0/services/truststore/csr/scope/{scopeId}

URI Parameters:

| scopeId   | (required) | Specified scope. |

Description:
Retrieve certificate signing requests (CSR) on the specified scope.

Working With Certificate Revocation Lists on a Specific Scope

POST /api/2.0/services/truststore/crl/{scopeId}

URI Parameters:

| scopeId   | (required) | Specified scope. |

Description:
Create a certificate revocation list (CRL) on the specified scope.

Request:
Body: application/xml

```xml
<trustObject>
  <pemEncoding></pemEncoding>
</trustObject>
```

Working With CRL Certificates in a Specific Scope

GET /api/2.0/services/truststore/crl/scope/{scopeId}

URI Parameters:
scopeId  (required) | Specified scope

**Description:**
Retrieve all certificates for the specified scope.

---

**Working With a Specific CRL Certificate**

**GET /api/2.0/services/truststore/crl/{crlId}**

**URI Parameters:**

| crlId  (required) | CRL ID |

**Description:**
Retrieve certificate object for the specified certificate revocation list (CRL).

**DELETE /api/2.0/services/truststore/crl/{crlId}**

**URI Parameters:**

| crlId  (required) | CRL ID |

**Description:**
Delete the specified certificate revocation list (CRL).
Working With Service Composer

Service Composer helps you provision and assign network and security services to applications in a virtual infrastructure. You map these services to a security group, and the services are applied to the virtual machines in the security group.

Security Groups

You begin by creating a security group to define assets that you want to protect. Security groups may be static (including specific virtual machines) or dynamic where membership may be defined in one or more of the following ways:

- vCenter containers (clusters, port groups, or datacenters).
- Security tags, IPset, MACset, or even other security groups. For example, you may include a criteria to add all members tagged with the specified security tag (such as AntiVirus.virusFound) to the security group.
- Directory Groups (if NSX Manager is registered with Active Directory).
- Regular expressions such as virtual machines with name VM1.

Note that security group membership changes constantly. For example, a virtual machine tagged with the AntiVirus.virusFound tag is moved into the Quarantine security group. When the virus is cleaned and this tag is removed from the virtual machine, it again moves out of the Quarantine security group.

Security Policies

A security policy is a collection of the following service configurations.

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
<th>Applies to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed Firewall rules</td>
<td>Rules that define the traffic to be allowed to, from, or within the security group.</td>
<td>vNIC</td>
</tr>
<tr>
<td><strong>category</strong>: firewall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guest Introspection service</td>
<td>Third party solution provider services such as anti-virus or vulnerability management services.</td>
<td>virtual machines</td>
</tr>
<tr>
<td><strong>category</strong>: endpoint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network Introspection services (NetX or Network Extensibility)</td>
<td>Services that monitor your network such as IPS.</td>
<td>virtual machines</td>
</tr>
<tr>
<td><strong>category</strong>: traffic_steering</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Applying Security Policies to Security Groups

You apply a security policy (say SP1) to a security group (say SG1). The services configured for SP1 are applied to all virtual machines that are members of SG1. If a virtual machine belongs to more than one security group, the services that are applied to the virtual machine depends on the precedence of the security policy mapped to the security groups. Service Composer profiles can be exported and imported as backups or for use in other environments. This approach to managing network and security services helps you with actionable and repeatable security policy management.

Service Composer Parameters

The following parameters are related to Service Composer, security policies, and security groups.

**Common Parameters**

- **actionType** - Defines the type of action belonging to a given executionOrderCategory
- **executionOrderCategory** - Category to which the action belongs to (endpoint, firewall or traffic_steering)
- **isActive** - In a security policy hierarchy, an action within a policy may or may not be active based on the precedence of the policy or usage of isActionEnforced flag in that hierarchy
isActionEnforced - Enforces an action of a parent policy on its child policies for a given actionType and executionOrderCategory. Note that in a policy hierarchy, for a given actionType and executionOrderCategory, there can be only one action which can be marked as enforced.

isEnabled - Indicates whether an action is enabled

secondarySecurityGroup - Applicable for actions which need secondary security groups, say a source-destination firewall rule

securityPolicy - Parent policy in an action

Output-only Parameters

executionOrder - Defines the sequence in which actions belonging to an executionOrderCategory are executed. Note that this is not an input parameter and its value is implied by the index in the list.

Firewall Category Parameters

action - Allow or block the traffic

applications - Applications / application groups on which the rules are to be applied

direction - Direction of traffic towards primary security group. Possible values: inbound, outbound, intra

logged - Flag to enable logging of the traffic that is hit by this rule

outsideSecondaryContainer - Flag to specify outside i.e. outside securitygroup-3

Endpoint Category Parameters

serviceId - ID of the service (as registered with the service insertion module). If this tag is null, the functionality type (as defined in actionType tag) is not applied which will also result in blocking the actions (of given functionality type) that are inherited from the parent security policy. This is true if there is no action of enforce type.

invalidServiceId - Flag to indicate that the service that was referenced in this rule is deleted, which make the rule ineffective (or deviate from the original intent that existed while configuring the rule). You must either modify this rule by adding correct Service or delete this rule.

serviceName - Name of the service

serviceProfile - Profile to be referenced in Endpoint rule.

invalidServiceProfile - Flag to indicate that the service profile that was referenced in this rule is deleted, which makes the rule ineffective (or deviate from the original intent that existed while configuring the rule). You must either modify this rule by adding correct Service Profile or delete this rule.

The following parameters are deprecated:

vendorTemplateId

invalidVendorTemplateId

vendorTemplateName

Traffic Steering/NetX Category Parameters

redirect - Flag to indicate whether to redirect the traffic or not

serviceProfile - Service profile for which redirection is being configured

logged - Flag to enable logging of the traffic that is hit by this rule

Working With Security Policies

A security policy is a set of Endpoint, firewall, and network introspection services that can be applied to a security group.

See Working With Security Groups for more information about managing security groups.

POST /api/2.0/services/policy/securitypolicy

Description:
Create a security policy.
When creating a security policy, a parent security policy can be specified if required. The security policy inherits services from the parent security policy. Security group bindings and actions can also be specified while creating the policy. Note that execution order of actions in a category is implied by their order in the list. The response of the call has Location header populated with the URI using which the created object can be fetched.

Ensure that:
- the required VMware built in services (such as Distributed Firewall and Endpoint) are installed. See NSX Installation Guide.
- the required partner services have been registered with NSX Manager.
- the required security groups have been created.

Request:
**Body**: application/xml

```xml
<securityPolicy>
  <name>name</name>
  <description>decription</description>
  <precedence></precedence>
  <parent>
    <objectId></objectId>
  </parent>
  <securityGroupBinding>
    <objectId></objectId>
  </securityGroupBinding>
  <securityGroupBinding>
    <objectId></objectId>
  </securityGroupBinding>
  <actionsByCategory>
    <category>firewall</category>
    <action class="firewallSecurityAction">
      <name>name</name>
      <description>description</description>
      <category></category>
      <actionType></actionType>
      <isActionEnforced></isActionEnforced>
      <isActive></isActive>
      <isEnabled></isEnabled>
      <secondarySecurityGroup>
        <objectId></objectId>
      </secondarySecurityGroup>
      <secondarySecurityGroup>
        <objectId></objectId>
      </secondarySecurityGroup>
      <applications>
        <application>
          <objectId></objectId>
        </application>
        <applicationGroup>
          <objectId></objectId>
        </applicationGroup>
      </applications>
      <logged></logged>
      <action></action>
      <direction></direction>
      <outsideSecondaryContainer></outsideSecondaryContainer>
    </action>
    <action>
      ***
    </action>
  </actionsByCategory>
</securityPolicy>
```
Working With a Specific Security Policy

**GET** /api/2.0/services/policy/securitypolicy/{ID}

**URI Parameters:**

<table>
<thead>
<tr>
<th>ID</th>
<th>(required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security policy, for example, policy-5.</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
Retrieve security policy information. To view all security policies, specify all as the security policy ID.

**Responses:**
- **Status Code:** 200
- **Body:** application/xml

```xml
<securityPolicy>
  <objectId>policy-5</objectId>
</securityPolicy>
```
<objectTypeName>Policy</objectTypeName>
<vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
<nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
<revision>10</revision>
<type>
  <typeName>Policy</typeName>
</type>
<name>Test Security Policy</name>
<description></description>
<scope>
  <id>globalroot-0</id>
  <objectTypeName>GlobalRoot</objectTypeName>
  <name>Global</name>
</scope>
<clientHandle></clientHandle>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
<inheritanceAllowed>false</inheritanceAllowed>
<precedence>4300</precedence>
<securityGroupBinding>
  <objectId>securitygroup-10</objectId>
  <objectTypeName>SecurityGroup</objectTypeName>
  <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
  <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
  <revision>2</revision>
  <type>
    <typeName>SecurityGroup</typeName>
  </type>
  <name>Local_Web_Tier</name>
  <description></description>
  <scope>
    <id>globalroot-0</id>
    <objectTypeName>GlobalRoot</objectTypeName>
    <name>Global</name>
  </scope>
  <clientHandle></clientHandle>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
</securityGroupBinding>
<actionsByCategory>
  <category>firewall</category>
  <action class="firewallSecurityAction">
    <objectId>firewallpolicyaction-1c</objectId>
    <objectTypeName>FirewallPolicyAction</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>7</revision>
    <type>
      <typeName>FirewallPolicyAction</typeName>
    </type>
    <name>allow to DB_SG</name>
    <scope>
      <id>globalroot-0</id>
      <objectTypeName>GlobalRoot</objectTypeName>
      <name>Global</name>
    </scope>
    <clientHandle></clientHandle>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </action>
</actionsByCategory>
PUT /api/2.0/services/policy/securitypolicy/{ID}

URI Parameters:

| ID (required) | Security policy, for example, policy-5. |

Description:
Edit a security policy.

To update a security policy, you must first fetch it. Then edit the received XML and pass it back as the input. The specified configuration replaces the current configuration.

Security group mappings provided in the PUT call replaces the security group mappings for the security policy. To remove all mappings, delete the securityGroupBindings parameter.

You can add or update actions for the security policy by editing the actionsByCategory parameter. To remove all actions (belonging to all categories), delete the actionsByCategory parameter. To remove actions belonging to a specific category, delete the block for that category.

Request:
DELETE /api/2.0/services/policy/securitypolicy/{ID}

URI Parameters:

<table>
<thead>
<tr>
<th>ID</th>
<th>Security policy, for example, policy-5.</th>
</tr>
</thead>
</table>

Query Parameters:

| force    | If set to true, the security policy is deleted even if it is in use. |

Description:
Delete a security policy.

When you delete a security policy, its child security policies and all the actions in it are deleted as well.

Working With Security Group Bindings

PUT /api/2.0/services/policy/securitypolicy/{ID}/sgbinding/{securityGroupId}

URI Parameters:

- securityGroupId (required)
  Security group ID, for example, securitygroup-11.
- ID (required)
  Security policy, for example, policy-5.

Description:
Apply the specified security policy to the specified security group.

Working With Security Actions on a Security Policy

GET /api/2.0/services/policy/securitypolicy/{ID}/securityactions

URI Parameters:

- ID (required)
  Security policy, for example, policy-5.

Description:
Retrieve all security actions applicable on a security policy.
This list includes security actions from associated parent security policies, if any. Security actions per Execution Order Category are sorted based on the weight of security actions in descending order.

Responses:
Status Code: 200
Body: application/xml

```
<securityPolicies>
  <securityPolicy></securityPolicy>
  <securityPolicy></securityPolicy>
</securityPolicies>
```

Working with Service Composer Policy Precedence

GET /api/2.0/services/policy/securitypolicy/maxprecedence

Description:
Retrieve the highest precedence (or weight) of the Service Composer security policies. The response body contains only the maximum precedence.

Example:

6300

### Working With Service Composer Status

**GET /api/2.0/services/policy/securitypolicy/status**

**Description:**
Retrieve the consolidated status of Service Composer.
The possible return of value for status are: `in_sync`, `in_progress`, `out_of_sync`, and `pending`.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

- **Status Code:** 200
- **Body:** application/xml

```xml
<serviceComposerStatus>
  <status>in_sync</status>
</serviceComposerStatus>
```

### Working With All Service Composer Alarms

**GET /api/2.0/services/policy/securitypolicy/alarms/all**

**Description:**
Retrieve all system alarms that are raised at Service Composer level and policy level.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

- **Status Code:** 200
Working With Service Composer Firewall Applied To Setting

You can set the applied to setting for all firewall rules created through Service Composer to either Distributed Firewall or Policy's Security Groups. By default, the applied to is set to Distributed Firewall. When Service Composer firewall rules
have an applied to setting of distributed firewall, the rules are applied to all clusters on which distributed firewall is installed. If the firewall rules are set to apply to the policy’s security groups, you have more granular control over the firewall rules, but may need multiple security policies or firewall rules to get the desired result.

**Applied To Values for Service Composer Firewall Rules**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dfw_only</td>
<td>Firewall rules are applied to all clusters on which Distributed Firewall is installed.</td>
</tr>
<tr>
<td>policy_security_group</td>
<td>Firewall rules are applied to security groups on which the security policy is applied.</td>
</tr>
</tbody>
</table>

**GET /api/2.0/services/policy/securitypolicy/serviceprovider/firewall**

**Description:**
Retrieve the Service Composer firewall applied to setting.

**Responses:**
- **Status Code:** 200
- **Body:** application/xml

```
<SecurityPolicyFirewallConfig>
  <appliedTo>dfw_only</appliedTo>
</SecurityPolicyFirewallConfig>
```

**PUT /api/2.0/services/policy/securitypolicy/serviceprovider/firewall**

**Description:**
Update the Service Composer firewall applied to setting.

**Request:**
- **Body:** application/xml

```
<SecurityPolicyFirewallConfig>
  <appliedTo>policy_security_group</appliedTo>
</SecurityPolicyFirewallConfig>
```

---

**Working With Service Composer Configuration Import and Export**

**GET /api/2.0/services/policy/securitypolicy/hierarchy**

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>policyIds</td>
<td>Comma separated list of security policy IDs to export. If omitted, all security policy IDs are exported.</td>
</tr>
<tr>
<td>prefix</td>
<td>A prefix to add before the names of the objects in the exported XML.</td>
</tr>
</tbody>
</table>
Description:
Export a Service Composer configuration (along with the security groups to which the security policies are mapped). You can save the response to a file. The saved configuration can be used as a backup for situations where you may accidentally delete a policy configuration, or it can be exported for use in another NSX Manager environment.

If a prefix is specified, it is added before the names of the security policy, security action, and security group objects in the exported XML. The prefix can thus be used to indicate the remote source from where the hierarchy was exported.

POST /api/2.0/services/policy/securitypolicy/hierarchy

Query Parameters:

<table>
<thead>
<tr>
<th>suffix</th>
<th>A suffix to add after the names of the objects in the imported XML.</th>
</tr>
</thead>
</table>

Description:
Import a security policy configuration

You can create multiple security policies and parent-child hierarchies using the data fetched through export. All objects including security policies, security groups and security actions are created on a global scope.

The policy that is being imported needs to be included in the request body.

If a suffix is specified, it is added after the names of the security policy, security action, and security group objects in the exported XML. The suffix can thus be used to differentiate locally created objects from imported ones.

The location of the newly created security policy objects (multiple locations are separated by commas) is populated in the Location header of the response.

Request:
Body: application/xml

<securityPolicyHierarchy>
  <name></name>
  <description></description>
  <securityPolicy></securityPolicy>
  <securityGroup></securityGroup>
</securityPolicyHierarchy>

Working With Virtual Machines with Security Actions Applied

GET /api/2.0/services/policy/securityaction/{category}/virtualmachines

URI Parameters:

category | Category of security action. Choice of endpoint (Guest Introspection), firewall (Distributed Firewall) or traffic_steering (Network Introspection/Network Extensibility).

Query Parameters:

attributeKey | Attribute key.
### Working With Security Actions Applicable on a Security Group

**GET /api/2.0/services/policy/securitygroup/{ID}/securityactions**

**URI Parameters:**

<table>
<thead>
<tr>
<th>ID</th>
<th>Specified security group.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(required)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Description:**
Retrieve all security actions applicable on a security group for all ExecutionOrderCategories. The list is sorted based on the weight of security actions in descending order. The `isActive` tag indicates if a security action will be applied (by the enforcement engine) on the security group.

**Responses:**

**Status Code: 200**

**Body:** application/xml

```xml
<securityActionsByCategoryMap>
  <actionsByCategory>
    <category>firewall</category>
    <action class="firewallSecurityAction">
      <objectId/>
      <objectTypeName/>
      <vsmUuid/>
      <revision/>
      <type>
        <typeName/>
      </type>
      <name/>
      <description/>
    </action>
  </actionsByCategory>
</securityActionsByCategoryMap>
```
<executionOrder></executionOrder>
<actionType></actionType>
<isActionEnforced></isActionEnforced>
<isActive></isActive>
<isEnabled></isEnabled>
<secondarySecurityGroup>
    <objectId></objectId>
    <objectTypeName></objectTypeName>
    <vsmUuid></vsmUuid>
    <revision></revision>
    <type>
        <typeName></typeName>
    </type>
    <name></name>
    <description></description>
    <scope>
        <id></id>
        <objectTypeName></objectTypeName>
        <name></name>
        <description></description>
    </scope>
    <extendedAttributes></extendedAttributes>
</secondarySecurityGroup>
<invalidSecondaryContainers></invalidSecondaryContainers>
<applications>
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        <objectTypeName></objectTypeName>
        <vsmUuid></vsmUuid>
        <revision></revision>
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            <typeName></typeName>
        </type>
        <name></name>
        <description></description>
        <scope>
            <id></id>
            <objectTypeName></objectTypeName>
            <name></name>
            <description></description>
        </scope>
    </application>
</applications>
<name></name>
</scope>
<clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<inheritanceAllowed></inheritanceAllowed>
<element>
  <applicationProtocol></applicationProtocol>
  <value></value>
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</application>
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  ***
</application>
***
</applications>
<invalidApplications>false</invalidApplications>
<logged>false</logged>
<action>block</action>
<direction>inbound</direction>
<outsideSecondaryContainer>true</outsideSecondaryContainer>
</action>
<action>
</action>
***
</action>
</actionsByCategory>
<actionsByCategory>
<category>endpoint</category>
<action class="endpointSecurityAction">
<objectId></objectId>
<objectTypeName></objectTypeName>
<vsmUuid></vsmUuid>
<revision></revision>
?type>
  <typeName></typeName>
</type>
<name></name>
<description></description>
</category></category>
<executionOrder></executionOrder>
<actionType></actionType>
<isActionEnforced></isActionEnforced>
<isActive></isActive>
<isEnabled></isEnabled>
<securityPolicy>
<objectId></objectId>
<objectTypeName></objectTypeName>
<vsmUuid></vsmUuid>
<revision></revision>
?type>
  <typeName></typeName>
</type>
<name></name>
<description></description>
<scope>
<id></id>
<objectTypeName></objectTypeName>
<name></name>
<typeName></typeName></type>
:name>P</name>
:<clientHandle>
</clientHandle>
:extendedAttributes></extendedAttributes>
:profileAttributes>
:attribute>
:id></id>
:revision></revision>
:attribute>
:id></id>
:revision></revision>
:key></key>
:name></name>
:value></value>
</attribute>
:attribute>
:attribute>
</profileAttributes>
</service>
:objectId></objectId>
:ObjectTypeName></ObjectTypeName>
:vsmUuid></vsmUuid>
:revision></revision>
:type>
:typeName></typeName>
</type>
:name>name</name>
:clientHandle></clientHandle>
:extendedAttributes></extendedAttributes>
</service>
:category></category>
</vendorTemplate>
:id></id>
:revision></revision>
:name>name</name>
:idFromVendor></idFromVendor>
:vendorAttributes>
:id></id>
:revision></revision>
</vendorAttributes>
</vendorTemplate>
:status></status>
:vendorAttributes>
:id></id>
:revision></revision>
</vendorAttributes>
:runtime>
:nonCompliantDvpg></nonCompliantDvpg>
:nonCompliantVwire</nonCompliantVwire>
</runtime>
</serviceProfileBinding>
:distributedVirtualPortGroups></distributedVirtualPortGroups>
:virtualWires></virtualWires>
:excludedVnics></excludedVnics>
:virtualServers></virtualServers>
</serviceProfileBinding>
</serviceProfile>
:redirect></redirect>
</action>
<action>
Working With Security Actions Applicable on a Virtual Machine

GET /api/2.0/services/policy/virtualmachine/{ID}/securityactions

**URI Parameters:**

| ID (required) | VM ID. |

**Description:**
You can retrieve the security actions applicable on a virtual machine for all ExecutionOrderCategories. The list of SecurityActions per ExecutionOrderCategory is sorted based on the weight of security actions in descending order. The `isActive` tag indicates whether a security action will be applied (by the enforcement engine) on the virtual machine.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<securityPolicies>
  <securityPolicy></securityPolicy>
  <securityPolicy></securityPolicy>
  <securityPolicy></securityPolicy>
  <securityPolicy></securityPolicy>
  <securityPolicy></securityPolicy>
  <securityPolicy></securityPolicy>
</securityPolicies>
```

Working With Service Composer Firewall

GET /api/2.0/services/policy/serviceprovider/firewall

**Description:**
If Service Composer goes out of sync with Distributed Firewall, you must re-synchronize Service Composer rules with firewall rules. If Service Composer stays out of sync, firewall configuration may not stay enforced as expected.

This GET method can perform the following functions, depending on the request body provided. **Note:** Some REST clients do not allow you to specify a request body with a GET request.

**Check if Service Composer firewall and Distributed Firewall are in sync**

**Note:** Deprecated. Use GET /2.0/services/policy/securitypolicy/status instead.
• If they are in sync, the response body does not contain any data.
• If they are out of sync, the response body contains the unix timestamp representing the time since when Service Composer firewall is out of sync.

```
<keyValues>
  <keyValue>
    <key>getServiceComposerFirewallOutOfSyncTimestamp</key>
  </keyValue>
</keyValues>
```

**Synchronize Service Composer firewall with Distributed Firewall**

```
<keyValues>
  <keyValue>
    <key>forceSync</key>
  </keyValue>
</keyValues>
```

**Retrieve the state of the auto save draft property in Service Composer**

Retrieve the state of the auto save draft property in Service Composer. Response is true or false.

```
<keyValues>
  <keyValue>
    <key>getAutoSaveDraft</key>
  </keyValue>
</keyValues>
```

**Change the state of the auto save draft property in Service Composer**

Note: Deprecated.

Change the state of the auto save draft property in Service Composer. Provide request body value of true or false.

```
<keyValues>
  <keyValue>
    <key>autoSaveDraft</key>
    <value>false</value>
  </keyValue>
</keyValues>
```

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 6.2.3

Method updated and some functions deprecated. Changing auto save draft with the `autoSaveDraft` parameter is deprecated, and will be removed in a future release. The default setting of `autoSaveDraft` is changed from `true` to `false`. Method to check if Service Composer and Distributed Firewall are in sync is deprecated, and will be removed in a future release. Use GET `/2.0/services/policy/securitypolicy/status` instead.

#### Request:

**Body:** application/xml

```xml
<keyValues>
  <keyValue>
    <key></key>
    <value></value>
  </keyValue>
</keyValues>
```

#### Working With Security Policies Mapped to a Security Group

**GET /api/2.0/services/policy/securitygroup/{ID}/securitypolicies**

**URI Parameters:**

<table>
<thead>
<tr>
<th>ID</th>
<th>Specified security group ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>(required)</td>
<td></td>
</tr>
</tbody>
</table>

**Description:**

Retrieve security policies mapped to a security group.

The list is sorted based on the precedence of security policy precedence in descending order. The security policy with the highest precedence (highest numeric value) is the first entry (index = 0) in the list.

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<securityPolicies>
  <securityPolicy>
    <objectId>policy-5</objectId>
    <objectTypeName>Policy</objectTypeName>
    <vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
    <nodeId>916287b3-761d-430b-8ab2-83878dfe3e7f</nodeId>
    <revision>10</revision>
    <type>
      <typeName>Policy</typeName>
    </type>
    <name>Test Security Policy</name>
    <description></description>
    <scope>
```

```xml
```
<id>globalroot-0</id>
<objectTypeName>GlobalRoot</objectTypeName>
</scope>
</clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
<inheritanceAllowed>false</inheritanceAllowed>
<precedence>4300</precedence>
<securityGroupBinding>
<objectId>securitygroup-10</objectId>
<objectTypeName>SecurityGroup</objectTypeName>
<vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
<nodeId>916287b3-761d-430b-8ab2-8387dfe3e7f</nodeId>
<revision>2</revision>
?type>
<typeName>SecurityGroup</typeName>
</type>
</scope>
<clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
</securityGroupBinding>
<actionsByCategory>
<category>firewall</category>
<action class="firewallSecurityAction">
<objectId>firewallpolicyaction-1</objectId>
<objectTypeName>FirewallPolicyAction</objectTypeName>
<vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
<nodeId>916287b3-761d-430b-8ab2-8387dfe3e7f</nodeId>
<revision>7</revision>
?type>
<typeName>FirewallPolicyAction</typeName>
</type>
</scope>
<clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
</category>firewall</category>
 categoria="firewallSecurityAction">
<objectId>firewallpolicyaction-1</objectId>
<objectTypeName>FirewallPolicyAction</objectTypeName>
<vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
<nodeId>916287b3-761d-430b-8ab2-8387dfe3e7f</nodeId>
<revision>7</revision>
?type>
<typeName>FirewallPolicyAction</typeName>
</type>
</scope>
<clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
<category>firewall</category>
</category>firewall</category>
<executionOrder>1</executionOrder>
<isEnabled>true</isEnabled>
<isActionEnforced>false</isActionEnforced>
<secondarySecurityGroup>
<objectId>securitygroup-12</objectId>
<objectTypeName>SecurityGroup</objectTypeName>
<vsmUuid>423A993F-BEE6-1285-58F1-54E48D508D90</vsmUuid>
<nodeId>916287b3-761d-430b-8ab2-8387dfe3e7f</nodeId>
<revision>2</revision>
</secondarySecurityGroup>
<type>
   <typeName>SecurityGroup</typeName>
</type>

<name>Local_DB_Tier</name>
<description></description>

<scope>
   <id>globalroot-0</id>
   <objectTypeName>GlobalRoot</objectTypeName>
   <name>Global</name>
</scope>
<clientHandle></clientHandle>
<extendedAttributes></extendedAttributes>
<isUniversal>false</isUniversal>
<universalRevision>0</universalRevision>
</secondarySecurityGroup>
<invalidSecondaryContainers>false</invalidSecondaryContainers>
<invalidApplications>false</invalidApplications>
<logged>true</logged>
<action>allow</action>
<direction>outbound</direction>
<outsideSecondaryContainer>false</outsideSecondaryContainer>
</action>
</actionsByCategory>
<statusesByCategory>
   <category>firewall</category>
   <status>in_sync</status>
</statusesByCategory>
</securityPolicy>
</securityPolicies>
Working With SNMP

NSX Manager receives events from other NSX components, including NSX Edge, network fabric, and hypervisors. You can configure NSX Manager to forward SNMP traps to an SNMP Manager.

Working With SNMP Status Settings

You can configure settings for SNMP on the NSX Manager.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>serviceStatus</td>
<td>Boolean. Set to true to enable SNMP. There must be at least one SNMP manager configured to enable SNMP.</td>
</tr>
<tr>
<td>groupedNotification</td>
<td>Boolean. Set to true to group similar SNMP notifications. This reduces the number of notifications being sent out, which can improve SNMP manager performance when there is a high volume of SNMP notifications.</td>
</tr>
</tbody>
</table>

GET /api/2.0/services/snmp/status

Description:
Retrieve SNMP status settings.

Method history:
- Release: 6.2.3
  - Modification: Method introduced.

Responses:
- Status Code: 200
- Body: application/xml

```
<snmpServiceStatus>
  <serviceStatus>false</serviceStatus>
  <groupedNotification>true</groupedNotification>
</snmpServiceStatus>
```

PUT /api/2.0/services/snmp/status

Description:
Update SNMP status settings.

Method history:
- Release: 6.2.3
  - Modification: Method introduced.
**Body**: application/xml

```xml
<snmpServiceStatus>
  <serviceStatus>true</serviceStatus>
  <groupedNotification>true</groupedNotification>
</snmpServiceStatus>
```

---

**Working With SNMP Managers**

**GET /api/2.0/services/snmp/manager**

**Description:**
Retrieve information about SNMP managers.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

- **Status Code**: 200
- **Body**: application/xml

```xml
<snmpManagers>
  <snmpManager>
    <managerId>1330</managerId>
    <ip>10.10.10.10</ip>
    <port>162</port>
    <communityString>NSXManager</communityString>
    <enabled>true</enabled>
  </snmpManager>
  <snmpManager>
    <managerId>1331</managerId>
    <ip>10.10.10.11</ip>
    <port>162</port>
    <communityString>NSXManager</communityString>
    <enabled>true</enabled>
  </snmpManager>
</snmpManagers>
```

**POST /api/2.0/services/snmp/manager**

**Description:**
Add an SNMP manager.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
</table>

6.2.3 | Method introduced.

**Request:**

**Body:** application/xml

```xml
<snmpManager>
  <ip>10.10.10.10</ip>
  <port>162</port>
  <communityString>NSXManager</communityString>
  <enabled>true</enabled>
</snmpManager>
```

---

### Working With a Specific SNMP Manager

**GET /api/2.0/services/snmp/manager/{managerId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>managerId</th>
<th>(required)</th>
<th>ID of the SNMP manager.</th>
</tr>
</thead>
</table>

**Description:**

Retrieve information about the specified SNMP manager.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<snmpManager>
  <managerId>1330</managerId>
  <ip>10.10.10.10</ip>
  <port>162</port>
  <communityString>NSXManager</communityString>
  <enabled>true</enabled>
</snmpManager>
```

**PUT /api/2.0/services/snmp/manager/{managerId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>managerId</th>
<th>(required)</th>
<th>ID of the SNMP manager.</th>
</tr>
</thead>
</table>

**Description:**
Update an SNMP manager configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<snmpManager>
  <managerId>1330</managerId>
  <ip>10.10.10.10</ip>
  <port>162</port>
  <communityString>NSXManager</communityString>
  <enabled>false</enabled>
</snmpManager>
```

DELETE /api/2.0/services/snmp/manager/{managerId}

**URI Parameters:**

|(managerId) (required) | ID of the SNMP manager. |

**Description:**

Delete an SNMP manager configuration.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

---

**Working With SNMP Traps**

**GET /api/2.0/services/snmp/trap**

**Description:**

Retrieve information about SNMP traps.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200

**Body:** application/xml
Working With a Specific SNMP Trap

GET /api/2.0/services/snmp/trap/{oid}

URI Parameters:

<table>
<thead>
<tr>
<th>oid</th>
<th>SNMP object identifier.</th>
</tr>
</thead>
</table>

Description:
Retrieve information about the specified SNMP trap.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200
Body: application/xml

PUT /api/2.0/services/snmp/trap/{oid}

URI Parameters:

<table>
<thead>
<tr>
<th>oid</th>
<th>SNMP object identifier.</th>
</tr>
</thead>
</table>

Description:
Update the specified SNMP trap.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<trapConfig>
  <oid>1.3.6.1.4.1.6876.90.1.2.3.0.1</oid>
  <enabled>false</enabled>
</trapConfig>
```
Working With the Central CLI

POST /api/1.0/nsx/cli

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>action</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Use action=execute.

Headers:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accept</td>
<td>(required)</td>
</tr>
</tbody>
</table>

Specify text/plain.

Description:
The central command-line interface (central CLI) commands are run from the NSX Manager command line, and retrieve information from the NSX Manager and other devices. These commands can also be executed in the API.

You can insert any valid central CLI command as the command parameter. For a complete list of the central CLI commands executable through the API, please see the central CLI chapter of the NSX Command Line Interface Reference.

You must set the Accept header to text/plain.

Request:

Body: application/xml

```xml
<nsxcli>
<command>show logical-switch list host host-21 vni</command>
</nsxcli>
```
Working with Logical Inventory Details

Communication Status of a Specific Host

This feature allows the user to check the connection status between the NSX Manager and hosts. A hash map is used to hold all hosts' connection status. It keeps track of the latest heartbeat from each host. When querying a host's connection status, NSX Manager will get the latest heartbeat information to compare the last heartbeat time and current time. If the duration is longer than a threshold, it returns DOWN, otherwise it returns UP. If no last heartbeat information is found and this host has not been prepared or the netcpa version on this host is lower than 6.2.0, it will return NOT_AVAILABLE. But if no last heartbeat information is found and the host has been prepared with netcpa version no less than 6.2.0, it will return DOWN. When a host has been unprepared, its heartbeat information will be removed from the NSX Manager memory.

GET /api/2.0/vdn/inventory/host/{hostId}/connection/status

URI Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hostId</td>
<td>ID of the host to check.</td>
</tr>
</tbody>
</table>

Description:
Retrieve the status of the specified host.

History:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. Introduced hostToControllerConnectionErrors array. Deprecated fullSyncCount parameter. Parameter is still present, but always has value of -1.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

Communication Status of a List of Hosts

GET /api/2.0/vdn/inventory/hosts/connection/status

Query Parameters:
**hostId (required)**

ID of a host to check. You can provide multiple hosts with `?hostId=host1&hostId=host2`.

**Description:**
Retrieve the status of a list of hosts.

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method updated. Introduced <code>hostToControllerConnectionErrors</code> array. Deprecated <code>fullSyncCount</code> parameter. Parameter is still present, but always has value of -1.</td>
</tr>
</tbody>
</table>

**Responses:**

_status code: 200_

**Body**: application/xml

```xml
<hostConnStatusList>
  <hostConnStatuses>
    <hostConnStatus>
      <hostId>host-31</hostId>
      <nsxMgrToFirewallAgentConn>UP</nsxMgrToFirewallAgentConn>
      <nsxMgrToControlPlaneAgentConn>UP</nsxMgrToControlPlaneAgentConn>
      <hostToControllerConn>UP</hostToControllerConn>
      <fullSyncCount>-1</fullSyncCount>
    </hostConnStatus>
    <hostConnStatus>
      <hostId>host-32</hostId>
      <nsxMgrToFirewallAgentConn>UP</nsxMgrToFirewallAgentConn>
      <nsxMgrToControlPlaneAgentConn>UP</nsxMgrToControlPlaneAgentConn>
      <hostToControllerConn>DOWN</hostToControllerConn>
      <fullSyncCount>-1</fullSyncCount>
      <hostToControllerConnectionErrors>
        <hostToControllerConnectionError>
          <controllerIp>10.160.203.236</controllerIp>
          <errorCode>1255604</errorCode>
          <errorMessage>Connection Refused</errorMessage>
        </hostToControllerConnectionError>
        <hostToControllerConnectionError>
          <controllerIp>10.160.203.237</controllerIp>
          <errorCode>1235603</errorCode>
          <errorMessage>SSL Handshake Failure</errorMessage>
        </hostToControllerConnectionError>
      </hostToControllerConnectionErrors>
    </hostConnStatus>
  </hostConnStatuses>
</hostConnStatusList>
```

---

**Detailed Information about Logical Switches**

**GET /api/2.0/vdn/inventory/ui/vw**
Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>extendedAttributes</td>
<td>Display extended attributes, including active hosts, total hosts, connected VM count.</td>
</tr>
<tr>
<td>pagesize</td>
<td>Number of entries to display per page.</td>
</tr>
<tr>
<td>startindex</td>
<td>The starting point for returning results.</td>
</tr>
</tbody>
</table>

Description:
Retrieve detailed information about logical switches shown in the UI. This includes hosts and VM information for the logical switches.

Responses:

Status Code: 200
Body: application/xml

```xml
<DataPage>
  <pagingInfo>
    <pageSize>1</pageSize>
    <startIndex>0</startIndex>
    <totalCount>8</totalCount>
    <sortOrderAscending>true</sortOrderAscending>
  </pagingInfo>
  <com.vmware.vshield.vsm.vdn.dto.ui.UiVirtualWireDto>
    <objectId>virtualwire-4</objectId>
    <objectTypeName>VirtualWire</objectTypeName>
    <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
    <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
    <revision>4</revision>
    <type>
      <typeName>VirtualWire</typeName>
    </type>
    <name>Web_Tier_Logical_Switch</name>
    <description></description>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
    <isTemporal>false</isTemporal>
    <tenantId>virtual wire tenant</tenantId>
    <vdnScopeId>vdnscope-1</vdnScopeId>
    <vdsContextWithBacking>
      <switch>
        <objectId>dvs-143</objectId>
        <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
        <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
        <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
        <revision>2</revision>
        <type>
          <typeName>VmwareDistributedVirtualSwitch</typeName>
        </type>
        <name>RegionA01-vDS-MGMT</name>
        <scope>
          <id>datacenter-21</id>
          <objectTypeName>Datacenter</objectTypeName>
          <name>RegionA01</name>
        </scope>
      </switch>
    </vdsContextWithBacking>
  </com.vmware.vshield.vsm.vdn.dto.ui.UiVirtualWireDto>
</DataPage>
```
<switch>
  <objectId>dvs-40</objectId>
  <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
  <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
  <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
  <revision>18</revision>
  <type>
    <typeName>VmwareDistributedVirtualSwitch</typeName>
  </type>
  <name>RegionA01-vDS-COMP</name>
  <scope>
    <id>datacenter-21</id>
    <objectTypeName>Datacenter</objectTypeName>
    <name>RegionA01</name>
  </scope>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <isTemporal>false</isTemporal>
</switch>

<mtu>1600</mtu>
<promiscuousMode>false</promiscuousMode>
<backingType>portgroup</backingType>
<backingValue>dvportgroup-245</backingValue>
<missingOnVc>false</missingOnVc>
</vdsContextWithBacking>

<vdsContextWithBacking>
  <switch>
    <objectId>dvs-40</objectId>
    <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
    <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
    <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
    <revision>18</revision>
    <type>
      <typeName>VmwareDistributedVirtualSwitch</typeName>
    </type>
    <name>RegionA01-vDS-COMP</name>
    <scope>
      <id>datacenter-21</id>
      <objectTypeName>Datacenter</objectTypeName>
      <name>RegionA01</name>
    </scope>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
    <isTemporal>false</isTemporal>
  </switch>
  <mtu>1600</mtu>
  <promiscuousMode>false</promiscuousMode>
  <backingType>portgroup</backingType>
  <backingValue>dvportgroup-246</backingValue>
  <missingOnVc>false</missingOnVc>
</vdsContextWithBacking>

<vdnId>5000</vdnId>
<guestVlanAllowed>false</guestVlanAllowed>
<controlPlaneMode>UNICAST_MODE</controlPlaneMode>
<macLearningEnabled>false</macLearningEnabled>
<status>OK</status>
<activeHosts>1</activeHosts>
<totalHosts>6</totalHosts>
<connectedVmCount>2</connectedVmCount>
<vdnScope class="vdnScope">
  <objectId>vdnscope-1</objectId>
  <objectTypeName>VdnScope</objectTypeName>
  <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
  <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
  <revision>1</revision>
  <type>
    <typeName>VdnScope</typeName>
  </type>
  <name>RegionA01-Global-TZ</name>
  <description></description>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <isTemporal>false</isTemporal>
</vdnScope>
Detailed Information about Logical Switches in a Specific Transport Zone

GET /api/2.0/vdn/inventory/ui/scope/{scopeId}/vw

**URI Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>scopeId</td>
<td>A valid transport zone ID (vdnScope objectId). For example, vdnscope-1 or universalvdnscope.</td>
</tr>
</tbody>
</table>

**Query Parameters:**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>extendedAttributes</td>
<td>Display extended attributes, including active hosts, total hosts, connected VM count.</td>
</tr>
<tr>
<td>pagesize</td>
<td>Number of entries to display per page.</td>
</tr>
<tr>
<td>startIndex</td>
<td>The starting point for returning results.</td>
</tr>
</tbody>
</table>

**Description:**
Retrieve detailed information about logical switches shown in the UI for the specified transport zone. This includes hosts and VM information for the logical switches.

**Responses:**

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Body: application/xml</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td></td>
</tr>
</tbody>
</table>

```xml
<DataPage>
  <pagingInfo>
    <pageSize>1</pageSize>
    <startIndex>0</startIndex>
    <totalCount>8</totalCount>
    <sortOrderAscending>true</sortOrderAscending>
  </pagingInfo>
  <com.vmware.vshield.vsm.vdn.dto.ui.UiVirtualWireDto>
    <objectId>virtualwire-4</objectId>
    <objectTypeName>VirtualWire</objectTypeName>
    <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
    <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
    <revision>4</revision>
    <type>
      <typeName>VirtualWire</typeName>
    </type>
    <name>Web_Tier_Logical_Switch</name>
    <description></description>
    <clientHandle></clientHandle>
    <extendedAttributes></extendedAttributes>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
  </com.vmware.vshield.vsm.vdn.dto.ui.UiVirtualWireDto>
</DataPage>
```
<switch>
  <objectId>dvs-143</objectId>
  <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
  <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
  <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
  <revision>21</revision>
  <type>
    <typeName>VmwareDistributedVirtualSwitch</typeName>
  </type>
  <name>RegionA01-vDS-MGMT</name>
  <scope>
    <id>datacenter-21</id>
    <objectTypeName>Datacenter</objectTypeName>
    <name>RegionA01</name>
  </scope>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <isTemporal>false</isTemporal>
</switch>

<mtu>1600</mtu>
<promiscuousMode>false</promiscuousMode>
<backingType>portgroup</backingType>
<backingValue>dvportgroup-245</backingValue>
<missingOnVc>false</missingOnVc>
</vdsContextWithBacking>

<switch>
  <objectId>dvs-40</objectId>
  <objectTypeName>VmwareDistributedVirtualSwitch</objectTypeName>
  <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
  <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
  <revision>18</revision>
  <type>
    <typeName>VmwareDistributedVirtualSwitch</typeName>
  </type>
  <name>RegionA01-vDS-COMP</name>
  <scope>
    <id>datacenter-21</id>
    <objectTypeName>Datacenter</objectTypeName>
    <name>RegionA01</name>
  </scope>
  <clientHandle></clientHandle>
  <extendedAttributes></extendedAttributes>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <isTemporal>false</isTemporal>
</switch>

<mtu>1600</mtu>
<promiscuousMode>false</promiscuousMode>
<backingType>portgroup</backingType>
<backingValue>dvportgroup-246</backingValue>
<missingOnVc>false</missingOnVc>
</vdsContextWithBacking>

<vdnId>5000</vdnId>
<guestVlanAllowed>false</guestVlanAllowed>
<controlPlaneMode>UNICAST_MODE</controlPlaneMode>
<macLearningEnabled>false</macLearningEnabled>
<status>OK</status>
<activeHosts>1</activeHosts>
<totalHosts>6</totalHosts>
<connectedVmCount>2</connectedVmCount>
<vdnScope class="vdnScope">
  <objectId>vdnscope-1</objectId>
  <objectTypeName>VdnScope</objectTypeName>
  <vsmUuid>42080AD5-D890-04C9-31C2-8A457C5588ED</vsmUuid>
  <nodeId>6ff72733-03cd-4603-b7c2-bdd38c769753</nodeId>
  <revision>1</revision>
  <type>
    <typeName>VdnScope</typeName>
  </type>
  <name>RegionA0-Global-TZ</name>
  <description/>
  <clientHandle/>
  <extendedAttributes/>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <isTemporal>false</isTemporal>
  <virtualWireCount>0</virtualWireCount>
  <cdoModeEnabled>false</cdoModeEnabled>
</vdnScope>
</com.vmware.vshield.vsm.vdn.dto.ui.UiVirtualWireDto>
</DataPage>
Working With Hardware Gateways

GET /api/2.0/vdn/hardwaregateways

Description:
Retrieve information about all hardware gateways.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<list>
  <hardwareGateway>
    <objectId>torgateway-1</objectId>
    <revision>0</revision>
    <name>torgateway1</name>
    <description>this is tor instance 1</description>
    <clientHandle></clientHandle>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
    <uuid>6536bcf5-2f55-47f6-8b26-9fa632061d8c</uuid>
    <status>UP</status>
    <bfdEnabled>true</bfdEnabled>
    <bindingCount>2</bindingCount>
  </hardwareGateway>
  <hardwareGateway>
    <objectId>torgateway-2</objectId>
    <revision>0</revision>
    <name>torgateway2</name>
    <description>this is tor instance 2</description>
    <clientHandle></clientHandle>
    <isUniversal>false</isUniversal>
    <universalRevision>0</universalRevision>
    <uuid>f1e9b733-c0c3-4905-b00d-4bd6d8649f48</uuid>
    <status>UP</status>
    <bfdEnabled>true</bfdEnabled>
    <managementIp>10.116.251.149</managementIp>
    <bindingCount>2</bindingCount>
  </hardwareGateway>
</list>
```

POST /api/2.0/vdn/hardwaregateways

Description:
Install a hardware gateway.
**bfdEnabled** is true by default.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**
- **Body**: application/xml

```xml
<hardwareGatewaySpec>
  <name></name>
  <description></description>
  <certificate></certificate>
  <bfdEnabled></bfdEnabled>
</hardwareGatewaySpec>
```

---

**Working With a Specific Hardware Gateway**

**GET /api/2.0/vdn/hardwaregateways/{hardwareGatewayId}**

**URI Parameters:**
- **hardwareGatewayId** *(required)*
  - Object ID of the hardware gateway.

**Description:**
Retrieve information about the specified hardware gateway.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**
- **Status Code**: 200
- **Body**: application/xml

```xml
<objectGateway>
  <objectId>torgateway-1</objectId>
  <revision>0</revision>
  <name>torgateway1</name>
  <description>this is tor instance 1</description>
  <clientHandle></clientHandle>
  <isUniversal>false</isUniversal>
  <universalRevision>0</universalRevision>
  <uid>6536bcf5-2f55-47f6-8b26-9fa632061d8c</uid>
  <status>UP</status>
  <bfdEnabled>true</bfdEnabled>
</objectGateway>
```
PUT /api/2.0/vdn/hardwaregateways/{hardwareGatewayId}

URI Parameters:

| hardwareGatewayId  | (required) | Object ID of the hardware gateway. |

Description:
Update the specified hardware gateway.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:

**Body:** application/xml

```xml
<hardwareGatewaySpec>
  <name></name>
  <description></description>
  <certificate></certificate>
  <bfdEnabled></bfdEnabled>
</hardwareGatewaySpec>
```

DELETE /api/2.0/vdn/hardwaregateways/{hardwareGatewayId}

URI Parameters:

| hardwareGatewayId  | (required) | Object ID of the hardware gateway. |

Description:
Delete the specified hardware gateway.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

---

Working With Switches on a Specific Hardware Gateway

GET /api/2.0/vdn/hardwaregateways/{hardwareGatewayId}/switches

URI Parameters:

| hardwareGatewayId  | (required) | Object ID of the hardware gateway. |

---

NSX API Guide Version: 6.3
Description:
Retrieve information about switches on the specified hardware gateway.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<hardwareGatewaySwitches>
  <hardwareGatewaySwitch>
    <switchname>1-switch-579</switchname>
    <description></description>
    <faults></faults>
  </hardwareGatewaySwitch>
  <hardwareGatewayId>torgateway-1</hardwareGatewayId>
</hardwareGatewaySwitches>
```

Working With a Specific Switch on a Specific Hardware Gateway

Working With Ports on a Specific Switch on a Specific Hardware Gateway

GET /api/2.0/vdn/hardwaregateways/{hardwareGatewayId}/switches/{switchName}/switchports

<table>
<thead>
<tr>
<th>URI Parameters:</th>
</tr>
</thead>
<tbody>
<tr>
<td>switchName (required)</td>
</tr>
<tr>
<td>hardwareGatewayId (required)</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about the hardware gateway switch ports for the specified switch and hardware gateway.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml
<hardwareGatewaySwitchPorts>
  <hardwareGatewaySwitchPort>
    <portname>p4</portname>
    <description></description>
    <faults></faults>
  </hardwareGatewaySwitchPort>
  <hardwareGatewaySwitchPort>
    <portname>p3</portname>
    <description></description>
    <faults></faults>
  </hardwareGatewaySwitchPort>
  <hardwareGatewaySwitchPort>
    <portname>p2</portname>
    <description></description>
    <faults></faults>
  </hardwareGatewaySwitchPort>
  <hardwareGatewaySwitchPort>
    <portname>p1</portname>
    <description></description>
    <faults></faults>
  </hardwareGatewaySwitchPort>
  <hardwareGatewaySwitch>
    <switchname>1-switch-579</switchname>
  </hardwareGatewaySwitch>
  <hardwareGatewayId>torgateway-1</hardwareGatewayId>
</hardwareGatewaySwitchPorts>

---

**Working With the Hardware Gateway Replication Cluster**

GET /api/2.0/vdn/hardwaregateways/replicationcluster

**Description:**
Retrieve information about the hardware gateway replication cluster.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

**Status Code:** 200

**Body:** application/xml

```xml
<replicationCluster>
  <hosts>
    <basicinfo>
      <objectId>host-26</objectId>
      <objectTypeName>HostSystem</objectTypeName>
      <vsmUuid>422874E3-6873-972C-DE9E-67D58846042E</vsmUuid>
      <nodeId>e5a97efd-89e1-44b1-bfe8-9d07a8d92f08</nodeId>
    </basicinfo>
  </hosts>
</replicationCluster>
```
PUT /api/2.0/vdn/hardwaregateways/replicationcluster
Description:
Update the hardware gateway replication cluster.
Add or remove hosts on a replication cluster.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml

```xml
<replicationCluster>
  <hosts>
    <basicinfo>
      <objectId>host-20</objectId>
    </basicinfo>
    <basicinfo>
      <objectId>host-21</objectId>
    </basicinfo>
    <basicinfo>
      <objectId>host-26</objectId>
    </basicinfo>
  </hosts>
</replicationCluster>
```
Working With Hardware Gateway Bindings and BFD

Working With Hardware Gateway Bindings

GET /api/2.0/vdn/hardwaregateway/bindings

Query Parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>hardwareGatewayId (optional)</td>
<td>ID of the hardware gateway.</td>
</tr>
<tr>
<td>vni (optional)</td>
<td>VNI of the logical switch.</td>
</tr>
</tbody>
</table>

Description:
Retrieve information about hardware gateway bindings.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:

Status Code: 200
Body: application/xml

POST /api/2.0/vdn/hardwaregateway/bindings

Description:
Create a hardware gateway binding.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:

Body: application/xml
<hardwareGatewayBinding>
  <hardwareGatewayId>hardwaregateway1</hardwareGatewayId>
  <vlan>201</vlan>
  <switchName>s1</switchName>
  <portName>s1</portName>
  <virtualWire>virtualwire-1</virtualWire>
</hardwareGatewayBinding>

## Working With a Specific Hardware Gateway Binding

**GET /api/2.0/vdn/hardwaregateway/bindings/{bindingId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>bindingId</th>
<th>(required)</th>
<th>hardware gateway binding ID.</th>
</tr>
</thead>
</table>

**Description:**
Retrieve information about the specified hardware gateway binding.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**PUT /api/2.0/vdn/hardwaregateway/bindings/{bindingId}**

**URI Parameters:**

<table>
<thead>
<tr>
<th>bindingId</th>
<th>(required)</th>
<th>hardware gateway binding ID.</th>
</tr>
</thead>
</table>

**Description:**
Update the specified hardware gateway binding.

You can update the binding parameters. This API will fail if:
- the specified `hardwareGatewayId` does not exist.
- the specified logical switch (`virtualWire`) is not present or there is a software gateway on the binding.
- the new binding value is a duplicate of an existing binding.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Request:**

**Body:** application/xml

```xml
<hardwareGatewayBinding>
  <hardwareGatewayId>hardwaregateway1</hardwareGatewayId>
  <vlan>201</vlan>
  <switchName>s1</switchName>
  <portName>s1</portName>
  <virtualWire>virtualwire-1</virtualWire>
</hardwareGatewayBinding>
```
DELETE /api/2.0/vdn/hardwaregateway/bindings/{bindingId}

**URI Parameters:**

| bindingId  | (required) | hardware gateway binding ID. |

**Description:**
Delete the specified hardware gateway binding.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

---

**Working With Hardware Gateway Binding Statistics**

GET /api/2.0/vdn/hardwaregateway/bindings/{bindingId}/statistic

**URI Parameters:**

| bindingId  | (required) | hardware gateway binding ID. |

**Description:**
Retrieve statistics for the specified hardware gateway binding.

**Method history:**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

**Responses:**

- **Status Code:** 200
- **Body:** application/xml

```xml
<hardwareGatewayStats>
  <bindingId>hwgwbinding-5</bindingId>
  <timestamp>long type timestamp for this query response</timestamp>
  <packetsFromLocal>23431</packetsFromLocal>
  <bytesFromLocal>734754</bytesFromLocal>
  <packetsToLocal>2343</packetsToLocal>
  <bytesToLocal>74364</bytesToLocal>
</hardwareGatewayStats>
```
Working With Hardware Gateway Binding Objects

POST /api/2.0/vdn/hardwaregateway/bindings/manage

Description:
Manage hardware gateway binding objects.

Use this API to attach, detach, and update multiple bindings in a single API call. This API accepts three lists for add, update, and delete. Each list accepts a hardwareGatewayManageBindingItem with a full description of the new binding with its objectID. This API handles a maximum of 100 HardwareGatewayManageBindingItem objects for each of the Add/Update/Delete lists.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<hardwareGatewayManageBindings>
  <addItems>
    <hardwareGatewayManageBindingItem>
      <hardwareGatewayId></hardwareGatewayId>
      <virtualWireId></virtualWireId>
      <switchName></switchName>
      <portname></portname>
      <vlan></vlan>
      <virtualWire></virtualWire>
    </hardwareGatewayManageBindingItem>
  </addItems>
  <updateItems>
    <hardwareGatewayManageBindingItem>
      <objectId></objectId>
      <hardwareGatewayId></hardwareGatewayId>
      <virtualWireId></virtualWireId>
      <switchName></switchName>
      <portname></portname>
      <vlan></vlan>
      <virtualWire></virtualWire>
    </hardwareGatewayManageBindingItem>
  </updateItems>
  <deleteItems>
    <hardwareGatewayManageBindingItem>
      <objectId></objectId>
    </hardwareGatewayManageBindingItem>
  </deleteItems>
</hardwareGatewayManageBindings>
```

Working With Hardware Gateway BFD (Bidirectional Forwarding Detection)
Working With Hardware Gateway BFD Configuration

GET /api/2.0/vdn/hardwaregateway/bfd/config

Description:
Retrieve global hardware gateway BFD configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<hardwareGatewayBfdParams>
  <bfdEnabled>true</bfdEnabled>
  <probeInterval>100</probeInterval>
</hardwareGatewayBfdParams>
```

PUT /api/2.0/vdn/hardwaregateway/bfd/config

Description:
Update global hardware gateway BFD configuration.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Request:
Body: application/xml

```xml
<hardwareGatewayBfdParams>
  <bfdEnabled>true</bfdEnabled>
  <probeInterval>100</probeInterval>
</hardwareGatewayBfdParams>
```

Working With Hardware Gateway BFD Tunnel Status

GET /api/2.0/vdn/hardwaregateway/bfd/status
Description:
Retrieve hardware gateway BFD tunnel status for all tunnel endpoints, including hosts and hardware gateways.

Method history:

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2.3</td>
<td>Method introduced.</td>
</tr>
</tbody>
</table>

Responses:
Status Code: 200
Body: application/xml

```xml
<hardwareGatewayBfdStatusList>
  <statuses>
    <hardwareGatewayBfdStatus>
      <probeSourceId>torgateway-2</probeSourceId>
      <bfdTunnelList>
        <bfdTunnelStatus>
          <diagnostic>Neighbor Signaled Session Down</diagnostic>
          <enabled>true</enabled>
          <forwarding>true</forwarding>
          <info/>
          <localVtepIp>172.21.145.84</localVtepIp>
          <remoteDiagnostic>Control Detection Time Expired</remoteDiagnostic>
          <remoteState>UP</remoteState>
          <remoteVtepIp>172.19.152.226</remoteVtepIp>
          <state>UP</state>
        </bfdTunnelStatus>
        <bfdTunnelStatus>
          <diagnostic>Neighbor Signaled Session Down</diagnostic>
          <enabled>true</enabled>
          <forwarding>true</forwarding>
          <info/>
          <localVtepIp>172.21.145.84</localVtepIp>
          <remoteDiagnostic>Control Detection Time Expired</remoteDiagnostic>
          <remoteState>UP</remoteState>
          <remoteVtepIp>172.18.171.169</remoteVtepIp>
          <state>UP</state>
        </bfdTunnelStatus>
        <bfdTunnelStatus>
          <diagnostic>Neighbor Signaled Session Down</diagnostic>
          <enabled>true</enabled>
          <forwarding>true</forwarding>
          <info/>
          <localVtepIp>172.21.145.84</localVtepIp>
          <remoteDiagnostic>Control Detection Time Expired</remoteDiagnostic>
          <remoteState>UP</remoteState>
          <remoteVtepIp>172.18.171.168</remoteVtepIp>
          <state>UP</state>
        </bfdTunnelStatus>
      </bfdTunnelList>
    </hardwareGatewayBfdStatus>
    <hardwareGatewayBfdStatus>
      <probeSourceId>torgateway-1</probeSourceId>
      <bfdTunnelList>
        <bfdTunnelStatus>
          <diagnostic>Control Detection Time Expired</diagnostic>
          <enabled>true</enabled>
          <forwarding>true</forwarding>
          <info/>
          <localVtepIp>172.21.145.84</localVtepIp>
          <remoteDiagnostic>Control Detection Time Expired</remoteDiagnostic>
          <remoteState>UP</remoteState>
          <remoteVtepIp>172.18.171.168</remoteVtepIp>
        </bfdTunnelStatus>
      </bfdTunnelList>
    </hardwareGatewayBfdStatus>
  </statuses>
</hardwareGatewayBfdStatusList>
```
<info></info>
<localVtepIp>172.21.145.85</localVtepIp>
<remoteDiagnostic>Control Detection Time Expired</remoteDiagnostic>
<remoteState>UP</remoteState>
<remoteVtepIp>172.19.152.226</remoteVtepIp>
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<remoteState>UP</remoteState>
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</ bfdTunnelStatus>
</bfdTunnelList>
</hardwareGatewayBfdStatus>
</statuses>
</hardwareGatewayBfdStatusList>
Appendix

Status Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 OK</td>
<td>The request was valid and has been completed. Generally, this response is accompanied by a body document (XML).</td>
</tr>
<tr>
<td>201 Created</td>
<td>The request was completed and new resource was created. The Location header of the response contains the URI of newly created resource.</td>
</tr>
<tr>
<td>204 No Content</td>
<td>Same as 200 OK, but the response body is empty (No XML).</td>
</tr>
<tr>
<td>400 Bad Request</td>
<td>The request body contains an invalid representation or the representation of the entity is missing information. The response is accompanied by Error Object (XML).</td>
</tr>
<tr>
<td>401 Unauthorized</td>
<td>An authorization header was expected. Request with invalid or missing NSX Manager Token.</td>
</tr>
<tr>
<td>403 Forbidden</td>
<td>The user does not have enough privileges to access the resource.</td>
</tr>
<tr>
<td>404 Not Found</td>
<td>The resource was not found. The response is accompanied by Error Object (XML).</td>
</tr>
<tr>
<td>415 Unsupported Media Type</td>
<td>The required <strong>Accept</strong> or <strong>Content-type</strong> header is missing or incorrect.</td>
</tr>
<tr>
<td>500 Internal Server Error</td>
<td>Unexpected error with the server. The response is accompanied by Error Object (XML).</td>
</tr>
<tr>
<td>503 Service Unavailable</td>
<td>Cannot proceed with the request, because some of the services are unavailable. Example: NSX Edge is Unreachable. The response is accompanied by Error Object (XML).</td>
</tr>
</tbody>
</table>

Error Messages

There are three type of errors returned by NSX Manager:

**Error With Single Message**

```xml
<error>
  <details>[Routing] Default Originate cannot be enabled on BGP from edge version 6.3.0 onwards.</details>
  <errorCode>13100</errorCode>
  <moduleName>vShield Edge</moduleName>
</error>
```

**Error With Multiple Error Messages**
Error With Message and Error Data

<error>
  <details>Invalid IP Address input 44.4-44.5 for field ipPools.ipPools[0].ipRange.</details>
  <errorCode>15012</errorCode>
  <moduleName>vShield Edge</moduleName>
  <errorData>
    <data>
      <key>leafNode</key>
      <value>
        <autoConfigureDNS>true</autoConfigureDNS><ipRange>44.4-44.5</ipRange></value>
    </data>
  </errorData>
</error>

API Removals and Behavior Changes

This section lists API removals and behavior changes. See Method history information throughout the NSX API Guide for details of other changes, such as parameter additions.

Behavior Changes in NSX 6.3.5

NSX 6.3.5 introduces these changes in error handling:

- If an API request results in a database exception on the NSX Manager, the response is 500 Internal server error. In previous releases, NSX Manager responded with 200 OK, even though the request failed.
- If you send an API request with an empty body when a request body is expected, the response is 400 Bad request. In previous releases NSX Manager responded with 500 Internal server error.
- If you specify an incorrect security group in this API, GET /api/2.0/services/policy/securitygroup/{ID}/securitypolicies, the response is 404 Not found. In previous releases NSX Manager responded with 200 OK.

Behavior Changes in NSX 6.3.3

Starting in 6.3.3, the defaults for two backup and restore parameters have changed to match the defaults in the UI. Previously passiveMode and useEPSV defaulted to false, now they default to true. This affects the following APIs:

- PUT /api/1.0/appliance-management/backuprestore/backupsettings
- PUT /api/1.0/appliance-management/backuprestore/backupsettings/ftpsettings

Removed in NSX 6.3.0

SSL VPN web access removed.
GET, POST, DELETE /api/4.0/edges/{edgeId}/sslvpn/config/webresources
GET, PUT, DELETE /api/4.0/edges/{edgeId}/sslvpn/config/webresources/{id}

Removed in NSX 6.2.3
ISIS removed from NSX Edge routing.
GET, PUT, DELETE /api/4.0/edges/{edge-id}/routing/config/isis
GET, PUT /api/4.0/edges/{edge-id}/routing/config

PUT /api/1.0/appliance-management/certificatemanager/csr/nsx removed.
Replaced with POST /api/1.0/appliance-management/certificatemanager/csr/nsx.

**Removed in NSX 6.0**

<table>
<thead>
<tr>
<th>Removed API</th>
<th>Alternative API</th>
</tr>
</thead>
<tbody>
<tr>
<td>/api/2.0/global/heartbeat</td>
<td>/api/1.0/appliance-management/global/info</td>
</tr>
<tr>
<td>/api/2.0/global/config</td>
<td>/api/2.0/services/vcconfig</td>
</tr>
<tr>
<td></td>
<td>/api/2.0/services/ssoconfig</td>
</tr>
<tr>
<td></td>
<td>/api/1.0/appliance-management/system/network/dns</td>
</tr>
<tr>
<td></td>
<td>/api/1.0/appliance-management/system/timesettings</td>
</tr>
<tr>
<td>/api/2.0/global/vcInfo</td>
<td>/api/2.0/services/vcconfig</td>
</tr>
<tr>
<td>/api/2.0/global/techsupportlogs</td>
<td>/api/1.0/appliance-management/techsupportlogs/NSX</td>
</tr>
<tr>
<td>/api/2.0/vdn/map/cluster/clusterId</td>
<td></td>
</tr>
<tr>
<td>/api/2.0/services/usermgmt/securityprofile</td>
<td></td>
</tr>
</tbody>
</table>