

Monitoring and Alerting

VMware Validated Design 4.0

VMware Validated Design for Software-Defined Data
Center 4.0



vmware®

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docfeedback@vmware.com

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About VMware Validated Design Monitoring and Alerting

VMware Validated Design Monitoring and Alerting provides step-by-step instructions about configuring vRealize Operations Manager and vRealize Log Insight for monitoring of the operations in the SDDC. This documentation also discusses enabling notifications about issues in your environment and operating a software-defined data center (SDDC) based on the VMware Validated Design™ for Software-Defined Data Center.

After you deploy the Software-Defined Data Center from this VMware Validated Design, you can monitor the parameters that are most important for environment management by using a set of dashboards for alerts and log events.

Intended Audience

The *VMware Validated Design Monitoring and Alerting* documentation is intended for cloud architects, infrastructure administrators, cloud administrators and cloud operators who are familiar with and want to use VMware software to deploy in a short time and manage an SDDC that meets the requirements for capacity, scalability, backup and restore, and extensibility for disaster recovery support.

Required VMware Software

VMware Validated Design Monitoring and Alerting is compliant and validated with certain product versions. See *VMware Validated Design Release Notes* for more information about supported product versions.

Enabling Alerts in vRealize Log Insight



Use the vRealize Log Insight known event signature engine to monitor key events. You can use a set of alerts to send to vRealize Operations Manager and via SMTP for operations team notification.

The integration between vRealize Log Insight and vRealize Operations Manager allows for implementing the following cross-product event tracking:

- Sending alerts from vRealize Log Insight to vRealize Operations Manager, which automatically maps them to the target objects
- Launching in context from a vRealize Operations Manager object to the objects logs in vRealize Log Insight
- Launching in context from a vRealize Log Insight event to the objects in vRealize Operations Manager

For applications that are failed over between regions, such as vRealize Automation and vRealize Operations Manager, configure alerting in both regions to avoid missing any alerts when applications move between regions.

Procedure

1 [View the Full List of Alerts for a Management Product](#)

Explore the alerts and queries that are available in vRealize Log Insight for the management products in the SDDC such as vSphere, NSX for vSphere, vRealize Automation, and so on. The alerts and queries are handled by the content packs for these products.

2 [Enable the Alerts for vSphere Resources](#)

Use the built-in problem and alert signatures in vRealize Log Insight for ESXi host and vCenter Server to enable alerts about issues.

3 [Enable the Alerts for Storage Resources](#)

Use the inbuilt problem and alert signatures in vRealize Log Insight for storage monitoring.

4 [Enable the Alerts for vSAN](#)

Use the built-in problem and alert signatures in vRealize Log Insight for vSAN monitoring.

5 [Enable the Alerts for vSphere Networking](#)

Use the inbuilt problem and alert signatures in vRealize Log Insight for networking to enable alerts about issues.

6 [Enable the Alerts for NSX for vSphere](#)

Use the inbuilt problem and alert signatures in vRealize Log Insight for NSX for vSphere.

7 [Enable the Alerts for vRealize Operations Manager](#)

Use the built-in problem and alert signatures in vRealize Log Insight for vRealize Operations Manager.

8 [Enable the Alerts for vRealize Automation](#)

Use the inbuilt problem and alert signatures in vRealize Log Insight for vRealize Automation.

9 [Enable the Alerts for vRealize Orchestrator](#)

Use the inbuilt problem and alert signatures in vRealize Log Insight for vRealize Orchestrator.

View the Full List of Alerts for a Management Product

Explore the alerts and queries that are available in vRealize Log Insight for the management products in the SDDC such as vSphere, NSX for vSphere, vRealize Automation, and so on. The alerts and queries are handled by the content packs for these products.

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

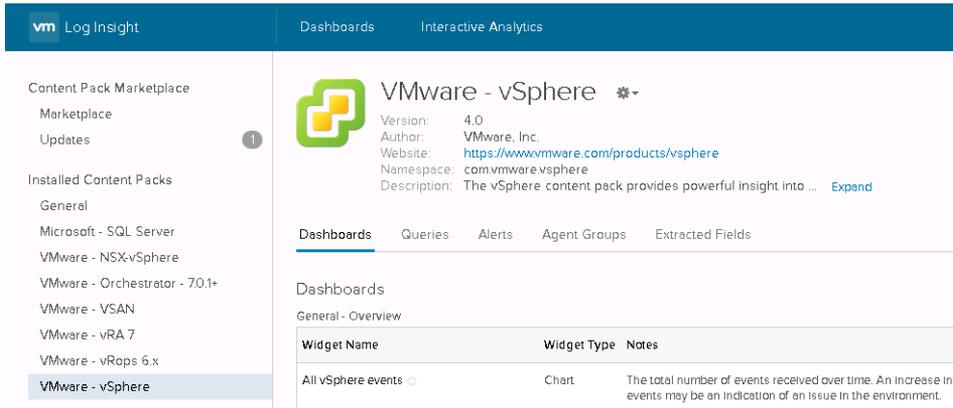
Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

- b Log in using the following credentials.

Setting	Value
User name	admin
Password	<i>vrli_admin_password</i>

2 Locate the content pack for the management product.

- a In the vRealize Log Insight UI, click the configuration drop-down menu icon  and select **Content Packs**.
- b Under **Installed Content Packs**, select the pack.
- c Click **Alerts** or **Queries** to view the full list of alerts for the product.



Enable the Alerts for vSphere Resources

Use the built-in problem and alert signatures in vRealize Log Insight for ESXi host and vCenter Server to enable alerts about issues.

For basic monitoring the vSphere components, use the following alerts:

Table 1-1. vSphere Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
*** CRITICAL *** Hardware: Physical event detected	The purpose of this widget is to notify when the following physical hardware events have been detected, which indicates a hardware problem. Under most normal conditions, this widget should return no results. The following types of hardware events are returned: <ul style="list-style-type: none"> ■ Advanced Programmable Interrupt Controller (APIC) ■ Machine Check Exception (MCE) ■ Non-Maskable Interrupt (NMI) 	Critical
Hardware: Faulty memory detected	During the previous boot of an ESXi host faulty memory was detected. Unless a corresponding corrected message is seen, the memory should be replaced.	Critical
*** CRITICAL *** ESX/ESXi: Core dump detected	A core dump has been detected, which indicates the failure of a component in ESX/ESXi. This issue may lead to VM crashes and/or host PSODs.	Critical

Table 1-1. vSphere Alerts in vRealize Log Insight (Continued)

Alert Name	Purpose	Severity
*** CRITICAL *** ESX/ESXi: Stopped logging	The purpose of this alert is to notify when an ESXi host has stopped sending syslog to a remote server.	Critical
*** CRITICAL *** ESX/ESXi: RAM disk / inode table is full	A root file system has reached its resource pool limit. Various administrative actions depend on the ability to write files to various parts of the root file system and might fail if the RAM disk and/or inode table is full.	Critical
ESX/ESXi: HA isolated events by hostname	During a health check, HA determined that a host was isolated. Depending on how HA is configured this may mean that VMs have been failed over from the isolated host.	Critical
vCenter Server: HA connection failure detected	A HA cluster has detected one or more unresponsive ESXi hosts. If the host(s) are marked as dead, then VMs running on those hosts will be migrated to other systems.	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

- b Log in using the following credentials.

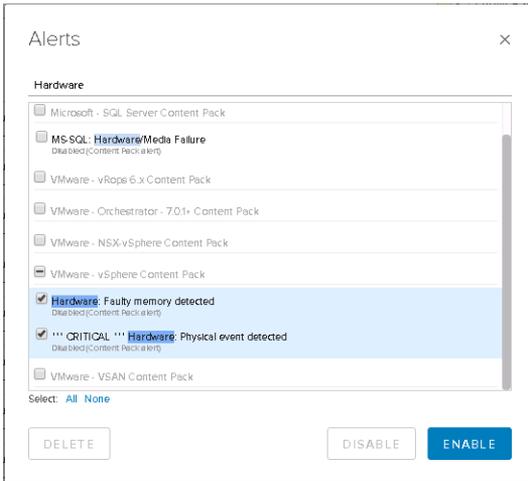
Setting	Value
User name	admin
Password	<i>vrli_admin_password</i>

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.

4 Select the alerts that are related to vSphere.

- a In the search box of the **Alerts** dialog box, enter **Hardware**, **ESX/ESXi** or **vCenter Server** as a search phrase
- b Select the following alerts from the results.

Alert
vCenter Server: HA connection failure detected
Hardware: Faulty memory detected
*** CRITICAL *** ESX/ESXi: Core dump detected
*** CRITICAL *** ESX/ESXi: Stopped logging
*** CRITICAL *** Hardware: Physical event detected
*** CRITICAL *** ESX/ESXi: RAM disk / inode table is full
ESX/ESXi: HA isolated events by hostname



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings and click **Enable**.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	SFO01	LAX01
Criticality	critical	critical

Enable Alerts

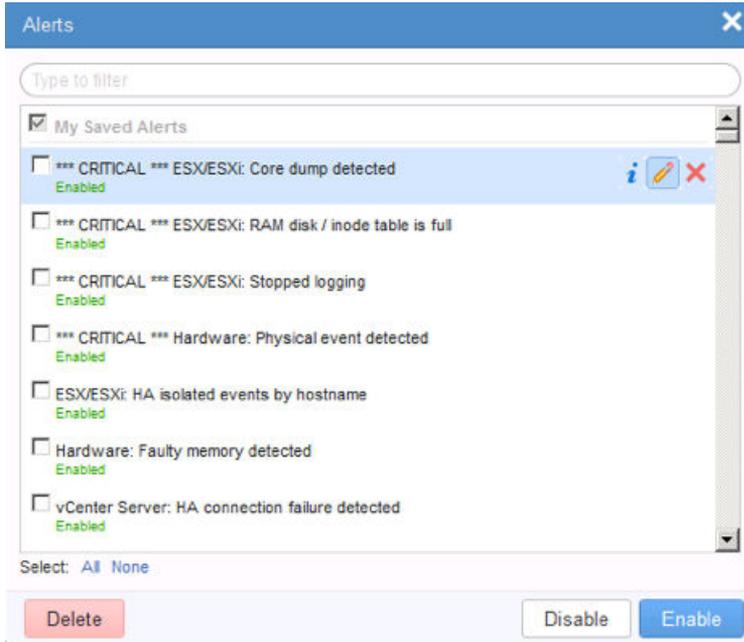
The following alerts will be enabled and saved to My Alerts:

vCenter Server: HA connection failure detected
 Hardware: Faulty memory detected
 *** CRITICAL *** ESX/ESXi: Core dump detected
 *** CRITICAL *** ESX/ESXi: Stopped logging
 *** CRITICAL *** Hardware: Physical event detected
 *** CRITICAL *** ESX/ESXi: RAM disk / inode table is full
 ESX/ESXi: HA isolated events by hostname

- Email ops-team@rainpole.com
- Webhook URLs separated by spaces
- Send to vRealize Operations Manager
- Fallback Object: SFO01 SELECT... ⓘ
- Criticality: critical ▾
- Auto Cancel

CANCEL
ENABLE

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled vSphere alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.



- c Repeat the steps for the other enabled alerts.
 - d Close the **Alerts** dialog box.
- 7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable the alerts for the LAX01 data center.

Enable the Alerts for Storage Resources

Use the inbuilt problem and alert signatures in vRealize Log Insight for storage monitoring.

For monitoring storage in the Software-Defined Data Center, you can use the following alerts in vRealize Log Insight:

Table 1-2. Storage Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
*** CRITICAL *** Storage: All Paths Down (APD)	One or more datastores has experienced an All Paths Down (APD) outage situation. This indicates that one or more datastores is or was unavailable. As a result of this issue, VMs are or were unavailable and ESX/ESXi hosts may have been disconnected from vCenter Server. This issue requires immediate attention.	Critical
*** CRITICAL *** Storage: VSAN device offline	A Virtual SAN storage device that backs up the datastores might fail. This occurs due to a faulty device firmware, physical media, or storage controller or when certain storage devices are not readable or writeable. Typically, such failures are irreversible. In some instances, permanent data loss might also occur, especially when data is not replicated on other nodes before failure. Virtual SAN automatically recovers data when new devices are added to the storage cluster, unless data lost is permanent.	Critical
Storage: NFS connectivity issue	The purpose of this alert is to notify when an NFS connectivity issue was detected. This means an NFS datastore is or was unavailable. Do to this issue, one or more VMs may be unavailable.	Critical
Storage: NFS lock file issue	The purpose of this alert is to notify when an NFS lock file issue has been detected. Stale NFS lock files can prevent VMs from powering on.	

Table 1-2. Storage Alerts in vRealize Log Insight (Continued)

Alert Name	Purpose	Severity
Storage SCSI Path dead	The purpose of this alert is to notify when a SCSI path has become unavailable. Assuming multiple paths are in use and the other paths are online this means reduced redundancy and performance. If all paths to a storage device become unavailable then VMs running on the storage device will become unavailable.	Critical
Storage: Snapshot consolidation required	The purpose of this alert is to notify when a snapshot consolidation is required. A failed snapshot consolidation operation that is not manually addressed can lead to a full datastore.	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

- b Log in using the following credentials.

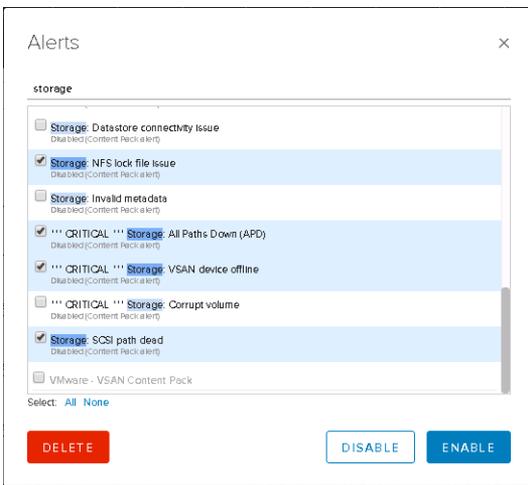
Setting	Value
User name	admin
Password	<i>vrli_admin_password</i>

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.

4 Select the alerts that are storage related.

- a In the search box of the **Alerts** dialog box, enter **storage** as a search phrase.
- b Select the following alerts from the results.

Alert
*** CRITICAL *** Storage: All Paths Down (APD)
*** CRITICAL *** Storage: VSAN device offline
Storage: NFS connectivity issue
Storage: NFS lock file issue
Storage SCSI Path dead
Storage: Snapshot consolidation required



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings and click **Enable**.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	SFO01	LAX01
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

Storage: NFS connectivity issue
 Storage: Snapshot consolidation required
 Storage: NFS lock file issue
 *** CRITICAL *** Storage: All Paths Down (APD)
 *** CRITICAL *** Storage: VSAN device offline
 Storage: SCSI path dead

Email Email address(es) separated by commas

Webhook URLs separated by spaces

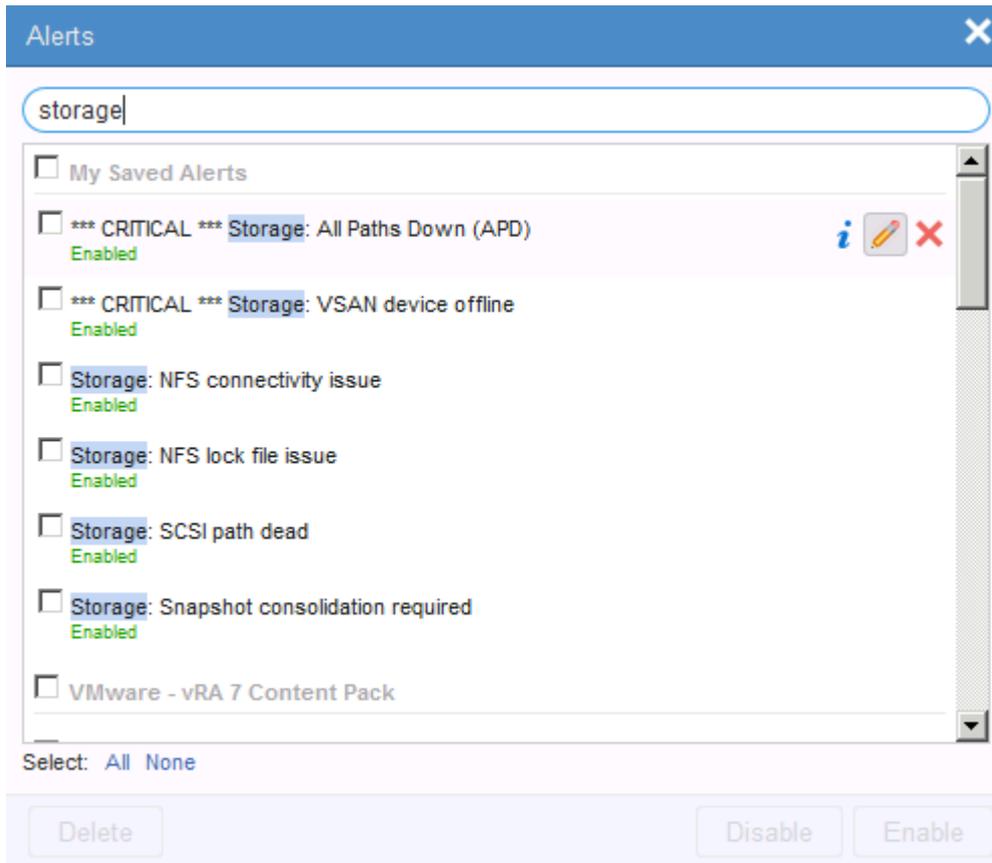
Send to vRealize Operations Manager

Fallback Object: ⓘ

Criticality: ▼

Auto Cancel

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled Storage Resources alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.

Edit Alert

Name ***** CRITICAL *** Storage: All Paths Down (APD)**

Notes **B I U**
 One or more datastores has experienced an All Paths Down (APD) outage situation. This indicates that one or more datastores is or was unavailable. As a result of this issue, VMs are or were unavailable and ESX/ESXi hosts may have been disconnected from vCenter Server. This

Notify:

Email ops-team@rainpole.com

Webhook URLs separated by spaces

Send to vRealize Operations Manager

Fallback Object: SFO01 SELECT... Criticality: critical

Auto Cancel

SEND TEST ALERT

Raise an alert:

On any match

When an event is seen for the first time in the last Custom 15 minutes

When more than 1 matches are found in the last 15 Minutes

The query will run every 5 minutes and will only alert once for the defined threshold above.

No results

EDIT QUERY CANCEL SAVE

- c Repeat the steps for the other enabled alerts.
 - d Close the **Alerts** dialog box.
- 7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable alerts for the LAX01 data center.

Enable the Alerts for vSAN

Use the built-in problem and alert signatures in vRealize Log Insight for vSAN monitoring.

For monitoring vSAN in the Software-Defined Data Center, you can use the following alerts in vRealize Log Insight:

Table 1-3. vSAN Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
VSAN - SSD health change to unhealthy state	This alert will fire when the state of any SSD changes to unhealthy. The reason could be either because of permanent disk failure, disk decommissioning, node shutdown, etc.	Critical
VSAN - Configuration failure - Insufficient space	This alert indicates that we cannot create a configuration for a new object(VM) in the VSAN cluster because sufficient space is not available in the cluster. If we see this error, please check the error logs and try the provisioning operation after adding new hosts/disks.	Critical
VSAN - Device offline	This alarm will trigger if a particular device goes offline. In this case, please check the device configuration and other cluster state.	Critical
VSAN - Object component state changed to degraded	This alert will be triggered when VSAN object state changes to degraded state. Check the state of the adapters, disks and network settings associated with the VSAN cluster.	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

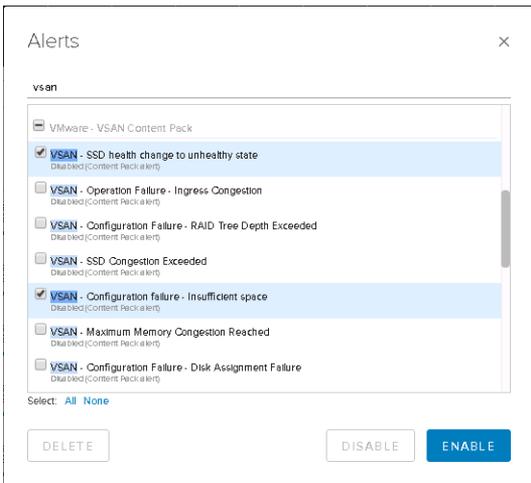
- b Log in using the following credentials.

Setting	Value
User name	admin
Password	<i>vrli_admin_password</i>

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.

- 4 Select the alerts that are vSAN related.
 - a In the search box of the **Alerts** dialog box, enter **vsan** as a search phrase.
 - b Select the following alerts from the results.

Alert
VSAN - SSD health change to unhealthy state
VSAN - Configuration failure - Insufficient space
VSAN - Device offline
VSAN - Object component state changed to degraded



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings, and click **Enable**.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	SFO01	LAX01
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

VSAN - SSD health change to unhealthy state
 VSAN - Configuration failure - Insufficient space
 VSAN - Device Offline
 VSAN - Object component state changed to degraded

Email ops-team@rainpole.com

Webhook URLs separated by spaces

Send to vRealize Operations Manager

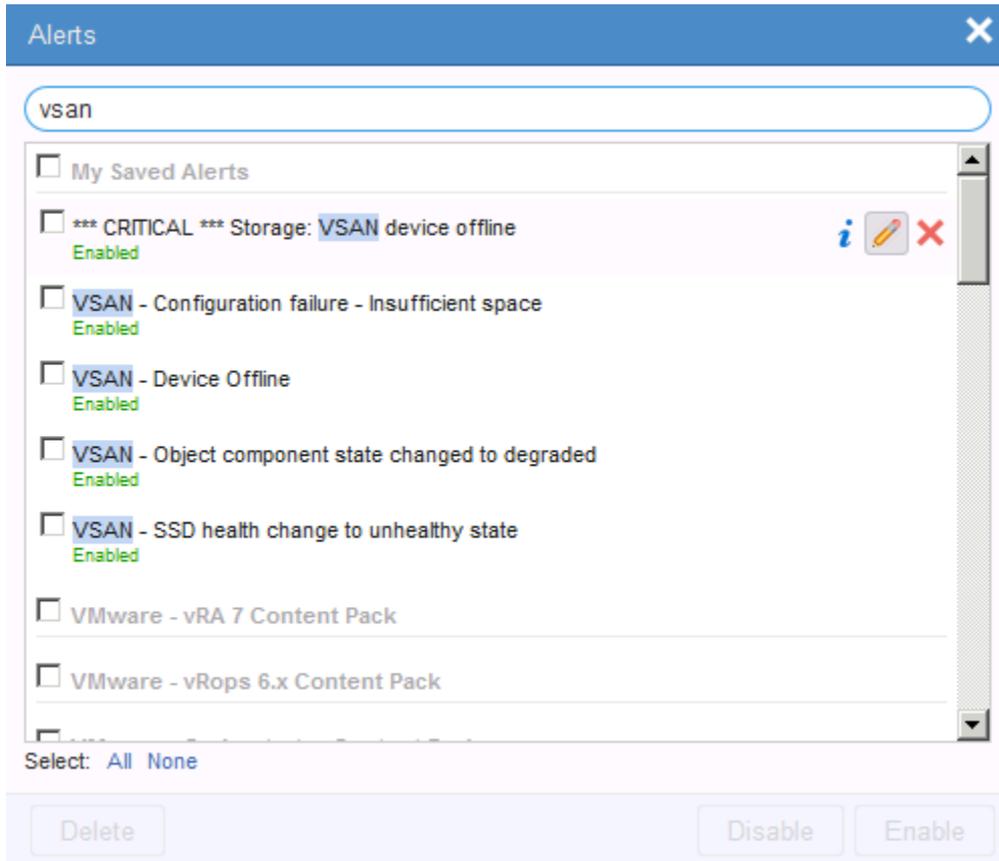
Fallback Object: SFO01 SELECT... ⓘ

Criticality: critical ▼

Auto Cancel

CANCEL
ENABLE

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled vSAN alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.

Edit Alert

Name: VSAN - Configuration failure - Insufficient space

Notes: **B I U**
 This alert indicates that we cannot create a configuration for a new object(VM) in the VSAN cluster because sufficient space is not available in the cluster. If we see this error, please check the error logs and try the provisioning operation after adding new hosts/disks.

Notify:

Email: ops-team@rainpole.com

Webhook: URLs separated by spaces

Send to vRealize Operations Manager

Fallback Object: SFO01 SELECT... Criticality: **critical**

Auto Cancel

SEND TEST ALERT

Raise an alert:

On any match

When an event is seen for the first time in the last **Custom** 5 minutes

When **more than** 1 matches are found in the last **5 Minutes**

When **more than** 1 events occur in a single group in the last **5 Minutes**

The query will run every 5 minutes and will only alert once for the defined threshold above.

No results



Count of events over time

EDIT QUERY CANCEL SAVE

- c Repeat the steps for the other enabled alerts.
 - d Close the **Alerts** dialog box.
- 7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable alerts for the LAX01 data center.

Enable the Alerts for vSphere Networking

Use the inbuilt problem and alert signatures in vRealize Log Insight for networking to enable alerts about issues.

For basic monitoring the vSphere networking components, use the following alerts:

Table 1-4. vSphere Networking Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
Network: ESXi physical NIC down	ESX/ESXi has reported that a physical NIC has become unavailable. Assuming other NICs are still online this indicates a lack of redundancy and a potential performance impact. If all physical NICs for a vSwitch/dvSwitch are unavailable then communication problems to VMs and/or the ESX/ESXi host may be possible.	Critical
Network: ESX/ESXi uplink redundancy lost	Only one physical NIC is currently connected, one more failure will result in a loss of connectivity.	Critical
Network: Out of Memory	Under certain circumstances hosts with NetQueue enabled, may run out of memory when using jumbo frames (MTU is 9000 bytes). Out of memory conditions could lead to lost connectivity between vCenter Server, NFS datastores, and the virtual machine level.	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

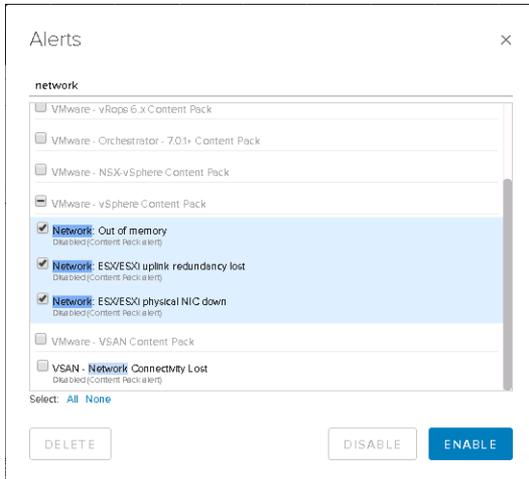
- b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrli_admin_password

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.

- 4 Select the alerts that are related to vSphere networking.
 - a In the search box of the **Alerts** dialog box, enter **network** as a search phrase.
 - b Select the following alerts from the results.

Alert
Network: Out of Memory
Network: ESX/ESXi uplink redundancy lost
Network: ESXi physical NIC down



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings and click **Enable**.

For default object, you select the data center for the region.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	SFO01	LAX01
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

Network: Out of memory
 Network: ESX/ESXi uplink redundancy lost
 Network: ESX/ESXi physical NIC down

Email ops-team@rainpole.com

Webhook URLs separated by spaces

Send to vRealize Operations Manager

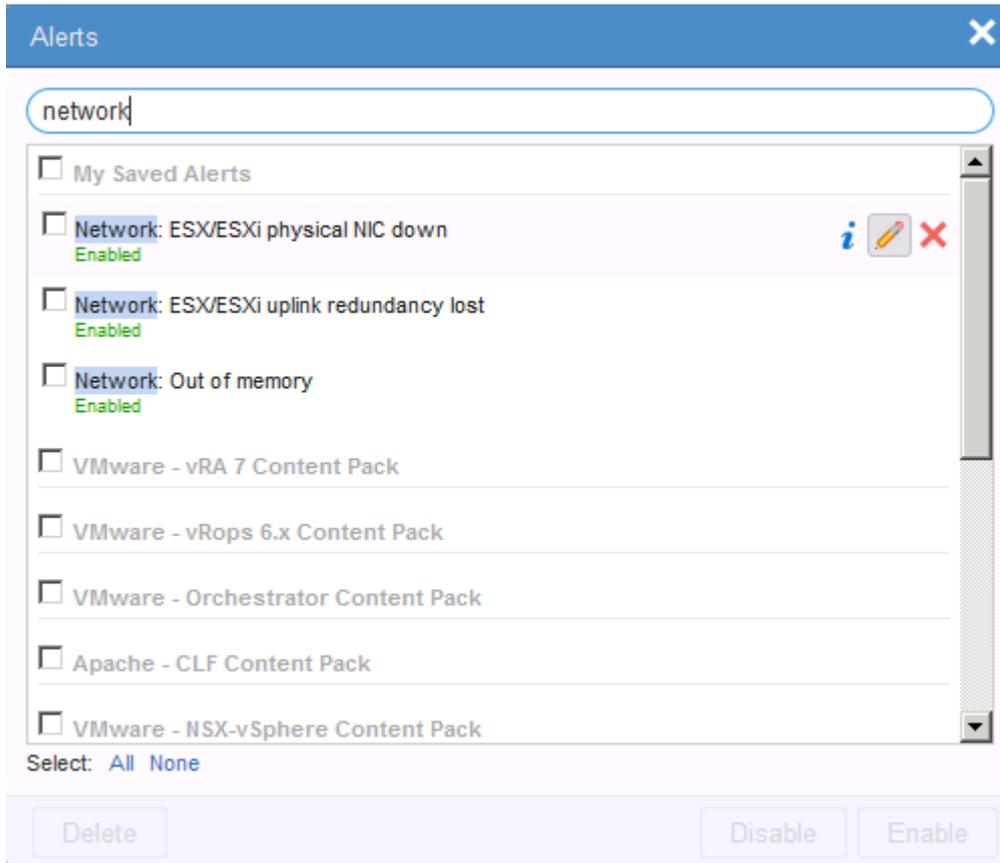
Fallback Object: SFO01 SELECT... ⓘ

Criticality: critical ▼

Auto Cancel

CANCEL
ENABLE

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled Network alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.

Edit Alert

Name: Network: ESX/ESXi physical NIC down

Notes: **B I U**
 ESX/ESXi has reported that a physical NIC has become unavailable. Assuming other NICs are still online this indicates a lack of redundancy and a potential performance impact. If all physical NICs for a vSwitch/dvSwitch are unavailable then communication problems to VMs and/or the

Notify:

Email: ops-team@rainpole.com

Webhook: URLs separated by spaces

Send to vRealize Operations Manager

Fallback Object: SFO01 SELECT... Criticality: critical

Auto Cancel

SEND TEST ALERT

Raise an alert:

On any match

When an event is seen for the first time in the last Custom 15 minutes

When more than 1 matches are found in the last 15 Minutes

When more than 1 events occur in a single group in the last 15 Minutes

The query will run every 5 minutes and will only alert once for the defined threshold above.

No results

Count of events over time

EDIT QUERY CANCEL SAVE

- c Repeat the steps for the other enabled alerts.
- d Close the **Alerts** dialog box.

7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable alerts for the LAX01 data center.

Enable the Alerts for NSX for vSphere

Use the inbuilt problem and alert signatures in vRealize Log Insight for NSX for vSphere.

For monitoring the NSX for vSphere configuration in the Software-Defined Data Center, you can use the following alerts in vRealize Log Insight:

Table 1-5. NSX Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
VMW_NSX_Manager - Host Communication Errors	This event will be generated when NSX Manager fails to receive heartbeat from UserWorld Agent on the host within the threshold period. The output is grouped by host-id. The host-id can be found from vCenter.	Critical
VMW_NSX_VXLAN dataplane lost connection to controller	This alert indicates VXLAN dataplane lost connection to controller.	Critical

Table 1-5. NSX Alerts in vRealize Log Insight (Continued)

Alert Name	Purpose	Severity
VMW_NSX_VXLAN configuration issue	This alert is generated when VXLAN configuration pushed to host before host was prep'ed - host must be rebooted to initialize configuration in correct order. Recommendation: Investigate the status of VXLAN installation in NSX.	Critical
VMW_NSX_Firewall critical errors	Firewall critical events: <ul style="list-style-type: none"> ■ 301501 - This is vsm side event if host failed to respond with in time out window ■ 301503 - This is vsm side event if vsm failed while provisioning firewall rule ■ 301506 - This is vsm side event if vsm failed to send exclude list update ■ 301031 - Failed to receive/parse/Update firewall config. Key value will have context info like generation number and also other debugging info 	

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

- b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrli_admin_password

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.

- 4 Select the alerts that are related to vSphere.
 - a In the search box of the **Alerts** dialog box, enter **nsx** as a search phrase.
 - b Select the following alerts from the results.

Alert

VMW_NSX_Manager - Host Communication Errors

VMW_NSX_VXLAN dataplane lost connection to controller

VMW_NSX_VXLAN configuration issue

VMW_NSX_Firewall critical errors

Alerts ×

nsx

- VMW_NSX_VXLAN dataplane lost connection to controller
Disabled (Content Pack alert)
- VMW_NSX_Logical Router LIF problem
Disabled (Content Pack alert)
- VMW_NSX_VXLAN tcp/ip stack not created
Disabled (Content Pack alert)
- VMW_NSX_VXLAN configuration issue
Disabled (Content Pack alert)
- VMW_NSX_Failed to create/delete a routing related object
Disabled (Content Pack alert)
- VMW_NSX_Partner Service VM connected to Guest Introspection Module
Disabled (Content Pack alert)
- VMW_NSX_Filter Config errors
Disabled (Content Pack alert)
- VMW_NSX_Manager - Host Communication Errors
Disabled (Content Pack alert)

Select: [All](#) [None](#)

DELETEDISABLEENABLE

5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings, and click **Enable**.

For default object, you select the NSX Manager instance for the management cluster in the region.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	mgmt01nsxm01.sfo01	mgmt01nsxm51.lax01
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

VMW_NSX_Firewall critical errors
 VMW_NSX_VXLAN dataplane lost connection to controller
 VMW_NSX_VXLAN configuration issue
 VMW_NSX_Manager - Host Communication Errors

Email ops-team@rainpole.com

Webhook URLs separated by spaces

Send to vRealize Operations Manager

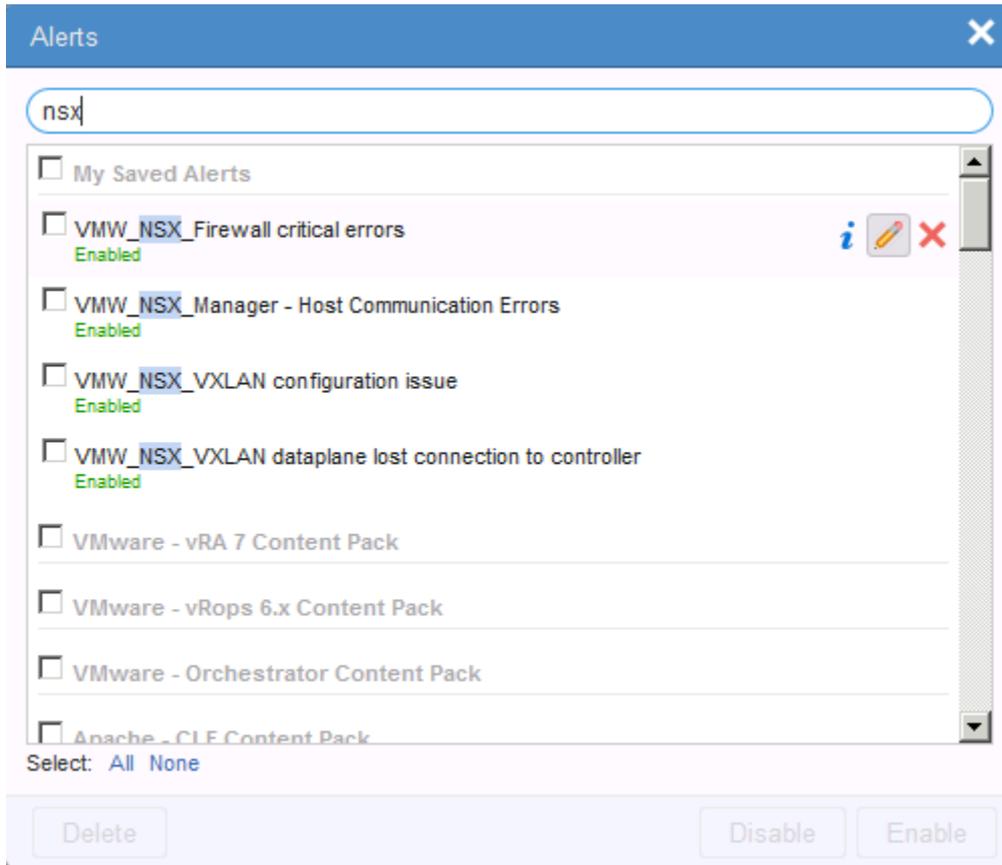
Fallback Object: mgmt01nsxm01.sfo01 SELECT... ⓘ

Criticality: critical ▼

Auto Cancel

CANCEL
ENABLE

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled NSX for vSphere alert.



- b In the **Enable Alerts** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.

The screenshot shows the 'Edit Alert' dialog box. At the top, the name is 'VMW_NSX_Firewall critical errors'. Below that is a 'Notes' field with a rich text editor containing the text: 'Firewall critical events: 301501 - This is vsm side event if host failed to respond with in time out window'. The 'Notify' section has three options: 'Email' (checked, with address 'ops-team@rainpole.com'), 'Webhook' (unchecked), and 'Send to vRealize Operations Manager' (checked). The 'Fallback Object' is 'mgmt01nsxm01.sfo01' and 'Criticality' is 'critical'. There is a 'SEND TEST ALERT' button. The 'Raise an alert' section has three radio buttons: 'On any match' (selected), 'When an event is seen for the first time in the last Custom 60 minutes', and 'When more than 0 matches are found in the last 1 Hour'. Below this is a graph area with 'No results' and 'Count of events over time'. At the bottom are 'EDIT QUERY', 'CANCEL', and 'SAVE' buttons.

- c Repeat the steps for the other enabled alerts.
 - d Close the **Alerts** dialog box.
- 7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable alerts for the mgmt01nsxm51.lax01 NSX Manager instance.

Enable the Alerts for vRealize Operations Manager

Use the built-in problem and alert signatures in vRealize Log Insight for vRealize Operations Manager.

For monitoring the vRealize Operations Manager deployment in the Software-Defined Data Center, you can use the following alerts in vRealize Log Insight:

Table 1-6. vRealize Operations Manager Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
vRops: VC stats query timed out occurred	The purpose of this alert is to notify when vROPs instance is not able to get the data back from vCenter instance within the 5 minute interval and the metrics back up and get dropped with the error: Communication Error: com.integrien.adapter.vmware.VcCollector.collectMetrics - Vc stats query timed out (ms): 300377. This is usually due to intermittent connection issues with the vCenter and hosts or down to the network not able to handle the request and timing out.	Critical
vRops: Out of Memory errors occurred	This alert gets generated when OutOfMemoryError: Java heap space occurs. This could indicate memory issues and could lead to degradation in performance.	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

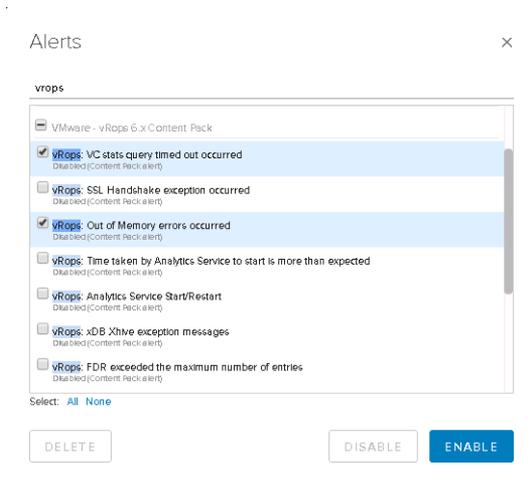
Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

- b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrli_admin_password

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.
- 4 Select the alerts that are related to vRealize Operations Manager.
 - a In the search box of the **Alerts** dialog box, enter **vrops** as a search phrase.
 - b Select the following alerts from the results.

Alert
vRops: VC stats query timed out occurred
vRops: Out of Memory errors occurred



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings and click **Enable**.

For default object, you select the vRealize Operations Manager master node.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	vrops-mstrn-01	vrops-mstrn-01
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

vRops: VC stats query timed out occurred
 vRops: Out of Memory errors occurred

Email

Webhook

Send to vRealize Operations Manager

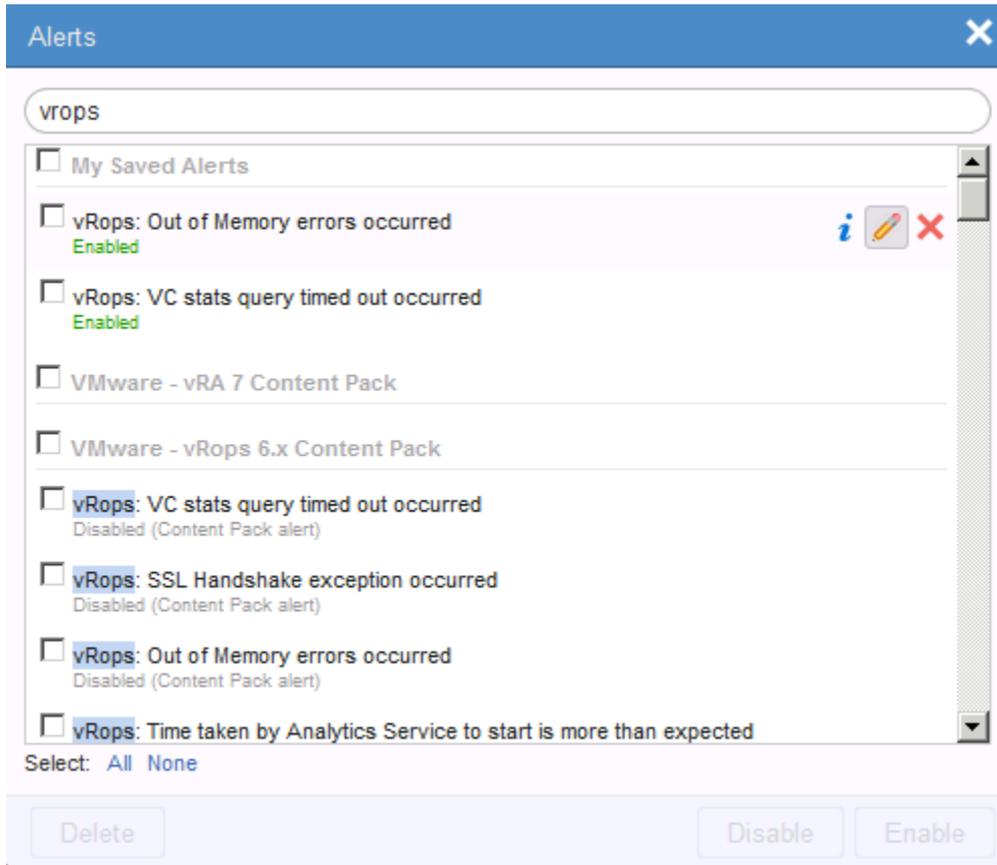
Fallback Object: SELECT... ⓘ

Criticality: ▼

Auto Cancel

CANCEL
ENABLE

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled vRealize Operations Manager alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.

Edit Alert

Name `vRops: Out of Memory errors occurred`

Notes **B I U**

This alert gets generated when OutOfMemoryError: Java heap space occurs. This could indicate memory issues and could lead to degradation in performance.

Notify:

Email `ops-team@rainpole.com`

Webhook `URLs separated by spaces`

Send to vRealize Operations Manager

Fallback Object: `vrops-mstrn-01` [SELECT...](#) Criticality: `critical`

Auto Cancel

[SEND TEST ALERT](#)

Raise an alert:

On any match

When an event is seen for the first time in the last `Custom` `60` minutes

When `more than` `3` matches are found in the last `1 Hour`

The query will run every 5 minutes and will only alert once for the defined threshold above.

No results

Count of events over time

[EDIT QUERY](#) [CANCEL](#) [SAVE](#)

- c Repeat the steps for the other enabled alerts.
 - d Close the **Alerts** dialog box.
- 7 Repeat the steps on `https://vrli-cluster-51.lax01.rainpole.local` to enable alerts for the vRealize Operations Manager master node `vrops-mstrn-01`.

Enable the Alerts for vRealize Automation

Use the inbuilt problem and alert signatures in vRealize Log Insight for vRealize Automation.

For monitoring the vRealize Automation deployment in the Software-Defined Data Center, you can use the following alerts in vRealize Log Insight.

Table 1-7. vRealize Automation Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
*** CRITICAL *** vRA CAFE service unavailable!	<p>A vRA CAFE service has become unavailable. This may happen because:</p> <ul style="list-style-type: none"> ■ A service has failed - if the service does not automatically restart this may impact vRA's ability to function ■ A service is blocked and cannot response at the moment - this may indicate increased load within the environment ■ vRA is starting and certain dependencies of the component are not available yet - this issue should clear automatically as all services come online 	Critical
*** CRITICAL *** vRA disk is full	<p>Windows host(s) have disk that is at capacity. If disk space runs out completely, it will impact the Infrastructure services provided by IaaS component of vRA and the Infrastructure tab will become unavailable from the vRA UI.</p>	Critical
*** CRITICAL *** vRA IaaS Services Stopped	<p>A vRA service has become unavailable. This may happen because:</p> <ul style="list-style-type: none"> • A service has failed - if the service does not automatically restart this may impact vRA's ability to function • A service is blocked and cannot response at the moment - this may indicate increased load within the environment • Management Agent- in an HA deployment, only ONE Management Agent instance should be running. If more than one is running, this will cause issues with normal functioning of the system. 	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

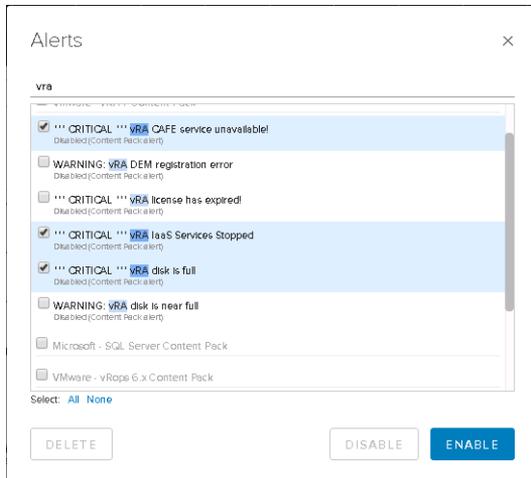
Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

- b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrli_admin_password

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.
- 4 Select the alerts that are related to vRealize Automation.
 - a In the search box of the **Alerts** dialog box, enter **vra** as a search phrase.
 - b Select the following alerts from the results.

Alert
*** CRITICAL *** vRA CAFE service unavailable!
*** CRITICAL *** vRA disk is full
*** CRITICAL *** vRA IaaS Services Stopped



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings and click **Enable**.

For default object, you select the first vRealize Automation Appliance.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	vra01svr01a	vra01svr01a
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

*** CRITICAL *** vRA CAFE service unavailable!

*** CRITICAL *** vRA IaaS Services Stopped

*** CRITICAL *** vRA disk is full

Email

Webhook

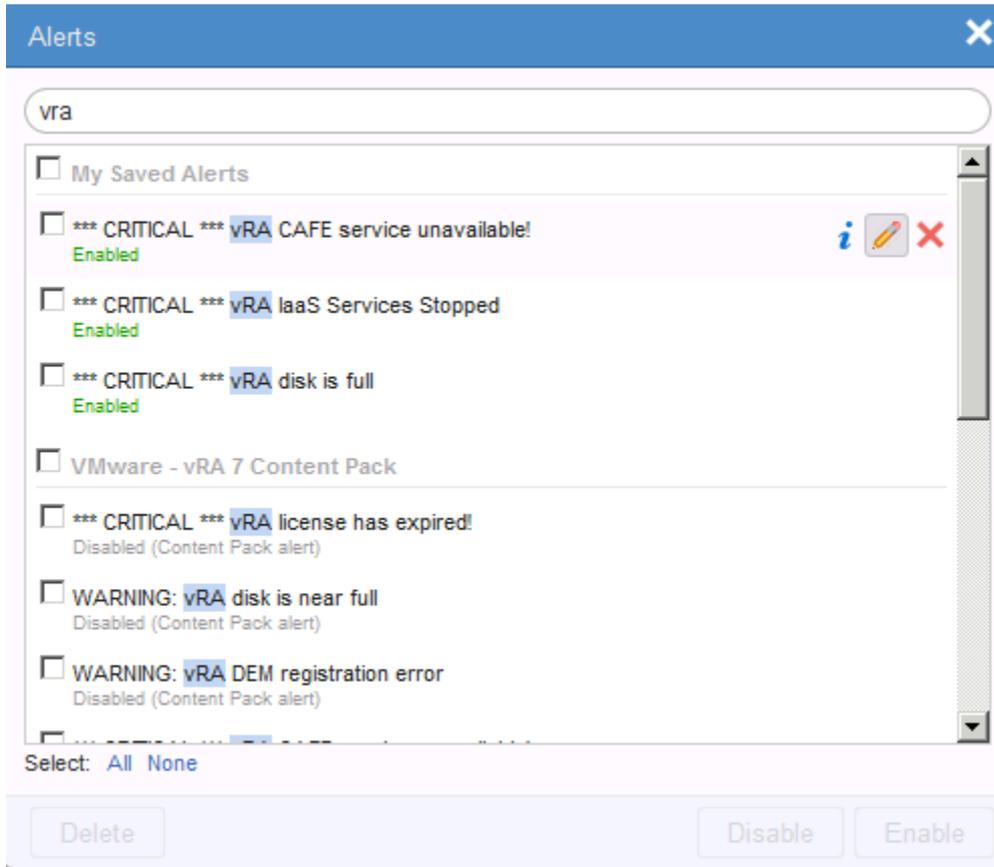
Send to vRealize Operations Manager

Fallback Object: ⓘ

Criticality: ▼

Auto Cancel

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled vRealize Automation alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.

Edit Alert

Name ***** CRITICAL *** vRA CAFE service unavailable!**

Notes **B I U**
 A vRA CAFE service has become unavailable. This may happen because:
 • **A service has failed** - if the service does not automatically restart this may impact vRA's

Notify:

Email ops-team@rainpole.com

Webhook URLs separated by spaces

Send to vRealize Operations Manager

Fallback Object: vra01svr01a.rainpole.local SELECT... Criticality: critical

Auto Cancel

SEND TEST ALERT

Raise an alert:

On any match

When an event is seen for the first time in the last Custom 60 minutes

When more than 1 matches are found in the last 1 Hour

When more than 1 events occur in a single group in the last 1 Hour

The query will run every 5 minutes and will only alert once for the defined threshold above.

No results

Count of events over time

EDIT QUERY CANCEL SAVE

c Repeat the steps for the other enabled alerts.

d Close the **Alerts** dialog box.

7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable alerts for vRealize Automation in Region B.

Enable the Alerts for vRealize Orchestrator

Use the inbuilt problem and alert signatures in vRealize Log Insight for vRealize Orchestrator.

For monitoring the vRealize Orchestrator deployment in the Software-Defined Data Center, you can use the following alerts in vRealize Log Insight.

Table 1-8. vRealize Orchestrator Alerts in vRealize Log Insight

Alert Name	Purpose	Severity
vRO: Orchestrator STANDBY Alert	The Orchestrator server state switched to STANDBY mode. In general there could be two reasons: <ul style="list-style-type: none"> There are enough RUNNING nodes in the cluster and current node will stay on standby playing a role of back-up node waiting to switch to RUNNING state if needed. Problems with critical components as database or authentication provider has been detected which prevents the normal functioning of the server node. The current node is considered unhealthy. The server will monitor that critical components and try to recover as soon as the problems are solved. The current work won't accept any new requests and all its workflows will be resumed on other healthy nodes. 	Critical
vRO: Invalid Login Alert	Failed login attempt has been detected. The reason could be wrong credentials used to login to the server or there could be malicious attempt to access the server.	Critical
vRO: Orchestrator Reboot Alert	Orchestrator server has been started or rebooted. The cause could be planned reboot or result of unwanted action.	Critical
vRO: Workflow Modification Alert	The content of some workflow has been modified. This could be a planned workflow content update or result of unwanted malicious actions.	Critical
vRO: Orchestrator Workflow Failure Alert	Orchestrator workflow run failures have been detected. This could be due to infrastructure problems with external systems.	Critical
vRO: Configuration Modification Alert	Some modifications in the configuration elements of the Orchestrator have been detected.	Critical

Procedure

- 1 Open the vRealize Log Insight user interface.
 - a Open a Web browser and go to the following URL.

Region	vRealize Log Insight URL
Region A	https://vrli-cluster-01.sfo01.rainpole.local
Region B	https://vrli-cluster-51.lax01.rainpole.local

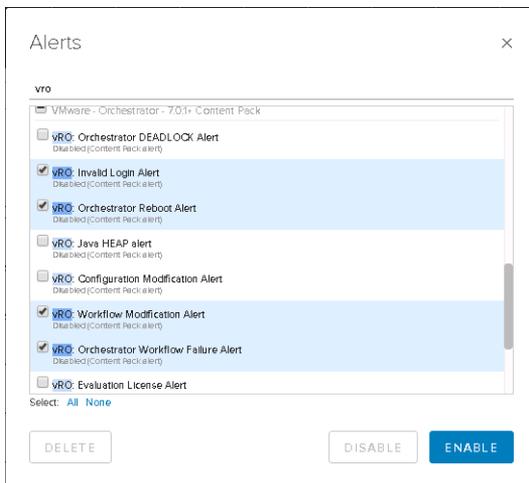
- b Log in using the following credentials.

Setting	Value
User name	admin
Password	<i>vrli_admin_password</i>

- 2 In the vRealize Log Insight user interface, click **Interactive Analytics**.
- 3 Click the  icon and select **Manage Alerts**.

- 4 Select the alerts that are related to vRealize Orchestrator.
 - a In the search box of the **Alerts** dialog box, enter **vro** as a search phrase.
 - b Select the following alerts from the results.

Alert
vRO: Orchestrator STANDBY Alert
vRO: Invalid Login Alert
vRO: Orchestrator Reboot Alert
vRO: Workflow Modification Alert
vRO: Orchestrator Workflow Failure Alert
vRO: Configuration Modification Alert



5 Enable the alerts.

- a In the **Alerts** dialog box, click **Enable**.
- b In the **Enable Alerts** dialog box, configure the following alert settings and click **Enable**.

For default object, you select the first vRealize Orchestrator virtual appliance.

Setting	Region A	Region B
Email	<i>Email address to send alerts to</i>	<i>Email address to send alerts to</i>
Send to vRealize Operations Manager	Selected	Selected
Fallback Object	vra01vro01a	vra01vro01a
Criticality	critical	critical

Enable Alerts

The following alerts will be enabled and saved to My Alerts:

vRO: Invalid Login Alert
 vRO: Orchestrator Reboot Alert
 vRO: Configuration Modification Alert
 vRO: Workflow Modification Alert
 vRO: Orchestrator Workflow Failure Alert
 vRO: Orchestrator STANDBY Alert

Email

Webhook

Send to vRealize Operations Manager

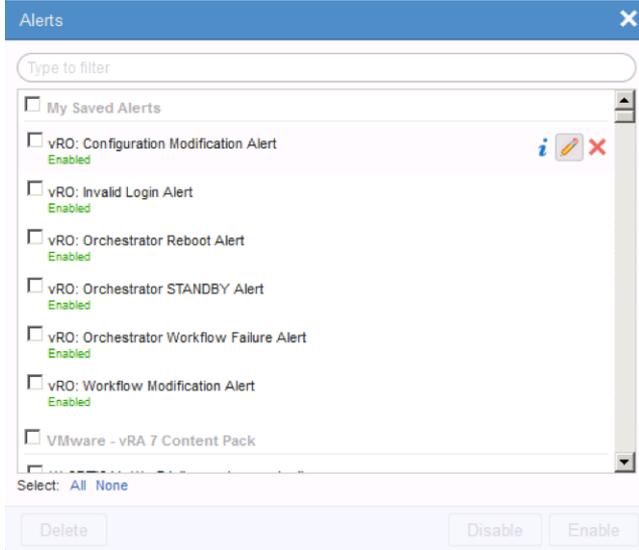
Fallback Object: SELECT... ⓘ

Criticality: ▼

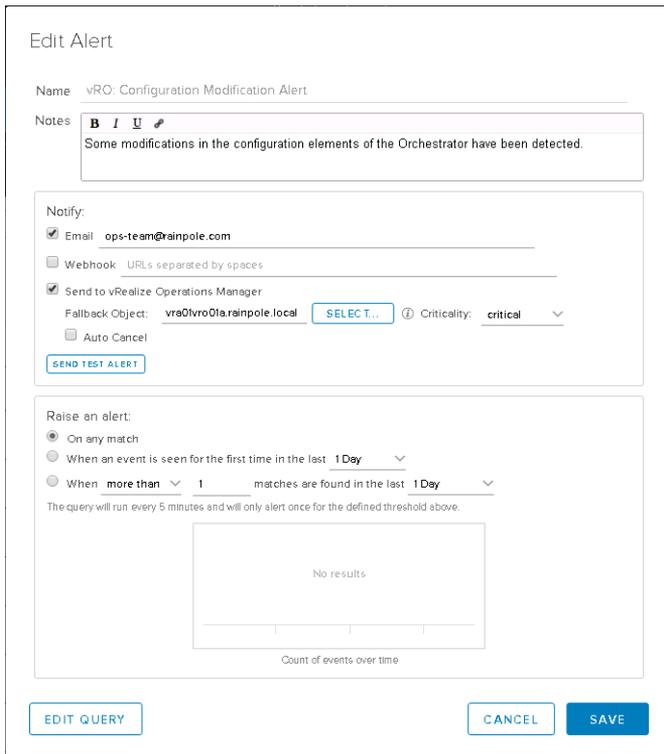
Auto Cancel

CANCEL
ENABLE

- 6 In the **Alerts** dialog box, set the **Raise an alert** option for each enabled alert.
 - a Click the **Edit** button on the first enabled vRealize Orchestrator alert.



- b In the **Edit Alert** dialog box, under **Raise an alert**, select **On any match**, and click **Save**.



- c Repeat the steps for the other enabled alerts.
 - d Close the **Alerts** dialog box.

- 7 Repeat the steps on <https://vrli-cluster-51.lax01.rainpole.local> to enable alerts for vRealize Orchestrator in Region B.

Creating Custom SDDC vRealize Operations Dashboards

2

Monitoring the Software-Defined Data Center (SDDC) is critical to the health of the environment. You create custom vRealize Operations Manager dashboards to provide centralized SDDC dashboards. Using such dashboards simplifies monitoring the health of the SDDC as opposed to having to switch between multiple product-specific dashboards.

To create custom dashboards, verify that you have deployed vRealize Operations Manager according to implementation guides. You must have the following management packs installed and configured:

- vRealize Operations Manager Management Pack for VMware vSphere
- vRealize Operations Manager Management Pack for NSX-vSphere
- vRealize Operations Manager Management Pack for vRealize Automation
- vRealize Operations Manager Management Pack for Storage Devices
- vRealize Operations Manager Management Pack for Log Insight

Procedure

1 [Create the SDDC Capacity Dashboard](#)

In the SDDC, monitor the trends in the CPU and memory consumption on the ESXi hosts and the storage capacity of the datastores from a common dashboard.

2 [Configure a Dashboard that Provides an Overview of SDDC Operation](#)

Create a dashboard in vRealize Operations Manager where you can monitor the objects of the SDDC management stack.

Create the SDDC Capacity Dashboard

In the SDDC, monitor the trends in the CPU and memory consumption on the ESXi hosts and the storage capacity of the datastores from a common dashboard.

Procedure

- 1 Log in to vRealize Operations Manager by using the administration console.
 - a Open a Web browser and go to **https://vrops-cluster-01.rainpole.local**.
 - b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrops_admin_password

- 2 On the **Home** page, from the **Actions** menu select **Create Dashboard**.
- 3 In the **Dashboard Configuration** section of the **New Dashboard** dialog box, configure the following settings.

Setting	Value
Name	SDDC Capacity Trends
Is default	No

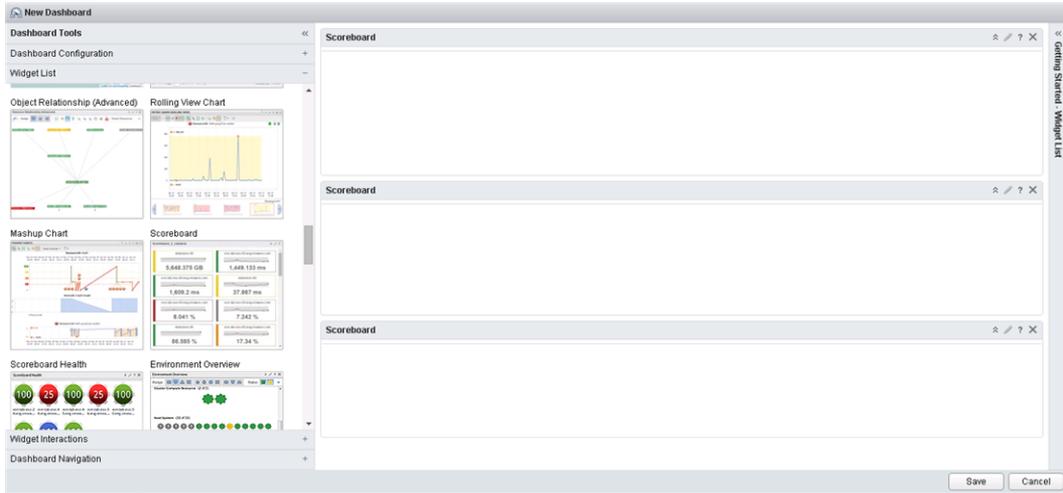
The screenshot shows the 'New Dashboard' dialog box. The 'Dashboard Configuration' section is expanded, displaying a form with the following fields:

- Name:** SDDC Capacity Trends
- Description:** (Empty text area)
- Is default:** Radio buttons for 'Yes' and 'No', with 'No' selected.

- 4 Add widgets to the dashboard.
 - a Expand the **Widget List** section.
 - b Drag three Scoreboard widgets to the layout pane on the right.

5 Configure the first Scoreboard widget to show metrics for CPU usage.

- a In the upper-right corner of the first Scoreboard widget, click the **Edit** icon.



- b Configure the following settings at the top of the **Edit Scoreboard** dialog box.

Scoreboard Widget Setting	Value
Title	SDDC CPU Usage
Refresh Content	On
Refresh Interval	300s
Self Provider	On
Show Object Name	On
Show Sparkline	On

- c Click the **Object Types** tab, and add the metrics that this widget displays.

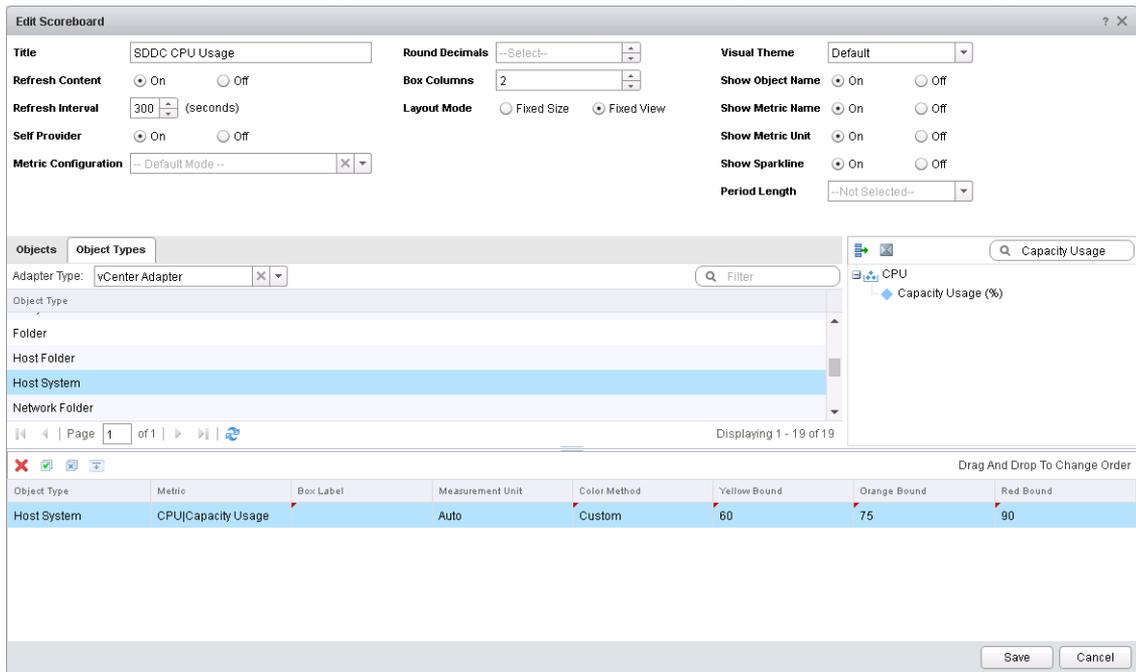
Object Type Setting	Value
Adapter Type	vCenter Adapter
Object Type	Host System

- d In the metrics pane on the right, enter **Capacity Usage** in the search box, and press Enter.
- e In the search result, expand the CPU metric category and double-click the **Capacity Usage (%)** metric to add it to the list of metrics that the widget displays.

- f In the metrics list, double-click each of the following collection options, customize it and click **Update**.

Collection Setting	Value
Color Method	Custom
Yellow Bound	60
Orange Bound	75
Red Bound	90

- g In the **Edit Scoreboard** dialog box, click **Save**.



- 6 Configure the second Scoreboard widget to show metrics for memory usage.
 - a In the upper-right corner of the second Scoreboard widget, click the **Edit** icon.
 - b Configure the following settings at the top of the **Edit Scoreboard** dialog box.

Scoreboard Widget Setting	Value
Title	SDDC Memory Overview
Refresh Content	On
Refresh Interval	300s
Self Provider	On
Show Object Name	On
Show Sparkline	On

- c Click the **Object Types** tab, and add the metrics that this widget displays.

Object Type Setting	Value
Adapter Type	vCenter Adapter
Object Type	Host System

- d In the metrics pane on the right, enter **Usage / Usable** in the search box, and press Enter .
- e In the search result, expand the Memory metric category and double-click the **Usage/Usable (%)** metric to add it to the list of metrics that the widget displays.
- f In the metrics list, double-click each of the following collection options, customize it and click **Update**.

Collection Setting	Value
Color Method	Custom
Yellow Bound	70
Orange Bound	80
Red Bound	90

- g In the **Edit Scoreboard** dialog box, click **Save**.

The screenshot shows the 'Edit Scoreboard' dialog box with the following configuration:

- Title:** SDDC Memory Overview
- Refresh Content:** On
- Refresh Interval:** 300 (seconds)
- Self Provider:** On
- Metric Configuration:** -- Default Mode --
- Round Decimals:** --Select--
- Box Columns:** 2
- Layout Mode:** Fixed View
- Visual Theme:** Default
- Show Object Name:** On
- Show Metric Name:** On
- Show Metric Unit:** On
- Show Sparkline:** On
- Period Length:** --Not Selected--

The **Object Types** tab is active, showing a search for 'Usage / Usable'. The search results show a tree structure with 'Memory' expanded and 'Usage / Usable (%)' selected. Below the search results is a table of metrics:

Object Type	Metric	Box Label	Measurement Unit	Color Method	Yellow Bound	Orange Bound	Red Bound
Host System	Memory Usage / Usable		Auto	Custom	70	80	90

At the bottom of the dialog box, there are 'Save' and 'Cancel' buttons.

7 Configure the third Scoreboard widget to show metrics for storage usage.

- a In the upper-right corner of the third Scoreboard widget, click the **Edit** icon.
- b Configure the following settings at the top of the **Edit Scoreboard** dialog box.

Scoreboard Widget Setting	Value
Title	SDDC Storage Consumption
Refresh Content	On
Refresh Interval	300s
Self Provider	On
Show Object Name	On
Show Sparkline	On

- c Click the **Object Types** tab, and add the metrics that this widget displays.

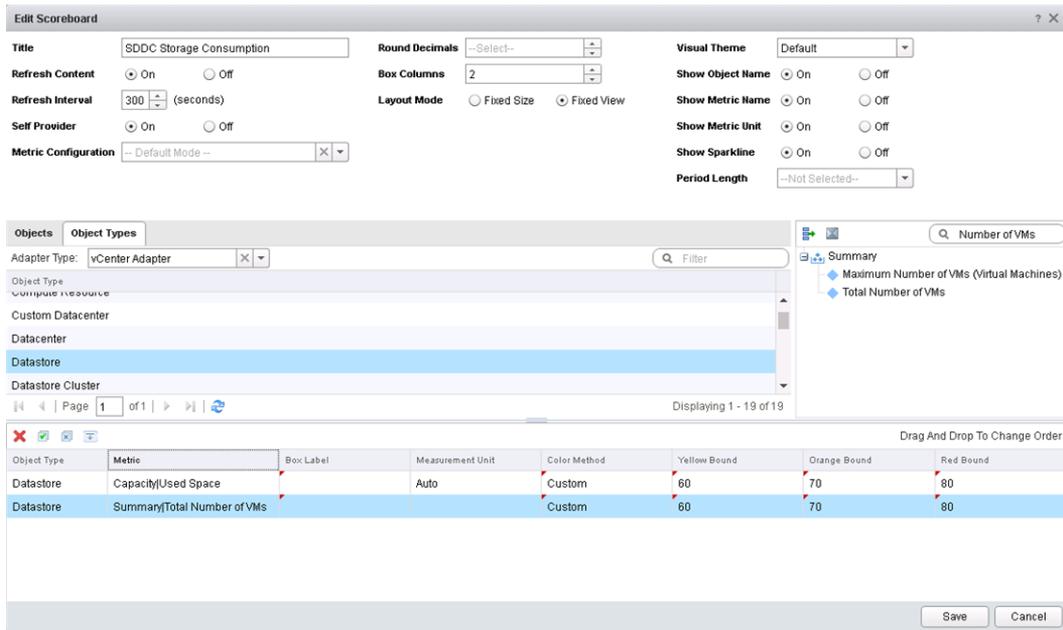
Object Type Setting	Value
Adapter Type	vCenter Adapter
Object Type	Datastore

- d In the metrics pane on the right, enter **Used Space** in the search box, and press Enter .
- e In the search result, expand the Capacity metric category and double-click the **Used Space (%)** metric to add it to the list of metrics that the widget displays.
- f In the metrics pane on the right, enter **Number of VMs** in the search box and press Enter.
- g In the search result, expand the Summary metric category and double-click the **Total Number of VMs** metric to add the number of VMs in the datastore to the list of metrics in the widget.

- h In the metrics list at the bottom, double-click each metric row, customize the following collection attribute for the metric and click **Update**.

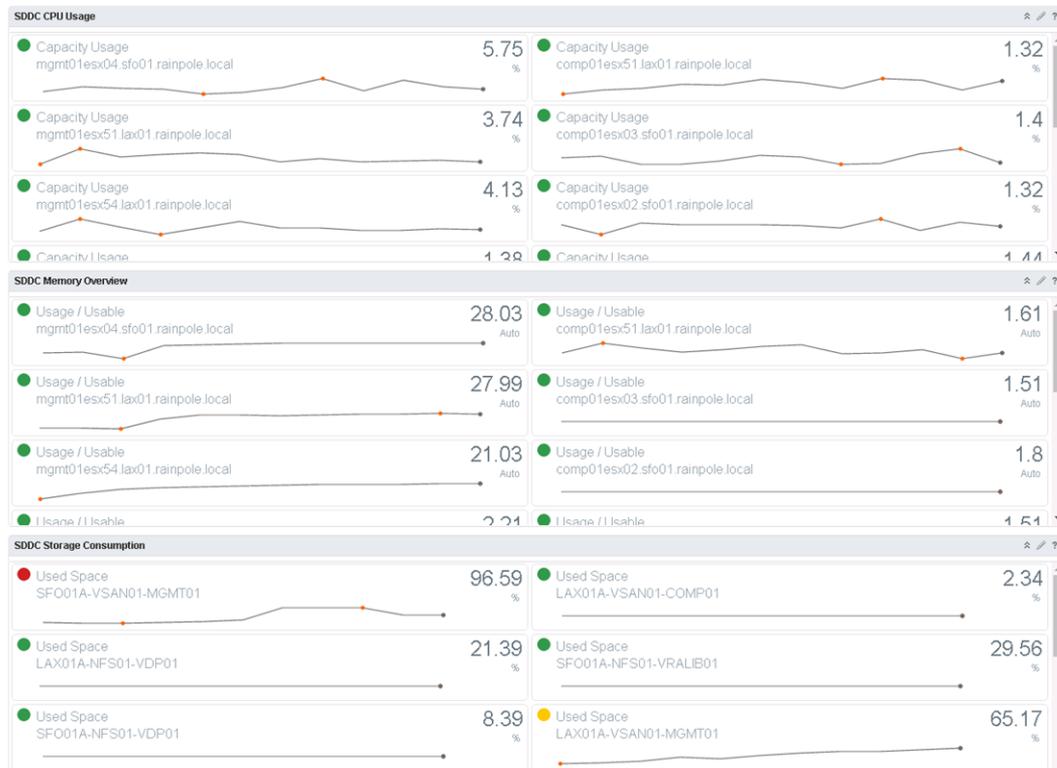
Collection Setting	Value
Color Method	Custom
Yellow Bound	60
Orange Bound	70
Red Bound	80

- i In the **Edit Scoreboard** dialog box, click **Save**.



- 8 In the **New Dashboard** dialog box, click **Save**.

The **SDDC Capacity Trends** dashboard becomes available on the **Home** page of the vRealize Operations Manager user interface.



Configure a Dashboard that Provides an Overview of SDDC Operation

Create a dashboard in vRealize Operations Manager where you can monitor the objects of the SDDC management stack.

Procedure

1 Create an Application for vRealize Log Insight

Create an application in vRealize Operations Manager to group the monitoring data about the virtual machines of vRealize Log Insight.

2 Create an Application for vRealize Orchestrator

Create an application in vRealize Operations Manager to group the monitoring data for the virtual machines of vRealize Orchestrator.

3 Collect the SDDC Objects in a Group

Create a custom group for each management application to monitor the health of the entire application stack as opposed to individual virtual machine health.

4 Configure a Dashboard that Provides an Overview of the SDDC State

Create a central dashboard that you can use to track the overall state of the SDDC.

Create an Application for vRealize Log Insight

Create an application in vRealize Operations Manager to group the monitoring data about the virtual machines of vRealize Log Insight.

vRealize Operations Manager builds an application to determine how your environment is affected when one or more components in an application experiences problems. You can also monitor the overall health and performance of the application.

vRealize Operations Manager collects data from the components in the application and displays the results in a summary dashboard for each application with a real-time analysis for any or all of the components.

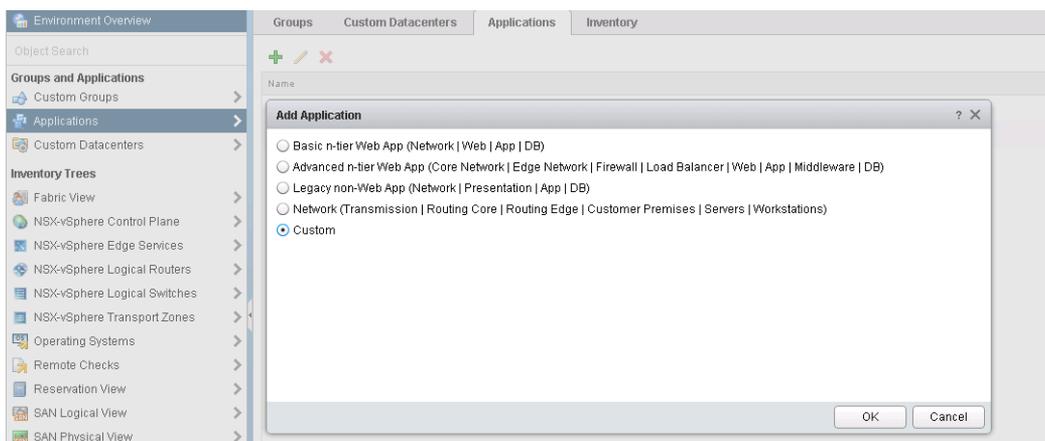
Because the Management Pack for vRealize Log Insight does not collect monitoring data about the virtual machines of the vRealize Log Insight deployment, you create an application to watch their state.

Procedure

- 1 Log in to vRealize Operations Manager by using the administration console.
 - a Open a Web browser and go to **https://vrops-cluster-01.rainpole.local**.
 - b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrops_admin_password

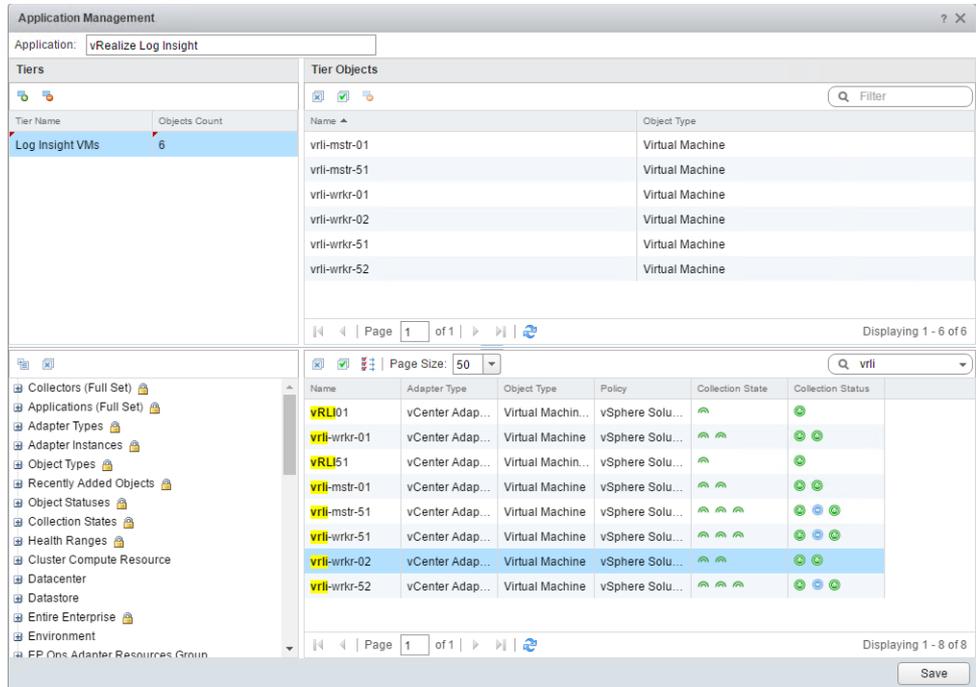
- 2 In the left pane of vRealize Operations Manager, click the **Environment** menu and click the **Applications** tab.
- 3 On the **Applications** tab, click the **Add** icon to add an application.
- 4 In the **Add Application** dialog box, select **Custom** and click **OK**.



- 5 In the **Application Management** dialog box, in the **Application** text box enter **vRealize Log Insight**.

- 6 In the **Tiers** pane, click **Add Tier**, enter **Log Insight VMs** as the **Tier Name** and click **Update**.
- 7 In the objects list underneath, enter **vrli** in the search box, and press Enter.
- 8 Select the virtual machine objects of vRealize Log Insight and drag them to the **Tier Objects** pane.

Region A VMs	Region B VMs
vrli-mstr-01	vrli-mstr-51
vrli-wrkr-01	vrli-wrkr-51
vrli-wrkr-02	vrli-wrkr-52



- 9 Click **Save**.

Create an Application for vRealize Orchestrator

Create an application in vRealize Operations Manager to group the monitoring data for the virtual machines of vRealize Orchestrator.

vRealize Operations Manager builds an application to determine how your environment is affected when one or more components in an application experiences problems. You can also monitor the overall health and performance of the application.

vRealize Operations Manager collects data from the components in the application and displays the results in a summary dashboard for each application with a real-time analysis for any or all of the components.

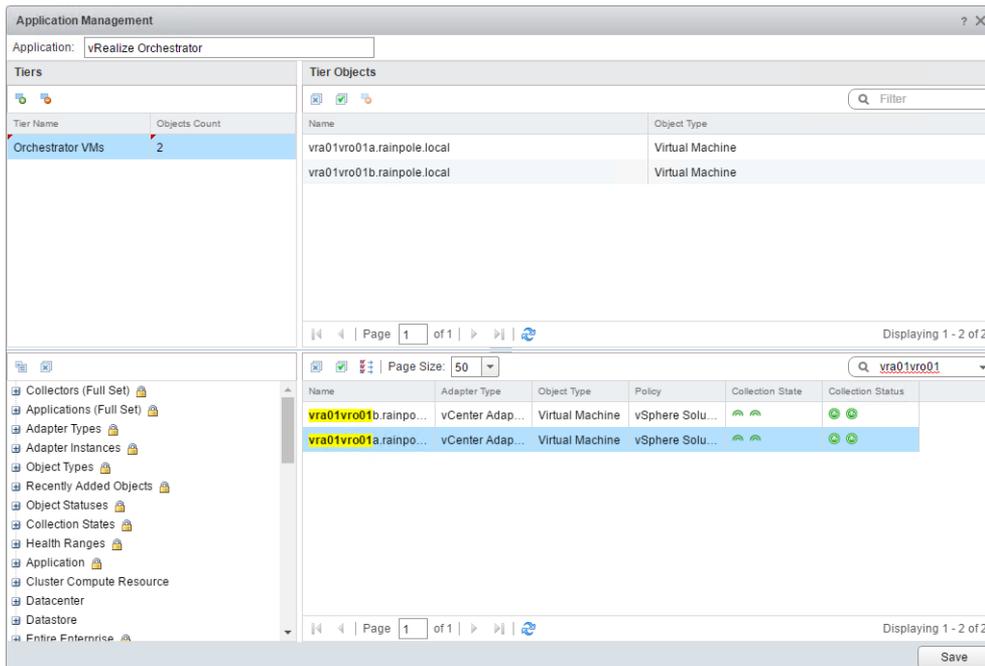
Because the Management Pack for vRealize Automation does not collect monitoring data about the virtual machines of the vRealize Orchestrator cluster, you create an application to watch their state.

Procedure

- 1 Log in to vRealize Operations Manager by using the administration console.
 - a Open a Web browser and go to **https://vrops-cluster-01.rainpole.local**.
 - b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrops_admin_password

- 2 In the left pane of vRealize Operations Manager, click the **Environment** menu and click the **Applications** tab.
- 3 On the **Applications** tab, click the **Add** icon to add an application.
- 4 In the **Add Application** dialog box, select **Custom** and click **OK**.
- 5 In the **Application Management** dialog box, in the **Application** text box enter **vRealize Orchestrator**.
- 6 In the **Tiers** pane, click **Add Tier**, enter **Orchestrator VMs** as the **Tier Name** and click **Update**.
- 7 In the objects list underneath, enter **vra01vro01** in the search box and press Enter.
- 8 Select the virtual machine objects of vRealize Orchestrator and drag them to the **Tier Objects** pane.
 - vra01vro01a
 - vra01vro01b



- 9 Click **Save**.

Collect the SDDC Objects in a Group

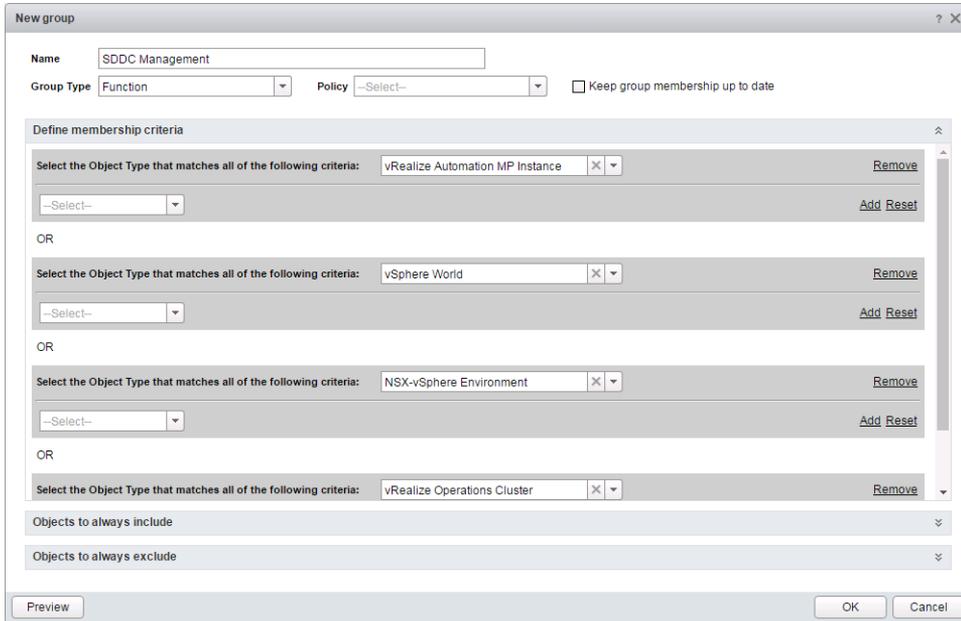
Create a custom group for each management application to monitor the health of the entire application stack as opposed to individual virtual machine health.

Procedure

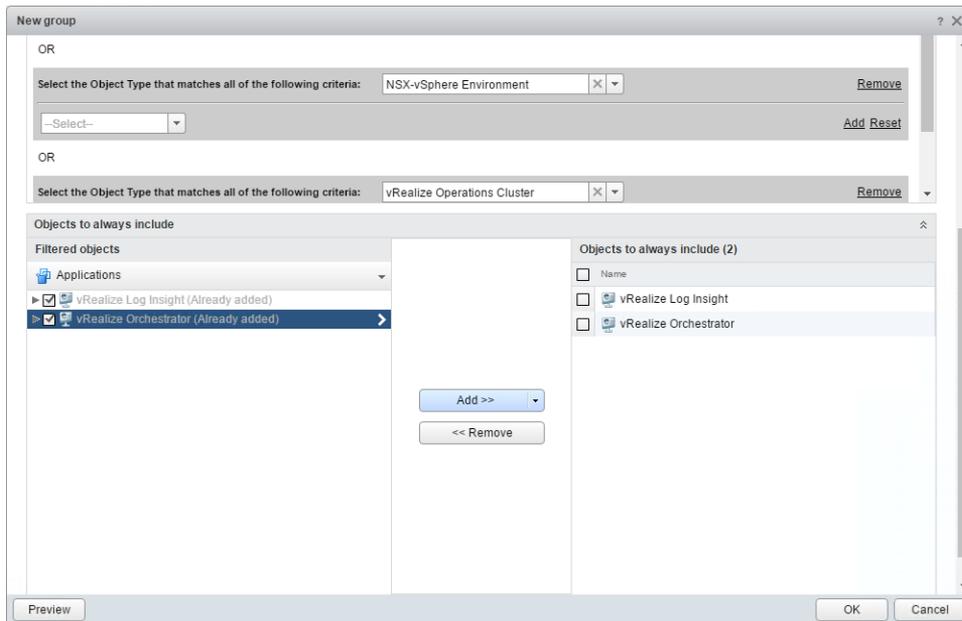
- 1 Log in to vRealize Operations Manager by using the administration console.
 - a Open a Web browser and go to **https://vrops-cluster-01.rainpole.local**.
 - b Log in using the following credentials.

Setting	Value
User name	admin
Password	vrops_admin_password

- 2 In the left pane of vRealize Operations Manager, click the **Environment** menu.
- 3 Click the **Groups** tab, and click the **Add** icon to add a custom group.
- 4 In the **New group** dialog box, enter **SDDC Management** in the **Name** text box.
- 5 From the **Group Type** drop-down menu, select **Function**.
- 6 Expand the **Define membership criteria** section.
- 7 To add the vRealize Automation objects, from the **Select the Object Type that matches all of the following criteria** drop-down menu, select **vRealize Automation MP > vRealize Automation MP Instance**.
- 8 Click **Add another criteria set** and repeat [Step 7](#) to add each of the following object types representing the other management applications in the SDDC.
 - **vCenter Adapter > vSphere World**
 - **NSX-vSphere Adapter > NSX-vSphere Environment**
 - **vRealize Operations Adapter > vRealize Operations Cluster**



- 9 Expand the **Objects to always include** section.
- 10 Add the following vRealize Log Insight and vRealize Orchestrator application objects.
 - a Under **Filtered objects**, expand **Custom Groups** and select **Applications**.
 - b Select **vRealize Log Insight** and **vRealize Orchestrator**, and click the **Add** button to add the application objects to **Objects to always include** list on the right.



- 11 Click **OK**.

Configure a Dashboard that Provides an Overview of the SDDC State

Create a central dashboard that you can use to track the overall state of the SDDC.

The SDDC overview dashboard has the following two aspects:

- Display the main indicators for the state of CPU, memory, connectivity and storage in the management cluster that hosts the management applications.
- Show the overall state of the management applications in the SDDC. You use the SDDC Management custom group that represents a common object for all management applications.

The SDDC dashboard consists of the following widgets:

- Twelve heatmap widgets showing heatmaps of the compute resources in the SDDC. You arrange the heatmap widgets in three rows and four columns. Heatmap widgets are labeled Heatmap *X.Y* where *X* is the row number and *Y* is the column number in the dashboard.
- One health chart widget

Table 2-1. Configuration of the Heatmap Widgets in the First Row of the SDDC Dashboard

Widget Setting	Heatmap 1.1	Heatmap 1.2	Heatmap 1.3	Heatmap 1.4
Title	Physical CPU Remaining	Physical Memory Remaining	Management VM CPU Used	Management VM CPU Contention
Refresh Content	On	On	On	On
Refresh Interval	300s	300s	300s	300s
Name	Management Hosts	Management Hosts	Management VMs	Management VMs
Group by	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter
Then by	-	-	-	-
Mode	Instance	Instance	Instance	Instance
Object type	vCenter Adapter > Host System	vCenter Adapter > Host System	vCenter Adapter > Virtual Machine	vCenter Adapter > Virtual Machine
Attribute type	CPU > Capacity Remaining (%)	Memory > Capacity Remaining (%)	CPU > Usage (%)	CPU > CPU Contention (%)
Min Value (Color)	0 (red)	0 (red)	80 (green)	0 (green)
Max Value (Color)	25 (green)	25 (green)	100 (red)	2 (red)
Filter	-	-	<ul style="list-style-type: none"> ■ Adapter Instances > vCenter Server > mgmt01vc01-sfo01 ■ Adapter Instances > vCenter Server > mgmt01vc51-lax01 	<ul style="list-style-type: none"> ■ Adapter Instances > vCenter Server > mgmt01vc01-sfo01 ■ Adapter Instances > vCenter Server > mgmt01vc51-lax01

Table 2-2. Configuration of the Heatmap Widgets in the Second Row of the SDDC Dashboard

Widget Setting	Heatmap 2.1	Heatmap 2.2	Heatmap 2.3	Heatmap 2.4
Title	Physical Network I/O	Physical Dropped Packets	Management VM Memory Used	Management VM Swap Rate
Refresh Content	On	On	On	On
Refresh Interval	300s	300s	300s	300s
Name	Management Hosts	Management Hosts	Management VMs	Management VMs
Group by	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter
Then by	-	-	-	-
Mode	Instance	Instance	Instance	Instance
Object type	vCenter Adapter > Host System	vCenter Adapter > Host System	vCenter Adapter > Virtual Machine	vCenter Adapter > Virtual Machine
Attribute type	Network I/O > Demand (%)	Network I/O > Packets Dropped	Memory > Usage (%)	Memory > Swapped (KB)
Min Value (Color)	80 (green)	0 (green)	50 (green)	0 (green)
Max Value (Color)	100 (red)	1 (red)	90 (red)	1 (red)
Filter	-	-	<ul style="list-style-type: none"> ■ Adapter Instances > vCenter Server > mgmt01vc01-sfo01 ■ Adapter Instances > vCenter Server > mgmt01vc51-lax01 	<ul style="list-style-type: none"> ■ Adapter Instances > vCenter Server > mgmt01vc01-sfo01 ■ Adapter Instances > vCenter Server > mgmt01vc51-lax01

Table 2-3. Configuration of the Heatmap Widgets in the Third Row of the SDDC Dashboard

Widget Setting	Heatmap 3.1	Heatmap 3.2	Heatmap 3.3	Heatmap 3.4
Title	Storage VSAN Latency	Storage NFS Latency	Management VM Storage Latency	Management VM Disk Free
Refresh Content	On	On	On	On
Refresh Interval	300s	300s	300s	300s
Name	Datastores	Datastores	Management VMs	Management VMs
Group by	Storage Devices > VirtualSAN Datastore	Storage Devices > NFS Volume	vCenter Adapter > Datacenter	vCenter Adapter > Datacenter
Then by	-	-	-	-
Mode	Instance	Instance	Instance	Instance
Object type	Storage Devices > VirtualSAN Datastore	Storage Devices > NFS Volume	vCenter Adapter > Virtual Machine	vCenter Adapter > Virtual Machine
Attribute type	Host Specific Metrics > Write Latency (ms)	Derived Statistics > Inferred Latency	Virtual Disk > Read Latency (ms)	Disk Space > Capacity Remaining (%)

Table 2-3. Configuration of the Heatmap Widgets in the Third Row of the SDDC Dashboard (Continued)

Widget Setting	Heatmap 3.1	Heatmap 3.2	Heatmap 3.3	Heatmap 3.4
Min Value (Color)	0 (green)	0 (green)	0 (green)	5 (red)
Max Value (Color)	30 (red)	30 (red)	30 (red)	20 (green)
Filter	-	-	<ul style="list-style-type: none"> ■ Adapter Instances > vCenter Server > mgmt01vc01-sfo01 ■ Adapter Instances > vCenter Server > mgmt01vc51-lax01 	<ul style="list-style-type: none"> ■ Adapter Instances > vCenter Server > mgmt01vc01-sfo01 ■ Adapter Instances > vCenter Server > mgmt01vc51-lax01

Table 2-4. Configuration of the Health Chart Widget in the SDDC Dashboard

Health Widget Setting	Value
Title	Management Applications
Refresh Content	On
Refresh Interval	300s
Self Provider	On
Mode	Children
Order By	Value Asc
Pagination number	15
Period Length	Last 6 hours
Metric	Health

Procedure

- 1 Log in to vRealize Operations Manager by using the administration console.
 - a Open a Web browser and go to **https://vrops-cluster-01.rainpole.local**.
 - b Log in using the following credentials.

Setting	Value
User name	admin
Password	<i>vrops_admin_password</i>

- 2 On the **Home** page, from the **Actions** menu select **Create Dashboard** and in the **Dashboard Configuration** section of the **New Dashboard** dialog box, configure the following settings.

Dashboard Setting	Value
Name	SDDC Overview
Is default	Yes

3 Add widgets to the dashboard.

- a Expand the **Widget List** section.
- b Drag 12 Heatmap widgets to the layout pane on the right, make three rows with four columns and align them so that they are all approximately equal in size.
- c Drag a Health Chart widget to the layout pane on the right.

4 Configure the heatmap widgets.

- a In the upper-right corner of each widget, click the **Edit** icon and configure the widget.
- b In the **Edit Heatmap** dialog box, configure the settings of the heatmap widget and click **Save**.

5 Configure the Health Chart widget.

- a In the upper-right corner of the widget, click the **Edit** icon and configure the widget.
- b In the **Edit Health Chart** dialog box, configure the settings of the Health Chart widget .
- c From the objects list at the bottom, expand **Function** and select the **SDDC Management** custom group and click **Save**.

6 In the **New Dashboard** dialog box, click **Save**.

The SDDC Overview dashboard becomes available on the Home page of the vRealize Operations Manager user interface.



Configure vRealize Operations Manager to Notify of SDDC Issues

3

Create a set of notifications in vRealize Operations Manager so that data center operators receive alerts about issues in the SDDC main functions.

- [Create Notifications in vRealize Operations Manager](#)
Create email notifications in vRealize Operations Manager so that the SDDC operators know of issues in the main monitoring parameters of the environment.
- [List of Notifications for vRealize Operations Manager](#)
Configure vRealize Operations Manager to send email notifications about important alerts in the SDDC.

Create Notifications in vRealize Operations Manager

Create email notifications in vRealize Operations Manager so that the SDDC operators know of issues in the main monitoring parameters of the environment.

You create a set of notifications of important alerts in the SDDC. See [List of Notifications for vRealize Operations Manager](#).

Procedure

- 1 Log in to vRealize Operations Manager by using the administration console.
 - a Open a Web browser and go to **https://vrops-cluster-01.rainpole.local**.
 - b Log in using the following credentials.

Setting	Value
User name	admin
Password	<i>vrops_admin_password</i>

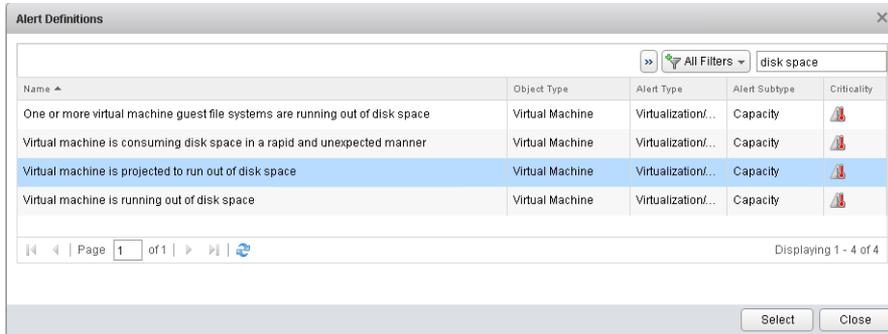
- 2 In the left pane of vRealize Operations Manager, click **Content** and click the **Notifications** tab.

- 3 On the **Notifications** tab, click the **Add** icon and configure the following notification settings in the **Add Rule** dialog box.

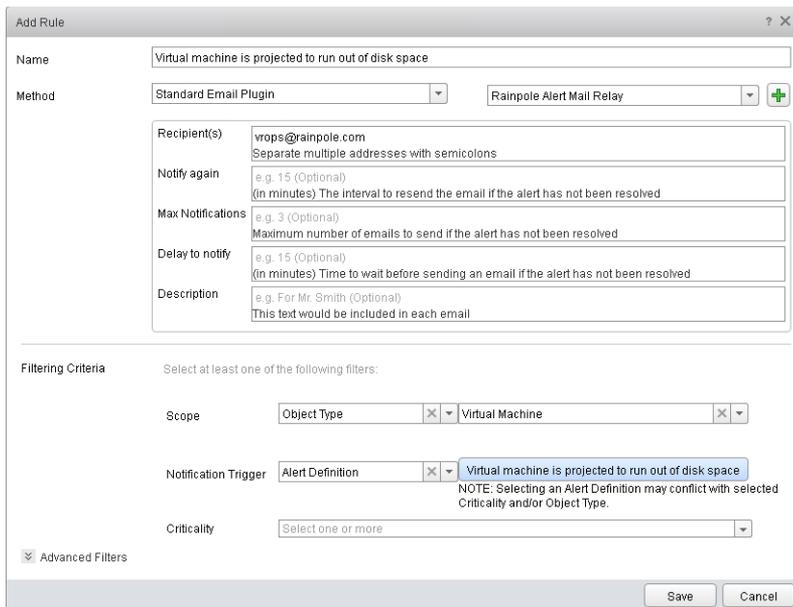
Notification Setting	Value
Name	Virtual machine is projected to run out of disk space
Method	Standard Email Plugin
Instance	Rainpole Alert Mail Relay
Recipients	vrops@rainpole.com
Filtering Criteria	
Scope	Object Type
Object Type	vCenter Adapter > Virtual Machine

- 4 Configure the trigger for the notification.
- In the **Filtering Criteria** section of the **Add Rule** dialog box, select **Alert Definition** from the **Notification Trigger** drop-down menu.
 - Click the **Select an Alert Definition** button.

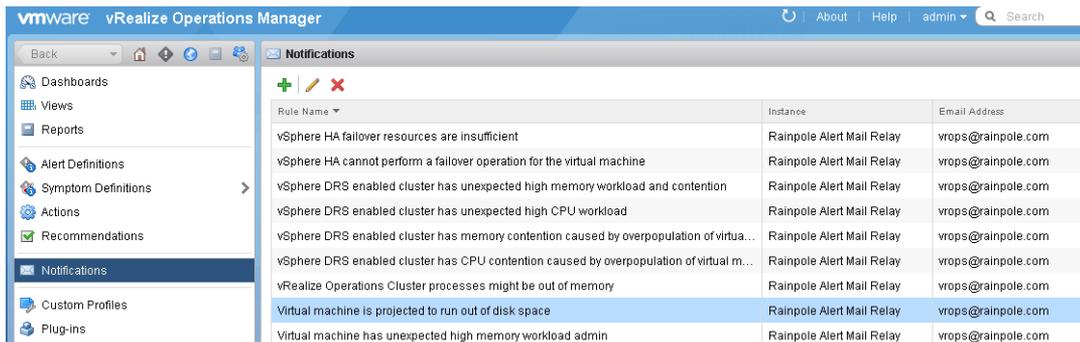
- c In the search box of the **Alert Definitions** dialog box, enter **disk space** and press Enter.
- d Select the **Virtual machine is projected to run out of disk space** alert definition and click **Select**.



- 5 In the **Add Rule** dialog box, click **Save**.



- 6 Repeat the steps to create the other SDDC notifications.



List of Notifications for vRealize Operations Manager

Configure vRealize Operations Manager to send email notifications about important alerts in the SDDC.

You define notifications from the **Content > Notifications** page in vRealize Operations user interface.

See [Create Notifications in vRealize Operations Manager](#).

Notification Delivery Properties

When you define notifications from vRealize Operations Manager, use the following properties to direct them by email to the operations team in your organization.

Table 3-1. Delivery Properties of vRealize Operations Manager Notifications

Notification Delivery Property	Value
Method	Standard Email Plugin
Instance	Rainpole Alert Mail Relay
Recipients	vrops@rainpole.com

Virtual Machine and Host Notifications

Create notifications for most important virtual machines and ESXi host issues.

Table 3-2. VM and Host Notifications in SDDC

Name	Scope	Notification Trigger	Alert Definition
Virtual machine is projected to run out of disk space	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual machine is projected to run out of disk space
Virtual machine has CPU contention caused by co-stop	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual machine has CPU contention due to multi-vCPU scheduling issues (co-stop) caused by too many vCPUs
Virtual machine has unexpected high CPU workload	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual machine has unexpected high CPU workload
Virtual machine has unexpected high memory workload	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual machine has unexpected high memory workload
Virtual machine has disk I/O latency problem caused by snapshots	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual machine has disk I/O latency problem caused by snapshots
Virtual Machine is running out of disk space	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual Machine is running out of disk space

Table 3-2. VM and Host Notifications in SDDC (Continued)

Name	Scope	Notification Trigger	Alert Definition
Virtual machine has large disk snapshots	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Virtual machine has large disk snapshots
Not enough resources for vSphere HA to start the virtual machine	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	Not enough resources for vSphere HA to start the virtual machine
vSphere HA cannot perform a failover operation for the virtual machine	1 Object Type 2 vCenter Adapter > Virtual Machine	Alert Definition	vSphere HA cannot perform a failover operation for the virtual machine
Host has CPU contention caused by overpopulation of virtual machines	1 Object Type 2 vCenter Adapter > Host System	Alert Definition	Host has CPU contention caused by overpopulation of virtual machines
Host has memory contention caused by overpopulation of virtual machines	1 Object Type 2 vCenter Adapter > Host System	Alert Definition	Host has memory contention caused by overpopulation of virtual machines
vSphere DRS enabled cluster has CPU contention caused by overpopulation of virtual machines	1 Object Type 2 vCenter Adapter > Cluster Compute Resource	Alert Definition	DRS-enabled cluster has CPU contention caused by overpopulation of virtual machines
vSphere DRS enabled cluster has unexpected high CPU workload	1 Object Type 2 vCenter Adapter > Cluster Compute Resource	Alert Definition	DRS-enabled cluster has unexpected high CPU workload
vSphere DRS enabled cluster has memory contention caused by overpopulation of virtual machines	1 Object Type 2 vCenter Adapter > Cluster Compute Resource	Alert Definition	DRS-enabled cluster has memory contention caused by overpopulation of virtual machines
vSphere DRS enabled cluster has unexpected high memory workload and contention	1 Object Type 2 vCenter Adapter > Cluster Compute Resource	Alert Definition	DRS-enabled cluster has unexpected high memory workload and contention
vSphere HA failover resources are insufficient	1 Object Type 2 vCenter Adapter > Cluster Compute Resource	Alert Definition	vSphere High Availability (HA) failover resources are insufficient

Networking Notifications

Create notifications for most important networking issues in distributed switches and NSX components.

Table 3-3. Networking Notifications in SDDC

Name	Scope	Notification Trigger	Alert Definition
Distributed switch configuration is out of sync	1 Object Type	Alert Definition	Distributed Switch configuration is out of sync
	2 vCenter Adapter > vSphere Distributed Switch		
Host NSX messaging infrastructure is reporting an issue	1 Object Type	Alert Definition	Host's NSX messaging infrastructure is reporting an issue
	2 vCenter Adapter > Host System		
NSX Manager resource usage is high	1 Object Type	Alert Definition	Manager resource usage is high
	2 NSX-vSphere Adapter > NSX-vSphere Manager		
NSX Manager API calls are failing	1 Object Type	Alert Definition	Manager API calls are failing
	2 NSX-vSphere Adapter > NSX-vSphere Manager		
VXLAN segment range has been exhausted	1 Object Type	Alert Definition	VXLAN segment range has been exhausted
	2 NSX-vSphere Adapter > NSX-vSphere Manager		
Less than three NSX Controllers are active	1 Object Type	Alert Definition	Less than three controllers are active
	2 NSX-vSphere Adapter > NSX-vSphere Controller Cluster		
Edge resource usage is high	1 Object Type	Alert Definition	Edge resource usage is high
	2 NSX-vSphere Adapter > NSX-vSphere Edge		
High Availability is not configured correctly on the Edge	1 Object Type	Alert Definition High Availability is not configured correctly on the Edge	High Availability is not configured correctly on the Edge
	2 NSX-vSphere Adapter > NSX-vSphere Edge		
Edge VM is not responding to health check	1 Object Type	Alert Definition	Edge VM is not responding to health check
	2 NSX-vSphere Adapter > NSX-vSphere Edge		
One or more Load Balancer pool members are down	1 Object Type	Alert Definition	One or more Load Balancer pool members are down
	2 NSX-vSphere Adapter > NSX-vSphere Edge		

Storage Notifications

Create notifications of most important storage issues.

Table 3-4. Storage Notifications in SDDC

Name	Scope	Notification Trigger	Alert Definition
Datastore is running out of disk space	1 Object Type	Alert Definition	Datastore is running out of disk space
	2 vCenter Adapter > Datastore		
Datastore is projected to run out of disk space	1 Object Type	Alert Definition	Datastore is projected to run out of disk space
	2 vCenter Adapter > Datastore		
Virtual SAN cluster partitioned	1 Object Type	Alert Definition	VirtualSAN cluster partitioned
	2 Storage Devices > Virtual SAN Cluster		

Notifications about vRealize Operations Manager

Create notifications of most important issues in the operation of vRealize Operations Manager.

Table 3-5. Notifications of vRealize Operations Manager Issues

Name	Scope	Notification Trigger	Alert Definition
One or more vRealize Operations services on a node are down	1 Object Type	Alert Definition	One or more vRealize Operations services on a node are down
	2 vRealize Operations Adapter > vRealize Operations Node		
Disk space on a vRealize Operations Manager node is low	1 Object Type	Alert Definition	Disk space on node is low
	2 vRealize Operations Adapter > vRealize Operations Node		
Node processing queue is backing up	1 Object Type	Alert Definition	Node processing queue is backing up
	2 vRealize Operations Adapter > vRealize Operations Node		
FSDB failed to repair corrupted files	1 Object Type	Alert Definition	Fsdb failed to repair corrupted files
	2 vRealize Operations Adapter > vRealize Operations Fsdb		
FSDB overload	1 Object Type	Alert Definition	Fsdb high load
	2 vRealize Operations Adapter > vRealize Operations Fsdb		
Number of objects monitored by this vRealize Operations Manager node exceeds the configured limit. Possible loss of data	1 Object Type	Alert Definition	Number of Objects being monitored by this vRealize Operations Node exceeds the configured limit. Possible loss of data
	2 vRealize Operations Adapter > vRealize Operations Analytics		
Remote Collector one or more vRealize Operations services are down	1 Object Type	Alert Definition	One or more vRealize Operations services on a remote collector are down
	2 vRealize Operations Adapter > vRealize Operations Remote Collector		

Table 3-5. Notifications of vRealize Operations Manager Issues (Continued)

Name	Scope	Notification Trigger	Alert Definition
Remote Collector not reporting correct number of services	1 Object Type 2 vRealize Operations Adapter > vRealize Operations Remote Collector	Alert Definition	Remote Collector not reporting correct number of services
vRealize Operations Cluster processes might be out of memory	1 Object Type 2 vRealize Operations Adapter > vRealize Operations Cluster	Alert Definition	vRealize Operations Cluster processes may not have enough memory

Monitor vSphere Data Protection Jobs by Email

4

vSphere Data Protection supports email notifications about the status of backup jobs. Configure vSphere Data Protection to send daily emails. You can regularly check them as a part of your daily monitoring activities.

Procedure

1 Log in to vCenter Server by using the vSphere Web Client.

a Open a Web browser and go to the following URL.

Region	vCenter Server URL
Region A	https://mgmt01vc01.sfo01.rainpole.local/vsphere-client
Region B	https://mgmt01vc51.lax01.rainpole.local/vsphere-client

b Log in using the following credentials.

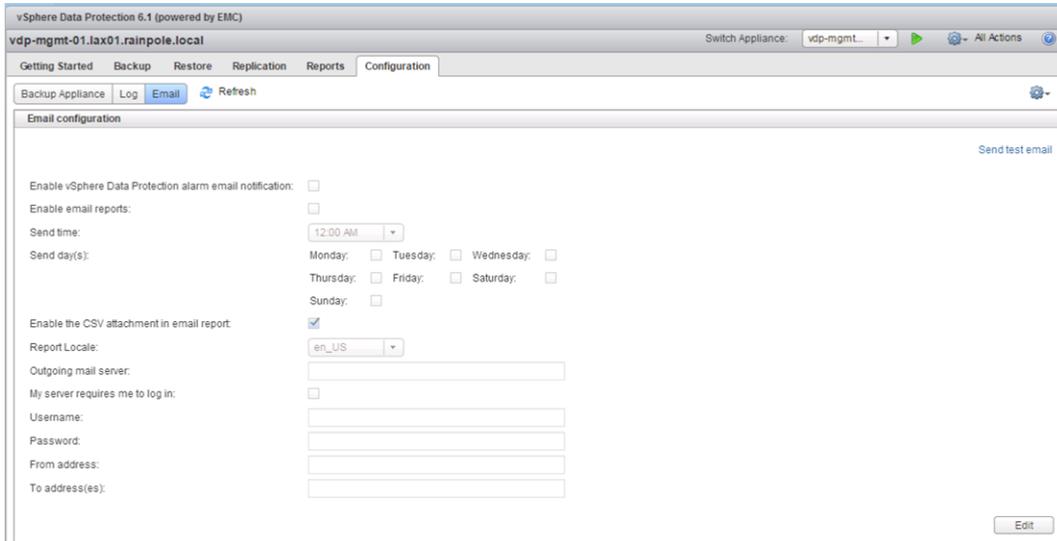
Setting	Value
User name	administrator@vsphere.local
Password	vsphere_admin_password

2 On the vSphere Web Client **Home** page, click the **VDP** icon.

3 On the **Welcome to vSphere Data Protection** page, select the region-specific vSphere Data Protection instance from the **VDP Appliance** drop-down menu and click **Connect**.

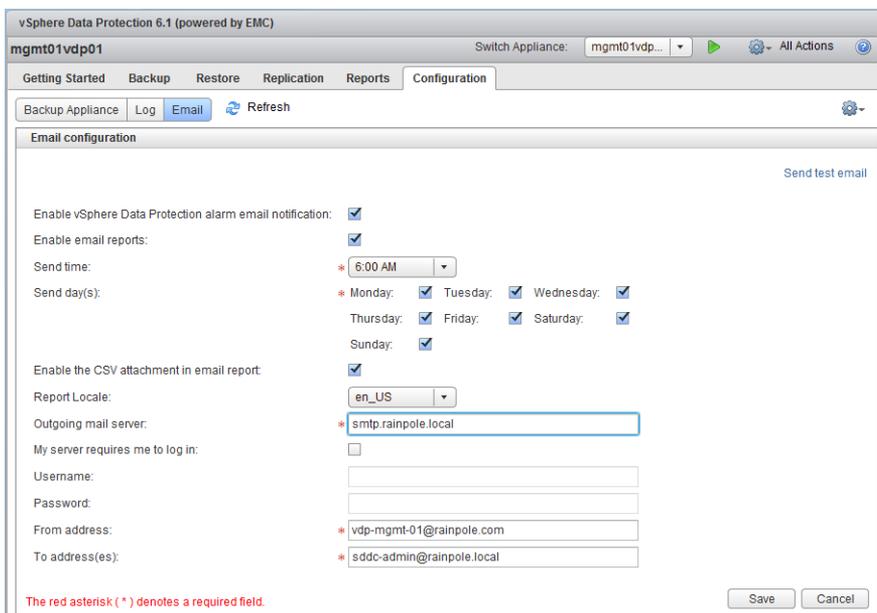
Region	vSphere Data Protection Instance
Region A	mgmt01vdp01
Region B	mgmt01vdp51

4 On the **Configuration** tab, click the **Email** button and click **Edit**.



5 Configure the following settings for email notification and click **Save**.

Email Notification Settings	Region A	Region B
Enable vSphere Data Protection alarm email notification	Selected	Selected
Enable email reports	Selected	Selected
Send time	6:00 AM	6:00 AM
Send day(s)	All days	All days
Enable the CSV attachment in email report	Selected	Selected
Outgoing mail server	<i>FQDN of the mail server</i>	<i>FQDN of the mail server</i>
From address	vdp-mgmt-01@rainpole.com	vdp-mgmt-51@rainpole.com
To addresses(es)	sddc-admin@rainpole.com	sddc-admin@rainpole.com



- 6 Click the **Send test email** hyperlink and verify that you receive the test email.
- 7 Click **Save**.
- 8 Repeat the steps to configure vSphere Data Protection in Region B to send daily email messages.

Configure vRealize Automation System Notification Events

5

You can receive automatic notifications for several types of events, such as the successful completion of a catalog request or a required approval.

System administrators can configure global email servers that handle email notifications.

Tenant administrators can override the system default servers, or add their own servers if no global servers are specified. Tenant administrators select which events, also known as scenarios, trigger notifications. Each component, such as the service catalog or IaaS, can define events that can trigger notifications.

Each user can choose whether to receive notifications. Users either receive all notifications configured by the tenant administrator or no notifications, they do not have the fine-grained control over which notifications to receive.

Prerequisites

Verify that vRealize Automation has the inbound and outbound email servers configured. See *Configure the Default Email Servers in Region A* in *VMware Validated Design Deployment Guide for Region A*.

Procedure

- 1 Log in to the vRealize Automation Rainpole portal.
 - a Open a Web browser and go to **`https://vra01svr01.rainpole.local/vcac/org/rainpole`**.
 - b Log in using the following credentials.

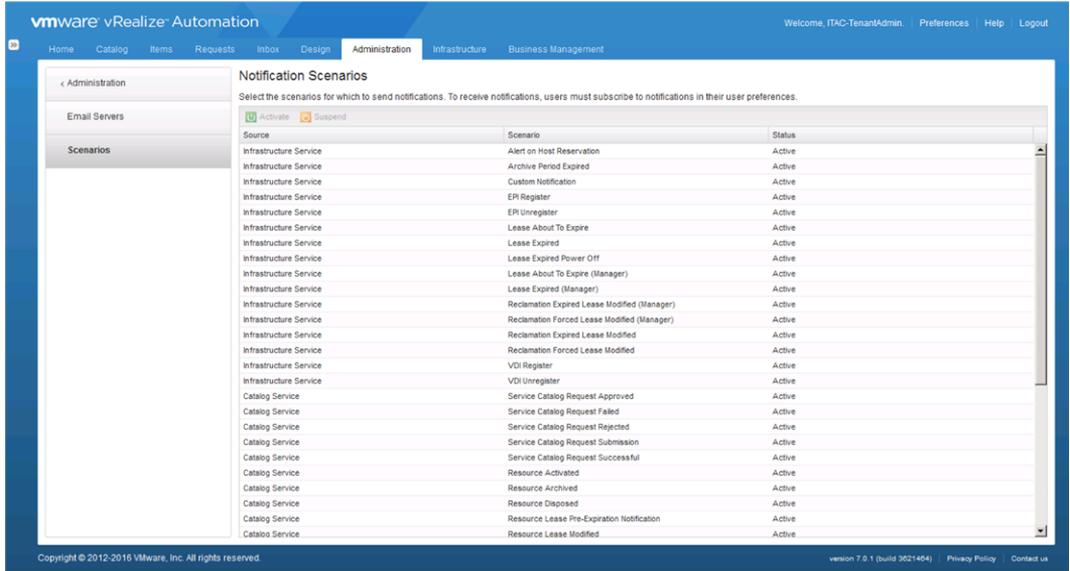
Setting	Value
User name	itac-tenantadmin
Password	<i>itac-tenantadmin_password</i>
Domain	Rainpole.local

- 2 On the **Home** page of the vRealize Automation management console, click the **Administration** tab and click **Notifications**.

3 Configure the scenarios to receive notifications about.

By default all scenarios are active.

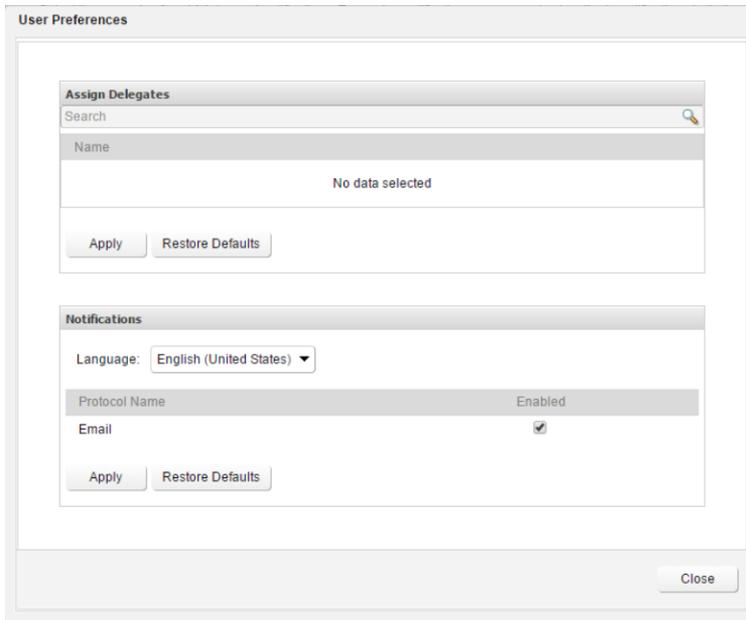
- a On the **Notifications** page, select **Scenarios** in the navigator.
- b If you do not want to be alerted on a scenario, select it and click the **Suspend** button.
- c Verify that each of the scenarios you want to receive notifications about is Active.



- 4 Subscribe to notifications from vRealize Automation.
 - a Click **Preferences** next to the ITAC-TenantAdmin user name.



- b Under **Notifications**, select **English (United States)** from the **Language** drop-down menu.
 - c Select **Enabled** next to the Email protocol, click **Apply** and click **Close**.



Notifications are now enabled for the ITAC-TenantAdmin account.