Upgrading vRealize Automation 6.2.3 for vRealize Code Stream 1.2

vRealize Code Stream 1.2

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Upgrading vRealize Automation 6.2.3 for vRealize Code Stream

Upgrading vRealize Automation 6.2.3 for vRealize Code Stream tells you how to download and install updates to upgrade vCloud Automation Center 6.1.x to vRealize Automation 6.2.3 so that you can upgrade your appliance to vRealize Code Stream 1.2.

NOTE Not all features and capabilities of vRealize Automation are available in all editions. For a comparison of feature sets in each edition, see https://www.vmware.com/products/vrealize-automation/.

Intended Audience

This information is intended for experienced Windows or Linux system administrators who are familiar with virtual machine technology and datacenter operations.

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.

Upgrading to vRealize Automation 6.2 or Later

<div style="text-align: right">**1**</div>

Upgrading is a multistage process in which procedures must be performed in a particular order. Follow the suggested processes to ensure a smooth upgrade with a minimum of system downtime. You must upgrade all product components to the same version.

NOTE   Beginning in 6.2, vCloud Automation Center is rebranded to vRealize Automation. Only the user interface and service names are changed. Directory names and program names that contain vcac are not affected.

Locate your currently installed version in the table and then follow the steps in the documents on the right to incrementally upgrade your vRealize Automation environment to the latest release. You can find links to the documentation for all versions of vCloud Automation Center and vRealize Automation at https://www.vmware.com/support/pubs/vcac-pubs.html.

Table 1-1. Supported Upgrade Paths

Your Currently Installed Version	Documentation for Incremental Upgrades
vCloud Automation Center 6.0	Perform upgrades in the following order: ■ *Upgrading vCloud Automation Center 6.0 to 6.0.1* ■ *Upgrading to vCloud Automation Center 6.1* ■ *Upgrading to vRealize Automation 6.2.x*
vCloud Automation Center 6.0.1	Perform upgrades in the following order: ■ *Upgrading to vCloud Automation Center 6.1* ■ *Upgrading to vRealize Automation 6.2.x*
vCloud Automation Center 6.1.x	*Upgrading to vRealize Automation 6.2.x*
vRealize Automation 6.2.x	Upgrade directly to the latest 6.2.x release as described in *Upgrading to vRealize Automation 6.2.x*

Checklist for Upgrading
vRealize Automation Components

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When you perform an upgrade, you update all vRealize Automation components is this order: virtual appliances, IaaS databases, and IaaS services.

The Upgrade to vRealize Automation Checklist table provides a high-level overview of upgrade tasks.

Print out a copy of this checklist and use it to track your work as you complete the upgrade. Complete the tasks in the order in which they are given.

You must upgrade components in the prescribed order and upgrade all components. Using a different order can result in unexpected behavior after the upgrade or failure of the upgrade to complete.

For information on all supported upgrade paths, see the release notes for vRealize Automation, available at the VMware vRealize Automation Documentation landing page.

Table 2-1. Upgrade to vRealize Automation Checklist

Task	Instructions	Notes
❑ Complete and verify all prerequisites for the upgrade.	See Chapter 3, "Prerequisites for Upgrading vRealize Automation," on page 11.	
❑ If you are upgrading a distributed deployment that uses a load balancer, shut down the vco-service on each vRealize Appliance.	See "Shut Down Services for the Current Deployment," on page 14.	
❑ Shut down services on your IaaS Windows Servers.	See "Shut Down vCloud Automation Center Services on Your IaaS Windows Server," on page 15.	
❑ Check for updates to the Identity Appliance.	See "Downloading Virtual Appliance Updates," on page 15.	
❑ Install the 6.2 update on the Identity Appliance.	See "Install the Update on the Identity Appliance," on page 23.	If you plan to use vSphere PSC as your SSO appliance, see Chapter 5, "Upgrading to vCenter Platform Services Controller," on page 19.
❑ Check for updates to the vRealize Appliance.	See "Downloading Virtual Appliance Updates," on page 15.	
❑ Install the 6.2 update on each vRealize Appliance in your installation.	See "Install the Update on the vRealize Automation Appliance," on page 24.	
❑ Update the IaaS database.	See "Upgrade the Database," on page 27.	

Table 2-1. Upgrade to vRealize Automation Checklist (Continued)

Task	Instructions	Notes
❑ Download and install updates for IaaS.	See Chapter 7, "Upgrading the IaaS Server," on page 27.	
❑ (Optional) Apply vRealize Automation branding to 6.2	See "Apply vRealize Automation Branding," on page 33.	

Prerequisites for Upgrading vRealize Automation

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Before you run the upgrade, review the prerequisites.

System Configuration Requirements

Verify the following system requirements before you begin an upgrade.

- Verify that you are following a supported upgrade path. See the vRealize Automation release notes for a list of supported upgrade paths.

- Verify that all appliances and servers that are part of your deployment meet the system requirements for the version you are upgrading to. See the *vRealize Automation Support Matrix* on the VMware Web site at https://www.vmware.com/support/pubs/vcac-pubs.html.

- If you are using a vSphere SSO, verify that it is a supported version and at the correct patch level. See the *vRealize Automation Support Matrix* for information about supported versions

- Consult the *VMware Product Interoperability Matrix* on the VMware Web site for information about compatibility with other VMware products.

General Prerequisites

Verify that the following prerequisites are finished before you begin an upgrade.

- Your source installation is fully installed and configured.

- Microsoft Distributed Transaction Coordinator (MSDTC) is enabled on all vRealize Automation and associated SQL servers. For instructions, see the VMware Knowledge Base article *Various tasks fail after upgrading or migrating to VMware vCloud Automation Center (vCAC) 6.1.x (2089503)* at http://kb.vmware.com/kb/2089503.

- You have backups for vRealize Appliance configuration files in the following directories for each appliance.

  - `/etc/vcac/`

  - `/etc/vco/`

  - `/etc/apache2/`

  - `/etc/rabitmq/`

- You have backups for all databases.

- You have backups for any files you have customized, such as `DataCenterLocations.xml`.

- You have a snapshot of your virtual appliances and IaaS servers.

- You perform the upgrade at a time when the system is not in heavy use.

■ You have followed the instructions in "Shut Down vCloud Automation Center Services on Your IaaS Windows Server," on page 15.

Order of Upgrade for Integrations

Review the following table for information about the order of upgrade for other VMware components integrated with your vRealize Automation deployment.

If your site uses ...	Take this action
vCloud Automation Center Designer, formerly vCloud Automation Center Designer	If your site includes vCloud Automation Center Designer, uninstall it. After the upgrade is finished, install the 6.2.x version provided on the VMware Appliance Install download page. For more information about installing and using vCloud Automation Center Designer, see *Machine Extensibility* .
An external vRealize Orchestrator appliance	If your deployment uses an external vRealize Orchestrator appliance and it is connected to the Identity Appliance, upgrade vRealize Orchestrator before you upgrade vRealize Automation.

Preparing to Upgrade vRealize Automation

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You must download updates for the virtual appliances and shut down services on instances of your vRealize Appliance and IaaS servers before you begin the upgrade.

This chapter includes the following topics:

Verify the Age of Root Passwords for Virtual Appliances

Before you upgrade vRealize Automation, you must verify the age of the root passwords for the Identity Appliance, or other SSO appliance, and the vRealize Appliance.

If a root password is 365 days old or older, you must change the password before you run the upgrade. If a root password is 364 days old or newer, you can proceed with the upgrade.

Verify the age of the password.

Procedure

1 Log in to the vRealize Appliance for the version that you want to upgrade with SSH, or log in to the virtual machine console by using the user name **root** and the password you specified when the appliance was deployed.

2 Run the `chage -l` command.

The output of the `chage -l` command appears. In this example, the date in the `Last Change` field is less than 364 days ago.

```
Minimum: 0
Maximum: 365
Warning: 7
Inactive: -1
Last Change: Dec 29, 2014
Password Expires: Dec 29, 2015
Password Inactive: Never
Account Expires: Never"
```

3   Check the value in the `Last Change` field.

- If the date reported in the `Last Change` field is less than 364 days ago you can proceed with the upgrade.

- If the date reported in the `Last Change` field is more than 365 days ago you must change your password before running the upgrade.

Shut Down Services for the Current Deployment

For high-availability deployments, in which multiple appliances are deployed and configured behind a load balancer, ensure that the `vco-server` service is disabled on each vCloud Automation Center Appliance or vRealize Appliance in your current deployment before you begin the upgrade.

IMPORTANT   Do not perform these steps if you are upgrading a minimal deployment.

Procedure

1   Log in to the vCloud Automation Center Appliance or vRealize Appliance of your current deployment with SSH or log in to the virtual machine console.

2   Verify that SSH is enabled.

a   Log in to the management console by using its fully qualified domain name `https://va-hostname.domain.name:5480/`, the user name root, and the password you specified when you deployed the appliance.

b   Click the **Admin** tab.

c   Verify that **SSH service enabled** and select **Administrator SSH login** are selected.

Selecting the **SSH service enabled** checkbox enables SSH access for all but the root user. Selecting **Administrator SSH login enabled** allows SSH login by the root user.

3   (Optional) If SSH is not enabled, select the checkboxes for **SSH service enabled** and **Administrator SSH login** on the **Admin** tab and click **Save Settings**.

4   Disable the `vco-server` service.

```
service  vco-server stop
chkconfig  vco-server off
```

Perform this step for each appliance in your current deployment and for your PostgreSQL virtual appliance if it was configured from a vCloud Automation Center Appliance or an earlier version of a vRealize Appliance.

5   Verify that the service is stopped. The returned status should be `NOT RUNNING`.

```
service vco-server status
```

6   Stop vcac-server, apache2, and rabbitmq-server services on each vCloud Automation Center Appliance or vRealize Appliance.

Do not perform this step for the first node you plan to update.

```
service  vcac-server stop
service apache2 stop
service rabbitmq-server stop
```

7   Verify that the services are stopped. The returned status for each service should be `NOT RUNNING`.

```
service  vcac-server status
service apache2 status
service rabbitmq-server status
```

Do not reboot the appliance or start these services until after you have upgraded each vCloud Automation Center Appliance or vRealize Appliance. Do not stop the vcac, apache, and rabbitmq services on the first node you plan to update.

What to do next

"Shut Down vCloud Automation Center Services on Your IaaS Windows Server," on page 15.

Shut Down vCloud Automation Center Services on Your IaaS Windows Server

Before you begin the upgrade, shut down vCloud Automation Center services on your IaaS Windows Server.

For distributed installations, shut down vCloud Automation Center services in the recommended order for all servers that are running IaaS services.

Procedure

1 Log in to your IaaS Windows Server.

2 Select **Start > Administrative Tools > Services**.

3 Shut down services in the following order.

   a All VMware vCloud Automation Center agents

   b All VMware DEM workers

   c VMware DEM orchestrator

   d VMware vCloud Automation Center Manager Service

What to do next

Choose a method for downloading the virtual appliance updates. See "Downloading Virtual Appliance Updates," on page 15 for more information.

Downloading Virtual Appliance Updates

You can check for updates from the client management page for your appliance and download the updates by using one of several methods.

■ Download Virtual Appliance Updates from a VMware Repository on page 16

   You can download the update for your Identity Appliance or vCloud Automation Center appliance from a public repository on the vmware.com Web site.

■ Download Virtual Appliance Updates from an Internal Repository on page 16

   If your Internet access is restricted, you can set up your own internal repository for updates, instead of getting updates from a VMware public repository. You can download updates as a zipped update bundle.

■ Download Virtual Appliance Updates for Use with a CD-ROM Drive on page 17

   You can update your virtual appliance from an ISO file that the appliance reads from the virtual CD-ROM drive.

Download Virtual Appliance Updates from a VMware Repository

You can download the update for your Identity Appliance or vCloud Automation Center appliance from a public repository on the vmware.com Web site.

Procedure

1   Go to the management console for your virtual appliance by using its fully qualified domain name, https://*va-hostname.domain.name*:5480.

2   Log in with the user name root and the password you specified when the appliance was deployed.

3   Click the **Update** tab.

4   Click **Settings**.

5   (Optional) Set how often to check for updates in the Automatic Updates panel.

6   Select **Use Default Repository** in the Update Repository panel.

    The default repository is set to the correct VMware.com URL.

7   Click **Save Settings**.

What to do next

■   "Install the Update on the Identity Appliance," on page 23.

■   If you have completed the update to the Identity Appliance or if you use another VMware appliance to support Single Sign-On capabilities, go to "Install the Update on the vRealize Automation Appliance," on page 24.

Download Virtual Appliance Updates from an Internal Repository

If your Internet access is restricted, you can set up your own internal repository for updates, instead of getting updates from a VMware public repository. You can download updates as a zipped update bundle.

Procedure

1   Download the zipped update bundle from the vmware.com Web site.

2   Create a repository directory under the root directory on your chosen server.

3   Extract the zipped bundle to the repository directory.

4   Go to the management console for your virtual appliance by using its fully qualified domain name, https://*va-hostname.domain.name*:5480.

5   Log in with the user name root and the password you specified when the appliance was deployed.

6   Click the **Update** tab.

7   Click **Settings**.

8   Select **Use Specified Repository** in the Update Repository panel.

9   Enter the URL of the repository you created in the **Repository URL** text box.

    For example, if the repository directory is vcac_update_repo, the URL should be similar to http://web_server_name.your_company.com/vcac_update_repo.

10 Click **Save Settings**.

What to do next

■   "Install the Update on the Identity Appliance," on page 23.

■ If you have completed the update to the Identity Appliance or if you use another VMware appliance to support Single Sign-On capabilities, go to "Install the Update on the vRealize Automation Appliance," on page 24.

Download Virtual Appliance Updates for Use with a CD-ROM Drive

You can update your virtual appliance from an ISO file that the appliance reads from the virtual CD-ROM drive.

Prerequisites

■ "Shut Down Services for the Current Deployment," on page 14.

■ All CD-ROM drives you use in your upgrade must be enabled before any vCloud Automation Center Appliances are updated. See the vSphere documentation center for information about adding a CD-ROM drive to a virtual machine in the vSphere client.

Procedure

1 Download the update ISO file from the vmware.com Web site.

2 Connect the CD-ROM drive for the virtual appliance you are updating to the ISO file you downloaded.

3 Go to the management console for your virtual appliance by using its fully qualified domain name, https://*va-hostname.domain.name*:5480.

4 Log in with the user name root and the password you specified when the appliance was deployed.

5 Click the **Update** tab.

6 Click **Settings**.

7 Under Update Repository, select **Use CDROM Updates**.

8 Click **Save Settings**.

What to do next

■ "Install the Update on the Identity Appliance," on page 23.

■ If you have completed the update to the Identity Appliance or if you use another VMware appliance to support Single Sign-On capabilities, go to "Install the Update on the vRealize Automation Appliance," on page 24.

Upgrading to vCenter Platform Services Controller

5

vRealize Appliance 6.2 or later supports the use of vCenter Platform Services Controller (PSC), the SSO component of vSphere 6.0.

You can upgrade from a vRealize Automation Identity Appliance to PSC or from a vSphere SSO used for vRealize Automation to PSC. Upgrades to PSC can be done as part of an upgrade of your deployment or independent of a general upgrade.

This chapter includes the following topics:

Upgrade an Identity Appliance to PSC for Use with vRealize Automation

You can upgrade a vRealize Automation Identity Appliance with vCenter Platform Services Controller (PSC), a component of vSphere 6.x. To do this, you must register the new SSO with vRealize Appliance, add identity stores, and create a new solution user.

You can upgrade to PSC as part of your product upgrade or as an independent product component.

Prerequisites

■   Backup and create a snapshot of your Identity Appliance.

■   Save information for identity stores for all tenants. You must recreate this information in the new SSO appliance.

■   Install vCenter PSC.

   ■   Download the vCenter Server (VCSA) for Linux and Windows Deploys from the VMware download site.

   ■   Follow the deployment procedures in the *VMware vCenter Server 6.0 Deployment Guide* searchable at http://www.vmware.com.

■   If you are upgrading to PSC as part of a complete product upgrade, upgrade your vRealize Automation deployment before beginning the following procedure.

Procedure

1   Navigate to the vRealize Appliance management console by using its fully qualified domain name, https://*vra-va-hostname.domain.name*:5480/.

2   Log in with user name root and the password you specified when you deployed vRealize Appliance.

3   Click the **vRA Settings** tab and click **SSO** from the menu bar.

4   Change the value in the **SSO Port** text box to **443**.

5   Enter the default administrator name `administrator@vsphere.local` in the **SSO Admin User** text box.

6   Enter the SSO administrator password in the **SSO Admin Password** text box. The password must match the password you specified in the SSO settings for the Identity Appliance.

7   Click **Save Settings**.

8   If you are prompted with a warning about an untrusted host, click **OK** to proceed and to restart vRealize Appliance services.

9   Wait for all services to restart before using vRealize Automation.

    a   Click the **Services** tab.

    b   Monitor the Registered Services listing. You can click **Refresh** to see the latest information.

10   Add identity stores to the new appliance.

    a   Log out of the vRealize Appliance management console.

    b   Go to your default tenant at `https://vCAC FQDN/vcac` and log in as administrator@vsphere.local.

    c   Open the tenant.

    d   Click **Update**.

    e   Open each configured tenant and add the identity stores you configured prior to the upgrade and saved earlier,

    f   Click **Add**.

    g   Click **Update**.

    h   Reopen the tenant and confirm that settings for the tenant and the IaaS administrators display correctly.

    i   Add identity stores for all tenants.

11   Go to the IaaS machine where Model Manager Data was installed and imported from and create a new data file.

    a   Open a Windows command prompt as an administrator.

    b   Go to `C:\Program Files (x86)\VMware\vCAC\Server\Model Manager Data\Cafe\`.

    c   Rename the file vcac-config.data to vcac-config.old.

    d   Run the following command to create the updated data file: `Vcac-Config.exe GetServerCertificates -url https://(vCAC FQDN) --FileName vcac-config.data`.

        For example:

```
 Vcac-Config.exe GetServerCertificates -url https://vcac.vcloud.local
--FileName vcac-config.data
```

12   Create a new solution user. A solution user represents the IaaS service and is used for authentication between Windows and virtual appliances. Use a command of the following form: `Vcac-Config.exe RegisterSolutionUser -url https://(vCAC FQDN) --Tenant vsphere.local -cu administrator@vsphere.local -cp password --FileName vcac-config.data -v`

For example:

```
Vcac-Config.exe RegisterSolutionUser -url https://vcac.vcloud.local
--Tenant vsphere.local -cu administrator@vsphere.local -cp Passw0rd123
--FileName vcac-config.data -v
```

13 Move the solution user into the IaaS database with a command of the following form: `Vcac-Config.exe MoveRegistrationDataToDB --FileName vcac-config.data -s "SQL Server FQDN" -d "Database_name" -v`

For example:

```
Vcac-Config.exe MoveRegistrationDataToDB --FileName vcac-config.data
-s "sql.vcloud.local" -d "vCAC" -v
```

14 Restart IIS or open an elevated command prompt window and type **iisreset**.

15 From the IaaS Windows machine, select **Start > Administrative Tools > Services**.

16 Restart machines for all IaaS Services in the recommended order.

All IaaS services must be restarted for the solution user change to take effect.

a VMware vCloud Automation Center Service (manager service)

b VMware DEM-Orchestrator

c VMware DEM-Worker

d VMware vRealize Automation Agents

You have created a new PSC SSO appliance with required vRealize Automation information.

Upgrade a vSphere SSO to PSC for Use with vRealize Automation

You can upgrade a vSphere SSO to vCenter Platform Services Controller (PSC), a component of vSphere 6.x. Because PSC uses a different port from other supported SSOs, you must edit your vRealize Appliance configuration to specify the new port.

You can upgrade to PSC as part of your product upgrade or as an independent product component.

NOTE PSC version 6.0 that was introduced in vSphere 6.0 allows you to specify a tenant name other than vsphere.local. vRealize Automation requires vsphere.local as the name of the default tenant because you cannot enter the name of the tenant on the SSO tab of the management console when you configure vRealize Automation. If you have used another name, rename the tenant to vsphere.local.

Prerequisites

■ Upgrade your vCenter SSO appliance to vCenter PSC.

Instructions for upgrading a 5.5 vCenter SSO to vCenter PSC are available from the vSphere documentation center and the white paper *vCenter Server Deployment* searchable at http://ww.vmware.com.

■ If you are upgrading to PSC as part of a complete product upgrade, upgrade your vRealize Automation deployment before beginning the following procedure.

Procedure

1 Navigate to the vRealize Appliance management console by using its fully qualified domain name, https://*vra-va-hostname.domain.name*:5480/.

2 Log in with user name root and the password you specified when you deployed vRealize Appliance.

3 Click the **vRA Settings** tab and click **SSO** from the menu bar.

4 Change the value in the **SSO Port** text box to **443**.

5 Enter the default administrator name **administrator@vsphere.local** in the **SSO Admin User** text box.

6   Enter the SSO administrator password in the **SSO Admin Password** text box. The password must match the password you specified in the SSO settings for the Identity Appliance.

7   Click **Save Settings**.

8   If you are prompted with a warning about an untrusted host, click **OK** to proceed and to restart vRealize Appliance services.

9   Wait for all services to restart before using vRealize Automation.

    a   Click the **Services** tab.

    b   Monitor the Registered Services listing. You can click **Refresh** to see the latest information.

The Platform Services Controller server is in use.

Installing the Virtual Appliance Updates

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After you complete prerequisites for upgrading and download the update, you install updates for the Identity Appliance and for all instances of the vRealize Appliance. You can also choose to upgrade from an Identity Appliance or vSphere SSO appliance to vCenter Platform Services Controller (PSC).

Your vRealize Automation upgrade does not affect vSphere appliances, however, you must reconfigure vRealize Automation settings when you upgrade to PSC from an earlier version of the vSphere SSO or when you replace an Identity Appliance with PSC. For more information, see Chapter 5, "Upgrading to vCenter Platform Services Controller," on page 19.

This chapter includes the following topics:

- "Install the Update on the Identity Appliance," on page 23
- "Install the Update on the vRealize Automation Appliance," on page 24

Install the Update on the Identity Appliance

You install the update on the Identity Appliance before you update the vRealize Appliance.

Prerequisites

- Select a download method and download the update. See "Downloading Virtual Appliance Updates," on page 15.
- "Shut Down vCloud Automation Center Services on Your IaaS Windows Server," on page 15.

Procedure

1 Log in to the Identity Appliance management console and open the **Update** tab.

   a Go to the management console for your virtual appliance by using its fully qualified domain name, https://*va-hostname.domain.name*:5480.

   b Log in with the user name root and the password you specified when the appliance was deployed.

   c Click the **Update** tab.

2 Click **Check Updates** to verify that an update is accessible.

3 Click **Install Updates**.

4 Click **OK** to confirm that you want the update to proceed.

   The time it takes for the update to finish is dependent on your site environment.

5   After the update is installed, reboot the virtual appliance.

    a   Click the **System** tab.

    b   Click **Reboot** and confirm your selection.

6   Clear the cache of the Web browser used to access the management console.

What to do next

"Install the Update on the vRealize Automation Appliance," on page 24.

Install the Update on the vRealize Automation Appliance

You install the update on the vRealize Appliance after you upgrade and reboot the Identity Appliance. Apply the update to each instance of vRealize Appliance in your installation.

NOTE   If your deployment uses a load balancer, disable all but one vRealize Appliance for load balancer traffic. The first appliance you plan to upgrade must be connected to the load balancer. All other instances of vRealize Appliance must be disabled for load balancer traffic when you upgrade them.

If you are using a vRealize Appliance as a dedicated appliance database server, update it before you update a vRealize Appliance used as an application server.

Wait for the reboot to complete on one appliance before starting the upgrade on another.

Prerequisites

■   Select a download method and download the update. See "Downloading Virtual Appliance Updates," on page 15.

■   For high-availability deployments, "Shut Down Services for the Current Deployment," on page 14.

■   Verify that the identity server is running.

■   Before you apply the appliance upgrade for deployments that use load balancers, disable traffic for all nodes except the first node you that you plan to upgrade in order to prevent cache errors.

Procedure

1   Log in to the vRealize Appliance management console and click the **Update** tab.

    a   Go to the management console for your virtual appliance by using its fully qualified domain name, https://*va-hostname.domain.name*:5480.

    b   Log in with the user name root and the password you specified when the appliance was deployed.

    c   Click the **Update** tab.

2   Click **Status**.

3   Click **Check Updates** to verify that an update is accessible.

4   (Optional) For instances of vRealize Appliance, click **Details** in the Appliance Version area to see information about the location of release notes.

5   Read the note about participation in the Customer Experience Improvement Program.

Participation is automatically enabled when you upgrade. See *System Administration* for information about setting parameters for data collection and enabling and disabling participation after installation.

```
You are enrolled in Customer Experience Improvement Program (CEIP) during this
upgrade. More information about program here: vRealize Automation product documentation. You
can opt-out of this program by visiting the "Telemetry" tab in the product management
console.
```

6   Click **Install Updates**.

7   Click **OK**.

An informational message stating that the update is in progress appears. The time it takes for the update to finish depends on your site environment.

8   Reboot the virtual appliance.

   a   Click the **System** tab.

   b   Click **Reboot** and confirm your selection.

9   Clear the cache of the Web browser that you use to access the management console.

10 Verify that services are running.

   a   Log in to the vRealize Appliance management console.

   b   Click the **Services** tab on the console.

   c   Click the **Refresh** tab to monitor the progress of service startup.

      You should see a minimum of twenty-one services.

11 If your deployment uses a load balancer, repeat these steps for each vRealize Appliance.

Leave the second and subsequent vRealize Appliance disabled for load balance traffic when you apply the update.

12 Reconnect all virtual appliances to the load balancer.

What to do next

Upgrade the IaaS database and servers. See Chapter 7, "Upgrading the IaaS Server," on page 27.

Upgrading the IaaS Server 7

A system administrator upgrades the IaaS server components and the SQL database.

You upgrade the SQL database for IaaS with the `DBUpgrade` command and you upgrade the IaaS server components with the IaaS Installer.

NOTE   You must upgrade the database before you upgrade the IaaS server and its components.

This chapter includes the following topics:

- "Upgrade the Database," on page 27
- "Download the IaaS Installer," on page 29
- "Upgrade the IaaS Components," on page 29

Upgrade the Database

An administrator must upgrade the database with the `DBUpgrade.exe` command before upgrading the IaaS components.

The `DBUpgrade` command requires the names of the SQL Server database instance and the vRealize Automation database and the port number if you are using a port other than the default SQL port. It can use Windows authentication or it accepts credentials to access the database using SQL authentication. It creates a log file named `dbupgrade.log` in the current directory if you do not provide a path name for a different log file.

IMPORTANT   Run this command only once during an upgrade.

If the correct Java version is not installed, or if the JAVA_HOME environment is set incorrectly, you see a message similar to the following one:

```
Upgrading VMware vCAC or vCloud Automation Center IaaS SQL database
fails with the error: Java version 1.7(64-bit) must be installed,
the environment variable JAVA_HOME must be set to the Java install folder, and
%JAVA_HOME%\bin\java.exe (2089329)
```

For information about resolving the error, see the VMware Knowledge Base article at http://kb.vmware.com/kb/2089329.

Prerequisites

- Verify that the machine on which you run the `DBUpgrade` command meets the following Java-related requirements.

  - 64-bit Java version 1.7 or later is installed. 32-bit versions are not supported.

- ■ The environment variable JAVA_HOME is set to the Java install folder.

- ■ The `%JAVA_HOME%\bin\java.exe` file is available.

Procedure

1   Navigate to the Windows installer download page by using https://*vcac-va-hostname.domain.name*: 5480/installer/, the host name of the vRealize Appliance.

2   Click **database upgrade scripts** from the list of options under IaaS Installation.

3   Extract the contents of the `DBUpgrade.zip` archive file to a local folder on the vRealize Automation database host, or to another location with network access to the database host.

4   In an elevated Windows command prompt window, set your current directory to the folder where you extracted the contents of the `DBUpgrade.zip` archive file.

5   Enter a `DBUpgrade` command string in the following format.

```
DBUpgrade [–S dbserver[,port number][\SQLinstance]] [–d dbname] [{–E | –U username}] [–l
logfilepath]
```

Option	Description
-S dbserver [,portnumber] [\SQLinstance]	Identifies the database server instance by server name, port number and SQL instance name.
	Allowable values for *dbserver* are **localhost** or a fully qualified domain name for the database server.
	If you are using an SQL port number other than the default, 1433, you must specify the port number as part of the FQDN. If no port number is specified, the 1433 port is used.
	If you are using a named SQLinstance, specify the instance name. If no name is specified, the default, unnamed SQL instance is used.
-d dbname	Identifies the vRealize Automation database *dbname*.
-E	Requires a Windows Authentication trusted connection to access the database and connects using the Windows credentials of the user who is running the command.
-U username	Specifies the user name for the database owner account.
-l logfilepath	Specifies the full pathname of the upgrade log file. By default, the command creates the `dbupgrade.log` log file in the current directory.

6   (Optional) At the prompt, enter the password for the database owner account.

You are prompted for this information only when you specify a username with the -U *username* argument to the `DBUpgrade` command.

The command upgrades the database to the latest release.

Example: DBUpgrade.exe

The following examples illustrate uses of command syntax.

- ■ `DBUpgrade`

  With no options, displays usage information.

- ■ `DBUpgrade –S localhost    –d VCAC –E`

  Upgrades the VCAC database in the default, unnamed SQL instance running on the local host on the default port 1433 and connects using your Windows credentials over a Windows Authentication trusted connection.

- ■ `DBUpgrade –S dbhost.mydomain.local,5555 –d VCAC –E`

Upgrades the VCAC database in the default, unnamed SQL instance running on dbhost on the non-default port 5555 and connects using your Windows credentials over a Windows Authentication trusted connection.

■ `DBUpgrade –S dbhost.mydomain.local\MySQLinstance –d VCAC –U SqlUser –l    %SystemDrive %\VCACDBUpgrade\Log_30Apr.log`

Logs in as the user named SqlUser and prompts you for the password for the SqlUser account. Then, upgrades the VCAC database in the named instance MySQLinstance running on dbhost on the default port, and creates the `Log_30Apr.log` upgrade log file in the VCACDBUpgrade folder on the system drive.

■ `DBUpgrade –S dbhost.mydomain.local,5555\MySQLinstance –d VCAC –E –l %SystemDrive %\VCACDBUpgrade\Log_30Apr.log`

Upgrades the database VCAC in the named instance MySQLinstance running on dbhost and the non-default port 5555, logs in using your Windows credentials over a Windows Authentication trusted connection, and creates the `Log_30Apr.log` upgrade log file in the VCACDBUpgrade folder on the system drive.

Download the IaaS Installer

You download the IaaS installer to the machine where the IaaS components to be upgraded are installed.

If you see certificate warnings during this procedure, you can ignore them.

Prerequisites

■ Verify that Microsoft .NET Framework 4.5.1 or later is installed on the IaaS installation machine. You can download the .NET installer from the vRealize Automation installer Web page.

■ If you are using Internet Explorer for the download, verify that Enhanced Security Configuration is not enabled. See `res://iesetup.dll/SoftAdmin.htm`.

■ Log in as a local administrator to the Windows server where one or more of the IaaS components to be upgraded are installed.

■ The IaaS components to be upgraded must be part of vRealize Automation 6.0.1. If they are from vRealize Automation 6.0, then you must upgrade them to vRealize Automation 6.0.1 before you can proceed with this upgrade.

Procedure

1 Open a Web browser.

2 Enter the URL for the Windows installer download page.

For example, **https://*vcac–va–hostname.domain.name***:5480/installer**, where *vcac-va-hostname.domain.name* is the name of the vRealize Appliance host.

3 Click the **IaaS installer** link.

4 When prompted, save the installer file, setup__*vcac-va-hostname.domain.name*@5480.exe, to the desktop.

Do not change the file name. It is used to connect the installation to the vRealize Appliance.

Upgrade the IaaS Components

You must upgrade the database and configure all systems that have IaaS components installed. You can use these steps for minimal and distributed installations.

If you have multiple IaaS servers, perform the upgrade so that services are upgraded in the following order:

1 Websites

If you are using a load balancer, disable all Websites for load balancer traffic except the Website on which Model Manager data is install. Upgrade the Website on which Model Manager data is installed first.

Finish the upgrade on one server before upgrading the next server that is running a Website service.

2   Manager services

Upgrade the active manager service before you upgrade the passive manager service and reboot the system where the passive manager service is installed.

3   DEM orchestrator and workers

Upgrade all DEM orchestrators and workers. Finish the upgrade on one server before you upgrade the next server.

4   Agents

Finish the upgrade on one server before you upgrade the next server that is running an agent.

If you are using different services on one server, the upgrade updates the services in the proper order. For example, if your site has Website and manager services on the same server, select both for update. The upgrade installer applies the updates in the proper order. You must complete the upgrade on one server before you begin an upgrade on another.

NOTE   If your deployment uses a load balancer, the first appliance you plan to upgrade must be connected to the load balancer. All other instances of vRealize Appliance appliances must be disabled for load balancer traffic before you apply the upgrade to avoid caching errors.

Prerequisites

■   "Shut Down vCloud Automation Center Services on Your IaaS Windows Server," on page 15

■   "Download the IaaS Installer," on page 29.

■   "Upgrade the Database," on page 27.

Procedure

1   If you are using a load balancer, prepare your environment.

a   Verify that the Website on which Model Manager data is installed is enabled for load balancer traffic.

You can identify this node by the presence of the `<vCAC Folder>\Server\ConfigTool` folder.

b   Disable all other Websites for load balancer traffic.

2   Right-click the `setup__vra-va-hostname.domain.name`@5480.exe setup file and select **Run as administrator**.

3   Click **Next**.

4   Accept the license agreement and click **Next**.

5   Type the administrator credentials for your current deployment on the Log In page.

The user name is root and the password is the password that you specified when you deployed the appliance.

6   Select **Accept Certificate**.

7   Select **Upgrade** on the Installation Type page and click **Next**.

8   Configure the upgrade settings.

Option	Action
If you are upgrading the Model Manager Data	Select the **Model Manager Data** check box in the vCAC Server section.
	The check box is selected by default. Upgrade the Model Manager data only once. If you are running the setup file on multiple machines to upgrade a distributed installation, the Web servers stop functioning while there is a version mismatch between the Web servers and the Model Manager data. When you have upgraded the Model Manager data and all of the Web servers, all of the Web servers should function.
If you are not upgrading the Model Manager Data	Unselect the **Model Manager Data** check box in the vCAC Server section.
To preserve customized workflows as the latest version in your Model Manager Data	If you are upgrading the Model Manager Data, select the **Preserve my latest workflow versions** check box in the Extensibility Workflows section.
	The check box is selected by default. Customized workflows are always preserved. The checkbox determines version order only. If you used vCloud Automation Center Designer to customize workflows in the Model Manager, select this option to maintain the most recent version of each customized workflow before upgrade as the most recent version after upgrade.
	If you do not select this option, the version of each workflow provided with vCloud Automation Center Designer 6.1 becomes the most recent after upgrade, and the most recent version before upgrade becomes the second most recent. For information about vCloud Automation Center Designer, see *Extensibility*.
If you are upgrading a Distributed Execution Manager or a proxy agent	Enter the credentials for the administrator account in the Service Account section. All of the services that you upgrade run under this account.
To specify your Microsoft SQL Server database	If you are upgrading the Model Manager Data, enter the names of the database server and database instance in the **Server** text box in the Microsoft SQL Server Database Installation Information section. Use a fully qualified domain name (FQDN) for the database server name.
	If the database instance is on a non-default SQL port, include the port number in the server instance specification. The Microsoft SQL default port number is 1433.

9   Click **Next**.

10   Confirm that all services to upgrade appear on the Ready to Upgrade page, and click **Upgrade**.

The Upgrading page and a progress indicator appear. When the upgrade process finishes, the **Next** button is enabled.

11   Click **Next**.

12   Click **Finish**.

13   Verify that all services restarted.

14   If the DEM orchestrator, DEM workers, or agents are installed on the same server where Model Manager Data has been upgraded, reboot the appliance.

15   Repeat these steps for each IaaS server in your deployment in the recommended order.

16   If your deployment uses a load balancer, reenable load balancer traffic for any unconnected nodes.

17   After all components are upgraded, log in to the management console for the appliance and verify that all services, including IaaS, are now registered.

All of the selected components are upgraded to the new release.

Post-Upgrade Tasks for vRealize Automation

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</div>

After you upgrade vRealize Automation, perform any required post-upgrade tasks.

This chapter includes the following topics:

Apply vRealize Automation Branding

vCloud Automation Center branding remains on the console login page after you upgrade from vCloud Automation Center 6.1 to vRealize Automation 6.2.

You can update your login console to use vRealize Automation branding. Note that this procedure sets default vRealize Automation branding. It does not set customer specific branding.

Prerequisites

Complete the upgrade to vRealize Automation 6.2 before you begin this procedure.

Procedure

1   Navigate to the vRealize Appliance management console by using its fully qualified domain name, https://vra-va-hostname.domain.name:5480

2   Log in with the username root and the password you specified when the appliance was deployed.

3   Click the **vRA Settings** tab.

4   Click **SSO.**

5   Enter the settings for your SSO Server. These settings must match the settings you entered when you configured your SSO appliance.

   a   Type the fully qualified domain name of the SSO appliance by using the form `sso–va–hostname.domain.name` in the **SSO Host** text box. Do not use an https:// prefix. For example, **vra–sso–mycompany.com**.

   b   The default port number, 7444, is displayed in the `SSO Port` text box. Edit this value if you are using a non-default port.

   c   Do not modify the default tenant name, **vsphere.local**.

      d   Type the default administrator name `administrator@vsphere.local` in the **SSO Admin User** text box.

      e   Type the SSO administrator password in the **SSO Admin Password** text box.

6   Select **Apply Branding**.

7   Click **Save Settings**.

    After a few minutes, a success message appears and the SSO Status is updated to Connected.

The login console uses vRealize Automation branding.

Port Configuration for High-Availability Deployments

After finishing an upgrade in a high availability deployment, you must configure the load balancer to pass traffic on port 8444 to the vRealize Appliance to support remote console features.

Enabling the Connect to Remote Console Action for Consumers

The remote console action for consumers is supported for appliances provisioned by vSphere in vRealize Automation 6.2.1 and later. You must modify blueprints created in 6.2.0 to enable this feature.

Edit the blueprint after you have upgraded the release and select the **Connect to Remote Console** action on the **Action** tab.

If your blueprint was created in 6.1 and the **Connect to Remote Console** action was enabled, the action is automatically reenabled in 6.2.1 and later releases and you are not required to edit the blueprint.

For more information, see Knowledge Base article 2109706.

Post vRealize Code Stream Upgrade

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During an upgrade from vRealize Code Stream 1.0 to vRealize Code Stream 1.2, existing endpoints are added to the appliance and the format of release pipeline variables is updated.

Jenkins Server and vRealize Automation Server Endpoints

vRealize Code Stream retrieves all of the existing Jenkins Server and vRealize Automation Server endpoints from vRealize Orchestrator and adds them as new entries to the page at **Administration > Orchestration Configuration > Endpoints**.

The updated Jenkins server endpoint name is prefixed with Jenkins_*EndpointName* and the updated vRealize Automation server endpoint name is prefixed with Vra_*EndpointName*.

Release Pipeline Variables

The format of existing release pipeline variable values such as $RP1 and $RP2 are updated to $ {pipeline.RP1} and ${pipeline.RP2} during the upgrade.

Task Output Variables

The format of existing task output variable values such as $*CustomScriptName*_OUTPUT are updated to $ {*StageName*.*TaskName*.outputConfig} in the release pipeline during the upgrade.

Variable Names

The format of variable names for manual approval in custom tasks are updated during the upgrade.

Table 9-1. Variable Name Values

Pre-upgrade Format	Post-upgrade Format
$*ReleasePipelineName*	${*releasePipelineName*}
$*StageName*	${*stageName* }
$*NextStageName*	${*nextStageName*}
$*TaskName*	${*taskName*}
$*NextTaskName*	${*nextTaskName*}

Variable Concatenation

The format of variable values that are concatenated such as $RP1 with output $*CustomScriptName*_OUTPUT are updated to ${pipeline.RP1} with output ${*StageName*.*TaskName*.outputConfig} during the upgrade.

Troubleshooting the Upgrade

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The upgrade troubleshooting topics provide solutions to problems that you might encounter when upgrading vRealize Automation.

This chapter includes the following topics:

Installation or Upgrade Fails with a Load Balancer Timeout Error

A vRealize Automation installation or upgrade for a distributed deployment with a load balancer fails with a 503 service unavailable error.

Problem

The installation or upgrade fails because the load balancer timeout setting does not allow enough time for the task to complete.

Cause

An insufficient load balancer timeout setting might cause failure. You can correct the problem by increasing the load balancer timeout setting to 100 seconds or greater and rerunning the task.

Solution

1   Increase your load balancer timeout value to at least 100 seconds. For example, and depending on the load balancer you are using, edit the load balancer timeout setting in your `ssl.conf`, `httpd.conf` or other Web configuration file.

2   Rerun the installation or upgrade.

Upgrade Fails for Website Component During IaaS Upgrade

The IaaS upgrade fails and you cannot continue the upgrade.

Problem

The installer cannot update the `web.config` file.

Cause

This occurs when the creation date for the `web.config` file is the same as or later than the modified date.

Solution

1   Before you begin the upgrade, open the `web.config` file in an editor from an account with elevated privileges.

2   Save the file to change the date stamp for modification.

3   Verify that the file modification date for the `web.config` file is later than the creation date.

4   Run the IaaS upgrade.

Incorrect Tab Names Appear Intermittently

IaaS tabs and other tabs might be labeled incorrectly.

Problem

After upgrading a high availability environment from vCloud Automation Center 6.0.x or 6.1 to vRealize Automation 6.2, tabs might intermittently appear with incorrect names.

Solution

Restart all the vRealize Automation virtual appliances to restore the correct tab names.

Retrieve Logs to Troubleshoot the vRealize Code Stream Upgrade

You can retrieve the logs from the `catalina.out` log file in the vRealize Automation appliance to troubleshoot the vRealize Code Stream upgrade.

Prerequisites

Verify that you have credentials for logging in to the Linux-based virtual machine with root privileges.

Procedure

1   Log in to the virtual machine.

2   Navigate to the `/var/lib/vcac/server/logs` directory.

3   Retrieve upgrade logs from the `catalina.out` log file.

    grep -3n "vRCS Upgrade" catalina.out

4   Identify upgrade logs that have a `vRCS Upgrade` -> prefix.

    The release pipelines that failed to migrate have an error description next to the pipeline name.

Changes Made to /etc/hosts Files Might Be Overwritten

Problem

If you made changes to the `/etc/hosts` file, they might be overwritten when any of the following actions occur:

■   Reboot

■   Network changes

■   Changes made in the **Management console-> Network** tab

■   Upgrade

Solution

To make a permanent change to the /etc/hosts file, you must make the change outside of the VAMI_EDIT_BEGIN to VAMI_EDIT_END section because this section is overwritten when a network change is detected.

vRealize Automation Requires vsphere.local as the Default Tenant Name

vSphere 6.0 permits assignment of a tenant name other than vsphere.local. However, alternate names cannot be used for the vRealize Automation default tenant name.

Problem

If you specify a tenant name other than vsphere.local with vSphere 6.0 Platform Service Control (PSC), you cannot configure the default tenant for vRealize Automation.

Cause

vRealize Automation requires that the default tenant name be vsphere.local. Input is for other tenant names is disabled on the **SSO** tab of the management console.

Solution

Rename the tenant to vsphere.local.

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