



# Lenovo XClarity Integrator for VMware vRealize Automation Installation and User Guide



**Version 1.2.0**

**Note**

Before using this information and the product it supports, read the information in [Appendix A “Notices” on page 19](#).

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## About this publication

This guide provides information about how to install and use Lenovo XClarity Integrator for VMware vRealize Automation.

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## Conventions and terminology

Paragraphs that start with a bold **Note**, **Important**, or **Attention** are notices with specific meanings that highlight key information.

### Conventions

<b>Note:</b> These notices provide important tips, guidance, or advice.
<b>Important:</b> These notices provide information or advice that might help you avoid inconvenient or difficult situations.
<b>Attention:</b> These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

### Terminology

Term	Definition
LXCI	Lenovo XClarity Integrator
LXCA	Lenovo XClarity Administrator
vRA	VMware vRealize Automation
vRO	VMware vRealize Orchestrator



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# Chapter 1. Lenovo XClarity Integrator for VMware vRealize Automation

Lenovo XClarity Integrator for VMware vRealize Automation (vRA) (henceforth referred as the **plug-in**) is installed on top of vRealize Automation and allows cloud administrators to easily, and repeatedly, provision hardware infrastructure components (such as Lenovo servers) into vRealize-managed hybrid cloud environments.

VMware vRealize Automation automates the delivery of personalized infrastructure, applications, and custom IT services. This cloud automation software lets you deploy across hybrid cloud infrastructure, giving you both flexibility and investment protection for current and future technology choices.

The Lenovo vRA plugin supports creation of the following Lenovo Server Blueprints:

1. Install ESXi
2. Add license to provisioned ESXi host
3. Assign a configuration pattern
4. De-assign a configuration pattern
5. Register XClarity Administrator
6. Unregister XClarity Administrator
7. Master workflow
8. Configure ESXi host

The Lenovo vRA plugin supports creation of the following Lenovo Virtualization Blueprints:

1. Create cluster
2. Delete cluster
3. Add host to cluster
4. Remove host
5. Enter maintenance mode
6. Exit maintenance mode
7. Create distributed virtual switch with port group
8. Attach host to distributed virtual switch
9. Add port group to distributed virtual switch
10. Create private VLAN
11. Delete private VLAN
12. Update distributed virtual port group
13. Delete distributed virtual port group
14. Add a vCenter Server instance

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## Plug-in contents

The Lenovo XClarity Integrator for VMware vRealize Automation contains the `<com.lenovo.library.softbundle.package>` files. This vRealize Orchestrator workflow package contains the workflows that are required for the Lenovo Virtualization and Server Blueprints.





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## Chapter 2. Configuring Lenovo XClarity Integrator for VMware vRealize Automation

Use this procedure to install Lenovo XClarity Integrator for VMware vRealize Automation. The vRealize installer helps you install vRealize Automation.

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### Prerequisites

This section describes software requirements for Lenovo XClarity Integrator for VMware vRealize Automation.

*Table 1. Software requirements*

Software	Version
EXSi OS	6.7 GA and 7.0 GA
vCenter	7.0
VMware vRealize Automation	8.3
Lenovo XClarity Administrator	3.2.0 and 3.3.0
Lenovo XClarity Integrator for VMware vRealize Orchestrator	1.2.0
Web browser	Google Chrome

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### Supported server models

Lenovo XClarity Integrator for VMware vRealize Automation supports Lenovo ThinkAgile VX servers and ThinkSystem servers.

The following Lenovo ThinkAgile VX servers and ThinkSystem servers are supported.

System	Server models	
ThinkAgile VX Series appliances	<ul style="list-style-type: none"> <li>• ThinkAgile VX1320 Certified (7Z58)</li> <li>• ThinkAgile VX 1U Certified (7Y93)</li> <li>• ThinkAgile VX 2U Certified (7Y94)</li> <li>• ThinkAgile VX 2U4N Certified (7Y92)</li> <li>• VX2320 (7Y13, 7Y93)</li> <li>• VX3320 (7Y13, 7Y93)</li> <li>• VX3520-G (7Y14, 7Y94)</li> <li>• VX3720 (7Y12, 7Y92)</li> </ul>	<ul style="list-style-type: none"> <li>• VX3720-N (7Y93)</li> <li>• VX5520 (7Y14, 7Y94)</li> <li>• VX7320 (7Y94)</li> <li>• VX7520 (7Y14)</li> <li>• VX7520-N (7Y14)</li> <li>• VX7520 (7Y94)</li> <li>• VX7820 (7Z12, 7Z13, 7Z14)</li> <li>• VX-SR665 (7D43)</li> </ul>
ThinkSystem servers	<ul style="list-style-type: none"> <li>• SD530 (7X21)</li> <li>• SD630 V2 (7D1K)</li> <li>• SD650 (7X58)</li> <li>• SD650 V2 (7D1M)</li> <li>• SD650-N V2 (7D1N)</li> <li>• SE350 (7D1X, 7D27, 7Z46)</li> <li>• SR150 (7Y54)</li> <li>• SR158 (7Y55)</li> <li>• SR258 (7Y53)</li> <li>• SR250 (7Y51, 7Y52, 7Y72, 7Y73)</li> <li>• SR530 (7X07, 7X08)</li> <li>• SR550 (7X03, 7X04)</li> <li>• SR570 (7Y02, 7Y03)</li> <li>• SR590 (7X98, 7X99)</li> <li>• SR630 (7X01, 7X02)</li> <li>• SR630 V2 (7Z70, 7Z71)</li> <li>• SR635 (7Y98, 7Y99)</li> <li>• SR645 (7D2X, 7D2Y)</li> <li>• SR650 (7X05, 7X06)</li> <li>• SR650 (7D4K)</li> </ul>	<ul style="list-style-type: none"> <li>• SR650 V2 (7Z72, 7Z73)</li> <li>• SR655 (7Y00, 7Z01)</li> <li>• SR665 (7D2V, 7D2W)</li> <li>• SR670 (7Y36, 7Y37, 7Y38)</li> <li>• SR670 V2 (7Z22, 7Z23)</li> <li>• SR850 (7X18, 7X19)</li> <li>• SR850 V2 (7D31, 7D32, 7D33)</li> <li>• SR850P (7D2H)</li> <li>• SR850P (7D2F, 7D2G)</li> <li>• SR860 (7X69, 7X70)</li> <li>• SR860 V2 (7Z59, 7Z60, 7D42)</li> <li>• SR950 (7X11, 7X12)</li> <li>• SR950(7X13)</li> <li>• ST250 (7Y45, 7Y46)</li> <li>• ST258 (7Y47)</li> <li>• ST550 (7X09, 7X10)</li> <li>• ST550 (7X09, 7X10)</li> <li>• ST558 (7Y15, 7Y16)</li> <li>• ST650 V2 (7Z74, 7Z75)</li> </ul>

## Installing Lenovo XClarity Integrator for VMware vRealize Orchestrator

Install Lenovo XClarity Integrator for VMware vRealize Orchestrator prior to installing the vRA plugin.

### Procedure

To install the plugin, complete the following steps.

- Step 1. Log in to vRA control server using `https://<vra fqdn>/vco-controlcenter` and enter the valid log in credentials (root/password).
- Step 2. On `https://<vRA FQDN>/vco-controlcenter/config/#/`, click **Manage plugins**.
- Step 3. Click **Browse** to navigate to the folder where you have saved the plug-in to be installed. Select LXCI for vRO 1.2.0 plugin.
- Step 4. Click **UPLOAD**. The end-user license agreement screen is displayed.
- Step 5. Read the end-user license, select **Accept EULA to proceed**, and then click **INSTALL**.

After successful installation, you can see the Lenovo XClarity Integrator in the inventory list in the **Administration** tab.

## Installing Lenovo XClarity Integrator for VMware vRealize Automation

Lenovo XClarity Integrator for VMware vRealize Automation is installed using the VMware vRealize Automation softbundle package.

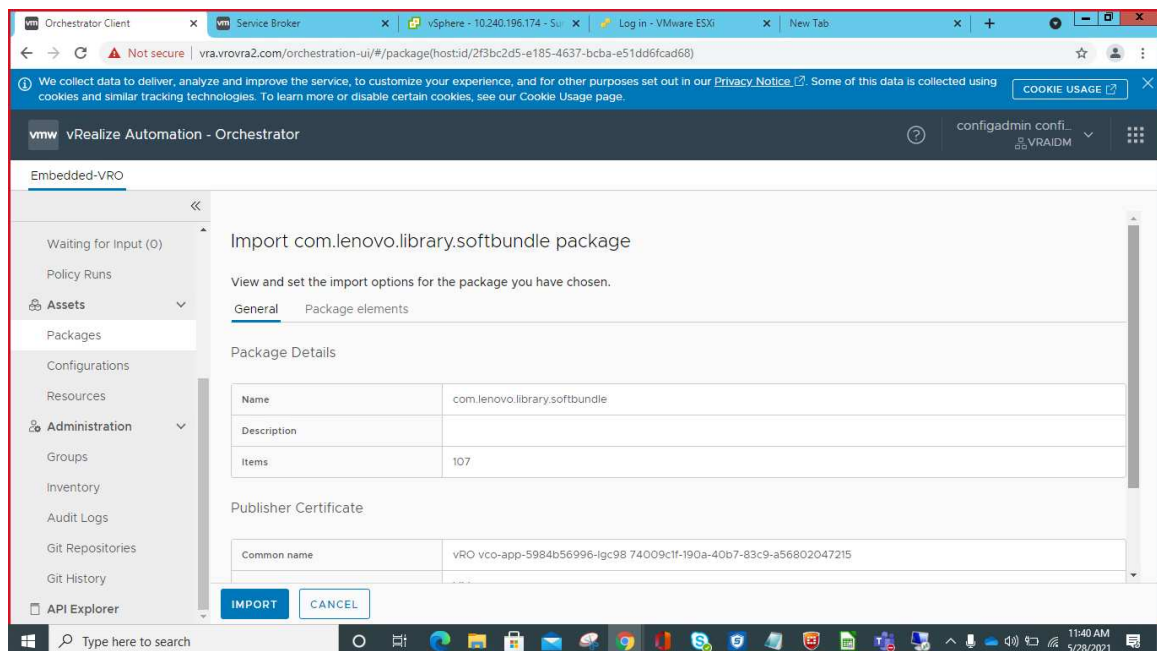
### Before you begin

- Deploy vCenter server 7.0 on the ESXi host.
- Install vRA 8.3 server using the vRA easy installer file on ESXi host. For details, see [VMware vRealize Automation](#) documents.
- Deploy LXCA server and create server configuration LX pattern in Lenovo XClarity Administrator server. If you want to deploy ESXi to provision servers, please also upload ESXi (6.7/7.0) in the deployed Lenovo XClarity Administrator and configure the network correctly for OS deployment.
- Install LXCI for vRO plugin 1.2.0 in the vRA 8.3 control server. For details, see [“Installing Lenovo XClarity Integrator for VMware vRealize Orchestrator” on page 4.](#)
- Add vCenter 7.0 server in vRA 8.3 server.
  1. Log in to the vRA server.
  2. Click **LAUNCH QUICKSTART** on the cloud account types.
  3. Click **VMware vCenter server > Start** and provide the details prompted.
- Create new Cloud Zone.
  1. Log in to the vRA server.
  2. Click **Service Broker > Configure > Cloud Zones > New Cloud Zone.**
- Add a new project.
  1. Log in to the vRA server.
  2. Click **Service Broker -> Administration -> Projects -> New Project**, Enter a new project name.
  3. Click **Provisioning -> ADD ZONE**, add a Cloud Zone
  4. Ensure that all required software is installed and configured. For details, see [“Prerequisites” on page 3.](#)

## Procedure

To install the plugin, complete the following steps.

- Step 1. Log in to vRA 8.3 server using `https://<vra FQDN>`.
- Step 2. Click **Go To Login Page** and give valid vRA credentials. The **vRealize Automation- Cloud services console** page is displayed.
- Step 3. In the **My Services** section, click **Orchestrator**, and you are redirected to the **vRealize Automation- Orchestrator** page.
- Step 4. Navigate to **Embedded vRO > Assets > Packages** and click **IMPORT** and add the `com.lenovo.library.softbundle` package from the local storage.



Step 5. After successful import, you can see the **Lenovo softbundle** folder under the following path: **Embedded vRO > Library > Workflows**.

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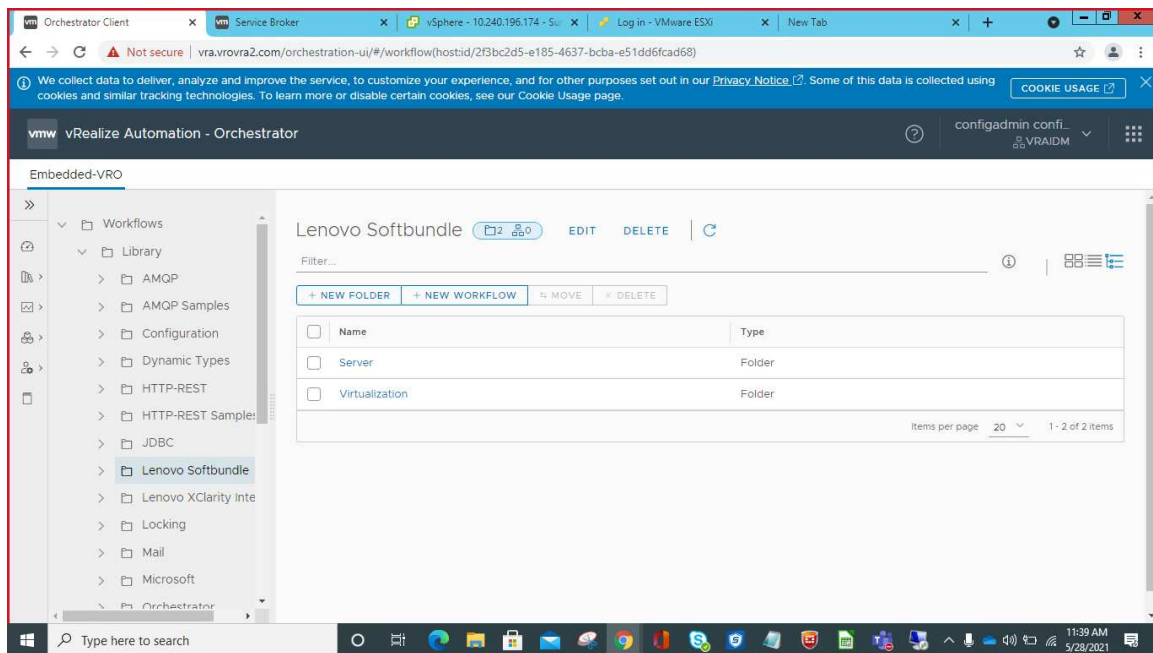
## Deleting Lenovo XClarity Integrator for VMware vRealize Automation

To delete the package, delete the `<com.lenovo.library.softbundle.package>` plug-in from the package list.

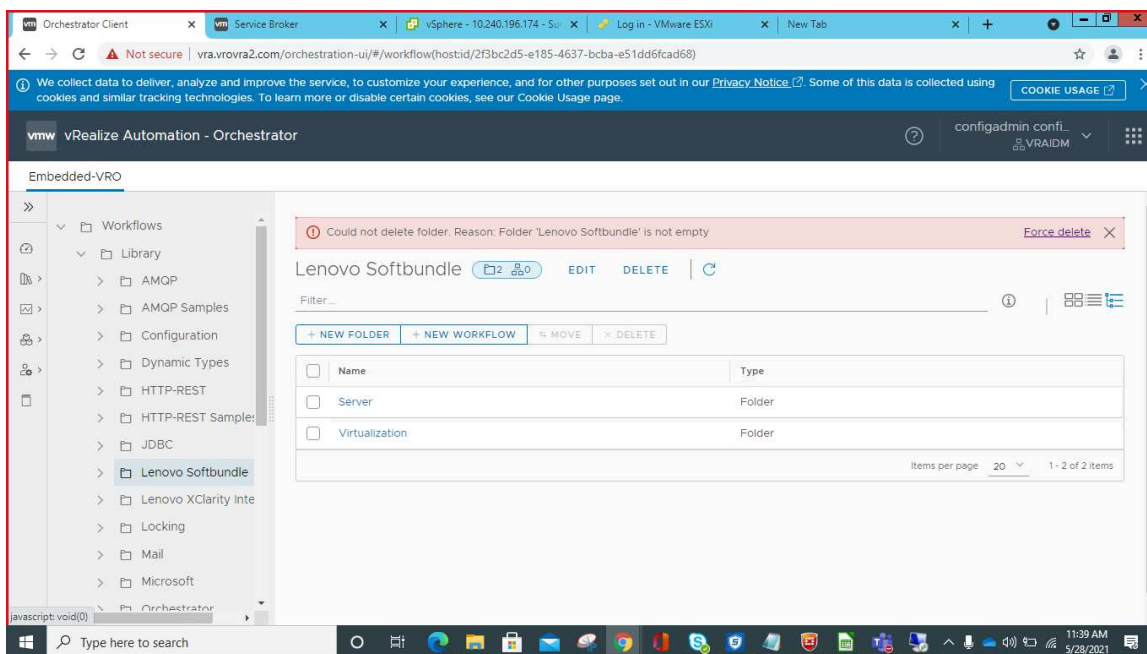
### Procedure

To delete the plug-in, complete the following steps.

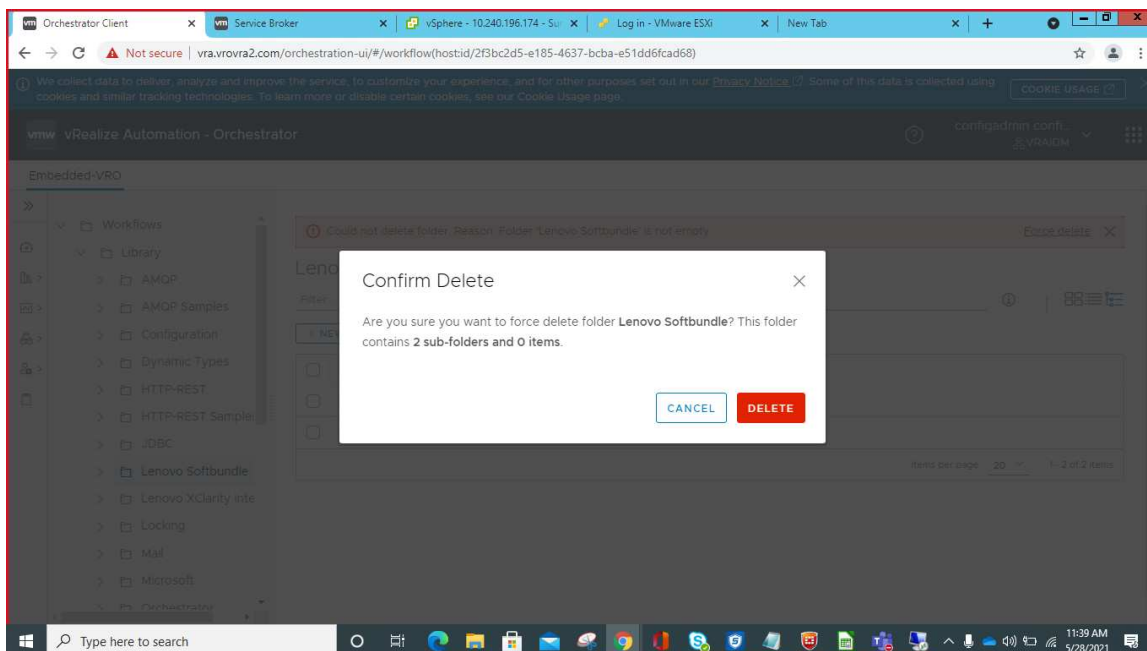
- Step 1. Log in to vRA 8.3 server using vRA server FQDN.
- Step 2. Enter the username and password and click **Login** on the Login page.
- Step 3. On the **vRealize Automation-Orchestrator** page, navigate to the **Lenovo Softbundle** in the **Embedded-vRO** workflow. The **Lenovo Softbundle** page is displayed on the right pane.



- Step 4. Click the **DELETE** button. A confirmation dialog box is displayed.
- Step 5. Click **DELETE** in the confirmation box. If the **Lenovo Softbundle** folder is not empty, the following notification is displayed and you can proceed with the **Force delete** option provided on the notification.

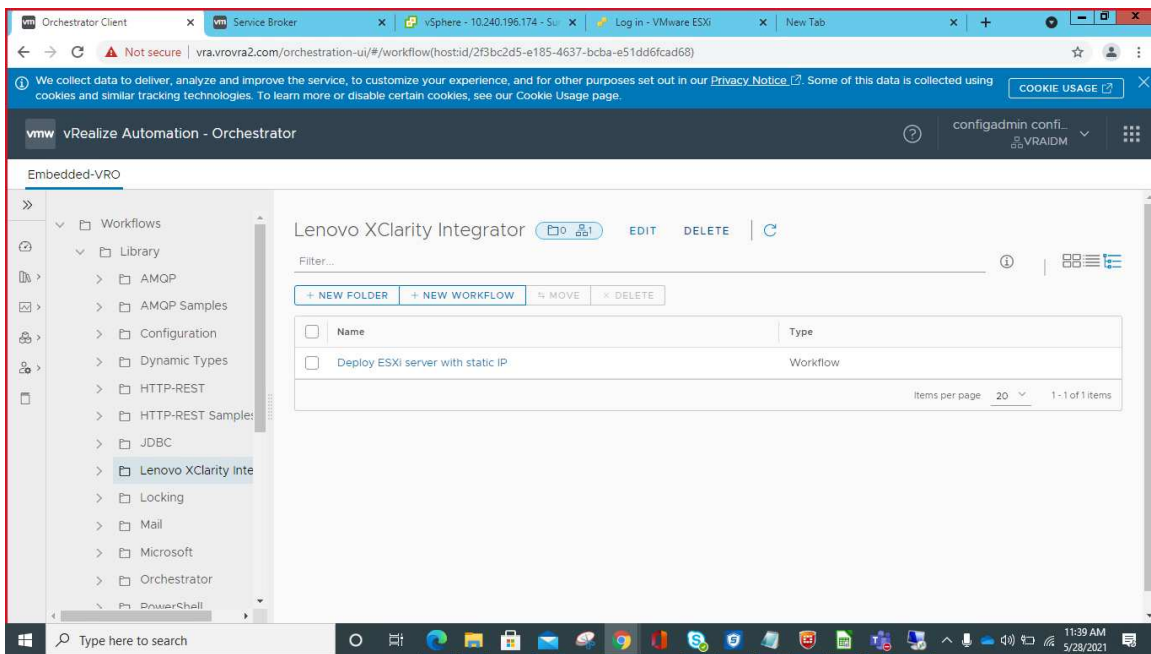


Step 6. Click **DELETE** in the confirmation dialog box. Please note that the folders in the Lenovo Softbundle folder will also be deleted.

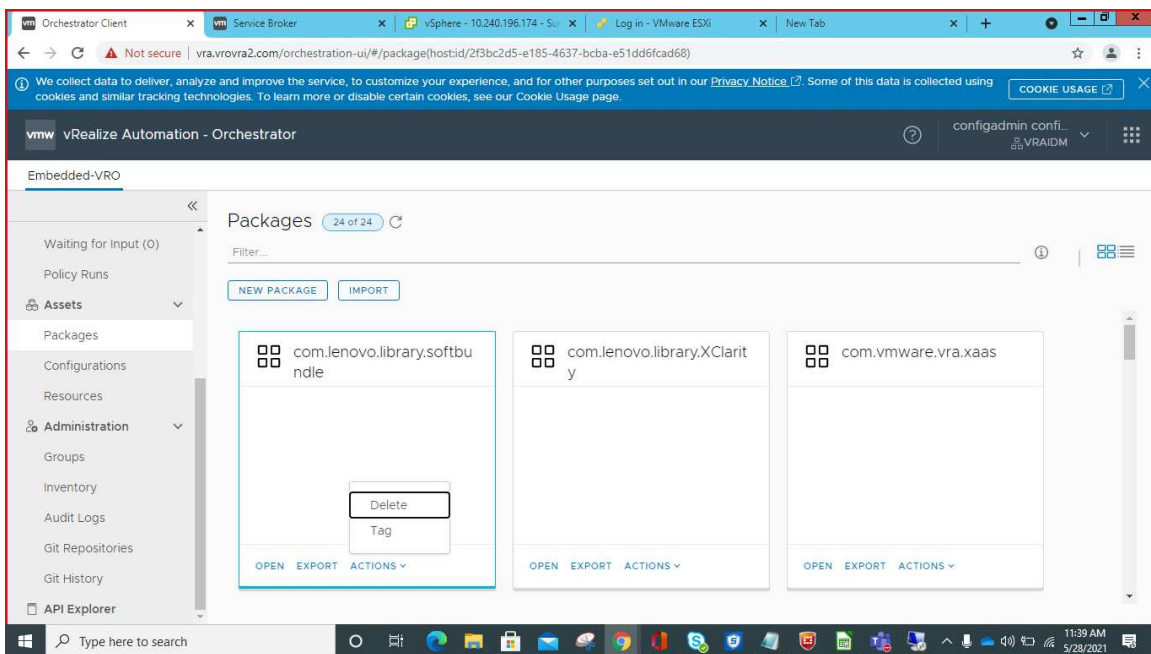


**Note:** After deleting the Lenovo Softbundle, you must delete the Lenovo XClarity Integrator package as well.

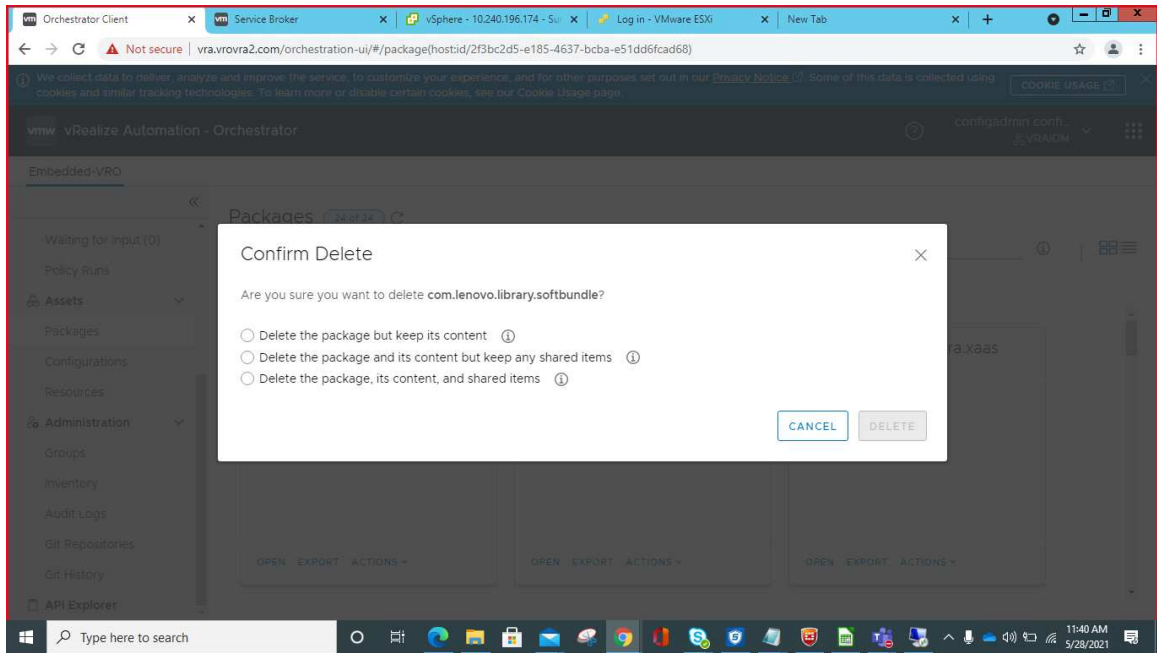
Step 7. Navigate to the Lenovo XClarity Integrator workflow on the left pane. The Lenovo XClarity Integrator page is displayed on the right pane.



- Step 8. Click the **DELETE** button on the right pane. A confirmation dialog box is displayed.
- Step 9. Click **DELETE** in the confirmation dialog box to delete the Lenovo XClarity Integrator.
- Step 10. Navigate to the **Packages** page and delete the <com.lenovo.library.softbundle> package as follows.



- Step 11. Select the packages you want to delete and click **DELETE** in the confirmation dialog box.







## Chapter 3. Using Lenovo XClarity Integrator for VMware vRealize Automation

Lenovo XClarity Integrator for VMware vRealize Automation contains blueprints that enable the administrators to easily and repeatedly provision various components (such as Lenovo servers) into vRealize-managed hybrid environments. You must add a blueprint and then share and execute the blueprint described in the following topics.

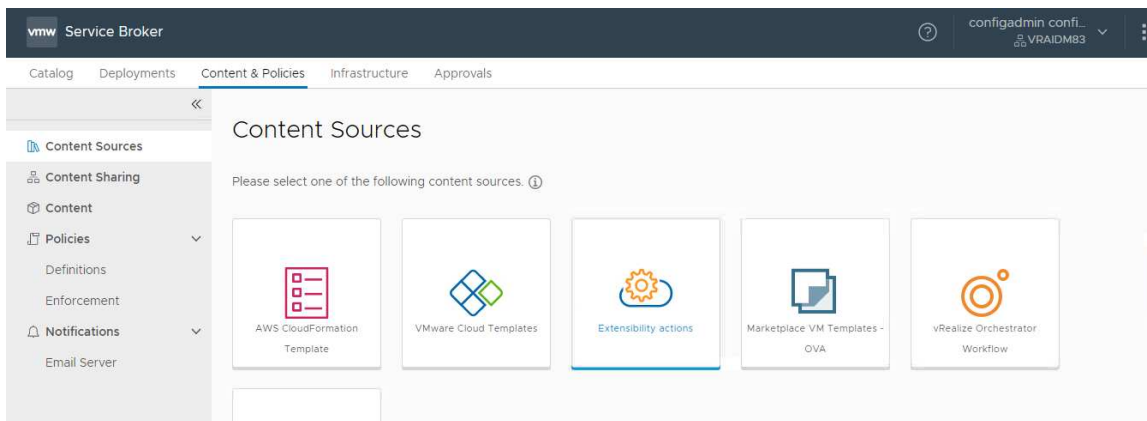
- “Adding a blueprint” on page 11
- “Creating and executing a blueprint” on page 13
- “Sample blueprint creation workflow” on page 15

### Adding a blueprint

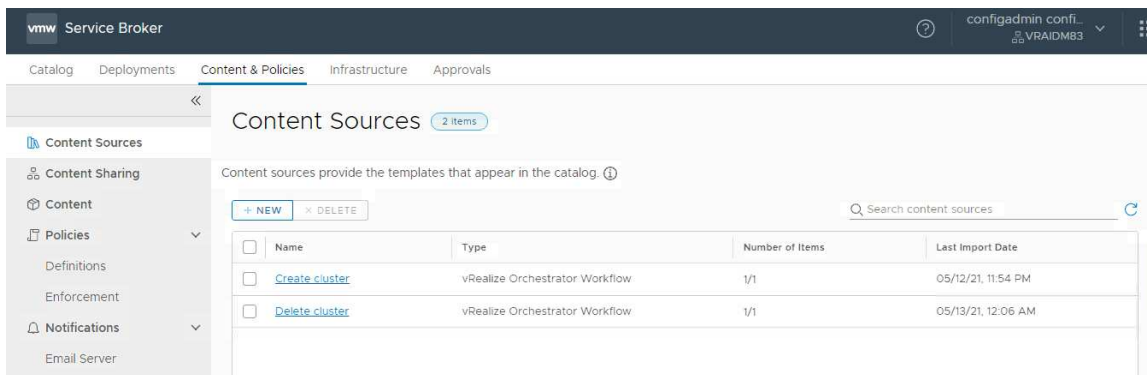
You can add a blueprint for the existing Orchestrator workflows as follows.

#### Procedure

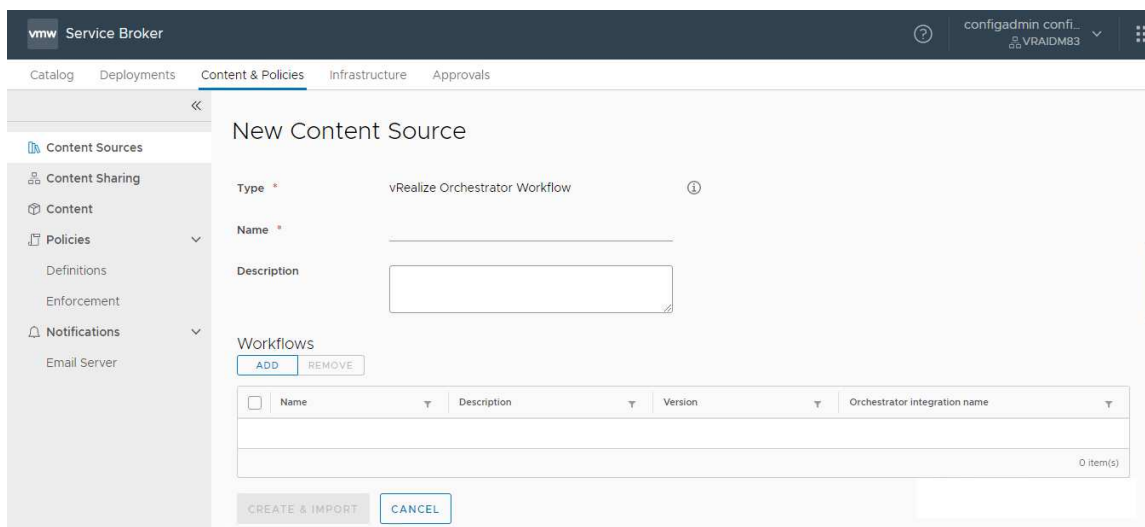
- Step 1. Log in to vRA 8.3 server using vRA server FQDN.
- Step 2. Enter the username and password and click **Login** on the Login page.
- Step 3. On the **vRealize Automation-Cloud Services Console**, under **My Services**, click **Service Broker**. The **vRealize Automation- Service Broker** page is displayed.



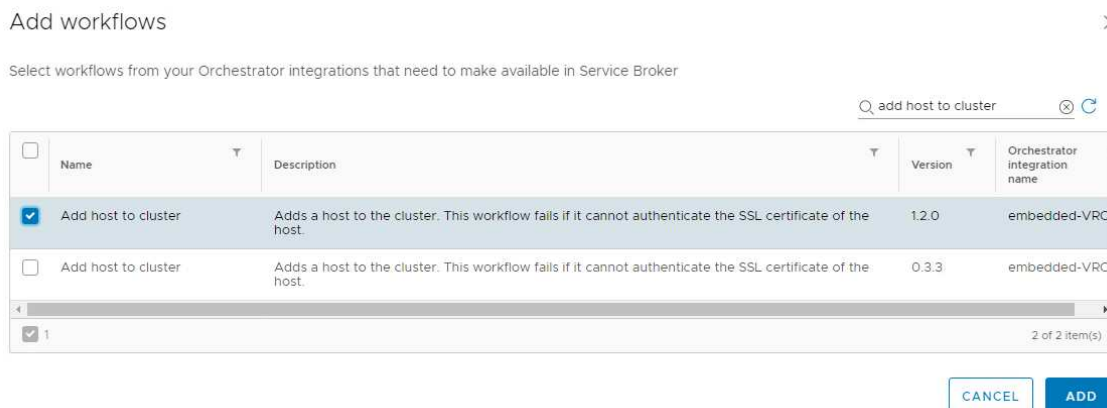
- Step 4. Click the **Content & Policies** tab. The **Content Sources** page is displayed.



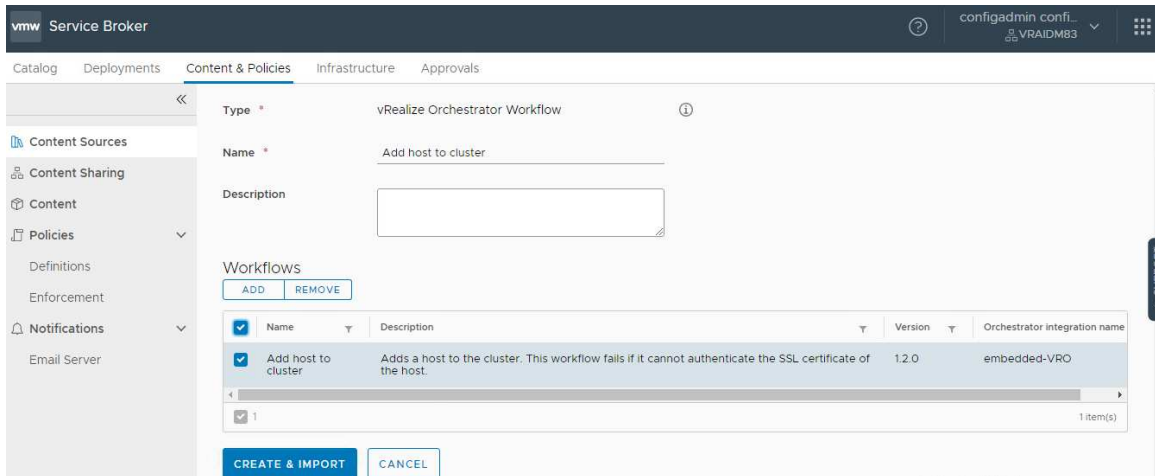
- Step 5. To create a template, click **NEW > vRealize Orchestrator Workflow**. The **New Content Source** page is displayed.



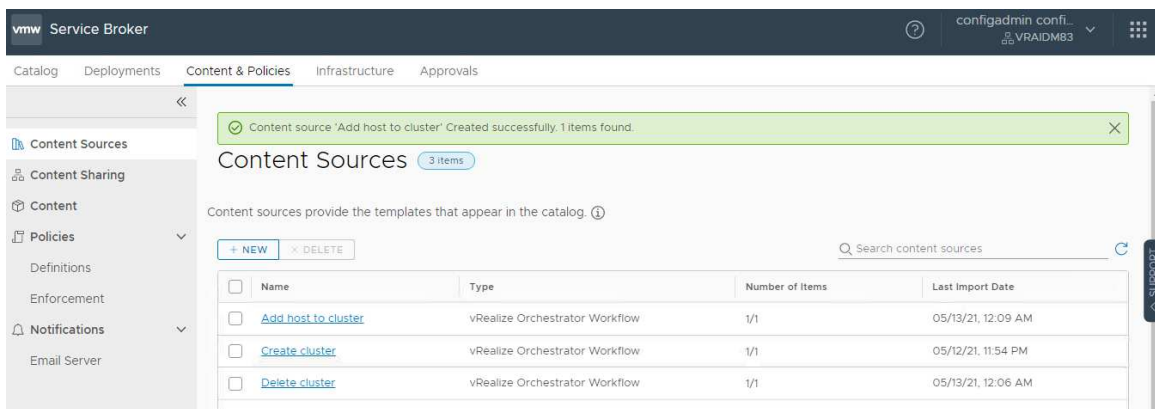
- Step 6. Enter the name of the blueprint you want to create in the **Name** text box. Provide a name that would help the user further in finding and using the blueprint. For example, Add host to cluster, and so on.
- Step 7. Enter a description in the **Description** field. It is recommended to add the word "Lenovo" when you add the relevant description as it helps to identify the workflow.
- Step 8. Click **ADD**. The **Add workflows** page is displayed listing the orchestrator workflows.



- Step 9. Search for the workflow you want to add in the **Search workflow** search box to list the required workflows from the Orchestrator integrations.
- Step 10. Select the check box of the required workflow on the extreme left, and click **ADD**. The selected workflow is listed as follows.



Step 11. Click **CREATE & IMPORT** to create a blueprint. A notification is displayed with the name of the blueprint that is created on the top of the screen.



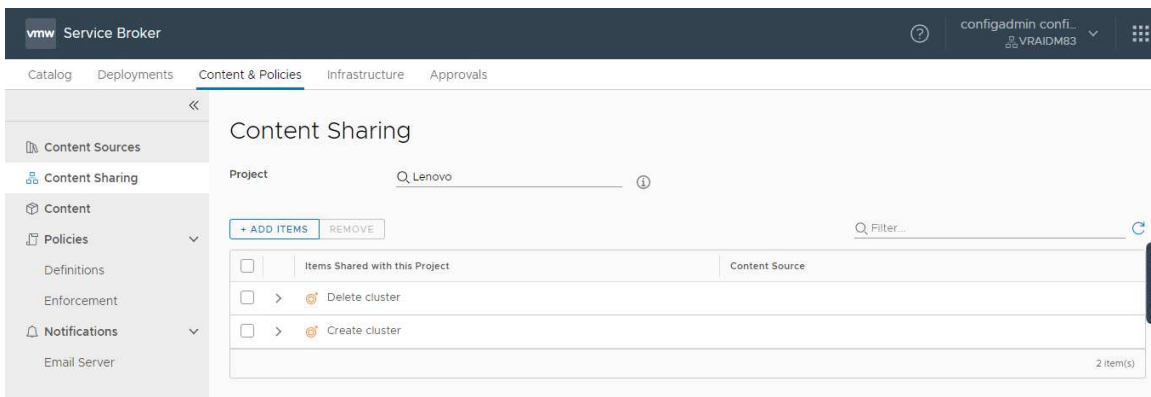
## Creating and executing a blueprint

You can share the blueprints and execute the blueprints that are added to the orchestrator workflows.

### Procedure

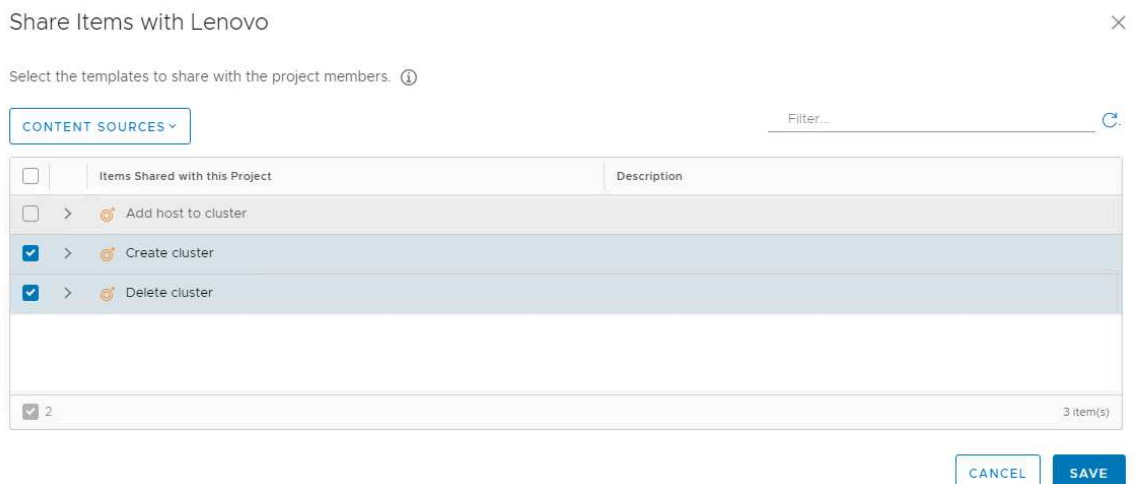
To create and execute a blueprint, complete the following steps.

- Step 1. Log in to vRA 8.3 server using vRA server FQDN.
- Step 2. Enter the username and password and click **Login** on the Login page.
- Step 3. On the **vRealize Automation-Cloud Services Console**, under **My Services**, click **Service Broker**. The **vRealize Automation- Service Broker** page is displayed.
- Step 4. On the left pane, click **Content Sharing**. The **Content Sources** page is displayed.

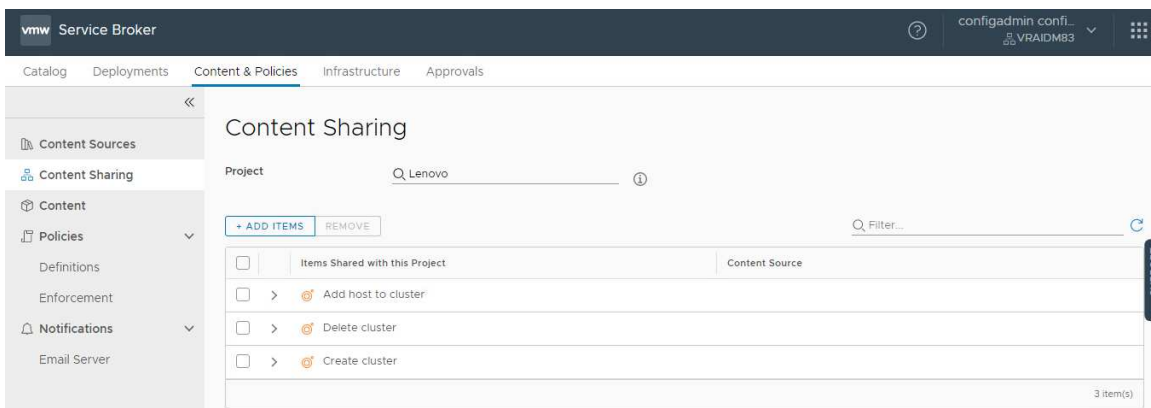


Step 5. Search for the required project in the search box. The available templates for the required project are listed.

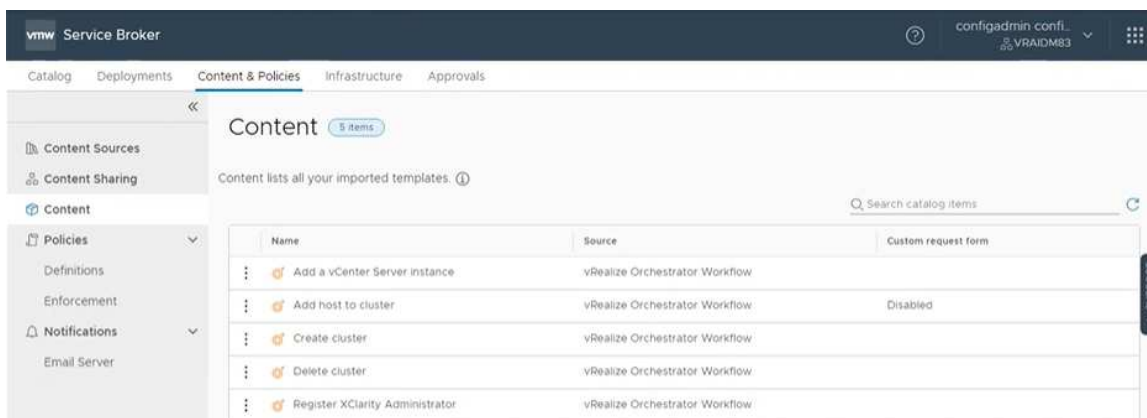
Step 6. Click **ADD ITEMS**. The list of templates available is listed as follows.



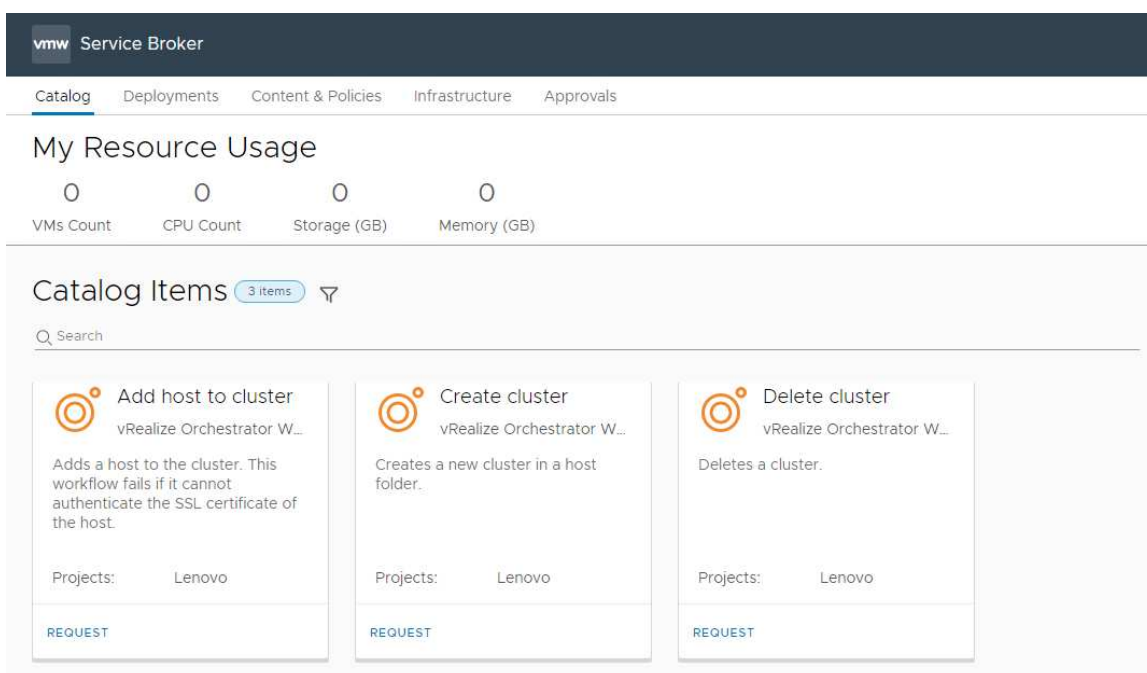
Step 7. Select the templates you want to share by selecting the checkbox and click **SAVE**.



Step 8. To view the added template, on the left pane, navigate to **Contents**.



Step 9. To view the added templates, navigate to the **Catalog** tab.



Step 10. To deploy a blueprint, click **REQUEST** in the required workflow.

## Sample blueprint creation workflow

This topic describes the steps to create blueprints for the Create Cluster workflow. Similarly, you can create other blueprints as well.

### Procedure

To create the Create Cluster workflow blueprint, complete the following steps.

- Step 1. Post deploying the vRA plugin, follow the process mentioned in this section for installation.
- Step 2. Log in to vRA 8.3 server using vRA server FQDN.
- Step 3. Enter the username and password and click **Login** on the Login page.
- Step 4. On the **vRealize Automation-Cloud services** console, click **Service Broker**. The **vRealize Automation- Service Broker** page is displayed.
- Step 5. Click **Content & Policies**.

- Step 6. Click **Content Sources > NEW > vRealize Orchestrator Workflow**. The **New Content Source** page is displayed.
- Step 7. Enter a name for the **Create Cluster** workflow and click **ADD**.
- Step 8. On the **Add workflows** window, search for **Create cluster** and select the latest workflow available from the list and click **ADD**.
- Step 9. Click **Create and import** and verify that **Create cluster** is listed in **Content sources**.
- Step 10. In the left panel, click **content sharing**, search and select the project name. The **Content sharing** page is displayed.
- Step 11. Click **Add items**, select the **Create cluster** check box, and click **SAVE**. The **vRealize Automation-Service Broker** page is displayed.
- Step 12. Click **Catalog** and check whether the created blueprint (Create cluster) is displayed.

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## Chapter 4. Troubleshooting

This section provides troubleshooting information to help you to resolve problems with Lenovo XClarity Integrator for VMware vRealize Automation.

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### Issues

#### The request for Add a server instance or Register Xclarity administrator is keeping in progress and does not finish

While adding a vCenter server instance or Register Xclarity administrator, the request status is always in progress. This is because the **Ignore Certificate Warning** is not selected and vRealize Automation is waiting for user to verify and accept the certificate.

#### Procedure

To resolve the mentioned certificate issue, complete the following steps:

- Step 1. Launch vRA server with FQDN and click **GO TO LOGIN PAGE**.
- Step 2. Enter the valid credentials.
- Step 3. In the vRealize Automation-cloud Services console page, click **Orchestrator**. The vRealize Automation-Orchestrator page is displayed.
- Step 4. On the left-hand pane, navigate to **Library > Activity > Waiting for input**.
- Step 5. On the same page, click **Answer** and proceed further.

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### Logging

vRealize Orchestrator provides the facility for troubleshooting issues using logs.

For details to enable logging, how to change log levels, and log file location, see [VMware vRealize Automation documents](#).

The Lenovo XClarity Integrator for VMware vRealize Orchestrator supports the following log levels:

- Info
- Debug
- Error





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## Important notes

Processor speed indicates the internal clock speed of the microprocessor; other factors also affect application performance.

When referring to processor storage, real and virtual storage, or channel volume, KB stands for 1 024 bytes, MB stands for 1 048 576 bytes, and GB stands for 1 073 741 824 bytes.

When referring to hard disk drive capacity or communications volume, MB stands for 1 000 000 bytes, and GB stands for 1 000 000 000 bytes. Total user-accessible capacity can vary depending on operating environments.

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