Integrate with vCenter

ONTAP Select

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Integrate with vCenter

Get started

Overview of the Deploy vCenter plug-in

The VMware vCenter plug-in for ONTAP Select Deploy is designed for ONTAP Select administrators working in the VMware environment. It provides an alternative to the native Deploy user interface.

Packaged with Deploy

The Deploy vCenter plug-in is packaged with the Deploy administration utility. After using the Deploy user interface to install the plug-in to the vCenter server, you can access the plug-in through the vSphere web interface.

Integration with VMware

For many businesses, VMware vCenter is a central platform for administering virtualized data center and cloud resources. Because the Deploy plug-in is tightly integrated with vCenter, administrators can quickly move between the ONTAP Select and vCenter domains to leverage the relationships among the various resources.

Functionality provided by the Deploy vCenter plug-in

After installing the Deploy vCenter plug-in, there are two primary options available through vSphere in the **Global Inventory Lists** pane.

ONTAP Select Clusters

The ONTAP Select Clusters option is roughly equivalent to the **Clusters** tab in the native Deploy web user interface. It provides the functionality described in the following table.

You perform this operation …	By doing this …
Deploy an ONTAP Select cluster	Click New ONTAP Select.
View cluster details	Select a cluster, click Summary, and then click Details.
View cluster event messages	Select a cluster, click Summary, and then click Events.
Move a cluster online or offline, or delete a cluster	Select a cluster, click Actions, and then click the desired action.
Launch System Manager	Select a cluster, click Summary, click Details, and then click Launch System Manager.
View the ESXi hosts used by a cluster	Select a cluster, click More Objects, and then click Hosts. Select a host for more details and further actions.
View the ONTAP VMs used by a cluster	Select a cluster, click More Objects, and then click ONTAP VMs. Select a VM for more details and further actions.
View the datastores used by a cluster	Select a cluster, click More Objects, and then click Datastores. Select a datastore for more details and further actions.

You perform this operation …	By doing this …
View the networks used by a cluster	Select a cluster, click More Objects, and then click Networks. Select a network for more details and further actions.

ONTAP Select Deploy

The ONTAP Select Deploy option is roughly equivalent to the **Hypervisor Hosts** and **Administration** tabs in the native Deploy web user interface. It provides functionality through three tabs at the top of the page as described in the following table.

Tab	Description
Summary	Describes the characteristics of the Deploy instance, including the host name and IP address.
Host	Displays information about the ESXi hosts registered with ONTAP Select Deploy. You can add or remove hosts.
Administration	Allows you to perform administrative tasks through the Deploy utility. This functionality is equivalent to the ONTAP Select Deploy native user interface, except that the **Credentials** and **Plugins** options are not available with the plug-in.

Compare the vCenter plug-in to the native Deploy user interface

The functionality provided with the vCenter plug-in through vSphere is equivalent to the native Deploy user interface. However, there are a few features that are not provided with the plug-in and are only available with the Deploy user interface.

Manage the vCenter plug-in

You cannot install, update, remove, or verify the vCenter plug-in using the vCenter plug-in. You must perform these management tasks through the native Deploy user interface.

Manage vCenter credentials

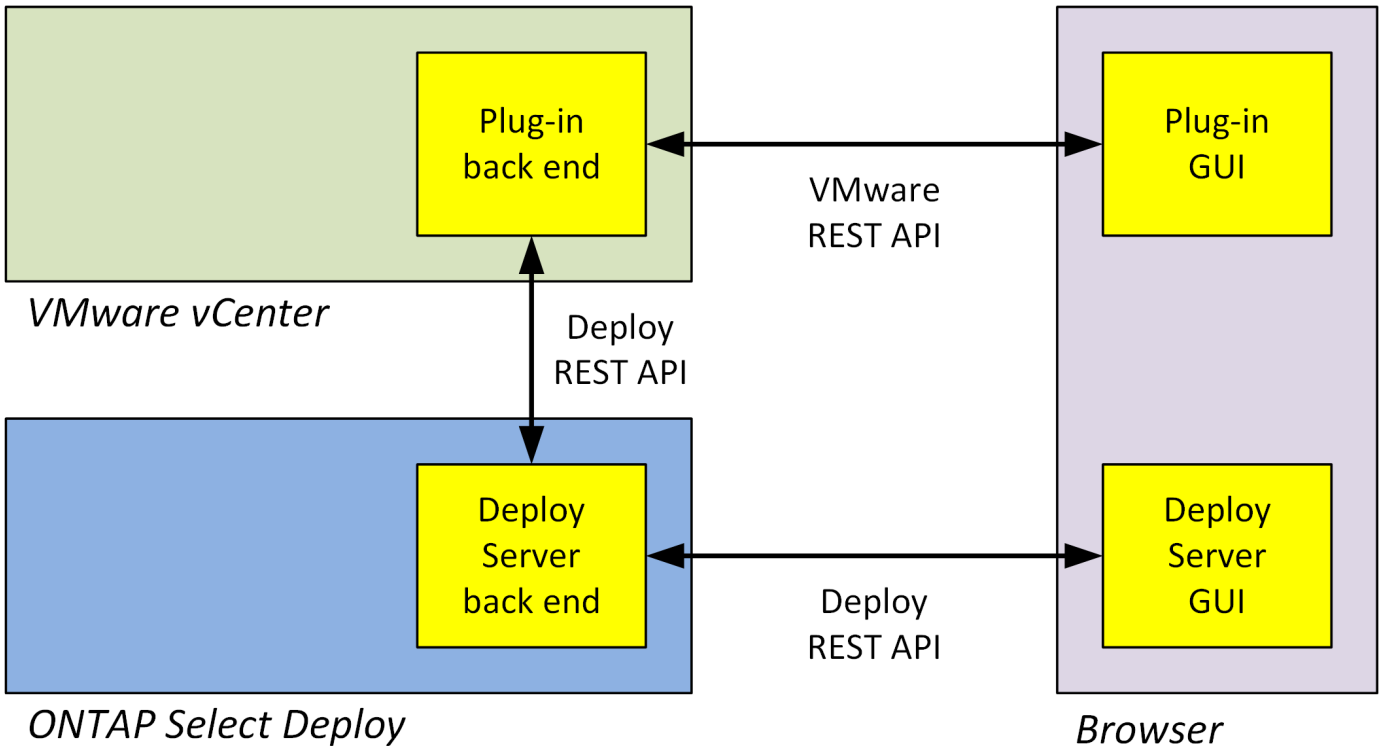
Before installing the vCenter plug-in, you must add the necessary vCenter credentials to Deploy using the native Deploy user interface.

ONTAP Select clusters must be controlled by the same vCenter server

You can only deploy and support the ONTAP Select clusters managed by the single vCenter server where the plug-in is installed. You cannot use the plug-in to access ONTAP Select clusters managed by other vCenter servers or clusters running on standalone ESXi or KVM hosts.

Plug-in architecture

The Deploy vCenter plug-in is tightly integrated with ONTAP Select Deploy and VMware vCenter. There are two paths to access the Deploy administration utility through the plug-in using the vSphere interface.



Plan to use the Deploy vCenter plug-in

Before installing and using the Deploy vCenter plug-in, you should prepare to assure success.

Software requirements

There are several software requirements you should consider as described in the following table.

Software	Supported version
ONTAP Select Deploy utility	2.11.2 or later
VMware vSphere	6.5 GA or later
VMware vSphere user interface	HTML5 (Flash-based version is not supported)
ESXi	6.5U2 or later

Cluster size restrictions

There are several restrictions related to the cluster size that you should consider as described in the following table.

Item	Maximum supported
ONTAP Select Deploy clusters	100
Nodes (virtual machines)	1000
Hosts	800

RBAC privileges for the vCenter user accounts

Several different vCenter privileges are required to manage and access the plug-in. These privileges correspond to the actions in the following three categories:

- Managing the plug-in through Deploy:
  - Install
  - Upgrade
  - Remove
- Accessing the plug-in through the vSphere client
- Validating user access to the plug-in through vSphere

See Preparing the vCenter server accounts for more information.

AutoSupport limitations

The Deploy vCenter plug-in provides a minimum amount of usage information in the Deploy administration utility (including the plug-in URL). However, AutoSupport does include a table of the installed plug-ins that can be displayed through the AutoSupport viewer.

> You cannot download an AutoSupport package through the vSphere web client using the Deploy plug-in. You must use the native Deploy interface to download AutoSupport packages.

Additional restrictions

There are several additional restrictions that you should consider before installing and using the Deploy vCenter plug-in:

- Each instance of the vCenter plug-in supports only one vCenter server.
- vCenter servers that are configured in linked mode are not supported.
- The Deploy plug-in GUI in vSphere only displays clusters with ONTAP Select virtual machines managed by the same vCenter server. ONTAP Select clusters running on standalone ESXi and KVM hosts are not included.

Manage the plug-in

Before you begin

There are several things you need to do before installing and managing the Deploy vCenter plug-in.

Decide whether to use the Deploy web user interface or the CLI

In most situations, the Deploy web user interface provides the most convenient option when managing the vCenter plug-in, and this is the option described in this procedure. However, you can also manage the plug-in using the Deploy command line interface. For more information, type the following commands at the Deploy CLI prompt:

- `deploy plugin ?` (Subcommands include: install, remove, show, and update)

- `deploy plugin-packages show`

Preparation common to all management tasks

There are several steps you must take regardless of the management task. The common preparation includes:

- Reading the section Getting started to become familiar with the Deploy vCenter plug-in.
- Assuring that the ONTAP Select Deploy administration utility is installed and running.
  See the Installation and Cluster Deployment documentation for VMware for more information.
- Acquiring the account credentials:
  - Deploy administrator account
  - vCenter server accounts
- Assuring that the Deploy utility has network access to port 443 at the vCenter server.

Additional preparation might be required depending on the management task.

Prepare the vCenter server accounts

Before installing and using the Deploy plug-in, you must create the vCenter accounts with the required privileges. You can create a single account with all the necessary privileges or create multiple accounts each with a single privilege. For simplicity, the following example distributes the vCenter privileges across three separate roles that can then be assigned to the three corresponding accounts.

Validate end user access to the plug-in

You need an account to validate access to the plug-in through vSphere. The account must have the following vCenter privilege: sessions.validate.session. After the account is created in vCenter, you must define it to the Deploy administration utility. In the Deploy web user interface, click the Administration tab and then Credentials to provide the vCenter server location and credentials.

This account is used in the following ways:

- The named vCenter server becomes available as an installation target in the plug-in registration dialog window.
- The account is used by Deploy to validate vSphere user requests to access the plug-in after the plug-in has been installed.

Manage the plug-in

In the Deploy web user interface, you can install the plug-in and then upgrade or remove it. Each time you perform one of these management actions, you are prompted for a vCenter account in the popup window. Each of the management actions is controlled through a separate vCenter privilege.

To install, upgrade, and remove the plug-in, you must assign the following privileges:

- Extension
  - Register extension
  - Update extension
  - Unregister extension

You can create a single role and account with all three privileges or divide the privileges among multiple accounts as needed.

Access the plug-in

End users can access the plug-in through vSphere. You must assign the following privilege to the accounts that will use the plug-in:

- NetApp
  - ONTAP Select Deploy
    - Administrator

Install the Deploy vCenter plug-in

The Deploy vCenter plug-in is bundled with the ONTAP Select Deploy administration utility. You can use the ONTAP Select Deploy web user interface to install and register the plug-in at the vCenter server.

Before you begin

- Review Before you begin.
- Define a vCenter account to Deploy with the following privilege: sessions.validate.session.
- Have credentials for a vCenter account with the following privileges:
  - Extension
    - Register extension

About this task

It is assumed the vCenter management server has already been added to Deploy. If the vCenter server has not been added, see Add a management server account for more information.

Steps

1. Sign in to the Deploy utility web user interface using the administrator account.
2. Click the **Administration** tab at the top of the page and then click **Management Servers** in the pane on the left.
3. Select the target management server and click ⋮ and click **Register as Plugin**.
4. Provide the vCenter credentials and select the plug-in version.
5. Click **Register**.

Access the vCenter plug-in through vSphere

You can access the Deploy vCenter plug-in through the vSphere web client.

Before you begin

The vCenter plug-in must be installed. In addition, the vCenter account you use when signing in to vSphere must have the following privilege:

- NetApp
  - ONTAP Select Deploy

        - Administrator

Steps

1. Sign out of the vSphere web client if you are signed in.
2. Sign in to vCenter using the vSphere web client, select HTML5, and accept the SSL certificate.

   Signing out and then back in refreshes the vCenter configuration information.

3. Click **Global Inventory Lists**.

Result

The options **ONTAP Select Clusters** and **ONTAP Select Deploy** are available in the pane on the left. If they are not displayed, you should sign out and then sign back in.

Verify and remove the Deploy vCenter plug-in

You can use the ONTAP Select Deploy web user interface to upgrade or remove the Deploy plug-in from the vCenter server. You can also verify that the plug-in is still installed.

Before you begin

- Review Before you begin.
- The VMware vCenter plug-in should be installed and registered.
- The vCenter administrator account must have the following vCenter privileges:
    - Extension
        - Update extension
        - Unregister extension

Steps

1. Sign in to the Deploy utility using the administrator account.
2. Click the **Administration** tab at the top of the page and then click **Management Servers** in the pane on the left.
3. Select the target management server and click ⋮ and optionally select on of:
    a. **Verify Plugin**
    b. **Unregister Plugin**
4. Provide the vCenter credentials if prompted.

After you finish

If you remove the plug-in, you must perform one of the following tasks to complete its removal from the vCenter server:

- Reboot the vCenter server
- Manually remove the plug-in from the vCenter server

Manually removing the Deploy plug-in from vCenter

You can manually remove the Deploy plug-in from the vCenter server.

Before you begin

You should always begin by removing the plug-in using the VMware Managed Object Browser (MOB) and then by removing it from the vSphere directories inside the vCenter server.

There are several instances in which you must manually remove the plug-in:

- The plug-in was removed using the Deploy utility native user interface, but the vCenter server could not be rebooted.
- The Deploy utility was decommissioned without removing the plug-in.

Use the VMware MOB to remove the plug-in

The MOB is a VMware application that allows you to view and manage the objects on a VMware vCenter server. You can use the MOB to remove the Deploy vCenter plug-in.

Steps

1. Access the MOB at the vCenter server using a browser and sign in:

   ```
   https://<FQDN_or_IP-address>/mob
   ```

2. Click **content** and then click **ExtensionManager**.
3. Confirm that the extension to be removed is present based on the full name:

   ```
   com.netapp.selectdeploy
   ```

4. Click **UnregisterExtension**.
5. Type the name of the extension and click **InvokeMethod**.

Result

The plug-in is removed from the list of extensions.

Remove the plug-in from the vSphere UI folder

You should examine vSphere UI directory at the vCenter server and remove the Deploy plugin if found.

Before you begin

You must have the password for the root account at the vCenter server. You should remove the plug-in using the vSphere MOB.

Steps

1. Use SSH to access the vCenter server and sign in:

   ```
   ssh root@<FQDN_or_IP-address>
   ```

2. Type **shell** and press **Enter** to launch the Bash shell.

3. Navigate to the `vsphere-client-serenity` directory for the vSphere-UI service:

   ```
   cd /etc/vmware/vsphere-ui/vc-packages/vsphere-client-serenity
   ```

4. Determine if there are directories of the form `com.netapp.selectdeploy` that must be removed:

   ```
   ls -al
   ```

5. Stop the HTML5 vSphere-UI web client:

   ```
   service-control --stop vsphere-ui
   ```

6. Remove the directory containing the UI extensions:

   ```
   rm -rf com.netapp.selectdeploy-1.0.0
   ```

7. Restart the HTML5 vSphere-UI web client:

   ```
   service-control --start vsphere-ui
   ```

After you finish

It can take several minutes for the Deploy plug-in to restart and become available.

Remove the plug-in from the vSphere client folder

You should examine the vSphere Client directory at the vCenter server and remove the Deploy plug-in if found. Although the Deploy plug-in does not use Flash, it is a best practice to examine this directory as part of the plug-in removal procedure.

Before you begin

You must have the password for the root account at the vCenter server. You should remove the plug-in using the vSphere MOB and remove the plug-in from the vSphere UI directory.

Steps

1. Use SSH to access the vCenter server and sign in:

   ```
   ssh root@<FQDN_or_IP-address>
   ```

2. Type **shell** and press **Enter** to launch the Bash shell.
3. Navigate to the `vsphere-client-serenity` directory for the vSphere-Client service:

   ```
   cd /etc/vmware/vsphere-client/vc-packages/vsphere-client-serenity
   ```

4. Determine if there are directories of the form `com.netapp.selectdeploy` that must be removed:

   ```
   ls -al
   ```

5. Stop the HTML5 vSphere-UI web client:

   ```
   service-control --stop vsphere-client
   ```

6. Remove the directory containing the client extensions:

```
rm -rf com.netapp.selectdeploy-1.0.0
```

7. Restart the HTML5 vSphere-UI web client:

```
service-control --start vsphere-client
```

After you finish

It can take several minutes for the Deploy plug-in to restart and become available.

Deploy an ONTAP Select cluster

You can use the Deploy vCenter plug-in through the vSphere web user interface to deploy ONTAP Select clusters.

Before you begin

You should prepare to use the Deploy vCenter plug-in before deploying an ONTAP Select cluster.

Common preparation for clusters of all sizes

There are several steps you need to take regardless of the cluster size:

- Read the *Getting started* section to become familiar with the Deploy vCenter plug-in.
- Ensure that the ONTAP Select Deploy administration utility is installed and running.
- Install the Deploy vCenter plug-in.
- Prepare the hypervisor host or hosts on which the ONTAP Select cluster will run.
- Acquire the required storage license files for the node or nodes in the cluster.
- Acquire the credentials for the following accounts:
  - Deploy administrator account
  - vCenter account with access to the plug-in
- If needed, install the Deploy SSL certificate on the Windows Certificate Manager as a “Trusted Root Certificate Authority.”
- Ensure that the Deploy utility has network access to port 443 at the vCenter server.

Additional preparation for a multi-node cluster

In addition to common preparation, you should be familiar with the Deploy network checker before deploying a multi-node cluster.

Add a hypervisor host

You can add hypervisors hosts to the Deploy utility on which the ONTAP Select nodes will run before deploying a cluster. If needed, you can instead add the hosts as part of the cluster creation dialog.

Before you begin

You should review Preparing to deploy an ONTAP Select cluster.

About this task

You can add one or more hosts based on the size of the cluster.

Steps

1. Sign in to the vCenter server through vSphere HTML5 using a browser.
2. In the toolbar, click **Menu** and then click **Global Inventory Lists**.
3. In the pane on the left, click **ONTAP Select Deploy** and then click the **Hosts** tab.
4. Click **Add** on the right.
5. Provide the host name or IP address of the host and then click **Add** or **Add and Exit**.

Create a single-node cluster

You can use the VMware vCenter plug-in through the vSphere web client to deploy an ONTAP Select cluster consisting of a single node.

Before you begin

You should review Preparing to deploy an ONTAP Select cluster and Adding a hypervisor host. You can add the host on which the ONTAP Select node will run before creating the cluster or as a part of creating the single-node cluster.

Steps

1. Sign in to the vCenter server through vSphere HTML5 using a browser.
2. Click **Menu** at the top and then click **Global Inventory Lists**.
3. Click **ONTAP Select Clusters** in the pane on the left and then click **New ONTAP Select**.

   If you have not previously accepted the SSL certificate, click the IP link in the warning message and accept the certificate. Then return to the your vCenter page and click the link in the warning message to reload the page.

4. On the **New ONTAP Select** page, enter the cluster details and click **Done**.
5. In the **Node Setup** section, provide the configuration and select a license.

   You can change the default node name and upload a new license if needed.

6. In the **Hypervisor and Network** section, select the instance type, host, and networks.

   You can add a host if needed. The license for the node must meet or exceed the instance type.

7. In the **Storage** section, select the storage capacity and a storage pool.

   You can optionally enable software RAID when using a premium license.

8. Click **Done** and review the configuration of the cluster.

   You can change the configuration by clicking Edit in each section as needed.

9. Click **Next**.
10. Provide the ONTAP administrator password and click **Create Cluster** to begin the cluster creation process and then click **OK** in the confirmation popup window.

    It can take up to 30 minutes for the cluster to be created.

11. Refresh the page and select the new cluster, then click **Summary** and **Details** to monitor the multi-step cluster creation process.

> If the cluster creation operation is initiated but fails to complete, the ONTAP administrative password you define is not registered. In this case, you can access the management interface for the ONTAP Select cluster using the password `changeme123` with the `admin` account.

After you finish

- Confirm that the ONTAP Select AutoSupport feature is enabled.
- Back up the ONTAP Select Deploy configuration data.

Create a multi-node cluster

You can use the VMware vCenter plug-in through the vSphere web client to deploy an ONTAP Select cluster consisting of multiple nodes.

Before you begin

You should review Preparing to deploy an ONTAP Select cluster and Adding a hypervisor host. You can add the hosts on which the ONTAP Select nodes will run before creating the cluster or as a part of creating the multi-node cluster.

About this task

An ONTAP Select multi-node cluster consists of an even number of nodes. The nodes are always joined as HA pairs.

Steps

1. Sign in to the vCenter server through vSphere HTML5 using a browser.
2. Click **Menu** at the top and then click **Global Inventory Lists**.
3. Click **ONTAP Select Clusters** in the pane on the left and then click **New ONTAP Select**

   If you have not previously accepted the SSL certificate, click the IP link in the warning message and accept the certificate. Then return to the your vCenter page and click the link in the warning message to reload the page.

4. On the **New ONTAP Select** page, enter the cluster details and click **Done**.

   Unless you have a reason to set the cluster MTU size, you should accept the default value and allow Deploy make any adjustments as needed.

5. In the **Node Setup** section, provide the configuration and select licenses for the two nodes in the HA pair.

   You can change the default node names and upload new licenses if needed.

6. In the **Hypervisor and Network** section, select the instance type, host, and networks for each node.

   You can add a host if needed. You must select the three networks. The internal network cannot be the same as the management or data network. The licenses for the nodes must meet or exceed the instance type.

7. In the **Storage** section, select the storage capacity and a storage pool.

You can optionally enable software RAID when using a premium license.

8. If the cluster has four or more nodes, you must configure the nodes in the additional HA pairs by following the same steps used for the first HA pair.
9. Click **Done** and review the configuration of the cluster.

   You can change the configuration by clicking **Edit** in each section as needed.

10. Optionally, run the network connectivity checker to test the connectivity among the nodes on the internal cluster network.
11. Click **Next**.
12. Provide the ONTAP administrator password and click **Create Cluster** to begin the cluster creation process and then click **OK** in the confirmation popup window.

    It can take up to 30 minutes for the cluster to be created.

13. Refresh the page and select the new cluster, then click **Summary** and **Details** to monitor the multi-step cluster creation process.

If the cluster creation operation is initiated but fails to complete, the ONTAP administrative password you define is not registered. In this case, you can access the management interface for the ONTAP Select cluster using the password `changeme123` with the `admin` account.

After you finish

- Confirm that the ONTAP Select AutoSupport feature is enabled.
- Back up the ONTAP Select Deploy configuration data.

Deploy plug-in and vCenter integration

The Deploy plug-in is tightly integrated with the vCenter server. Because of this integration, you can easily navigate among the resources managed by the Deploy utility and vCenter server. Several examples of this integration are provided below.

VMware resources assigned to an ONTAP Select cluster

An ONTAP Select cluster runs on VMWare as a set of one or more nodes. Each node is a dedicated virtual machine on a different ESXi host. An ONTAP Select cluster is associated with the following VMware resources:

- Hosts
- ONTAP VMs
- Datastores
- Networks

There are several ways to view the VMware resources used by a specific ONTAP Select cluster.

View the VMware resources for a cluster through the plug-in

You can view the VMware resources assigned to an ONTAP Select cluster through the Deploy plug-in.

Steps

1. Sign in to the vCenter server through vSphere HTML5 using a browser.
2. Click **ONTAP Select Clusters** in the **Global Inventory Lists** pane.
3. Click the desired cluster in the list on the right.
4. Click the **More Objects** tab and select the desired resource category at the top of the page.
5. Select a specific VMware resource to display additional information.

View the ONTAP Select clusters through an ESXi virtual machine

You can view the ONTAP Select cluster and associated cluster resources by accessing a VMware virtual machine.

Steps

1. Sign in to the vCenter server through vSphere HTML5 using a browser.
2. Click **Menu** at the top and then click **VMs and Templates**.
3. Select the desired virtual machine in the list on the left.
4. Click the **More Objects** tab to view the ONTAP Select cluster running in the VM.
5. To see the entire collection of VMware resources associated with the cluster, click the ONTAP Select cluster and then click the **More Objects** tab.

Create a single-node cluster on an ESXI host

You can select an ESXI hypervisor host through the vSphere interface and deploy an ONTAP Select single-node cluster.

Steps

1. Sign in to the vCenter server through vSphere HTML5 using a browser.
2. Click **Menu** at the top and then click **Hosts and Clusters**.
3. Right click the desired hypervisor host on the left, select **ONTAP Select**, and then click **New ONTAP Select**.
4. Complete the deployment process by following the steps in Deploy an ONTAP Select cluster.

Administer

Diagnostics and support

There are several related diagnostic and support tasks you can perform as part of administering ONTAP Select.

Display the system settings

You can view the basic settings for the Deploy administration utility through the vCenter Plugin.

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **System** option and click **Settings**.
4. Update the system configuration as needed and click **Save**.

Display event messages

The Deploy administration utility includes an event logging facility that provides information about the activity of the system. You can view the contents of the event log through the Deploy plug-in to debug any issues or when directed to do so by support.

About this task

You can filter the list of event messages based on several characteristics, including:

- Category
- Type
- Level
- Instance

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **Events** option and click **Deploy**.
4. Optionally, click Filtering and create a filter to limit the event messages that are displayed.

Enable AutoSupport

AutoSupport is the primary troubleshooting tool used by NetApp to support ONTAP Select. You can enable or disable the AutoSupport feature as needed.

About this task

After deploying a new cluster, you should make sure AutoSupport is enabled. You should only disable AutoSupport when necessary. If you disable AutoSupport, data is still collected but not transmitted to NetApp.

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **AutoSupport** option and click **Configure**
4. Enable or disable AutoSupport as needed.

Generate an AutoSupport package

The Deploy vCenter Plug-in includes the ability to generate an AutoSupport package. You should generate a package to debug issues or when directed to do so by support.

About this task

You can generate the following AutoSupport packages:

- Deploy logs
  Log files created by the ONTAP Select Deploy utility
- Troubleshooting
  Troubleshooting and debugging information about the hypervisor hosts and ONTAP Select nodes
- Performance
  Performance information about the hypervisor hosts and ONTAP Select nodes

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **AutoSupport** option and click **Generate**.
4. Select the type and provide a description for the package or provide a case number and then click **Generate AutoSupport**.
5. In the pane on the left, click **History** under **AutoSupport** and locate the package.

   You can click **Refresh** as needed.

After you finish

You can download the AutoSupport package to your workstation using the native Deploy utility user interface. You cannot download the package using the Deploy vCenter plug-in.

Confirm network connectivity

There are several aspects of the network that you can explore and display.

Confirm network connectivity

You can test the network connectivity among two or more ONTAP Select nodes on the internal cluster network. You should typically run this test before a multi-node cluster is deployed to detect issues that might cause the operation to fail. You can also run the connectivity test after a cluster is deployed and online.

About this task

Each time you start the test, a new process is created in the background and assigned a unique run identifier. Only one run can be active at a time.

The test is always run in quick mode which performs a basic nondisruptive test. A PING test is performed, along with a test of the network MTU size and the vSwitch.

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **Network** option and click **Connectivity Checker**.
4. Click **Run New** to start the test.
5. Optionally, click **Filtering** and create a filter to limit the test details that are displayed.

View the status of the mediator service

Each ONTAP Select two-node cluster is monitored by the mediator service, which assists in managing the HA capability shared by the nodes. You can view the status of the mediator service for each of the two-node clusters defined in the Deploy administration utility.

About this task

You can view the configuration of each mediator, including:

- Current status
- Two ONTAP Select nodes
- iSCSI target where the HA control information is stored

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **Mediator** option and click **Status**.
4. Optionally, click **Filtering** and create a filter to customize your view of the two-node clusters monitored by the mediator service.

ONTAP Select clusters

There are several related tasks you can perform to administer an ONTAP Select cluster.

Move an ONTAP Select cluster to the offline and online states

After you have created a cluster, you can change its status to offline or online as needed.

Steps

1. Click **ONTAP Select Clusters** in the **Global Inventory Lists** pane.
2. Right click the desired cluster to display the available actions.
3. Click **Take Offline** or **Bring Online** as appropriate and click **Yes** to confirm the request.

Delete an ONTAP Select cluster

You can delete an ONTAP Select cluster when it is no longer needed.

Before you begin

The cluster must be in the offline state.

Steps

1. Click **ONTAP Select Clusters** in the **Global Inventory Lists** pane.
2. Right click the desired cluster to display the available actions.
3. Click **Delete Cluster** and click **Yes** to confirm the request.

   If the delete option is not available, then the cluster is not in an offline state.

ONTAP Select licenses

There are several related tasks you can perform as part of administering the ONTAP Select licenses.

Manage licenses

You can add, edit, and delete ONTAP Select capacity tier licenses as needed.

Steps

1. Click **ONTAP Select Deploy** in the **Global Inventory Lists** pane.
2. Click the **Administration** tab.
3. Expand the **Licenses** option and click either **Capacity Tier** or **Capacity Pool** to select the license type.

   The current licenses and any issues are displayed.
4. Optionally, click **Filtering** and create a filter to limit the licenses that are displayed.
5. Perform the desired task:
   a. To add a license, click **+ADD**, click **Upload License(s)**, and select a license file.
   b. To delete an existing license, click the trash can icon to the right of the license.

Troubleshooting

You should be aware of the available troubleshooting techniques and common errors as a part of supporting the Deploy vCenter plug-in.

Installation, uninstallation, and update errors

If an error occurs during installation, uninstallation, or an update procedure, the API returns an error message that is displayed by the Deploy interface used to initiate the procedure (web user interface or CLI).

Common errors include the following:

- Bad credentials (username or password)
- Invalid or missing plug-in specified for installation
- vCenter server is offline or unreachable

For additional information about an error, examine the following logs:

- Deploy server log
- vCenter server log

Plug-in errors in vCenter

If an error occurs during a session with vCenter, an error message is displayed. Common errors include the following:

- Failure to load embedded content in vCenter from the Deploy server because the SSL certificate of the Deploy server was not accepted in the browser.

- The Deploy server fails to authorize the session ID for a vCenter user who is attempting to access the Deploy vCenter plug-in. The session times out.
- Insufficient privileges to access the Deploy vCenter plug-in.
- The Deploy server is offline or unreachable.

For additional information about an error, look in the following logs:

- vCenter server log
- Deploy server log

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