Deploy utility

ONTAP Select

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Deploy utility

Upgrade an ONTAP Select Deploy instance

Upgrade an existing ONTAP Select Deploy utility virtual machine in-place using the ONTAP Select Deploy utility CLI.

You can upgrade directly to ONTAP Select Deploy 9.19.1 from ONTAP Select Deploy 9.18.1 or 9.17.1. To upgrade from an earlier release, for example, ONTAP Select Deploy 9.16.1, you must first upgrade to ONTAP Select Deploy 9.17.1 or 9.18.1, then upgrade to ONTAP Select Deploy 9.19.1.

If you have an older instance of the ONTAP Select Deploy administration utility installed, you should upgrade to the current release. You upgrade the ONTAP Select node and ONTAP Select Deploy components independently. Refer to Upgrade the ONTAP Select nodes for further details.

Before you begin

Verify that ONTAP Select Deploy is not used to perform any other tasks during the upgrade.

Step 1: Download the upgrade package

To begin the upgrade process, download the ONTAP Select Deploy Upgrade file from the NetApp Support Site. The upgrade package is formatted as a single compressed file.

Steps

1. Access the NetApp Support Site downloads page.
2. Scroll down and select **ONTAP Select Deploy**.
3. Select the desired ONTAP Select version.
4. Review the End User License Agreement (EULA) and select **Accept & Continue**.
5. Select and download the appropriate **ONTAP Select Deploy Upgrade** package. Respond to all prompts as needed.

Step 2: Upload the package to the ONTAP Select Deploy virtual machine

After you download the package, you need to upload the file to the ONTAP Select Deploy virtual machine.

About this task

This task describes one method for uploading the file to the ONTAP Select Deploy virtual machine. There might be other options more suitable for your environment.

Before you begin

- Verify that the upgrade file is available on your local workstation.
- Verify that you have the password for the administrator user account.

Step

In a command shell on your local workstation, use the `scp` (Secure Copy Protocol) utility to upload the image file to the ONTAP Select Deploy virtual machine, as shown in the following example:

```
scp ONTAPdeploy2.12_upgrade.tar.gz admin@10.228.162.221:/home/admin
(provide password when prompted)
```

Result

The upgrade file is stored in the home directory of the admin user.

Step 3: Apply the upgrade package

After you upload the upgrade file to the ONTAP Select Deploy virtual machine, you can apply the upgrade.

Before you begin

- Verify which directory the upgrade file has been placed in at the ONTAP Select Deploy utility virtual machine.
- Verify that ONTAP Select Deploy is not used to perform any other tasks while the upgrade is performed.

Steps

1. Sign in to the ONTAP Select Deploy utility CLI using SSH with the administrator account.
2. Perform the upgrade using the appropriate directory path and file name:

   ```
   deploy upgrade -package-path <file_path>
   ```

   Example command:

   ```
   deploy upgrade -package-path /home/admin/ONTAPdeploy2.12_upgrade.tar.gz
   ```

After you finish

Before the upgrade procedure completes, you are asked to create a backup of the ONTAP Select Deploy virtual machine configuration. Also, you should clear the browser cache so you can view the newly created ONTAP Select Deploy pages.

Migrate an ONTAP Select Deploy instance to a new virtual machine

You can migrate an existing instance of the Deploy administration utility to a new virtual machine using the command line interface.

This procedure is based on creating a new virtual machine that uses the configuration data from the original virtual machine. The new and original virtual machines must run the same version and release of the Deploy utility. You cannot migrate to a different version and release of the Deploy utility.

Step 1:Back up the Deploy configuration data

You must create a backup of the Deploy configuration data as part of migrating the virtual machine. You should also create a backup after deploying an ONTAP Select cluster. The data is saved to a single encrypted file that you can download to your local workstation.

Before you begin

- Make sure that Deploy is not performing any other tasks during the backup operation.
- Save the original Deploy virtual machine image.

> The original Deploy virtual machine image is required later in this procedure when you restore the Deploy configuration data from the original to the new virtual machine.

About this task

The backup file you create captures all the configuration data from the virtual machine. This data describes aspects of your deployment environment, including the ONTAP Select clusters.

Steps

1. Sign in to the Deploy utility CLI using SSH with the administrator account.
2. Create a backup of the Deploy configuration data, which is stored in an internal directory at the Deploy server:

```
deploy backup create
```

3. Provide a password for the backup when prompted.

   The backup file is encrypted based on the password.

4. Display the available backups in the system:

```
deploy backup show -detailed
```

5. Select your backup file based on the date in the **Created** field and record the **Download URL** value.

   You can access the backup file through the URL.

6. Using a web browser or utility such as Curl, download the backup file to your local workstation with the URL.

Step 2: Install a new instance of the Deploy virtual machine

You must create a new instance of the Deploy virtual machine which you can update with the configuration data from the original virtual machine.

Before you begin

You must be familiar with the procedures used to download and deploy the ONTAP Select Deploy virtual machine in a VMware environment.

About this task

This task is described at a high level.

Steps

1. Create a new instance of the Deploy virtual machine:
   a. Download the virtual machine image.

b. Deploy the virtual machine and configure the network interface.

c. Access the Deploy utility using SSH.

Related information

Install ONTAP Select Deploy

Step 3: Restore the Deploy configuration data to the new virtual machine

You must restore the configuration data from the original Deploy utility virtual machine to the new virtual machine. The data is in a single file that you must upload from your local workstation.

Before you begin

You must have the configuration data from a previous backup. The data is contained in a single file and must be available on your local workstation.

Steps

1. In a command shell on your local workstation, use the sftp utility to upload the backup file to the Deploy virtual machine, as shown in the following example:

```
sftp admin@10.234.81.101 (provide password when prompted)
put deploy_backup_20190601162151.tar.gz
exit
```

2. Sign in to the Deploy utility CLI using SSH with the administrator account.
3. Restore the configuration data:

```
deploy backup restore -path <path_name> -filename <file_name>
```

Example command:

```
deploy backup restore -path /home/admin -filename
deploy_backup_20180601162151.tar.gz
```

Add an ONTAP Select image to Deploy

Add an ONTAP Select image to your instance of the Deploy administration utility. After the image has been installed, you can use it when deploying an ONTAP Select cluster.

Before you begin

Before adding any new ONTAP Select images to Deploy, you should first remove any unneeded images.

> You should only add an ONTAP Select image with a version that is earlier than the original version included with your instance of the Deploy utility. Adding later versions of ONTAP Select as they become available from NetApp is not a supported configuration.

Step 1: Download the install image

To begin the process of adding an ONTAP Select image to an instance of the Deploy utility, you must download the install image from the NetApp Support Site. The ONTAP Select install image is formatted as a single compressed file.

Steps

1. Access the NetApp Support Site downloads page.
2. Scroll down and select **ONTAP Select Image**.
3. Select the desired release of the install image.
4. Review the End User License Agreement (EULA) and select **Accept & Continue**.
5. Select and download the appropriate **ONTAP Select Image Install** package. Respond to all prompts as needed.

Step 2: Upload the install image to Deploy

After acquiring the ONTAP Select install image, you must upload the file to the Deploy virtual machine.

Before you begin

Verify that you have the install image file available on your local workstation. You must also have the password for the Deploy administrator user account.

About this task

This task describes one method for uploading the file to the Deploy virtual machine. There may be other options more suitable for your environment.

Step

1. In a command shell on your local workstation, upload the image file to the Deploy virtual machine, as shown in the following examples:

```
scp image_v_93_install_esx.tgz admin@10.234.81.101:/home/admin (provide
password when prompted)
```

```
sftp admin@10.234.81.101 (provide password when prompted)
put image_v_93_install_esx.tgz
exit
```

Result

The node install file is stored in the home directory of the admin user.

Step 3: Add the install image

Add the ONTAP Select installation image to the Deploy images directory so it is available when deploying a new cluster.

Before you begin

You must know which directory the install image file has been placed in at the Deploy utility virtual machine. It

is assumed the file is in the administrator's home directory.

Steps

1. Sign in to the Deploy utility CLI using SSH with the administrator (admin) account.
2. Start the Bash shell:

```
shell bash
```

3. Place the install image file into the images directory, as shown in the following example:

```
tar -xf image_v_93_install_esx.tgz -C /opt/netapp/images/
```

Step 4: Display the available install images

Display the ONTAP Select images that are available when deploying a new cluster.

Steps

1. Access the online documentation web page at the Deploy utility virtual machine and sign in using the administrator (admin) account:

   ```
   http://<FQDN|IP_ADDRESS>/api/ui
   ```

   Use the domain name or IP address of the Deploy virtual machine.

2. Navigate to the bottom of the page and select **Deploy** and then select **GET /images**.
3. Select **Try it out!** to display the available ONTAP Select images.
4. Confirm that the desired image is available.

Remove an ONTAP Select image from Deploy

You can remove ONTAP Select images from your instance of the Deploy administration utility when they are no longer needed.

> ! You should not remove any ONTAP Select images that are in use by a cluster.

About this task

You can remove older ONTAP Select images that are not currently in use by a cluster or planned for use with a future cluster deployment.

Steps

1. Sign in to the Deploy utility CLI using SSH with the administrator (admin) account.
2. Display the clusters managed by Deploy and record the ONTAP images in use:

```
cluster show
```

   Note the version number and hypervisor platform in each case.

3. Start the Bash shell:

```
shell bash
```

4. Display all of the available ONTAP Select images:

```
ls -lh /opt/netapp/images
```

5. Optionally, remove the ONTAP Select image with your hypervisor host.

ESXi example

```
rm -r /opt/netapp/images/DataONTAPv-9.3RC1-vidconsole-esx.ova
```

KVM example

```
rm -r /opt/netapp/images/DataONTAPv-9.3RC1-serialconsole-kvm.raw.tar
```

Recover the ONTAP Select Deploy utility for a two-node cluster

If the ONTAP Select Deploy utility fails or becomes unavailable for some reason, you lose the ability to administer ONTAP Select nodes and clusters. In addition, all two-node clusters lose HA capability because the mediator service included with Deploy is unavailable. If an unrecoverable failure occurs, you must recover the Deploy utility instance to restore administrative and HA functionality.

Prepare to recover the Deploy utility

You need to prepare before attempting to recover an instance of the Deploy utility to ensure success. You must be familiar with several administrative procedures and have the required information.

Steps

1. Verify that you can install a new instance of the ONTAP Select Deploy utility in your hypervisor environment.

   Learn about installing the ONTAP Select Deploy utility

2. Verify that you can log in to the ONTAP Select cluster and access the ONTAP cluster shell (CLI).
3. Determine if you have a backup of the configuration data from the failed Deploy utility instance that contains the ONTAP Select two-node cluster. You might have a backup that does not contain the cluster.
4. Verify that you can restore a backup of the Deploy configuration data, depending on the recovery procedure used.

Learn about restoring the Deploy configuration data to the new virtual machine

5. You have the IP address of the original Deploy utility virtual machine that failed.
6. Determine whether Capacity Pools or Capacity Tiers licensing is used. If you use Capacity Pools licensing, you must reinstall each Capacity Pool license after recovering or restoring the Deploy instance.
7. Decide which procedure to use when recovering an instance of the ONTAP Select Deploy utility. Your decision is based on whether or not you have a backup of the configuration data from the original failed Deploy utility that contains the ONTAP Select two-node cluster.

Do you have a Deploy backup containing the two-node cluster?	Use the recovery procedure…
Yes	Restore a Deploy utility instance using a configuration backup
No	Reconfigure and recover a Deploy utility instance

Restore a Deploy utility instance using a configuration backup

If you have a backup of the failed Deploy utility instance containing the two-node cluster, you can restore the configuration data to the new Deploy virtual machine instance. You must then complete the recovery by performing additional configuration of the two nodes in the ONTAP Select cluster.

Before you begin

Backup the configuration data from the original failed Deploy virtual machine that contains the two-node cluster. You must be able to sign in to the ONTAP CLI of the two-node cluster and know the ONTAP names of the two nodes.

About this task

Because the configuration backup you restore contains the two-node cluster, the mediator iSCSI targets and mailboxes are recreated in the new Deploy utility virtual machine.

Steps

1. Prepare a new instance of the ONTAP Select Deploy utility:
   a. Install a new Deploy utility virtual machine.
   b. Restore the Deploy configuration from a previous backup to the new virtual machine.

      Refer to the related tasks for more detailed information about the install and restore procedures.
2. Sign in to the ONTAP command line interface of the ONTAP Select two-node cluster.
3. Enter advanced privilege mode:

```
set adv
```

4. If the IP address of the new Deploy virtual machine is different than the original Deploy virtual machine, remove the old mediator iSCSI targets and add new targets:

```
storage iscsi-initiator remove-target -node * -target-type mailbox
```

```
storage iscsi-initiator add-target -node <node1_name> -label mediator
-target-type mailbox -target-portal <ip_address> -target-name <target>
```

```
storage iscsi-initiator add-target -node <node2_name> -label mediator
-target-type mailbox -target-portal <ip_address> -target-name <target>
```

The `<ip_address>` parameter is the IP address of the new Deploy virtual machine.

These commands allow the ONTAP Select nodes to discover the mailbox disks on the new Deploy utility virtual machine.

5. Determine the names of the mediator disks:

```
disk show -container-type mediator
```

6. Assign the mailbox disks to the two nodes:

```
disk assign -disk <mediator-disk1-name> -owner <node1-name>

disk assign -disk <mediator-disk2-name> -owner <node2-name>
```

7. Verify that storage failover is enabled:

```
storage failover show
```

After you finish

If you use Capacity Pools licensing, reinstall each Capacity Pool license. See Reinstall a Capacity Pool license for additional details.

Reconfigure and recover a Deploy utility instance

If you do not have a backup of the failed Deploy utility instance containing the two-node cluster, configure the mediator iSCSI target and mailbox in the new Deploy virtual machine. You then complete the recovery by performing additional configuration of the two nodes in the ONTAP Select cluster.

Before you begin

Verify that you have the name of the mediator target for the new Deploy utility instance. You must be able to sign in to the ONTAP CLI of the two-node cluster and know the ONTAP names of the two nodes.

About this task

You can optionally restore a configuration backup to the new Deploy virtual machine even though it does not contain the two-node cluster. Because the two-node cluster is not recreated with the restore, you must manually add the mediator iSCSI target and mailbox to the new Deploy utility instance through the ONTAP Select online documentation web page at the Deploy. You must be able to sign in to the two-node cluster and

know the ONTAP names of the two nodes.

> The goal of the recovery procedure is to restore the two-node cluster to a healthy state, where normal HA takeover and giveback operations can be performed.

Steps

1. Prepare a new instance of the ONTAP Select Deploy utility:
   a. Install a new Deploy utility virtual machine.
   b. Optionally, restore the Deploy configuration from a previous backup to the new virtual machine.

      If you restore a previous backup, the new Deploy instance will not contain the two-node cluster. Refer to the related information section for more detailed information about the install and restore procedures.
2. Sign in to the ONTAP command line interface of the ONTAP Select two-node cluster.
3. Enter advanced privileged mode:

   ```
   set adv
   ```

4. Get the mediator iSCSI target name:

   ```
   storage iscsi-initiator show -target-type mailbox
   ```

5. Access the online documentation web page at the new Deploy utility virtual machine and sign in using the admin account:

   `http://<ip_address>/api/ui`

   You must use the IP address of your Deploy virtual machine.
6. Select **Mediator** and then **GET /mediators**.
7. Select **Try it out!** to display a list of mediators maintained by Deploy.

   Note the ID of the desired mediator instance.
8. Select **Mediator** and then **POST**.
9. Provide the value for mediator_id.
10. Select the **Model** next to `iscsi_target` and complete the name value.

    Use the target name for the iqn_name parameter.
11. Select **Try it out!** to create the mediator iSCSI target.

    If the request is successful, you will receive HTTP status code 200.
12. If the IP address of the new Deploy virtual machine is different than the original Deploy virtual machine, you must use the ONTAP CLI to remove the old mediator iSCSI targets and add new targets:

```
storage iscsi-initiator remove-target -node * -target-type mailbox
```

```
storage iscsi-initiator add-target -node <node1_name> -label mediator
-target-type mailbox -target-portal <ip_address> -target-name <target>
```

```
storage iscsi-initiator add-target -node <node2_name> -label mediator-
target-type mailbox -target-portal <ip_address> -target-name <target>
```

The `<ip_address>` parameter is the IP address of the new Deploy virtual machine.

These commands allow the ONTAP Select nodes to discover the mailbox disks on the new Deploy utility virtual machine.

13. Determine the names of the mediator disks:

```
disk show -container-type mediator
```

14. Assign the mailbox disks to the two nodes:

```
disk assign -disk <mediator-disk1-name> -owner <node1-name>

disk assign -disk <mediator-disk2-name> -owner <node2-name>
```

15. Verify that storage failover is enabled:

```
storage failover show
```

After you finish

If you use Capacity Pools licensing, reinstall each Capacity Pool license. See Reinstall a Capacity Pool license for additional details.

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