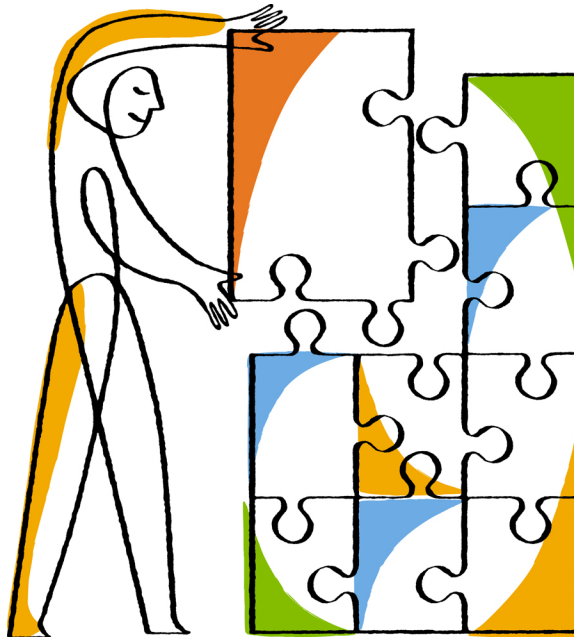




# Data ONTAP-v™ Administration Tool 1.2.1

## Installation Guide



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# Introducing the Data ONTAP-v administration tool (dvdadmin)

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The NetApp Data ONTAP Edge family of products uses Data ONTAP-v technology to run storage software in a virtual machine. The Data ONTAP-v administration tool (dvdadmin) is the command-line interface (CLI) you use to install, manage, and monitor your Data ONTAP Edge storage system.

This manual provides information about installing dvdadmin. See the following manuals for information about installing and managing your Data ONTAP Edge storage systems:

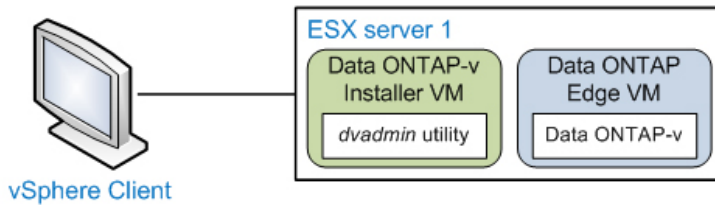
- *Data ONTAP Edge Installation and Administration Guide For 7-Mode* - Describes how to install and manage Data ONTAP Edge 7-Mode storage systems using dvdadmin.
- *Data ONTAP Edge Installation and Administration Guide For Clustered Data ONTAP* - Describes how to install and manage clustered Data ONTAP Edge storage systems using dvdadmin.
- *Data ONTAP-v Administration Tool Command Reference* - Describes the dvdadmin commands used to install, manage, and monitor a Data ONTAP Edge storage system.

## Where dvdadmin and Data ONTAP Edge reside

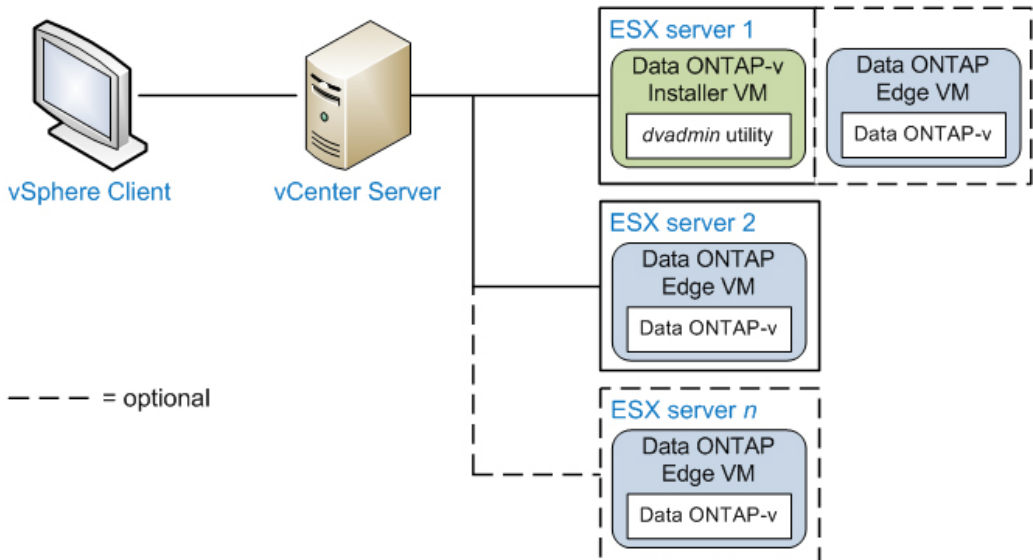
dvdadmin runs in a virtual machine called the *Data ONTAP-v Installer*. The VM can reside on any VMware ESX server with network connectivity to the host server where you plan to install Data ONTAP Edge.

One instance of dvdadmin can manage a single Data ONTAP Edge storage system or multiple storage systems. To manage a single storage system, dvdadmin can be connected directly to the ESX server, or connected to the server through a vCenter Server. To manage multiple storage systems with a single instance of dvdadmin, all Data ONTAP Edge storage systems must be connected to the same vCenter Server.

Single unmanaged ESX server



Single, or multiple, managed ESX servers



## How the Data ONTAP-v Installer is packaged

The Data ONTAP-v Installer is packaged in an OVF template. The template is distributed in an OVA file that also contains the Data ONTAP Edge image and all the software components you need to run dvdadmin.

To create the Data ONTAP-v Installer VM, you download the OVA file from the NetApp Support Site at [support.netapp.com](http://support.netapp.com), and deploy the template on an ESX host using the VMware vSphere Client.

## Installing the Data ONTAP-v administration tool

dvadmin comes installed in a prepackaged virtual machine called the *Data ONTAP-v Installer*. The installer is packaged in an OVF template that includes all the software components you need to run dvadmin.

You can deploy the installer template on any VMware ESX server with network connectivity to the host server where you plan to install Data ONTAP Edge. Before deploying the template:

- Make sure the ESX host for the Data ONTAP-v Installer meets the minimum host server requirements.
- Complete the configuration worksheet for the Data ONTAP-v Installer host.
- Complete the configuration worksheet for the ESX server, or servers, where you plan to install Data ONTAP Edge.

### Host server requirements

The ESX host for the Data ONTAP-v Installer VM must meet these minimum resource requirements. Review these requirements before deploying the OVF template.

Resource	Minimum Requirements
ESX Server	Hardware and software must be 64-bit.
vSphere version	VMware ESX or ESXi
Network	1 Gigabit Ethernet connection for fastest installation (optional). By default, the Data ONTAP-v Installer VM uses DHCP to communicate with the IP network.
Virtual CPUs	1
Virtual Memory	1 GB
Storage	8 GB

See the Interoperability Matrix at [support.netapp.com/matrix](http://support.netapp.com/matrix) for additional information.

#### Related tasks

[Deploying the Data ONTAP-v Installer virtual appliance](#) on page 9

## Required configuration information for the Data ONTAP-v Installer

You need to specify the host server information where the Data ONTAP-v Installer virtual machine will be installed. If your network does not use DHCP to automatically assign networking values to new devices, you will also need to specify this information for the Installer virtual machine.

Enter the ESX host information in the following configuration worksheet.

Host configuration information	Your values
Name you will use for the Installer virtual machine. The default name is "Data ONTAP-v Installer".	
ESX host where the Installer virtual machine will be installed. This may or may not be the same host where you plan to install Data ONTAP Edge.	
Datastore where the virtual machine files will be installed. These files consume approximately 8 GB.	
Network to which the virtual machine will be connected.	

By default, the Data ONTAP-v Installer attempts to use DHCP to assign an IP address to the Installer virtual machine. If you do not want to use DHCP, or if your network does not have a DHCP server, you need to enter the required networking information manually.

Enter the static IPv4 address, and other networking information, for the Data ONTAP-v Installer virtual machine in the following configuration worksheet.

Virtual machine configuration information	Your values
VM Host name	
VM Host IP address	
VM Subnet mask	
VM Gateway	
VM Primary DNS address	
VM Secondary DNS address (optional)	
VM Search domains (optional)	

**Related tasks**

[Configuring the virtual machine network interface](#) on page 10

## Required configuration information for the Data ONTAP Edge host

You can connect dadmin to an ESX host managed by a VMware vCenter server or to an unmanaged ESX host. Before connecting dadmin to the ESX host where you plan to install Data ONTAP Edge, you should record the necessary host information.

If you plan to install and manage multiple Data ONTAP Edge systems on hosts that are in the same vCenter by connecting only to the vCenter server, you do not need to collect the ESX host information in this worksheet. You will need only the vCenter server name, or IP address, and login credentials.

See the Interoperability Matrix Tool at [support.netapp.com/matrix](http://support.netapp.com/matrix) and the *Data ONTAP Edge Installation and Administration Guide* for supported vSphere versions and licenses.

Enter the ESX host information in the following configuration worksheet.

Host configuration information	Your values
Name or IP address of the ESX host where Data ONTAP Edge will be installed.	
Name or IP address of the vCenter server if the ESX host is managed by a vCenter server.	
Admin login name for the vCenter server. If the ESX host is not managed by a vCenter server, admin login name for the ESX host.	
Admin password for the vCenter server. If the ESX host is not managed by a vCenter server, admin password for the ESX host.	

**Related tasks**

[Connecting dadmin to the Data ONTAP Edge host](#) on page 12



## Downloading the Data ONTAP-v Installer virtual appliance

The Data ONTAP-v Installer virtual appliance is distributed in an OVA file that contains all the software components you need to run `dvadmin` and install Data ONTAP Edge.

### Before you begin

You must have downloaded your Data ONTAP Edge platform license from the "My Licenses" option on the NetApp Support Site.

### Steps

1. From the Data ONTAP Edge selection on the NetApp Support Site at [support.netapp.com](http://support.netapp.com), select the version of software that you want to install.
2. From the *Description* page, download the appropriate clustered Data ONTAP Edge documentation.
3. From the *Download* page, download the OVA file (for example, *821\_121\_v\_installer.ova*) for the latest Data ONTAP-v Installer virtual appliance.
4. Save the OVA file to a local or network location that is accessible to your vSphere Client.

## Deploying the Data ONTAP-v Installer virtual appliance

You use the VMware vSphere Client to deploy the Data ONTAP-v Installer virtual appliance to an ESXi server. The vSphere Client converts the appliance to a virtual machine (VM).

### Before you begin

Ensure that the host ESX server meets the minimum resource requirements.

### Steps

1. In the vSphere Client, select **File > Deploy OVF Template**.
2. Select the OVA file and complete the Deploy OVF Template wizard to deploy the Data ONTAP-v Installer. Use the information you recorded in [Required configuration information for the Data ONTAP-v Installer host](#) on page 7.  
**Note:** For the VM disk format, select Thin Provisioned, if prompted. For more information, see the vSphere online help.
3. After the appliance has successfully deployed to the ESX server, select the new VM and power it on.

**Note:** Select the **Power on after deployment** check box on the last page of the wizard to power on the virtual machine automatically after deployment. The check box is available in VMware vSphere Client 5.0 only, not in previous versions.

4. Click the **Console** tab to monitor the VM power-on status in the ESX host setup shell.

The VM powers up and the Data ONTAP-v Installer boots.

**Note:** The first boot of the installer typically takes longer than subsequent boots.

5. By default, the installer uses DHCP to assign an IP address to the VM. If you want to manually configure the network interface with a static IP address, press **Enter**.

If DHCP is not detected, the installer prompts you to configure the network interface with a static IP address.

### Related concepts

[Host server requirements](#) on page 6

## Configuring the virtual machine network interface

By default, the Data ONTAP-v Installer uses DHCP to assign an IP address to the installer virtual machine. If DHCP is not detected, or if you have chosen to configure the network interface manually, the installer prompts you to assign a static IP address.

### About this task

Skip this step if you are using DHCP to assign an IP address to the installer virtual machine.

### Steps

1. In the vSphere Console tab, the Data ONTAP-v Installer displays the following prompt:

```
Would you like to setup a static configuration? [y]:
```

2. Type **y** and press **Enter**.
3. At each displayed prompt, enter the corresponding information from the configuration worksheet you created for the installer host.
4. When you have responded to each prompt, the installer lists your entries and displays the following prompt:

```
Are these values correct? (y/n)
```

5. Type **y** and press **Enter**.

### Example of configuring the virtual machine network interface

The following example shows how you might configure the network interface with a static IP address. The text in bold is the information you must enter to define the interface.

```
The management interface is currently configured for DHCP but an
address could not be obtained from the DHCP server. This could be
due to either a DHCP configuration issue or virtual machine network
adapter configuration.
```

```
Would you like to setup a static configuration? [y]: y
```

```
Static Configuration
```

```
-----
Host name           : dvadmin_vm
Host IP address     : 10.10.10.09
Net mask            : 255.255.255.0
Gateway             : 10.10.10.1
Primary DNS address : 10.100.1.1
Secondary DNS address: 10.10.100.1
Please enter in all search domains separated by spaces (can be
left blank):
```

```
Selected host name   : dvadmin_vm
Selected IP          : 10.10.10.09
Selected net mask    : 255.255.255.0
Selected gateway     : 10.10.10.1
Selected primary DNS : 10.100.1.1
Selected secondary DNS: 10.10.100.1
Search domains      :
Calculated network   : 10.10.10.0
Calculated broadcast : 10.10.10.255
Are these values correct? [y] y
```

```
Applying network configuration. Please wait...
```

```
Continuing system startup. Please wait...
```

```
NetApp Data ONTAP-v Installer vxxx.yyy
```

```
Welcome to NetApp Data ONTAP-v Installer vxxx.yyy
```

```
The IP address of Data ONTAP-v Installer is: 10.10.10.09
```

### After you finish

You can continue the setup steps using the Console tab in the vSphere Client, but it is recommended that you SSH to the Data ONTAP-v Installer host IP address (listed above) because that interface is easier to use and is more stable.

### Related concepts

*[Required configuration information for the Data ONTAP-v Installer](#) on page 7*

### Related tasks

[Resetting the virtual machine network interface](#) on page 22

## Connecting dadmin to the Data ONTAP Edge host

After you have completed the virtual machine network configuration, the Data ONTAP-v Installer prompts you to connect dadmin to the ESX server where you plan to install Data ONTAP Edge.

### About this task

There are three ways to connect dadmin to a VMware ESX host:

- You can connect directly to the ESX host (provided it is not being managed by a vCenter Server).
- You can connect to the ESX host through the vCenter Server that is managing the host.
- You can connect to the vCenter Server without specifying an ESX host. Once logged in, you use the dadmin `host` command to connect to an ESX host. This method allows you to use a single instance of dadmin to manage multiple Data ONTAP Edge systems that reside in the same vCenter.

**Important:** VMware counsels against connecting directly to an ESX host if it is being managed by a vCenter Server because that can result in corruption of virtual machine configuration data.

To connect to a vCenter Server or an ESX host, you specify the information you recorded in the configuration worksheet for the Data ONTAP Edge host. The Data ONTAP-v Installer provides different prompts depending on whether you are connected to the ESX host through a vCenter Server or connected directly to the ESX host.

If you want to save the server login information so that you do not need to re-enter it every time you connect, answer **y** to the final prompt `Do you want to save this vCenter server login information [y]:`. This option writes the server name, host name, and user name to the startup file `$HOME/.dadmin`. The password, once correctly entered, will be stored in the VMware credential store.

**Note:** If the remote host key for SSH access to the ESX server is not cached in your `known_hosts` file, it will be added automatically the first time you connect to the server.

### Steps

1. In the vSphere Console tab, the Data ONTAP-v Installer displays the following prompt:

```
The following prompts define the connection to the vCenter server
or ESX host.
Is the ESX host managed by a vCenter server? [y]:
```

2. Enter **y** if the ESX host is managed by a vCenter Server, or **n** if it is not managed by a vCenter server.  
The following prompts are displayed if you connect to the ESX host through a vCenter server:

```
Enter vCenter server name or IP address:
Enter ESX host name or IP address (optional):
Enter vCenter server username:
Enter vCenter server password:
```

The following prompts are displayed if you connect directly to the ESX host:

```
Enter ESX host name or IP address:
Enter ESX host username:
Enter ESX host password:
```

3. Enter the vCenter Server and/or ESX host information to define the ESX host to which you want to connect.

The following prompt is displayed:

```
Do you want to save this server login information [y]:
```

4. If you want to save the server login information so that you do not need to re-enter it every time you connect, answer **y**, otherwise, enter **n**.

You are logged into the server and the `dvadmin` prompt is displayed:

```
NetApp Data ONTAP-v Administration Tool 1.x.x
Copyright (C) 1992-2013 NetApp.
All rights reserved.
Logging in Administrator@vcenter_server1
VMware SDK version: 5.0
Console escape key: ^]
Host: host_system1
Installer Version: 8.x.x.yyy
ESX License: VMware vSphere 5 Enterprise

dvadmin host host_system1>
```

**Note:** As listed in the NetApp Interoperability Matrix, Data ONTAP Edge is supported only with specific VMware licenses. You will receive a warning message when connecting to a vCenter Server or ESX host that has an unsupported license. You can continue to use the system, but it may run with reduced functionality.

### Examples of logging into a server

The following example shows how you might log into the ESX server named "host\_system1" through the vCenter server named "vcenter\_server1".

```
Is the ESX host managed by a vCenter server? [y]: y
Enter vCenter server name or IP address: vcenter_server1
Enter ESX host name or IP address (optional): host_system1
Enter vCenter server username: esxuser
```

```
Enter vCenter server password: *****
Do you want to save this vCenter server login information [y]: y
```

The following example shows how you might log into the vCenter server named "vcenter\_server1" without specifying an ESX host.

```
Is the ESX host managed by a vCenter server? [y]: y
Enter vCenter server name or IP address: vcenter_server1
Enter ESX host name or IP address (optional): <Enter>
Enter vCenter server username: esxuser
Enter vCenter server password: *****
Do you want to save this vCenter server login information [y]: y
```

The following example shows how you might log in directly to the unmanaged ESX server with IP address 126.127.128.129.

```
Is the ESX host managed by a vCenter server? [y]: n
Enter ESX host name or IP address: 126.127.128.129
Enter ESX host username: esxuser
Enter ESX host password: *****
Do you want to save this ESX server login information [y]: y
```

### Related concepts

[Required configuration information for the Data ONTAP Edge host](#) on page 8

## Verifying that the installation was successful

Once at the `dvdadmin` prompt, you can use the `status` command to verify that `dvdadmin` was installed successfully.

### Step

1. At the `dvdadmin` prompt, enter the following command:

```
status
```

The following status information is displayed:

- `dvdadmin` version
- vCenter server name
- User who is connected to the server
- VMware vSphere SDK for Perl version
- Console escape key
- Host server name (if `dvdadmin` is currently connected to a host)
- Type of ESX license installed on the host server

- Data ONTAP-v Installer version

**Note:** You can use the `dvadmin help` command to display the list of available commands, or the command syntax for a particular command.

### Example: Showing server status

The following example shows server status information:

```
dvadmin esx01> status

Version: 1.x.x
Server: server.company.com
User: Administrator
VMware SDK version: 5.0
Console escape key: ^]
Host: esx01
ESX License: vSphere 5 Enterprise
Installer Version: 8.x.x.yyy
```

### After you finish

After you have verified that the `dvadmin` installation was successful, you can use the `dvadmin setup` wizard to install the Data ONTAP Edge system. See the *Data ONTAP Edge Installation and Administration Guide* for setup wizard usage.

## Managing the Data ONTAP-v administration tool

---

You use a set of *management shells* to perform common dvadmin maintenance tasks. You can perform many of these tasks remotely in an SSH session.

### Understanding the dvadmin management shells

You perform dvadmin management tasks in three shells: the ESX host setup shell, the dvadmin shell, and the bash shell. You use each shell for a different set of management tasks.

**ESX host setup shell** This is the shell that starts after you log into the Data ONTAP-v Installer VM. In this shell, you define the installer network configuration and specify the login information you use to connect dvadmin to the Data ONTAP Edge host.

The following screen shows the ESX host setup shell after you log into the installer in an SSH session. The example assumes you have completed the installation of the installer VM.

```
login as: netapp
netapp@10.97.131.24's password: *****

Welcome to NetApp Data ONTAP-v Installer v8.x.x.yyy.
The IP address of Data ONTAP-v Installer is: 10.97.131.24
Type 'Ctrl-\`' to end the SSH session.
The following prompts define the connection to the vCenter
server or ESX host.

Do you want to use saved login information
("Administrator"@vc.nane.netapp.com)? [y]
```

**dvadmin shell** This is the shell that starts after you connect dvadmin to the Data ONTAP Edge host or the vCenter Server. In this shell, you use the dvadmin CLI to perform everyday Data ONTAP Edge management tasks. You exit the dvadmin shell by typing **exit** at the dvadmin prompt.

The following screen shows the dvadmin shell with the output of the `status` command.

```
dvadmin esx01.company.com> status

Version: 1.x.x
Server: server.company.com
User: Administrator
VMware SDK version: 5.0
Console escape key: ^]
```



```
Host: esx01.company.com
ESX License: vSphere 5 Enterprise
Installer Version: 8.x.x.yyy
```

**bash shell** This is the shell you use to stop, restart, and reset the virtual machine network interface for dvadmin. You start the bash shell by pressing Ctrl-C in the ESX host setup shell. You exit the bash shell by typing **exit** at the bash shell prompt.

The following screen shows the bash shell with the output of the `halt-system` command.

```
netapp@user-vsimg1:~$ halt-system

The system is going down for system halt NOW!s/O) (Wed Nov 28
18:26:42 2012):
netapp@user-vsimg1:~$
```

### Related concepts

[Accessing the dvadmin management shells remotely using SSH](#) on page 17

## Accessing the dvadmin management shells remotely using SSH

You can access the dvadmin management shells in the vSphere Client **Console** tab or remotely in an SSH session. Because many secure shell/terminal emulators offer a superior user experience to that of the **Console** tab, you may prefer to run dvadmin and perform related management tasks in SSH.

The following table shows how to navigate between management shells in an SSH session.

To	Do the following
Start the ESX host setup shell.	Log into the Data ONTAP-v Installer.
Start the dvadmin shell.	Connect dvadmin to the Data ONTAP Edge host or vCenter Server.
Exit the dvadmin shell.	Type <b>exit</b> at the dvadmin prompt.
Start the bash shell.	Press Ctrl-C in the ESX host setup shell.
Exit the bash shell.	Type <b>exit</b> at the bash shell prompt.
Exit the SSH session.	Press Ctrl-\..

The following screen shows how you start the dvadmin shell in an SSH session.

```

$ ssh netapp@10.97.131.24

netapp@10.97.131.24's password: *****

Welcome to NetApp Data ONTAP-v Installer v8.x.x.yyy
The IP address of Data ONTAP-v Installer is: 10.97.131.24
Type 'Ctrl-\' to end the SSH session.
The following prompts define the connection to the vCenter server or ESX
host.

Do you want to use saved login information
("Administrator"@vc.nane.netapp.com)? [y] y

NetApp Data ONTAP-v Administration Tool 1.x.x
Copyright (C) 1992-2013 NetApp.
All rights reserved.
Logging in Administrator@vc.nane.netapp.com
VMware SDK version: 5.0
Console escape key: ^]
Host: host_system1
Installer Version: 8.x.x.yyy
ESX License: vSphere 5 Enterprise

dvadmin host_system1>

```

**Related concepts**

[Understanding the dvadmin management shells](#) on page 16

## Starting the Data ONTAP-v Installer VM

You can power on the Data ONTAP-v Installer VM in the vSphere Client GUI only. The installer VM stays powered on until you stop or restart it. You must power on the VM before you access the dvadmin management shells.

**Steps**

1. In the vSphere Client, select the Data ONTAP-v Installer VM.
2. From the **Summary** tab, click **Power On**.

**Result**

The Data ONTAP-v Installer virtual machine is powered on.

**Related concepts**

[Understanding the dvadmin management shells](#) on page 16

**Related tasks**

[Stopping the Data ONTAP-v Installer VM](#) on page 21

**Logging in to the Data ONTAP-v Installer VM**

You are automatically logged in to the Data ONTAP-v Installer when you power on the installer VM in the vSphere Client. You need to log in manually when you access the installer in an SSH session.

**About this task**

You log in to the Data ONTAP-v Installer as user "netapp" with the default password "netapp". You should change the default password immediately.

**Steps**

1. In the SSH session, the Data ONTAP-v Installer displays the login prompt:

```
login as:
```

2. Type **netapp** and press **Enter**. The Data ONTAP-v Installer displays the password prompt:

```
netapp@IP's password:
```

3. Type the password (default of "netapp") and press **Enter**.

**Example of logging into the Data ONTAP-v Installer VM**

The following screen shows how you would log in to the Data ONTAP-v Installer VM in an SSH session.

```
login as: netapp
netapp@10.97.131.24's password: *****

NetApp Data ONTAP-v Installer v8.x.x.yyy.
Last login: Mon Feb 11 16:33:16 2013

Welcome to NetApp Data ONTAP-v Installer v8.x.x.yyy
The IP address of Data ONTAP-v Installer is: 10.97.131.24
Type 'Ctrl-\' to end the SSH session.
The following prompts define the connection to the vCenter server
or ESX host.

Do you want to use saved login information
("Administrator"@vc.nane.netapp.com)? [y] y
```

### After you finish

You can connect `dvadmin` to the previously connected ESX host or vCenter Server by pressing **Enter** in response to the Do you want to use saved login information ("user"@"server")? prompt.

### Related concepts

[Understanding the dvadmin management shells](#) on page 16

[Accessing the dvadmin management shells remotely using SSH](#) on page 17

### Related tasks

[Changing the password for the Data ONTAP-v Installer VM](#) on page 20

## Changing the password for the Data ONTAP-v Installer VM

The default password for the Data ONTAP-v Installer is "netapp". You should change the default password at the first opportunity. It is a good idea to change your password at regular intervals.

### About this task

You can start the bash shell in the vSphere Client **Console** tab or in an SSH session.

### Steps

1. In the ESX host setup shell, press **Ctrl-C** to start the bash shell.
2. At the bash shell prompt, type `passwd` and press **Enter**. The following prompt is displayed:

```
Changing password for netapp.  
(current) UNIX password:
```

3. Type the current password and press **Enter**. The following prompt is displayed:

```
Enter new UNIX password:
```

4. Type the new password and press **Enter**. The following prompt is displayed:

```
Retype new UNIX password:
```

5. Type the new password again and press **Enter**. The following message is displayed:

```
passwd: password updated successfully
```

**Related concepts**

[Understanding the dadmin management shells](#) on page 16

[Accessing the dadmin management shells remotely using SSH](#) on page 17

**Related tasks**

[Logging in to the Data ONTAP-v Installer VM](#) on page 19

## Restarting the Data ONTAP-v Installer VM

You can restart the Data ONTAP-v Installer virtual machine in the vSphere Client GUI or the bash shell.

**About this task**

You can start the bash shell in the vSphere Client **Console** tab or an SSH session.

**Step**

1. Choose a procedure below to restart the installer VM.

Option	Description
Restart the VM in the vSphere Client GUI	Select the Data ONTAP-v Installer VM in the vSphere Client. In the <b>Summary</b> tab, click <b>Restart Guest</b> . You are prompted to reboot the guest operating system. Click <b>Yes</b> .
Restart the VM in the vSphere Client <b>Console</b> tab	In the ESX host setup shell, press Ctrl-C to start the bash shell. Enter <code>reboot-system</code> at the bash shell prompt.
Restart the VM in an SSH session	In the ESX host setup shell, press Ctrl-C to start the bash shell. Enter <code>reboot-system</code> at the bash shell prompt.

**Related concepts**

[Understanding the dadmin management shells](#) on page 16

[Accessing the dadmin management shells remotely using SSH](#) on page 17

## Stopping the Data ONTAP-v Installer VM

You can stop, or power down, the Data ONTAP-v Installer virtual machine using the vSphere Client GUI or using the bash shell.

**About this task**

You can start the bash shell in the vSphere Client **Console** tab or an SSH session.

**Note:** Data ONTAP Edge VMs are not affected by exiting `dvadmin` or powering down the installer VM.

### Step

1. Choose a procedure below to stop the installer VM.

Option	Description
Stop the VM in the vSphere Client GUI	Select the Data ONTAP-v Installer VM in the vSphere Client. In the <b>Summary</b> tab, click <b>Shut Down Guest</b> . You are prompted to shut down the guest operating system. Click <b>Yes</b> .
Stop the VM in the vSphere Client <b>Console</b> tab	In the ESX host setup shell, press Ctrl-C to enter the bash shell. Enter <code>halt-system</code> at the bash shell prompt.
Stop the VM in an SSH session	In the ESX host setup shell, press Ctrl-C to enter the bash shell. Enter <code>halt-system</code> at the bash shell prompt.

### After you finish

**Note:** You cannot power on the Data ONTAP-v Installer VM in the bash shell. Use the vSphere Client GUI to power on the VM.

### Related concepts

[Understanding the dvadmin management shells](#) on page 16

[Accessing the dvadmin management shells remotely using SSH](#) on page 17

### Related tasks

[Starting the Data ONTAP-v Installer VM](#) on page 18

## Resetting the virtual machine network interface

You can reset the virtual machine network interface to the factory defaults by invoking the `reset-networking` command in the bash shell. You might want to reset the network configuration if you assign a new IP address to the Data ONTAP-v Installer virtual machine, or if you start using DHCP to assign an IP address automatically.

### About this task

You can start the bash shell in the vSphere Client **Console** tab or an SSH session. You must restart the Data ONTAP-v Installer virtual machine for the changes to take effect.

### Steps

1. In the ESX host setup shell, press Ctrl-C to start the bash shell.

2. At the bash shell prompt, type **reset-networking** and press **Enter**. The following prompt is displayed:

```
Would you like to reset network settings to the factory default? [y]:
```

3. Type **y** and press **Enter**. The following prompt is displayed:

```
You need to restart the system to apply changes.  
Would you like to restart now? [y]:
```

4. Type **y** to restart the Data ONTAP-v Installer virtual machine and apply the changes.

### Result

The virtual machine network interface is reset to the factory defaults. If you are not using DHCP to assign an IP address to the installer virtual machine automatically, you will need to configure the virtual machine network interface with a static IP address.

### Related concepts

[Understanding the dadmin management shells](#) on page 16

[Accessing the dadmin management shells remotely using SSH](#) on page 17

### Related tasks

[Configuring the virtual machine network interface](#) on page 10

# Upgrading and downgrading the Data ONTAP-v administration tool

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You can upgrade `dvadmin` when a new version of the Data ONTAP-v Installer is available. You can downgrade to an older version if you have problems with the new version.

The `dvadmin` version is paired with a specific version of Data ONTAP software. `dvadmin 1.2.0`, for example, is optimized to work with Data ONTAP 8.2.0. This means that `dvadmin 1.2.0` should be used with Data ONTAP Edge 8.2.0. If you upgrade your Data ONTAP Edge system to a newer version of Data ONTAP software, for example 8.2.1, you may also have to upgrade your `dvadmin` software. In this case, you would need to upgrade `dvadmin` to version 1.2.1.

If you do have to upgrade `dvadmin`, you should install the upgrade after the new version of Data ONTAP software has been installed. See the *Clustered Data ONTAP Upgrade and Revert/Downgrade Guide* or the *Data ONTAP Upgrade and Revert/Downgrade Guide for 7-Mode* for upgrade prerequisites and for the steps to upgrade your Data ONTAP software.

**Important:** Upgrading your Data ONTAP Edge system with a new Data ONTAP software release requires a Data ONTAP .tgz image. You download the .tgz file from the Data ONTAP Edge page on the NetApp Support Site at [support.netapp.com](http://support.netapp.com).

## Upgrading `dvadmin`

You can upgrade `dvadmin` by uninstalling the current version of the Data ONTAP-v Installer virtual machine and deploying the OVF template for the new version of the virtual machine.

### Before you begin

You should exit `dvadmin` before deploying the replacement OVF template. Before exiting the utility, make sure you have first exited any `dvadmin` console sessions and stopped the Data ONTAP-v monitor.

**Important:** You should not stop or shut down existing Data ONTAP Edge VMs. These storage systems must be running when you deploy the replacement OVF template and when you restart `dvadmin`.

### Steps

1. If you are running a `dvadmin` console session, press `Ctrl-]x` to exit the session.
2. If you are running the Data ONTAP-v monitor, type `vm monitor stop <vm_name>` at the `dvadmin` prompt.
3. If `dvadmin` is running, type `exit` at the `dvadmin` prompt.
4. Deploy the OVF template for the new version of the `dvadmin` virtual machine.



5. Configure the virtual machine network interface (manually or using DHCP).
6. Connect `dvadmin` to the Data ONTAP Edge host or the vCenter Server and verify that `dvadmin` can communicate with the Data ONTAP Edge system.
7. When Data ONTAP Edge is running clustered Data ONTAP software, you may need to perform an additional step to make sure your cluster configuration backup files will continue to be backed up to a remote server. By default, the files are backed up to the Data ONTAP-v Installer VM. If you are currently using this default destination on the old Installer virtual machine, you will need to run two Data ONTAP commands (at the advanced privilege level) to change the destination URL, user name, and password. The commands you need to use are: `system configuration backup settings modify` and `system configuration backup settings set-password`.  
  
You can specify the URL of the new Data ONTAP-v Installer virtual machine, or of another server that can accept file uploads using the HTTP, HTTPS, FTP, FTPS, or TFTP protocol.
8. After you have verified that the installation was successful, you may optionally uninstall the old version of the Data ONTAP-v Installer virtual machine to reclaim space.

#### Related tasks

[Deploying the Data ONTAP-v Installer virtual appliance](#) on page 9

[Configuring the virtual machine network interface](#) on page 10

[Connecting dvadmin to the Data ONTAP Edge host](#) on page 12

[Verifying that the installation was successful](#) on page 14

[Uninstalling the Data ONTAP-v administration tool](#) on page 27

## Downgrading dvadmin

You can downgrade `dvadmin` by uninstalling the current version of the Data ONTAP-v Installer virtual machine and deploying the OVF template for a previous version of the virtual machine.

#### Before you begin

You should exit `dvadmin` before deploying the replacement OVF template. Before exiting, make sure you have exited any `dvadmin` console sessions and stopped the Data ONTAP-v monitor.

**Note:** You should not stop or shutdown existing Data ONTAP Edge VMs. These storage systems must be running when you deploy the replacement OVF template and when you start `dvadmin`.

#### Steps

1. If you are running a `dvadmin` console session, press `Ctrl-]x` to exit the session.
2. If you are running the Data ONTAP-v monitor, type `vm monitor stop` at the `dvadmin` prompt.
3. If `dvadmin` is running, type `exit` at the `dvadmin` prompt.

4. Deploy the OVF template for the previous version of the dadmin virtual machine.
5. Configure the virtual machine network interface.
6. Connect dadmin to the Data ONTAP Edge host or the vCenter Server.
7. After you have verified that the installation was successful, you may optionally uninstall the current version of the dadmin virtual machine.

**Related tasks**

*Deploying the Data ONTAP-v Installer virtual appliance* on page 9

*Configuring the virtual machine network interface* on page 10

*Connecting dadmin to the Data ONTAP Edge host* on page 12

*Verifying that the installation was successful* on page 14

*Uninstalling the Data ONTAP-v administration tool* on page 27

# Uninstalling the Data ONTAP-v administration tool

You can uninstall the Data ONTAP-v Installer virtual machine when you no longer need dvadmin or after you have completed a dvadmin upgrade or downgrade.

## **Before you begin**

You should exit dvadmin before uninstalling the software. Before exiting, make sure you have exited any dvadmin console sessions and stopped the Data ONTAP-v monitor.

**Note:** Data ONTAP Edge VMs are not affected by exiting dvadmin or powering down the installer VM.

## **Steps**

1. If you are running a dvadmin console session, press `Ctrl-]x` to exit the session.
2. If you are running the Data ONTAP-v monitor, type `vm monitor stop` at the dvadmin prompt.
3. If dvadmin is running, type `exit` at the dvadmin prompt.
4. In the vSphere Client, select the Data ONTAP-v Installer VM and click **Shut Down Guest** in the **Summary** tab.
5. Select **Inventory > Virtual machine > Delete from disk** to uninstall the virtual machine.

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