# VE6120/VE6125 Virtual Appliances Installation Guide VMware® Platform

## Extreme Campus Controller™ Version 5.06.01

9036756-00 RevAA
June 2020

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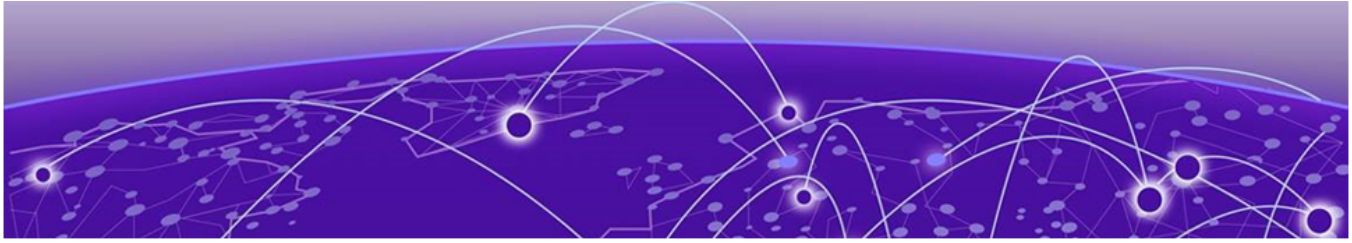

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# Preface

This section describes the text conventions used in this document, where you can find additional information, and how you can provide feedback to us.

## Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as ExtremeSwitching switches or SLX routers, the product is referred to as *the switch* or *the router*.

**Table 1: Notes and warnings**

| Icon | Notice type | Alerts you to... |
|---|---|---|
| | Tip | Helpful tips and notices for using the product. |
| | Note | Useful information or instructions. |
| | Important | Important features or instructions. |

**Table 1: Notes and warnings (continued)**

| Icon | Notice type | Alerts you to... |
|---|---|---|
| | Caution | Risk of personal injury, system damage, or loss of data. |
| | Warning | Risk of severe personal injury. |

**Table 2: Text**

| Convention | Description |
|---|---|
| `screen displays` | This typeface indicates command syntax, or represents information as it appears on the screen. |
| The words *enter* and *type* | When you see the word *enter* in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says *type*. |
| **Key** names | Key names are written in boldface, for example **Ctrl** or **Esc**. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press **Ctrl**+**Alt**+**Del** |
| *Words in italicized type* | Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles. |
| NEW! | New information. In a PDF, this is searchable text. |

**Table 3: Command syntax**

| Convention | Description |
|---|---|
| **bold** text | Bold text indicates command names, keywords, and command options. |
| *italic* text | Italic text indicates variable content. |
| [ ] | Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets. |
| { **x** \| **y** \| **z** } | A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options. |
| **x** \| **y** | A vertical bar separates mutually exclusive elements. |
| < > | Nonprinting characters, such as passwords, are enclosed in angle brackets. |
| ... | Repeat the previous element, for example, *member*[*member*...]. |
| \ | In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash. |

## Providing Feedback

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- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

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Note
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4. Select **Submit**.

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Release Notes
Hardware and software compatibility for Extreme Networks products
Extreme Optics Compatibility
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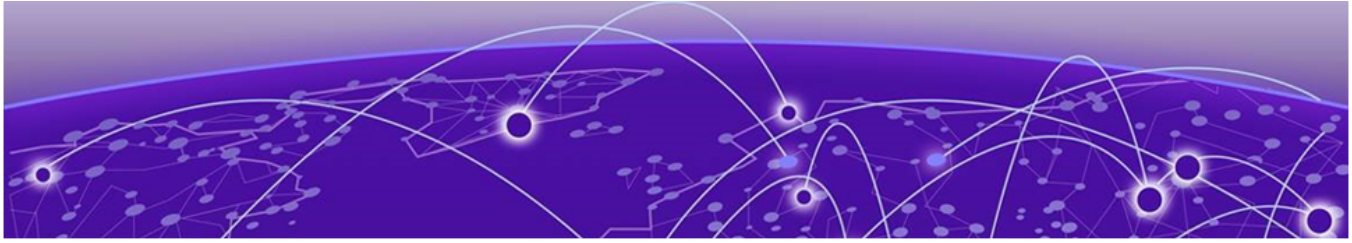

# Overview

The guide describes how to configure and deploy the Extreme Campus Controller VE6120 and VE6125 Virtual Appliances. This guide is a reference for system administrators who install and manage the VE6120 and VE6125 Virtual Appliances.

Any administrator performing tasks described in this guide must have an account with administrative privileges.

# Virtual Appliance Deployment

Deployment Requirements on page 10
Connectivity Requirements on page 11
Download a VE6120/VE6125 Image on page 12

This section provides an overview of the requirements for the Extreme Campus ControllerVirtual Appliances VE6120 and VE6125 deployments. It explains how to install the appliances on a VMware® vSphere™ server (ESXi™) and how to run the initial configuration wizard.

## Deployment Requirements

The VE6120/VE6125 are packaged in the .ova file format defined by VMware. The appliances must be deployed on a VMware ESXi host running vSphere.

Note
VE6120 and VE6125 use separate .ova files. You cannot upgrade from VE6120 to VE6125.

Note
The VE6125 requires an enterprise VMware license to launch and run the virtual machine.

The minimum supported version of vSphere for VE6120 is 5.1 and for VE6125 is 5.5.

Note
You only need to install the .ova file when you first install the appliance. All subsequent upgrades can be performed using the standard controller upgrade procedure to apply a .dle file to the VE6120 appliance and .rse file for the VE6125 appliance.

In addition, the appliances are configured with one Ethernet interface for administration and two data plane Ethernet interfaces for forwarding payload traffic.

If all three interfaces are used, it is recommended to connect them to separate virtual switches (vSwitches) in the host server.

Configuration Options:

- Small reflects the default configuration for VE6120.

- XLarge is the default and only configuration available for VE6125.

**Table 4: Virtual Extreme Campus Controller (VE6120 and VE6125)**

| Extreme Application | VE6120 | | | VE6125 |
|---|---|---|---|---|
| | **Small** | **Medium** | **Large** | **X-Large** |
| Total APs managed in Standalone mode | 50 | 250 | 500 | 2000 |
| Additional APs supported in high-availability mode | 50 | 250 | 500 | 2000 |
| Total managed APs per Appliance Pair | 100 | 500 | 1000 | 4000 |
| Total Switches managed per Appliance | 50/100 | 100/200 | 200/400 | 200/400 |
| Total simultaneous users in Standalone mode | 1,000 | 4,000 | 8,000 | 16000 |
| Additional simultaneous users in high-availability mode | 1,000 | 4,000 | 8,000 | 16000 |
| Total Simultaneous Users per Appliance Pair | 2,000 | 8,000 | 16,000 | 32000 |
| Hardware Requirements | | | | |
| CPU | 4 (4 distinct physical cores or 2 cores with hyper-threading) | 6 | 8 | 32 (physical or hyper-threading cores) |
| RAM (GB) | 8 | 16 | 24 | 32 |
| Hard Disk (GB) | 80 | 80 | 80 | 512 |
| 2x1Gbps Host (Open/Secure Mbps) | 1,870/1,870 | 1,870/1,870 | 1,870/1,870 | |
| 2x10 Gbps Host (Open/Secure Mbps) | 10,800/5,100 | 10,800/5,100 | 10,800/5,100 | |

- Consult VMWare ESXi for minimum host performance requirements for virtual environment. Performance depends on network interface characteristics of underlying host and on utilization on shared interfaces by other virtual appliances.
- Follow VMWare minimum installation requirements. 10 Gbps host recommended for best results. VE6120 supports VMware ESXi 5.1 or higher. VE6125 supports VMware ESXi 5.5 or higher.
- A VMware Enterprise license is required for the VE6125.

## Connectivity Requirements

The appliances have one management interface (Admin) and two data plane interfaces (Port1, Port2). If all three interfaces are used, it is recommended to connect them to separate virtual switches (vSwitches) in the ESXi host.

The data plane interfaces have additional requirements on the vSwitches to which they connect:

- The vSwitch must be configured to accept promiscuous mode connections.

- The vSwitch must be configured to accept any VLAN tag traffic and forward it without changing or removing the VLAN tags.

Although configuring the necessary vSwitches does not have to be done before installing the appliance, the installation process will be simpler if it is.

See Configure vSwitches for the Virtual Appliance on page 40 for instructions on how to create and configure vSwitches that can be used by the Virtual Appliance's data plane ports.

# Download a VE6120/VE6125 Image

### About This Task

Download the VE6120/VE6125 software image to your local machine where you manage the vSphere.

### Procedure

1. Access the VE6120/VE6125 download page at https://extremeportal.force.com/.
2. Download the image from **Downloads > Downloads Home** tab.
   a. Log into the **Downloads Home** using your Extreme Portal login credentials.
   b. Type VE6120/VE6125 in the search tab and select the search icon. The image list is displayed.
   c. Download the **latest** VE6120/VE6125 Virtual Appliance image.

## Log into the vSphere Client

### About This Task

To login to the vSphere server:

### Procedure

1. Launch a web browser and enter the vSphere address to access the vSphere application.

   The Web Client login screen displays.

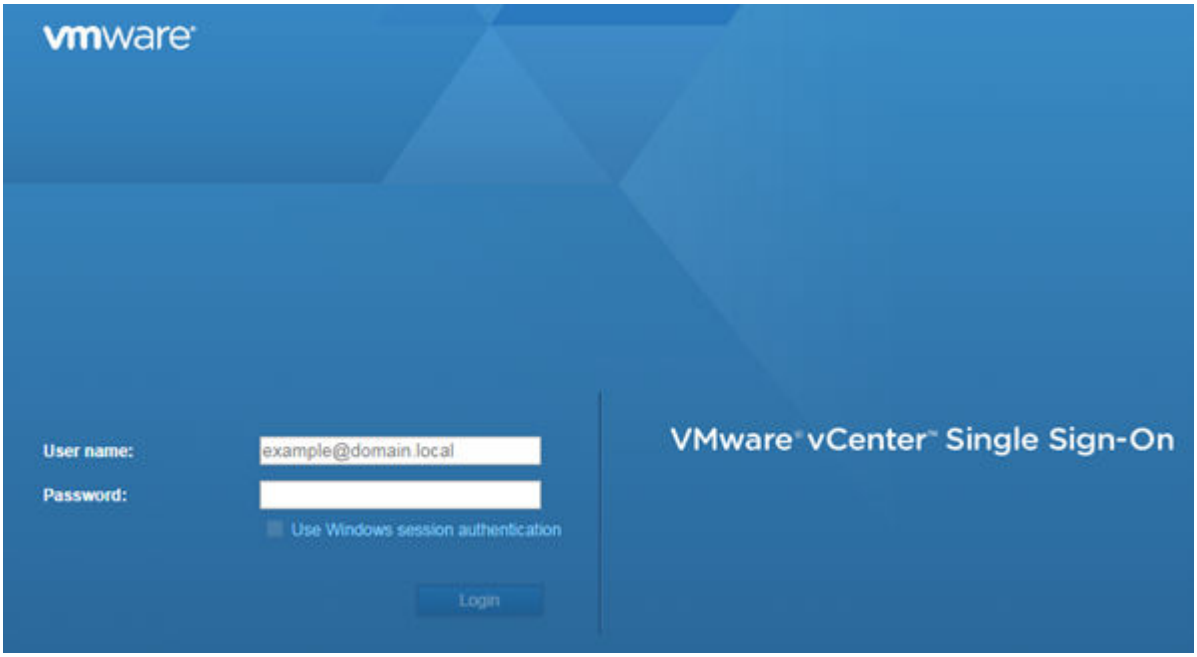


**Figure 1: VMware vSphere Web Client Login Screen**

2. On the VMware vSphere Web Client login screen:
   - Enter the User name and Password of an account that has full administrative access to the vSphere (ESXi) server.
   - Click **Login**.

## Install and Deploy the Virtual Appliance Image

### About This Task

To install the Virtual Appliance image:

### Procedure

1. From the **Navigator** tab in the vSphere Web Client, right-click the host machine and select **Deploy OVF Template**.

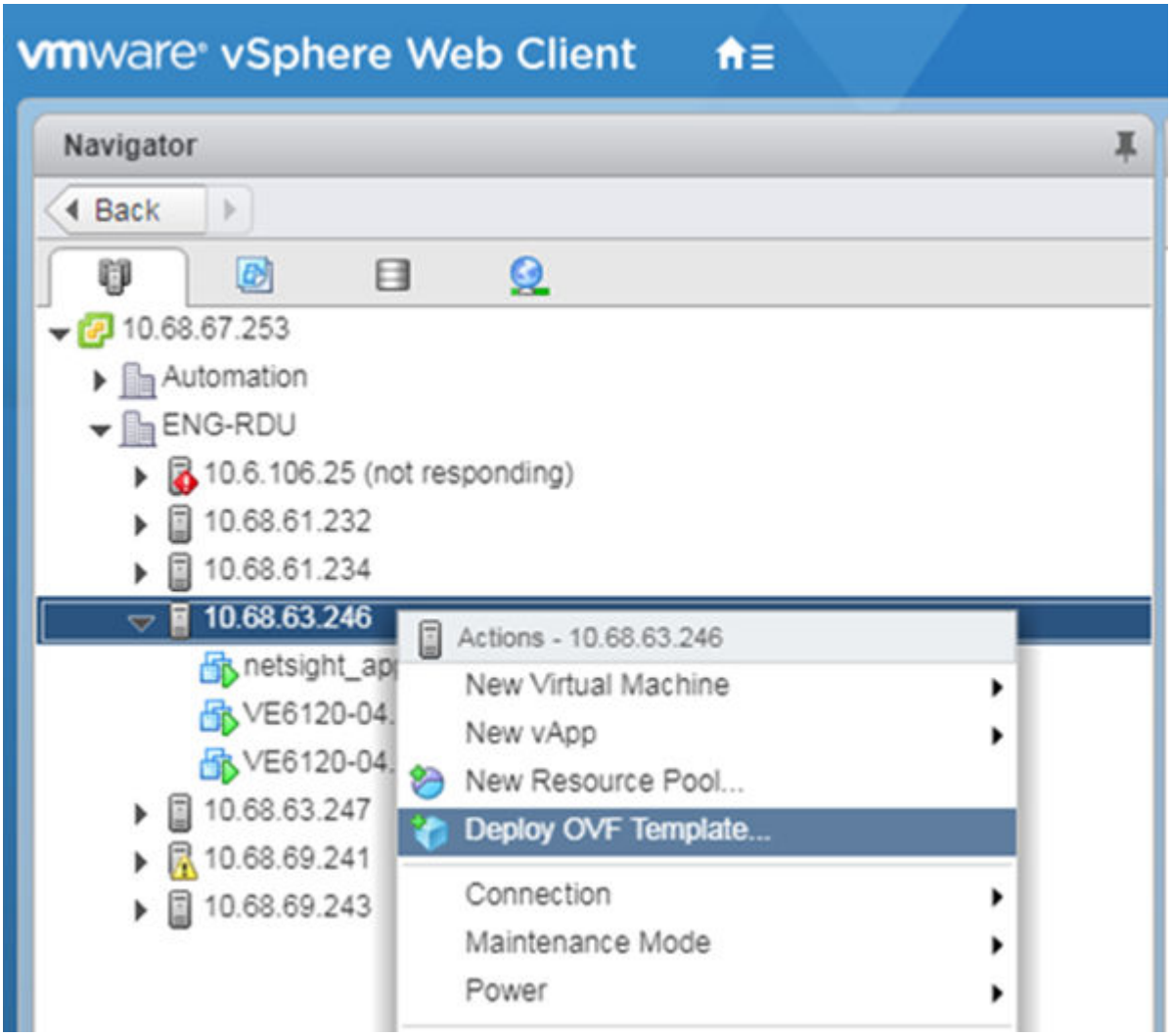


**Figure 2: Deploy OVF Template option**

Note
Even though the VE6120 is distributed in the .ova file format, it is compatible with the menu option of alternate .ovf format.

2. On the **Deploy OVF Template** window:
   - Select **Browse** to select the VE6120 .ova file that you downloaded in the Download a VE6120/VE6125 Image on page 12 section, and select **Next**. The **Name and Location** screen is displayed.

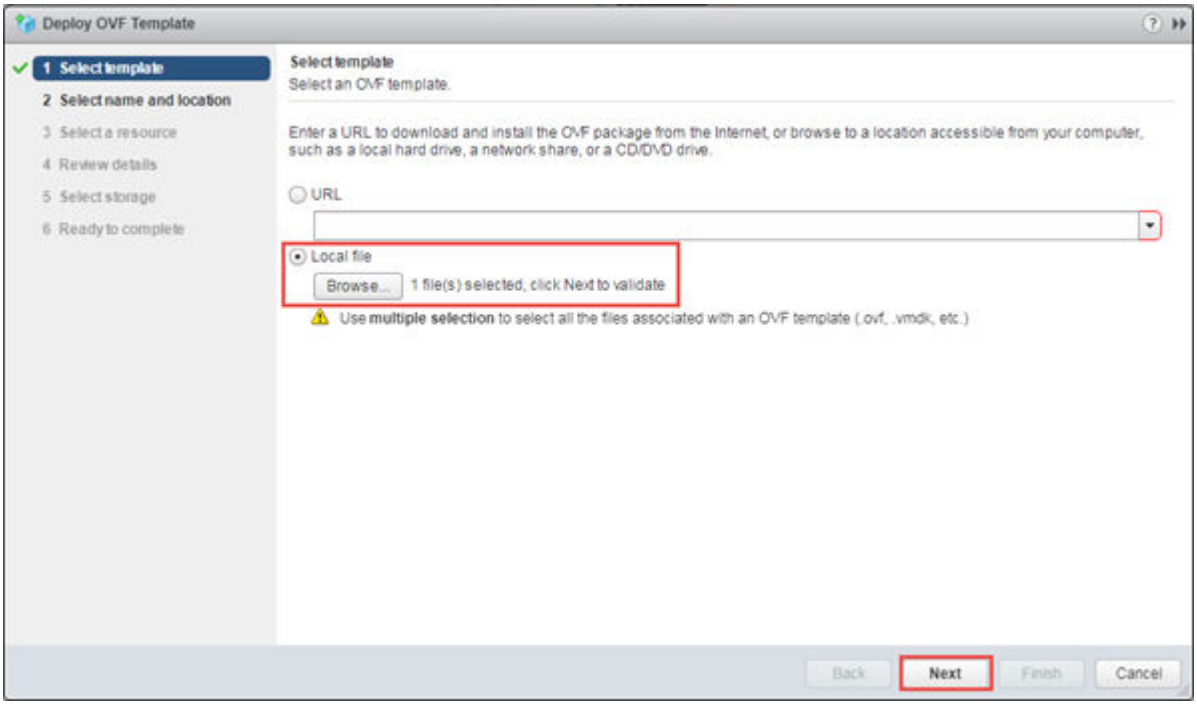


**Figure 3: Deploy OVF Template Window**

Or

- You can select a source URL to download and install the OVA file.

3. On the **Name and Location** screen, type a name for the VE6120, select a datacenter folder, and select **Next**. **Select a resource** screen is displayed.

Note

The name you type will be used in the vSphere client's inventory list. It does not have to be the same name as the hostname of the VE6120/VE6125 appliance.

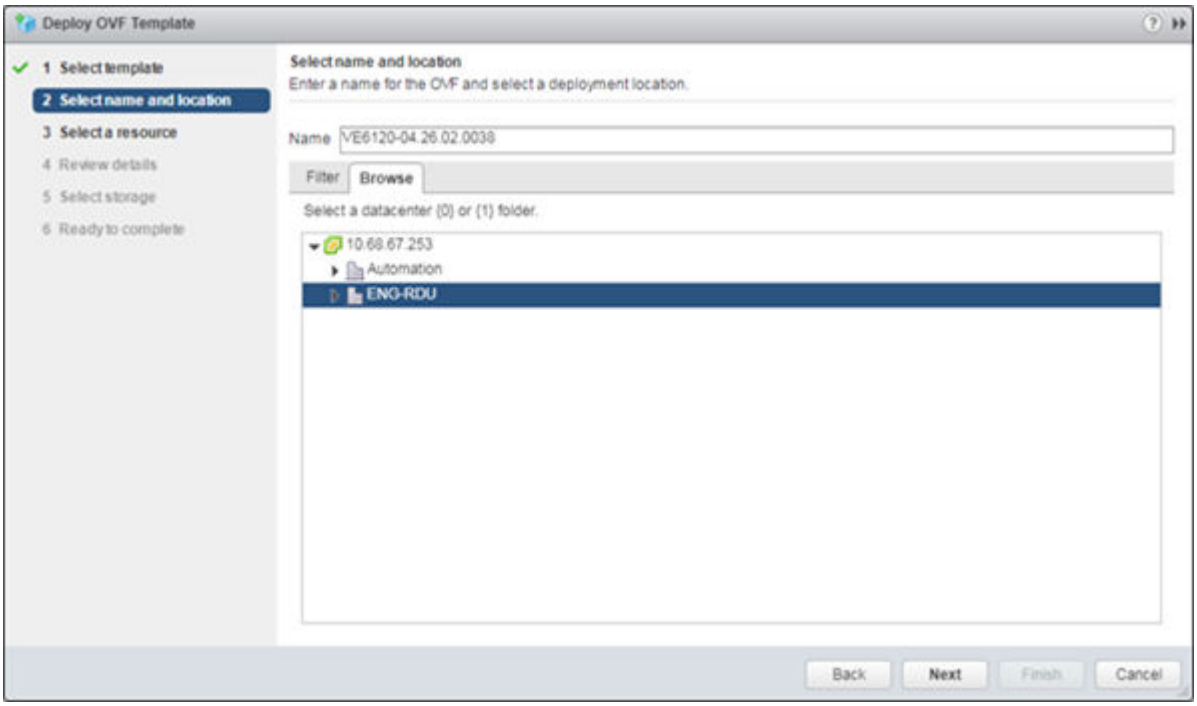


**Figure 4: Name and Location screen**

4. On the **Select a resource** screen, select a host server, and then select **Next**. The **Review details** screen is displayed.

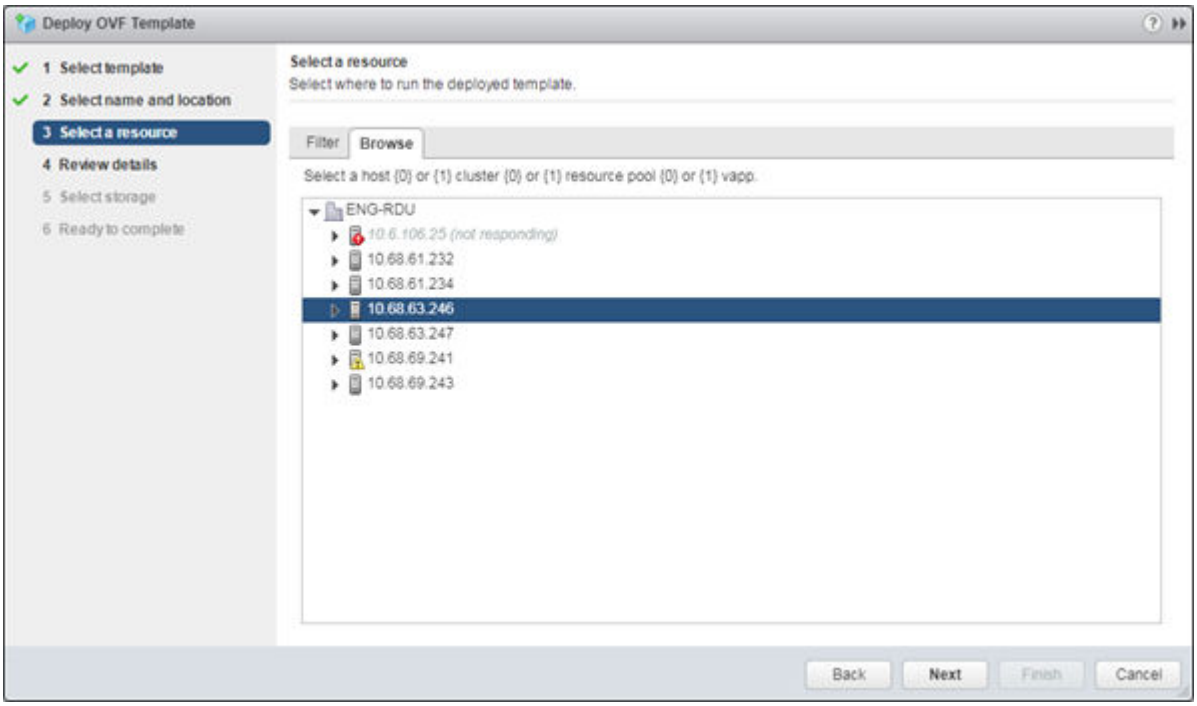


**Figure 5: Select a resource screen**

5. On the **Review details** screen, review the information and select **Next**.**Select storage** screen is displayed.

   Note
   You can select **Back** to modify any of the previous settings.

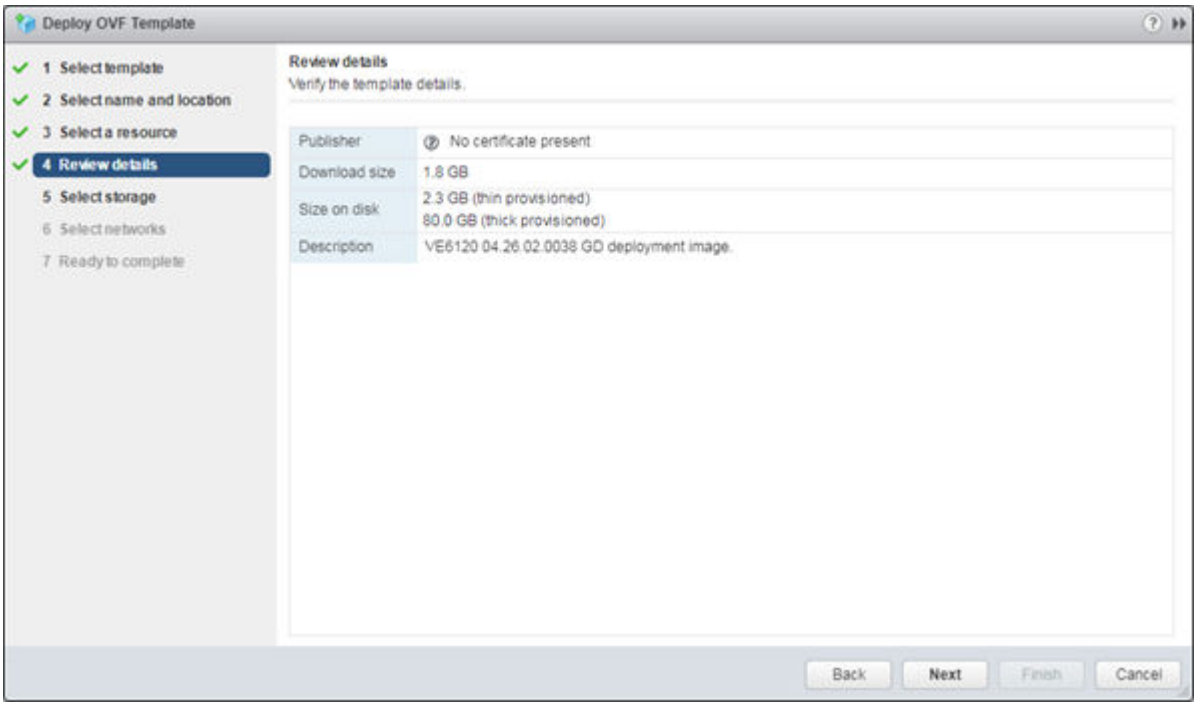


**Figure 6: Review details screen**

6. On the **Select storage** screen:
   a. Select virtual disk format as Thick provision. This is the default virtual disk format.

      Note
      Thick provision format allocates storage immediately. For more information on disk storage, see Deployment Requirements on page 10.

   b. Select your destination storage.
   c. Select **Next**.

   The **Select networks** screen is displayed.

7. On the **Select networks** screen, map the virtual appliance ports to the virtual networks that are deployed on the host server. For each **Source Network**, select a corresponding **Destination Network**.

**Table 5: Network Selection**

| Source Network | Destination Network/ Description |
|---|---|
| VM Network | MGMT-63/Management port |
| Port 2 | Internal 1 |
| Port 1 | 450-P8 |

Select **Next**. The **Ready to complete** screen is displayed.

8. Review your configuration data in the **Ready to complete** screen, select **Finish** to finish your setup.

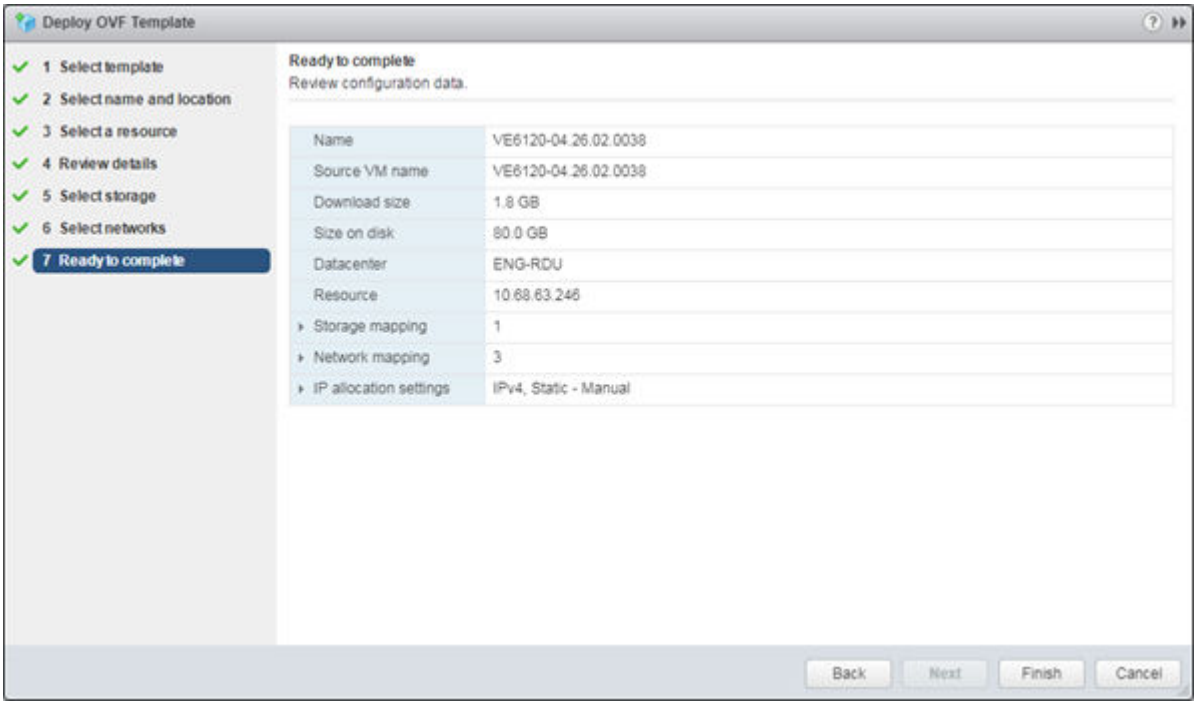


**Figure 7: Ready to Complete screen**

A progress bar is displayed in the **Recent Tasks** section.

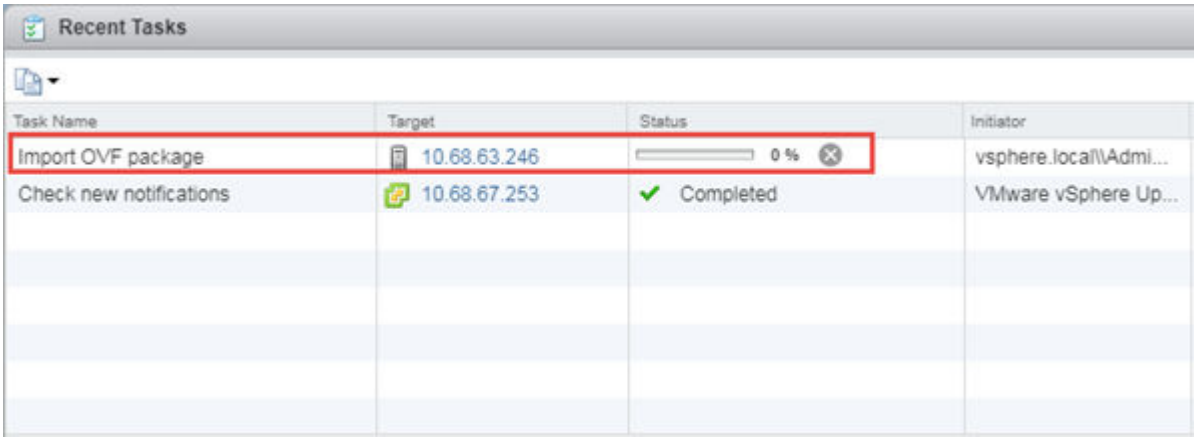


**Figure 8: Progress bar**

### What to Do Next

When the deployment has completed successfully, select **Close**.

# Virtual Appliance Configuration


Access the Virtual Appliance Console on page 21
Configure the VE6120/VE6125 using the Basic Configuration Wizard on page 25
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Upgrade the VE6120/VE6125 Software on page 28
Set Up the Virtual Appliance to Accept USB Flash Drives on page 31
Generate and Install the Activation Package on page 36
Subscription License on page 38
Permanent Capacity License on page 38


After the Virtual Appliance has been deployed on a VMware ESXi server using the instructions in Virtual Appliance Deployment on page 10 you are ready to perform initial server configuration.

## Access the Virtual Appliance Console

### About This Task

To log in to the Virtual Appliance and perform the initial configuration, access the vSphere client's console window as follows:

### Procedure

1. Launch a web browser and enter vSphere address to open the vSphere web client application.

   The **VMware vSphere Web Client** login screen is displayed.

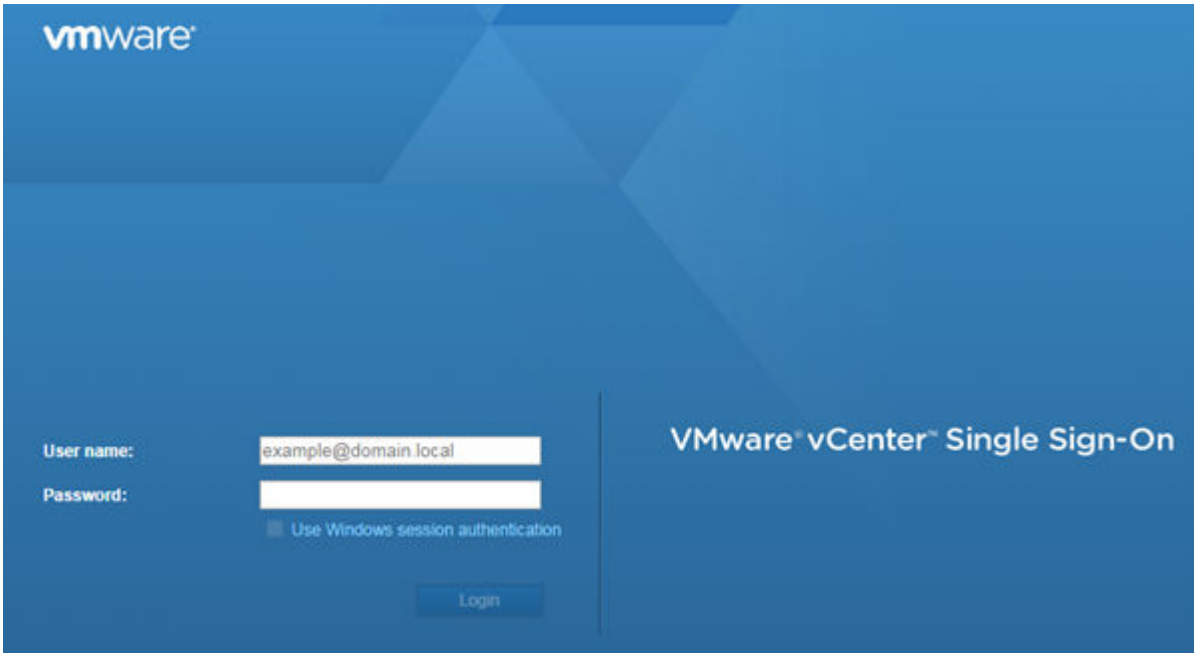



**Figure 9: VMware vSphere Web Client Login Screen**

2. On the VMware vSphere Web Client login screen:
   - Enter the User name and Password of an account that has full administrative access to the vSphere (ESXi) server.
   - Click **Login**.

3. On the **vSphere Web Client** screen, in the left **Navigator** pane, expand the host mode, right-click the **Virtual Appliance** and select **Power** > **Power On**.

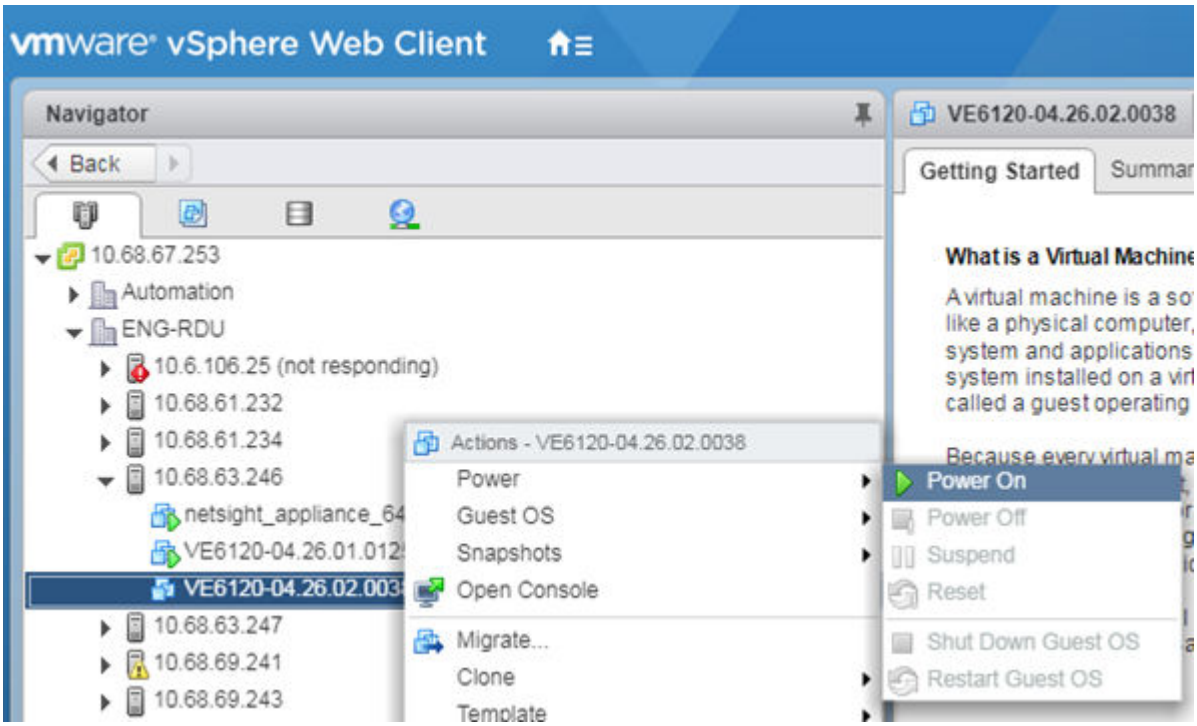



**Figure 10: vSphere Web Client Power On option**

Note

If the **Power On** option is greyed out, press the icon on the **vSphere Web Client** tool bar.

The Green icon indicates that the virtual appliance is powered on.

4. After the Virtual Appliance has been started and completes its boot process, right-click the appliance name, and from the drop-down menu, click **Open Console**.

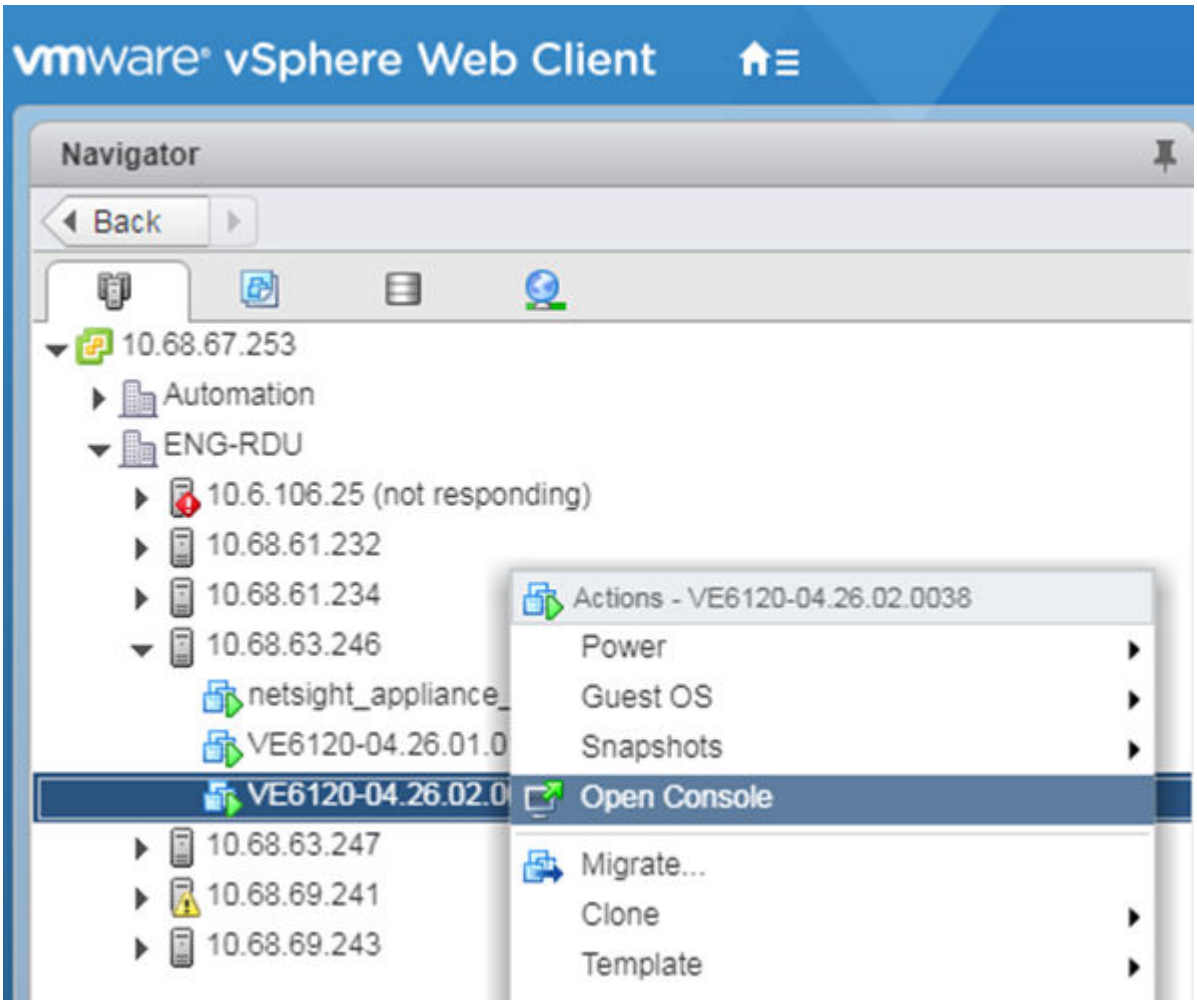



**Figure 11: Open Console option**

The VE6120 Command Line Interface (CLI) opens in a new window.

5. Enter your login credentials.

Note

Click inside the console window once or twice to make the window interactive. If the prompt is not visible, press **[Enter]**.

- For **User Name**, enter `admin`.
- For **Password**, enter `abc123`.

You now are working in the VE6120's CLI.

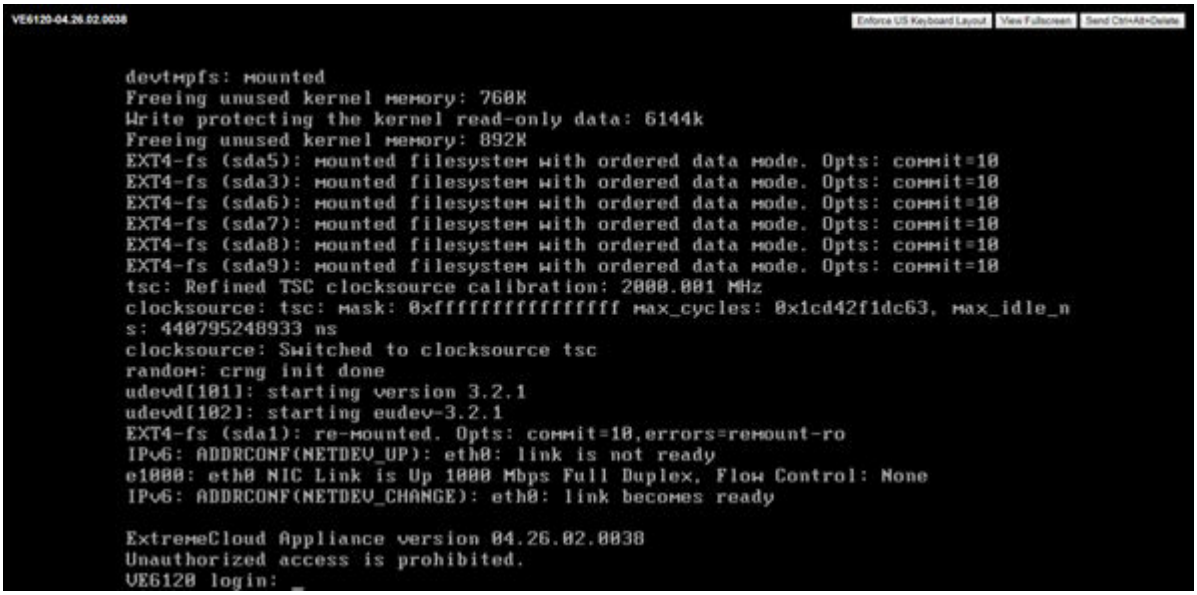



**Figure 12: VE6120's Command Line Interface (CLI)**

## Configure the VE6120/VE6125 using the Basic Configuration Wizard

The Extreme Campus Controller software provides a Basic Configuration Wizard that can help administrators configure the minimum settings necessary to deploy a fully functioning VE6120/VE6125 appliance on a network.

Administrators can use the wizard to quickly configure the appliances for deployment, and then after the installation is complete, continue to revise the configuration accordingly.

The wizard is automatically launched when an administrator logs on to the VE6120/VE6125 CLI for the first time, including after the system has been reset to the factory default settings.

The configuration wizard prompts with a set of **Yes** or **No** questions. The default value is indicated in parenthesis. To accept the default value, press **Enter**.

For more information about using the Basic Configuration Wizard, see Set up the VE6120/VE6125 Appliance using the Basic Configuration Wizard on page 25.

## Set up the VE6120/VE6125 Appliance using the Basic Configuration Wizard

### About This Task

After logging into the CLI of the VE6120/VE6125 Basic Configuration Wizard, you will be able to set it up using a set of **Yes** or **No** commands.

### Procedure

1. After logging into the CLI of VE6120/VE6125, you will be prompted to change the admin password. To begin the admin password setup, press **Enter**. The **Admin password Configuration** screen is displayed.
   a. To change the password for the admin account, press **Enter**.
   b. Enter the new password for the admin account.

      Note
      The password must be between 8-24 characters.

   c. Repeat the new password for the admin account and press **Enter**.

      If the passwords match, the password gets accepted.
   d. Press **Enter** to accept the changes.

      The AP access password screen is displayed.
2. To reset the AP access password, type a new password in the CLI.

   Note
   The password must be between 5-30 alphanumeric characters and can include period, dash, underscore, and space.

   a. Retype the AP access password. Click **Enter**.

      Your AP access password is now reset and the **Current Data Port Settings** CLI is displayed.

## Current Data Port Settings

### About This Task

Once you set up the **Admin Password configuration**, you will be prompted to set up the **Current Data Port Settings**. To set up the data port,

### Procedure

1. In the **Current Data Port Settings**, you will determine the port settings. The default port is **Port1**. Click **Enter** to select **Port1**.
2. Set IP Address to the default value. The default value is **`10.0.0.1`**. Press **Enter**.

   The IP Address is selected.
3. Set Netmask to default value of **`255.255.255.0`**. Press **Enter**.

   The Netmask is set.
4. Press **Enter** to set the default VLAN. The tagged frames command is displayed.
5. Press **Enter** to keep the default tagged frames value to **`No`**.
6. To enable management on the interface, press **Enter** to select the default value, **`Yes`**.
7. To enable device registration, press **Enter** to select the default value, **`yes`**. The updated Data Port Interface settings is displayed.
8. To accept the changes and keep the data port settings to the values you have chosen, press **Enter**.

   The Data Port Interface is now set. The CLI navigates to the **Current Host Attributes Settings** screen.

## Current Host Attributes

### About This Task

To set up the current host attributes,

### Procedure

1. Press **Enter** to change the Host Attributes.
2. Press **Enter** to enter the host name for the application.
3. Type **Y** to set up a dedicated Admin port for out-of-band management. The default option is **no**.
   A note is displayed that the Admin port does not allow device registration.
4. Type the IP address in the following format **xx.xx.xx.xxx** to set up the IP address for the Admin Port.
5. Press **Enter** to accept the default IP netmask for the Admin Port.
6. Press **Enter** to accept the default domain name for the appliance. The default domain name is **extremenetworks.com**.
7. Press **Enter** to configure your Primary DNS server.
8. Type another IP address **xx.x.xx.xx** to set up the IP address of the Primary DNS and press **Enter**.
9. The default option to set up a Secondary DNS server is **no**. Press **Enter** to accept the default option.
   The updated Host Attribute settings are displayed. To accept the changes you have made, press **Enter**. The **Current Global Default Gateway Settings** CLI is displayed.

## Current Global Default Gateway Settings

### About This Task

The global default gateway may be on any Admin or data port topology/subnet.

### Procedure

1. Type an IP address.
2. Press **Enter** to accept the changes.
   You are navigated to the **Current Time Settings** CLI.

## Current Time Settings

### About This Task

The Current Time Settings option allows you to change the time zone as per your location.

### Procedure

1. Press **Enter** to change the Time settings.
2. Press **Enter** again if you would like to change the Time Zone. The Region number list is displayed.
3. Pick a number according to the region numbers that is displayed on screen to pick you continent. Then, enter a number that corresponds to the Region. You can enter **n** to move down the list, or **p** to move up the list. To go back to the Region selection, press **c**.
4. Press **Enter** to run NTP as a client.
5. Provide the fully qualified domain name of the NTP server. Press **Enter**.
6. You are prompted to enter a second NTP server and the default option is **y**. Type **n** and press **Enter**.
   NTP Client is enabled.

7. Accept the changes you have made to the time zone and NTP server by pressing **Enter**.

   You are navigated to the **Controller Post Installation Configuration** screen along with the menu.
8. If you want to revisit any of the previous screens or exit without applying the configuration changes, enter one of the corresponding numbers/alphabets displayed on screen.

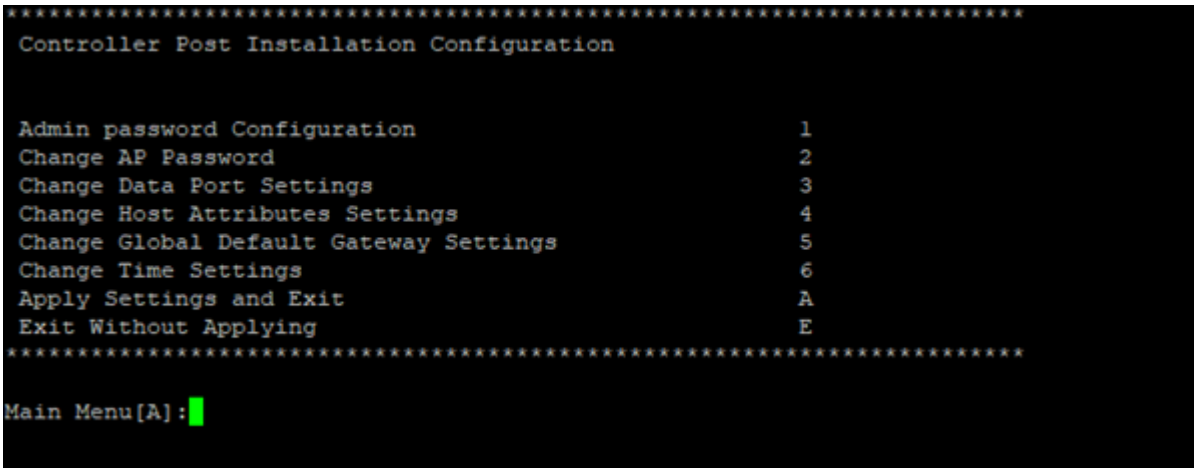



**Figure 13: Controller Post Installation Configuration Menu Screen**

**Table 6: Controller Post Installation Configuration Menu**

| Menu Option | Command |
|---|---|
| Admin password Configuration | 1 |
| Change AP Password | 2 |
| Change Data Port Settings | 3 |
| Change Host Attribute Settings | 4 |
| Change Global Default Gateway Settings | 5 |
| Change Time Settings | 6 |
| Apply Settings and Exit | A |
| Exit Without Applying | E |

When you revisit any other screen, you will have to reconfigure all subsequent area settings. For example, if you decide to reconfigure the Admin Password, which is at the beginning of the configuration wizard, you will have to reconfigure all the subsequent configuration wizard settings.

Press **Enter** to accept the settings. The default option for accepting the settings is **A**. Your settings are now applied successfully.

## Upgrade the VE6120/VE6125 Software

### About This Task

If you are not installing the latest Extreme Campus Controller release, you need to upgrade the software to the latest patch release.

### Procedure

1. Go to the Extreme Networks Support site and download the most recent Extreme Campus Controller software patch.
2. Log in to the virtual appliance using the admin user and password that you configured in the Set up the VE6120/VE6125 Appliance using the Basic Configuration Wizard on page 25 section.

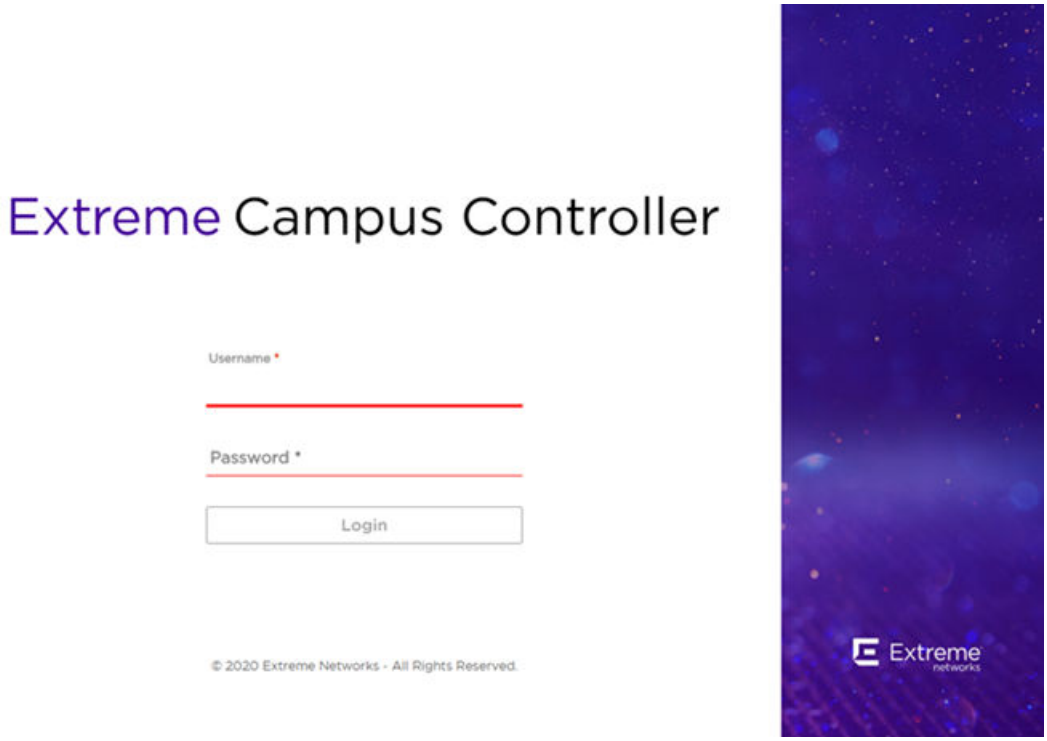



**Figure 14: Virtual Appliance Login Screen**

3. Go to **Administration > System**.

   The **System** screen is displayed.
4. Select **Software Upgrade** tab, and navigate to the **Upgrade** section.

5. To add the image file, select the plus icon.

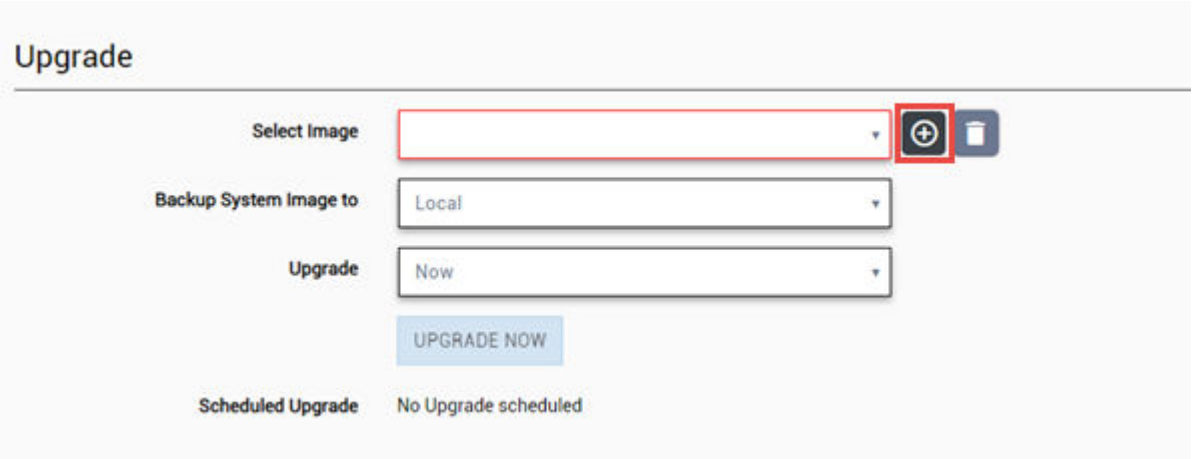



**Figure 15: Upgrade section**

The **Copy Upgrade Image** window is displayed.

6. To copy an upgrade or backup image to Extreme Campus Controller, configure the following parameters:

Image Type

Indicates the type of image file used. Valid values are:

- Upgrade
- Backup

Destination

Destination of the uploaded image file:

- Local
- Flash (The Flash drive must be mounted.)

Upload Method

Method used to upload image file to appliance. Valid values are:

- HTTP — Indicates to upload from a local workstation.
- FTP — Indicates to upload from the corresponding server.
- SCP — Indicates to upload from the corresponding server.

When the Upload Method is **FTP** or **SCP**, configure the server properties.

Copy Image from Local Drive

When the Upload Method is **HTTP**, drag image onto Extreme Campus Controller or select field to navigate to local file directory.

Select Image

Due to a storage space limitation, Extreme Campus Controller limits the number of locally available upgrade archives. If necessary, you can delete an older image before you upgrade to the latest image. To delete an image fromExtreme Campus Controller, from the **Select Image** field, select an image and select .

### What to Do Next

For more information about the **Software Upgrade** options, see the Extreme Campus Controller User Guide.

## Perform a Backup

The backup and restore procedure is limited to configuration files and, optionally, logs and audit files. A system backup is a full system snapshot rescue file (*-rescue-user.tgz). Creating a rescue file is an option during the system upgrade process. For more information on system upgrade, see Upgrade the Virtual Appliance Software.

Before you perform a backup procedure, decide what to backup and where to save the backup file:

- Select back up configs, logs, and audit or back up configuration only.
- Select a location to store the backup file.
- (Optional) Configure a backup schedule.

On-demand backups can only be stored locally, while scheduled backups can be stored on a mounted flash drive or on a remote server.

## Copy Backup

To copy a backup image to Extreme Campus Controller, configure the following parameters:

Upload Method

Method used to upload file to appliance. Valid values are:

- HTTP — Indicates to upload from a local workstation.
- FTP — Indicates to upload from the corresponding server.
- SCP — Indicates to upload from the corresponding server.

When the Upload Method is **FTP** or **SCP**, configure the server properties.

Copy Image from Local Drive

When the Upload Method is **HTTP**, drag image onto Extreme Campus Controller or select field to navigate to local file directory.

# Set Up the Virtual Appliance to Accept USB Flash Drives

### About This Task

The Virtual Appliance has a (virtual) USB controller and can accept USB flash drives. The flash drive can be used for backing up, restoring, upgrading, and collecting log information. A USB drive can be inserted, assigned to a virtual appliance, and removed from the virtual appliance while the appliance is in service.

To enable the Virtual Appliance to use a USB flash drive:

### Procedure

1. Format the flash drive to FAT32.

2. Insert the flash drive into a USB port on the host.

> **Note**
> The vSphere client application requires that a USB device be plugged in before it can be added to a virtual machine.

3. Log in to the vSphere client using an account that grants full administrative access to the VE6120.
4. From the list of guest operating systems (virtual machines), right-click on VE6120, and from the drop-down menu, select **Edit Settings**.

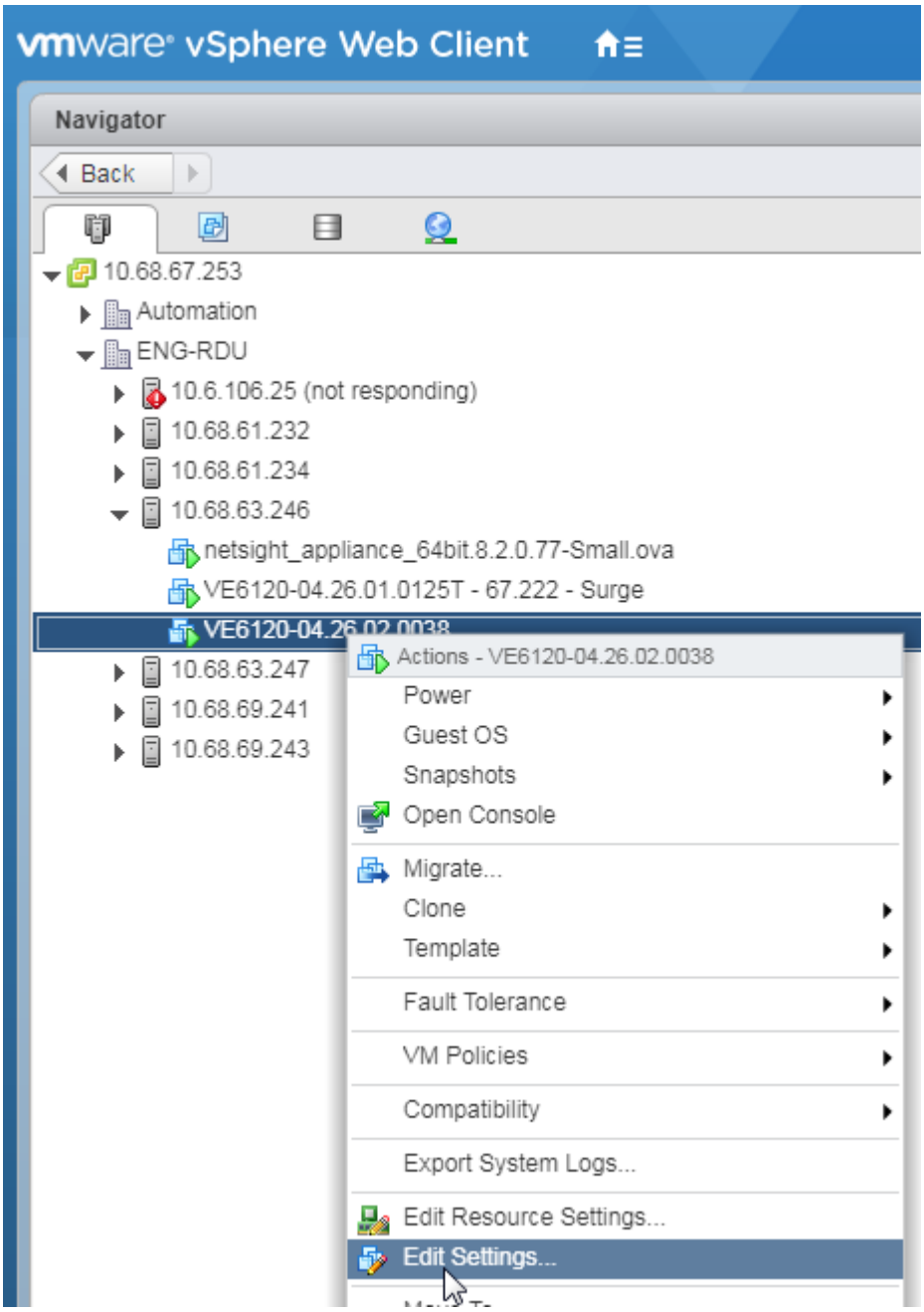



**Figure 16: VE6120 Edit Settings Window**

5. In the **Virtual Hardware** window, select **Host USB Device** from the drop-down, and click **Add**.

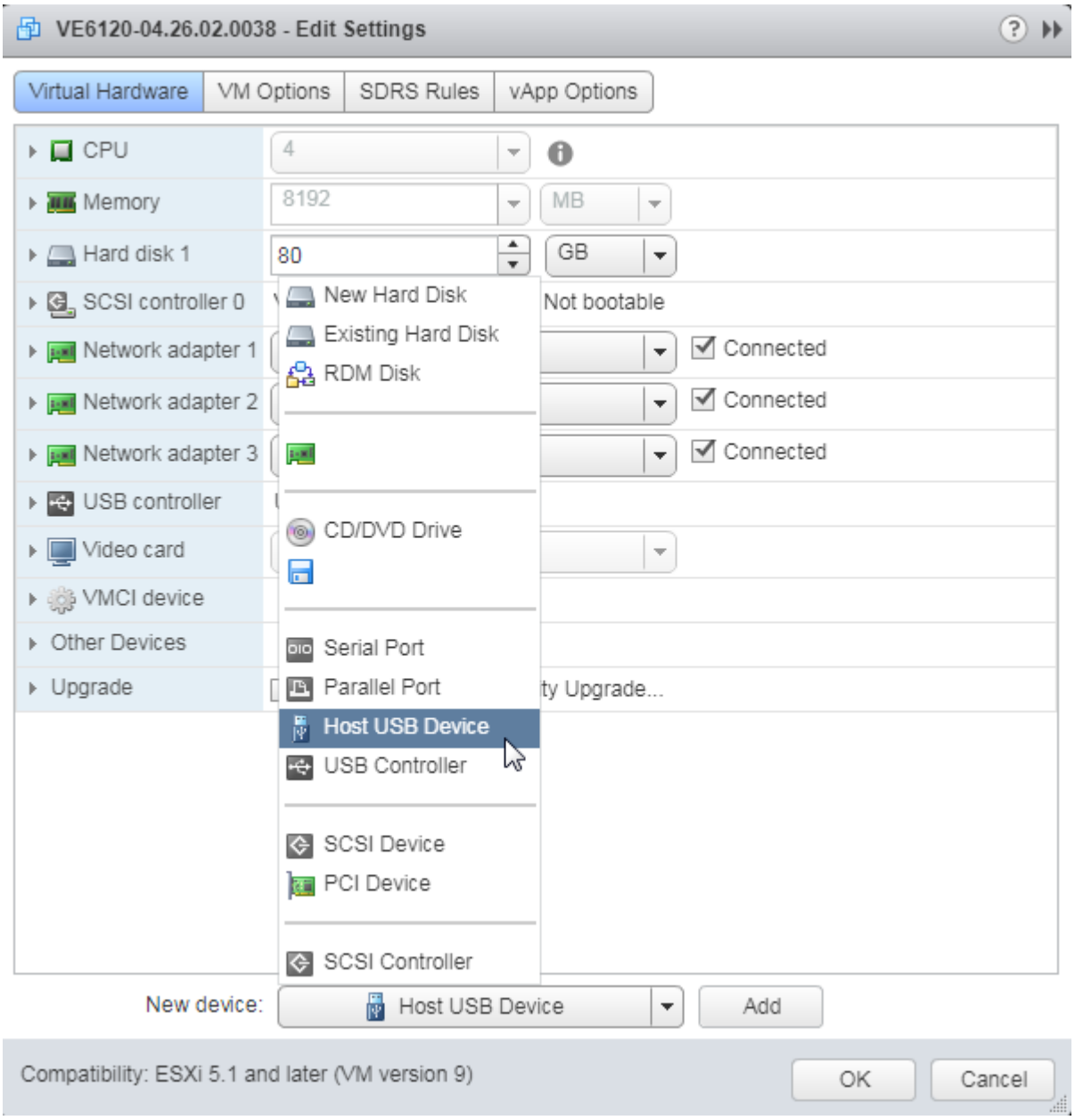



**Figure 17: Host USB Device Selection**

6. If running vSphere and a USB device has been inserted and is not assigned to another guest, the **USB Device** option will be listed. Select that option and click **OK**.

   The **USB Device** dialog appears. The dialog lists all USB devices plugged into the host that are not assigned to guest operating systems.

7. Select a USB Flash drive (as other devices are not supported by VE6120), and click **OK**.

   The **Ready to Complete** dialog appears.

8. Review the settings and then click **Finish** to add the USB device to VE6120 or click **Cancel** to abort the operation.

   The **Virtual Machine Properties** dialog displays that the USB device is in the process of being added to the virtual machine. The new USB device will be shown in bold and “adding” appears after the USB device name.
9. Click **OK** to save the configuration.
10. Open the VE6120 **Virtual Machine Properties** dialog from the main vSphere client screen and click the **Hardware** tab.

    The USB device will be listed under **Hardware**. You can now use the USB flash drive on the VE6120 just as you would on a physical controller.

## Manage the Flash Memory

### About This Task

Follow these steps to manage flash memory:

### Procedure

1. Log into the Extreme Campus Controller using your credentials.

2. In the left pane, from the **Administration** drop-down, select **System > Maintenance > External Flash** option.

   Use the **Mount/Unmount** options to mount and unmount flash memory respectively.

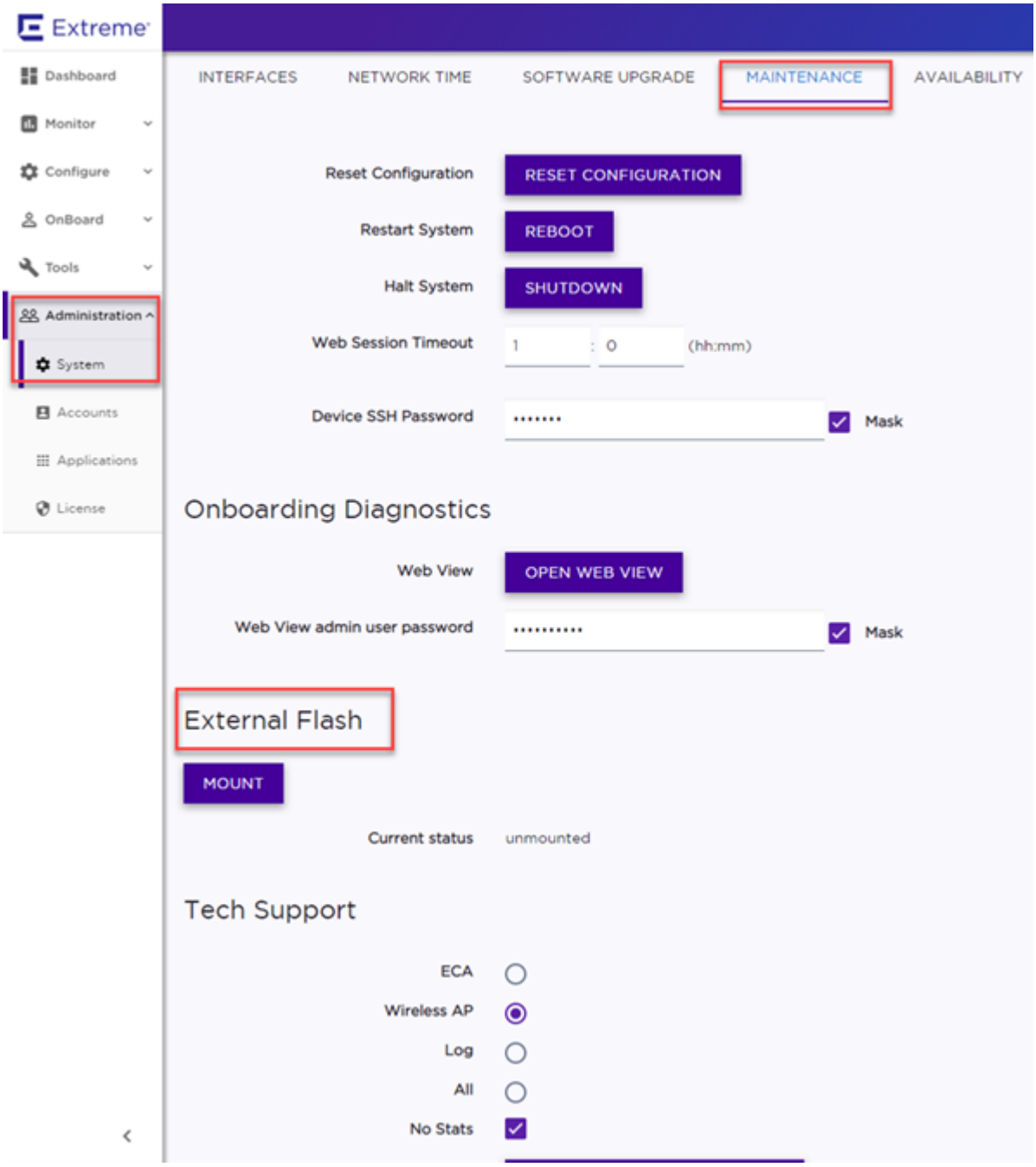



**Figure 18: Flash memory maintenance window**

## Remove the Flash Drive

### About This Task

Follow these steps to remove the flash drive.

Note

The Virtual Appliance can be in service when the USB flash drive is assigned to it using the vSphere client. Within a few seconds of the USB flash drive being assigned to it, the VE6120 will detect the flash drive and mount it for use.

### Procedure

1. When you are ready to remove the USB Flash drive, click **Un-Mount** from the Maintenance page.
2. Remove the drive.
3. You can delete the USB flash drive from the VE6120's **Virtual Machine Properties** dialog after unmounting it from the VE6120 appliance.

# Generate and Install the Activation Package

How to generate and install an Activation Package.

### About This Task

All customers must generate and install an Activation Package for Extreme Campus Controller. Regardless of whether you obtain a new license or upgrade to Extreme Campus Controller. Take the following steps to generate and install the Activation Package:

### Procedure

1. Log in to Extreme Campus Controller
2. Go to **Administration** > **License** to obtain the system **Locking ID**.
3. Log into the Extreme Support Portal: https://extremeportal.force.com/ExtrLicenseLanding.
4. Go to **Assets** > **Licenses Home** and select the Extreme Campus Controller Voucher ID line item from the list.

5. On the **Voucher Details** page, select **Generate Activation Key**.

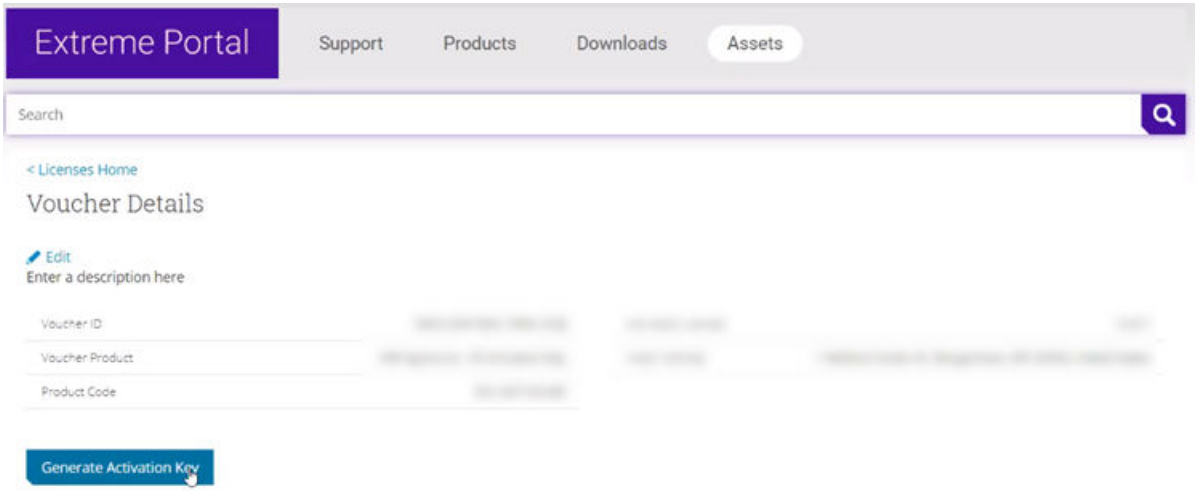



**Figure 19: Generate Activation Key**

6. Provide the Locking ID for the Extreme Campus Controller that will be activated.
7. Check the box to accept **Terms and Conditions** and select **Submit**.
8. The Activation package is generated, and the **Save As** dialogue displays.
9. Download the Activation Package to your local machine.

Note
The Activation Package *file name* includes the Locking ID for the specific Extreme Campus Controller.

## Install the Activation Package

### About This Task

Stage your Extreme Campus Controller instance. Install the Activation Package to activate Extreme Campus Controller:

### Procedure

1. Return to the Extreme Campus Controller instance from where you obtained the Locking ID.
2. Go to **Administration** > **License**.
3. Select the plus sign next to the **Activation License** field.
4. Drag the Activation Package to the **Upload License** dialog to install the Activation Package.

### What to Do Next

For more information on licensing, refer to the Extreme Campus Controller User Guide.

Related Topics

Subscription License
Permanent Capacity License

# Subscription License

Learn about Subscription Licensing.

Subscription licensing is available for Extreme Campus Controller for both access point and switch management. Upon purchase of a new Extreme Campus Controller you will receive a welcome email and activation instructions.

Each appliance obtains capacity Right to Use (RTU) entitlements regarding managed devices, subject to the system limits of the appliance instance and the total number of activations purchased. The total consumed RTU across all Extreme Campus Controller instances cannot exceed the number of RTU you have subscribed to. Each appliance provides visualization on specific RTU allocation and overall balance. For subscription management, Extreme Campus Controller requires a configured DNS server and constant connection to the Internet in order to be operational.

Related Topics

Generate and Install the Activation Package on page 36

# Permanent Capacity License

Learn about a Capacity License.

### About This Task

A Permanent Capacity License is a one-time license that allows permanent activation, and it works with a separate Capacity key. The alternative to a Permanent Capacity License is a Subscription License. The activation process is the same regardless of the license model you choose.

The Extreme Campus Controller permanent capacity works on simple software-based key strings. A key string consists of a series of numbers and/or letters. Using these key strings, you can enhance the capacity of the controller to manage additional APs.

Note
The controller does not require internet access with Permanent Capacity Licensing.

- Capacity key — Enhances the capacity of the appliance to manage devices. Extreme Campus Controller supports capacity enhancement keys for 5, 25, 100, 500 or 2000 APs. Max capacity on an Extreme Campus Controller instance is subject to the appliance type and the capacity tier configured (based on hypervisor resources for Virtual instances).

  Capacity applies to all managed devices (access points and switches). A capacity license is shared between nodes in an Availability Pair. Install the capacity license on only one of the nodes in the Availability Pair. Extreme Campus Controller and availability pair will restrict the user from installing the same capacity key again if it exists on either appliance.

  Note
  A capacity license cannot be installed on an Extreme Campus Controller if its peer has the same capacity key applied.

To obtain a Permanent Capacity License:

### Procedure

1. Go to the Support portal to generate an Activation Package. For more information, see #unique_35.
2. From the Support portal, obtain your capacity keys. For more information, see #unique_36.

   There is no connection to the licensing server when an Activation Package for Permanent Capacity Licensing is installed. Therefore, the Extreme Campus Controller displays a connection failure message. This message can be ignored for Permanent Capacity Licensing. Simply select the **Switch to Permanent Licensing** link to clear the message.

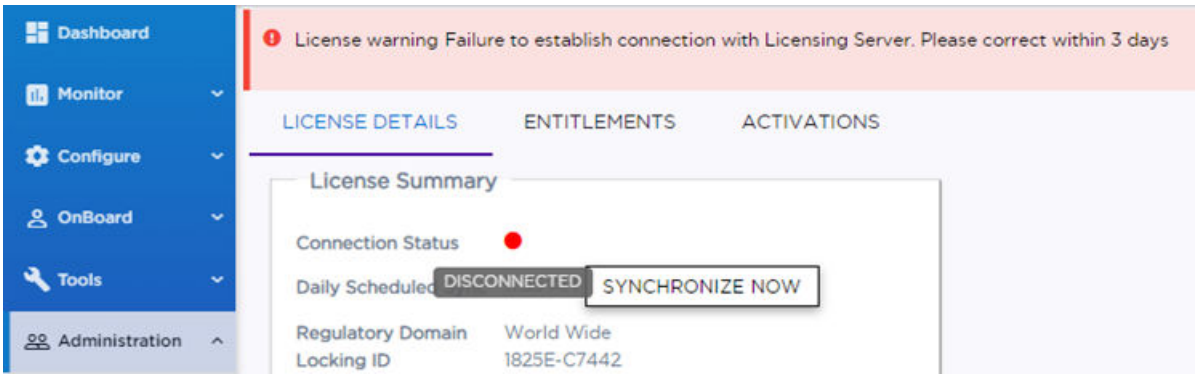



**Figure 20: Connection to License Server message when Permanent Licensing is applied**

3. After selecting **Switch to Permanent Licensing**, your valid capacity limits are displayed.

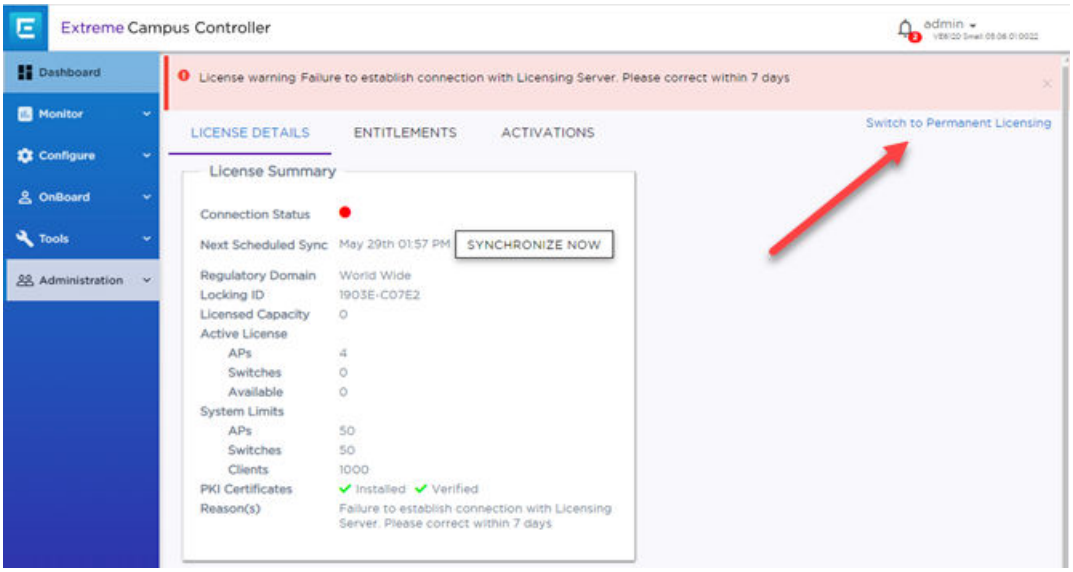



**Figure 21: Switch to Permanent Capacity Licensing**

Related Topics

Generate and Install the Activation Package on page 36

# Configure vSwitches for the Virtual Appliance


Create a New Virtual Switch or Port Group on the ESXi Server on page 40
Configuring the Virtual Switch for Promiscuous Connections on page 43


The Virtual Appliance has some specific requirements on the virtual switches (vSwitch) to which its data plane ports are connected. The following section explains how to create a vSwitch on an ESXi host that satisfies these requirements.

This does not replace the vSphere ESXi documentation. Before performing this procedure, you must log into the vSphere client using credentials that grant full administrative access to the vSphere ESXi host server.

## Create a New Virtual Switch or Port Group on the ESXi Server

### About This Task

This is an optional procedure since it is possible to reconfigure the virtual switch created by default when ESXi is installed to support VLANs or when another custom vSwitch is configured on the host. However, using separate vSwitches for the data plane traffic helps to isolate that traffic from other virtual devices and permits the switch to be configured specifically to meet the needs of the VE6120 appliance.

Note
Alternatively, it is also possible to define more than one network (port group) on a single vSwitch. All networks on the same vSwitch share the NICs assigned to the vSwitch.

To create a new switch or a port group:

### Procedure

1. Login to the vSphere web client.

   For more information, see Access the Virtual Appliance Console on page 21.
2. On the vSphere web client screen, select the vSphere server's IP address or host name in the left pane. The **Configure** tab displays on the right pane.
3. Select **Networking** > **Virtual switches**.

4. Select the globe icon to **Add host networking**.

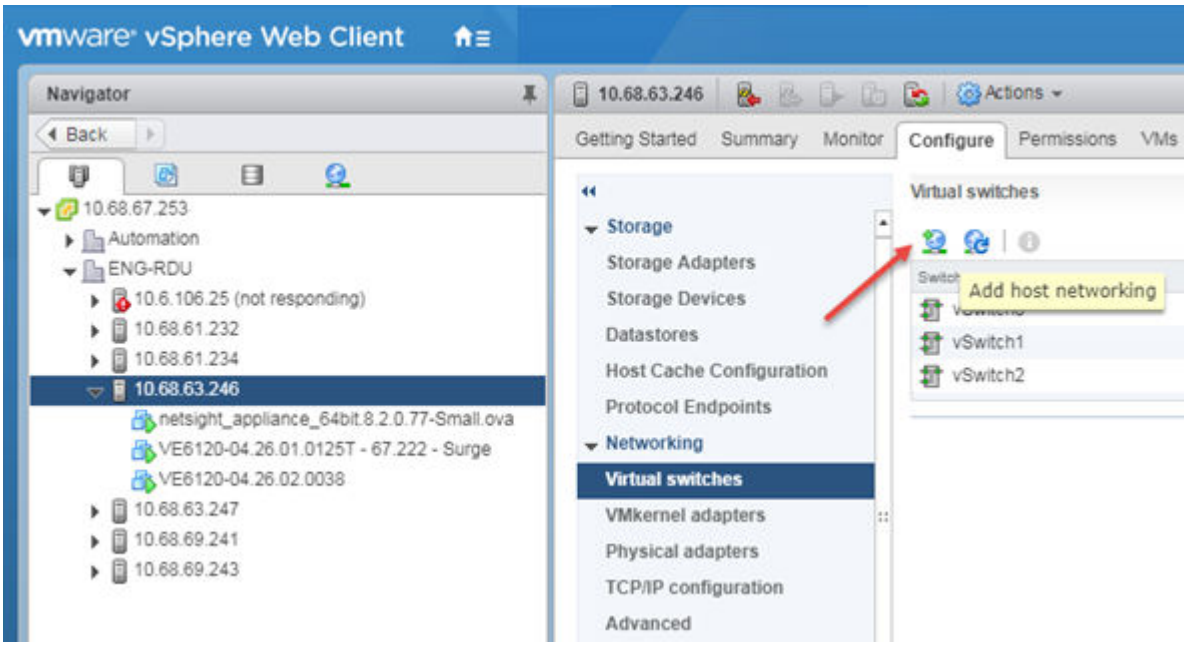



**Figure 22: How to add a virtual switch**

5. **Select the connection type:** Select **Virtual Machine Port Group for a Standard Switch**.
6. **Select target device:**.

   You can create a new switch or create a new port group on an existing switch.

   - To create a port group on an existing switch:

     a. Select, **Select an existing standard switch**.
     b. Select **Browse**, and select a switch from the list.
     c. Select **Next**.

   - To create a new switch:

     a. Select **New standard switch**.
     b. Select **Next**.
     c. Select **Assigned adapters** to add new adapters.
     d. Select the adapter, and select **OK**.

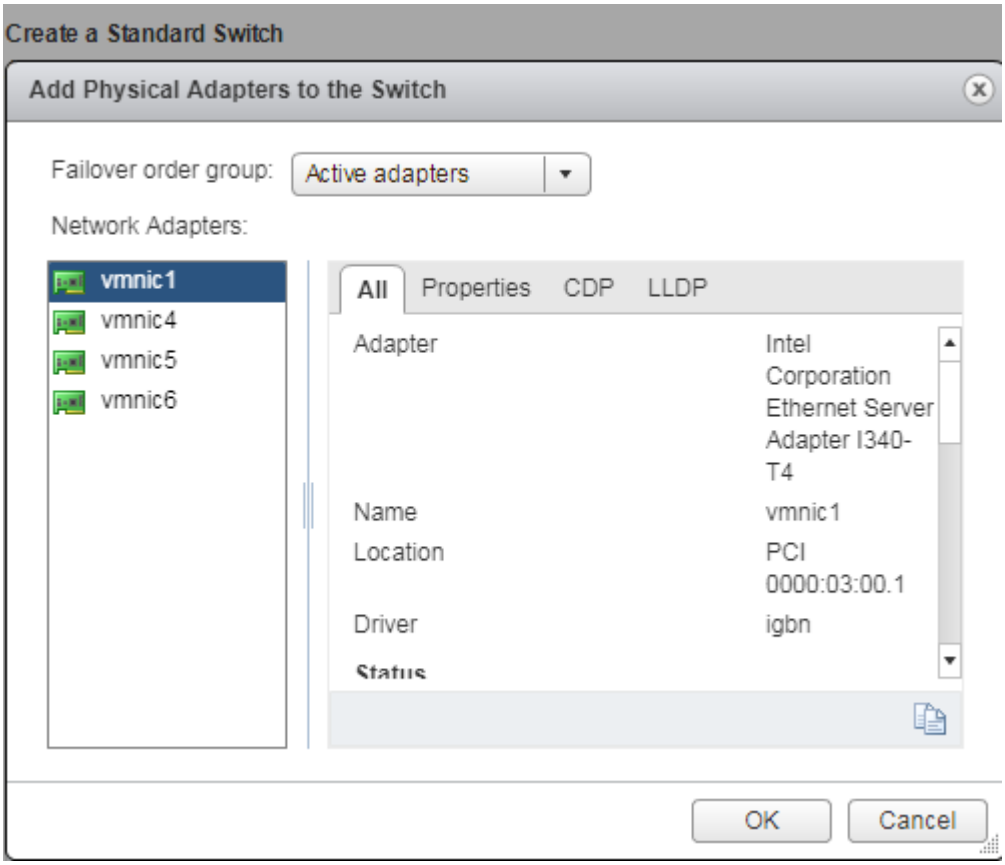



**Figure 23: Adding network adapters**

e. On the **Create a Standard Switch** dialog, select **Next**.

7. **Connection settings:**
   - Provide a network label for the switch or port group.
   - VLAN ID — **All (4095)**
8. **Ready to complete:** Review the settings and select **Finish**.

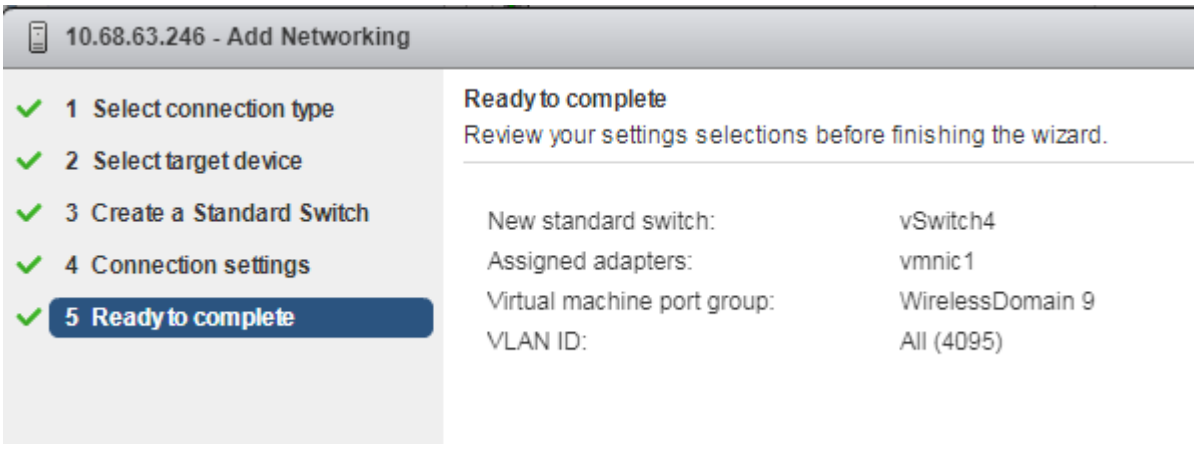



**Figure 24: Ready to complete**

9. The new switch is listed in the **Virtual switches** list.

   A diagram of the Port Groups and Physical Adapters displays.

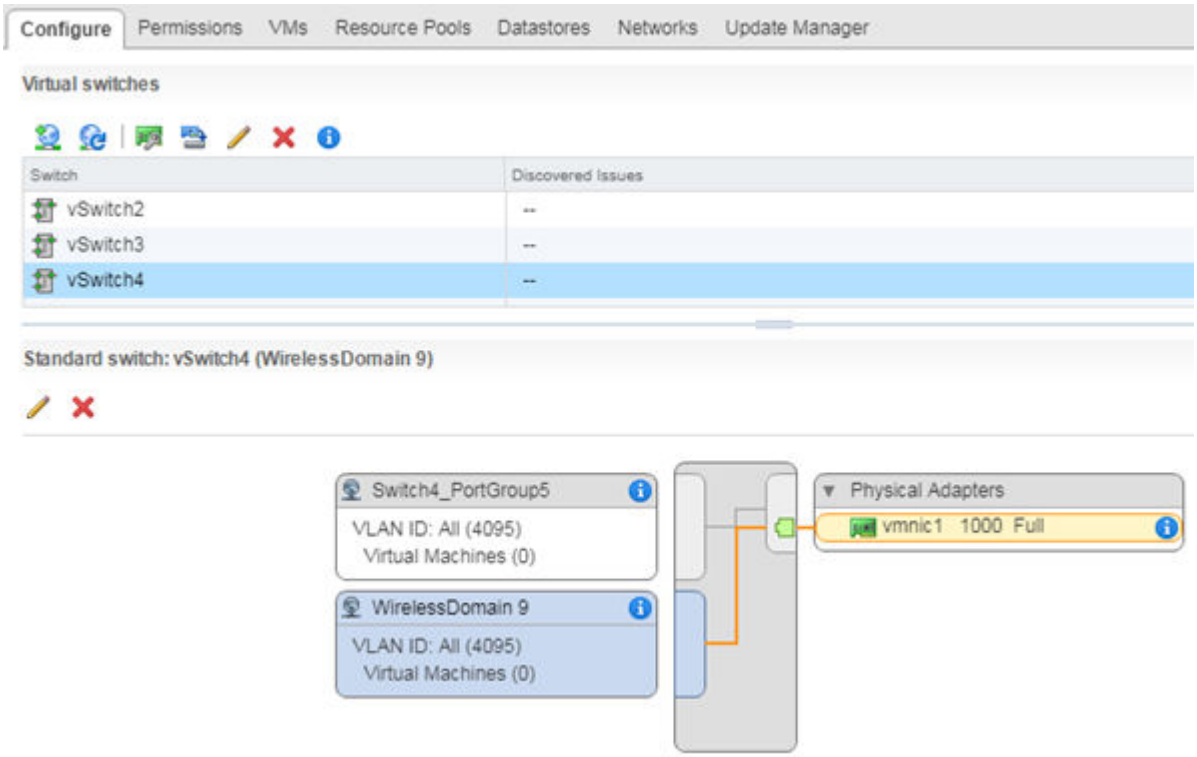



**Figure 25: Switch Diagram**

### What to Do Next

Next, configure the virtual switch for promiscuous connections.

## Configuring the Virtual Switch for Promiscuous Connections

### About This Task

ESXi virtual switches collect ports into port groups. Every virtual switch must have at least one port group, and one is automatically created by ESXi when the vSwitch is created. The VE6120 data plane ports always operate in promiscuous mode, so it is mandatory to change this default. The new virtual switch and port group will be configured to accept MAC address changes and forged transmits.

To change the security settings of a virtual switch:

### Procedure

1. Login to the vSphere web client host network.

   For more information on vSphere login, see Access the Virtual Appliance Console on page 21.
2. On the vSphere web client screen,select the vSphere server's IP address or host name. The **Configure** tab is displayed.

3. On the right pane, select **Networking** > **Virtual switches**, and select a switch from the list.

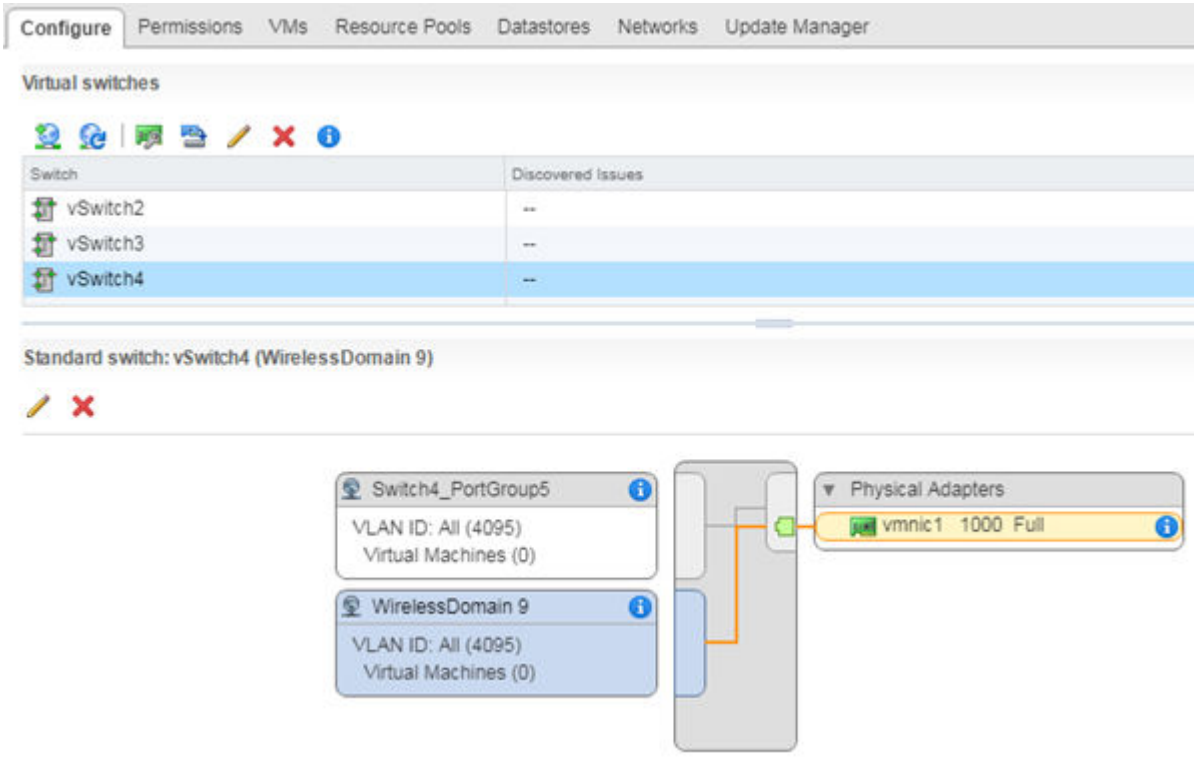



**Figure 26: Switch Diagram**

4. Select the pencil icon to edit properties:
   - To configure properties for the entire switch, select **switch** in the switch list, then select the pencil icon above the list.
   - To configure properties for a port group, select the port group in the diagram, then select the pencil icon above the diagram.

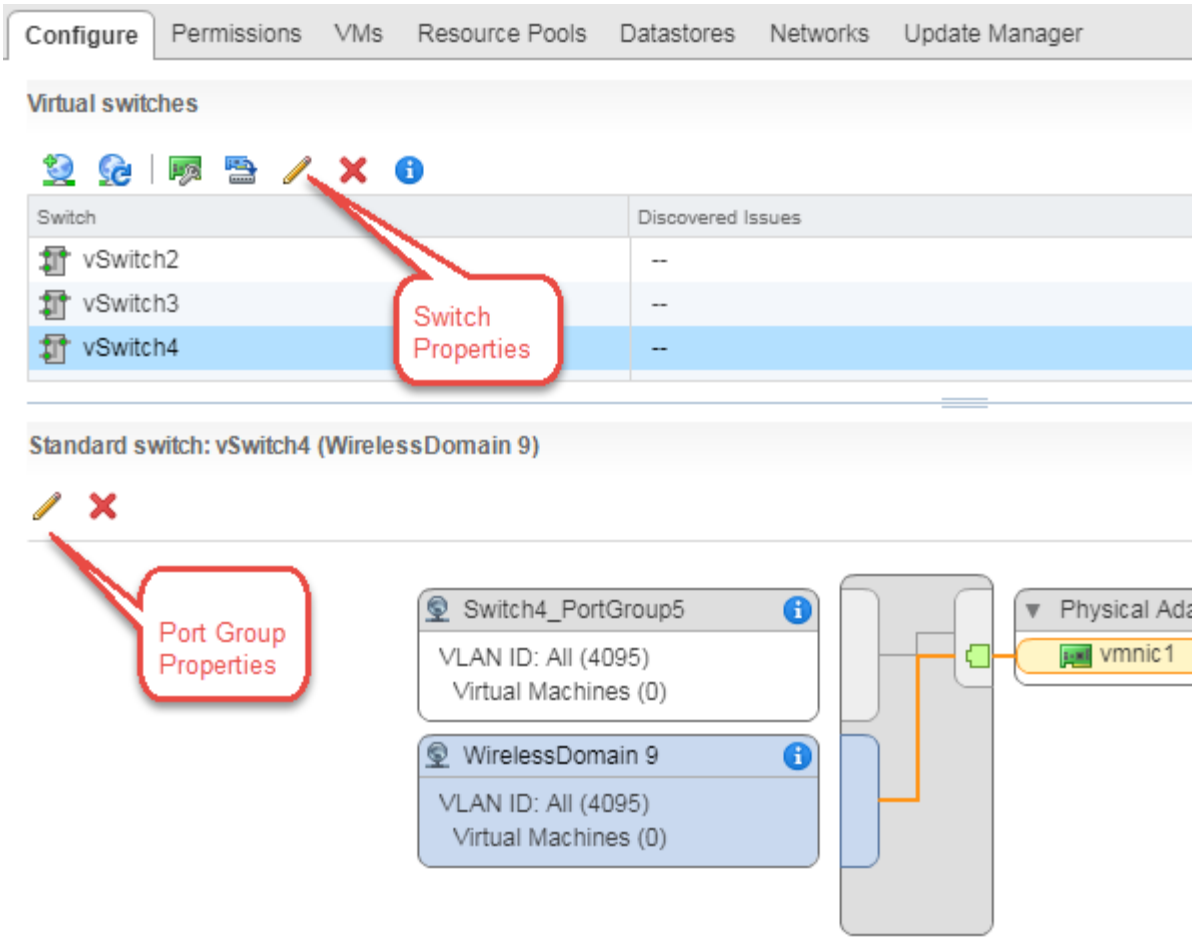



**Figure 27: Editing properties**

5. On the **Edit Settings** dialog, select the **Security** tab, and set all options to **Accept**.
6. Select **OK** to close the **Edit Settings** dialog.

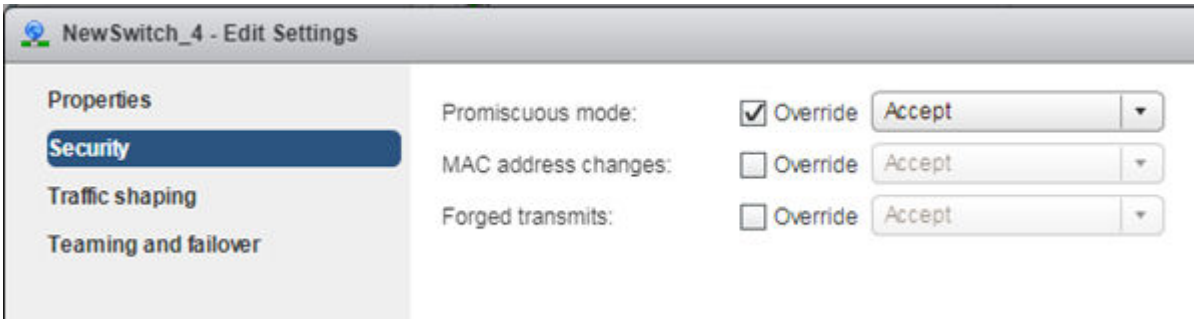



**Figure 28: Promiscuous mode setting**

# Configure a Virtual Machine to Gain Networking Performance

### About This Task

Configuring a virtual machine to gain more networking performance allows you to increase the networking throughput, especially if you use 10 Gbps or faster NICs on the server.

Note
Perform this task after every .ova deployment since the settings cannot be exported with an .ova image.

vSphere uses single receive thread and single transmit thread, regardless of the number of virtual devices configured on it. It is necessary to scale vSphere to prevent packet loss, core overload, and degraded performance.

This configuration creates a special transmit queue on the host server (ESXi) per appliance data plane networking interface. If you do not use both Port 1 and Port 2 on the appliance, the configuration can be applied only on the port that is being used.

If there is a vNIC is overload, you can configure additional cores to parallelize the threads by using the **`ethernetX.ctxPerDev`** command in the virtual machine file.

Note
Use this command only on vNICs that will handle high packet loads.

To configure and enable the **`ethernetX.ctxPerDev`** command on a vNIC:

### Procedure

1. Shutdown the virtual machine.

2. Select **VM Options**.

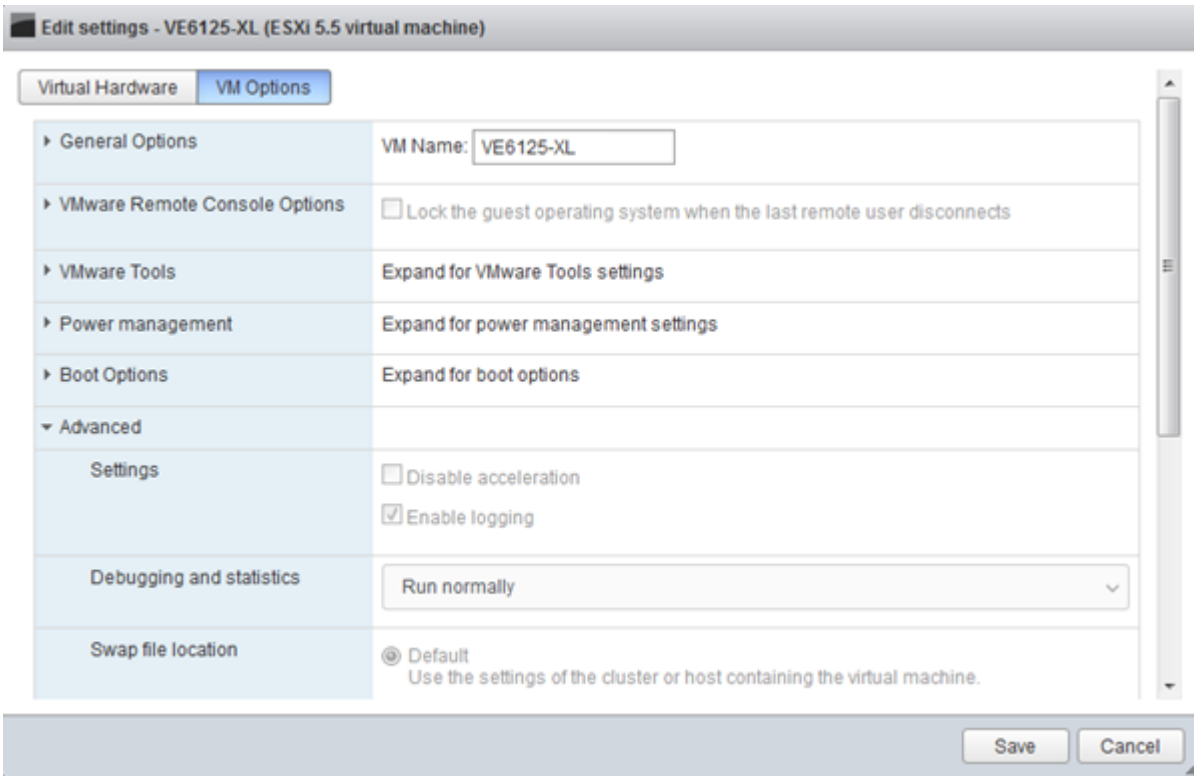



**Figure 29: VM options tab**

3. Expand the **Advanced** option.

4. Select **Edit Configurations** next to the **Configuration Parameters** option.

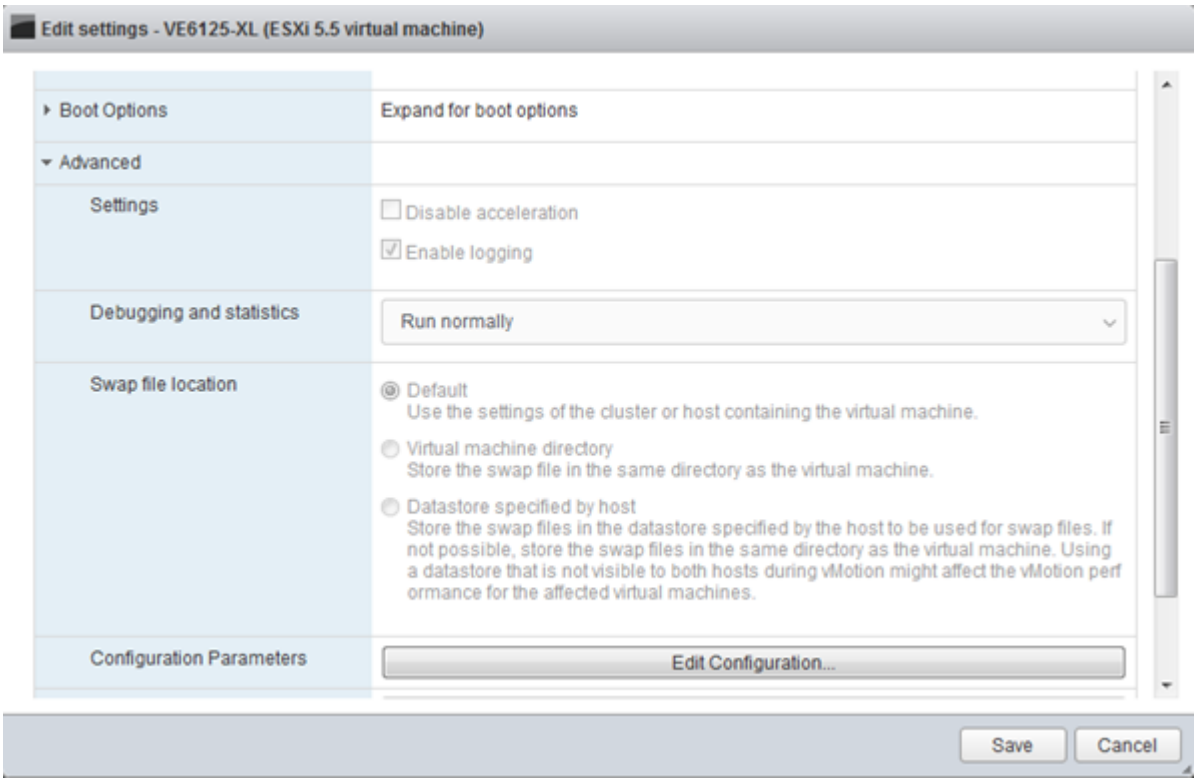



**Figure 30: Edit configuration option**

The **Configuration Parameters** window opens.

5. Select **Add parameter** to add an entry.

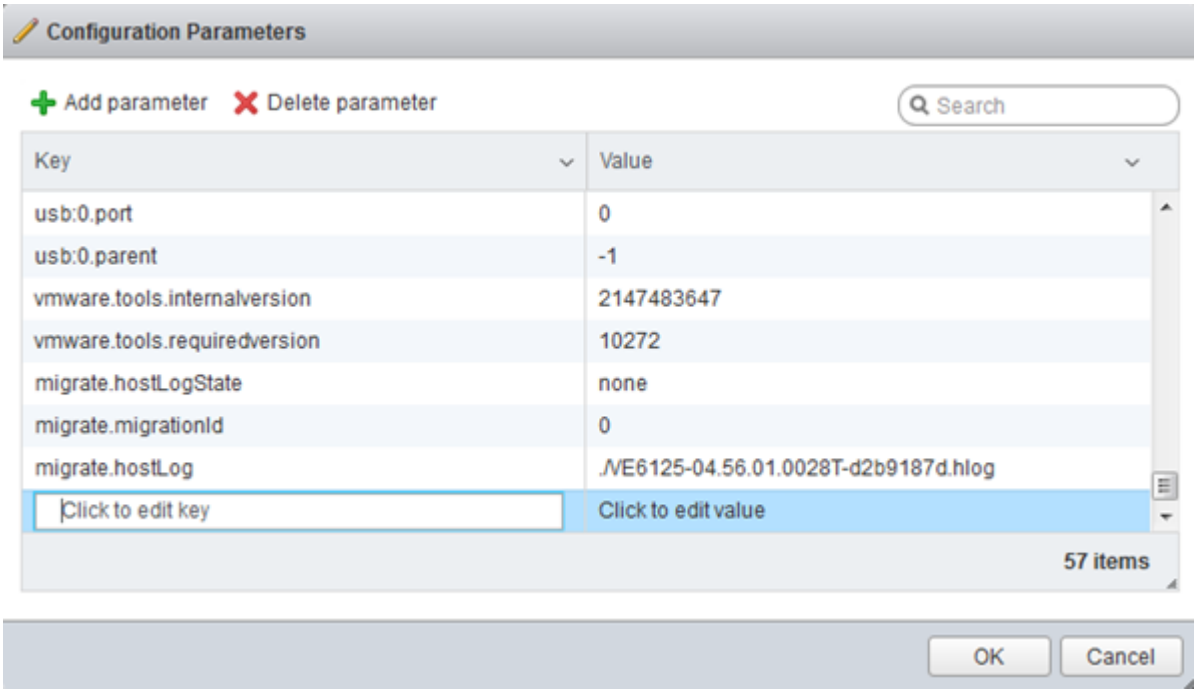


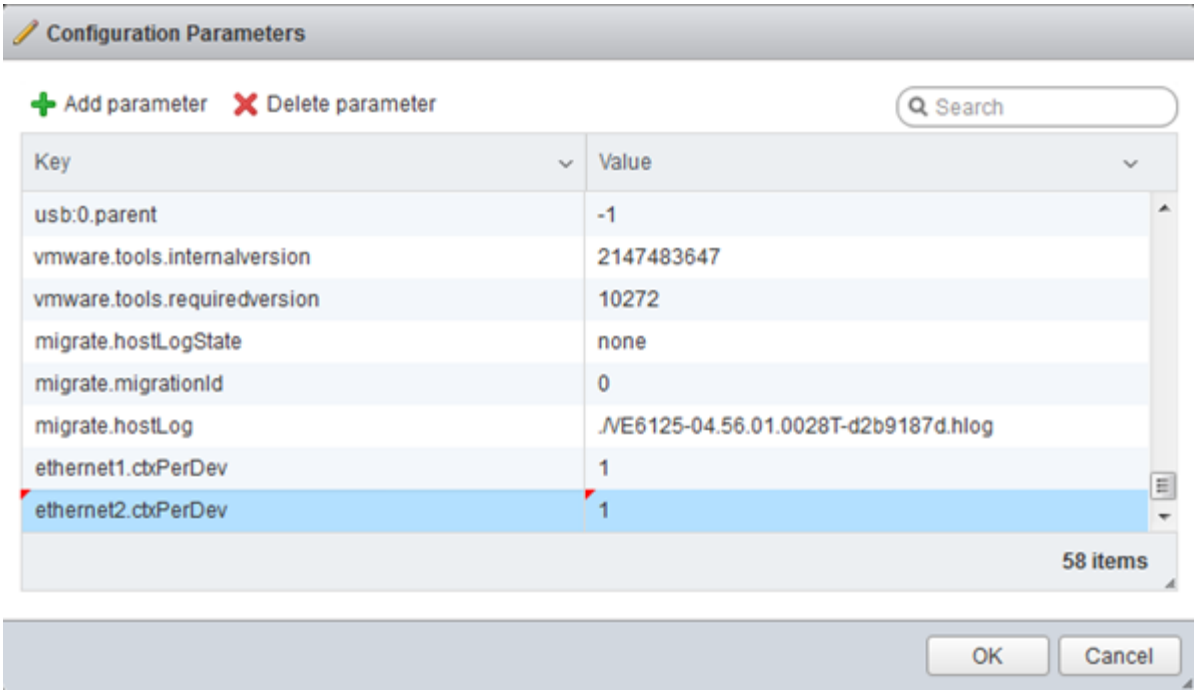

**Figure 31: Configuration Parameters window**

6. Set the following parameters in the **Configuration Parameters** window.

**Table 7: Configuration parameters entries**

| Key | Value |
|---|---|
| For Port 1:<br>• ethernet1.ctxPerDev | 1 |
| For Port 2:<br>• ethernet2.ctxPerDev | 1 |

Note
The "X" in **`ethernetX.ctxPerDev`** command is replaced with the vNIC number.




7. Select **OK** to add the configuration parameter.
8. Select **Save** to save the configuration parameter.
9. Turn on the virtual machine.

# Shut Down and Restart a Virtual Machine

Shut Down and Restart a Virtual Machine Using the Graphical User Interface (GUI) on page 51
Shut Down and Restart a Virtual Machine on a ESXi server on page 52

### About This Task

You need to shut down a virtual machine before configuring it to gain more networking performance. The following task will outline the various ways through which you can shut down and reboot a virtual machine.

For information on how to access the Basic Configuration Wizard, see Access the Virtual Appliance Console on page 21.

To shut down and reboot the virtual machine using the Command Line Interface (CLI) in the Basic Configuration Wizard:

### Procedure

1. Type **`shutdown halt`** and press **Enter** in the Basic Configuration Wizard.

   The virtual machine shuts down.
2. To reboot the virtual machine, type **`shutdown reboot`** and press **Enter**.

   The virtual machine restarts.

## Shut Down and Restart a Virtual Machine Using the Graphical User Interface (GUI)

### About This Task

To shut down and restart a virtual machine using the GUI:

### Procedure

1. Navigate to **Administration** > **System** > **Maintenance**.
2. Select **Halt System (SHUTDOWN)**.

   The machine shuts down.
3. To restart the machine, select **Restart System (REBOOT)**.

   The machine restarts.

# Shut Down and Restart a Virtual Machine on a ESXi server

### About This Task

You can shut down and restart a virtual machine through the ESXi server.

### Procedure

1. To shut down the virtual machine, right-click the virtual machine listed under **Virtual Machines**, select **Guest OS** > **Shut down**.
2. To restart the virtual machine, right-click the virtual machine listed under **Virtual Machines**, select **Guest OS** > **Restart**.

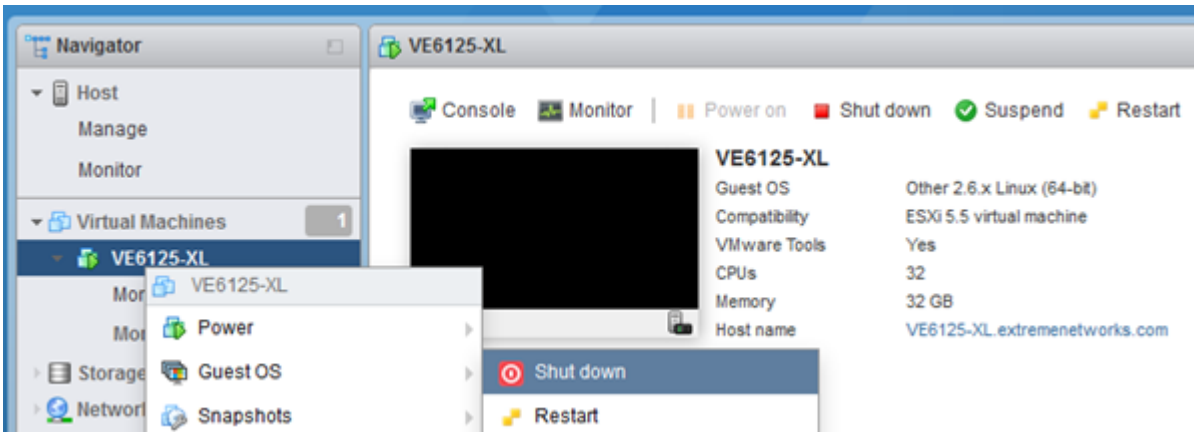
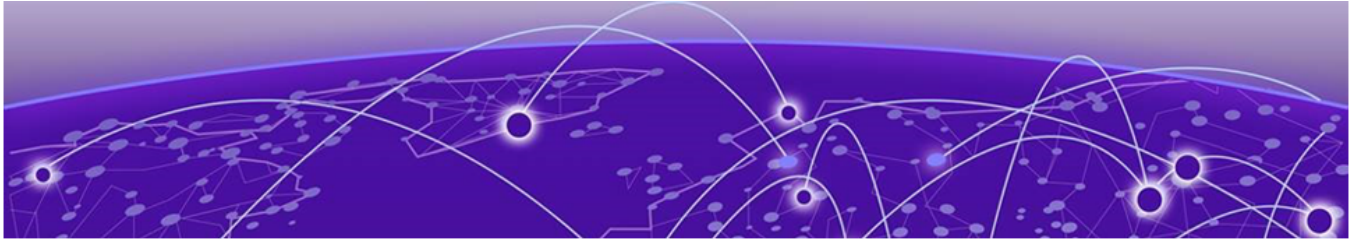



**Figure 32: Shut down or restart a virtual appliance through ESXi server**

3. You can shut down or restart a virtual machine by directly selecting the **Shut down** or **Restart** option on the ESXi server.



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