

1 Introduction

The VX virtualized controller is a software WLAN controller appliance running as a virtual machine (VM) on a variety of Hypervisor and Amazon EC2 cloud infrastructures. The VX 9000 supports virtually any server and commercially available Hypervisors for fast and seamless integration into an existing network infrastructure, without adding new hardware. You can run multiple instances of the VX 9000 on a single server, reducing cost, space and power in the Network Operations Center (NOC). With the ability to run in a private or public cloud, you have the freedom to choose the model that works best for your deployment needs, install on your own servers or lease a server in the public cloud.

Like existing controller platforms, the VX virtualized controller has its own unique VX 9000 product category. However, the VX 9000 is unique, in the sense it requires a software license to enable it. The VX virtualized controller is a license only orderable software SKU, and does not come as a resident application within an existing hardware product. Users are required to purchase a license to activate their VX 9000 downloaded. The ordering and fulfillment process however is similar to other software products, with an appliance license shipped in the form of a hard-copy license certificate.

A license is required to enable VX virtualized controller functionality within WiNG. There are different AP license packs available depending on the number of adaptive access points you'd like to support.

License	Description
VX-9000-APPLNC-LIC	VX 9000 appliance license
VX-9000-ADP-16	16x adaptive access point license pack
VX-9000-ADP-64	64x adaptive access point license pack
VX-9000-ADP-256	256x adaptive access point license pack
VX-9000-ADP-512	512x adaptive access point license pack
VX-9000-ADP-1024	1024x adaptive access point license pack

2 Installing the VX Virtualized Controller on a Hypervisor

To license and install the VX virtualized controller:

- 1 Use the following link to go to the extranet downloads page:

[Extreme Networks Extranet Download Page](#)

- 2 If you do not have an extranet account, register here:

<https://secure.extremenetworks.com/register.aspx>

- 3 Select the appropriate product family and then the product.

The Firmware sub-tab is present for EOS, SecureStack, S/K/7100-Series, ExtremeWireless (IdentiFi and WiNG), Management, Control, Analytics, Security, WiNG, AirDefense and Legacy products.

- 4 Select the Firmware sub-tab.

- 5 The Firmware page displays the resources that you are entitled to. If you do not see the items that you need or think that you are entitled to, please contact GTAC <http://www.extremenetworks.com/support/contact/> or e-mail portal@extremenetworks.com

The VX appliance is downloaded as an .iso image.

- 6 Ensure a Hypervisor (ESXi, Xen, Hyper V) is installed in your server environment or the downloaded .iso image will not run.

- 7 Install the .iso in a manner similar to a standard VM.

- 8 Boot the VX appliance for the first time.

The system prompts the user to change the password.

- 9 Configure your network for your data center environment (static IP address). Commit your updates.

The serial number is automatically generated. The VX appliance is ready for license activation.



NOTE

Extreme Networks recommends you save the serial number generated in step nine.



NOTE

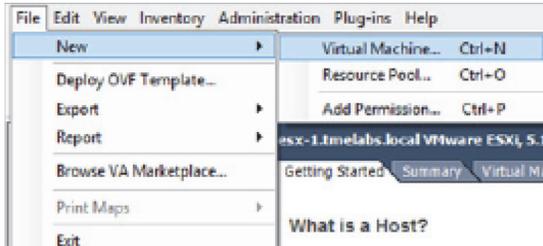
Do not change the IP address. If changed, the VX will not function until you obtain a new license by calling Support.

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- 10 Run `show version` command to display the serial number.

Installing in an ESXi Environment

To install the VX 9000 in an ESXi environment:

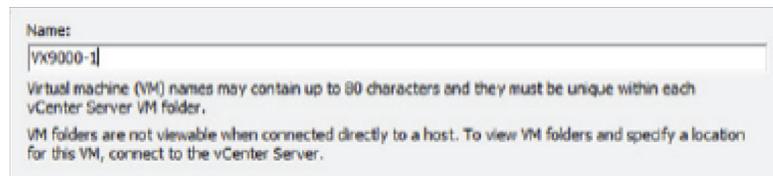
- 1 Within the vSphere client, select **File > New > Virtual Machine**.



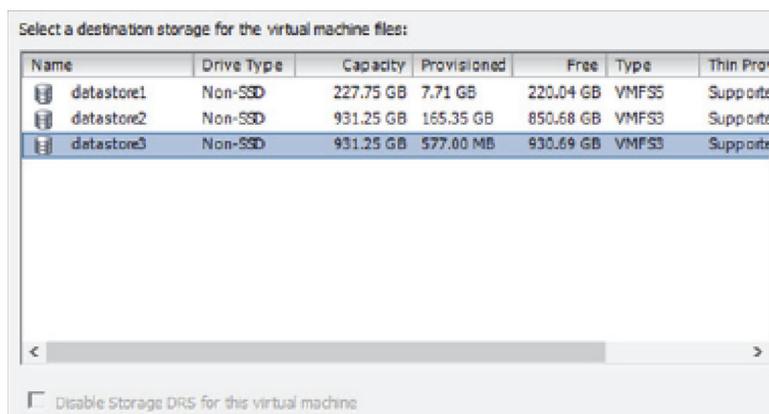
- 2 Select **Typical** within the **Configuration** field, then **Next >** from the lower, right-hand, side of the screen.



- 3 Enter a 80 character maximum virtual machine name, then **Next >** from the lower, right-hand, side of the screen.



- 4 Select the target **Storage** location from amongst the destinations listed, then **Next >** from the lower, right-hand, side of the screen.



- 5 Within the **Guest Operating System** screen, select **Linux** as the guest operating system.

- 6 Use the **Version** drop-down menu to select **Other Linux (64-bit)**, then select **Next >** from the lower, right-hand, side of the screen.



Guest Operating System:

Windows

Linux

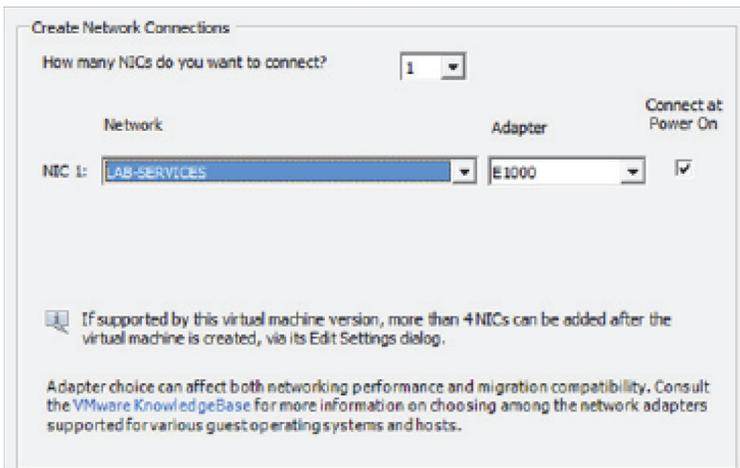
Other

Version:

Other Linux (64-bit)

Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.

- 7 Select one network interface card (NIC) from the **How many NICs do you want to connect?** drop-down menu.
- 8 Assign a **Network** to NIC1, then select **Next >** from the lower, right-hand, side of the screen.



Create Network Connections

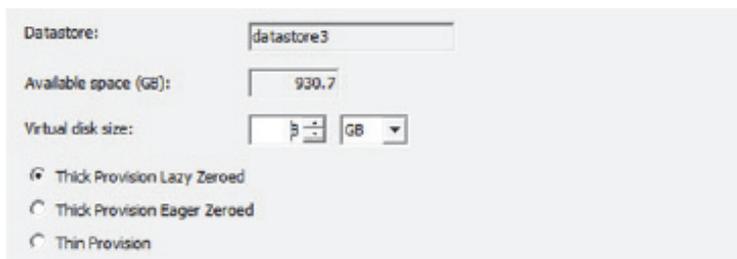
How many NICs do you want to connect? 1

Network	Adapter	Connect at Power On
LAB-SERVICES	E1000	<input checked="" type="checkbox"/>

If supported by this virtual machine version, more than 4 NICs can be added after the virtual machine is created, via its Edit Settings dialog.

Adapter choice can affect both networking performance and migration compatibility. Consult the VMware KnowledgeBase for more information on choosing among the network adapters supported for various guest operating systems and hosts.

- 9 Set the **Virtual disk size** from within the Create a Disk screen, then select **Next >** from the lower, right-hand, side of the screen.



Datastore: datastore3

Available space (GB): 930.7

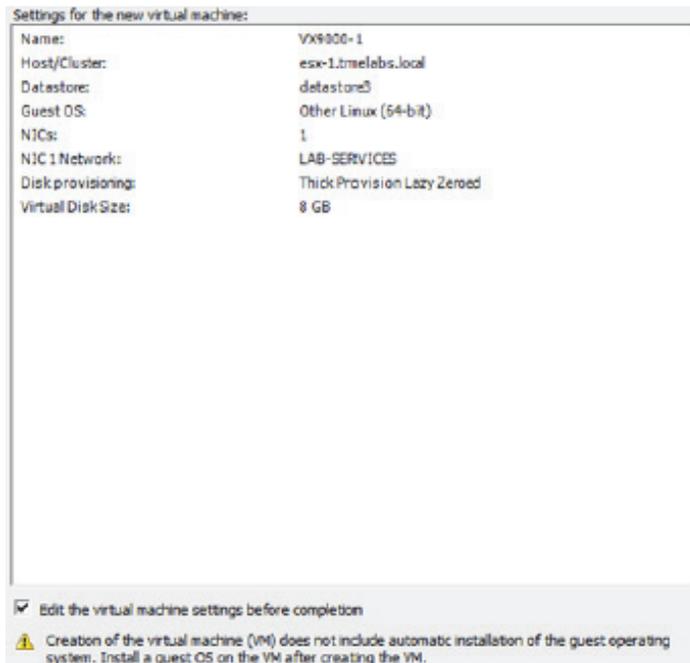
Virtual disk size: 3 GB

Thick Provision Lazy Zeroed

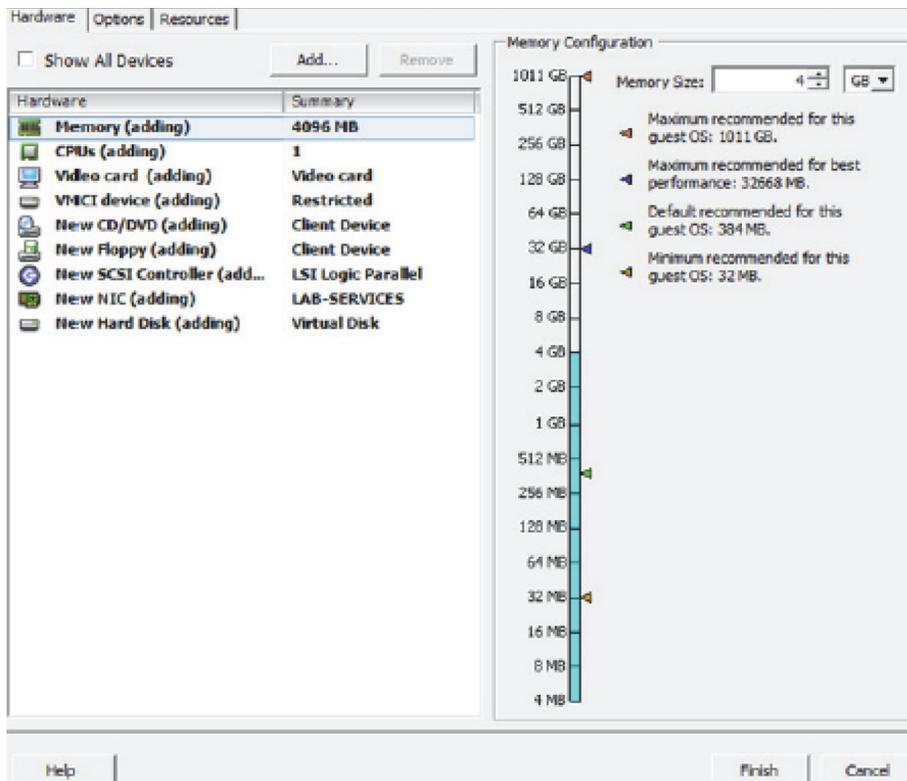
Thick Provision Eager Zeroed

Thin Provision

- 10 Select the **Edit the virtual machine settings before completion** checkbox, then select **Continue** from the lower, right-hand, side of the screen.

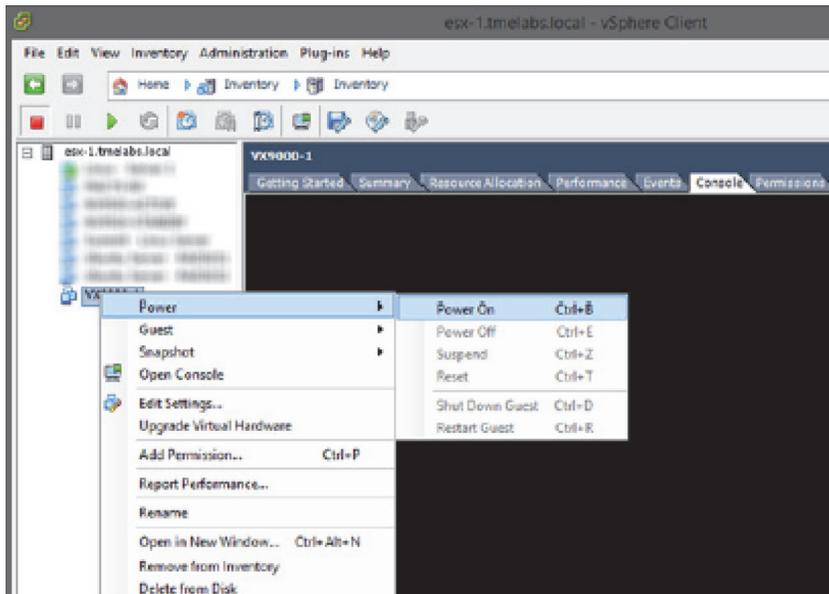


- 11 From within the **Hardware** tab, select **Memory** as the hardware type and set the **Memory Size**.



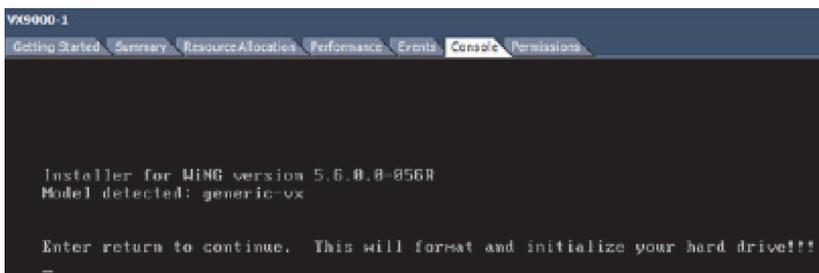
- 12 Remain within the **Hardware** tab, and select **CD/DVD**.

- 13 Set the device type to **Datastore ISO File**. Select the **Browse** button and select the VX 9000 ISO file. Select **Finish** from the lower, right-hand, side of the screen.

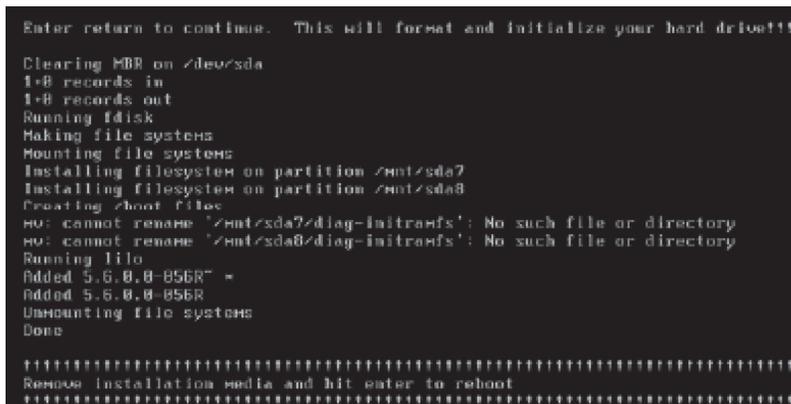


- 14 Highlight the new VX 9000 VM and select the **Console** tab.

- 15 Right-click and select **Power > Power On** (or CTRL+B).



- 16 Select the **Enter** key when prompted to begin the VX 9000 installation process.

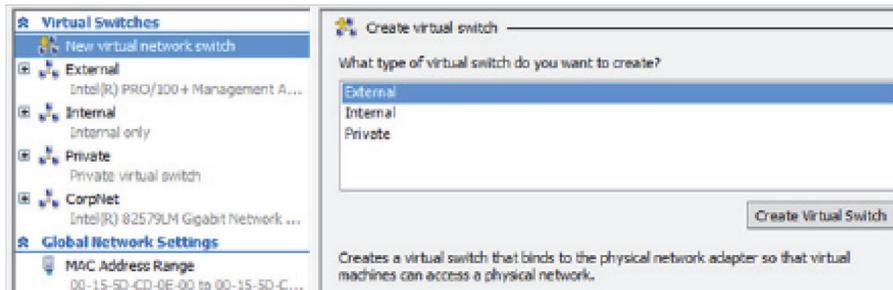


- 17 When the installation is completed, select the Enter key again to reboot the VX 9000. The VX 9000 is now ready to configure.

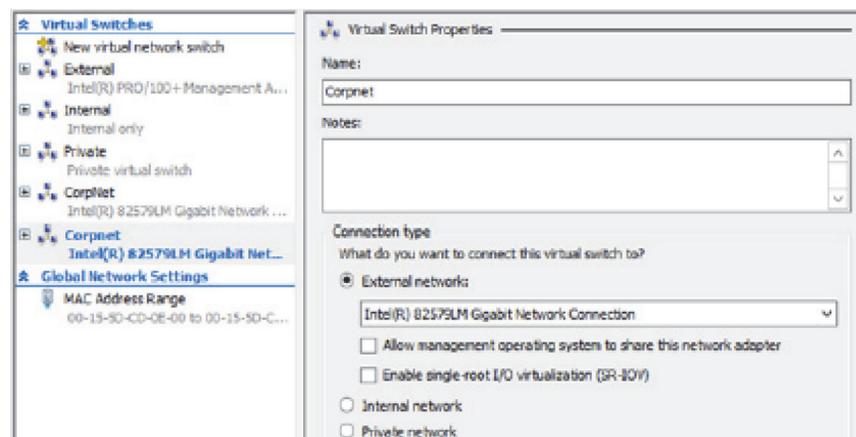
Installing in a Hyper-V Environment

To install the VX 9000 in a Hyper-V environment:

- 1 From the Hyper-V Virtual manager, under actions, select **Virtual Switches > New virtual network switch**.



- 2 Select **External** from within the **Create virtual switch** field.



- 3 Provide a **Name** for the switch and the physical interface used for **External network** connection. Select **OK** to save the updates.

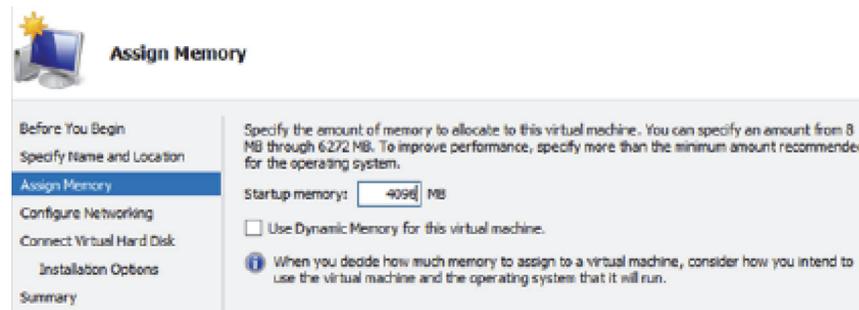


- From the Hyper-V manager, select **New > Virtual Machine** to launch the **New Virtual Machine Wizard** used to create a virtual machine for the VX 9000. Select **Next >** from the lower right to continue.



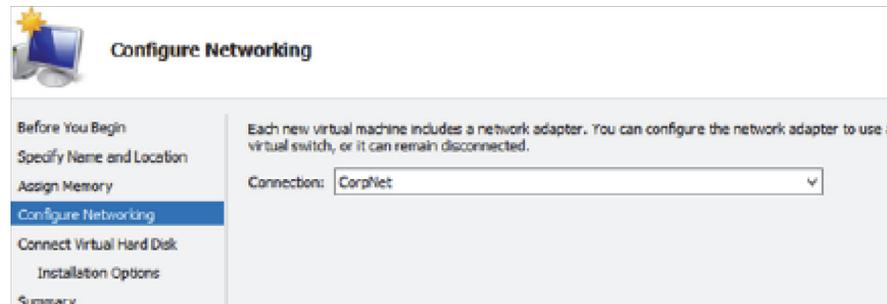
The screenshot shows the 'Specify Name and Location' step of the New Virtual Machine Wizard. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location' (highlighted), 'Assign Memory', 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Choose a name and location for this virtual machine. The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.' Below this, there is a text box for 'Name' containing 'ALPS VX'. Another text box for 'Location' contains 'C:\ProgramData\Microsoft\Windows\Hyper-V\'. A checkbox labeled 'Store the virtual machine in a different location' is unchecked. A 'Browse...' button is next to the location text box. A warning icon and text at the bottom state: 'If you plan to take snapshots of this virtual machine, select a location that has enough free space. Snapshots include virtual machine data and may require a large amount of space.'

- From the **Specify Name and Location** screen, provide a Name for the virtual machine and specify its location. Select **Next >** from the lower right to continue.



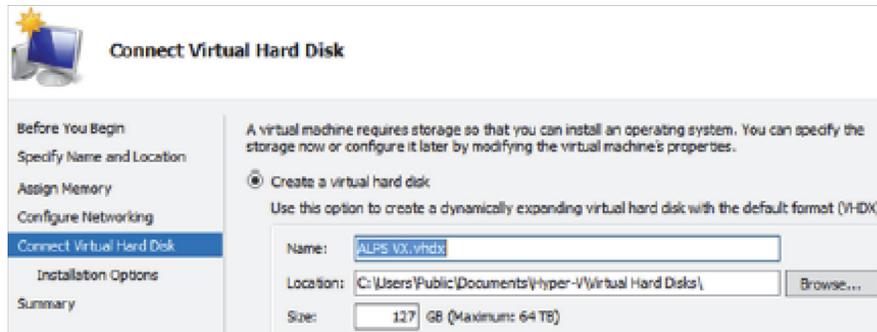
The screenshot shows the 'Assign Memory' step of the New Virtual Machine Wizard. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location', 'Assign Memory' (highlighted), 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 8 MB through 6272 MB. To improve performance, specify more than the minimum amount recommended for the operating system.' Below this, there is a text box for 'Startup memory' containing '4096' MB. A checkbox labeled 'Use Dynamic Memory for this virtual machine.' is unchecked. An information icon and text at the bottom state: 'When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.'

- From the **Assign Memory** screen, enter a **Startup memory** (in MB) for the virtual machine. Select **Next >** from the lower right to continue.

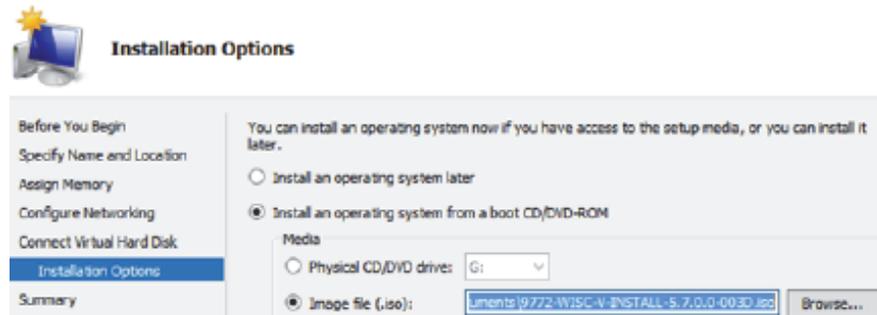


The screenshot shows the 'Configure Networking' step of the New Virtual Machine Wizard. The left sidebar contains a list of steps: 'Before You Begin', 'Specify Name and Location', 'Assign Memory', 'Configure Networking' (highlighted), 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area contains the following text: 'Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.' Below this, there is a dropdown menu for 'Connection' with 'CorpNet' selected.

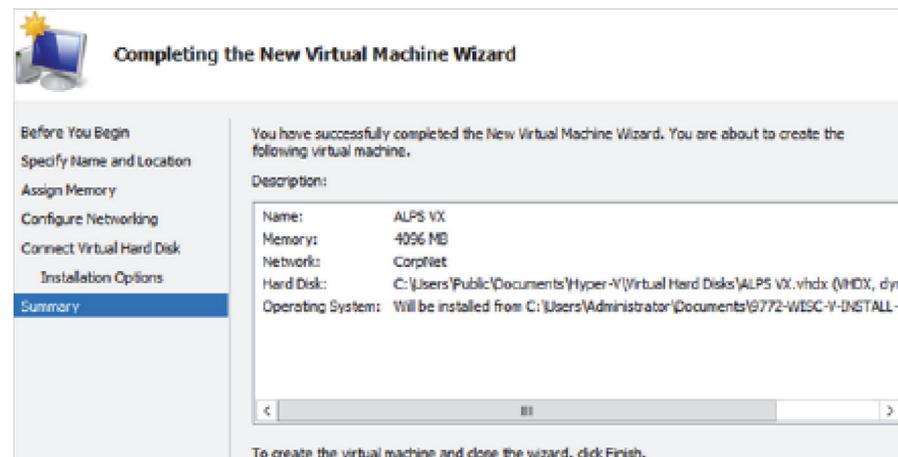
- 7 From the **Configure Networking** screen, use the **Connection** drop-down menu to select the external network connection defined earlier in this Hyper-V installation. Select **Next >** from the lower right to continue.



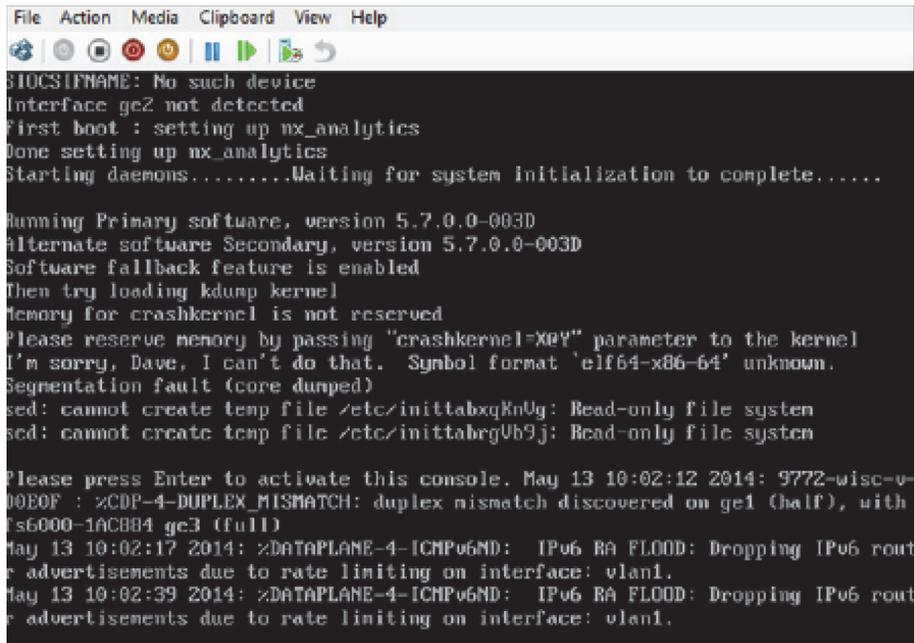
- 8 From the **Connect Virtual Hard Disk** screen, select the **Create a virtual hard disk** option and specify the **Location** and **Size** of a dynamically expanding virtual hard disk. Select **Next >** from the lower right to continue.



- 9 From the **Installation Options** screen, select the **Install an operating system from a boot CD/DVD-ROM** option and select the **Image file (.iso)** option).
- 10 Select the **Browse** button and navigate to the location of the downloaded VX 9000 image file. Select **Next >** from the lower right to continue.



14 When the installation is completed, select **Enter** to reboot the VX 9000.



```
File Action Media Clipboard View Help
BIOSIFNAME: No such device
Interface ge2 not detected
First boot : setting up nx_analytics
Done setting up nx_analytics
Starting daemons.....Waiting for system initialization to complete.....

Running Primary software, version 5.7.0.0-003D
Alternate software Secondary, version 5.7.0.0-003D
Software fallback feature is enabled
Then try loading kdump kernel
memory for crashkernel is not reserved
Please reserve memory by passing "crashkernel=X0Y" parameter to the kernel
I'm sorry, Dave, I can't do that. Symbol format 'elf64-x86-64' unknown.
Segmentation fault (core dumped)
sed: cannot create temp file /etc/inittabxqKnUg: Read-only file system
sed: cannot create temp file /etc/inittabrgUb9j: Read-only file system

Please press Enter to activate this console. May 13 10:02:12 2014: 9772-wisc-v-
00E0F : %CDP-4-DUPLEX_MISMATCH: duplex mismatch discovered on ge1 (half), with
ts6000-1ACB84 ge3 (full)
May 13 10:02:17 2014: %DATAPLANE-4-ICMPv6ND: IPv6 RA FLOOD: Dropping IPv6 rout
e advertisements due to rate limiting on interface: vlan1.
May 13 10:02:39 2014: %DATAPLANE-4-ICMPv6ND: IPv6 RA FLOOD: Dropping IPv6 rout
e advertisements due to rate limiting on interface: vlan1.
```

The VX 9000 is now ready for configuration.