



IdentiFi™ Wireless

V2110 Virtual Appliance Installation Guide

MS Hyper-V Platform

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1 About this Guide

The guide describes how to configure and deploy the IdentiFi Wireless V2110 Virtual Appliance MS Hyper-V Platform.

Intended Audience

This guide is a reference for system administrators who install and manage the V2110 Virtual Appliance .

Any administrator performing tasks described in this guide must be a member of the Administrators group.

How to Use This Guide

This preface provides an overview of this guide and a brief summary of each chapter, defines the conventions used in this document; and instructs how to obtain technical support from Extreme Networks.

Formatting Conventions

Extreme Networks documentation uses the following formatting conventions to make it easier to find information and follow procedures:

- Bold text is used to identify components of the management interface, such as menu items and section of pages, as well as the names of buttons and text boxes.
- For example: Click Logout.
- Monospace font is used in code examples and to indicate text that you type.
- For example: Type `https://<ewcwl-address>[:mgmt-port]`
- The following notes are used to draw your attention to additional information:



NOTE

Notes identify useful information, such as reminders, tips, or other ways to perform a task.



CAUTION

Cautionary notes identify essential information, which if ignored can adversely affect the operation of your equipment or software.

**WARNING**

Warning notes identify essential information, which if ignored can lead to personal injury or harm.

Additional Documentation

For related information, see the V2110 Virtual Appliance documentation at:

<http://www.extremenetworks.com/support/>

Getting Help

For additional support related to the product or this document, contact Extreme Networks using one of the following methods:

Website	http://www.extremenetworks.com/support/
Phone	1-800-872-8440 (toll-free in U.S. and Canada) or 1-603-952-5000 To find the Extreme Networks Support toll-free number in your country: http://www.extremenetworks.com/support/
Email	support@extremenetworks.com To expedite your message, type Wireless in the subject line

Before contacting Extreme Networks for technical support, have the following information ready:

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

2 Virtual Appliance Deployment

This chapter provides an overview of the requirements for the V2110 Virtual Appliance deployment. It explains how to install the appliance on a Microsoft Hyper-V host on the following supported platforms:

- Windows Server 2012R2
- Windows Server 2012R2 Server Core with Hyper-V role only
- Standalone Hyper-V 2012R2

Deployment Requirements

The entire virtual appliance is delivered as a .ZIP file. Typically this file only needs to be installed once. Software upgrades for the Hyper-V virtual appliance are delivered in files with the extensions .ize.



NOTE

You only need to install the “.zip” file when you first install the V2110. All subsequent upgrades can be performed using the standard controller upgrade procedure to apply a “.ize” file to the V2110. Refer to the *IdentiFi Wireless Maintenance Guide* for more information about upgrading the V2110.

The Virtual Appliance installation has the following prerequisites:

- 2 GB of RAM
- 4 virtual CPUs (4 distinct physical cores or 2 cores with hyperthreading)
- 25 GB of disk space (VHD format)

In addition, the Virtual Appliance is configured with one Ethernet interface for administration and two network adapters Ethernet interfaces for forwarding payload traffic.

Connectivity Requirements

The Virtual Appliance has one management interface (Admin) and two data plane interfaces (PhysAdapter1, and PhysAdapter2). If all three interfaces are used, they must be connected to separate external virtual switches on the Hyper-V 2012R2 host.

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

For more information, see [Chapter 4, “Creating a New Virtual Switch on the Host Server”](#) for instructions on how to create and configure virtual switches that can be used by the Virtual Appliance’s network adapter ports.

Deploying the V2110 MS Hyper-V Platform

The following steps are required to deploy the V2110 on a Hyper-V host.

- [Downloading the V2110 image](#)
- [Unpacking ZIP files on the Host](#)
- [Installing the Virtual Appliance Image](#)
- [Configuring the Network Adapter](#)

Downloading the V2110 image

Download the Virtual Appliance software image to your Hyper-V host.

- 1 Access the V2110 download page at <http://www.extremenetworks.com/support/>
- 2 Download the V2110 image from the Downloads section.

Unpacking ZIP files on the Host

Once the image has been downloaded from the website, unpack the files to the host as follows.

- 1 Locate the ZIP file on your computer.
- 2 Double-click the ZIP file.
- 3 Select a folder on the host machine, and unpack the ZIP files which contains the following files/directories:
 - V2110 Hyper-V Edition
 - Snapshots
 - Virtual Hard Disk
 - Virtual Machines
 - Scheduled_Task-Run_When_VM_Reboots.ps1
 - Commands_Executed_on_a_VM-Warm-Cycle.xml
- 4 Setup workaround scripts specifically for VLAN Traffic as described below.

Setup Scripts to Recover VLAN Trunk Configuration on the Appliance Reboot/Reset

The following script must be setup to be run to use tagged (VLAN) traffic on the controller data port interface.

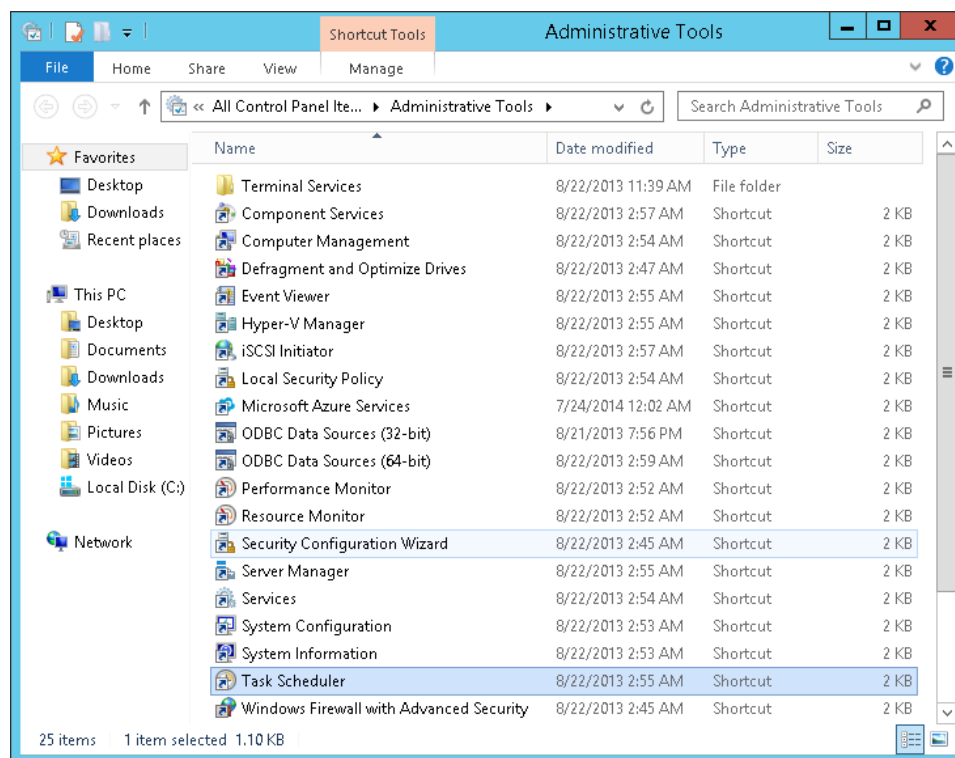
- 1 Transfer the following files to the host under directory:

C:\Users\Public\Documents\Hyper-V\SCRIPTS\

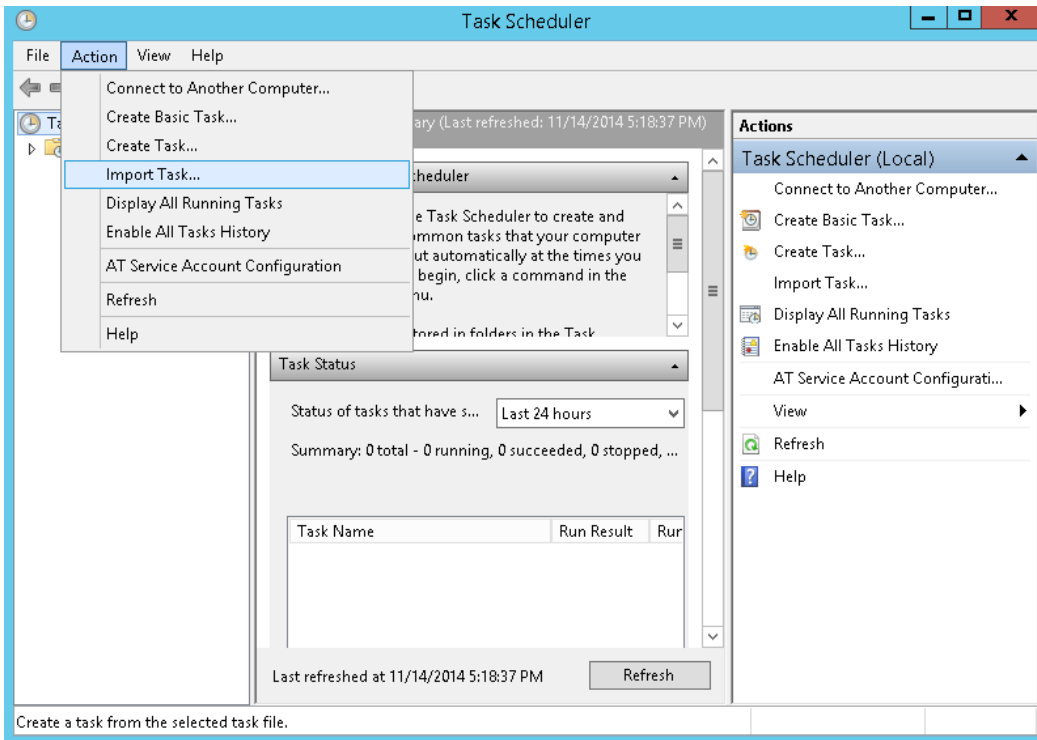
Scheduled_Task-Run_When_VM_Reboots.ps1

Commands_Executed_on_a_VM_Warm-Cycle.xml

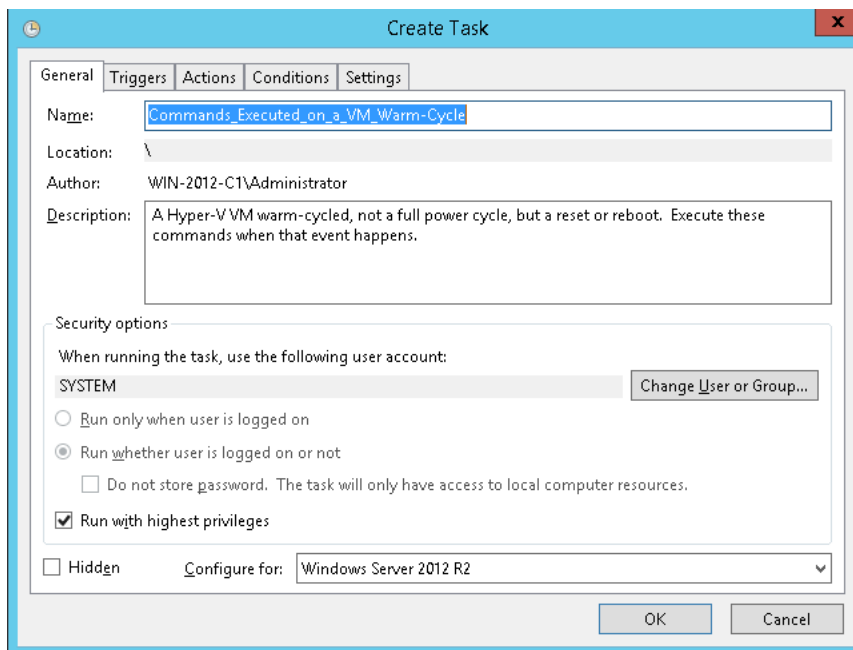
- 2 If necessary, create a directory.
- 3 Run Control Panel > Administrative Tools > Task Scheduler



4 Under Action menu, select Import Task.



5 Select `Commands_Executed_on_a_VM_Warm-Cycle.xml` from the drive.



NOTE

If a different host directory is required, the following file will need to be edited:
`Commands_Executed_on_a_VM_Warm-Cycle.xml`

Accessing the Hyper-V Host

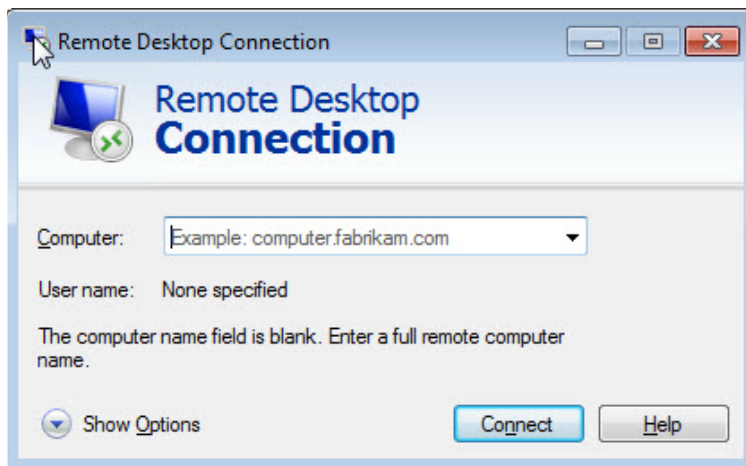


NOTE

The following instructions provide a common method used to access the Hyper-V host from a typical Windows-based system. Other methods can be used if desired.

To login to the Hyper-V host:

- 1 Open the client application.
- 2 The client login screen is displayed.



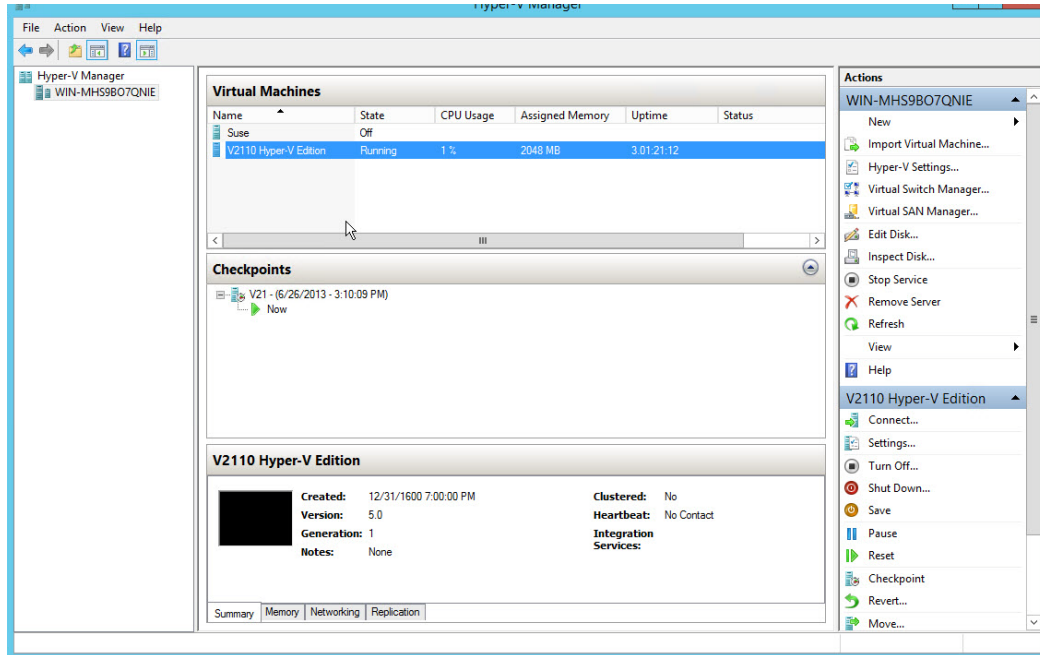
- 3 On the login screen:
 - Under Computer, enter the IP address of the Hyper-V server.
 - Click Connect.
 - Click Use Another Account, and click OK.
 - Enter the User name and Password of an account that has full administrative access.
 - Click OK.



NOTE

Hyper-V Manager can be used remotely to manage the Hyper-V role on 2012R2 servers other than Hyper-V manager's home. But the sequence is different again.

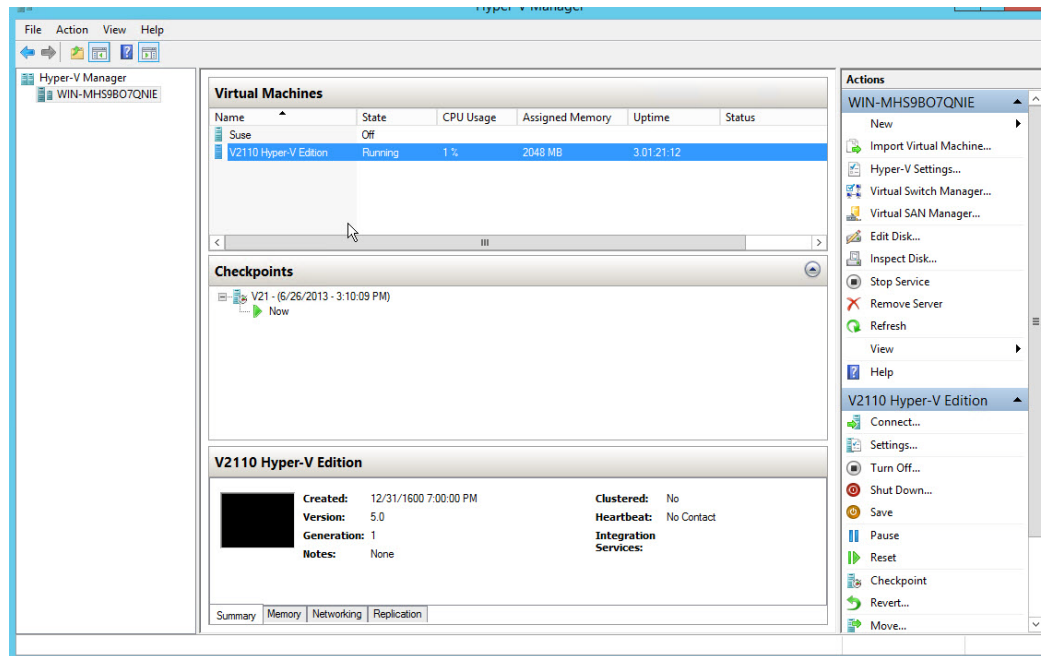
- 4 If you are using remote desktop to connect to the host then a successful login lands the user on the desktop. From the Start menu, launch Hyper-V Manager. The Hyper-V Manager screen displays.



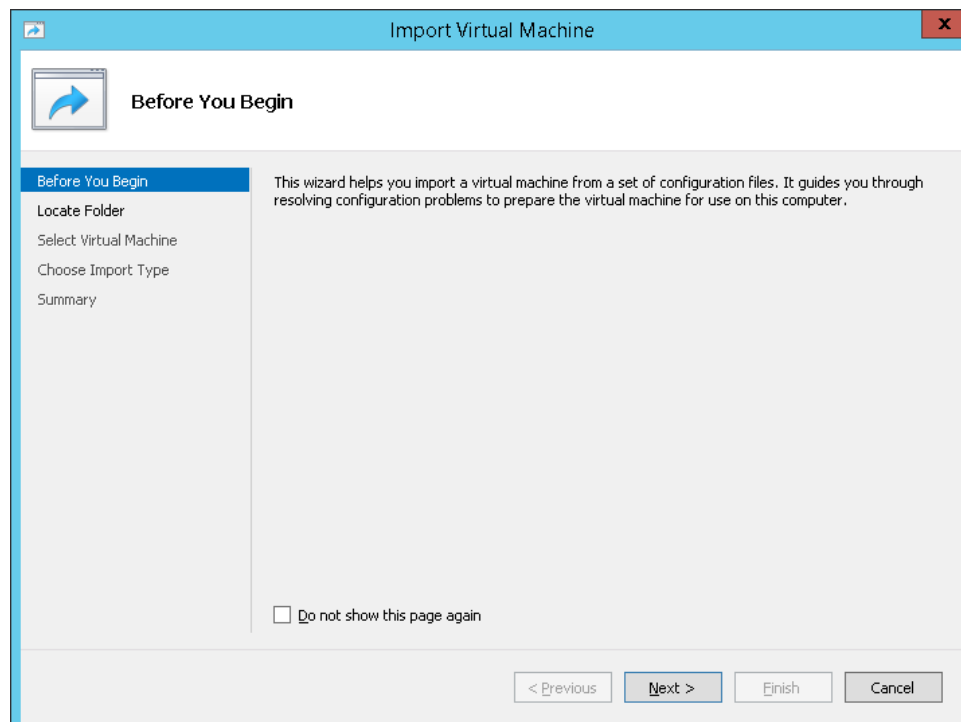
Installing the Virtual Appliance Image

To install the Virtual Appliance image:

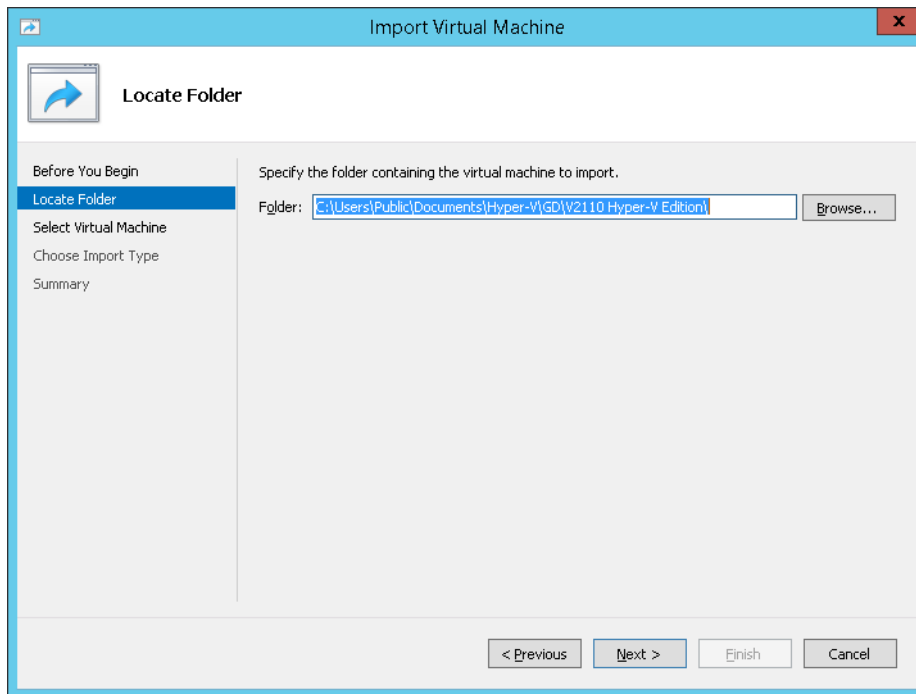
- 1 From the Hyper-V Manager dialog, under Hyper-V Manager, select the desired host from the left column (in this example, select WIN-MHS9BO7QNIE).



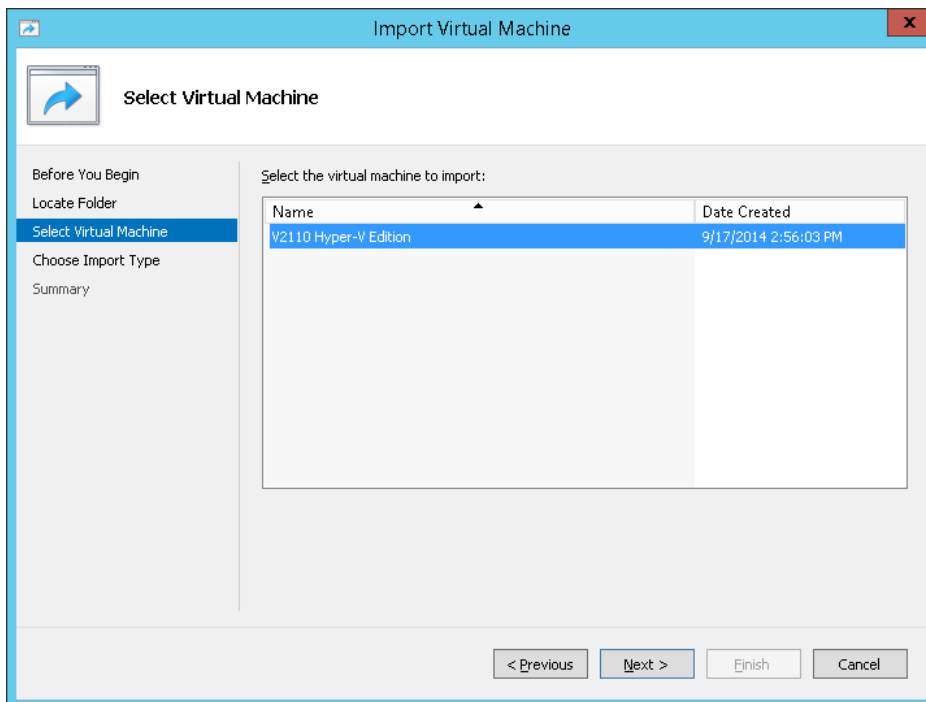
- 2 Under Actions, select Import Virtual Machine.
- 3 The Import Virtual Machine Wizard screen displays. Click Next.



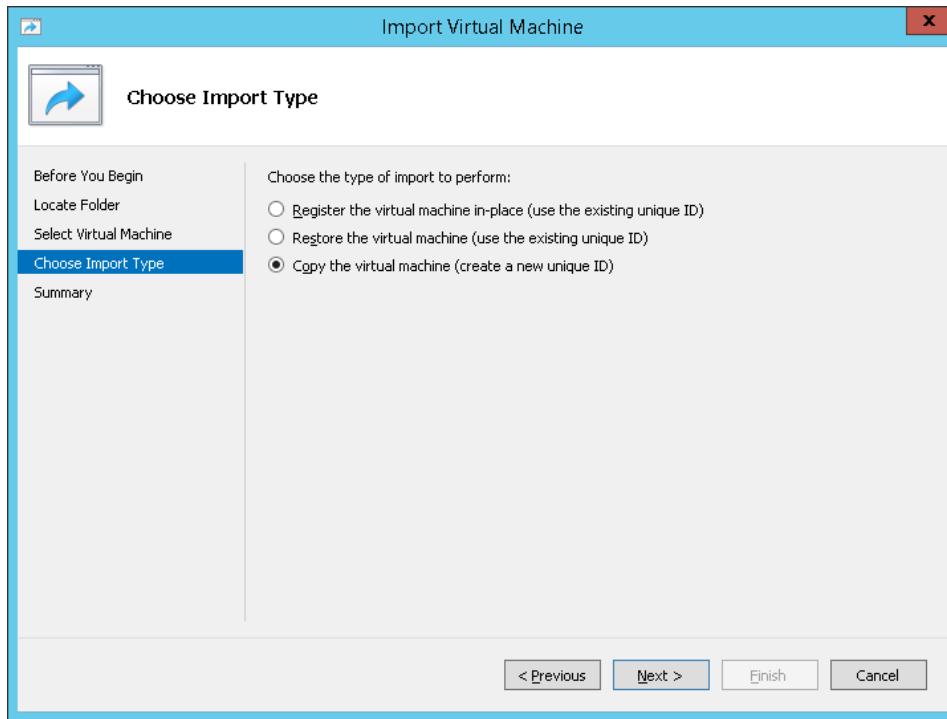
- Under Locate Folder, click Browse to specify the folder where the V2110 Hyper-V files were unpacked, and click Next.



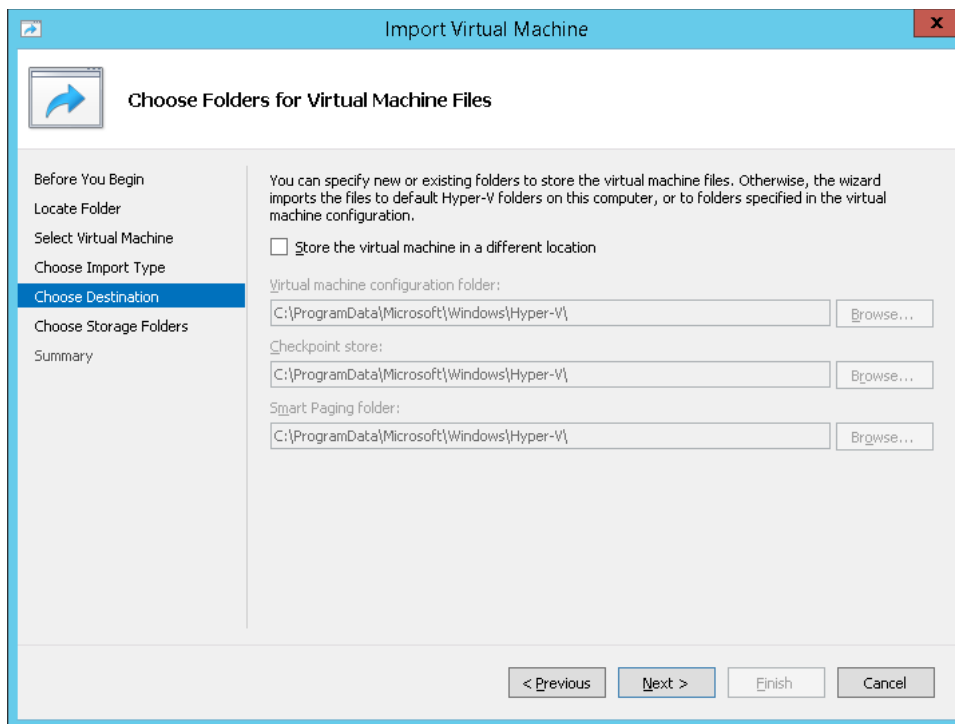
- Under Select Virtual Machine, select the V2110 Hyper-V file, and click Next.



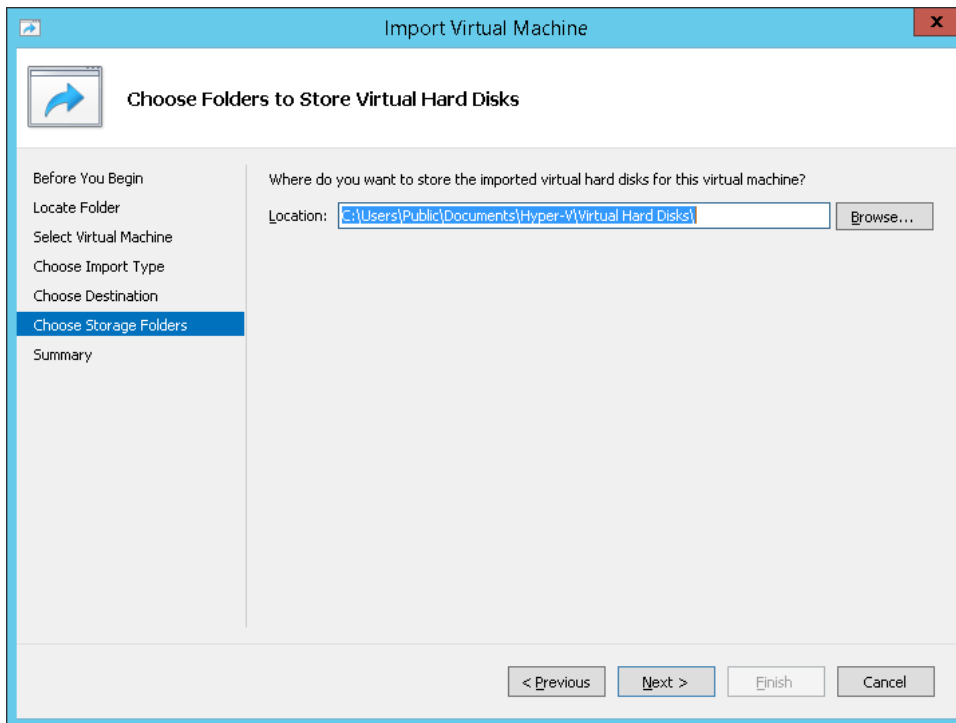
6 Under Choose Import Type, select Copy the virtual machine, and click Next.



7 Under Choose Destination, use the default settings for the virtual machine file, and click next.



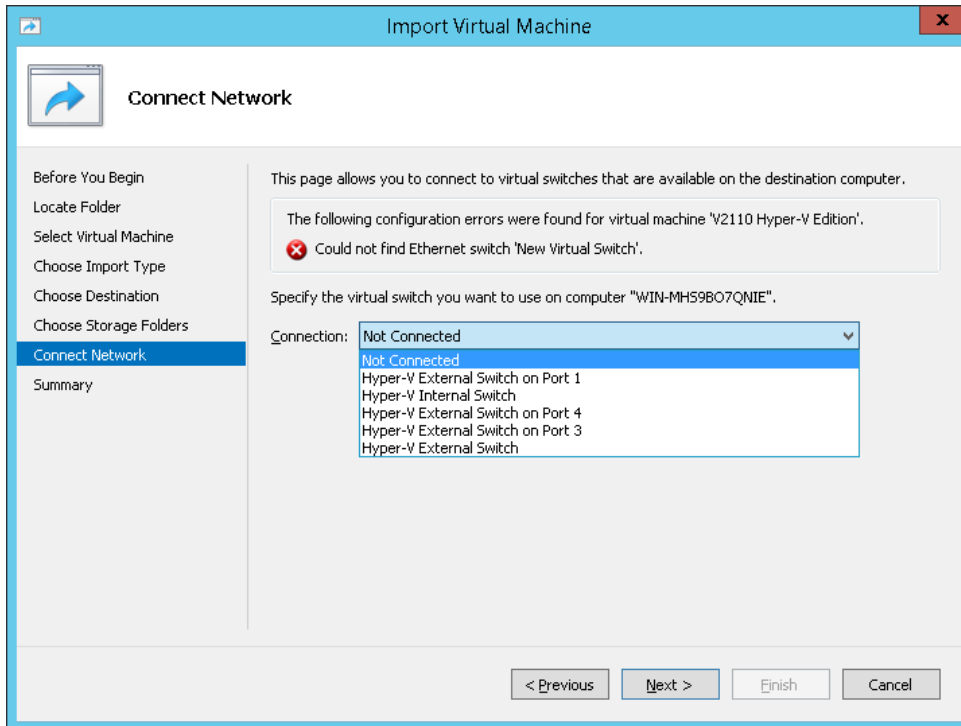
- 8 Under Choose Storage Folders, choose the default folders to store virtual hard disks, and click Next.



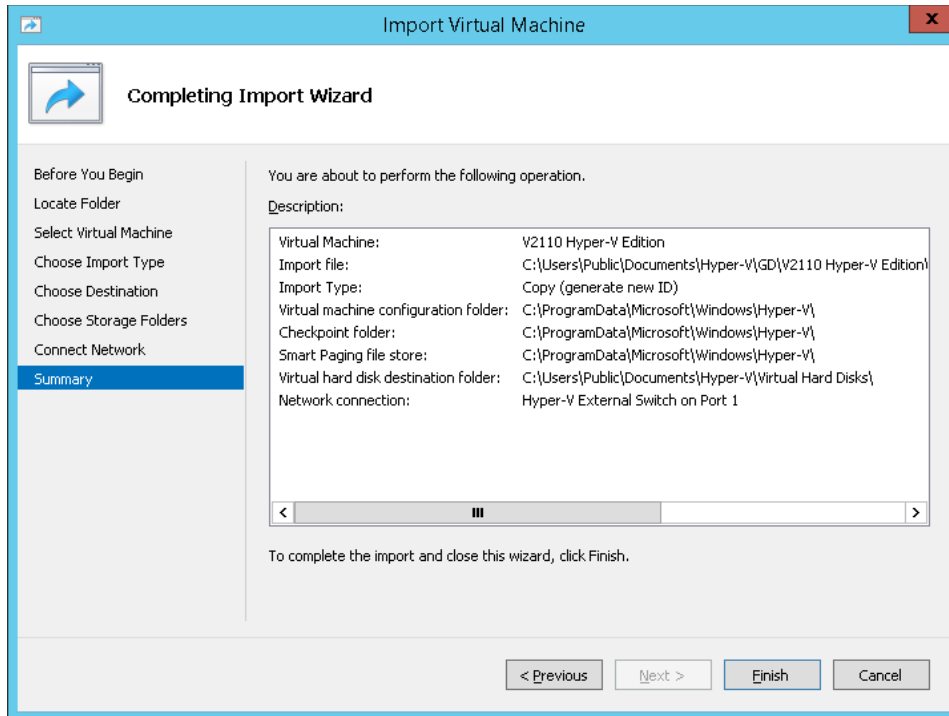
- Under Connect Network, select a virtual switch type from the drop-down menu, and click next.

**NOTE**

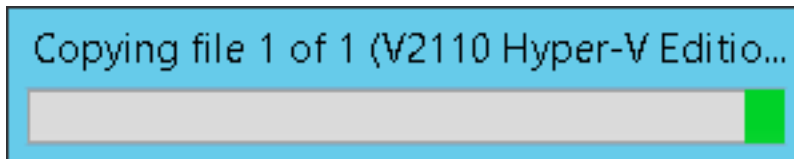
The Configuration Error displayed is expected behavior. Hyper-V Manager will not display this screen when all virtual switches for the image configuration matches one-to-one with switches configured on the host.



- 10 The summary page displays a summary of your selections. Review each setting and if necessary, click Back to return to previous screens and make any required changes. Click Finish to complete the deployment.



- 11 Click Finish. The image will be imported.



- 12 A progress bar reports deployment progress.

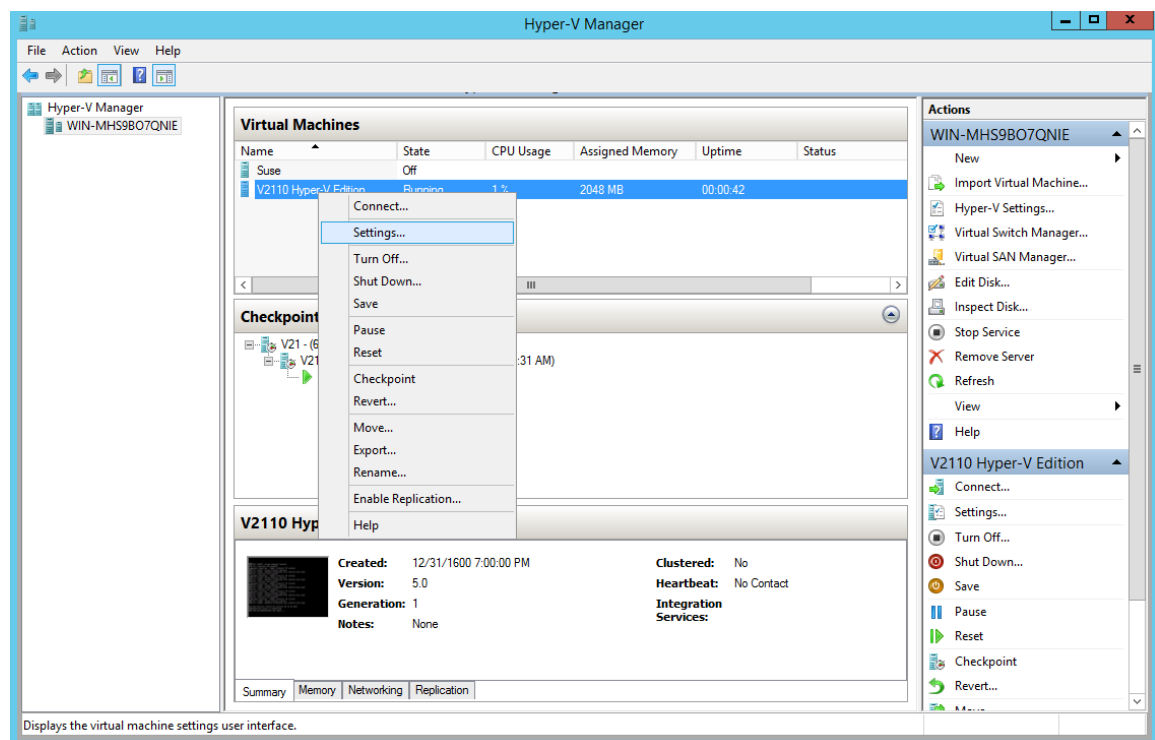
You are now ready to configure the V2110 Virtual Appliance (MS Hyper-V platform), as described in [Chapter 2, V2110 MS Hyper-V Platform Configuration](#).

Configuring the Network Adapter

The Hyper-V Settings menu is used to map the V2110 ports to virtual switches configured on the Hyper-V host.

To map the V2110 ports to virtual switches:

- 1 Open the Hyper-V Manager.
- 2 From the Hyper-V Manager dialog, under Virtual Machines, select a deployed VM from the list provided.
- 3 If necessary, install the V2110 Virtual Appliance. For more information, see [“Virtual Appliance Deployment”](#) on page 5.
- 4 From the Hyper-V Manager dialog, under Actions, click Settings.



- 5 Under Hardware, select from one of the following adapters (MgmtAdapter, PhysAdapter1, and PhysAdapter2).

MgmtAdapter is the network the V2110's management port is expecting to connect to. That network should be mapped to a virtual switch that will be used for management traffic.

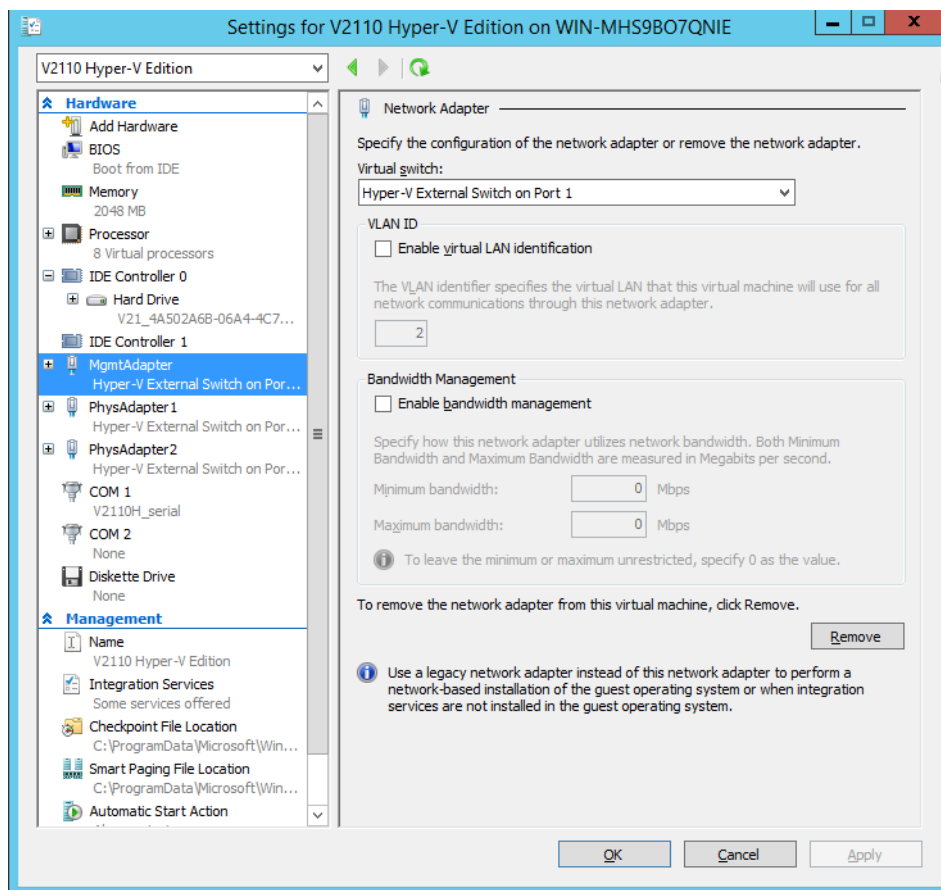
PhysAdapter1 is the network that the V2110's esa0 (data plane) port expects to use. That network should be mapped to a virtual switch on the host that will carry traffic between the V2110 and the APs.

PhysAdapter2 is the network that the V2110's esa1 (data plane) port expects to use. That network should be mapped to a virtual switch on the ESX/ESXi host that will carry traffic between the V2110 and the APs.

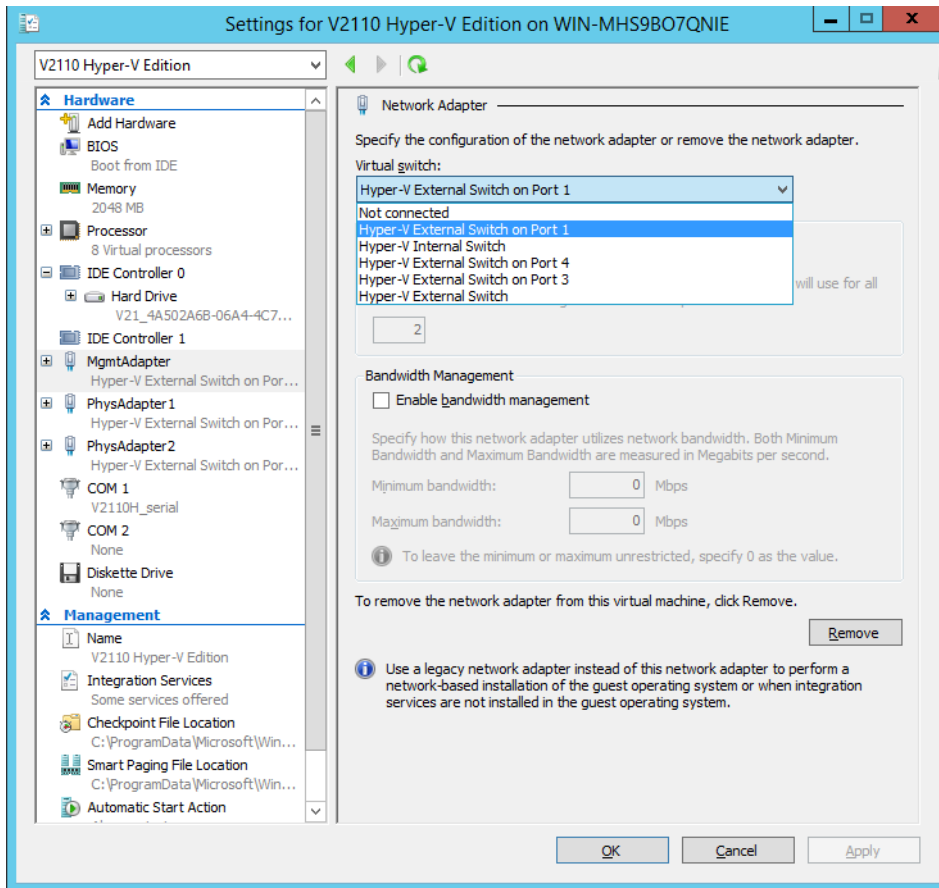


NOTE

Extreme Networks recommends not using the bandwidth management feature since the controller performs CoS enforcement on all traffic that egresses the controller.



- 6 Under Network Adapter, under Virtual switch, select the Virtual Switch to connect to from the drop-down menu.



- 7 Click OK.

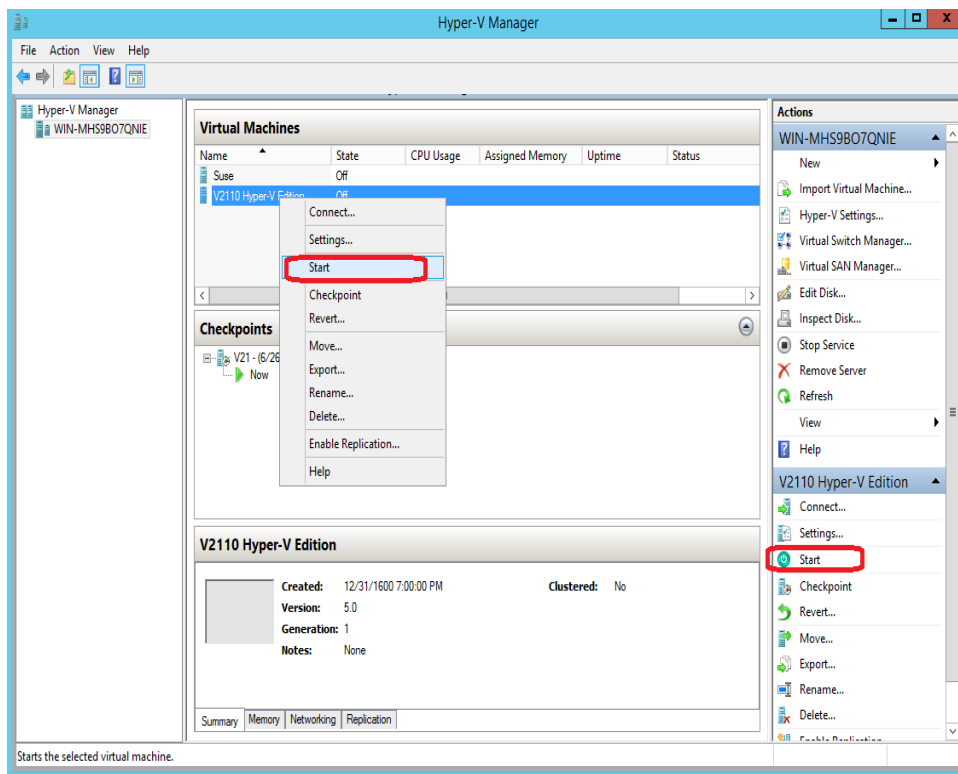
3 V2110 MS Hyper-V Platform Configuration

After the V2110 Wireless Appliance has been deployed on a MS Hyper-V 2012 server using the instructions in [Chapter 2, Virtual Appliance Deployment](#), you are ready to perform initial server configuration.

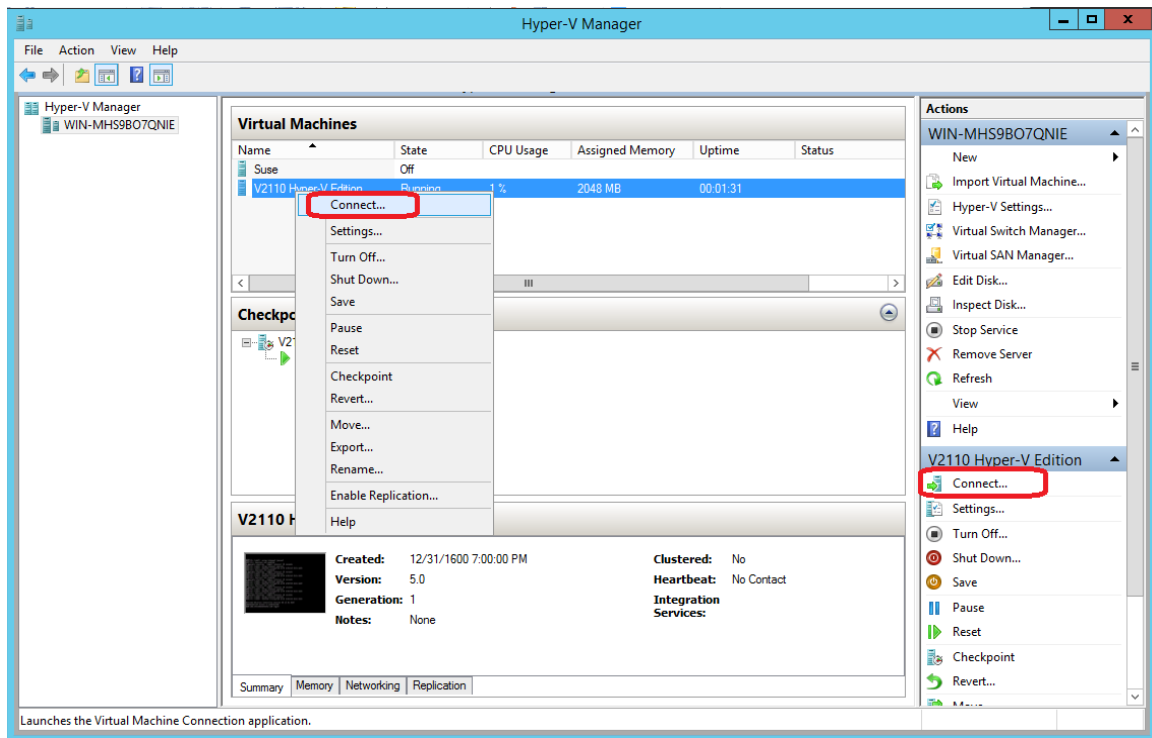
Accessing the V2110 MS Hyper-V Platform Console

To login to the Virtual Machine to perform the initial configuration:

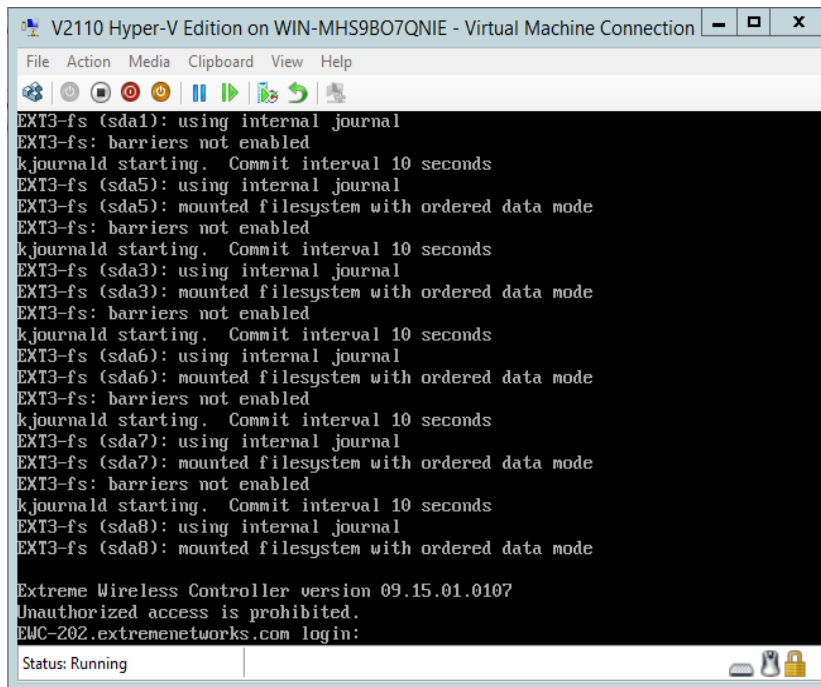
- 1 From the Hyper-V Manager dialog, under Virtual Machines, select the V2110.
- 2 Under Actions, click Start to start the Virtual Machine.



3 Under Actions, click Connect to open the Virtual Machine CLI.



4 The console will prompt for credentials.



NOTE

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

5 Enter the following credentials:

For User Name, enter admin

For Password, enter abc123.

You now are working in the V2110's command line interface (CLI).

Changing the V2110 Management Port IP Address and Appliance Using the CLI

In order to make the appliance accessible remotely, you must configure the virtual appliance admin interface IP address and gateway IP address for the virtual network inside the MS Hyper-V server. To configure the IP address, log in to the appliance CLI through the console as described above. Then enter the following commands:

- 1 At the root level, enter the topology context:
EWC.extremenetworks.com# topology
- 2 Enter the Admin named topology context:
EWC.extremenetworks.com:topology# Admin
- 3 Enter the layer 3 context (note that the first character of the command is an "l", as in "layer"):
EWC.extremenetworks.com:topology:Admin# l3
- 4 Enter the IP address for the admin interface with the ip command:
EWC.extremenetworks.com:topology:Admin:l3# ip 192.168.18.124/24
- 5 Enter the IP address for the gateway to the admin interface with the gateway command:
EWC.extremenetworks.com:topology:Admin:l3# gateway 192.168.18.1
- 6 Apply the ip and gateway command inputs with the apply command:
EWC.extremenetworks.com:topology:Admin:l3# apply

For more information about CLI commands and syntax, see the *IdentiFi Wireless CLI Reference Guide*.

Configuring the V2110 Using the Basic Installation Wizard

The IdentiFi Wireless Software system provides a basic installation wizard that can help administrators configure the minimum settings that are necessary to deploy a fully functioning V2110 on a network.

Administrators can use the basic installation wizard to quickly configure the V2110 for deployment, and then once the installation is complete, continue to revise the configuration accordingly.

The basic installation wizard is automatically launched when an administrator logs on to the V2110 GUI for the first time, including after the system has been reset to the factory default settings.

For more information about using the basic installation wizard, see the *IdentiFi Wireless Getting Started Guide*.

Obtaining a MAC Address Manually from the MS Hyper-V Manager

Activating the V2110 MS Hyper-V Platform requires a license key that must be obtained from Extreme Networks. The license key requires a MAC address that is assigned automatically from the MS Hyper-V Manager. In some cases the administrator may want to take manual control over the assignment of MAC addresses to the appliance physical ports. In that case, the administrator should obtain a MAC address manually. Once assigned, the MAC address is applied against the license key to activate the V2110 Virtual Appliance.

To obtain a MAC address manually from the MS Hyper-V Manager:

- 1 Open the Hyper-V Manager.
- 2 If necessary, install the V2110 Virtual Appliance. For more information, see “[Virtual Appliance Deployment](#)” on page 5.
- 3 If necessary, shut down the V2110 as follows:
 - From the Hyper-V Manager dialog, under Virtual Machines, right-click the name of V2110.
 - Under Actions, click Shut-Down.



NOTE

To ensure graceful shutdown, it is recommended that you shutdown from within the controller itself utilizing the GUI or CLI command.

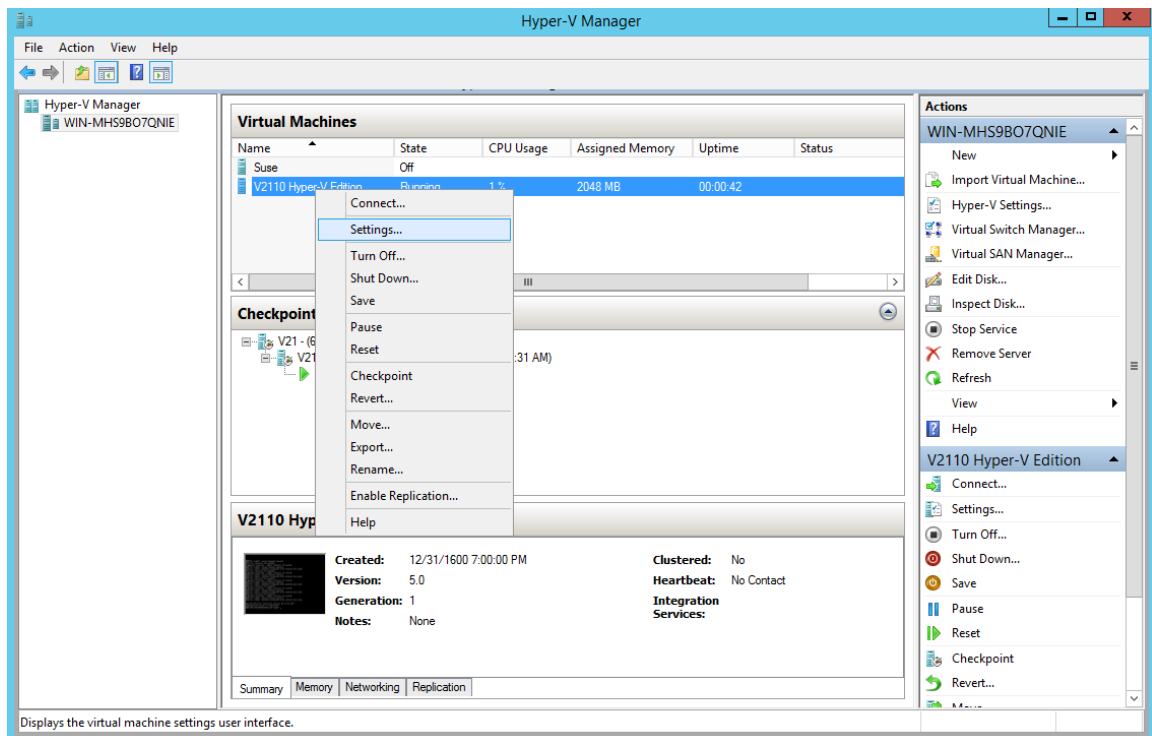
- Click OK to confirm.



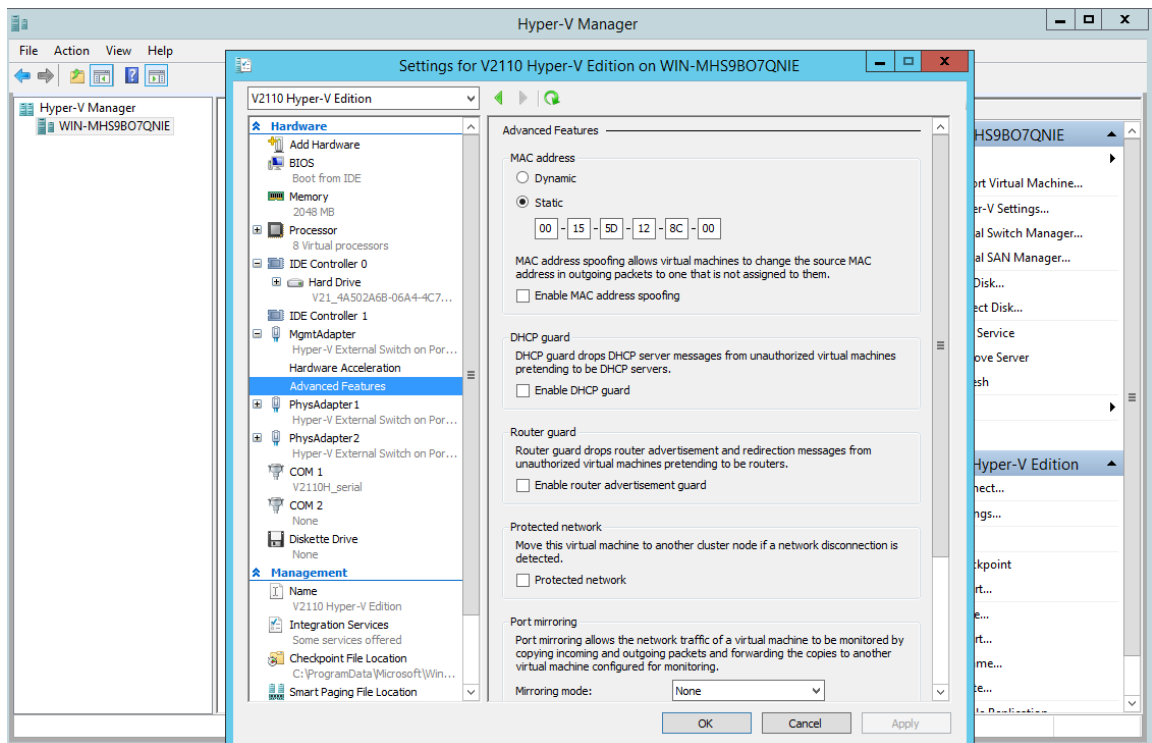
CAUTION

Do not select Turn Off as this will terminate the connection to the V2110.

4 From the Hyper-V Manager dialog, under Actions, click Settings.



5 Under Hardware, select MgmtAdapter, then select Advanced Features.



6 Enter the MAC Address for the V2110's management interface, and click OK.

7 Start the V2110 from the Hyper-V Manager dialog as follows:

- Right click the name of the appliance.
 - From the pull-down menu, click Start.
- From the Wireless Assistant top menu, click Controller. From the left pane, click Administration >Software Maintenance, then click the EWC Product Keys tab.
 - Under License Summary, notice that the Locking ID matches the manually assigned MAC address. Redeem Virtual Appliance licenses, such as the Regulatory Domain key, using this MAC address.

The screenshot displays the EWC Product Keys management interface. The navigation menu on the left includes 'Administration', 'Logs', 'Network', and 'Services'. The 'Administration' section is expanded, showing 'Availability', 'Flash', 'Host Attributes', 'Installation Wizard', 'Login Management', 'Software Maintenance', 'System Maintenance', and 'Web Settings'. The 'Software Maintenance' section is selected, and the 'EWC Product Keys' tab is active. The 'EWC Product Keys' section contains an 'Activation Key' field with the value 'PRDKVNAM-RYPOU0PO-I88SSFJH-N9CHH09K-L20H60YH' and an 'Apply Activation Key' button. Below this is an 'Option Key' field and an 'Apply Option Key' button. The 'License Summary' section shows the 'Locking ID: 00-0C-29-1A-53-14' highlighted with a red box. Other details include 'Regulatory Domain: North America', 'Number of Licensed APs: 57', and 'Number of Licensed APs for Radar: 2'. A 'View Installed Keys' button is located at the bottom right.

4 Configuring Virtual Switches for the Virtual Appliance

The Virtual Appliance has some specific requirements on the virtual switches to which its data plane ports (PhysAdapter1 and PhysAdapter2) are connected. This chapter explains how to create a virtual switch on a Hyper-V host that satisfies these requirements.

This chapter does not replace the MS Hyper-V documentation. The procedures described in this appendix assume that you have already gained access to the Hyper-V Manager using credentials that grant full administrative access to the host server.

Creating a New Virtual Switch on the Host Server

This is an optional step since it is possible to reconfigure the virtual switch created by default when Hyper-V is installed to support VLANs or another acceptable custom virtual switch might be configured on the host. However, using separate virtual switches 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 V2110.

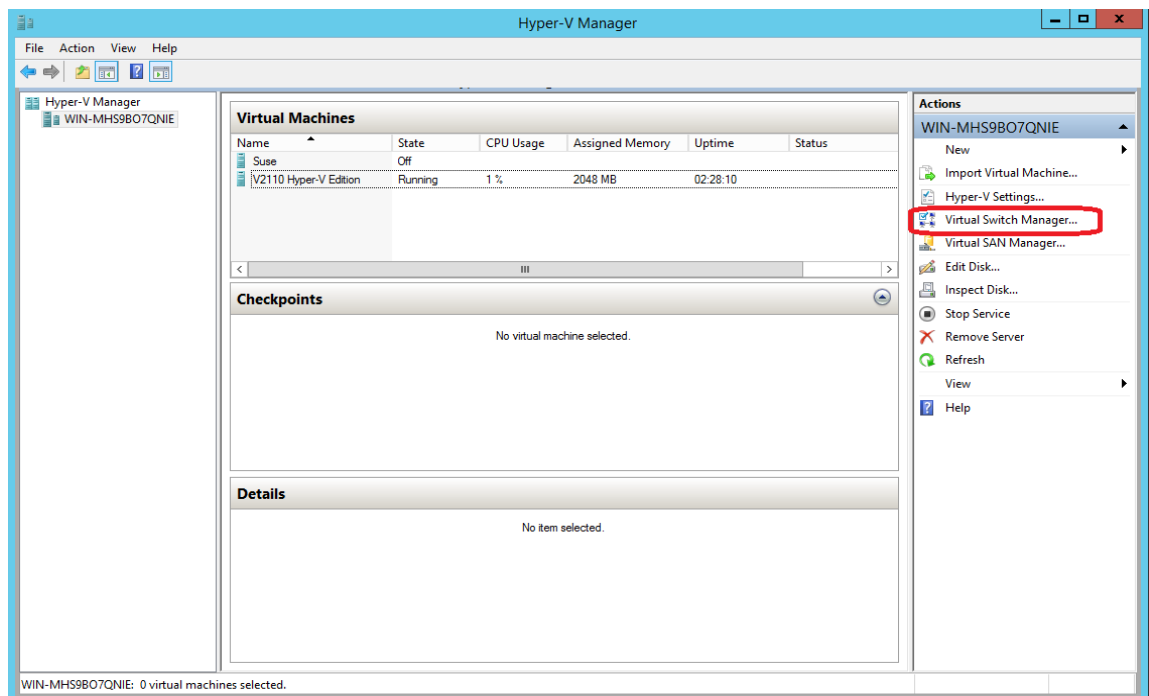


NOTE

Alternatively, it is also possible to define more than one network on a single virtual switch. All networks on the same virtual switch share the NICs assigned to the virtual switch.

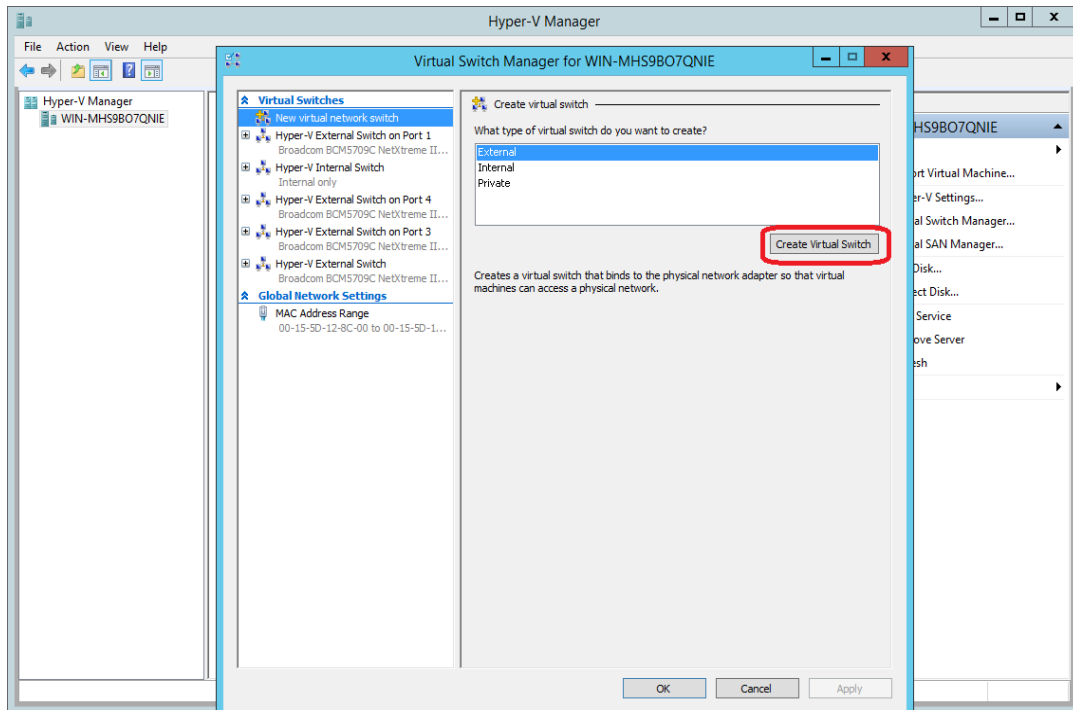
To create the new switch:

- 1 Run the Hyper-V Manager.
- 2 On the Hyper-V Manager dialog, under Actions, click Virtual Switch Manager.



3 Create a Virtual Switch for each data plane interface as follows:

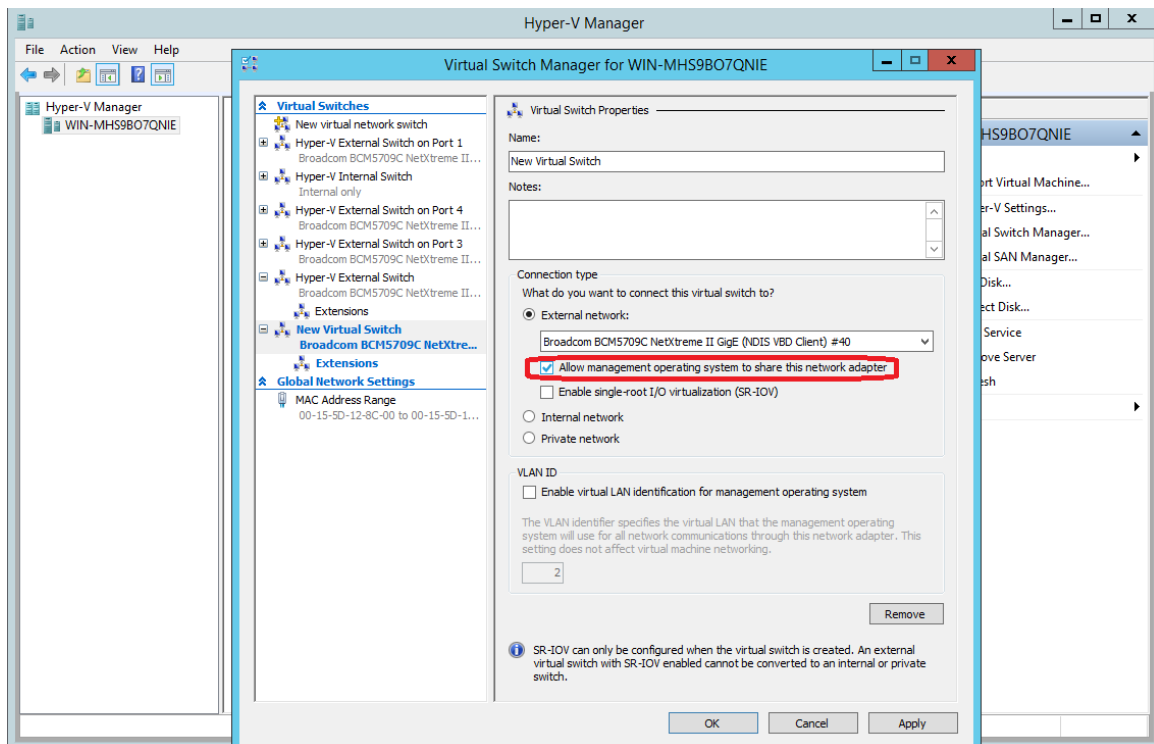
- Under Virtual Switches, select New virtual network switch.
- Under Create virtual switch, select the External type of virtual switch.
- Click Create Virtual Switch.



- Under Connection type, click External network and select Allow management operating system to share this network adapter to change VLAN ID for management operating system.

**NOTE**

The Allow management selection is required only if the external physical network card is going to be shared between multiple virtual machines. For example, here we don't enable this on data port adapters (PhysAdapter1 and 2) having one to one mapping to the physical network cards.

**NOTE**

Only one virtual switch is created in this example, but more can be created by repeating the procedure described above.

- Click OK and Apply.

Cloning a Deployed V2110 Hyper-V Appliance

The above procedures cover deploying a new V2110 appliance image to Hyper-V. It is also possible to clone a deployed Hyper-V V2110 and then deploy the clone. Care must be taken in this case to carefully manage the MAC addresses of the clones.

When Windows clones a VM it copies the VM's currently assigned MAC addresses to the VM. If the image that was cloned is running when the clone is started, the clone will replace its MAC addresses with new ones. The controller that was cloned retains its MAC address in this case.

If the original VM is not running when the clone starts, the clone will keep and use the MAC addresses belonging to the original VM. When the original VM starts it will change to new MAC addresses. This will invalidate licenses installed on the original V2110. If the original V2110 is running when the clone starts, the clone will be assigned new MAC addresses.

This is a hyper-V issue that cannot be helped by the V2110. One workaround is to always use statically (manually) assigned MAC addresses for each V2110 interface.

Another workaround is to ensure that the original controller (and all clones derived from it) are running at the moment a new derivative clone is created.