

FusionHub

SpeedFusion Virtual Appliance

User Manual and Installation Guide

May 2019

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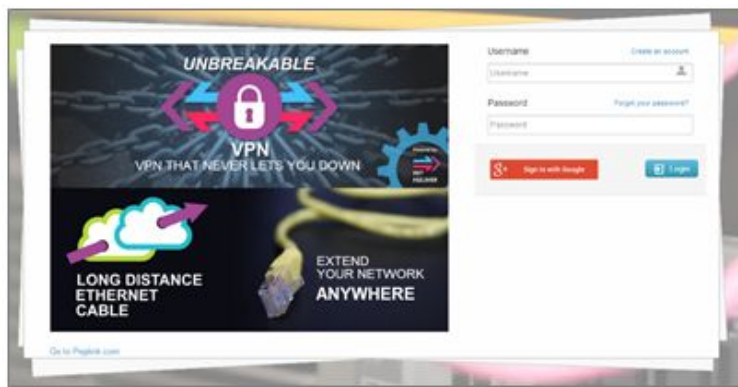
1. Purpose

This manual is a step-by-step guide to building a Peplink FusionHub server.

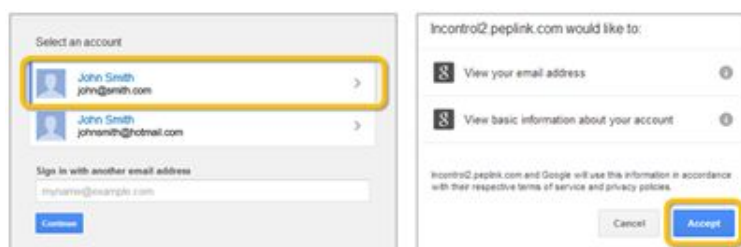
2. FusionHub License Generation

If you already have set up an InControl 2 account, please skip to step 5

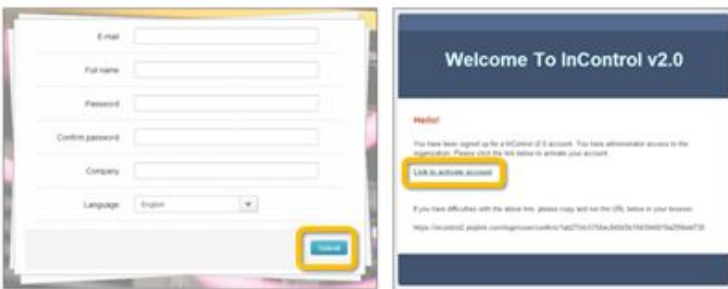
1. To obtain FusionHub evaluation license information and download the FusionHub ISO file from InControl 2, first sign in.



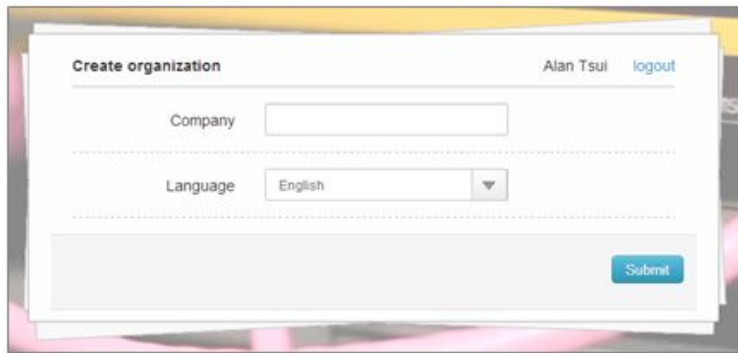
To sign in with Gmail, click **Sign in with Google**, choose your account, and then grant InControl 2 permissions.



To sign in without Gmail, click **Login** and enter your information. Next, click the link found in your confirmation email. Return to the first screen to enter your username and password.



2. Once you successfully login, InControl 2 will prompt you to name your organization and choose your language.



3. Name your group, choose a local time zone, and specify your location. Click **Create group** to finish.

Important: Name your group

Group name:

This name identifies your group in Dashboard. It will also be used as the name for your first SSID.


Group time zone

Local time zone:

Address

Country:

Address:



Map

Location:

[Map Data](#) [Terms of Use](#) [Report a map error](#)

[Create group](#) [Cancel](#)

- On the **Add devices into groups** dialog, click **Cancel** to skip this step and create the group.

Add devices into groups

InControl 2 can check the warranty status of the following devices:

- Peplink Balance family
- Pepwave MAX family
- Pepwave Surf SOHO

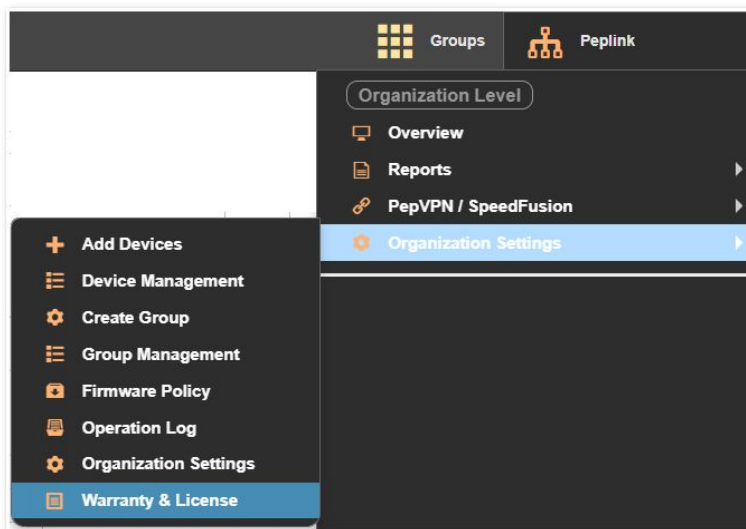
For InControl 2 to manage a device, it needs to meet the following criteria:

- Device needs to be in warranty
- Device needs to run Firmware version 6.1

Serial numbers:
(Comma, space or carriage return separated)

e.g.: XXXX-XXXX-XXXX

- To obtain an evaluation license, navigate to **Organization>Settings>Warranty & License**.



6. On the “Warranty Status” screen, click the **Acquire FusionHub License** button.

The screenshot shows the InControl2 interface. The top navigation bar includes 'Overview', 'Reports', 'PepVPN / SpeedFusion', 'Organization Settings', and 'Warranty & License'. The 'Warranty & License' section is active. Below the navigation bar, there's a 'Service Status' section with a filter dropdown set to 'ALL' and a search bar. A table lists devices with columns: Device Name, Product, Group, Service Status, and Service Expiration Date. Below this table is a 'Download as CSV' link. The 'FusionHub Licenses' section has a search bar and a 'Show expired evaluation license' checkbox. A table lists licenses with columns: Serial Number, FusionHub License Key, Max. Peers, Max. Bandwidth (Mbps), License Type, Activation Date, Evaluation Expiry Date, Warranty Expiry Date, Last Updated, and Release License Key. At the bottom of this section, there are buttons for 'Import FusionHub License', 'Import', 'Acquire FusionHub License...', 'Download as CSV', 'Download FusionHub', and 'Acquire FusionHub AMI for AWS EC2'. The 'Acquire FusionHub License...' button is highlighted with an orange box.

To download the FusionHub, click the **Download FusionHub** button located below the **Acquire FusionHub License** button.

Alternatively you can import an existing FusionHub License Key or acquire a FusionHub Amazon Machine Image for AWS EC2.

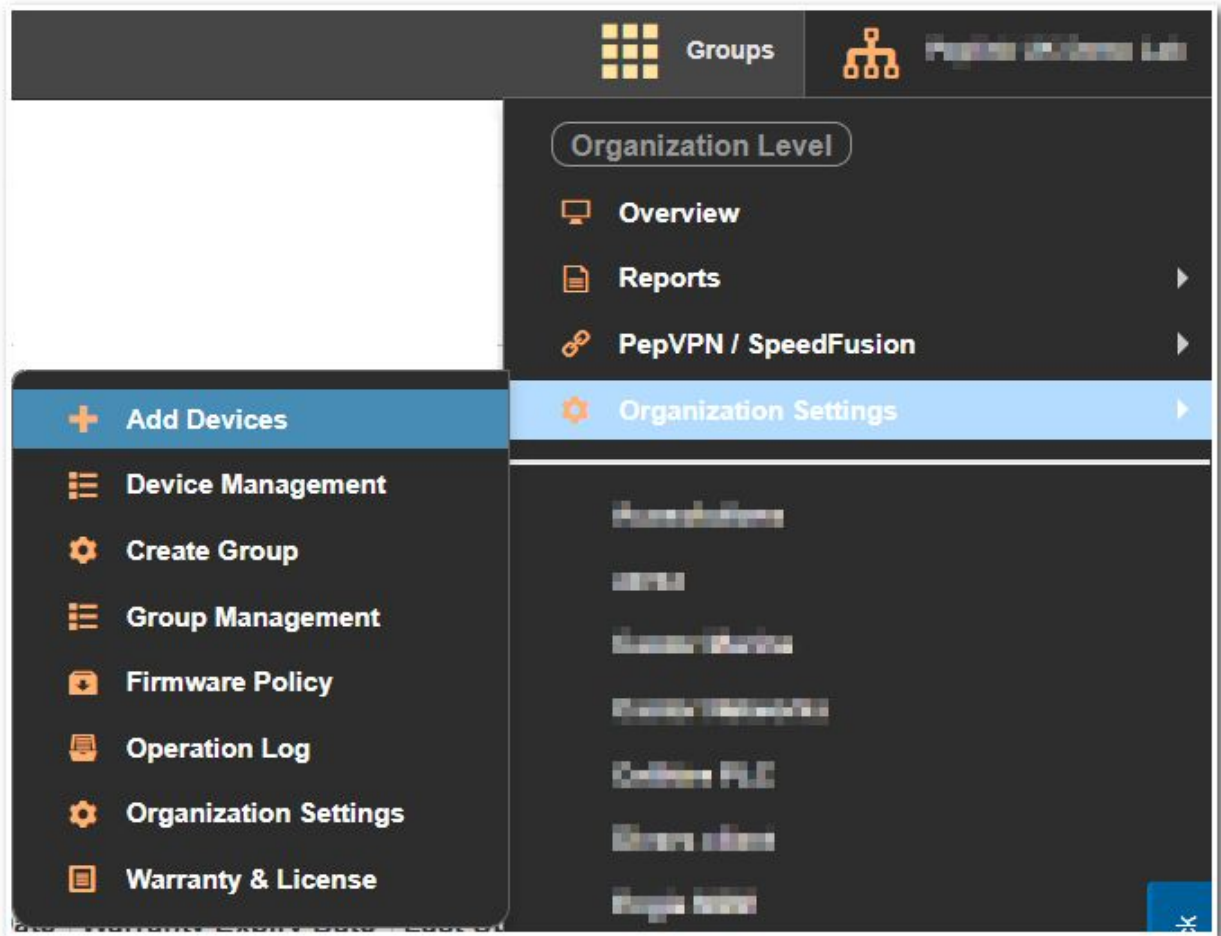
After selecting the **Acquire FusionHub License Button** a window pops up which allows you to select a temporary Evaluation License or a permanent Solo License.

Type of FusionHub License to Acquire

- ☐ Evaluation License (10 peers, 100 Mbps, 8 left)
- ☐ Solo License (1 peer, 100 Mbps)

Acquire
Cancel

7. InControl 2 will send the license information to the email address used to login. Follow the steps in the email to add a virtual router using your FusionHub serial number.
8. To add FusionHub onto your organization, navigate to **Organization>Settings>Add Devices**.



9. Enter the serial number from your license information email. Click **Add devices** and continue your FusionHub installation.

Add Devices Into Groups

InControl 2 can check the warranty status of the [following devices](#):

- Peplink Balance family
- Pepwave MAX family
- Pepwave Surf SOHO
- Pepwave Access Points
- Peplink FusionHub

For InControl 2 to manage a device, it needs to meet the [these criteria](#).

Select Group

Select Tag(s)

Serial numbers:
(Comma, space or carriage return separated)

3. FusionHub Download

For all VM platforms besides Amazon Web Services, please download FusionHub from the Peplink website by following the link below:

<https://www.peplink.com/products/fusionhub/>

Please scroll down to the section below to download the FusionHub base image for installation:

Try FusionHub for Free Today

Test FusionHub in your own equipment with a free 30-day trial and see for yourself. Our evaluation guide will provide the download links and the instructions to get started.

DOWNLOAD FUSIONHUB

For Amazon Web Services, please refer to page 66 for instructions on how to download and install.

** Please upgrade to the latest firmware **after** the FusionHub installation is completed.*

4. FusionHub Deployment

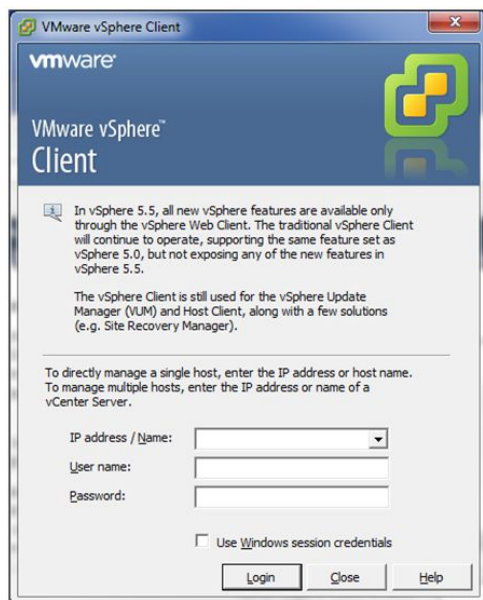
This section will show how to implement FusionHub on VMware (ESXi server, Workstation, Player), Oracle VirtualBox, Citrix XenCenter, Microsoft Hyper-V, and Amazon Web Services. Please select your VM platform:

4.1 VMware ESXi Server	8
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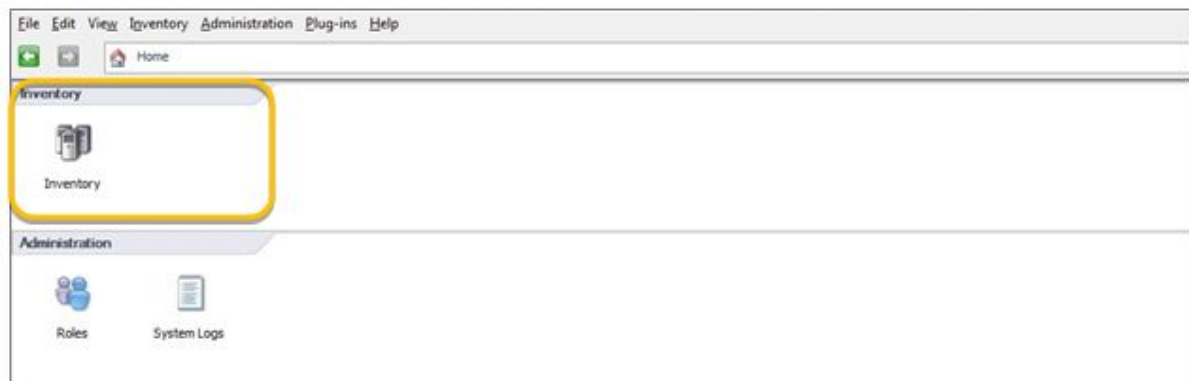
4.1 VMware ESXi Server

1. Download **VMware ESXi 5.5.0** from www.vmware.com/go/download-vmware and install it.

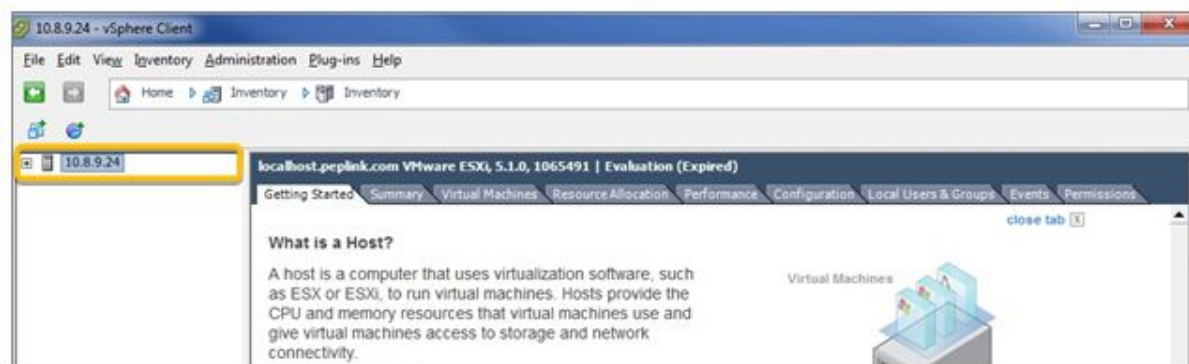
2. For VMware vSphere server installation hardware requirements, refer to <http://www.vmware.com/products/vsphere-hypervisor/gettingstarted.html>
3. Open **VMware vSphere**. Enter the appropriate **IP address / Name**, **User name**, and **Password**. Click **Login** to login to the ESXi server. **Make sure that your computer and ESXi server are on the same network.** If your computer and ESXi server are not on the same network, you won't be able to connect to FusionHub's Web admin interface, even though you can remotely access the ESXi server through a router. Follow the steps found in **4 FusionHub Interface Configuration** to connect to FusionHub's Web admin interface.



4. After successfully logging in, click **Inventory**. The remaining contents of this section will cover deploying a FusionHub virtual machine to your ESXi server.



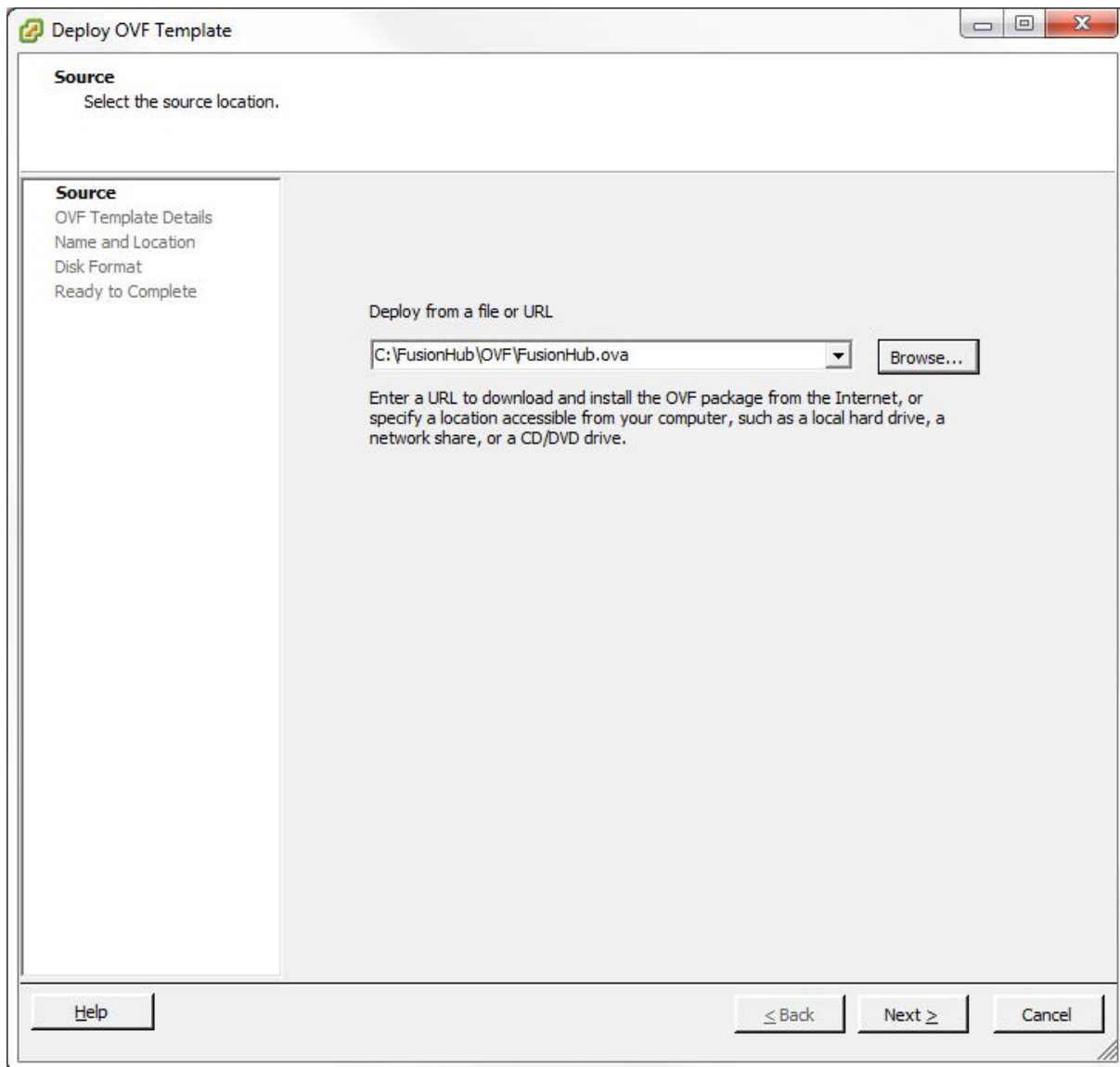
- Click the **inventory object** to begin deploying the OVF template.



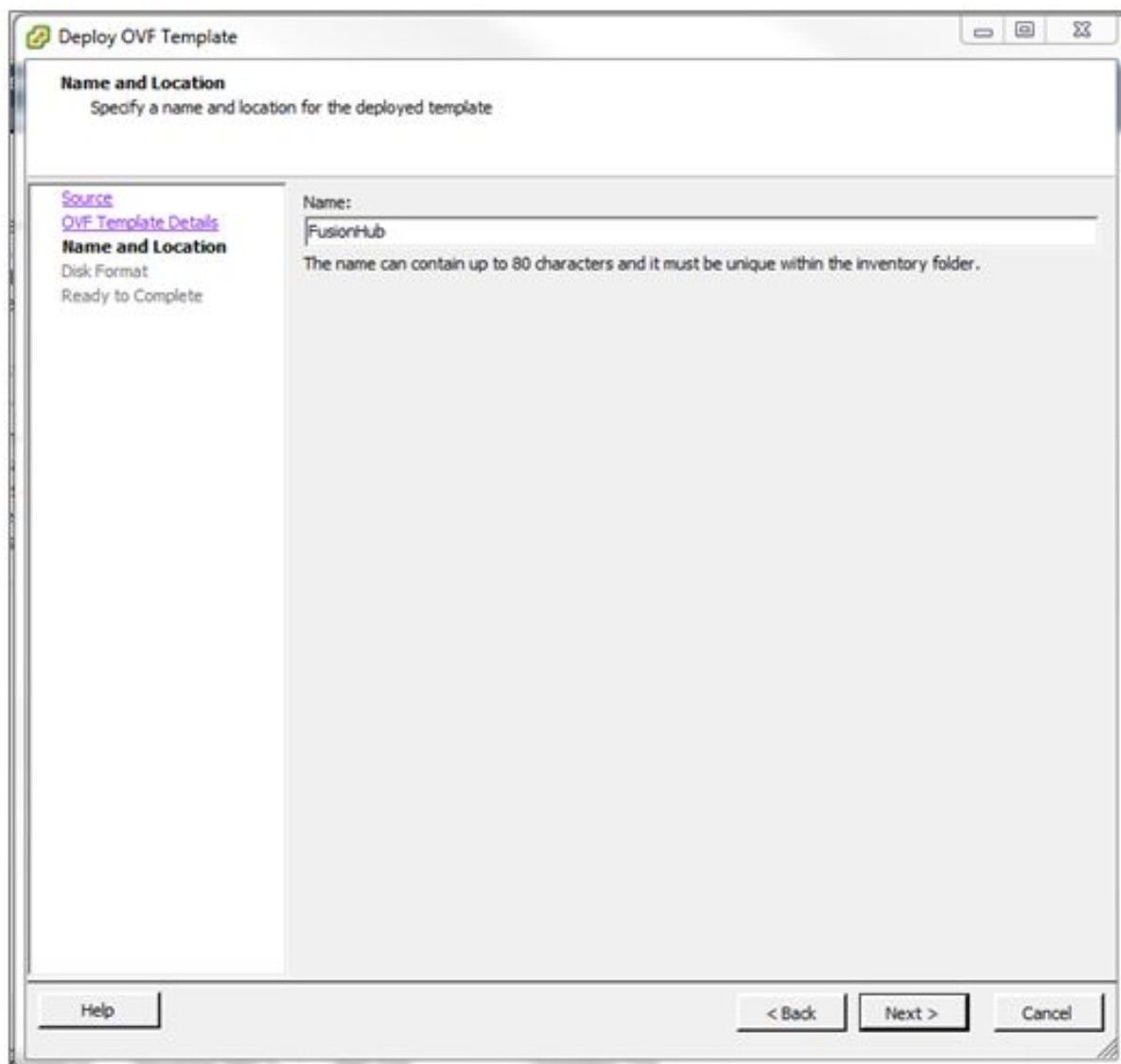
- Click File > Deploy OVF Template... to deploy the FusionHub OVF template downloaded from InControl 2. In order to deploy the OVF template successfully, please make sure that your ESXi server supports virtual machine version 8, which runs on VMware ESXi 5.5 and later.



7. On the **Source** dialog of the **Deploy OVF Template** wizard, click **Browse**. Locate the FusionHub.ova template file on your computer and click **Next**.



8. On the **Name and Location** dialog, type a **name** or keep the default setting. Click **Next**.



9. Keep the default settings on the **Disk Format** dialog. Click **Next**.

Deploy OVF Template

Disk Format
In which format do you want to store the virtual disks?

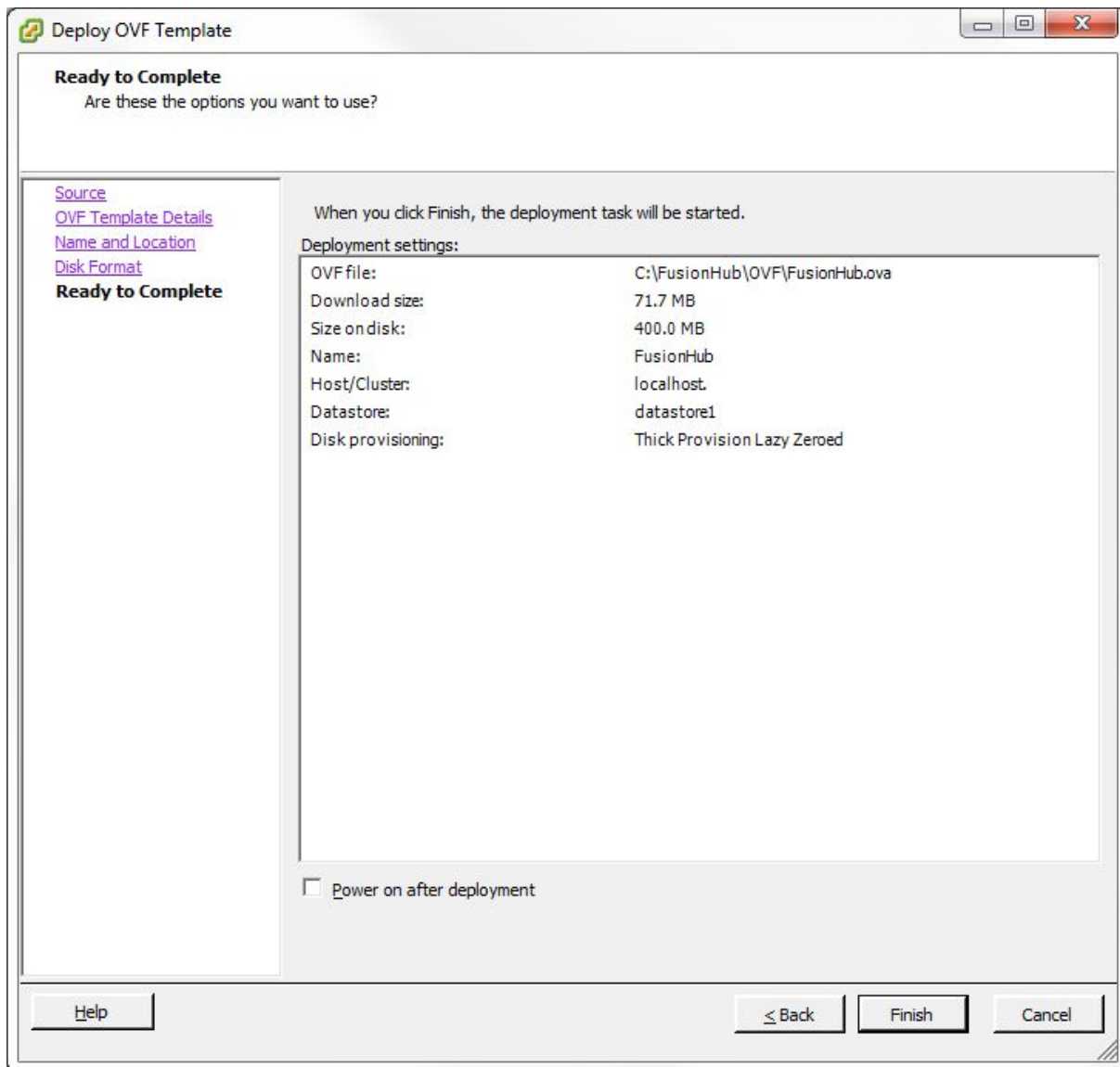
[Source](#)
[OVF Template Details](#)
[Name and Location](#)
Disk Format
Ready to Complete

Datastore:

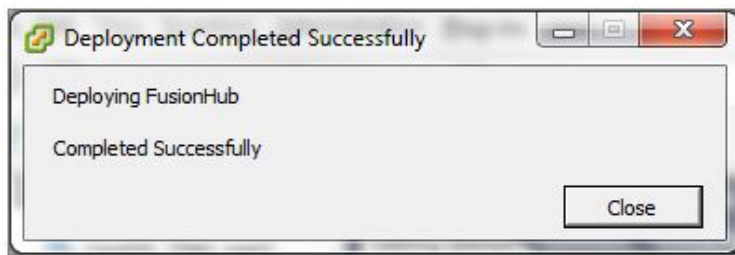
Available space (GB):

☒ Thick Provision Lazy Zeroed
☐ Thick Provision Eager Zeroed
☐ Thin Provision

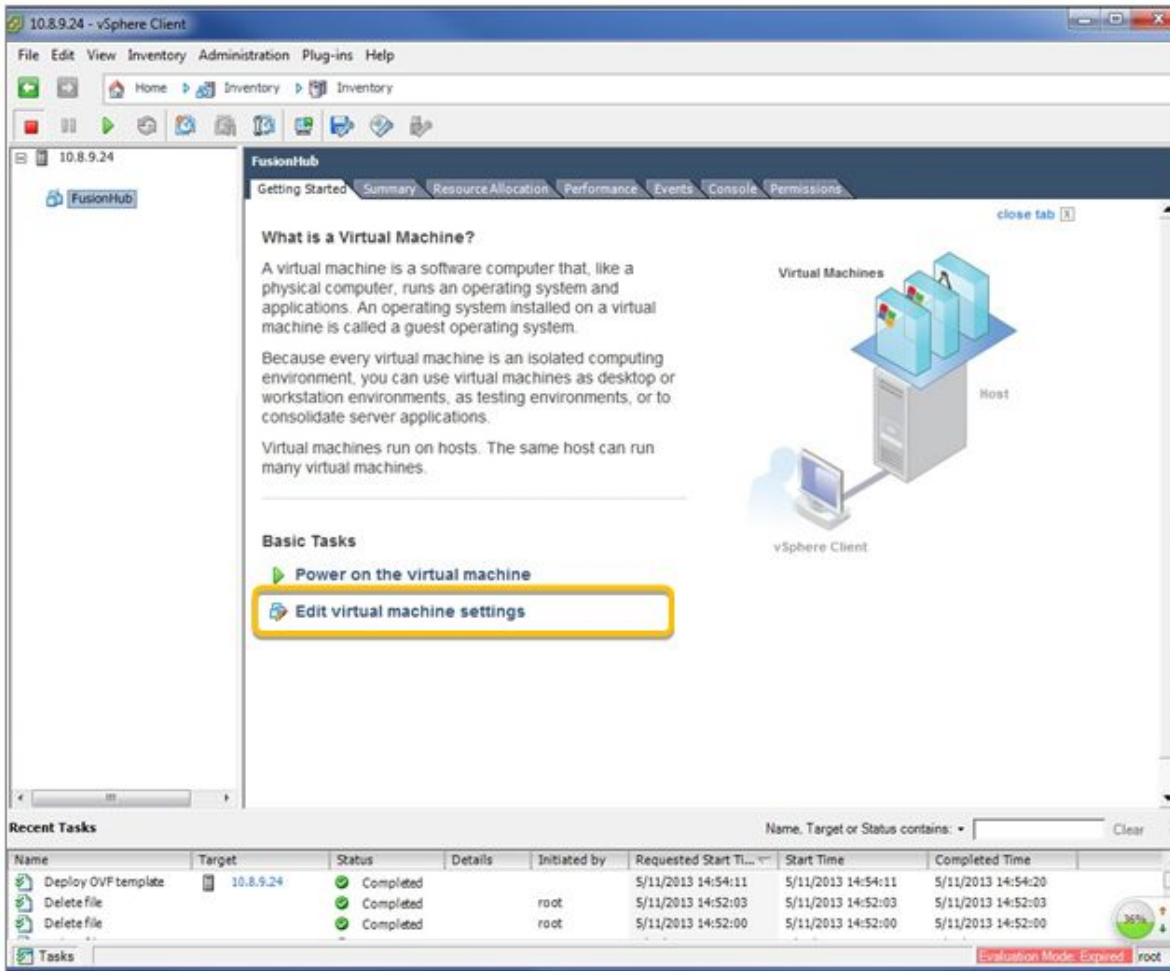
10. On the **Ready to Complete** dialog, review the deployment settings. Click **Finish** to complete the process and close the wizard.



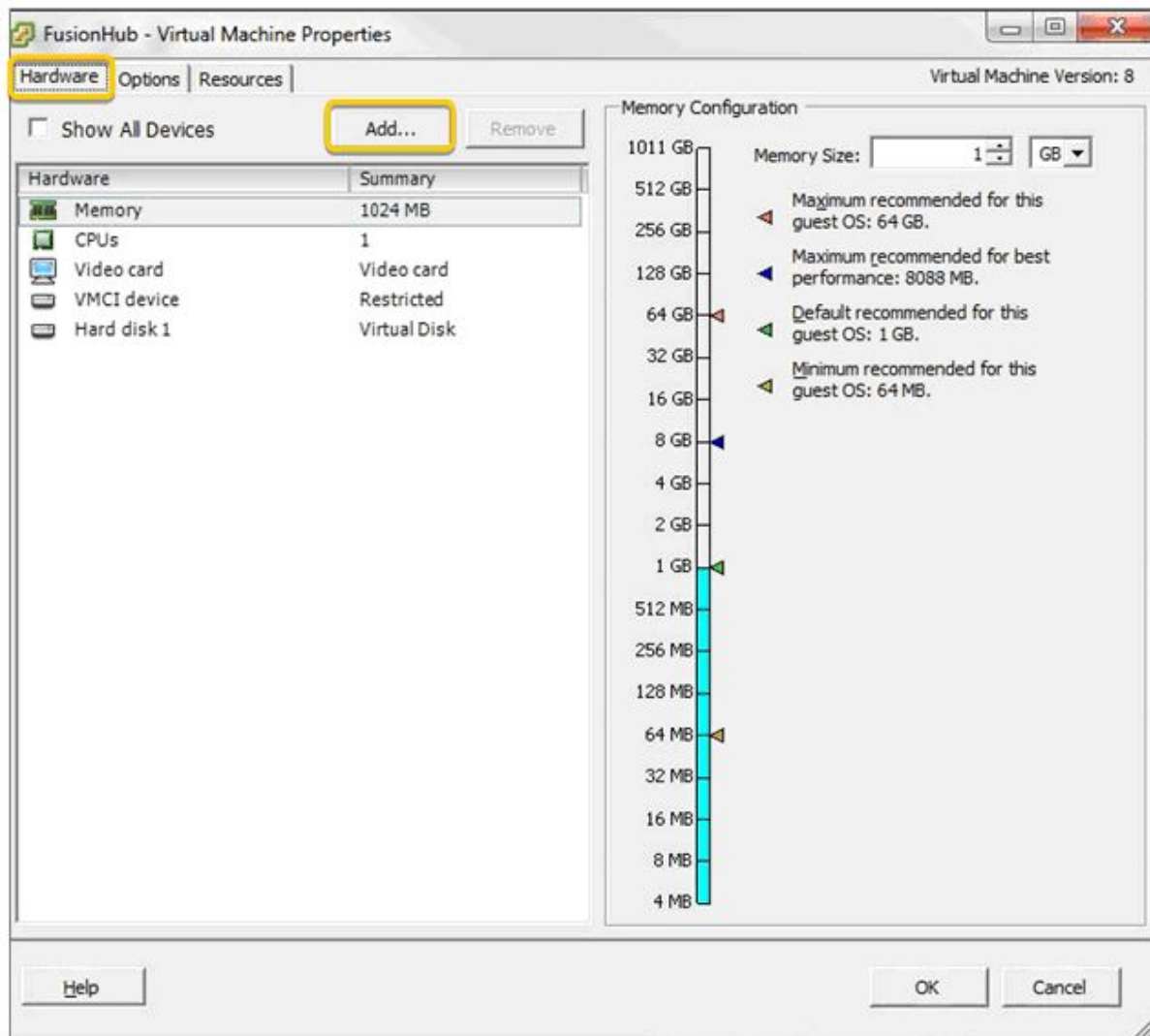
11. Once you have completed the steps above, a FusionHub virtual machine is created.



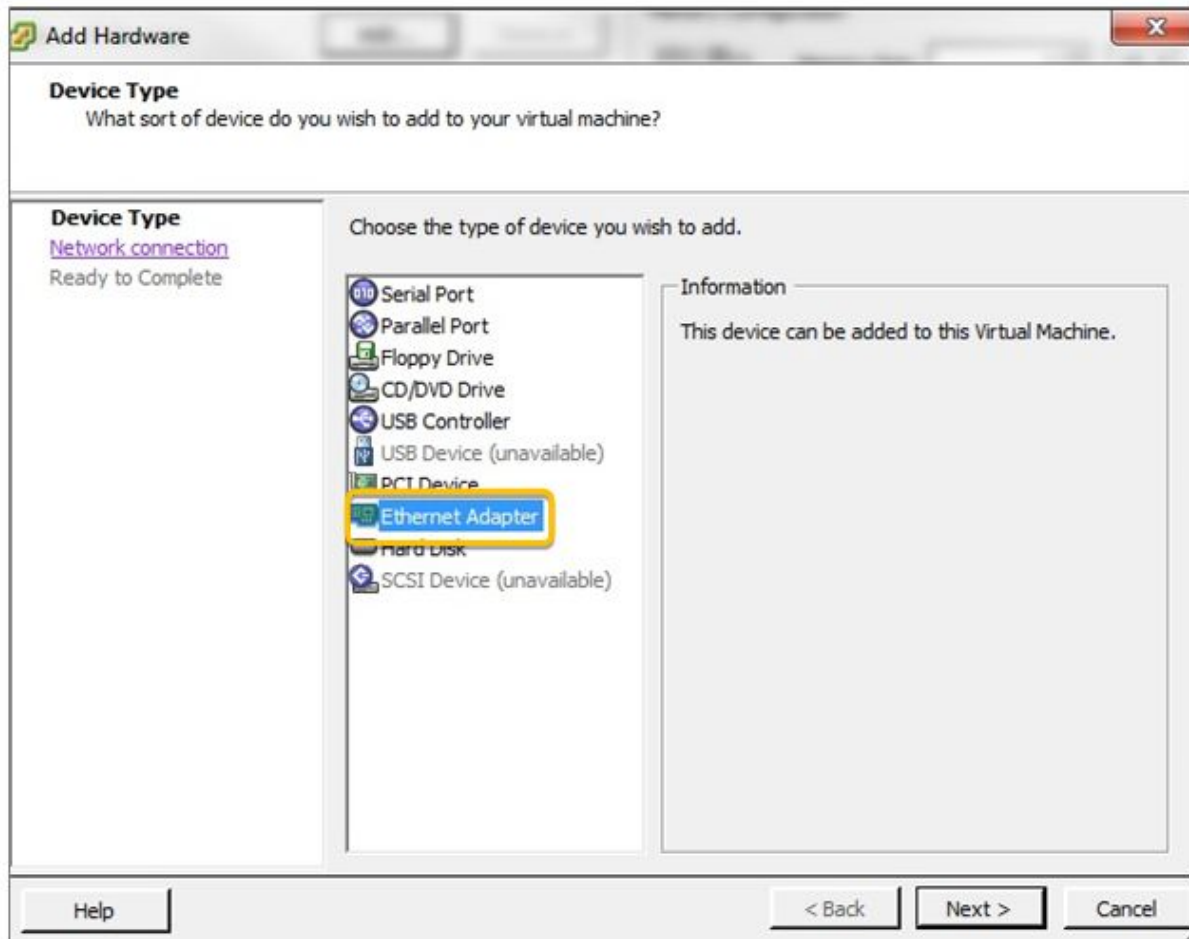
12. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter to the FusionHub virtual machine.



13. Click Add, found under the Hardware tab on the FusionHub – Virtual Machine Properties dialog.



14. On the **Add Hardware** dialog, select **Ethernet Adapter**. Click **Next**.



15. On the **Network Type** dialog, select **VMXNET 3** as the **Adapter Type**. Select the appropriate network and port settings from the drop-down menus under **Network Connection**.
16. Check **Connect at power on** to connect the NIC when the virtual machine is powered on.
17. Click **Next**.

Add Hardware

Network Type
What type of network do you want to add?

[Device Type](#)
Network connection
[Ready to Complete](#)

Adapter Type
Type: **VMXNET 3**

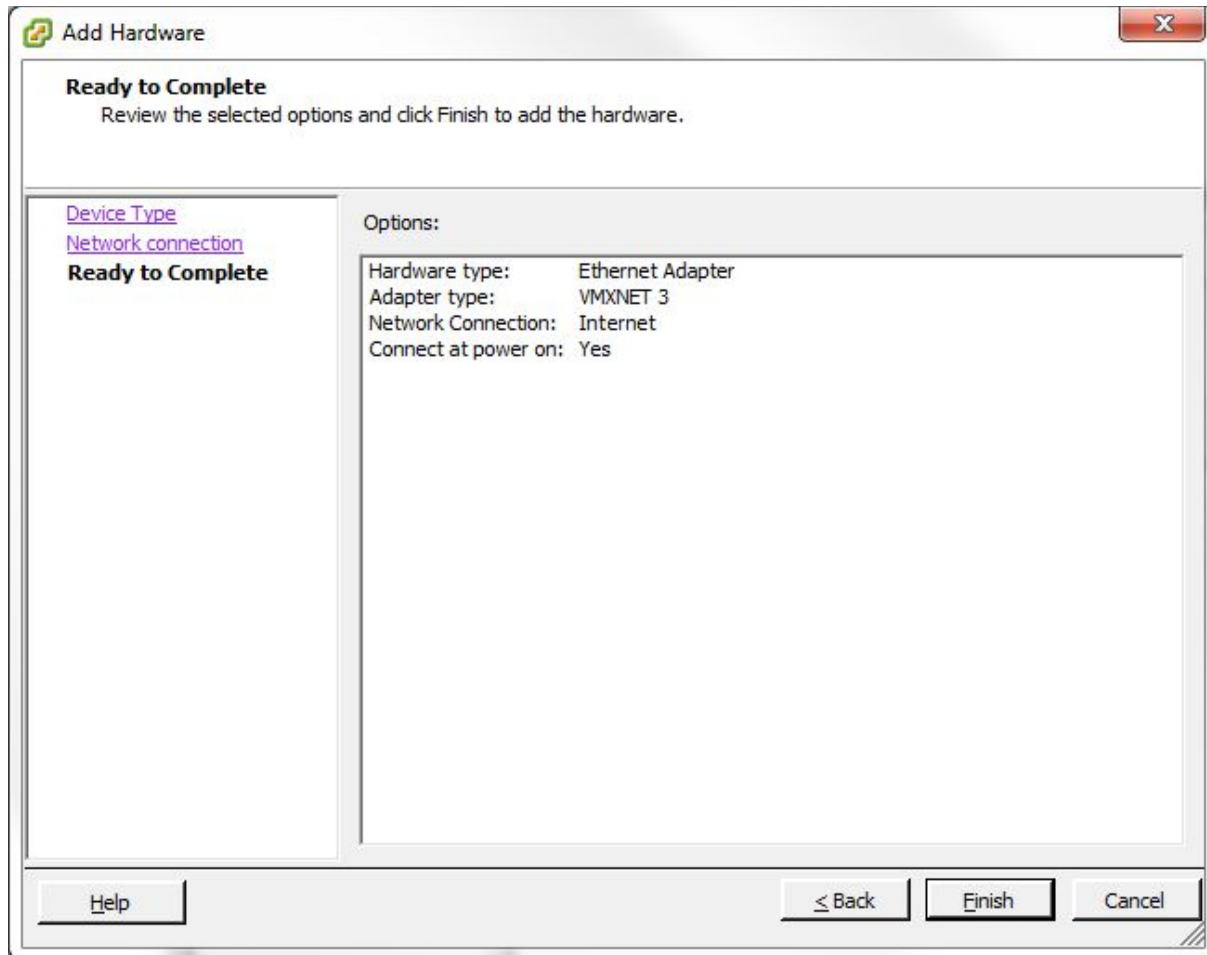
Adapter choice can affect both networking performance and migration compatibility. Consult the [VMware KnowledgeBase](#) for more information on choosing among the network adapters supported for various guest operating systems and hosts.

Network Connection
Network label:
Internet
Port: N/A

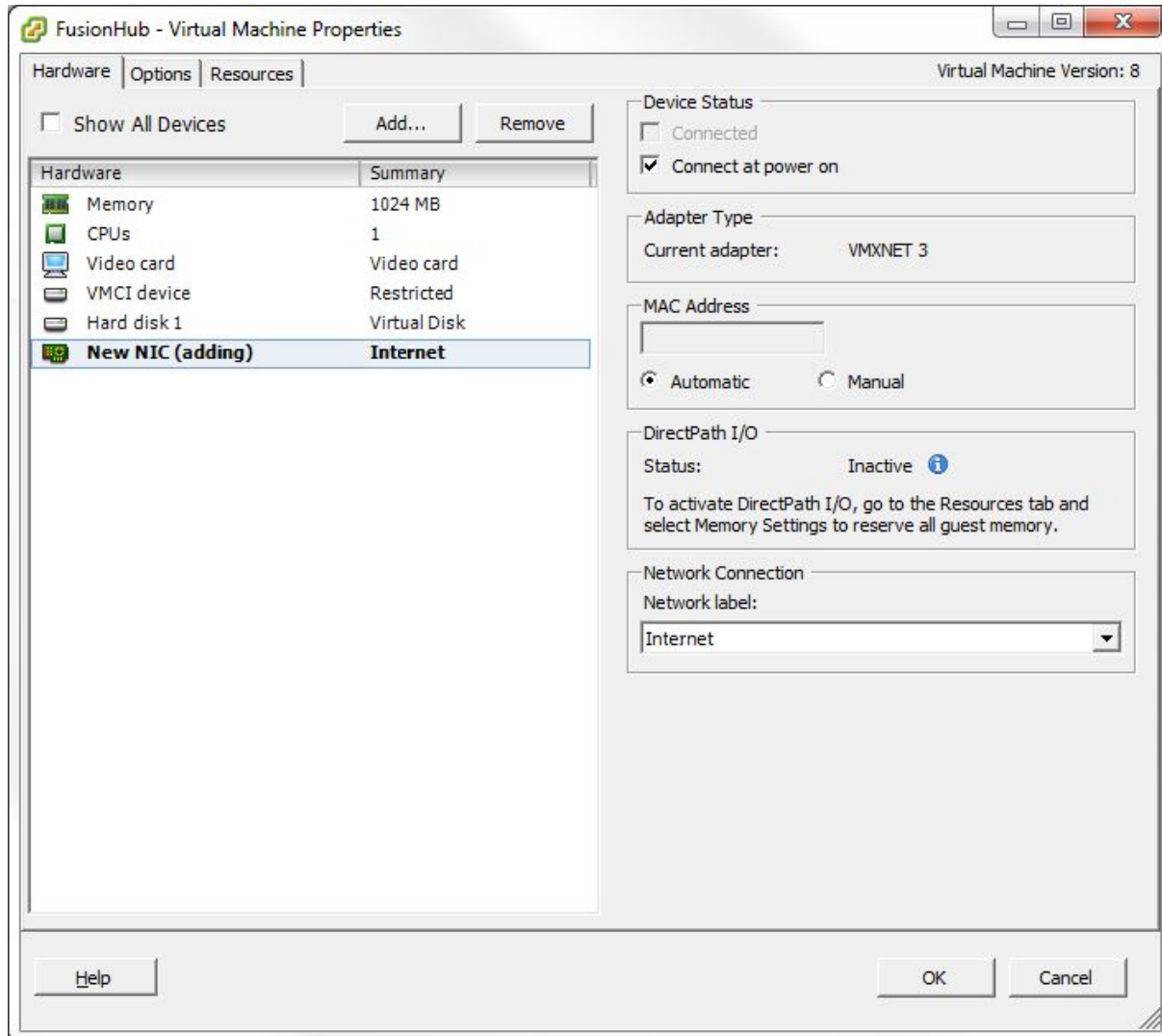
Device Status
☒ Connect at power on

[Help](#) < Back Next > Cancel

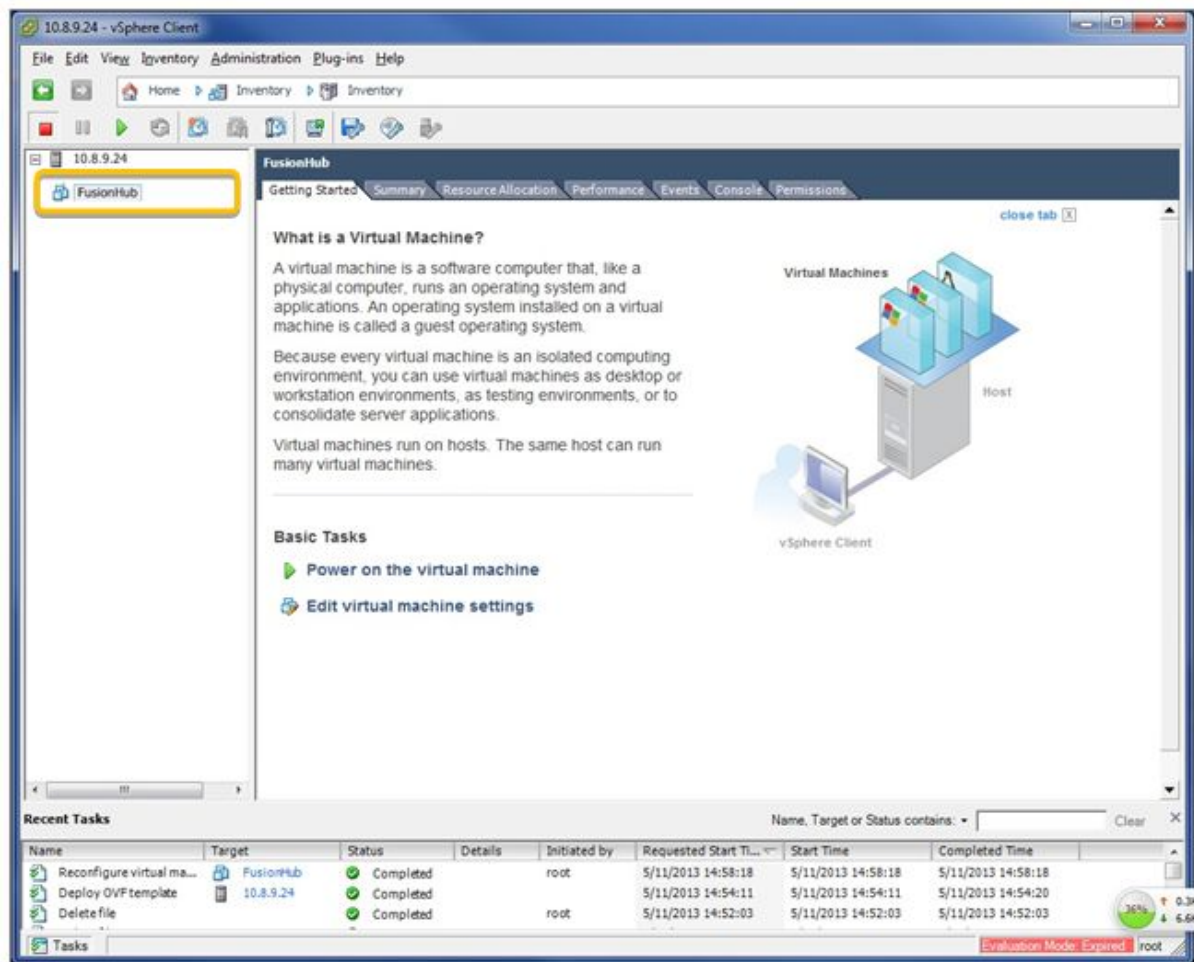
18. On the **Ready to Complete** dialog, review your settings and click **Finish**.



19. Click **OK** to finish adding hardware.



20. Click Power on the virtual machine to run FusionHub.



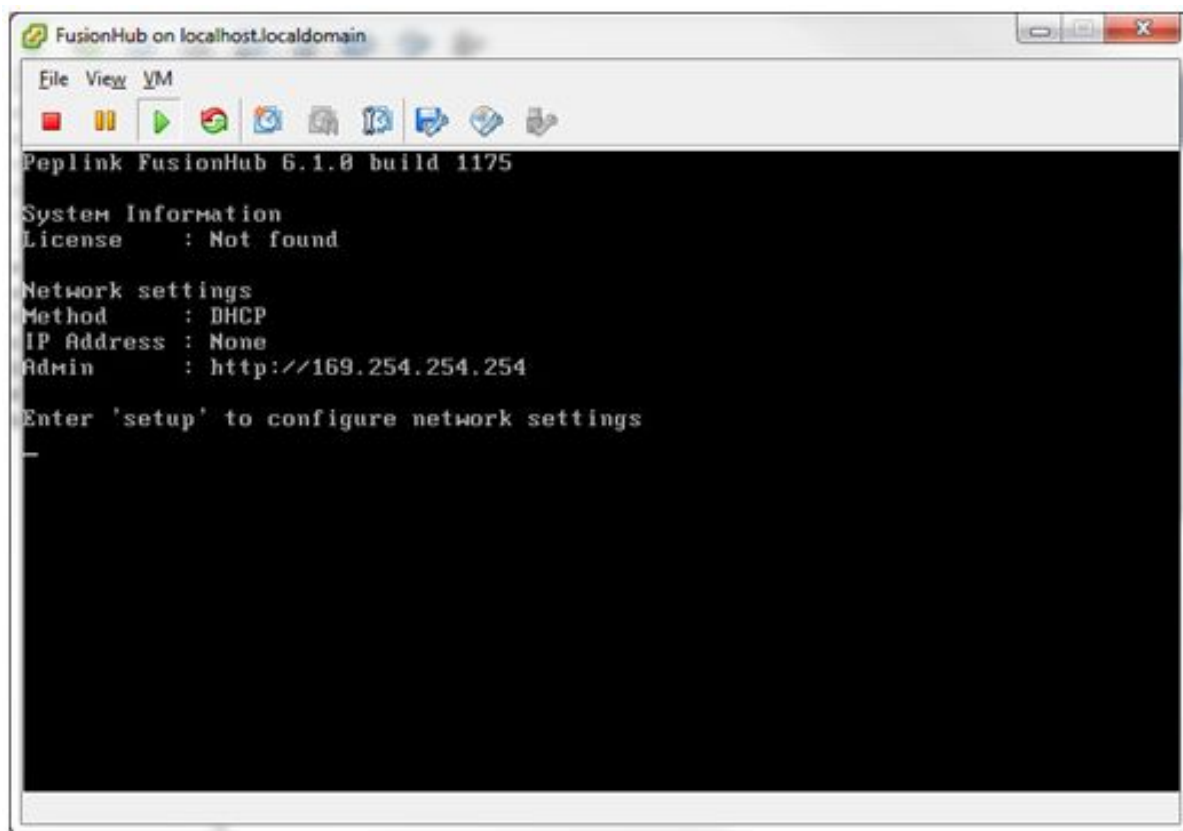
21. When the FusionHub virtual machine is powered on, right-click **FusionHub**. Select **Open Console** for general information about FusionHub, including:

- FusionHub version
- System information
- Network settings:

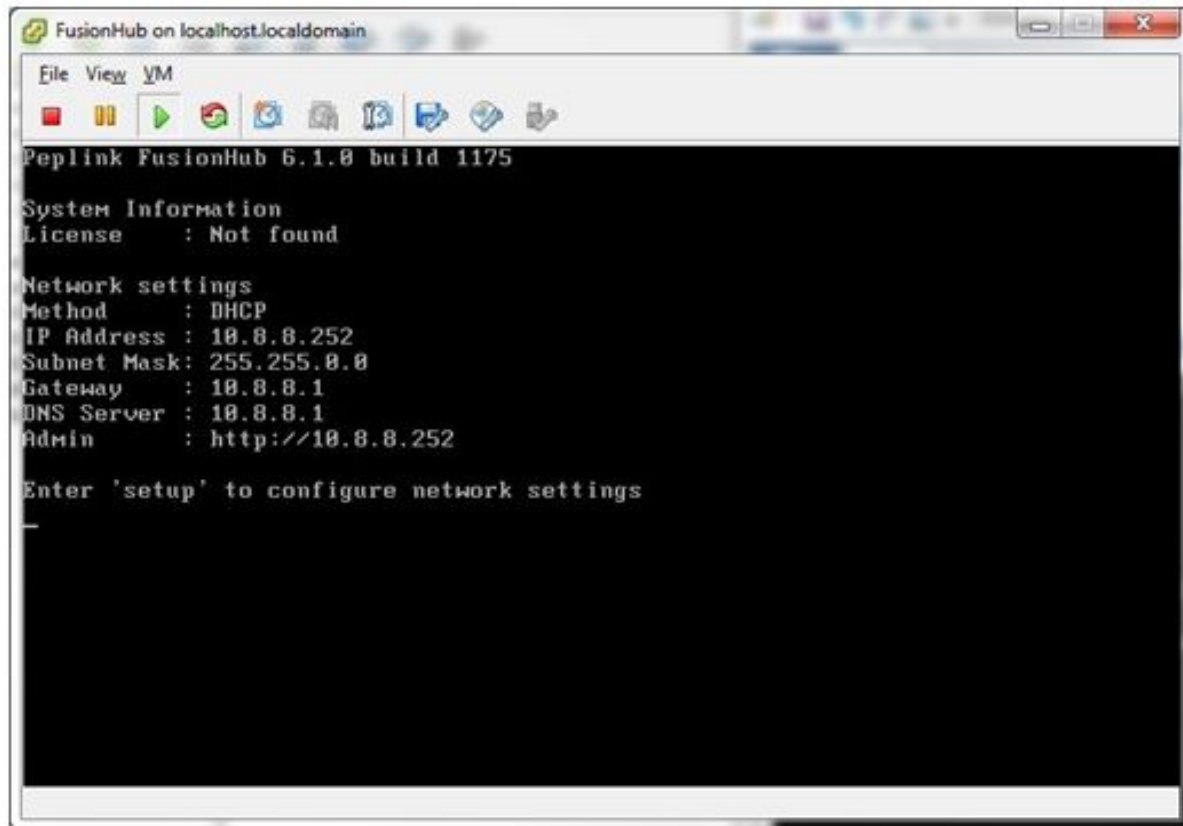
Method: DHCP

IP Address: None

Admin: <http://169.254.254.254>



22. The default WAN connection method is DHCP. If the DHCP server is available on your network, the FusionHub IP address will be automatically obtained by the DHCP server. In this case, the console will look similar to the following:

A screenshot of a Peplink FusionHub console window. The window title is "FusionHub on localhost.localdomain". The menu bar shows "File", "View", and "VM". The toolbar contains icons for running, pausing, and other VM controls. The console output shows the following text:

```
Peplink FusionHub 6.1.0 build 1175

System Information
License      : Not found

Network settings
Method       : DHCP
IP Address   : 10.8.8.252
Subnet Mask  : 255.255.0.0
Gateway      : 10.8.8.1
DNS Server   : 10.8.8.1
Admin        : http://10.8.8.252

Enter 'setup' to configure network settings
_
```

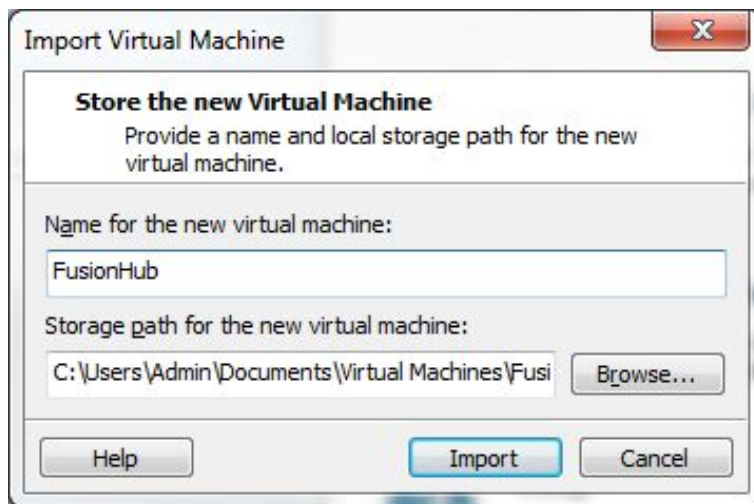
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.2 VMware Workstation

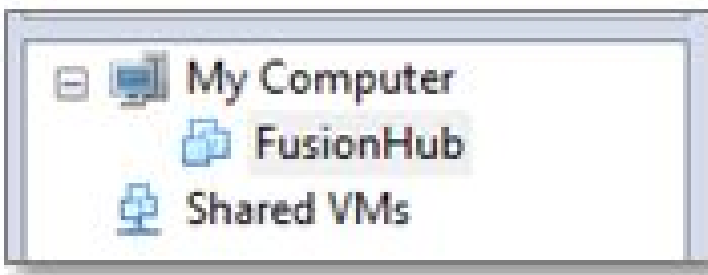
1. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter to the FusionHub virtual machine.
2. Download **VMware Workstation 10** from <http://www.vmware.com/products/workstation/> and install it. For VMware Workstation installation hardware requirements, refer to <http://pubs.vmware.com/workstation-10/index.jsp?topic=%2Fcom.vmware.ws.using.doc%2FGUID-55FF3F07-6C2E-41F7-B361-C7D870BCC4D7.html>
3. Open VMware Workstation and deploy the OVF template.
4. Click **File > Open** to open the FusionHub.ova template downloaded from InControl 2.



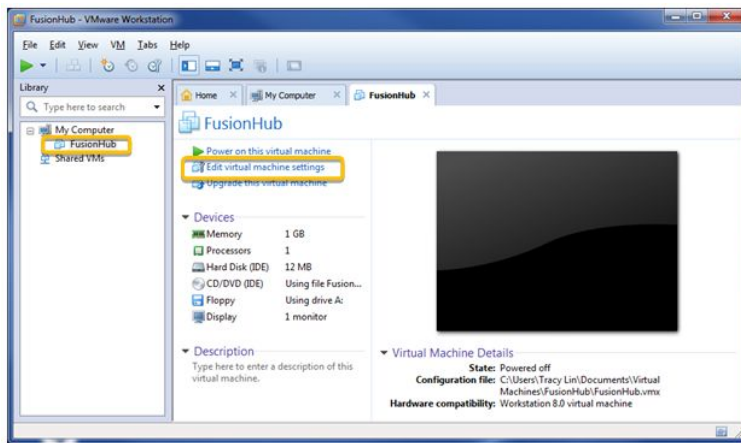
5. On the Store the new Virtual Machine dialog, type a name for the new virtual machine (i.e., FusionHub) and select the storage path. Please note that the storage path for this FusionHub virtual machine should not be the same as for the downloaded FusionHub OVF template file. Click Import.



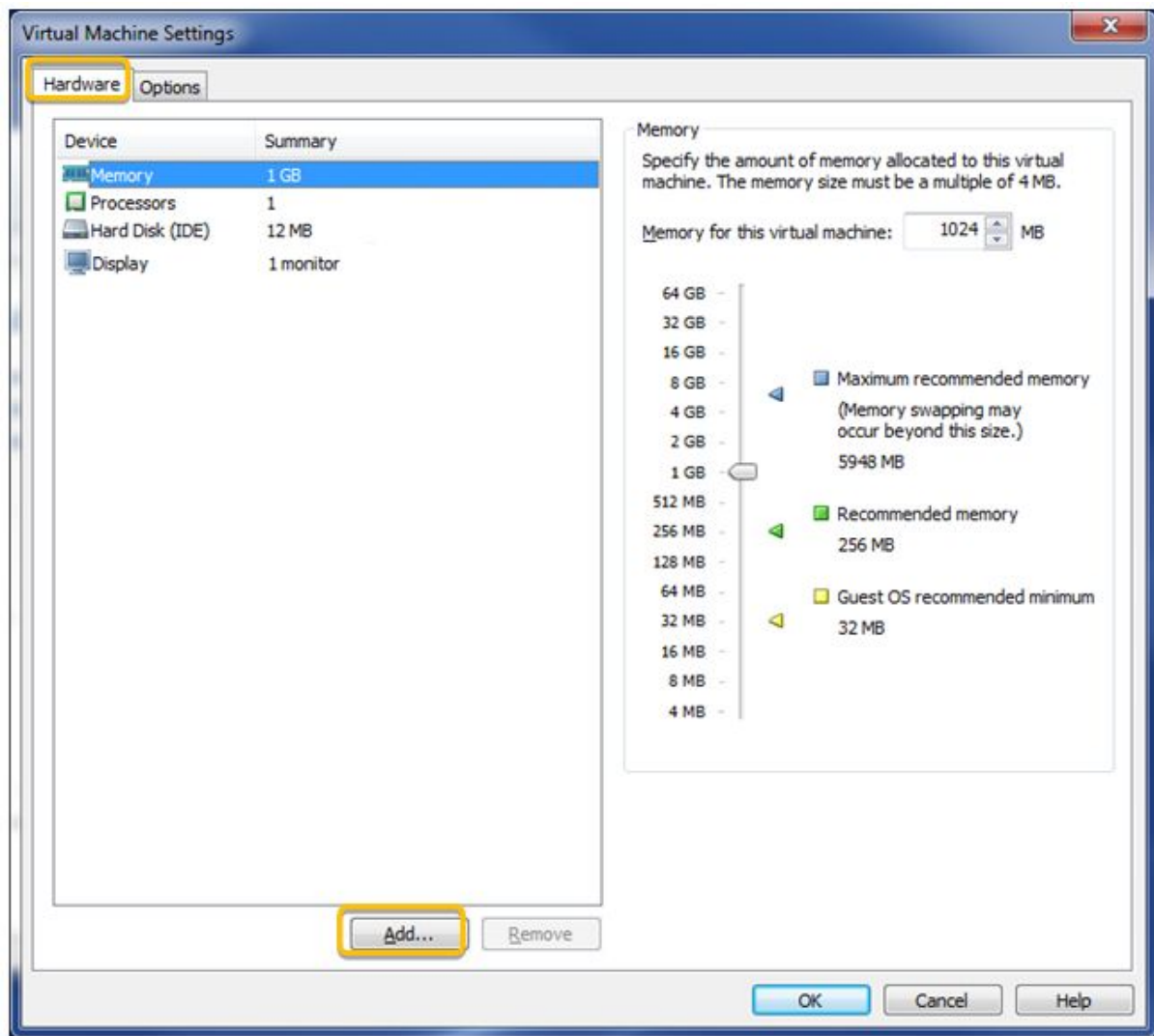
6. After successful import, a FusionHub virtual machine is created.



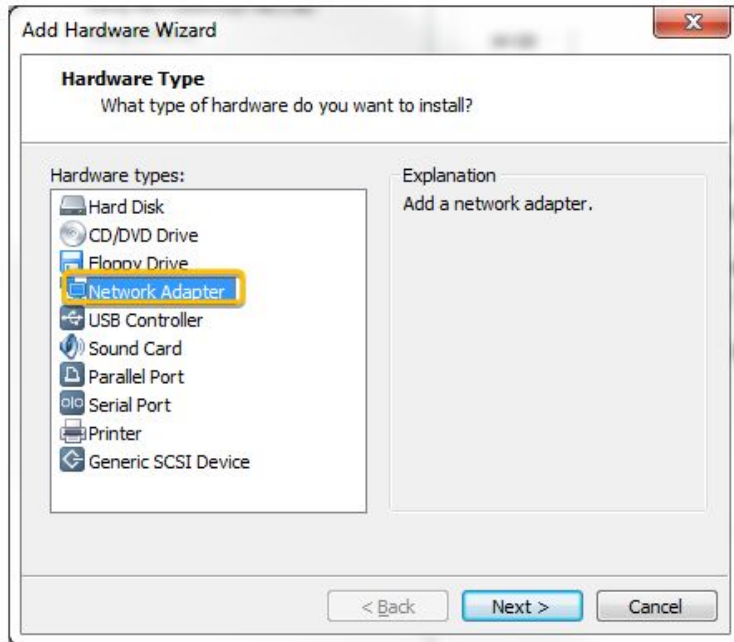
7. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter.



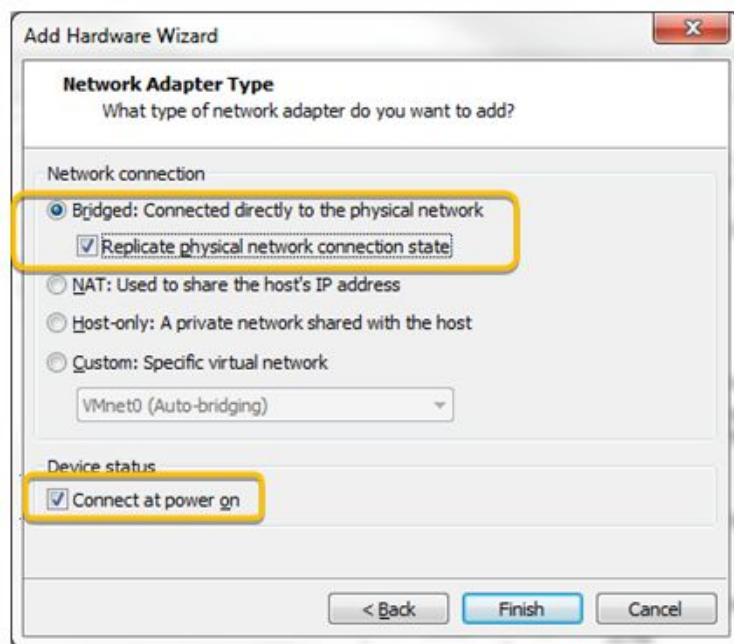
8. Click **Add**, found under the **Hardware** tab on the **Virtual Machine Settings** dialog.



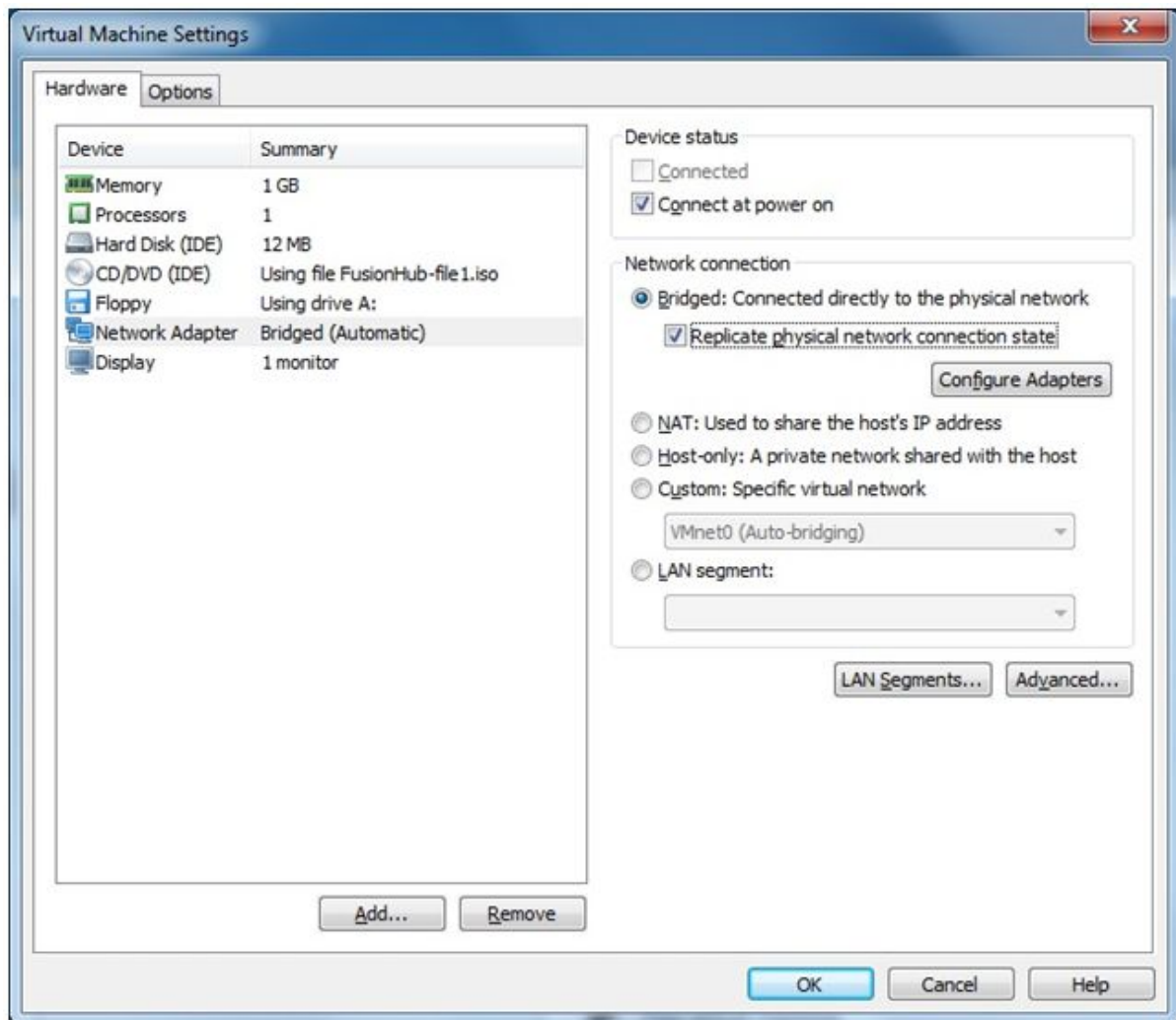
9. On the Add Hardware Wizard dialog, select Network Adapter. Click Next.



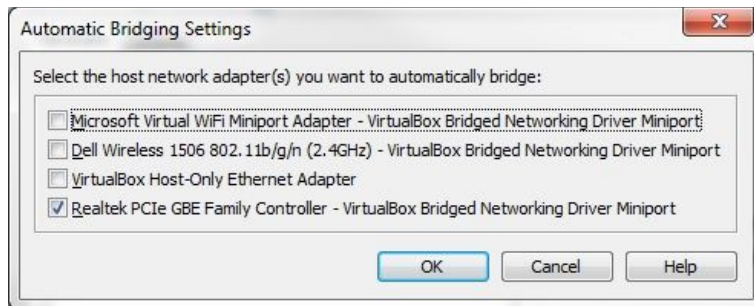
10. On the Network Adapter Type dialog, select Bridged: Connected directly to the physical network and Replicate physical network connection state. Check Connect at power on and click Finish.



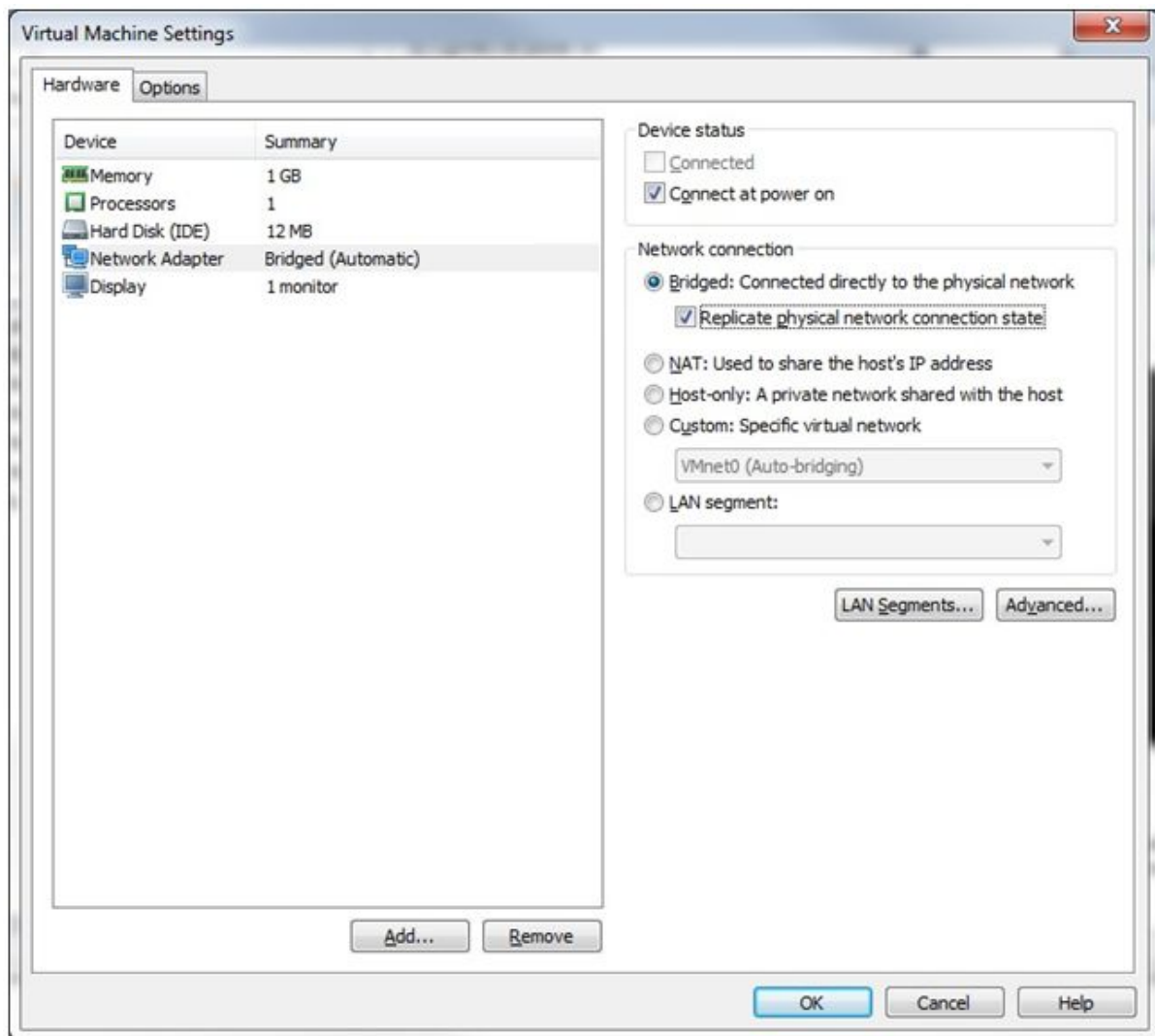
11. Click **Configure Adapters** to select the host adapter. This will apply only if you have more than one network adapter. Otherwise, skip this step.



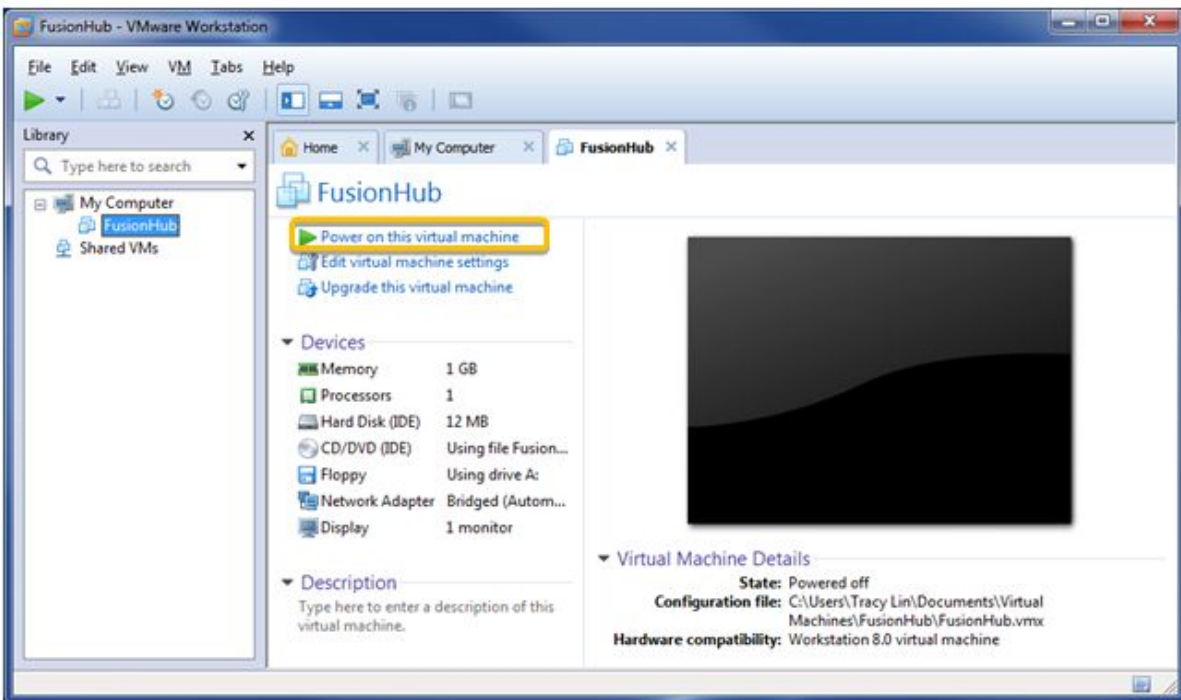
12. When the **Automatic Bridging Settings** dialog opens, select the host network adapter you want to automatically bridge and click **OK**.



13. Click **OK** to finish adding hardware.



14. Click Power on this virtual machine to run FusionHub.



15. The FusionHub console opens automatically and displays the following general information about FusionHub:

- FusionHub version
- System information
- Network settings:

Method: DHCP

IP Address: None

Admin: <http://169.254.254.254>

```
Peplink FusionHub 6.1.0 build 1175

System Information
License      : Not found

Network settings
Method       : DHCP
IP Address   : None
Admin        : http://169.254.254.254

Enter 'setup' to configure network settings
_
```

16. The default WAN connection method is DHCP. If the DHCP server is available on your network, the IP address of FusionHub will be automatically obtained by DHCP server. In this case, the console will look similar to the following:

```
Peplink FusionHub 6.1.0 build 1175

System Information
License      : Not found

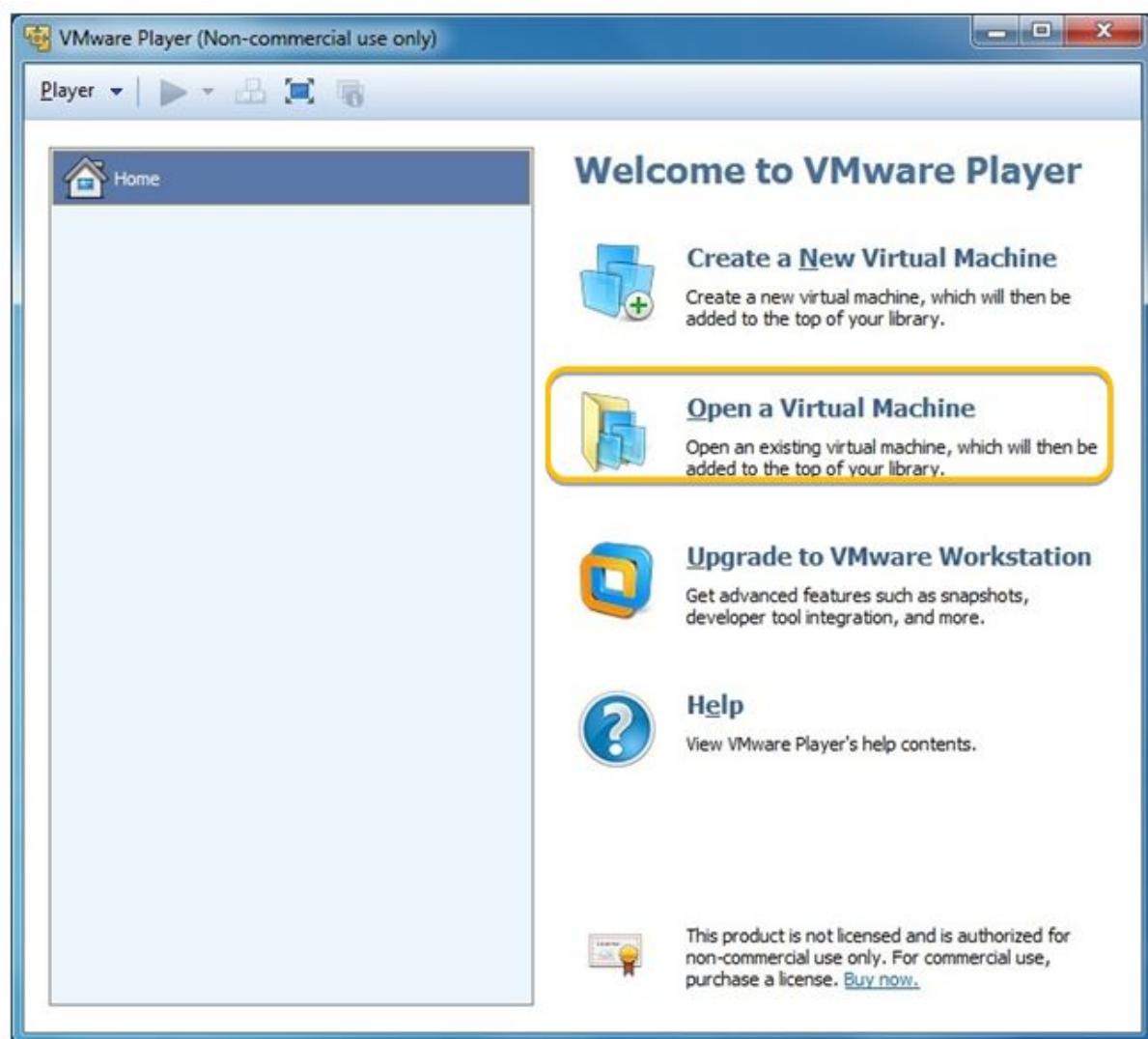
Network settings
Method       : DHCP
IP Address   : 10.8.8.252
Subnet Mask  : 255.255.0.0
Gateway      : 10.8.8.1
DNS Server   : 10.8.8.1
Admin        : http://10.8.8.252

Enter 'setup' to configure network settings
_
```

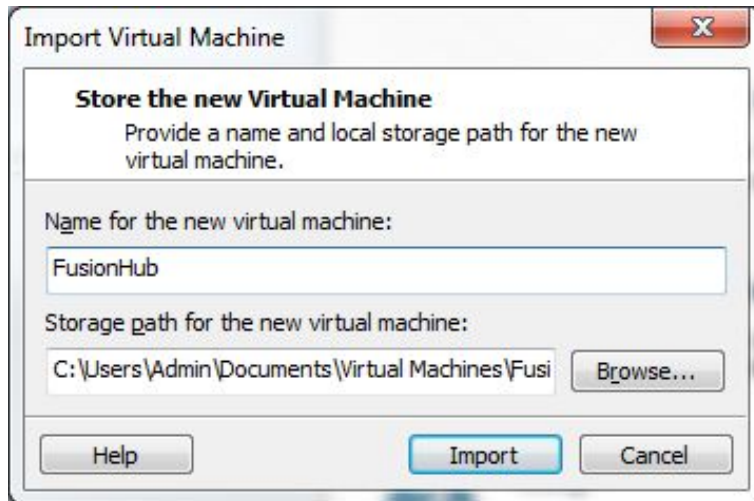
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.3 VMware Player

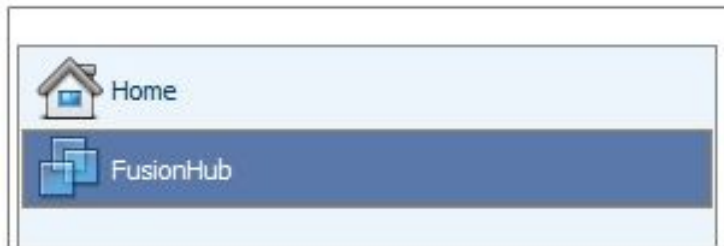
1. Download VMware Player 6.0 from https://my.vmware.com/web/vmware/free#desktop_end_user_computing/vmware_player/6_0 and install it.
2. Open **VMware Player** and install FusionHub.
3. Click **Open a Virtual Machine** to import the FusionHub.ova template downloaded from InControl 2.



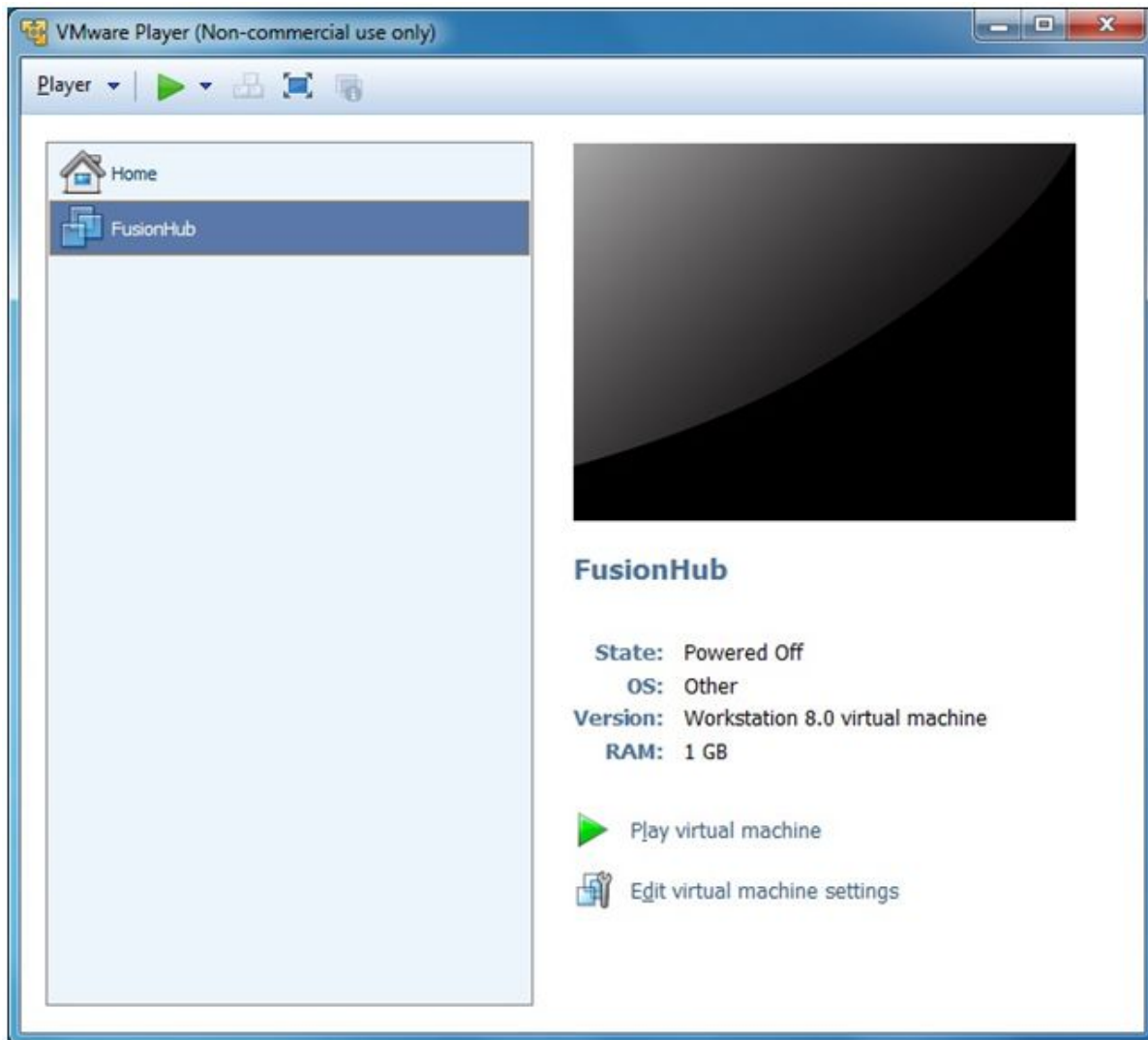
4. On the Store the new Virtual Machine dialog, type a name for the new virtual machine (i.e., FusionHub) and select the storage path. Please note that the storage path for this FusionHub virtual machine should not be the same as that for the downloaded FusionHub OVF template file. Click Import.



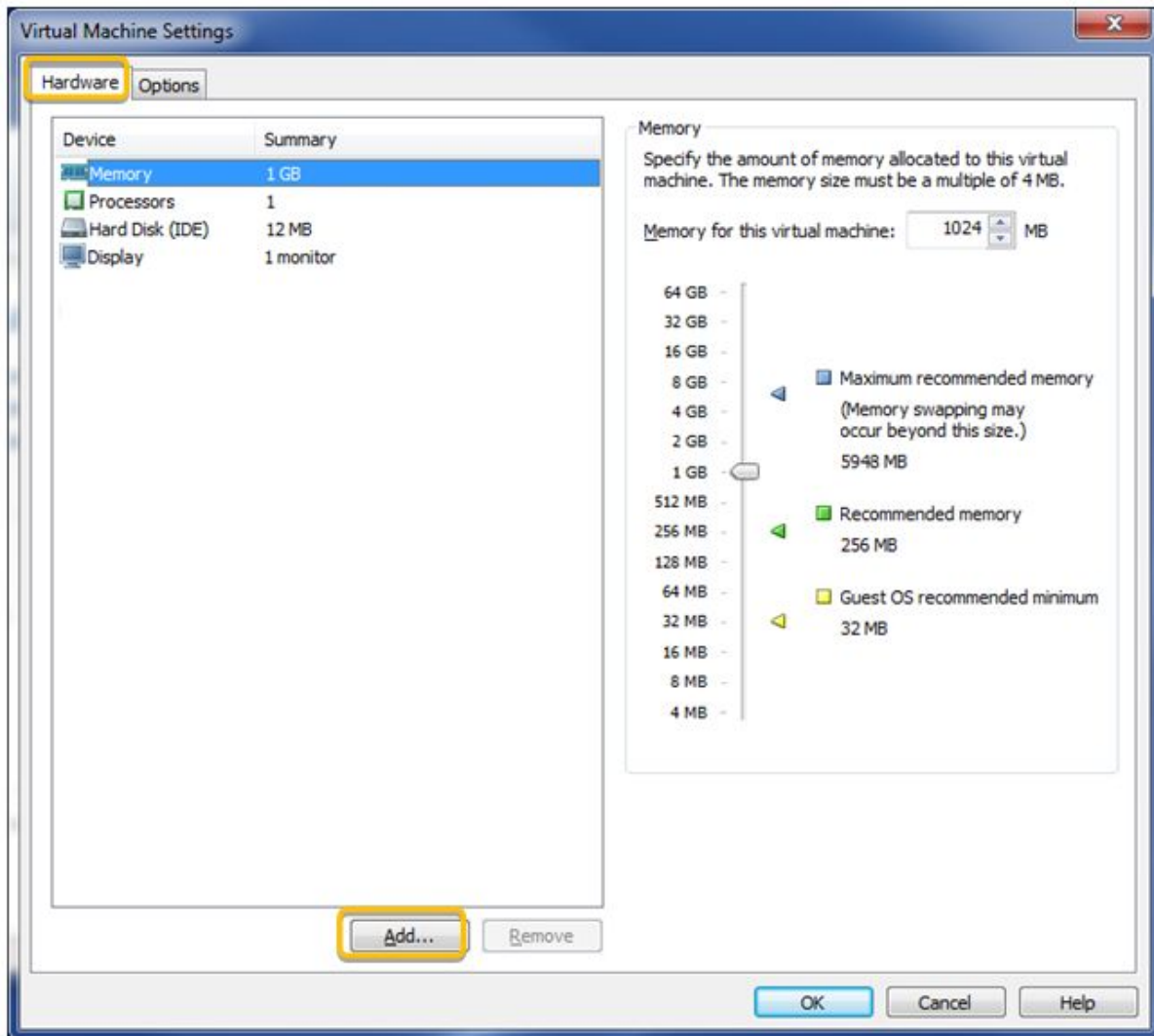
5. After successful import, a FusionHub virtual machine is created.



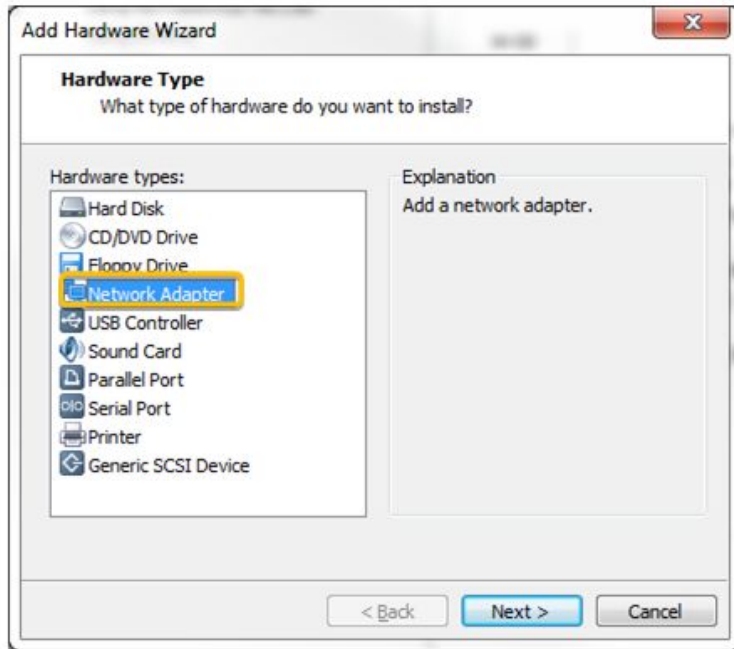
6. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter to the FusionHub virtual machine.



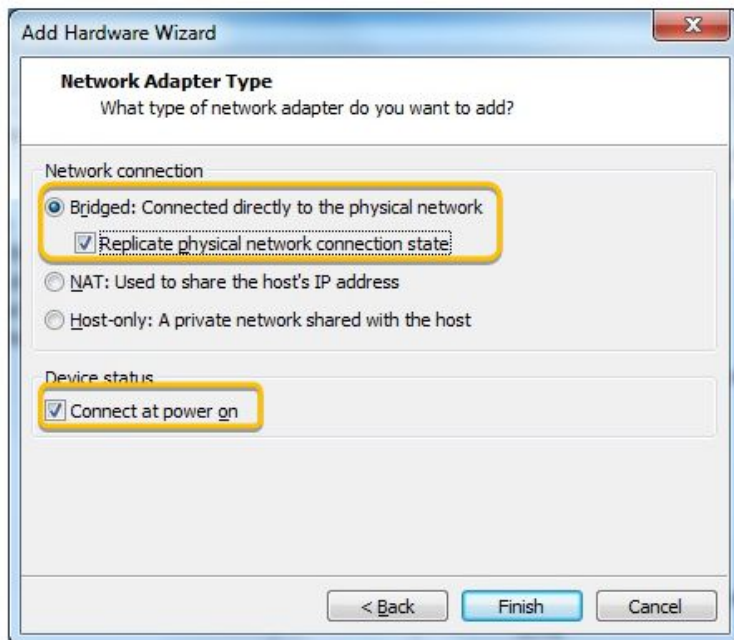
- Click **Add**, found under the **Hardware** tab on the **Virtual Machine Settings** dialog.



8. On the Add Hardware Wizard dialog, select Network Adapter. Click Next.

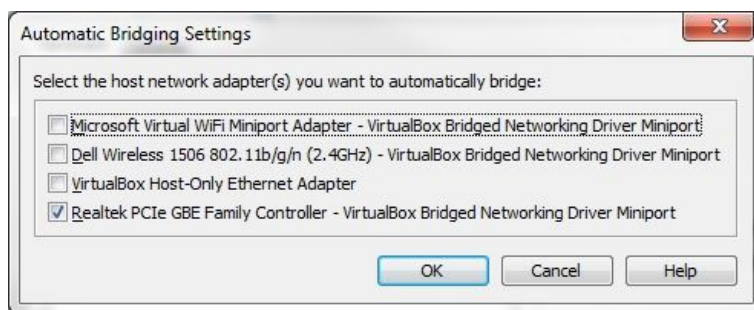


9. On the Network Adapter Type dialog, select Bridged: Connected directly to the physical network and Replicate physical network connection state. Check Connect at power on and click Finish.

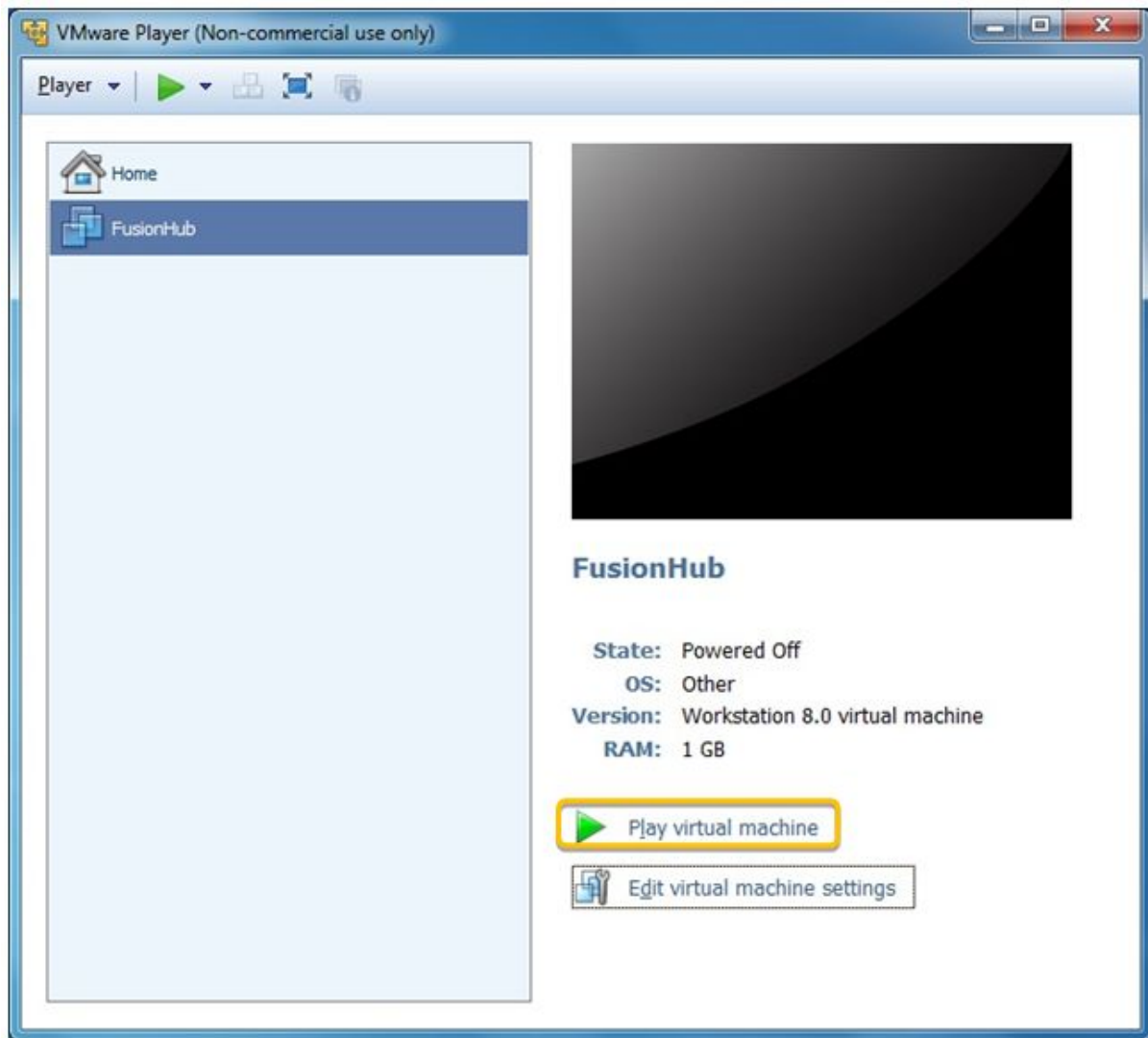


10. Click **Configure Adapters** to select the host network adapter.

11. On the **Automatic Bridging Settings** dialog, select the host network which you want to automatically bridge. Click **OK** to finish adding hardware.



12. Click **Play virtual machine** to run FusionHub.



13. The FusionHub console opens automatically and displays the following general information about FusionHub:

- FusionHub version
- System information
- Network settings:

Method: DHCP

IP Address: None

Admin: <http://169.254.254.254>

```
Peplink FusionHub 6.1.0 build 1175

System Information
License       : Not found

Network settings
Method       : DHCP
IP Address   : None
Admin        : http://169.254.254.254

Enter 'setup' to configure network settings
_
```

14. The default WAN connection method is DHCP. If the DHCP server is available on your network, the FusionHub IP address will be automatically obtained by the DHCP server. In this case, the console looks similar to the following:

```
Peplink FusionHub 6.1.0 build 1175

System Information
License      : Not found

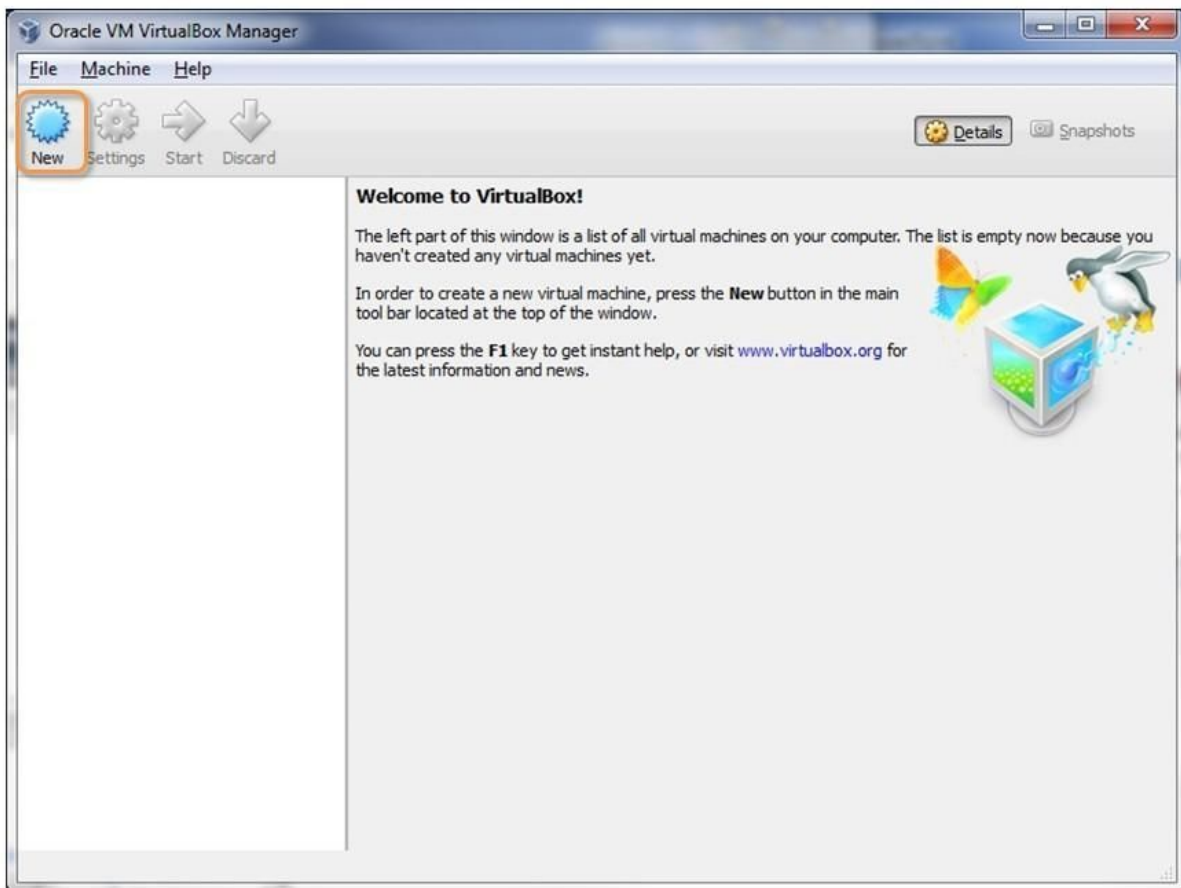
Network settings
Method       : DHCP
IP Address   : 10.8.8.252
Subnet Mask  : 255.255.0.0
Gateway      : 10.8.8.1
DNS Server   : 10.8.8.1
Admin        : http://10.8.8.252

Enter 'setup' to configure network settings
_
```

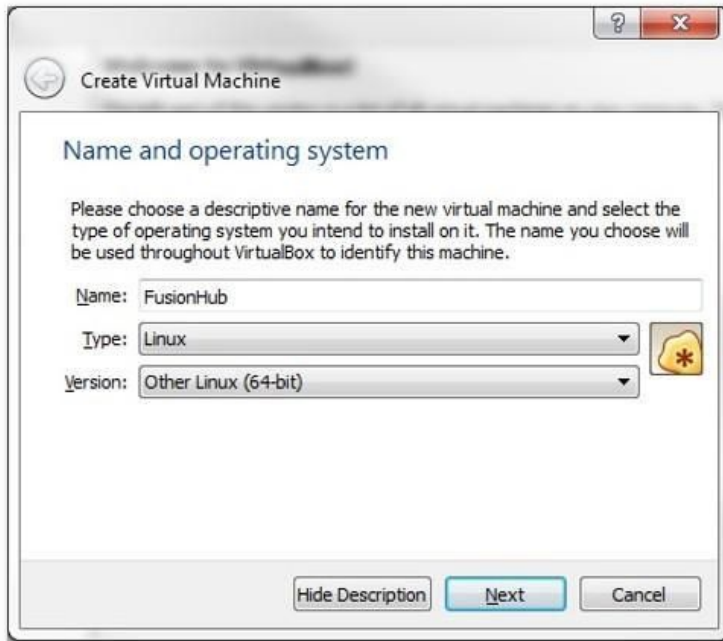
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.4 Oracle VirtualBox

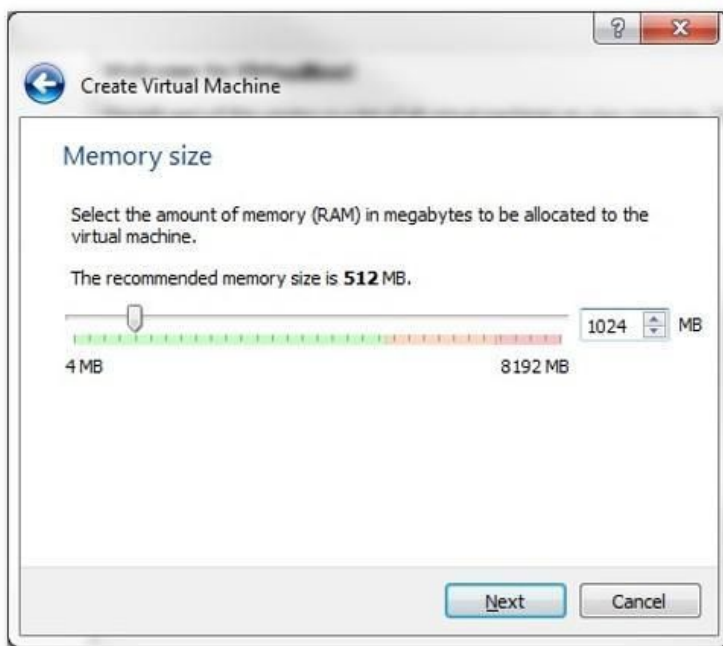
1. Download VirtualBox from <https://www.virtualbox.org/wiki/Downloads> and install it.
2. Open **VirtualBox**. Click **New** to create a virtual machine for FusionHub.



- On the **Create Virtual Machine** dialog, specify a **Name** for the virtual machine. Select **Linux** from the **Type** drop-down menu. Select **Other Linux (64-bit)** from the **Version** drop-down menu. Click **Next** to continue.



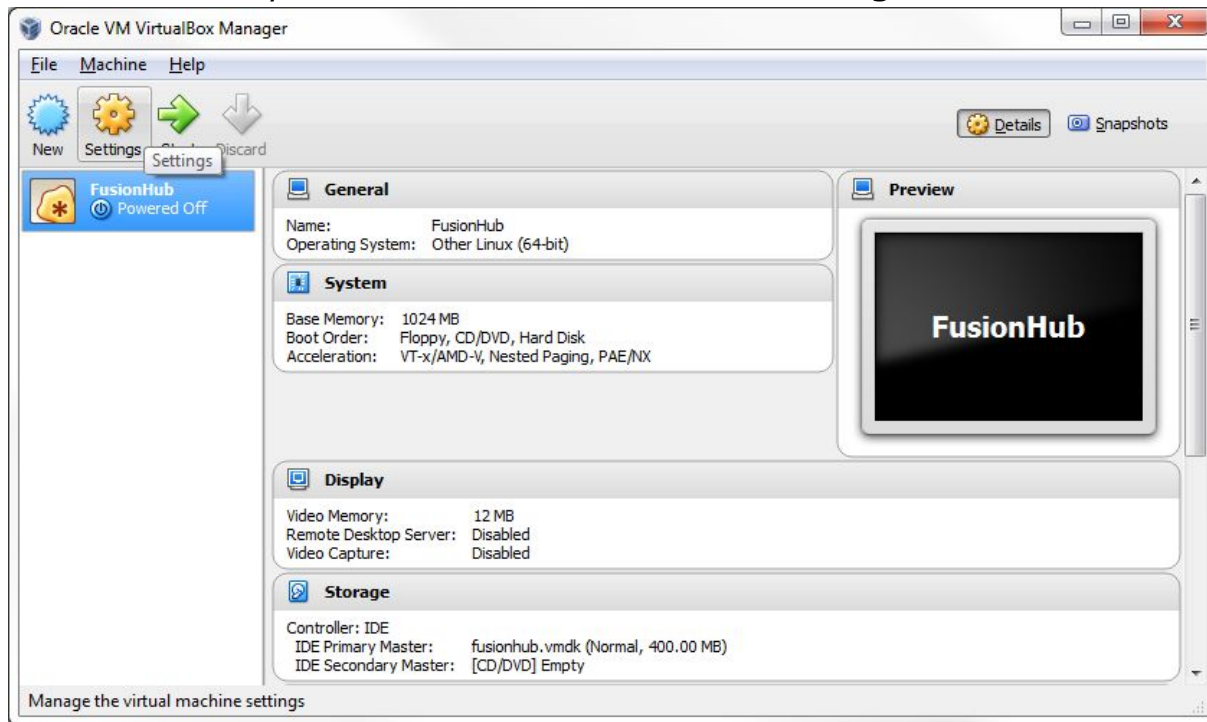
- Set the memory size to **1024MB**. Click **Next**.



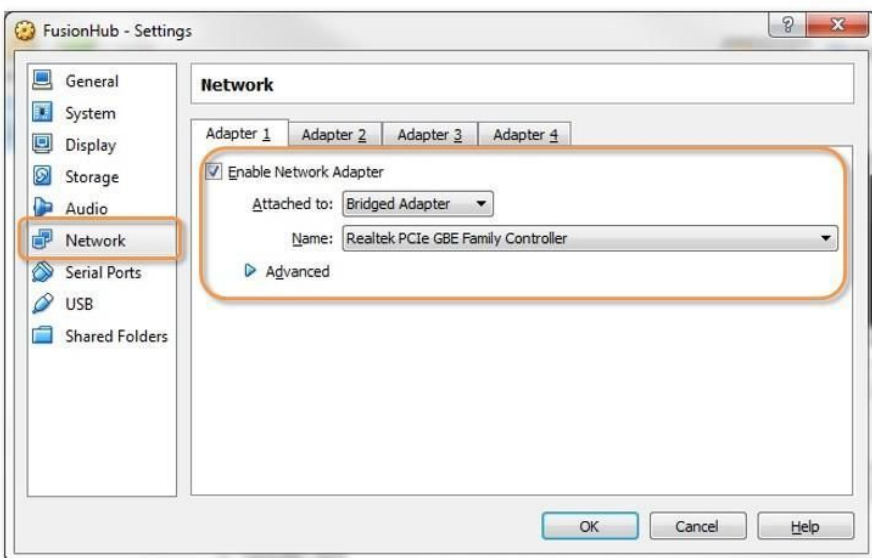
5. Click **Use an existing virtual hard drive file**. Select the **fusionhub.vmdk** file downloaded from InControl 2. Click **Create** to create a virtual machine.



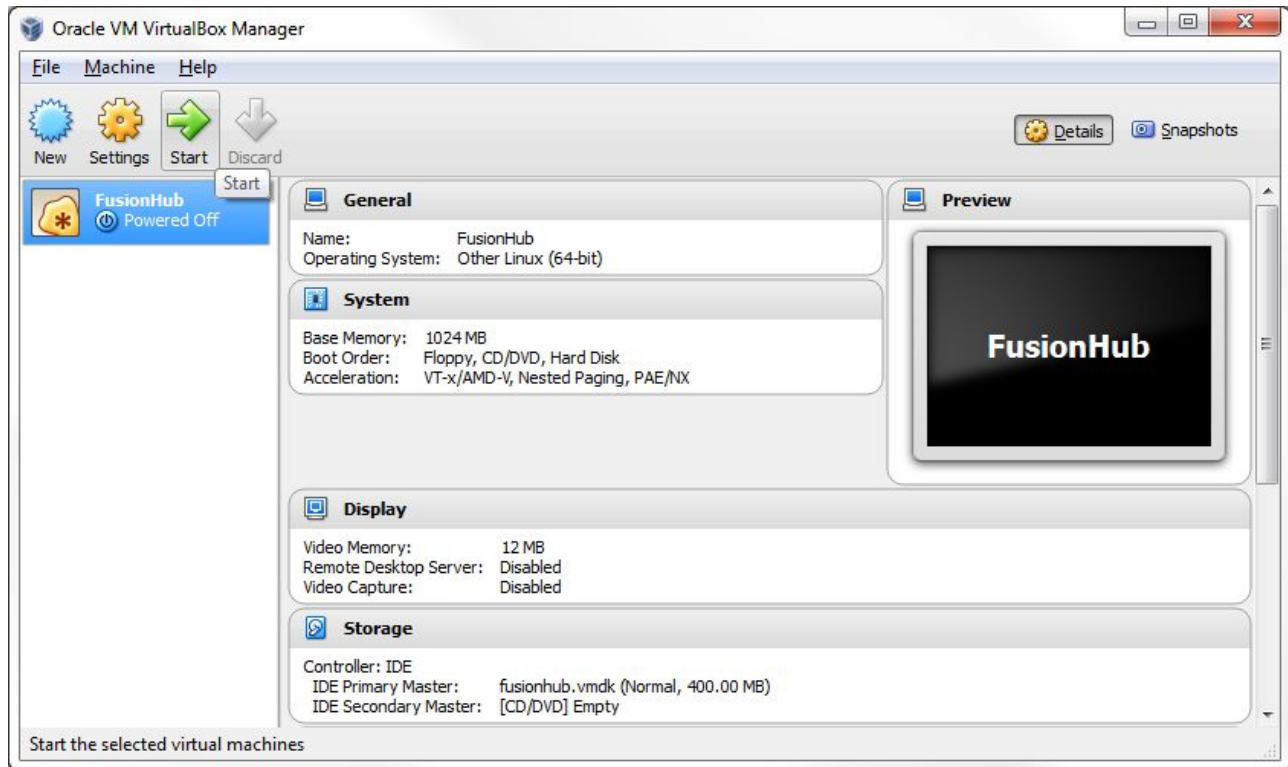
6. Select the newly created **FusionHub** VM and click **Settings**.



7. On the **FusionHub - Settings** dialog, click **Network**. Select the **Adapter 1** tab. Click **Enable Network Adapter** and select **Bridged Adapter** from the **Attached to:** drop-down menu. Select a proper adapter from the **Name** drop-down menu. Click **OK** to continue.



8. Select the **FusionHub** VM. Click **Start** to run FusionHub.



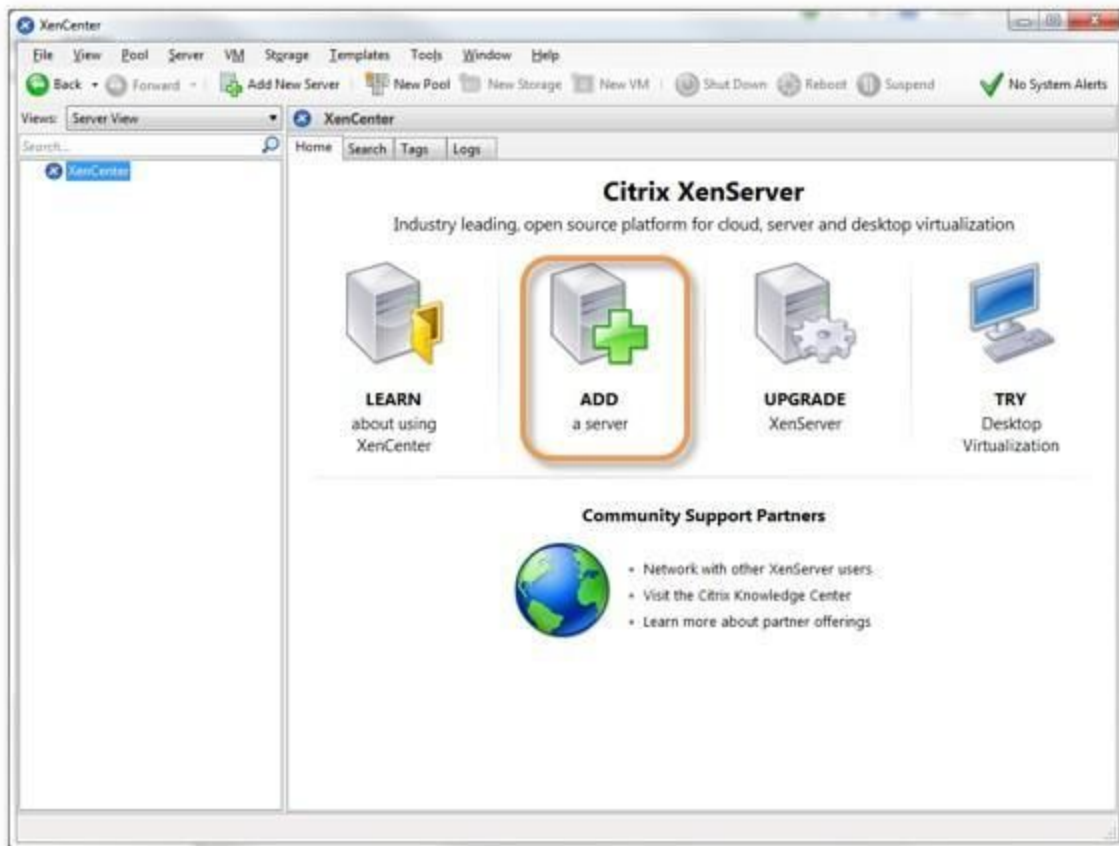
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.5 Citrix XenServer

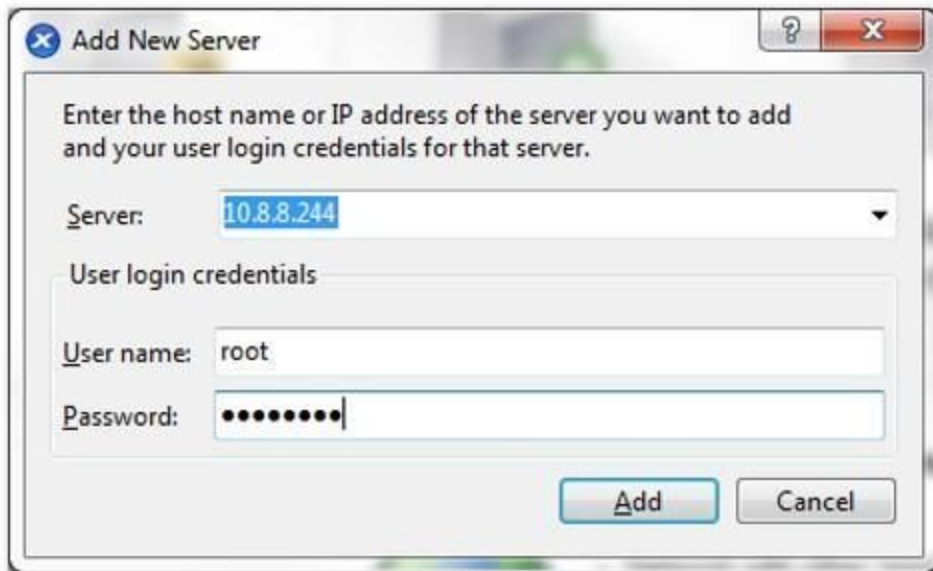
1. Download and install the **XenCenter installer** from your XenCenter server.



2. Open XenCenter. Click ADD a server.

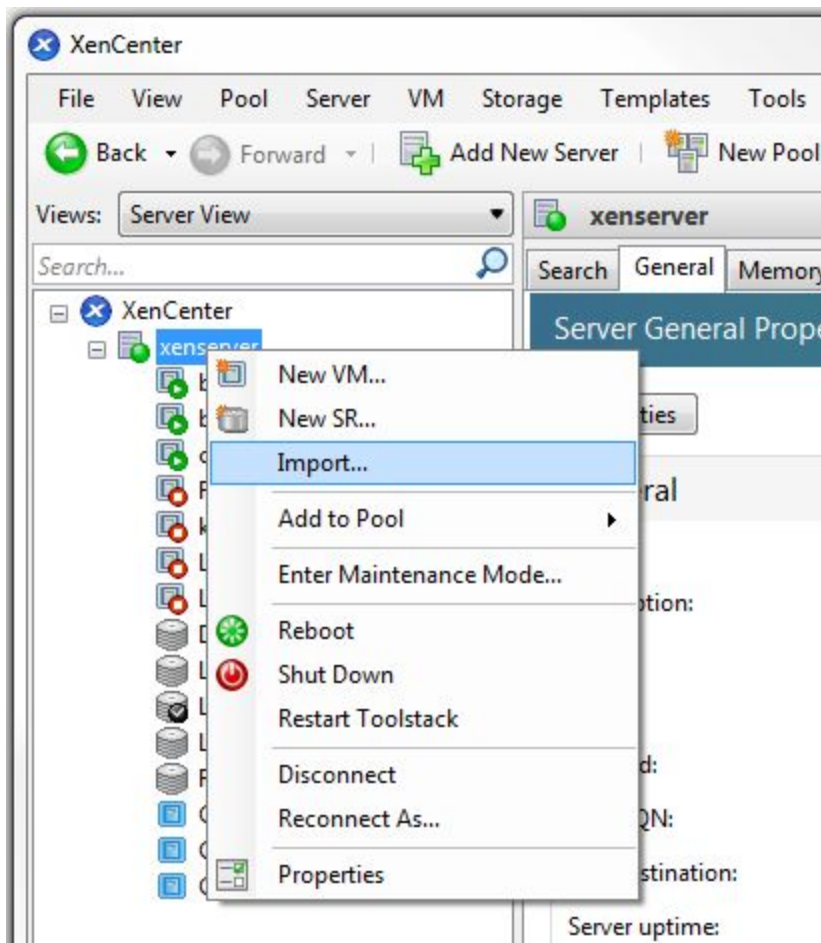


3. On the **Add New Server** dialog, enter the appropriate **Server** IP address/name, **User name**, and **Password**. Click **Add** to add the XenServer.

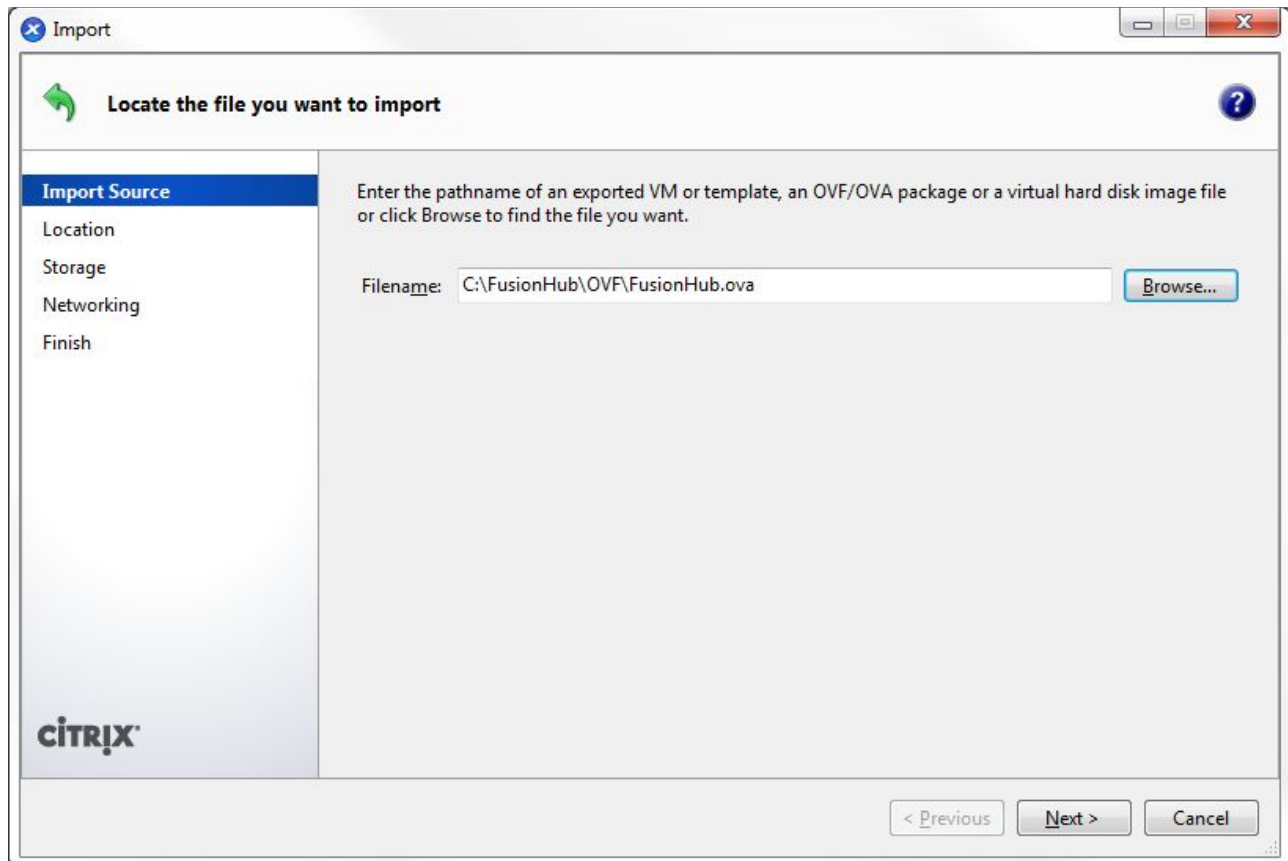


4. Enable E1000 gigabit device emulation in Citrix XenServer to take advantage of FusionHub's support for E1000 gigabit devices. For details, please refer to: http://www.netservers.co.uk/articles/open-source-howtos/citrix_e1000_gigabit

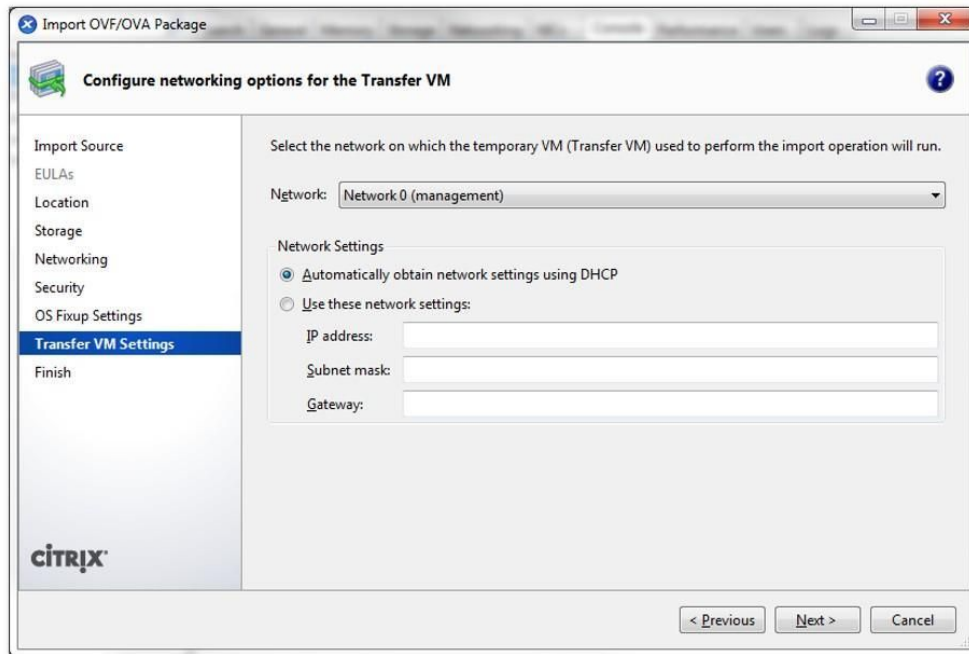
5. Right-click the XenServer and select **Import** to begin importing the OVA file to this XenServer.



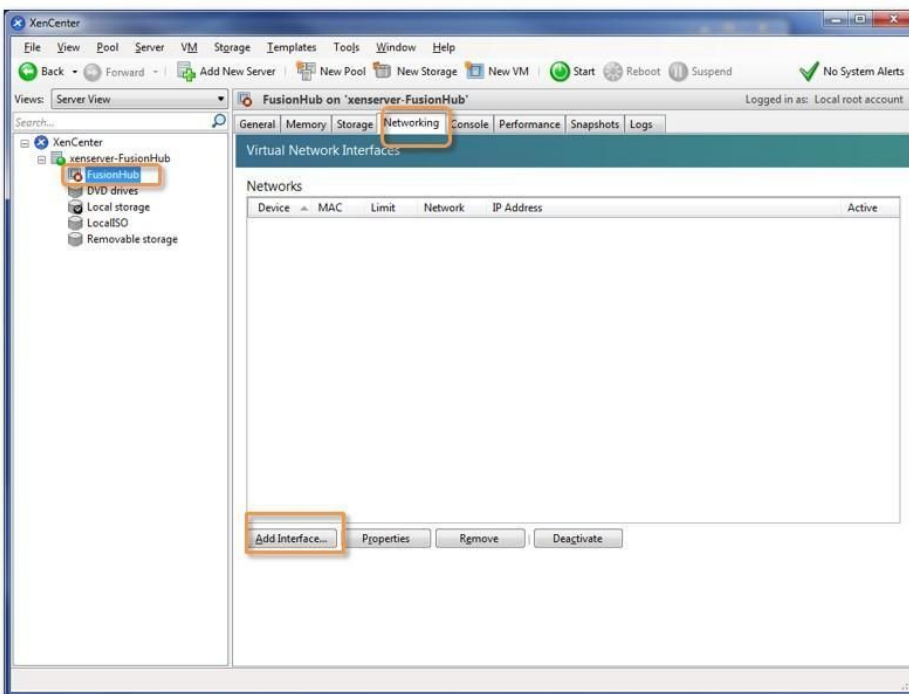
6. On the **Import** dialog, select the **FusionHub.ova** file downloaded from InControl 2.



- Click **Next** to keep the default settings and display the **Configure networking options for the Transfer VM** dialog. Select an appropriate network on which the temporary VM used to perform the import operation will run. Click **Next**. Click **Finish** to import the OVF file.



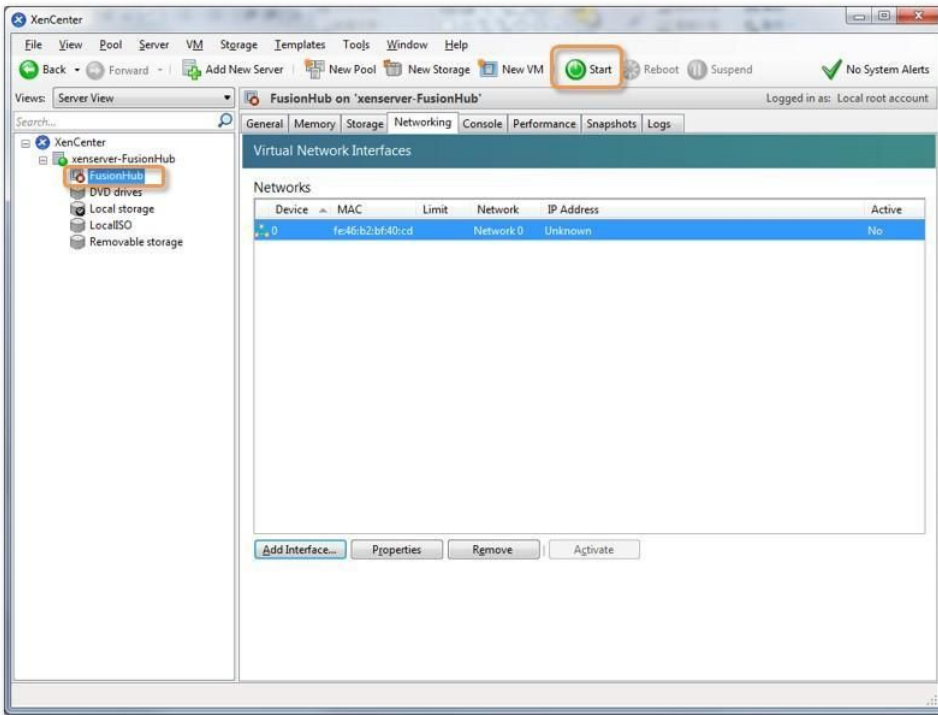
- Click **FusionHub** -> **Networking** -> **Add Interface** to add a network interface.



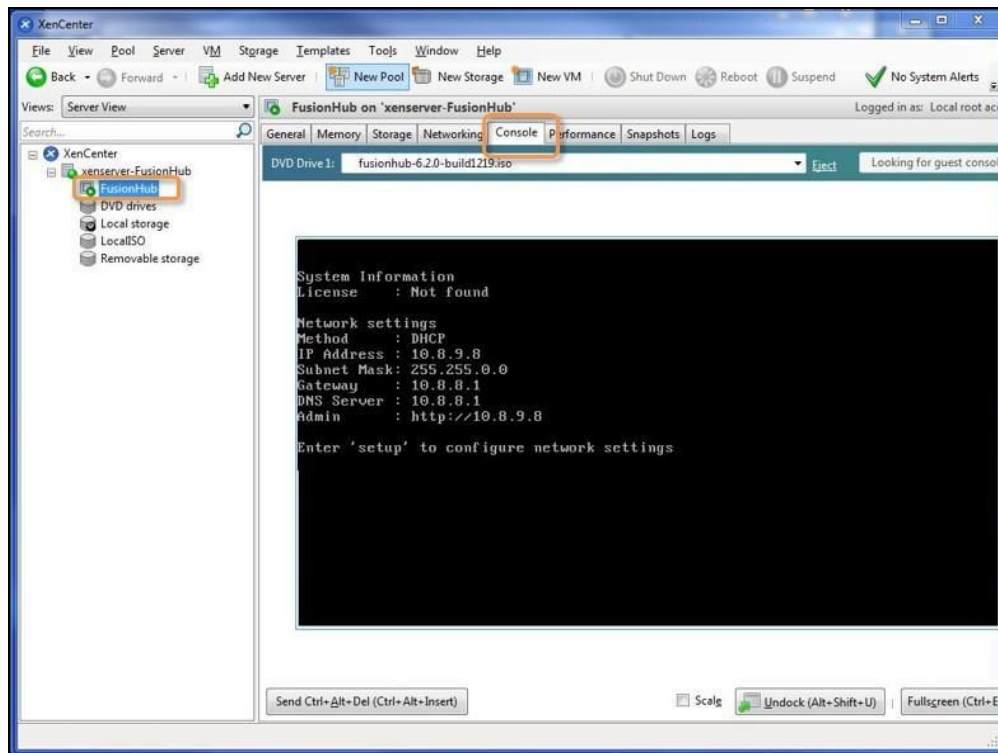
9. On the **Add Virtual Interface** dialog, select the network and click **Add**.



10. Click **FusionHub** -> **Start** to run this FusionHub virtual machine.



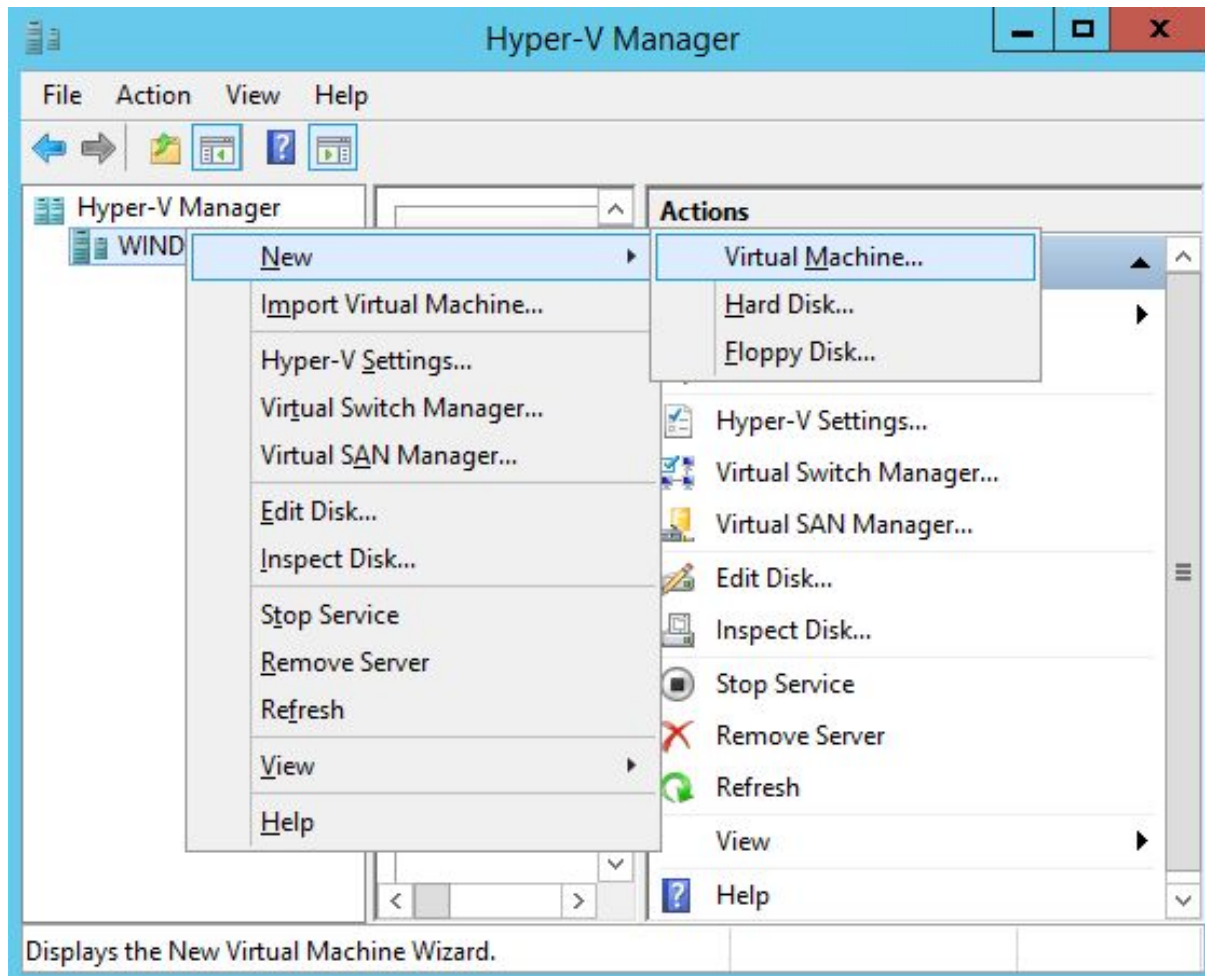
11. Click **FusionHub** -> **Console** to open the console.



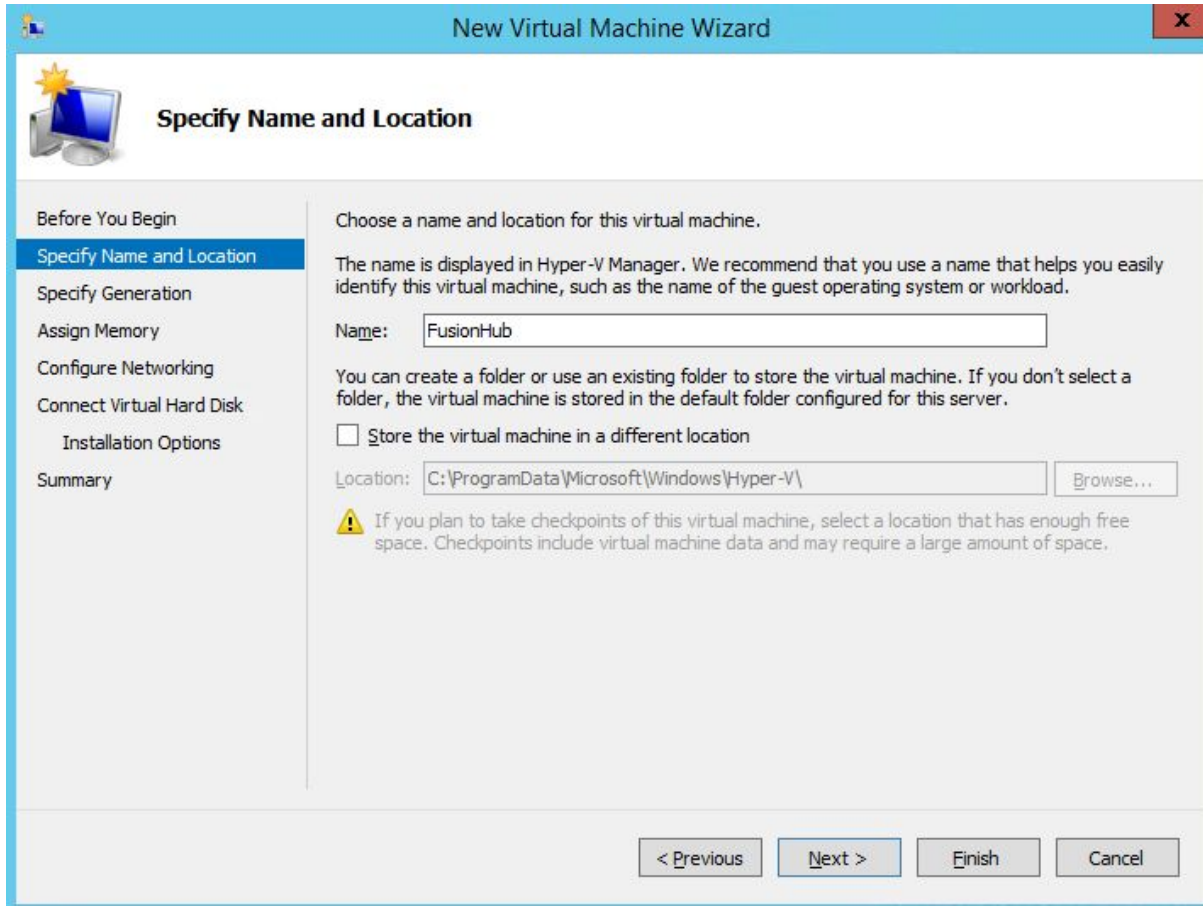
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.6 Microsoft Hyper-V

1. Open Hyper-V and install FusionHub, click **New** -> **Virtual Machine** to create a virtual machine for FusionHub.



2. On the **Specify Name and Location** dialog, specify a name for the virtual machine. Click **Next**.



The screenshot shows the 'New Virtual Machine Wizard' window with the 'Specify Name and Location' step selected in the left-hand navigation pane. The main area contains instructions for naming and locating the virtual machine. The 'Name' field is filled with 'FusionHub'. The 'Location' field shows the default path 'C:\ProgramData\Microsoft\Windows\Hyper-V\'. A warning icon and text advise selecting a location with enough free space for checkpoints.

New Virtual Machine Wizard

Specify Name and Location

Before You Begin
Specify Name and Location
 Specify Generation
 Assign Memory
 Configure Networking
 Connect Virtual Hard Disk
 Installation Options
 Summary

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.

Name:

You can create a folder or use an existing folder to store the virtual machine. If you don't select a folder, the virtual machine is stored in the default folder configured for this server.

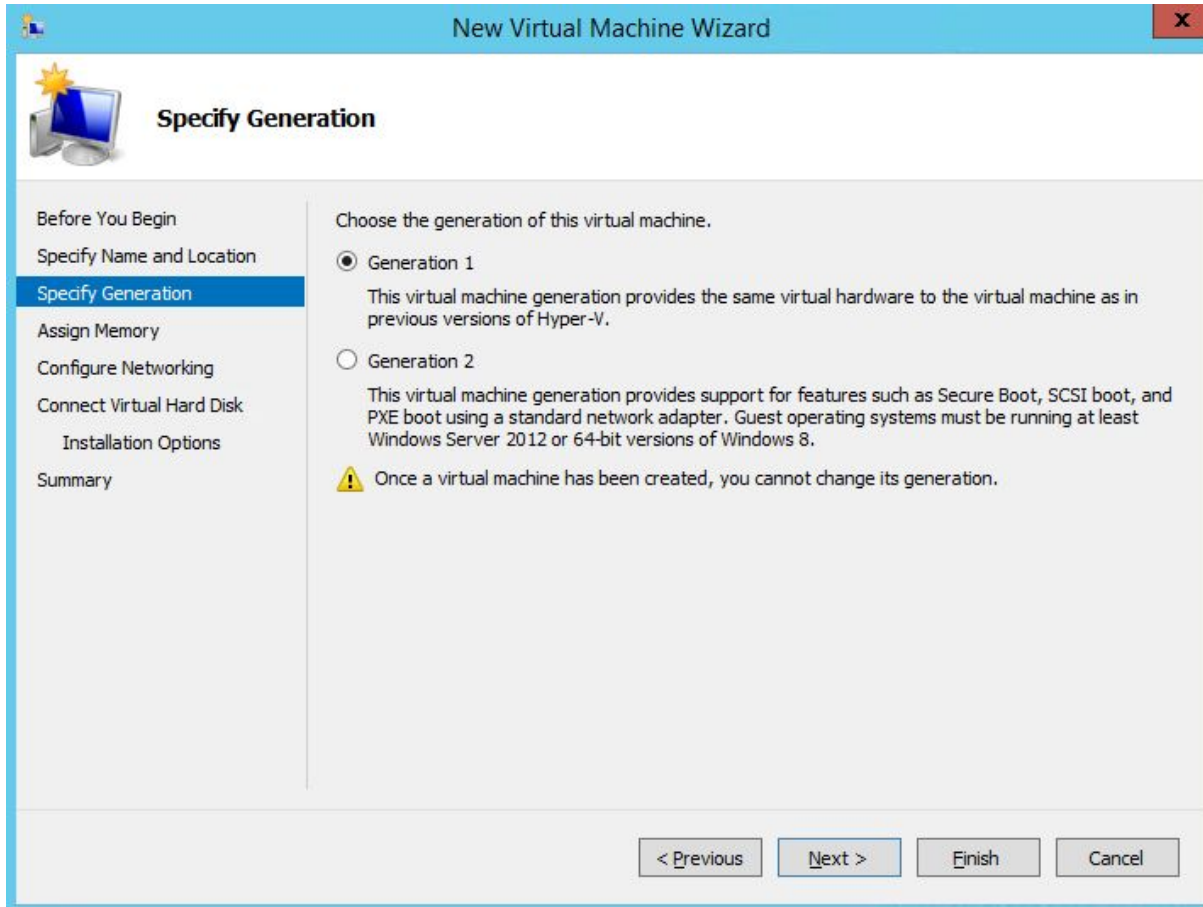
☐ Store the virtual machine in a different location

Location:

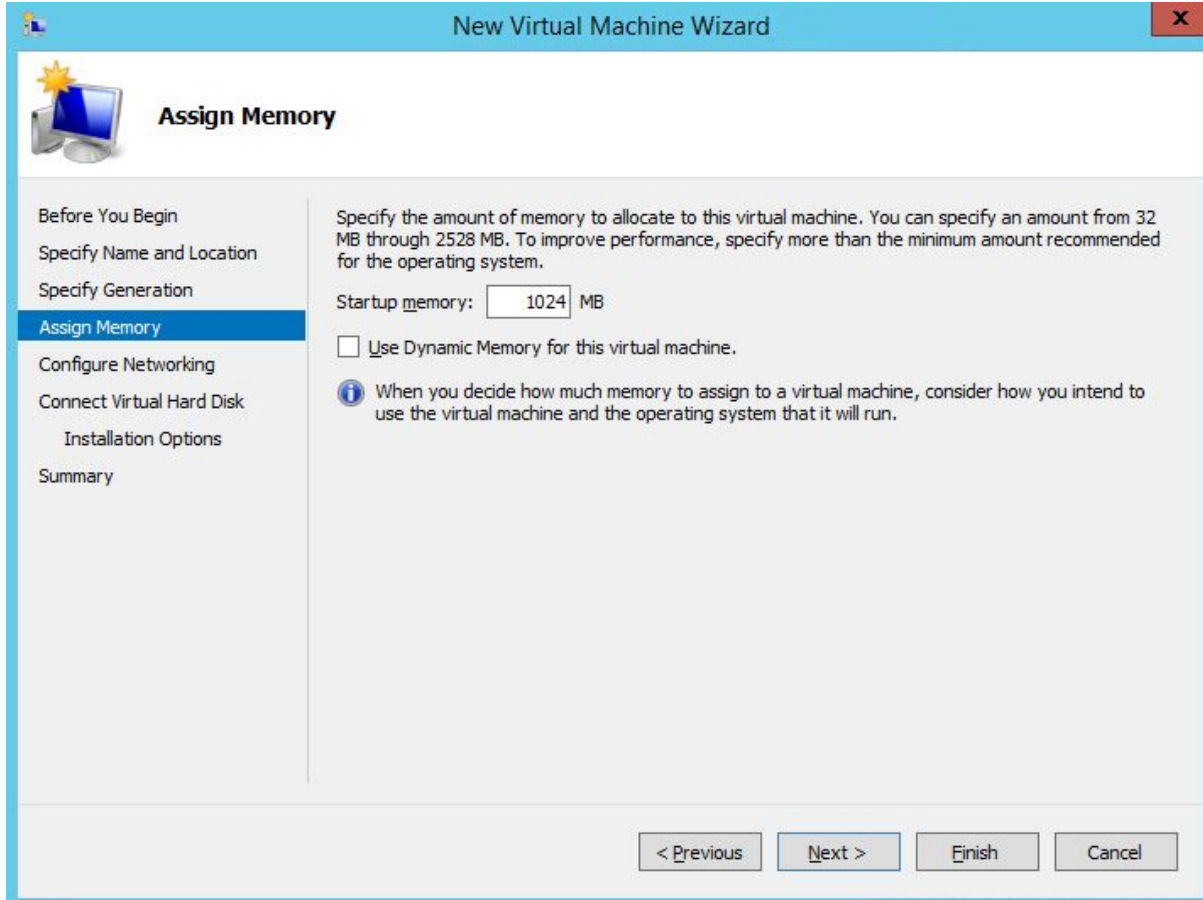
 If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.

< Previous Next > Finish Cancel

3. On the **Specify Generation** dialog, choose **Generation 1**. Click **Next**.



4. On the **Assign Memory** dialog, set the memory size to **1024MB**. Click **Next**.



New Virtual Machine Wizard

Assign Memory

Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Installation Options
Summary

Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 2528 MB. To improve performance, specify more than the minimum amount recommended for the operating system.

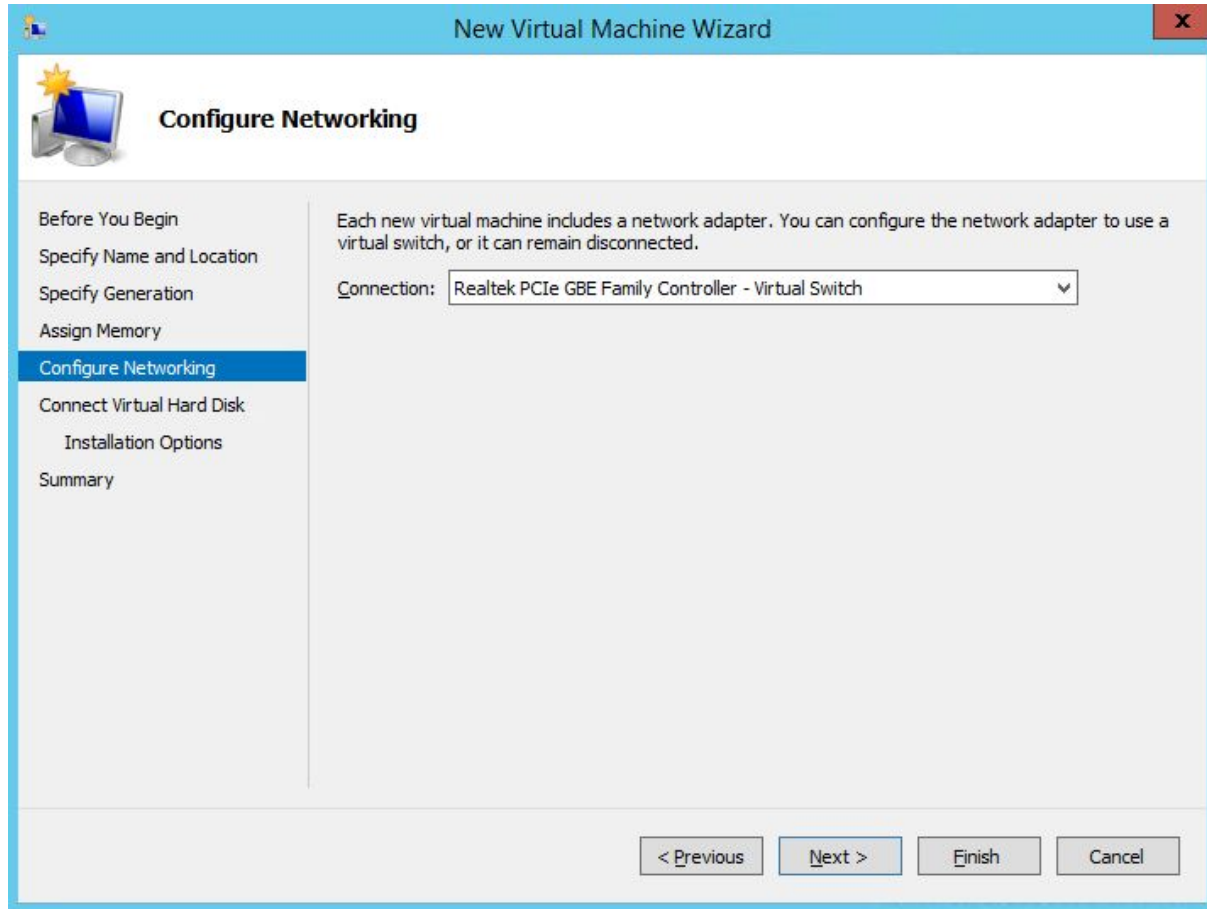
Startup memory: MB

☐ Use Dynamic Memory for this virtual machine.

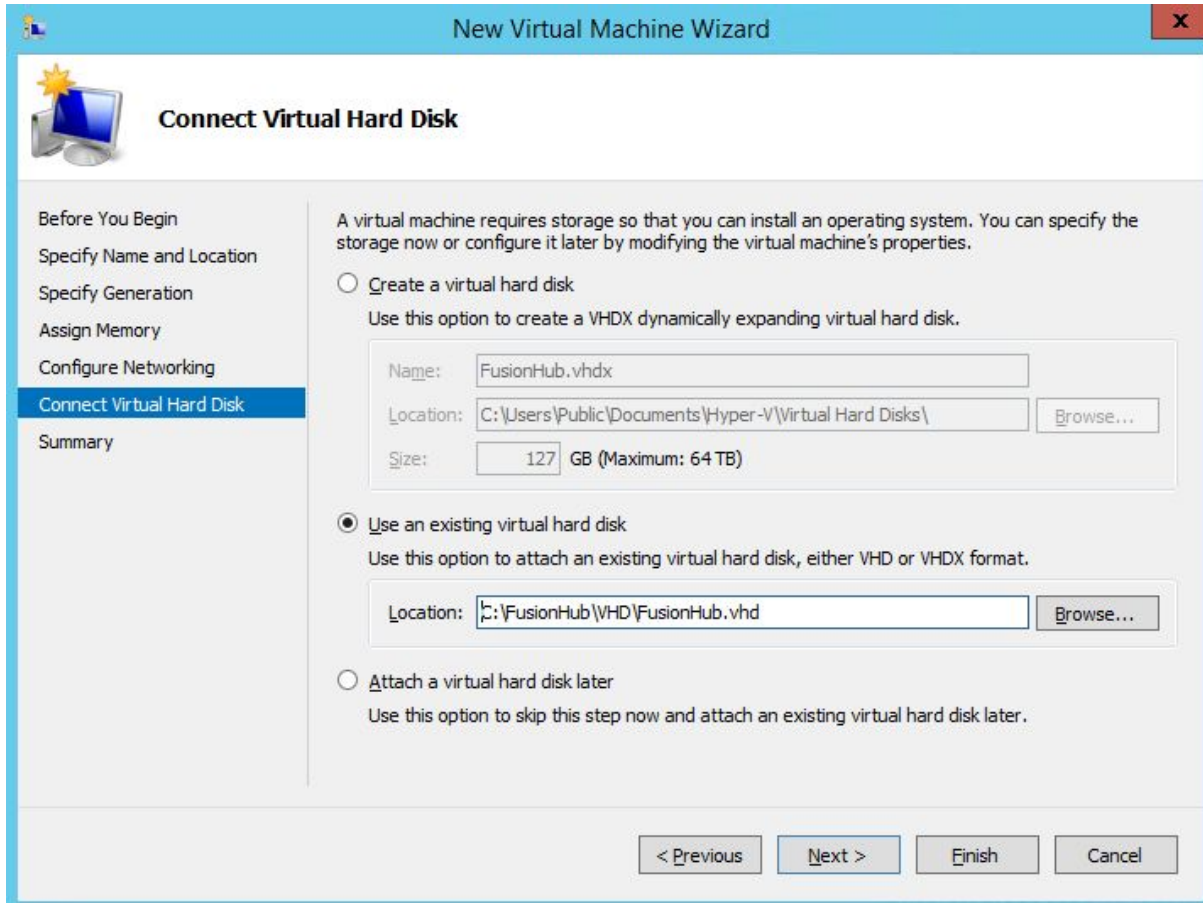
i When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.

< Previous Next > Finish Cancel

5. On the **Configure Networking** dialog, select a network adapter and click **Next**



6. On the **Connect Virtual Hard Disk** dialog, select **“Use an existing virtual hard disk”** and select FusionHub.vhd from the location you downloaded FusionHub. Click **Next**.



New Virtual Machine Wizard

Connect Virtual Hard Disk

Before You Begin
Specify Name and Location
Specify Generation
Assign Memory
Configure Networking
Connect Virtual Hard Disk
Summary

A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties.

☐ **Create a virtual hard disk**
Use this option to create a VHDX dynamically expanding virtual hard disk.

Name: FusionHub.vhdx
Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ Browse...
Size: 127 GB (Maximum: 64 TB)

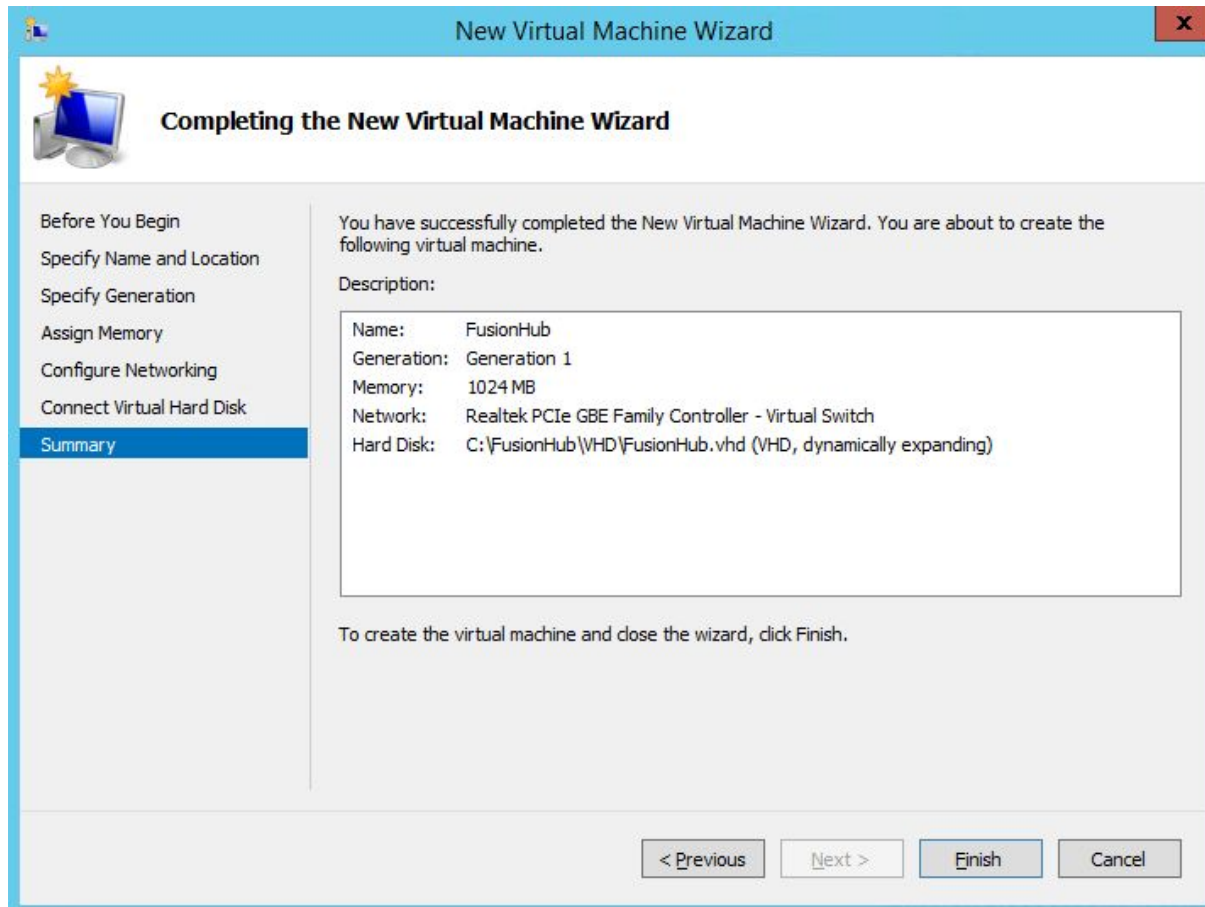
☒ **Use an existing virtual hard disk**
Use this option to attach an existing virtual hard disk, either VHD or VHDX format.

Location: C:\FusionHub\VHD\FusionHub.vhd Browse...

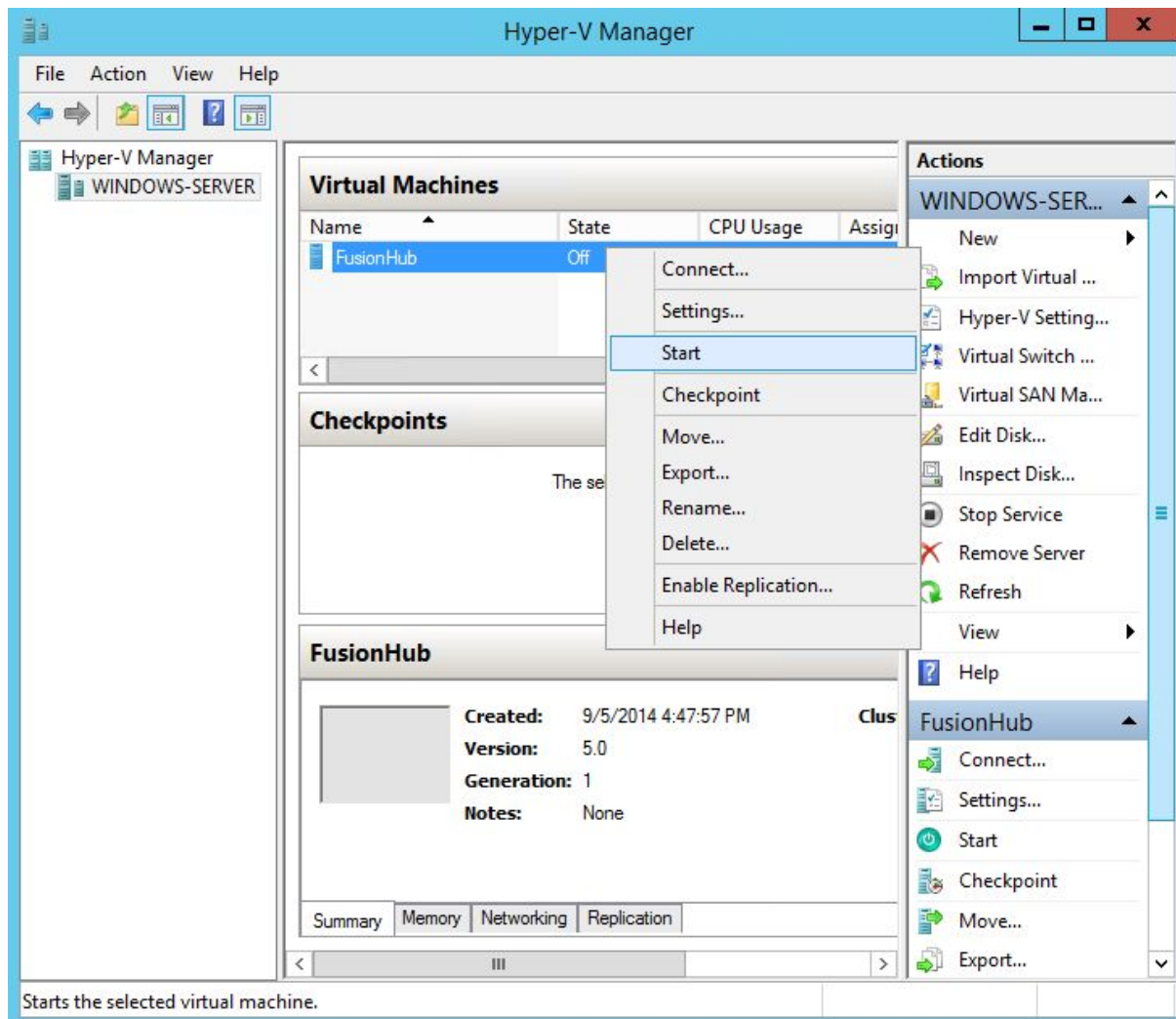
☐ **Attach a virtual hard disk later**
Use this option to skip this step now and attach an existing virtual hard disk later.

< Previous Next > Finish Cancel

7. Click **Finish** to complete virtual machine configuration.



8. Click **Start** to to run this FusionHub virtual machine.

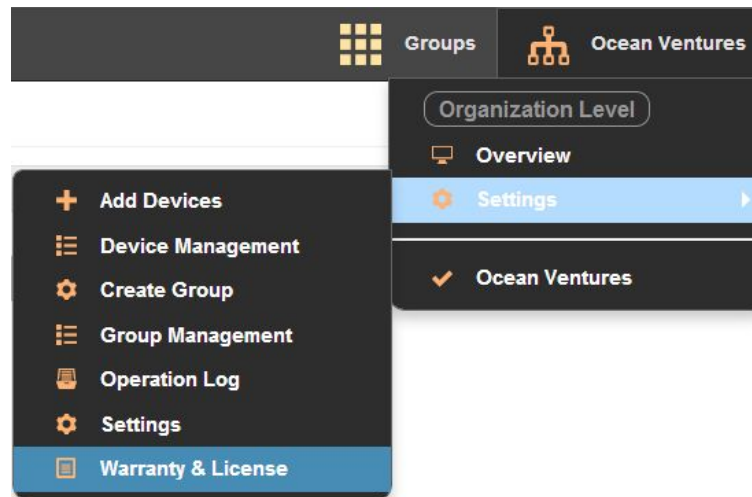


Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.7 Amazon Web Services

Acquiring FusionHub for AWS

1. Get FusionHub AMI image
 - Login to InControl2 and navigate to Organization>Settings>Warranty & License



- Click "Acquire FusionHub AMI for AWS EC2" and input your 12-digit Amazon ID.

FusionHub Licenses

Search: ☐ Show expired evaluation license

Serial Number	FusionHub License Key	Max. Peers	Max. Bandwidth (Mbps)	License Type	Activation Date	Evaluation Expiry Date
PEPLINK-6.2.1b01	PEPLINK-6.2.1b01	2	500	FULL	-	-
PEPLINK-6.2.1b01	PEPLINK-6.2.1b01	10	100	EVALUATION	-	-
PEPLINK-6.2.1b01	PEPLINK-6.2.1b01	10	100	EVALUATION	-	-

Import FusionHub License

[Download as CSV](#) | [Download FusionHub...](#) [Acquire FusionHub AMI for AWS EC2](#)

2. Login to your AWS Management Console after 10 minutes
3. In the left hand panel, expand “Images”, select “**AMIs**”.
4. At the top, locate “Filter:” and pick “**Private images**”.
5. Click on “**Peplink FusionHub**” to highlight it. A blue dot will appear to show that it is currently highlighted.
6. Click on the “**Launch**” button at the top.

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Spot Requests

Reserved Instances

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Filter: **Private images**

	Name	AMI Name	AMI ID	Source	Owner	Visibility
<input checked="" type="checkbox"/>	Peplink FusionHub 6.2.1b01	ami-fd3375cd	100871073111/...	100871073111	Private	

Setting the Instance type

1. In the next screen “Choose an Instance Type, click to highlight “**t2.micro**”
2. Then click “**Configure Instance Details**” at the bottom right of the page.

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High

Cancel

Previous

Review and Launch

Next: Configure Instance Details

Configuring the Instance

1. The “Configure Instance Details” page allows you to make changes to the Instance details and network interfaces. If you’re unsure what these should be, then please skip this step.
2. Click “**Review and Launch**” at the bottom right


1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot Instances to take advantage of the

Number of instances ⓘ

Purchasing option ⓘ ☐ Request Spot Instances

Network ⓘ  [Create new VPC](#)

Subnet ⓘ [Create new subnet](#)
4091 IP Addresses available

Auto-assign Public IP ⓘ

IAM role ⓘ

Shutdown behavior ⓘ

Enable termination protection ⓘ ☐ Protect against accidental termination

Monitoring ⓘ ☐ Enable CloudWatch detailed monitoring
[Additional charges apply.](#)

Tenancy ⓘ
[Additional charges will apply for dedicated tenancy.](#)

▼ Network interfaces

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses
eth0	<input type="text" value="New network interface"/>	<input type="text" value="subnet-ca606cbe"/>	<input type="text" value="Auto-assign"/>	Add IP

3. In the next page “Review Instance Launch”, click on “**Edit security groups**”.

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

⚠ Improve your instance's security. Your security group, launch-wizard-3, is open to the world.

Your instance may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

[Edit AMI](#)

AMI Details

Peplink FusionHub 6.2.1b01 - ami-fd3375cd
 Peplink FusionHub 6.2.1b01
Root Device Type: ebs Virtualization type: paravirtual

[Edit instance type](#)

Instance Type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t1.micro	Variable	1	0.613	EBS only		Low

[Edit security groups](#)

Security Groups

Security group name launch-wizard-3
Description launch-wizard-3 created 2014-09-05T11:47:15.229+08:00

Type ①	Protocol ①	Port Range ①	Source ①
SSH	TCP	22	0.0.0.0/0

[Edit instance details](#)

Instance Details

[Edit storage](#)

Storage

[Cancel](#) [Previous](#) [Launch](#)

4. **Configure** the security group settings as follows:

- Remove SSH
- Add TCP 2222/32015
- Add UDP 4500
- Add HTTP/HTTPS

5. Click **“Review and Launch”**

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more about Amazon EC2 security groups.](#)

Assign a security group: ☒ Create a **new** security group ☐ Select an **existing** security group

Security group name:

Description:

Type	Protocol	Port Range	Source	
Custom TCP Rule	TCP	2222	0.0.0.0/0	✕
Custom TCP Rule	TCP	32015	0.0.0.0/0	✕
Custom UDP Rule	UDP	4500	0.0.0.0/0	✕
HTTPS	TCP	443	0.0.0.0/0	✕
HTTP	TCP	80	0.0.0.0/0	✕

Add Rule

Warning

You will not be able to connect to this instance as the AMI requires port(s) 22 to be open in order to have access. Your current security group doesn't have port(s) 22 open.

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Review and Launch Cancel Previous Review and Launch

- Confirm that the details are correct, and then click **“Launch”**.

Tweak the running Instance

- In the left hand panel, expand “Instances” and click on **“Instances”**.
- Select FusionHub’s **running instance** by clicking on it once.

EC2 Dashboard

- Events
- Tags
- Reports
- Limits
- INSTANCES**
 - Instances**
 - Spot Requests
 - Reserved Instances
- IMAGES
 - AMIs
 - Bundle Tasks
- ELASTIC BLOCK STORE
 - Volumes

Launch Instance **Connect** **Actions**

Filter by tags and attributes or search by keyword

	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
<input checked="" type="checkbox"/>	i-20353328	t1.micro	us-west-2c	running	2/2 checks ...	None	ec2-54-213-85-

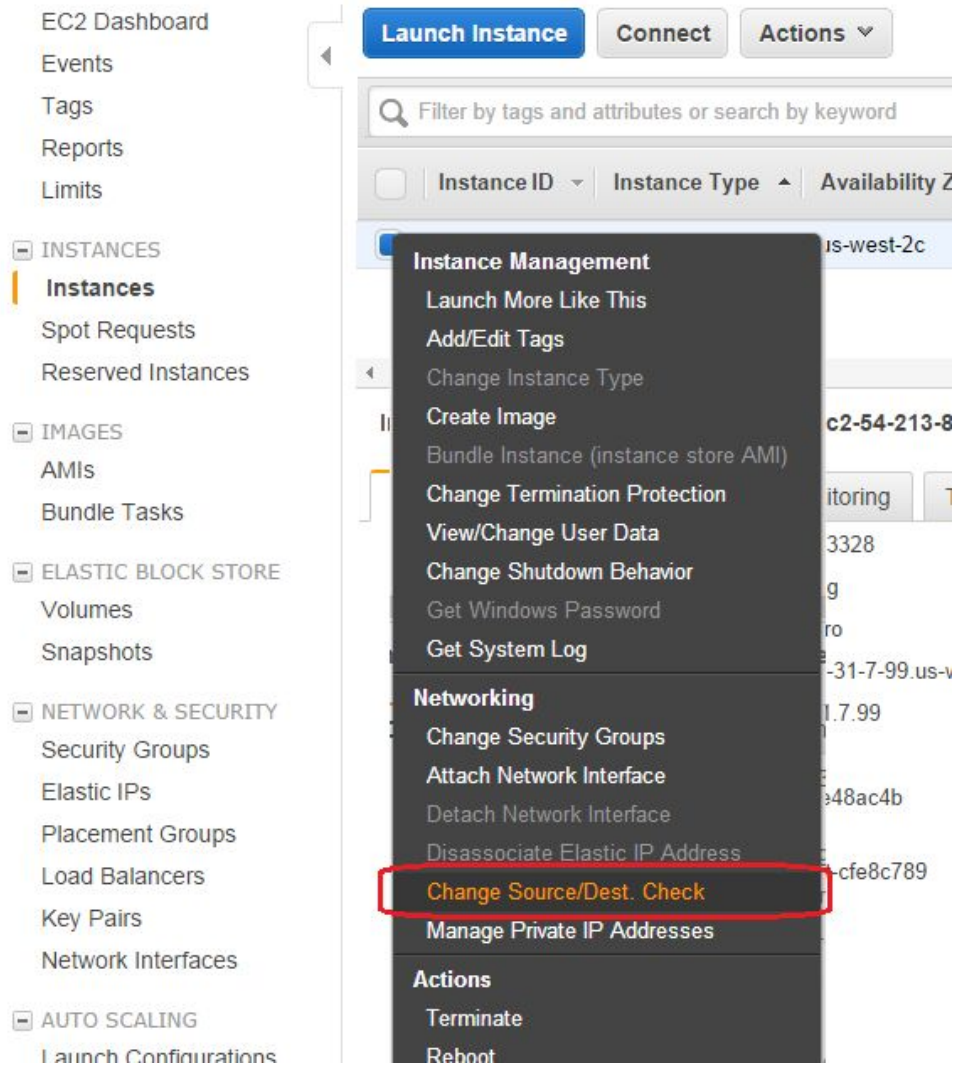
Instance: **i-20353328** Public DNS: **ec2-54-213-85-222.us-west-2.compute.amazonaws.com**

Description **Status Checks** **Monitoring** **Tags**

Instance ID	i-20353328	Public DN:
Instance state	running	Public II
Instance type	t1.micro	Elastic II

- After highlighting the running instance, right-click to bring up the **context menu**.
- Click on **“Change Source/Des. Check”** in the context menu

5. Select “**Disable Source/Dest. Check**”.



Accessing FusionHub

1. Note down FusionHub's public **IP address**.

Alarm Status	Public DNS	Public IP	Key
one	ec2-54-213-85-2.us-west-2.compute.amazonaws.com	54.213.85.2	solr

--	--

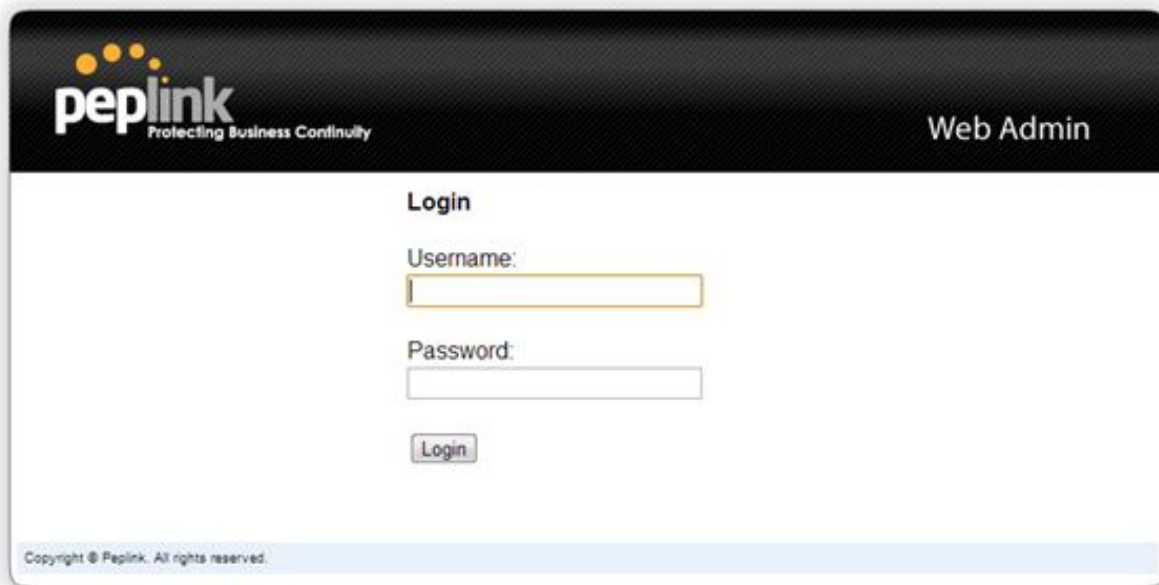
Public DNS	ec2-54-213-85-2.us-west-2.compute.amazonaws.com
Public IP	54.213.85.2
Elastic IP	-
Availability zone	us-west-2c
Security groups	launch-wizard-2 . view rules
Scheduled events	No scheduled events

2. In your web browser, type in “**http://[FusionHub.instance.public.ip.address]**” in order to access FusionHub's administration interface. In our example, the line to type into the web browser would be: <http://54.213.85.2/>
3. Follow [Section 5](#) to continue.

5. FusionHub Interface Configuration

5.1 Connecting to FusionHub's Web Admin Interface

1. Open a Web browser on the computer hosting your Peplink FusionHub virtual machine.
2. To access FusionHub's Web admin interface, connect your computer to the network on which FusionHub is running. The default WAN connection method for FusionHub is DHCP.
3. If the DHCP server is available in your network, the FusionHub IP address will be automatically obtained by the DHCP server. The Web admin address will appear on the FusionHub console automatically (i.e., Admin: http://10.8.8.252). Enter the Web admin address (i.e., http://10.8.8.252) in your Web browser's address field.
4. If there is no DHCP server in your network, set your computer's IP address to 169.254.x.x (x denotes any integer from 2 to 253), using a subnet mask of 255.255.0.0.
5. After successfully changing these settings, enter **http://169.254.254.254** in your Web browser's address field.
6. Next, access the Web admin interface by entering **admin** for both the user name and password. The default admin and read-only user passwords can be changed after logging into the Web admin interface at **System > Admin Security**.



The image shows the Peplink Web Admin login interface. At the top, there is a black header with the Peplink logo on the left and 'Web Admin' on the right. Below the header, the word 'Login' is centered. Underneath, there are two input fields: 'Username:' and 'Password:'. A 'Login' button is positioned below the password field. At the bottom of the page, a small copyright notice reads 'Copyright © Peplink. All rights reserved.'

7. Once you have successfully logged in, the **Setup Wizard** will be displayed.

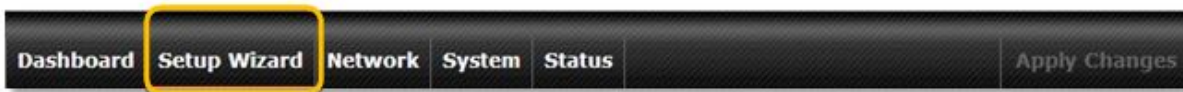


The image displays the Peplink Setup Wizard interface. The top navigation bar includes 'Dashboard', 'Setup Wizard' (which is highlighted), 'Network', 'System', and 'Status'. On the far right of this bar is an 'Apply Changes' button. On the left side, there is a 'WAN Setup' section with a 'Logout' button. The main content area is titled 'Setup Wizard > Welcome > Step 1'. It contains a welcome message: 'Welcome to Setup Wizard! The Setup Wizard will guide you through the port(s) configuration step by step. This wizard is designed to simplify the process in configuring your device and connecting it to the Internet. Click Next to begin.' At the bottom right, there are two buttons: 'Next >>' and 'Cancel'.

5.2 Configuration Using the Setup Wizard

FusionHub's **Setup Wizard** leads you step-by-step through the process of configuring your WAN connection.

1. Click **Setup Wizard** after connecting to the Web admin interface.




2. Click **Next** to begin.



- Click **Next** to configure the WAN connection. Select the WAN connection method from the following screen. The default selection is **DHCP**.



Choose a connection method for WAN port

Connection Method 	
Method	Select
Static	<input type="radio"/>
DHCP	<input checked="" type="radio"/>
PPPoE	<input type="radio"/>

- Depending on the selected connection type, further configuration may be needed:

- If **Static** is selected, the Setup Wizard will display **Static IP Settings**.

Enter the parameters of Static IP setting for WAN port

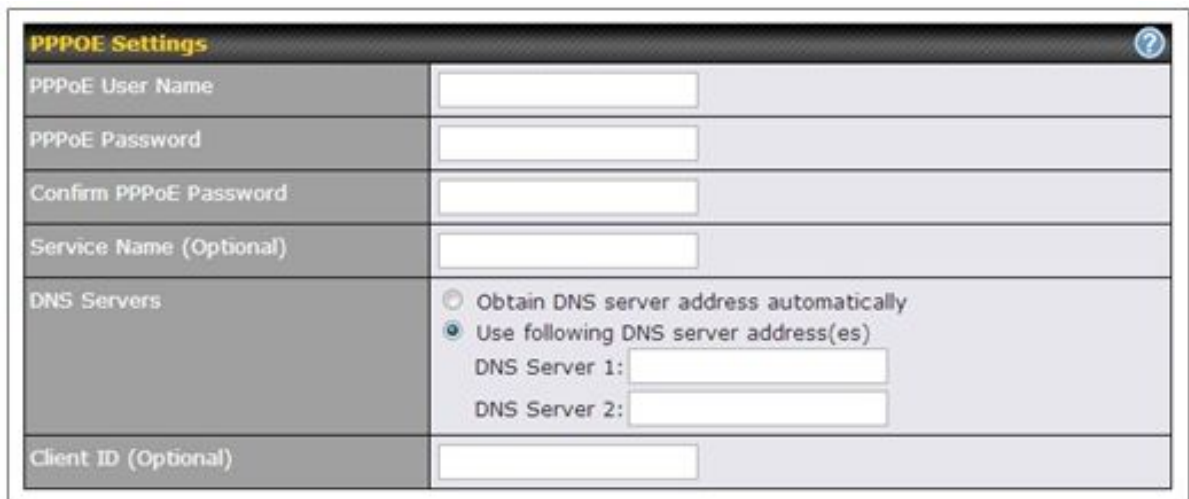
Static IP Settings 	
IP Address	<input type="text"/>
Subnet Mask	<input type="text" value="255.255.255.0"/> 
Gateway	<input type="text"/>
DNS Servers	DNS Server 1: <input type="text"/> DNS Server 2: <input type="text"/>

- If **DHCP** is selected, the Setup Wizard will display **DHCP Settings**.

Enter the parameters of DHCP setting for this port

DHCP Settings	
DNS Servers	<input checked="" type="radio"/> Obtain DNS server address automatically <input type="radio"/> Use following DNS server address(es) DNS Server 1: <input type="text"/> DNS Server 2: <input type="text"/>
Client ID (Optional):	<input type="text"/>

- If **PPPoE** is selected, the Setup Wizard will display **PPPoE Settings**.



PPPoE Settings	
PPPoE User Name	<input type="text"/>
PPPoE Password	<input type="password"/>
Confirm PPPoE Password	<input type="password"/>
Service Name (Optional)	<input type="text"/>
DNS Servers	<input type="radio"/> Obtain DNS server address automatically <input checked="" type="radio"/> Use following DNS server address(es) DNS Server 1: <input type="text"/> DNS Server 2: <input type="text"/>
Client ID (Optional)	<input type="text"/>

During this step, make sure the FusionHub and ESXi servers are on the same network if **Static** is selected. For example:

If the ESXi server's IP settings are:

IP address: **10.8.9.124**

Subnet mask: **255.255.0.0**

Default gateway: **10.8.8.1**

Configure port settings as follows:

IP address: **10.8.x.x** (x denotes any integer from 2 to 254)

Subnet mask: **255.255.0.0**

Default gateway: **10.8.8.1**

Setup Wizard > Default Gateway > Step 5

Would you use this port as your default gateway?

Default Gateway Setting	
Yes	<input checked="" type="radio"/>
No	<input type="radio"/>

- If there is more than one port on the ESXi server and you have assigned two network adapters to this FusionHub virtual machine, the LAN port configuration dialog will be open. The default selection is **Static**.

Choose a connection method for LAN port

Connection Method	
Method	Select
Static	<input checked="" type="radio"/>
DHCP	<input type="radio"/>
Disable	<input type="radio"/>

- If **Static** is selected, the Setup Wizard will display **Static IP Settings**.

Enter the parameters of Static IP setting for LAN port

Static IP Settings	
IP Address	<input type="text"/>
Subnet Mask	255.255.255.0

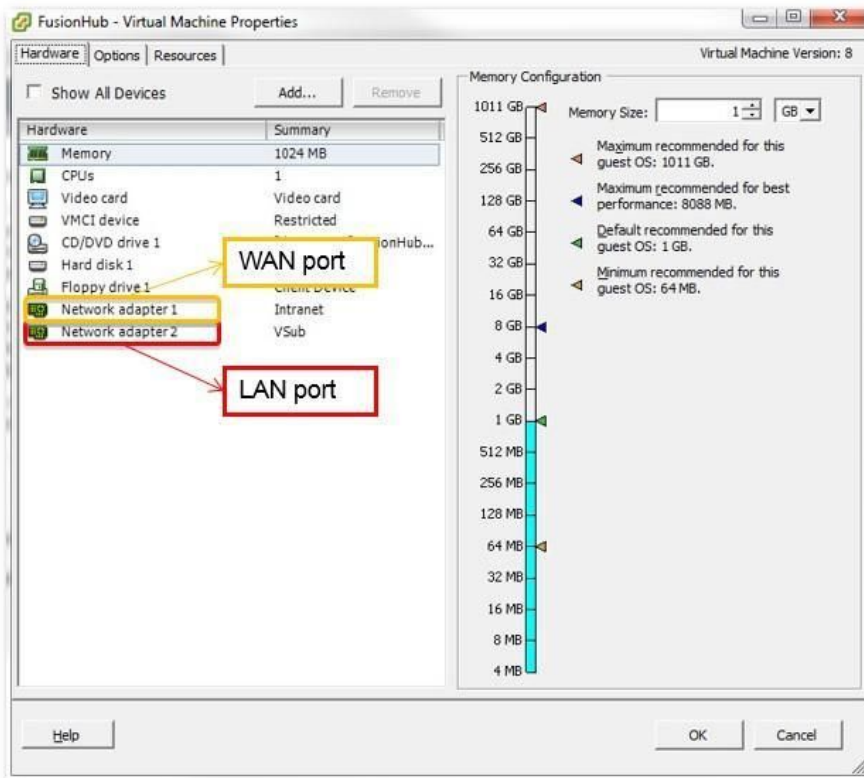
- If **DHCP** is selected, the Setup Wizard will display **DHCP Settings**.

Enter the parameters of DHCP setting for LAN port

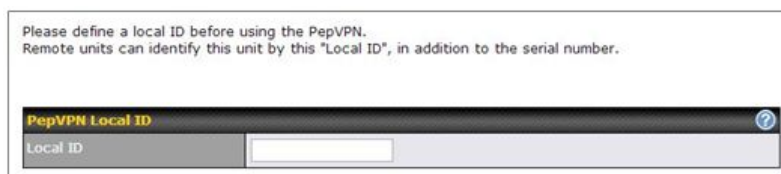
DHCP Settings	
Client ID (Optional)	<input type="text"/>

- If **Disable** is selected, the Setup Wizard will move to the next step.

Note: FusionHub virtual machines support a maximum number of two network adapters. By default, **Network adapter 1** is set as the WAN port, and **Network adapter 2** is set as the LAN port.



6. Click **Next** to define a **Local ID** before using PepVPN. The local ID is a text string that identifies this local unit when establishing a VPN connection. Remote units can identify this unit using the local ID, as well as by serial number. When creating a profile on a remote unit, this unit's local ID must be entered into the remote unit's **Remote ID** field.



7. Click **Next** to choose the time zone of your country/region. Check **Show all** to display all time zone options.

Setup Wizard > Timezone > Step 7

Choose time zone of your Country / Region.

Time Zone Settings	
Time Zone	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
	<input type="checkbox"/> Show all

- Check to make sure all settings have been configured correctly, and then click **Save and Apply Settings** to confirm.

Setup Wizard > Save and Apply Setting > Final Step

Confirm the configuration below. Click *Back* to modify the configuration settings in previous steps. Click *Save and Apply Settings* when you are done.

Summary of Configuration	
WAN Port	
Connection Method	Static IP
IP Address	10.8.50.50
Subnet Mask	255.255.0.0
Default Gateway	10.8.8.1
DNS Server	10.8.8.1
LAN Port	
Enable	No
Local ID	
Local ID	FusionHubVM
Time Zone Settings	
Time Zone	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi

- You will be redirected to the **License Information** dialog. The default selection for **Virtual Machine Model** is **VMware ESXi**. The default **License Information** dialog looks similar to the following:

Setup Wizard > License > License Activation

Enter license information

License Information	
License Key	<input type="text"/>
Virtual Machine Model	VMware ESXi
ESXi Server Address	<input type="text"/>

(Registered trademarks are copyrighted by their respective owner)

If you are **not** using VMware ESXi, please select **Other** for the **Virtual Machine Model**. In that case, the license activation dialog will look similar to this:

Enter license information

License Information	
License Key	<input type="text"/>
Virtual Machine Model	Other

(Registered trademarks are copyrighted by their respective owner)

- **License Key** is the FusionHub license key obtained from the InControl2 webpage. Please refer to **FusionHub License Generation** for details on creating this license key.
- **Virtual Machine Model** is the virtual machine platform on which FusionHub is implemented. If FusionHub is implemented on a VMware ESXi Server, please select **VMware ESXi**. If it is implemented on a VMware Workstation or VMware Player, please select **Other**.
 - **ESXi Server address** is the ESXi server's hostname or IP address. Note: this column is shown only when **VMware ESXi** is selected.
 - Click **Submit** after filling the form.

10. When the license is successfully activated, you will see the following screen:



The information shown on the FusionHub console will change to the following:

```
Peplink FusionHub 6.1.0 build 1175
System Information
Serial No. : 1124-EBBC-FEE2
License   : Evaluation, expiry date 2014-01-21

Network settings
Method    : DHCP
IP Address : 10.8.8.252
Subnet Mask: 255.255.0.0
Gateway   : 10.8.8.1
DNS Server : 10.8.8.1
Admin     : http://10.8.8.252

Enter 'setup' to configure network settings
_
```

If you have changed your computer's IP to 169.254.x.x, please change the computer's IP settings so that they're the same as your FusionHub network settings, and then connect to FusionHub's Web admin again.

6. PepVPN with SpeedFusion Settings

This section will describe how to set up PepVPN with SpeedFusion.

6.1 Background

Peplink FusionHub securely connects one or more branch offices to your company's main datacenter or to other branches. Data, voice, and video communications between these locations are kept confidential across the public Internet.

FusionHub's SpeedFusion Bandwidth Bonding feature, enabled by default, is specifically designed for multi-WAN environments. FusionHub can bond all WAN bandwidth for routing SpeedFusion traffic, and unless all of one site's WAN connections are down, the Peplink Balance can keep your VPN up and running.

When supporting multiple VPN connections, FusionHub can act as a central hub that connects branch offices. For example, if Branch Office A and Branch Office B make VPN connections to Headquarters C, both branch office LAN subnets and the subnets behind them (e.g., static routes) will also be advertised to Headquarters C and the other branches. In this example, Branch Office A will be able to access Branch Office B via Headquarters C.

The local LAN subnet and subnets behind the LAN will be advertised to the VPN. All VPN members (branch offices and the datacenter) will be able to route to local subnets. Note that all LAN subnets and subnets behind them must be unique. Otherwise, VPN members will not be able to access each other.

All data can be routed over the VPN using the 256-bit AES encryption standard. In the following sections, three FusionHub application examples illustrate how to set up your devices.

6.2 Example One

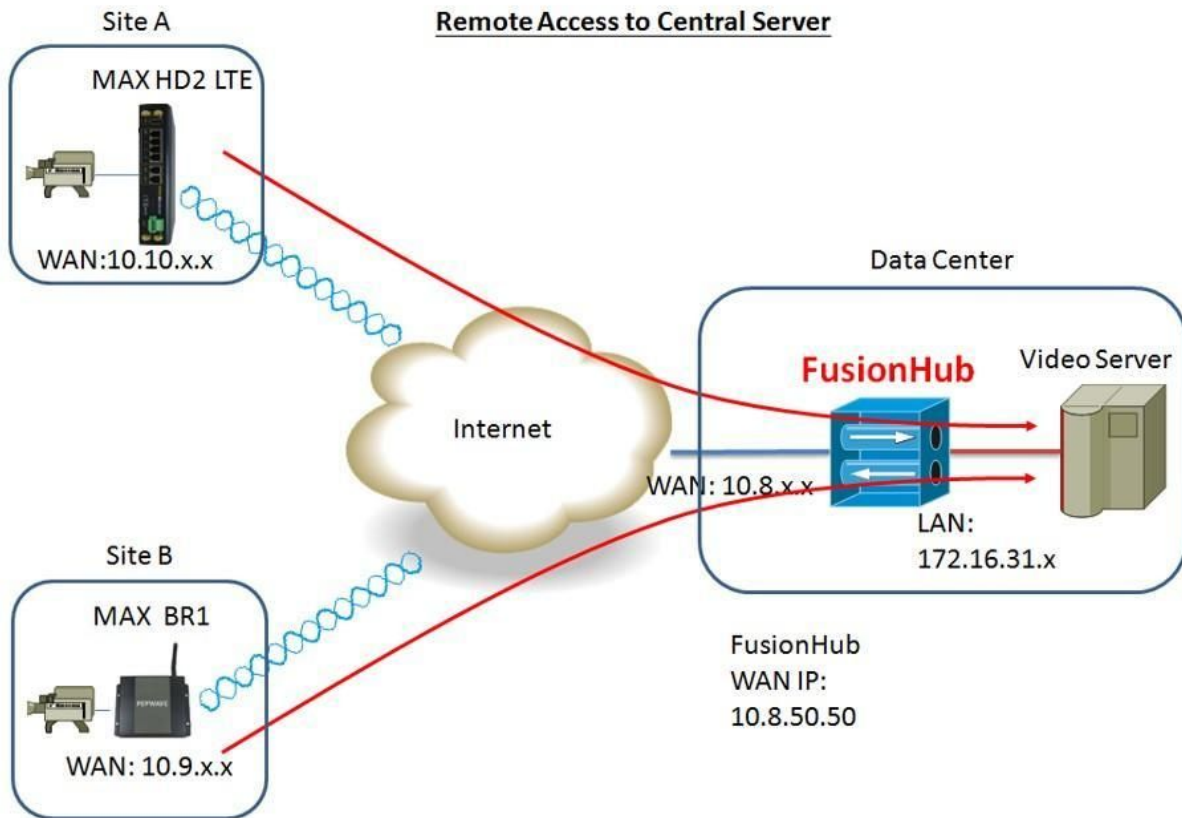


Figure 5.1 Remote Access to Central Server

To set up the scenario shown in Figure 5.1, we need to configure a MAX HD2 at Site A, a MAX BR1 at Site B, and FusionHub (two network adapters are needed) at the Datacenter.

In our case, FusionHub settings (refer to **Configuration Using the Setup Wizard**) are as follows:

IP address: **10.8.50.50** (static IP)

Netmask: 255.255.0.0

Default gateway: **10.8.8.1**

Local ID: FusionHubVM



The screenshot shows the Peplink Setup Wizard interface. The top navigation bar includes 'Dashboard', 'Setup Wizard', 'Network' (selected), 'System', and 'Status'. A 'Logout' button is located in the left sidebar. The main content area is titled 'Network' and contains three sections:

- Connection Settings:**
 - Connection Method: Static (dropdown)
 - IP Address: 10.8.50.50
 - Subnet Mask: 255.255.0.0 (dropdown)
 - Gateway: 10.8.8.1
 - DNS Server 1: 10.8.8.1
 - DNS Server 2: (empty field)
- SpeedFusion™ Peers Access Internal Network:**
 - Enable: ☐ (with a help icon ?)
- Physical Interface Settings:**
 - MTU: 1440 (with a help icon ?) and a 'Default' button
 - MSS: ☒ Auto ☐ Custom (with a help icon ?)

An 'Apply Changes' button is located in the top right corner of the main content area.

MAX HD2 LTE configuration (Site A)

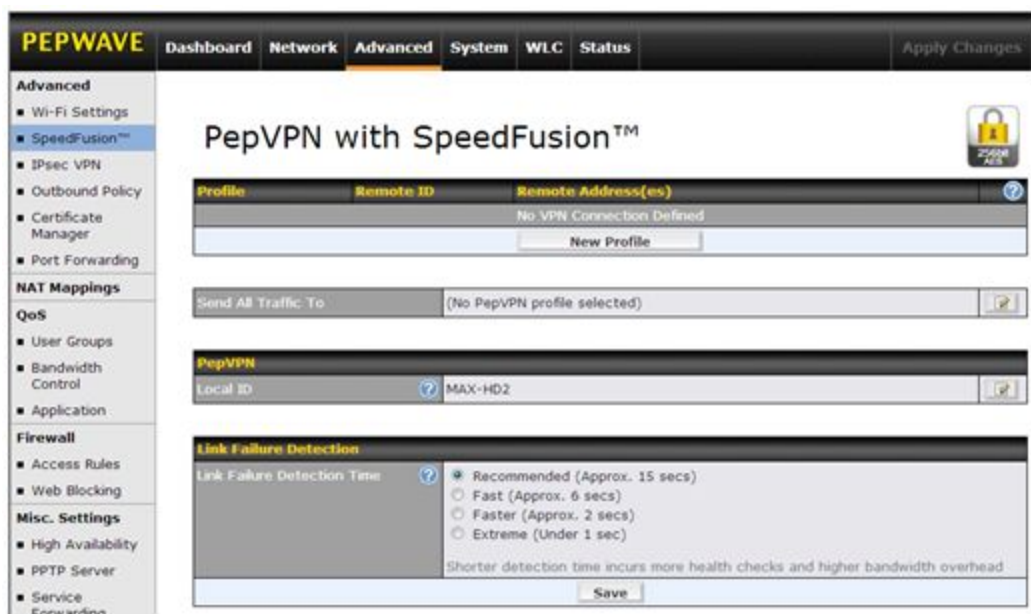
Suppose that the MAX HD2 in Figure 5.1 is configured with the following IP settings:

WAN 1 IP address: **10.10.13.49**

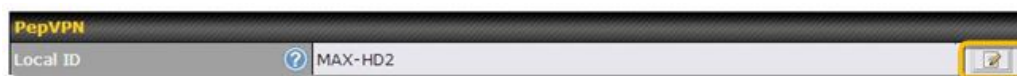
WAN 2 IP address: **10.10.13.50**

LAN IP address: **192.168.150.1**

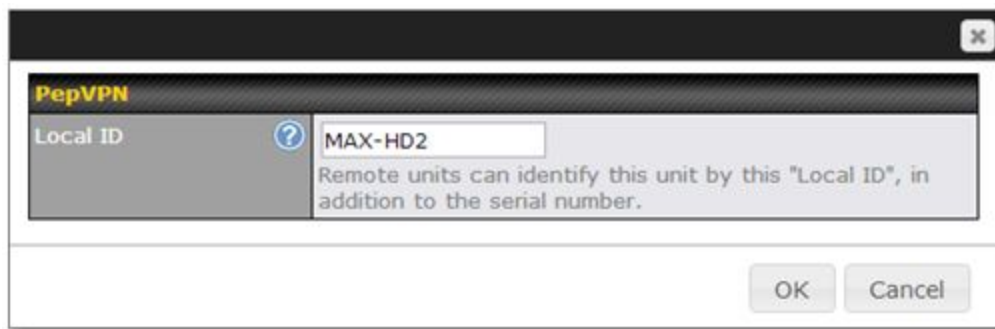
1. To configure, connect to the Web admin interface of the MAX HD2, and then navigate to **Advanced > SpeedFusion**.



2. Next, click  under **PepVPN**.



3. Enter a **Local ID**, such as **MAX-HD2**, for this MAX HD2, and then click **OK**.



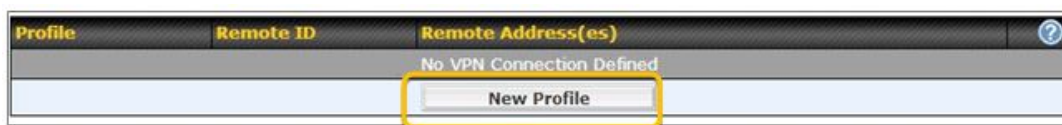
PepVPN

Local ID ?

Remote units can identify this unit by this "Local ID", in addition to the serial number.

OK Cancel

- Click **New Profile** under **Profile** to add a new profile.



Profile	Remote ID	Remote Address(es)
No VPN Connection Defined		
New Profile		

- On the dialog displayed next, fill the form as follows:

Name – Enter a name to represent this profile. In this case, we chose **FusionHub**.

Remote ID – **Remote ID** should be the same as FusionHub's **Local ID**. In our case, the FusionHub local ID is **FusionHubVM**.

Click **Preshared Key** and create a pre-shared key, which is **12345678** in our example.

Remote IP addresses – Here, we've entered **10.8.50.50**, the FusionHub IP address.

PepVPN Profile					
Name	FusionHub				
Active	<input checked="" type="checkbox"/>				
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF				
Authentication	<input checked="" type="radio"/> Remote ID / Pre-shared Key				
Remote ID / Pre-shared Key	<table border="1"> <tr> <th>Remote ID</th> <th>Pre-shared Key</th> </tr> <tr> <td>FusionHubVM</td> <td>.....</td> </tr> </table>	Remote ID	Pre-shared Key	FusionHubVM
Remote ID	Pre-shared Key				
FusionHubVM				
NAT Mode	<input type="checkbox"/>				
Remote IP Address / Host Names (Optional)	10.8.50.50 <small>If this field is empty, this field on the remote unit must be filled</small>				
Cost	10				
Data Port	<input checked="" type="radio"/> Auto <input type="radio"/> Custom				
Bandwidth Limit	<input type="checkbox"/>				
WAN Smoothing	Off				
Receive Buffer	0 ms				
WAN Connection Priority					
1. WAN	Priority: 1 (Highest)				
2. Cellular	Priority: 2				
3. USB	Priority: 3 (Lowest)				

Save Cancel

6. After completing the form, click **Save** and then **Apply Changes**.

MAX BR1 configuration (Site B)

Assume the MAX BR1's IP settings are:

WAN IP address: **10.9.3.167**

LAN IP address: **192.168.71.1**

1. To configure the MAX BR1, connect to the MAX BR1's Web admin interface (in our case, the Web admin interface address is **http://192.168.71.1**), and then navigate to **Advanced > PepVPN**.

PEPWAVE Dashboard Network **Advanced** System Status Apply Changes

Advanced

- Wi-Fi Settings
- PepVPN**
- IPsec VPN
- Port Forwarding

NAT Mappings

QoS

- Application

Firewall

Misc. Settings

- Service Forwarding
- Service Passthrough

Logout

PepVPN

Profile **Remote ID** **Remote Address(es)** ?

No VPN Connection Defined

New Profile

Outbound Policy (According to custom rules) ?

PepVPN Outbound Custom Rules

Service	Algorithm	Source	Destination	Protocol / Port
(Auto)				

Add Rule

PepVPN

Local ID ? MAX_BR1_169B ?

Link Failure Detection

Link Failure Detection Time ?

- ☒ Recommended (Approx. 15 secs)
- ☐ Fast (Approx. 6 secs)
- ☐ Faster (Approx. 2 secs)
- ☐ Extreme (Under 1 sec)

Shorter detection time incurs more health checks and higher bandwidth overhead

Save

2. Click  under **PepVPN**.

PepVPN

Local ID ? MAX_BR1_169B ?

3. Enter a **Local ID**, such as **MAX_BR1_169B**, for this MAX BR1, and then click **OK**.

PepVPN

Local ID ? MAX_BR1_169B

Remote units can identify this unit by this *Local ID*, in addition to the serial number.

OK Cancel

- Click **New Profile** under **Profile** to add a new profile.



- On the dialog displayed next, fill the form as follows:

Name – Enter a name to represent this profile. In this case, we chose **FusionHub**.

Remote ID – **Remote ID** should be the same as FusionHub's **Local ID**. In our case, the FusionHub local ID is **FusionHubVM**.

Click **Preshared Key** and create a pre-shared key, which is **23456789** in our example.

Remote IP addresses – Here, we've entered **10.8.50.50**, the FusionHub IP address.

The screenshot shows the 'PepVPN Profile' configuration dialog box. It contains the following fields and settings:

- Name:** FusionHub
- Active:** ☒
- Encryption:** ☒ 256-bit AES ☐ OFF
- Authentication:** ☒ Remote ID / Pre-shared Key
- Remote ID / Pre-shared Key:**
 - Remote ID:** FusionHubVM
 - Pre-shared Key:** [Redacted]
- NAT Mode:** ☐
- Remote IP Address / Host Names (Optional):** 10.8.50.50
- Cost:** 10
- Data Port:** ☒ Auto ☐ Custom []
- Bandwidth Limit:** ☐
- WAN Smoothing:** Off
- Receive Buffer:** 0 ms

Below the main configuration fields is the 'WAN Connection Priority' section:

- 1. WAN: Priority: 1 (Highest)
- 2. Cellular: Priority: 2
- 3. USB: Priority: 3 (Lowest)

At the bottom right, there are 'Save' and 'Cancel' buttons.

After completing the form, click **Save** and then **Apply Changes**.

C. FusionHub configuration (Datacenter)

In our example, the IP address of the ESXi server is **10.8.9.24/16**, and the FusionHub IP address is **10.8.50.50/16**.

1. To configure FusionHub, connect to the FusionHub Web admin interface (<http://10.8.50.50>) again. Then, navigate to **Network > SpeedFusion**.



2. To add a new profile, click the **New Profile** button. On the dialog displayed next, fill the form as follows:

Name – Enter a name to represent this profile. In this case, since we’re adding the MAX HD2 to Site A, we chose **Site A**.

Remote ID – **Remote ID** should be the same as the MAX HD2's **Local ID**. In our case, the MAX HD2’s local ID is **MAX-HD2**.

Click **Preshared Key**, and then enter the same pre-shared key used with the MAX HD2, **12345678** in our example.

PepVPN Profile		
Name	Site A	
Active	<input checked="" type="checkbox"/>	
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF	
Authentication	<input checked="" type="radio"/> Remote ID / Pre-shared Key <input type="radio"/> X.509	
Remote ID / Pre-shared Key	Remote ID	Pre-shared Key
	MAX-HD2
Allow shared Remote ID	<input type="checkbox"/>	
NAT Mode	<input type="checkbox"/>	
Remote IP Address / Host Names (Optional)	<input type="text"/> <small>If this field is empty, this field on the remote unit must be filled</small>	
Cost	10	
Data Port	<input checked="" type="radio"/> Auto <input type="radio"/> Custom <input type="text"/>	
Bandwidth Limit	<input type="checkbox"/>	
WAN Smoothing	Off	
Receive Buffer	0 ms	

Save Cancel

3. After completing the form, click **Save** and then **Apply Changes**.

4. Click **New Profile** again to add the MAX BR1 to Site B.

Name – Enter a name to represent this profile. In this case, since we’re adding the MAX BR1 to Site B, we chose **Site B**.

Remote ID – **Remote ID** should be the same as the MAX BR1's **Local ID**. In our case, the local ID is **MAX-BR1-169B**.

Click **Preshared Key** and enter the same pre-shared key used with the MAX BR1, **23456789** in our example.

5. After completing the form, click **Save** and then **Apply Changes**.

PepVPN Profile		
Name	Site B	
Active	<input checked="" type="checkbox"/>	
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF	
Authentication	<input checked="" type="radio"/> Remote ID / Pre-shared Key <input type="radio"/> X.509	
Remote ID / Pre-shared Key	Remote ID MAX-BR1_169E	Pre-shared Key
Allow shared Remote ID	<input type="checkbox"/>	
NAT Mode	<input type="checkbox"/>	
Remote IP Address / Host Names (Optional)		
Cost	10	
Data Port	<input checked="" type="radio"/> Auto <input type="radio"/> Custom	
Bandwidth Limit	<input type="checkbox"/>	
WAN Smoothing	Off	
Receive Buffer	0 ms	

Save Cancel

6. On the **Dashboard**, we see that PepVPN with SpeedFusion has been established for Site A and B.

Interface	
WAN IP Address:	192.168.1.1

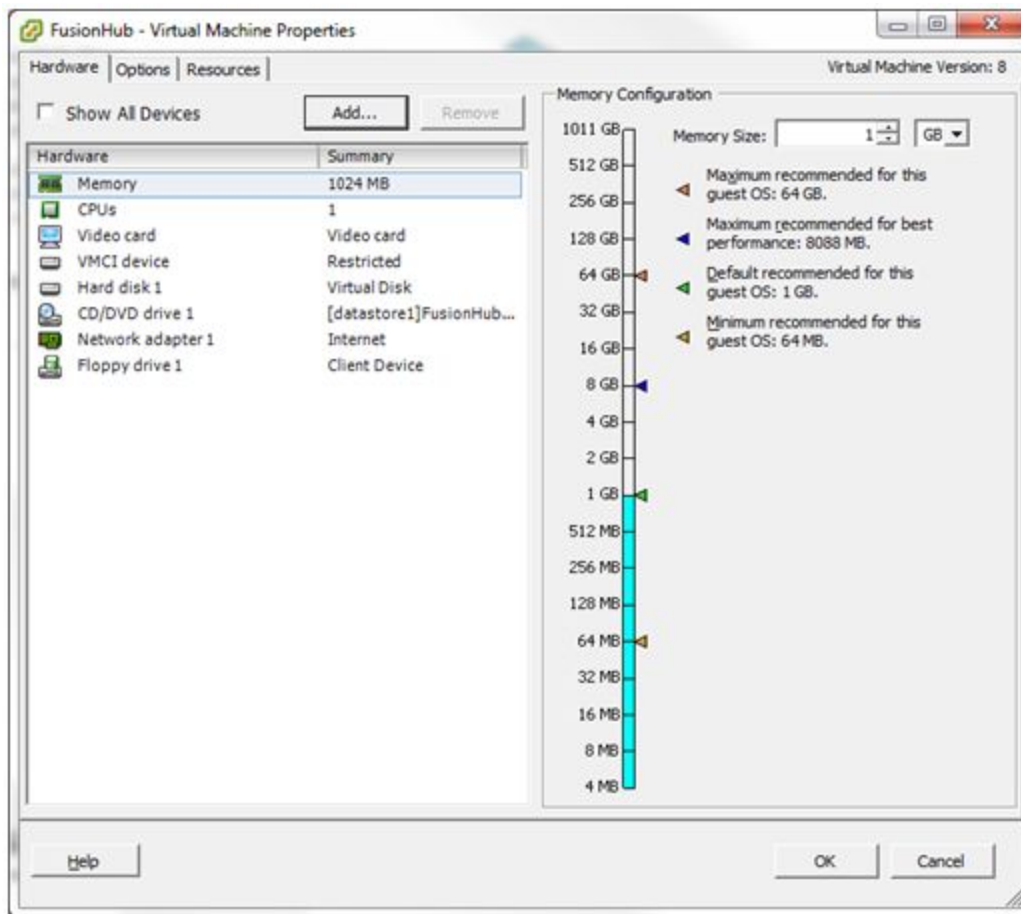
PepVPN with SpeedFusion		Status
Site A	<input checked="" type="checkbox"/>	Established
Site B	<input checked="" type="checkbox"/>	Established

Device Information	
Model:	Peplink FusionHub
Firmware:	8.0.0b01 build 1566
Uptime:	0 days 22 hours 59 minutes
CPU Load:	1%
Throughput:	↓ 19.0 kbps ↑ 38.0 kbps

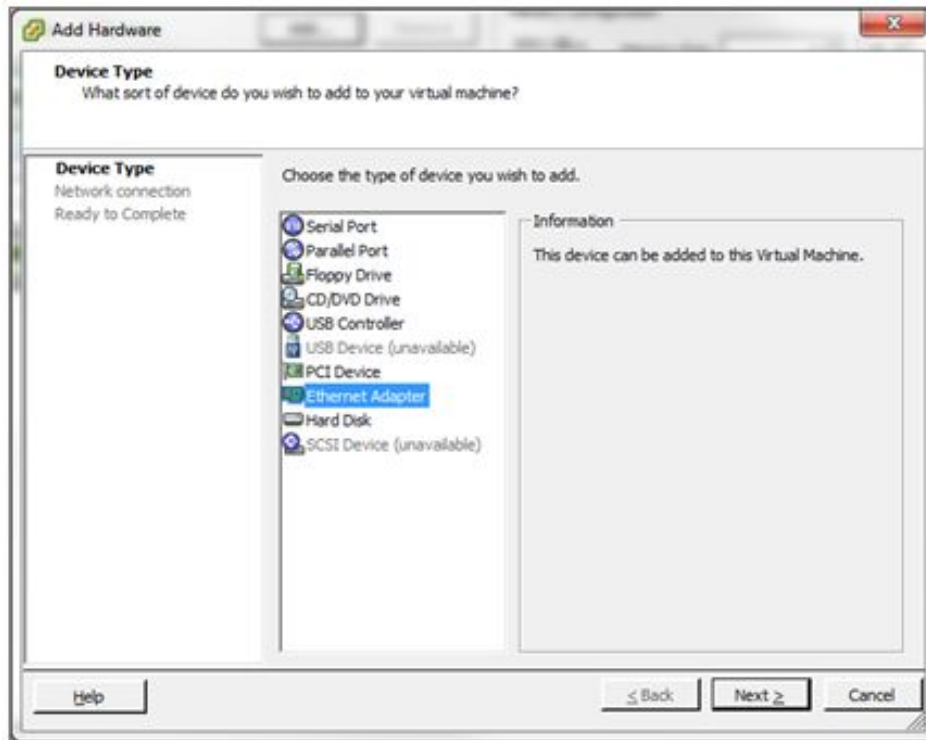
7. In order to make a direct link between FusionHub and the video server shown on the right-hand side of Figure 5.1, we need to add one more port (a network adapter) to FusionHub's virtual machine.

Adding a network adapter when using ESXi server

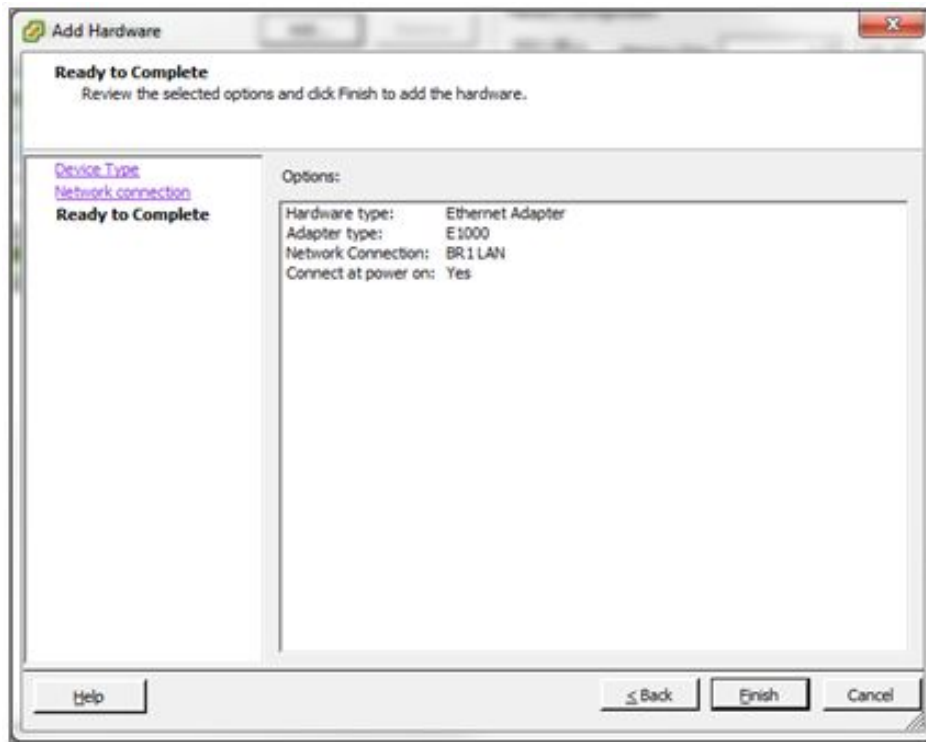
- a. Login to the ESXi server again, and then power off the FusionHub virtual machine. Next, click **Edit virtual machine settings**. On the **FusionHub – Virtual Machine Properties** dialog, click **Add** to add another network adapter.



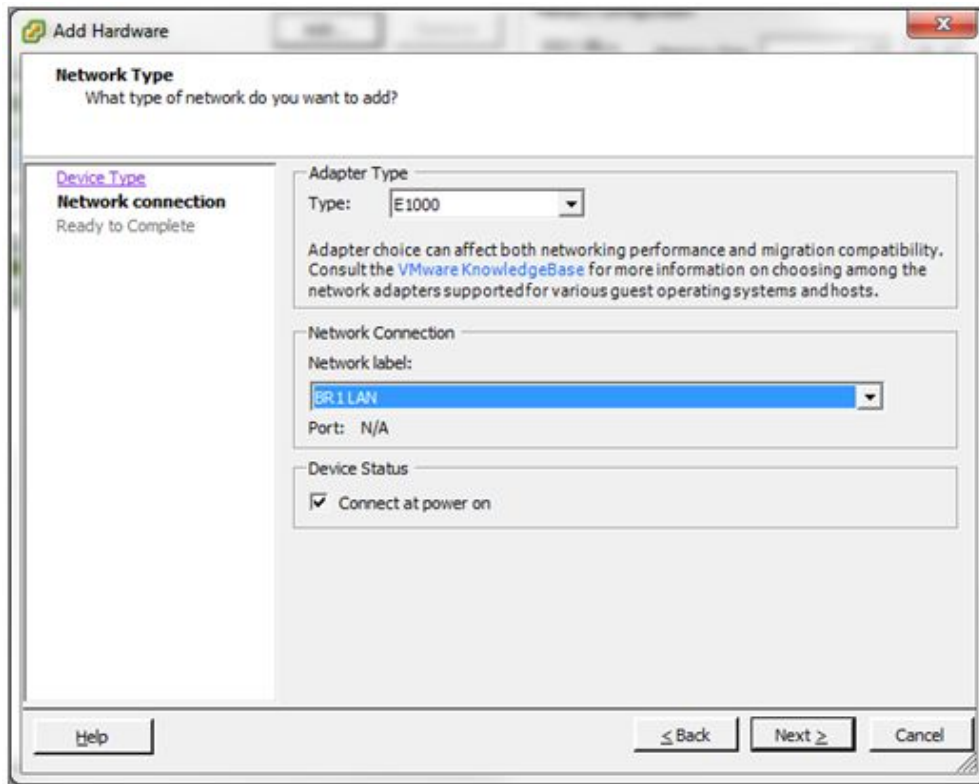
- b. Select **Ethernet Adapter**, and then click **Next**.



- c. Select a network and adapter from the drop-down menus, and then click **Next**.

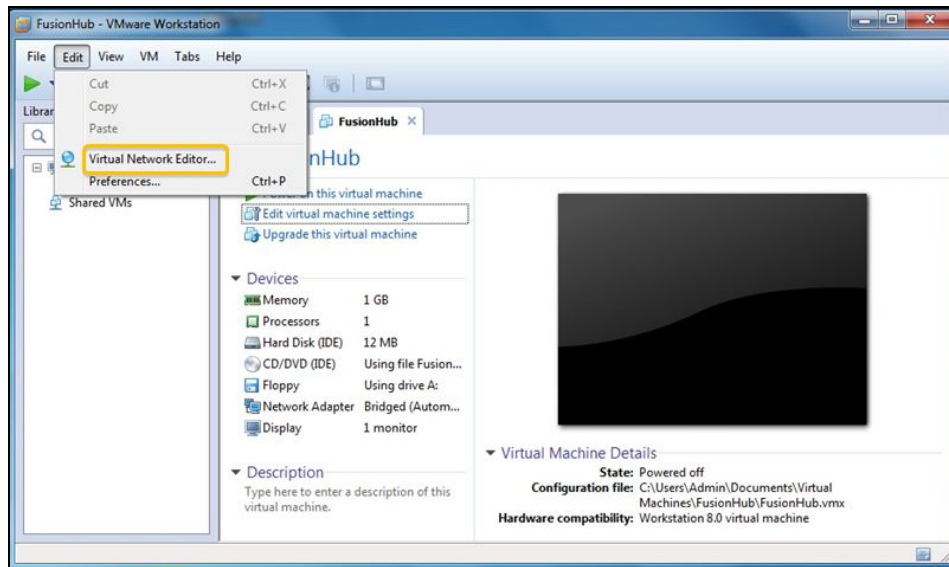


- d. Click **Finish** and then **OK** to save your settings.

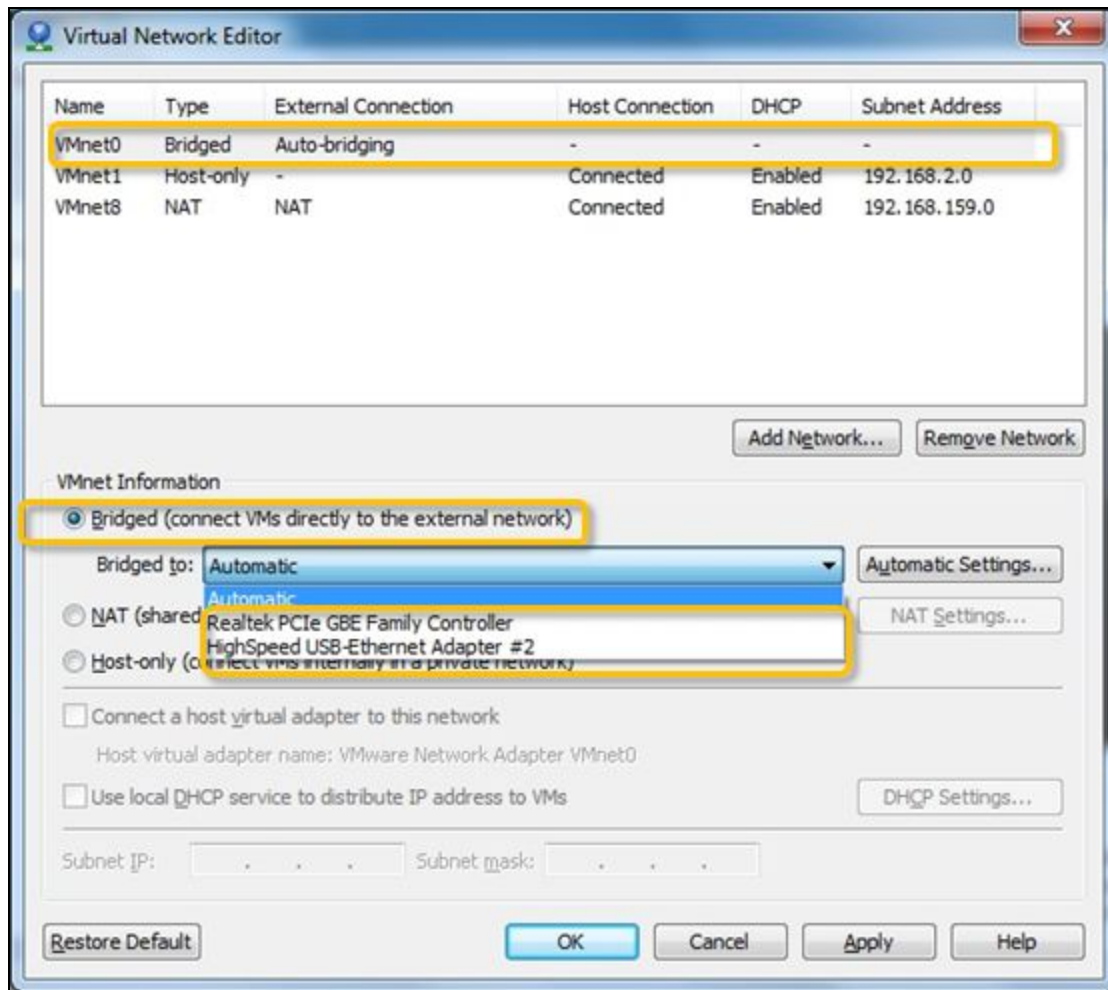


Adding a network adapter when using VMware Workstation

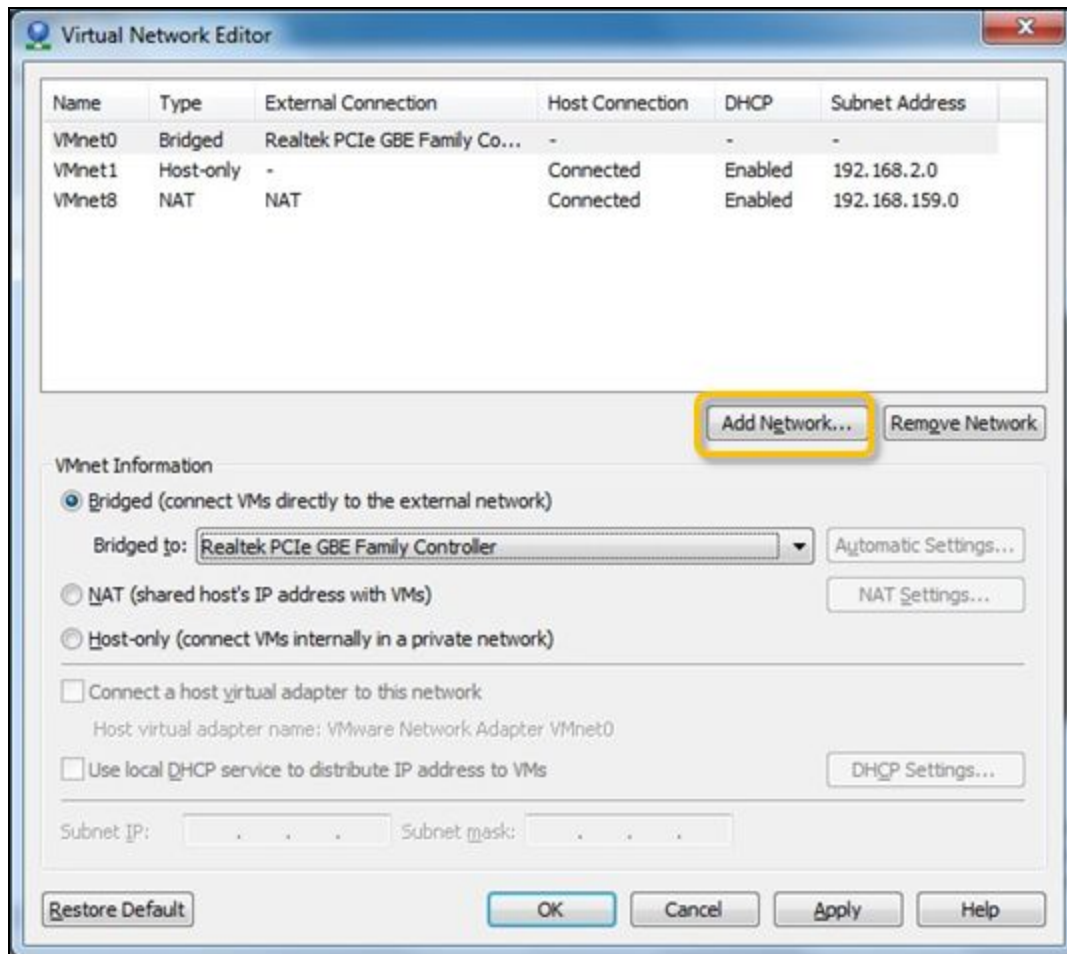
- a. Power off the FusionHub virtual machine and select **Edit > Virtual Network Editor**



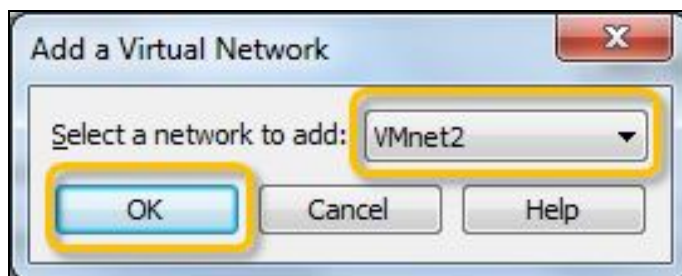
- b. Under VMnet Information, select **VMnet0** and check **Bridged (connect VMs directly to the external network)**. Select the appropriate network adapter from the drop-down menu and click **OK**.



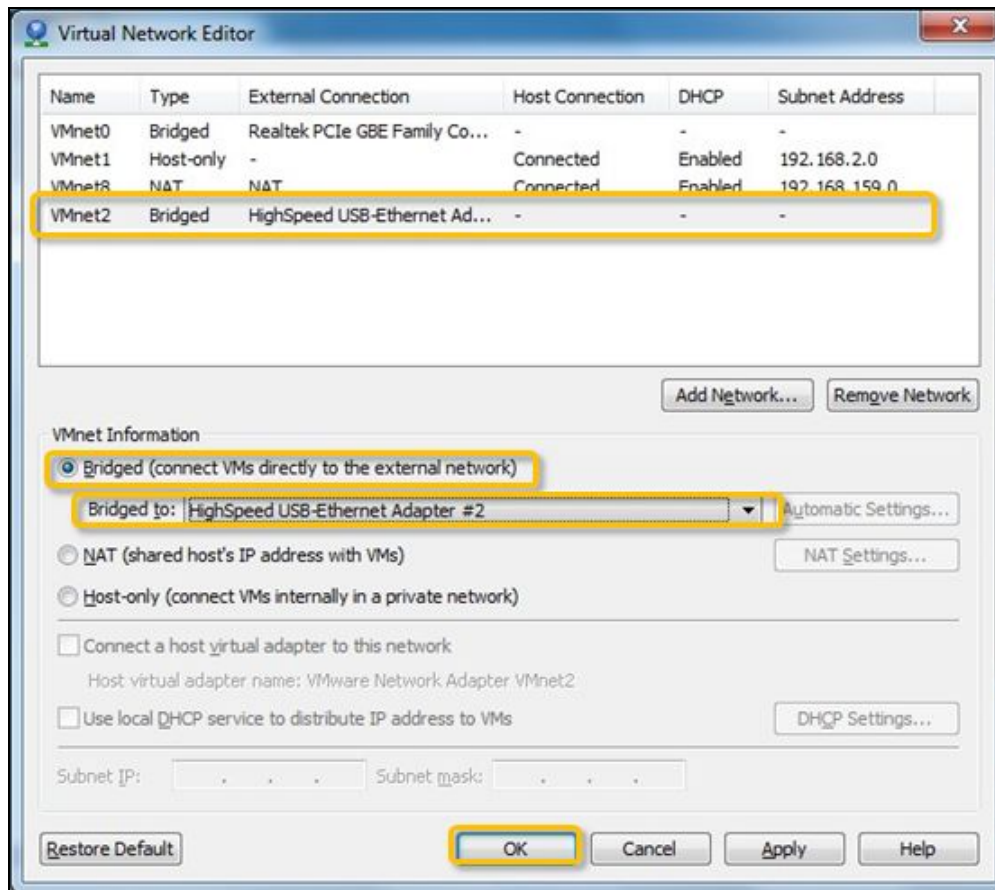
c. Click Add Network.



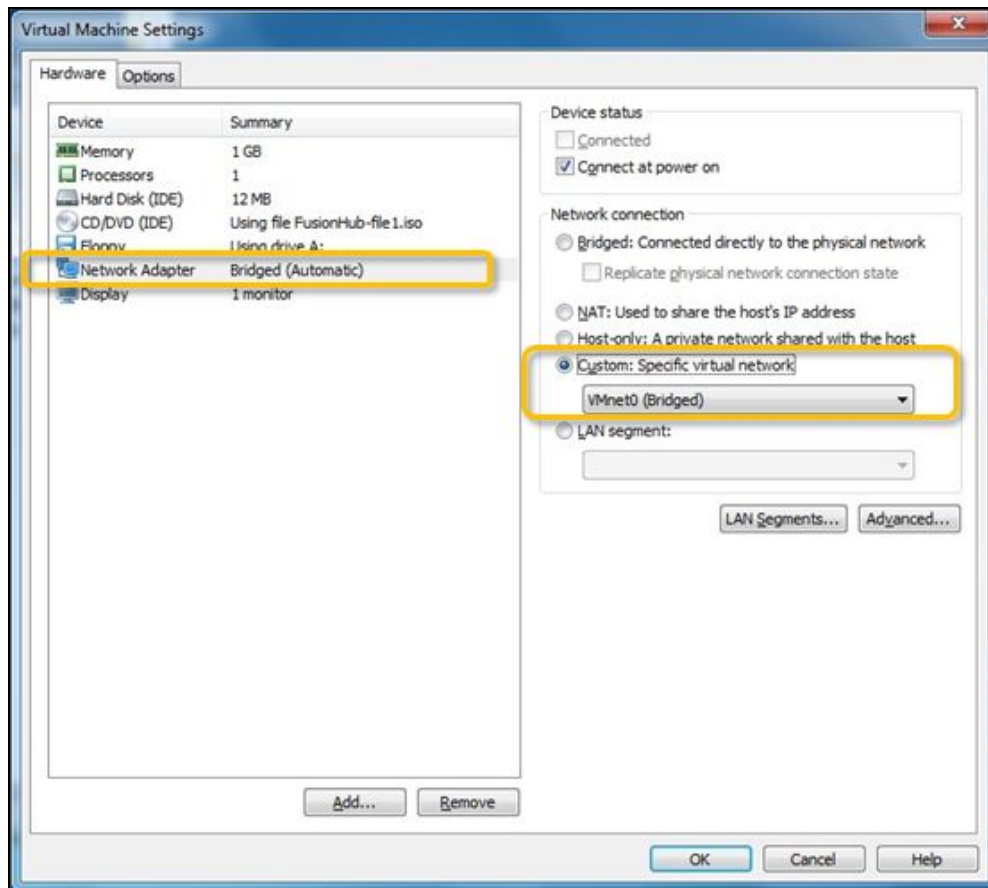
d. On the **Add a Virtual Network** dialog, select a network to add from the drop-down menu and click OK. In this example, we selected **VMnet2**.



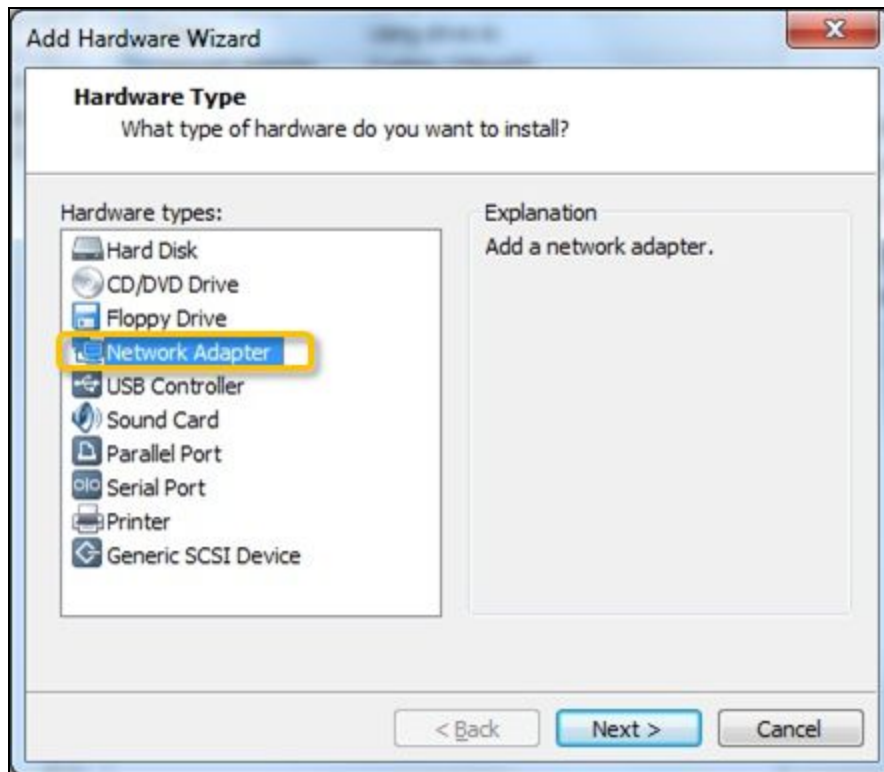
- e. Select the **VMnet2** network added in the previous step and check **Bridged (connect VMs directly to the external network)**. Click **OK** to apply changes.



- f. Click FusionHub and select Edit virtual machine settings. On the Virtual Machine Settings dialog, select Network adapter. Check Custom: Specific virtual network and select VMnet0 (Bridged). Then click Add to add another network adapter.



g. Select Network Adapter and click Next.



- h. Check **Custom: Specific virtual network** and select **VMnet2 (Bridged)** from the drop-down menu. Click **Finish** to complete the network adapter addition process.



Adding a network adapter when using VMware Player

The **Virtual Network Editor** is not available in **VMware Player**. If you want to test this example with VMware Player, first add a virtual network editor to VMware Player. Then follow the steps described in **VMware Workstation** to modify and add network adapters. For details on adding a virtual network editor to VMware Player, refer to <http://www.eightforums.com/virtualization/5137-how-add-virtual-network-editor-vmware-player-2.html#post275406>

8. After adding one or more network adapters to the FusionHub virtual machine, select **FusionHub** again. Click **Power on the virtual machine**, and then reconnect to the FusionHub Web admin interface. Navigate to **Network > LAN**.

peplink		Dashboard	Setup Wizard	Network	System	Status	Apply Changes
Interfaces ■ LAN ■ WAN		Connection Settings Connection Method: None					

9. Once you've set up the LAN port, click **Save** and then **Apply Changes**. In this case, the IP address of Port 2 is **172.16.31.100**.

Connection Settings	
Connection Method	Static ▼
IP Address	172.16.31.100
Subnet Mask	255.240.0.0 ▼
Gateway	172.16.31.255
Route PepVPN traffic to LAN	<input checked="" type="checkbox"/>

10. To set up the video server as shown in Figure 5.1, enter **172.16.31.x** as its IP address, and then set the default gateway so that it is the same as the IP address of FusionHub's port (in this example, the video server's default gateway address is **172.16.31.100**). Finally, directly link the video server and FusionHub Port 2 with one network cable.

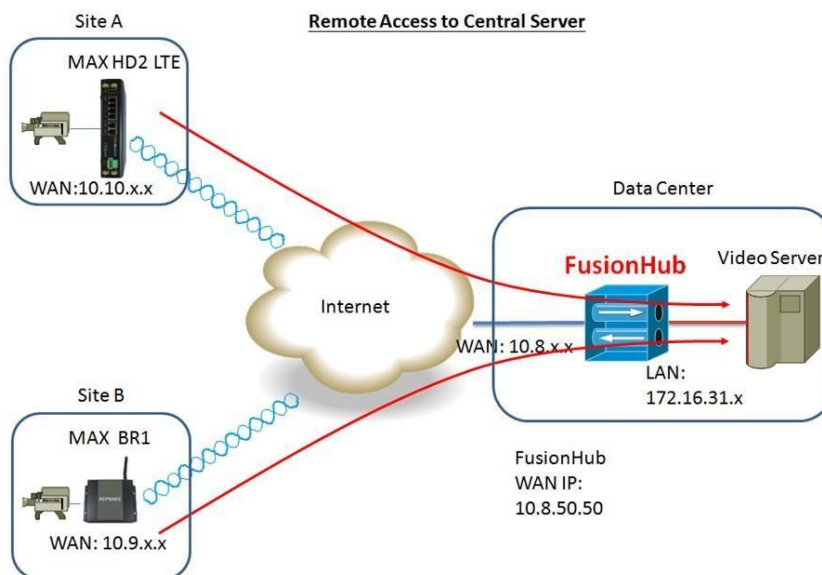


Figure 5.1 Remote access to central server

6.3 Example Two

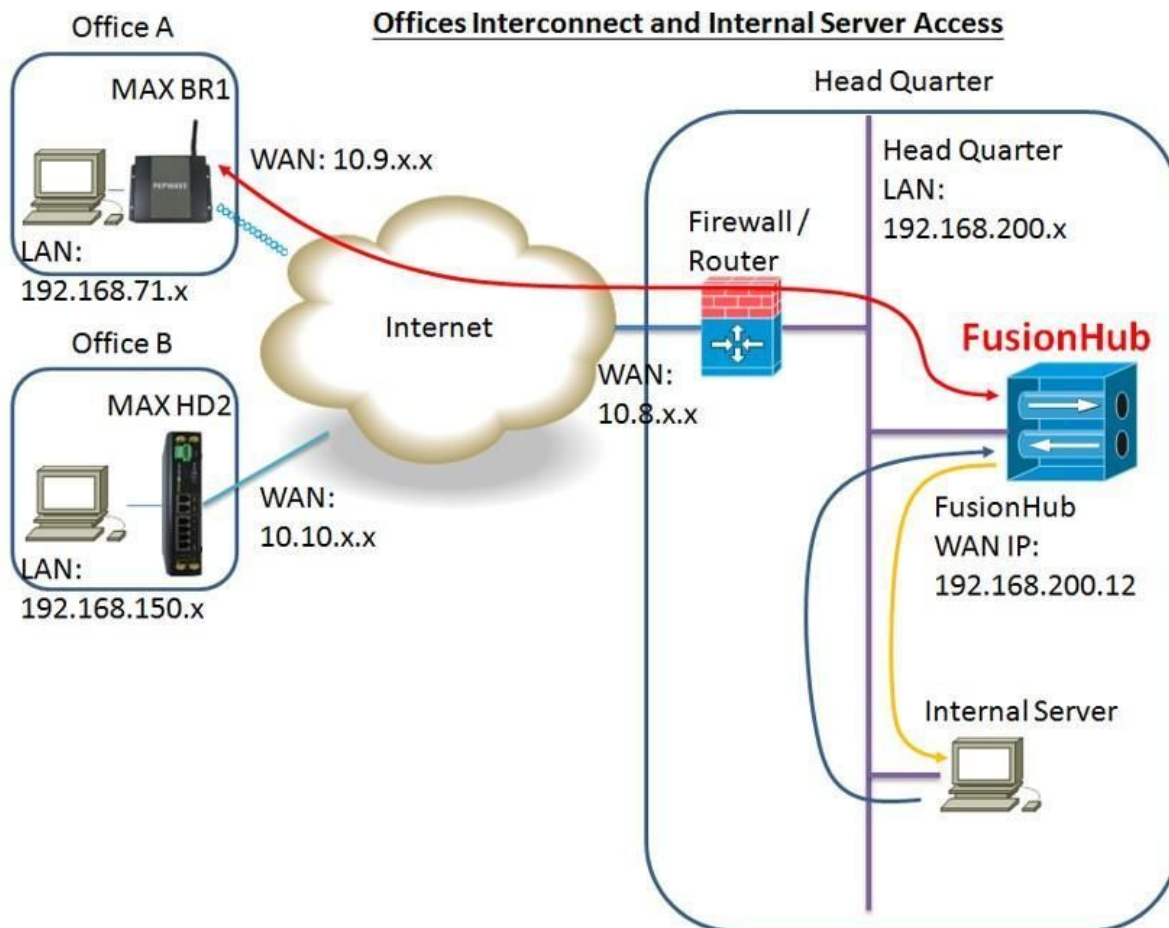



Figure 5.2 Offices interconnect

In this example, the hosts located at Office A want to communicate with the host located at Headquarters.

Case one: Supposing that network access is always made from Office A to Headquarters, setup your devices as follows:

MAX BR1 Settings

The settings for the MAX BR1 in Office A are the same as those in the first example, except that the **Remote IP Address/Host Names Optional** item in the PepVPN profile for FusionHub should be changed to the IP address of the firewall/router .

MAX BR1 Setting: Advanced > PepVPN > Profile > FusionHub

PepVPN Profile	
Name	FusionHub
Active	<input checked="" type="checkbox"/>
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF
Remote ID	FusionHubVM
Authentication	<input type="radio"/> By Remote ID only <input checked="" type="radio"/> Preshared Key <input type="radio"/> X.509
Pre-shared Key	23456789 <input type="checkbox"/> Hide Characters
Remote IP Address / Host Names (Optional)	10.8.9.62 Type the IP Address of Firewall/Router <small>If this field is empty, this field on the remote unit must be filled</small>
Data Port	<input checked="" type="radio"/> Default <input type="radio"/> Custom

Save Cancel

FusionHub Settings

The FusionHub settings are also the same as those used in the first example, except that we need only one FusionHub port in this example. Therefore, if you have added a second port during Example One, please complete the following steps to remove one port:

1. Power off the FusionHub
2. Remove the network adapter added in Example One
3. Power on the FusionHub

Next, connect to the FusionHub Web admin interface. Navigate to **Network > WAN**. Check the box under **SpeedFusion Peers Access Internal Network** to enable it. To save your changes, click **OK** and then **Apply Changes**.

The screenshot displays the Peplink FusionHub Web admin interface. The top navigation bar includes 'Dashboard', 'Setup Wizard', 'Network' (highlighted with a yellow box), 'System', and 'Status'. On the left sidebar, 'Interfaces' is expanded, and 'WAN' is selected (highlighted with a yellow box). Below 'WAN' are 'SpeedFusion™', 'QoS', and 'Misc. Settings'. A 'Logout' button is at the bottom of the sidebar. The main content area is titled 'Connection Settings' and contains the following fields:

Connection Method	Static
IP Address	192.168.200.12
Subnet Mask	255.255.255.0
Gateway	192.168.1.1
DNS Server 1	192.168.1.1
DNS Server 2	

Below this is the 'SpeedFusion™ Peers Access Internal Network' section, which includes an 'Enable' checkbox that is checked (highlighted with a yellow box). At the bottom is the 'Physical Interface Settings' section, which includes an 'MTU' field set to 1440 (with a 'Default' button) and an 'MSS' field set to 'Auto' (with radio buttons for 'Auto' and 'Custom').

Check **NAT Mode** in the PepVPN profile for FusionHub.

Firewall/Router  settings

Forward **UDP port 4500** to FusionHub (192.168.200.12, in our example). Then forward **TCP port 32015** to FusionHub (192.168.200.12, in our example).

Case two: Supposing that network access needs to be available on both sides: **Follow the same steps in case one except** in Step 2 do not check **NAT Mode** in the PepVPN profile for FusionHub.

Configuring the hosts located on the Headquarters LAN

In Figure 5.2, the host located on the Headquarters LAN is a PC named **Internal Server**. In this example, you would need to add a static return route on this PC. For a PC running Windows, the command to add a static route is *route add -p* <MAX BR1 LAN's network> <MAX BR1's netmask> <FusionHub's local IP address>.

Example: *> route add -p 192.168.71.0 mask 255.255.255.0 192.168.200.12* (assuming FusionHub's local IP is 192.168.200.12). Here, *-p* makes the added route persistent across system reboots. This option is not supported in Windows 95.

NOTE: If you use a Peplink product as your firewall/router in this example, you will need to disable all PepVPN with SpeedFusion profiles.

6.4 Example Three

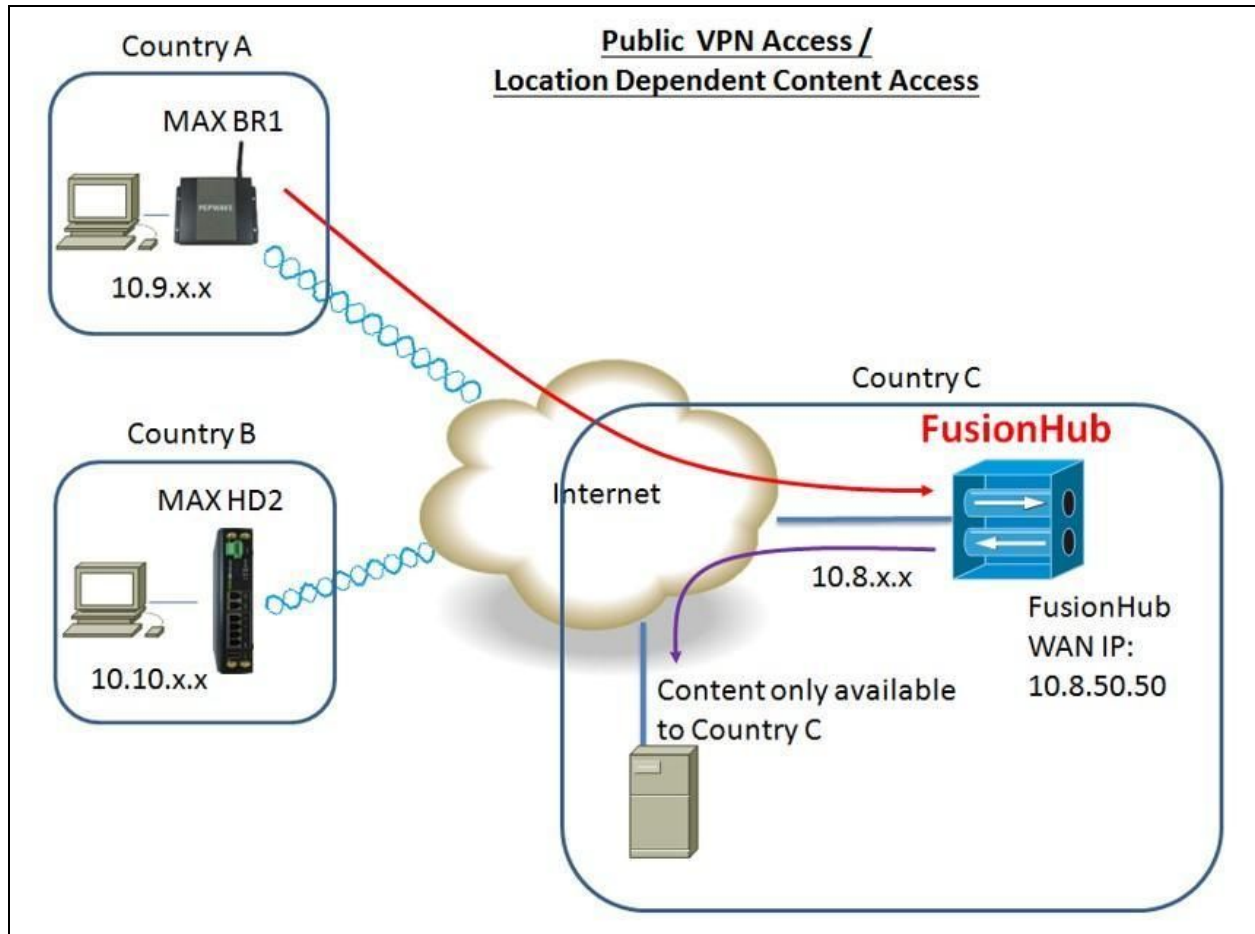

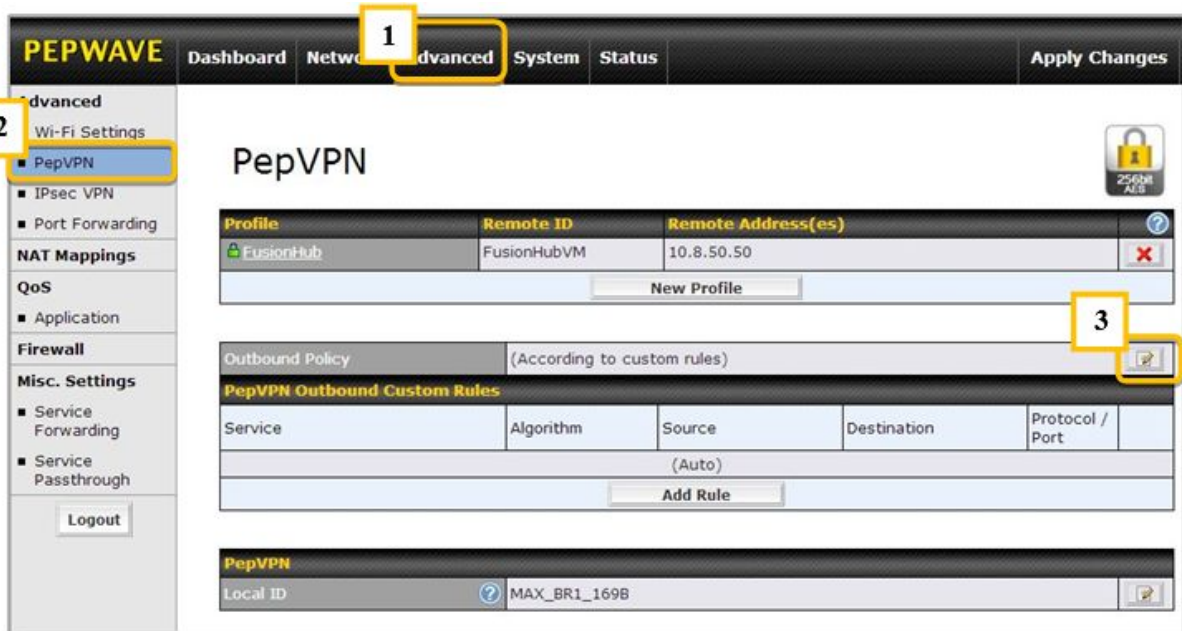


Figure 5.3 Public VPN Access / Location Dependent Content Access

In this case, the settings of the MAX BR1 in Country A and the MAX HD2 in Country B are similar to those settings in the first example. However, the following changes must be made:

MAX BR1 Settings

1. Navigate to **Advanced** > **PepVPN**, and then click  under **Outbound Policy**.



PEPWAVE Dashboard Network **Advanced** System Status Apply Changes

Advanced

- Wi-Fi Settings
- PepVPN**
- IPsec VPN
- Port Forwarding

NAT Mappings

QoS

- Application

Firewall


Misc. Settings

- Service Forwarding
- Service Passthrough


Logout

PepVPN

Profile Remote ID Remote Address(es)

FusionHub	FusionHubVM	10.8.50.50	
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New Profile



Outbound Policy (According to custom rules) 

PepVPN Outbound Custom Rules

Service	Algorithm	Source	Destination	Protocol / Port
(Auto)				

Add Rule


PepVPN

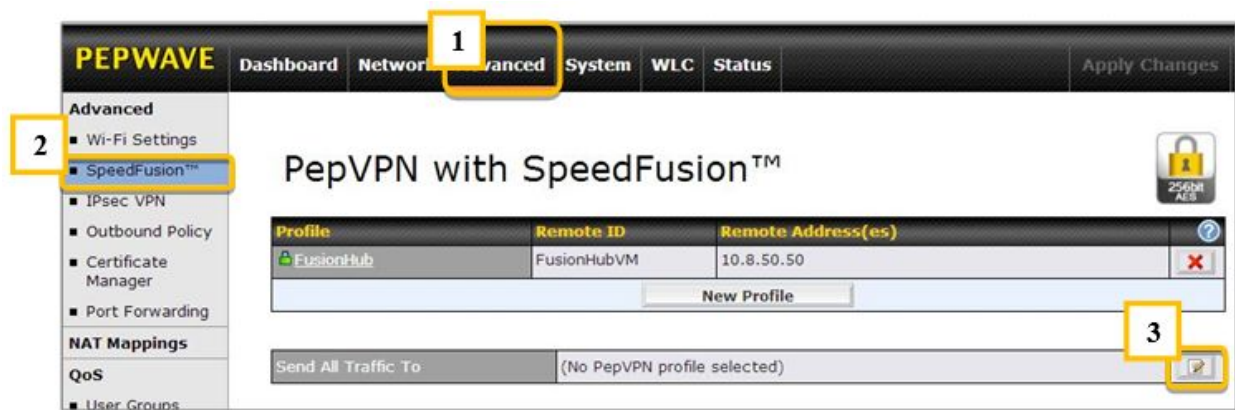
Local ID	 MAX_BR1_169B	
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2. On the dialog displayed next, check the box under **Send All Traffic To**. Select **FusionHub** from the drop-down menu. Here, **FusionHub** is the profile name. Next, set **DNS server** to the same address used by FusionHub's DNS server, which is **10.8.8.1** in this example. To save your changes, click **OK** and then **Apply Changes**.



MAX HD2 Settings

1. Navigate to Advanced > SpeedFusion, and then click  under Send All Traffic To.



2. On the dialog displayed next, check the box under **Send All Traffic To**. Select **FusionHub** from the drop-down menu. Here, **FusionHub** is the profile name. Next, set **DNS Server** to the same address used by FusionHub's DNS server, which is **10.8.8.1** in this example. To save your changes, click **OK** and then **Apply Changes**.



The FusionHub settings are also similar to those settings in the first example, except that we need only one FusionHub port in this example. Enabling **SpeedFusion Peers Access Internal Network** is not needed here, so we've left the box unchecked.

