

FusionHub

SpeedFusion Virtual Appliance

Installation Guide
Version 1.1.0-5

Table of Contents

1. Purpose	2
2. FusionHub License Generation	2
3. FusionHub Download.....	8
4. FusionHub Deployment	8
4.1 VMware ESXi Server	8
4.2 VMware Workstation	24
4.3 VMware Player	33
4.4 Oracle VirtualBox.....	42
4.5 Citrix XenServer	47
4.6 Microsoft Hyper-V	54
4.7 Amazon Web Services	62
5. FusionHub Interface Configuration	68
5.1 Connecting to FusionHub's Web Admin Interface	68
5.2 Configuration Using the Setup Wizard.....	69
6. PepVPN with SpeedFusion Settings.....	76
6.1 Background	76
6.2 Example One	77
6.3 Example Two	95
6.4 Example Three.....	99

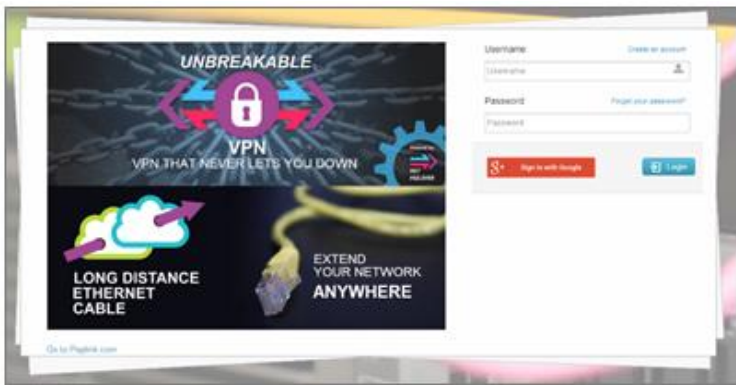
1. Purpose

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

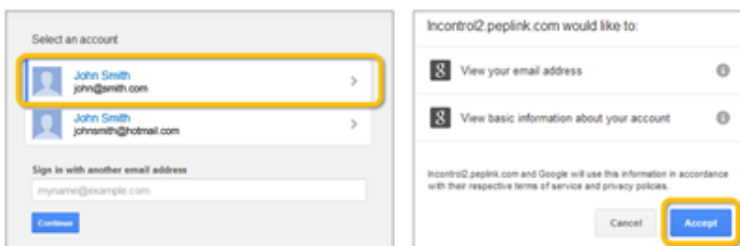
2. FusionHub License Generation

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

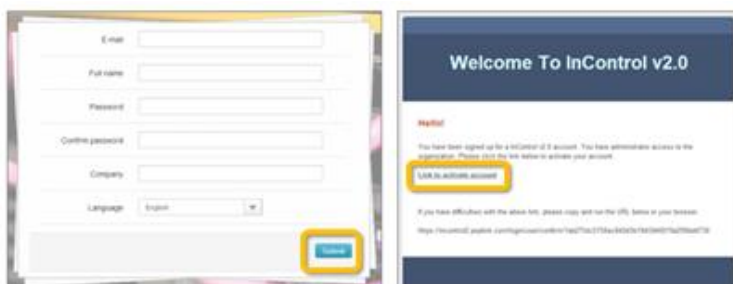
1. To obtain FusionHub evaluation license information and download the FusionHub ISO file from InControl 2, first sign in.



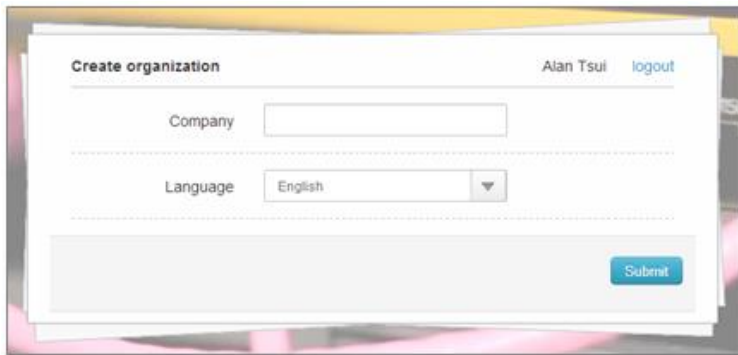
To sign in with Gmail, click **Sign in with Google**, choose your account, and then grant InControl 2 permissions.



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.

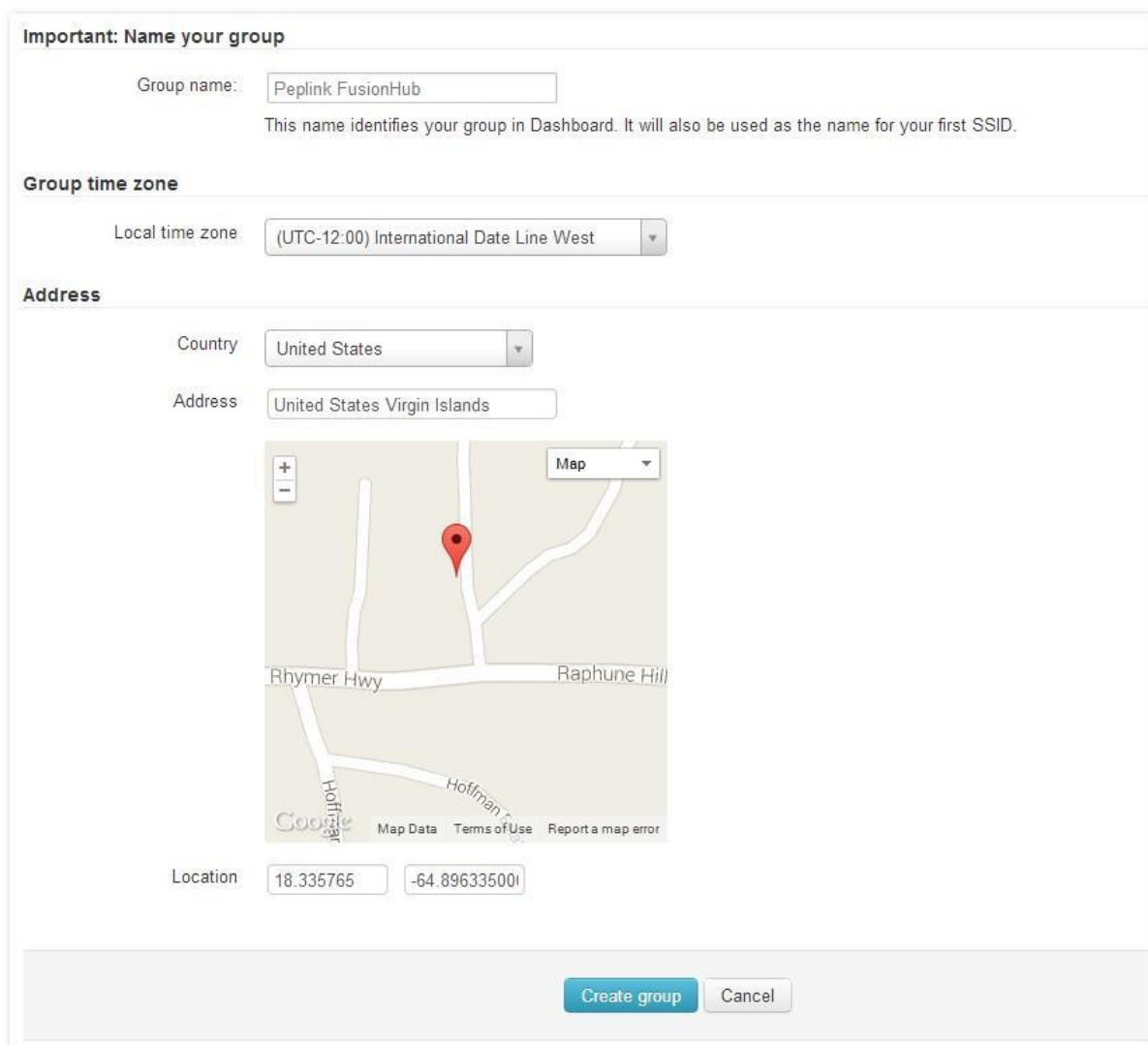


2. Once you successfully login, InControl 2 will prompt you to name your organization and choose your language.



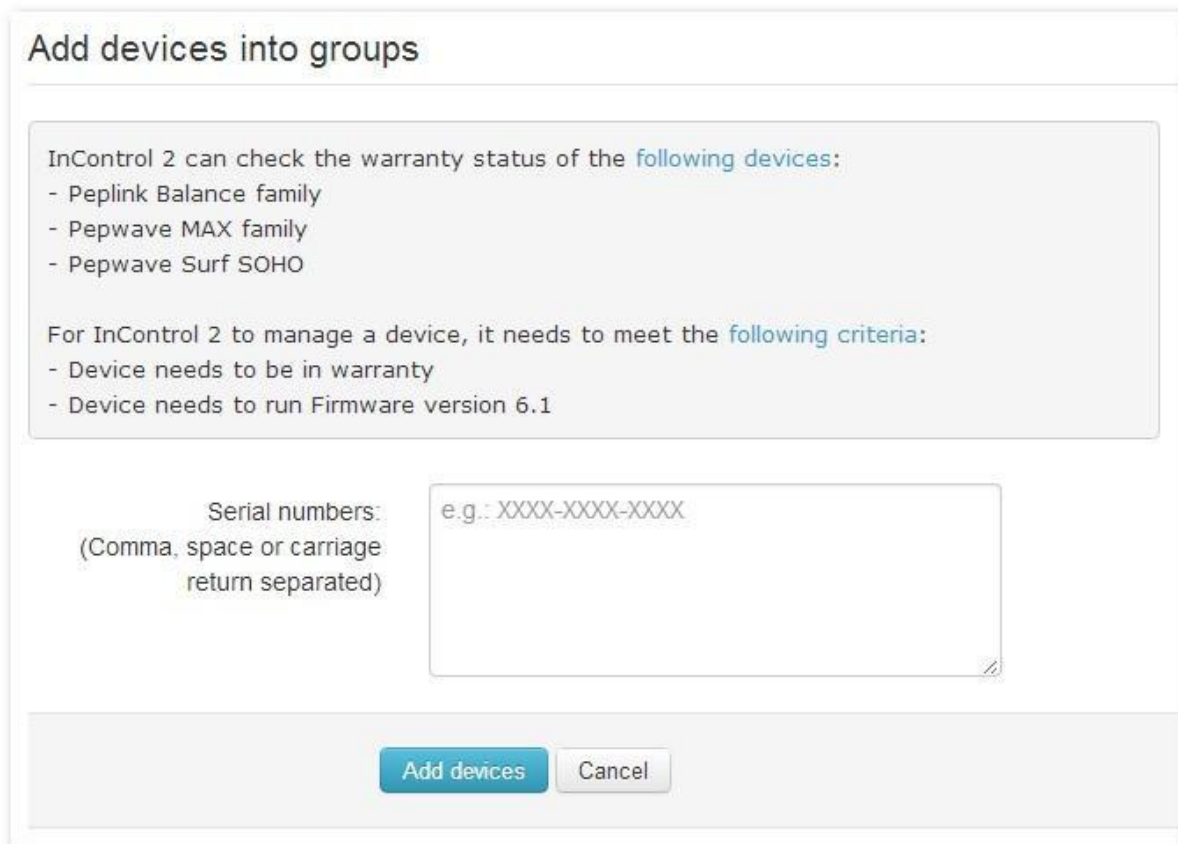
The screenshot shows a web form titled "Create organization". At the top right, it says "Alan Tsui" and "logout". The form has two main input fields: "Company" with a text box, and "Language" with a dropdown menu currently set to "English". Below these fields is a large grey rectangular area, and at the bottom right is a blue "Submit" button.

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



The screenshot shows a web form titled "Important: Name your group". It has three main sections: "Group name", "Group time zone", and "Address".
1. "Group name": A text box contains "Peplink FusionHub". Below it, a note says: "This name identifies your group in Dashboard. It will also be used as the name for your first SSID."
2. "Group time zone": A dropdown menu for "Local time zone" is set to "(UTC-12:00) International Date Line West".
3. "Address": A dropdown menu for "Country" is set to "United States". Below it, a text box for "Address" contains "United States Virgin Islands".
Below the address section is a map from Google Maps showing a location marked with a red pin. The map labels include "Rhymer Hwy", "Raphune Hill", and "Hoffman". At the bottom of the map are links for "Map Data", "Terms of Use", and "Report a map error".
Below the map, there are two text boxes for "Location" with the coordinates "18.335765" and "-64.89633500".
At the bottom of the form are two buttons: "Create group" (in blue) and "Cancel".

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



The dialog box is titled "Add devices into groups". It contains two sections of information:

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

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

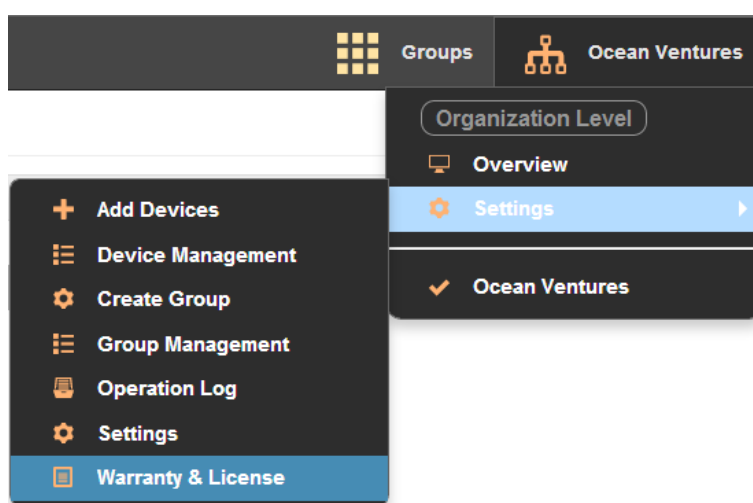
For InControl 2 to manage a device, it needs to meet the following criteria:

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

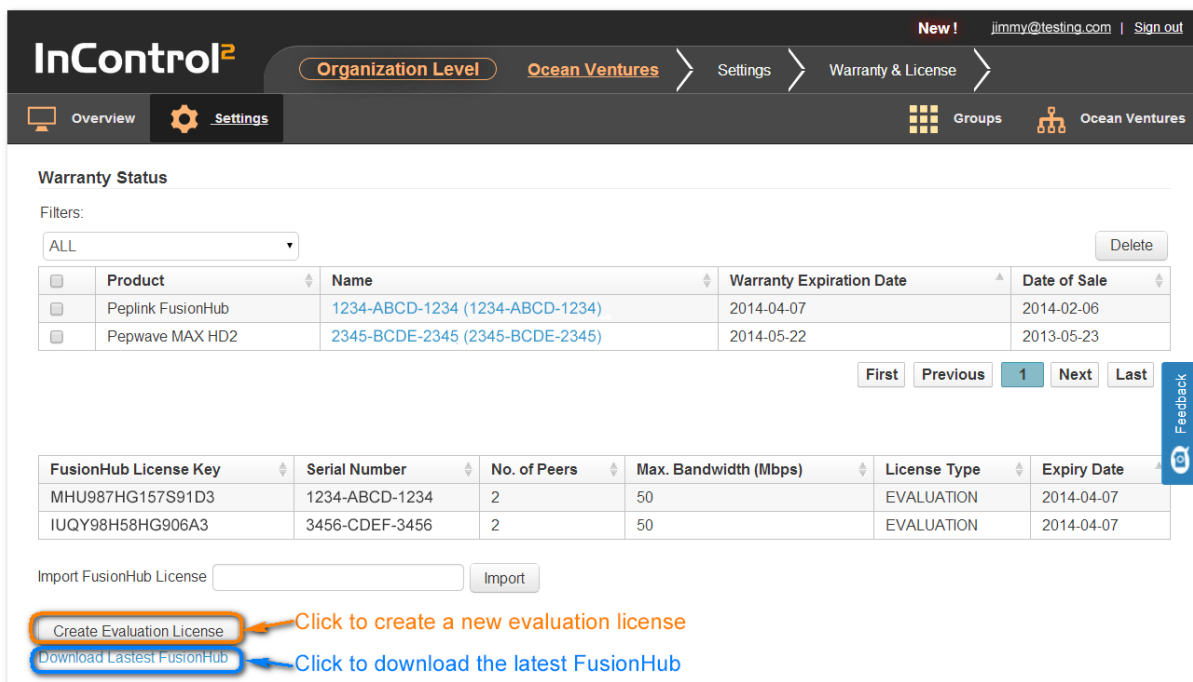
Below this information is a text input field for "Serial numbers:". To the left of the field, it says "(Comma, space or carriage return separated)". Inside the field, there is a placeholder text "e.g.: XXXX-XXXX-XXXX".

At the bottom of the dialog are two buttons: "Add devices" (in blue) and "Cancel" (in grey).

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



6. On the "Warranty Status" screen, click the **Create Evaluation License** button.



InControl² New ! jimmy@testing.com | Sign out

Organization Level Ocean Ventures Settings Warranty & License

Overview Settings Groups Ocean Ventures

Warranty Status

Filters: ALL Delete

Product	Name	Warranty Expiration Date	Date of Sale
Peplink FusionHub	1234-ABCD-1234 (1234-ABCD-1234)	2014-04-07	2014-02-06
Pepwave MAX HD2	2345-BCDE-2345 (2345-BCDE-2345)	2014-05-22	2013-05-23

First Previous 1 Next Last

FusionHub License Key	Serial Number	No. of Peers	Max. Bandwidth (Mbps)	License Type	Expiry Date
MHU987HG157S91D3	1234-ABCD-1234	2	50	EVALUATION	2014-04-07
IUQY98H58HG906A3	3456-CDEF-3456	2	50	EVALUATION	2014-04-07

Import FusionHub License Import

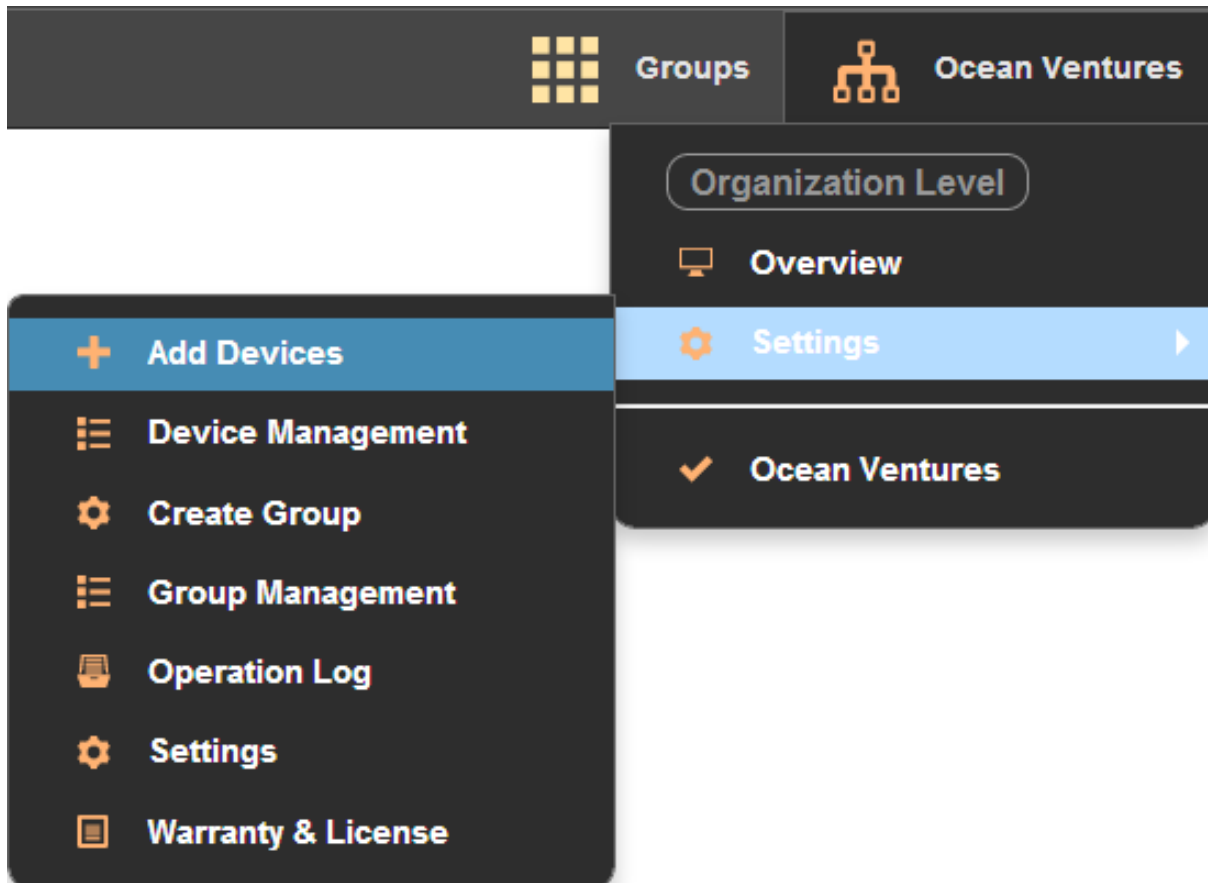
Create Evaluation License Click to create a new evaluation license

Download Latest FusionHub Click to download the latest FusionHub

Feedback

To download the FusionHub, click the **Download Latest FusionHub** button located below the **Create Evaluation License** button.

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

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

Add devices

Cancel

3. FusionHub Download

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

<http://download.peplink.com/firmware/fusionhub/get>

For Amazon Web Services, please refer to page 62 for instructions on how to download and install.

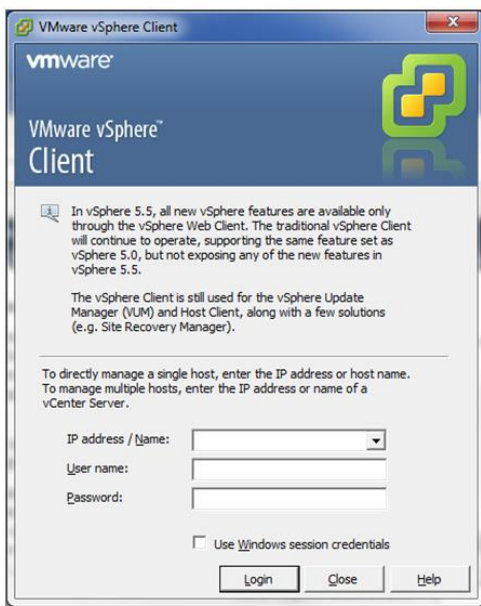
4. FusionHub Deployment

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
4.2 VMware Workstation	24
4.3 VMware Player	32
4.4 Oracle VirtualBox.....	42
4.5 Citrix XenServer	47
4.6 Microsoft Hyper-V	54
4.7 Amazon Web Services	62

4.1 VMware ESXi Server

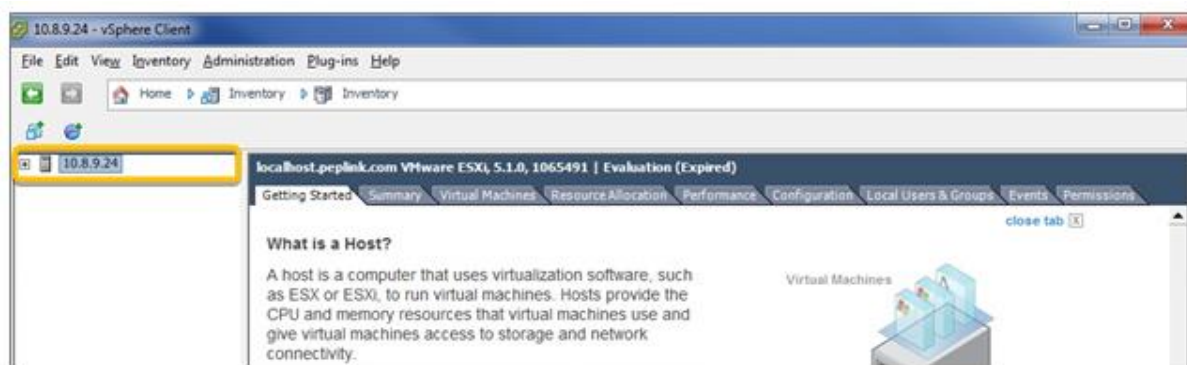
1. Download **VMware ESXi 5.5.0** from www.vmware.com/go/download-vmware and install it.
2. For VMware vSphere server installation hardware requirements, refer to <http://www.vmware.com/products/vsphere-hypervisor/gettingstarted.html>
3. Open **VMware vSphere**. Enter the appropriate **IP address / Name, 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.



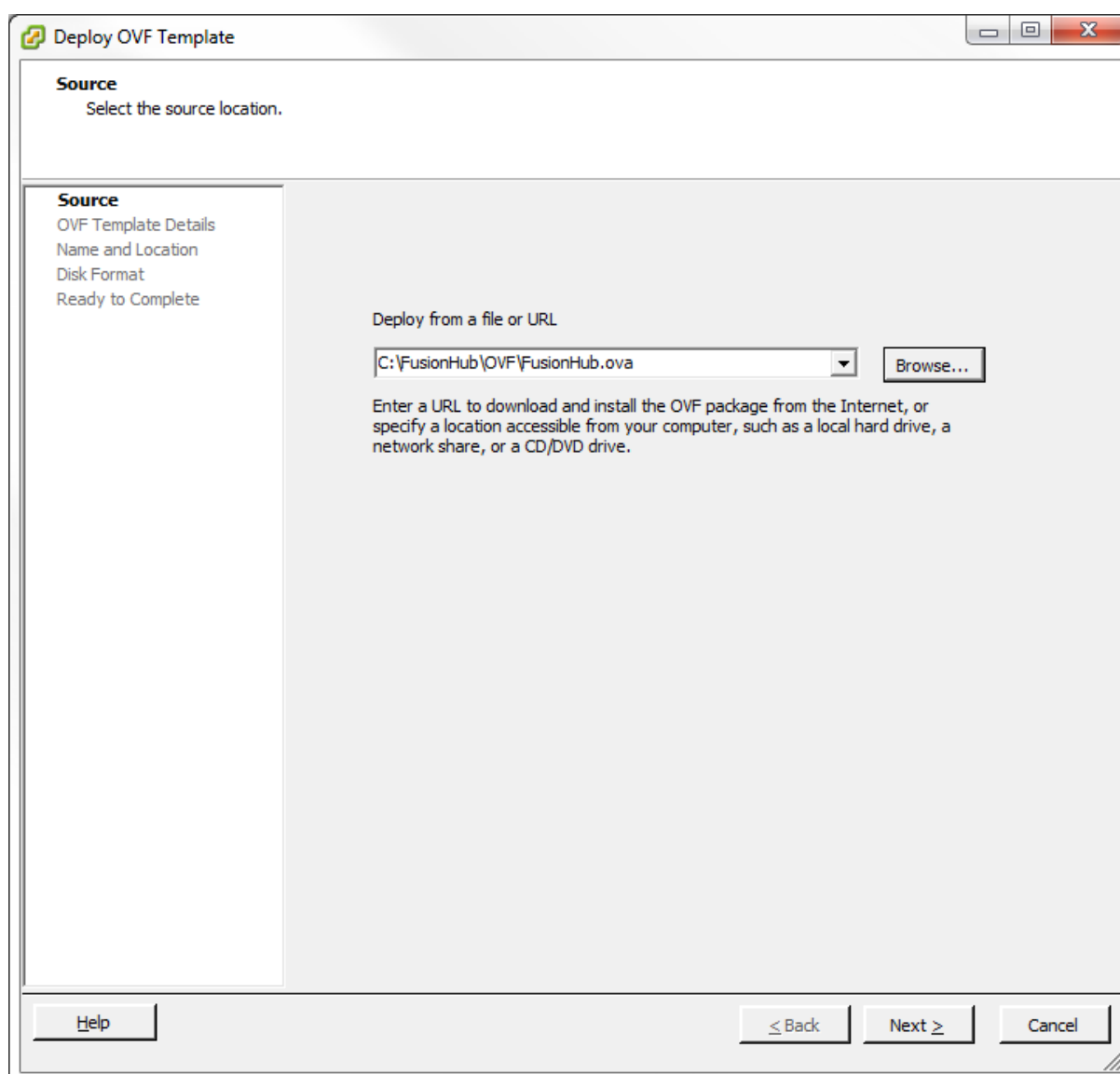
5. Click the **inventory object** to begin deploying the OVF template.



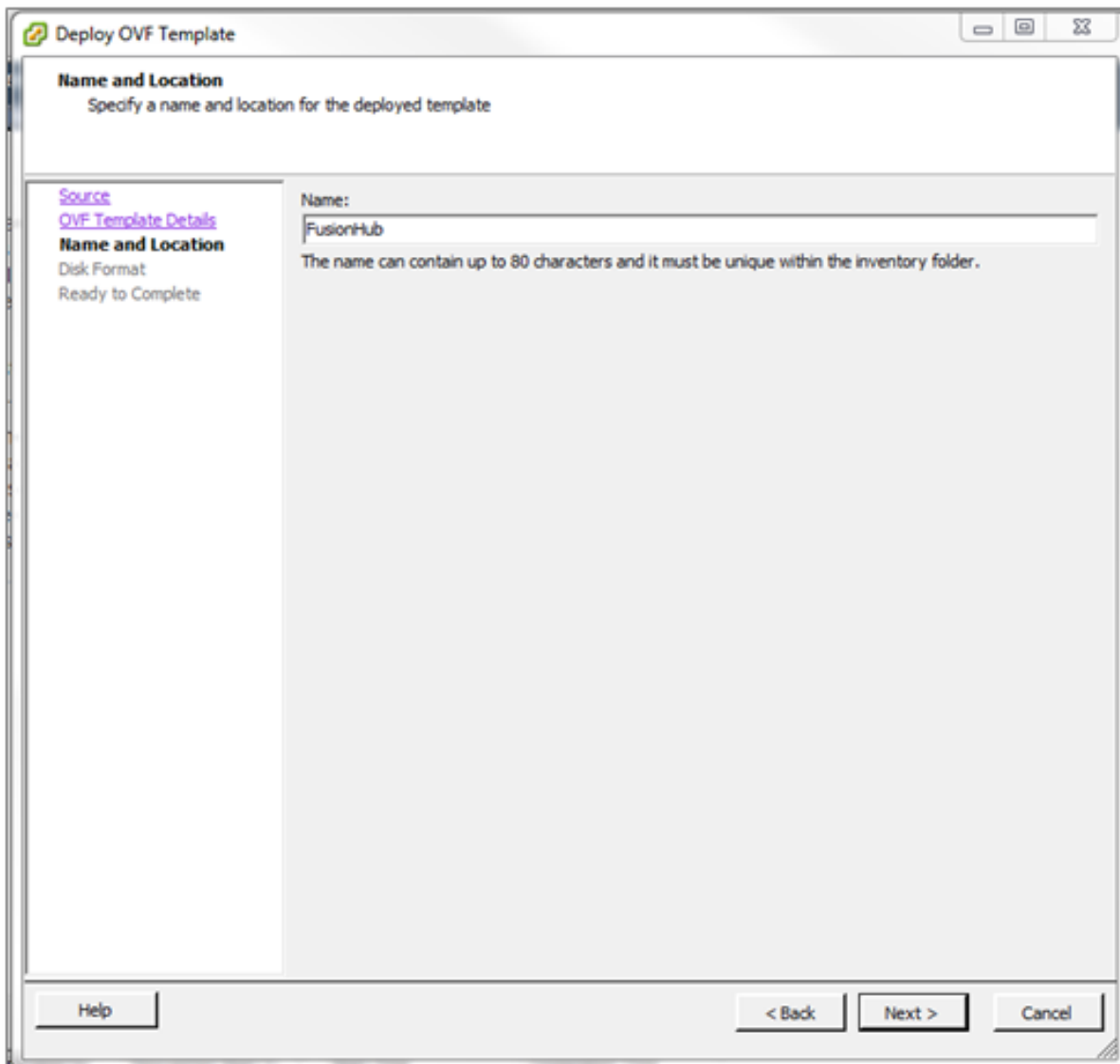
6. Click **File > Deploy OVF Template...** to deploy the FusionHub OVF template downloaded from InControl 2. In order to deploy the OVF template successfully, please make sure that your ESXi server supports virtual machine version 8, which runs on VMware ESXi 5.5 and later.



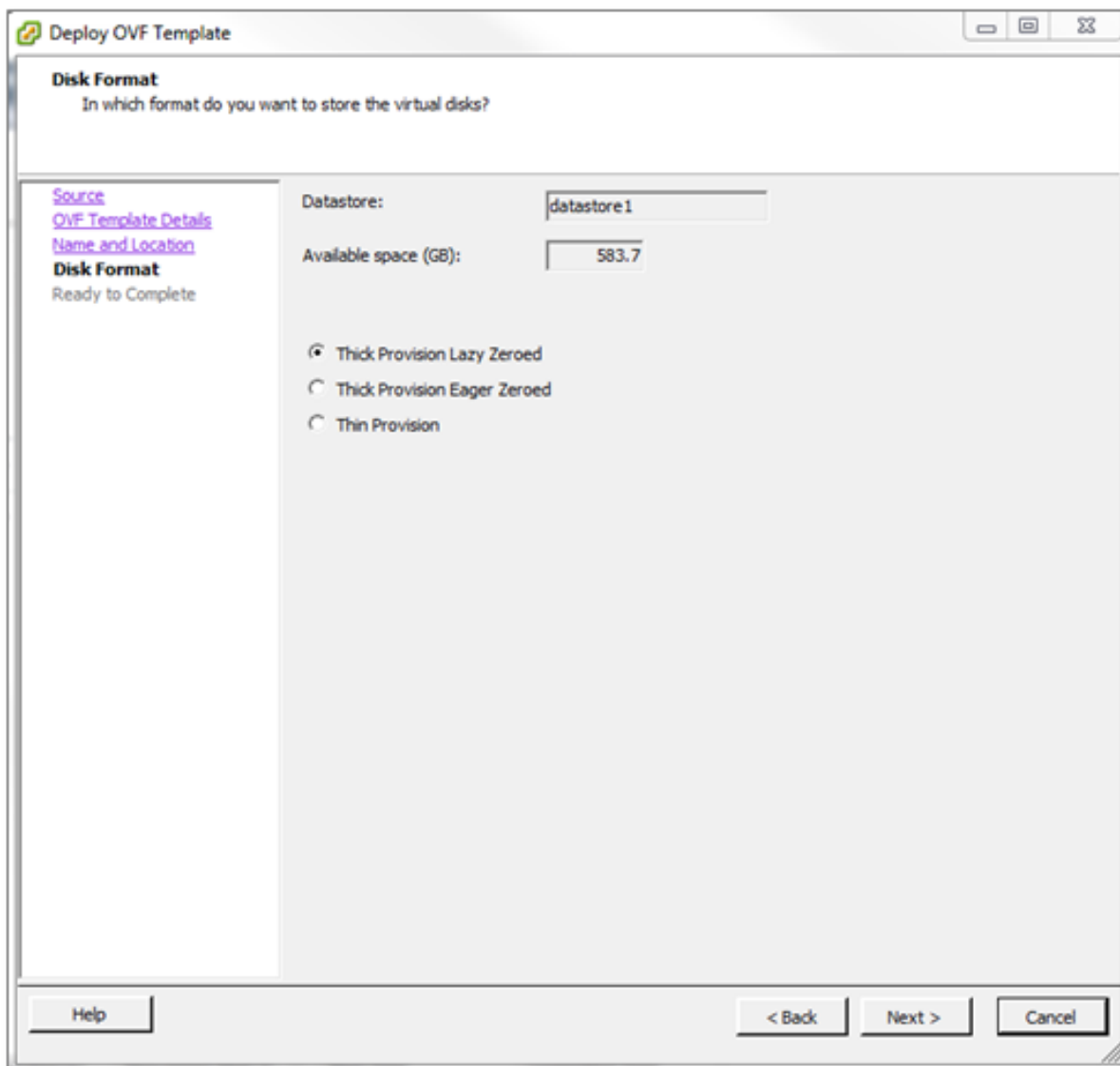
7. On the **Source** dialog of the **Deploy OVF Template** wizard, click **Browse**. Locate the FusionHub.ovf template file on your computer and click **Next**.



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?

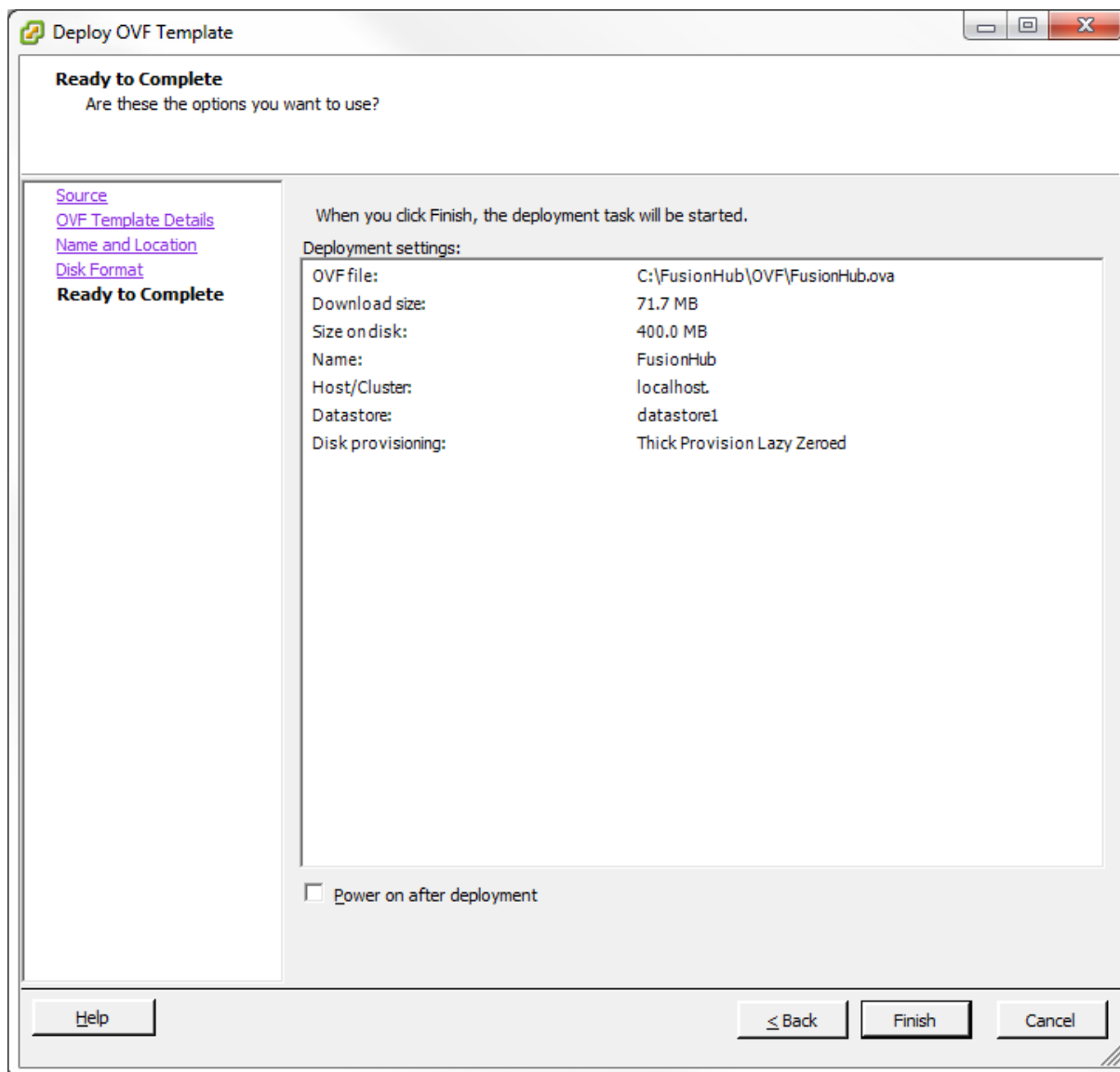
[Source](#)
[OVF Template Details](#)
[Name and Location](#)
Disk Format
Ready to Complete

Datastore:

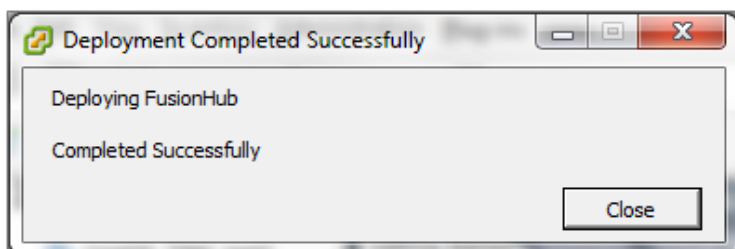
Available space (GB):

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

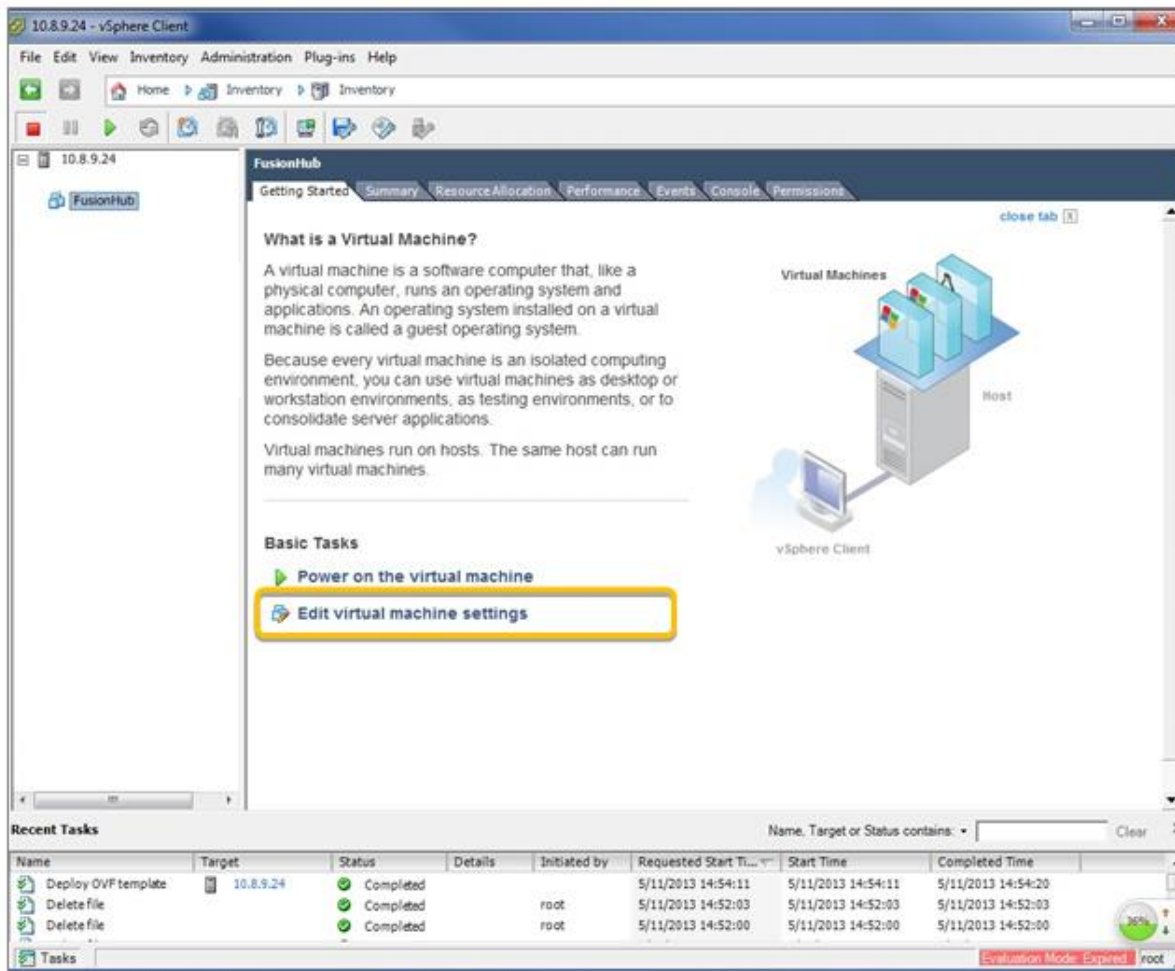
10. On the **Ready to Complete** dialog, review the deployment settings. Click **Finish** to complete the process and close the wizard.



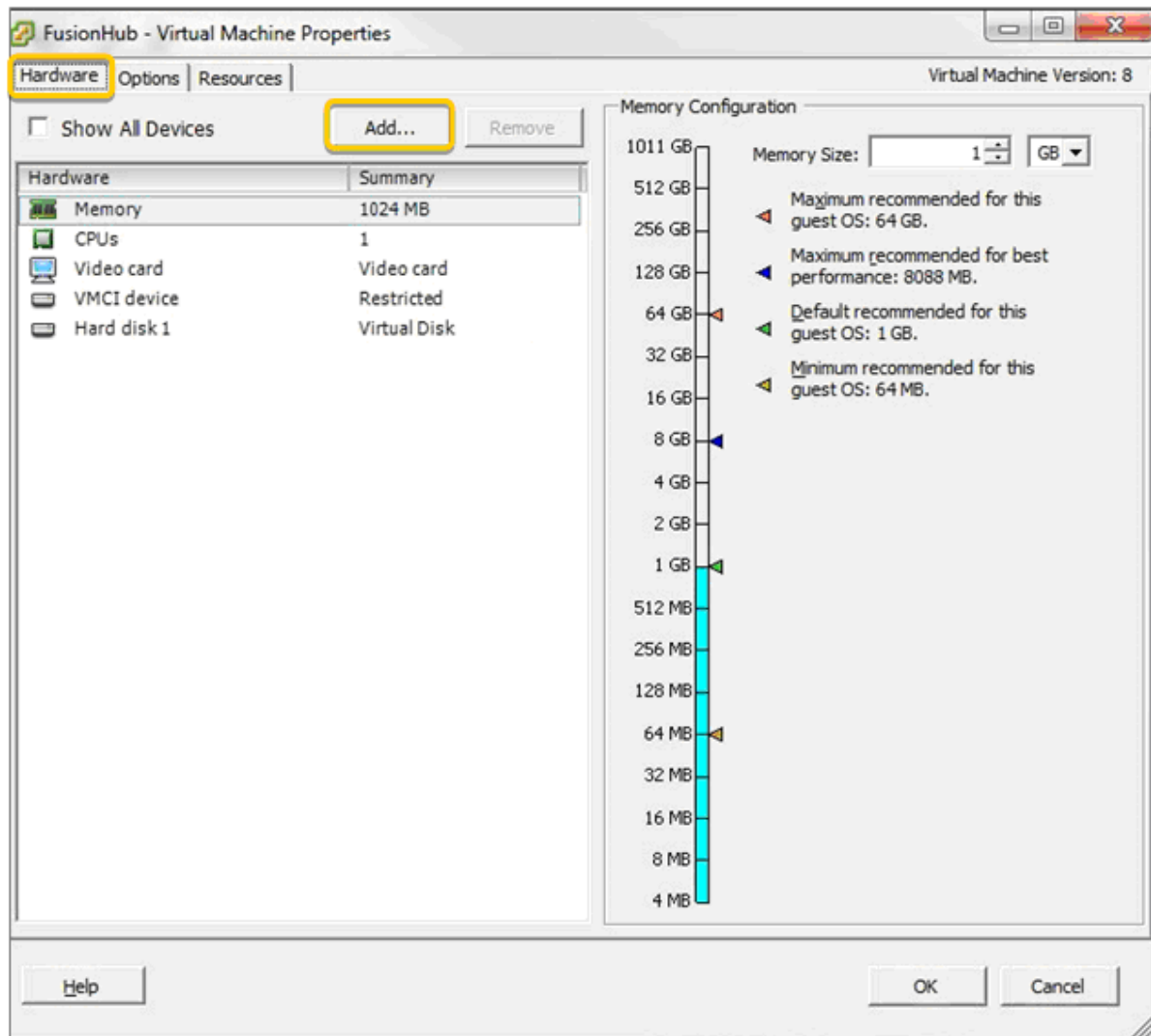
11. Once you have completed the steps above, a FusionHub virtual machine is created.



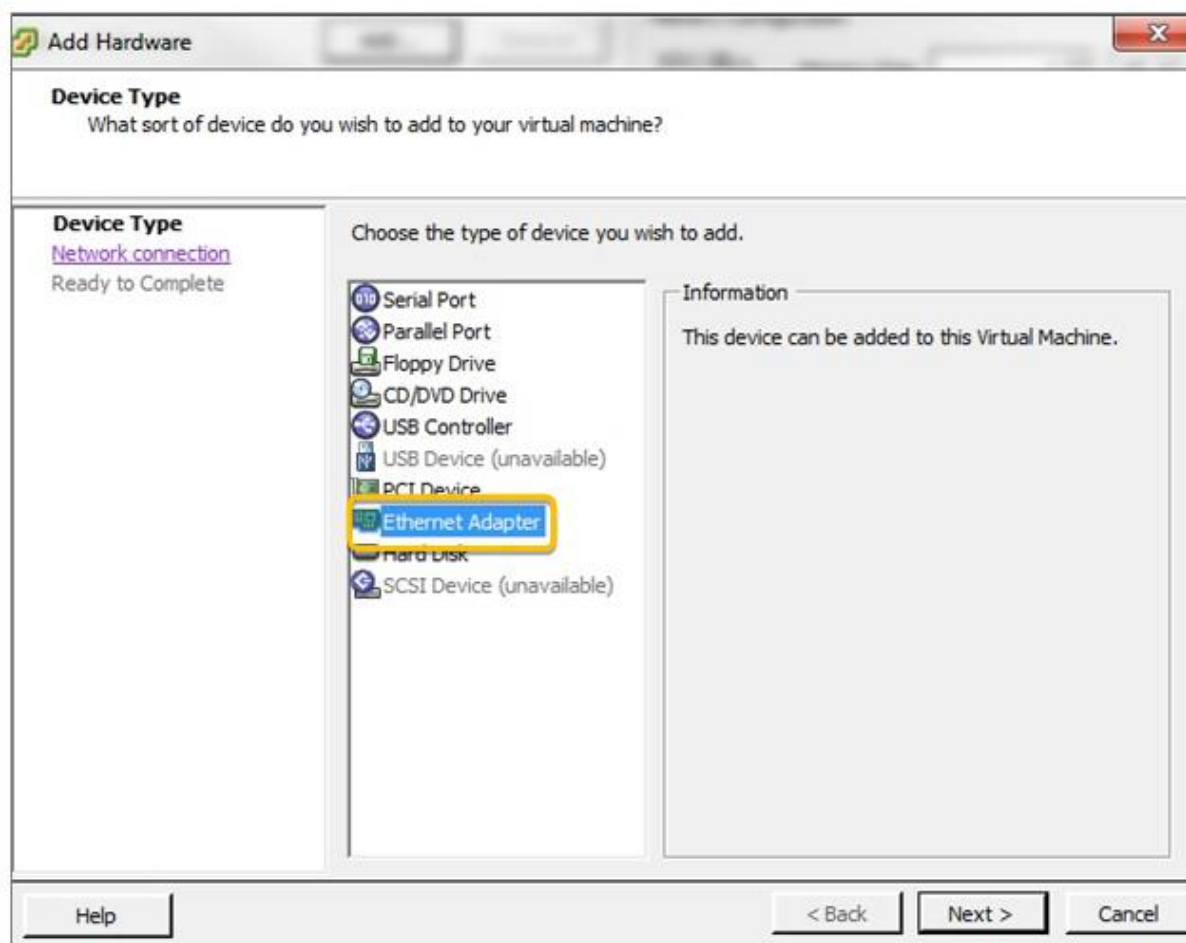
12. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter to the FusionHub virtual machine.



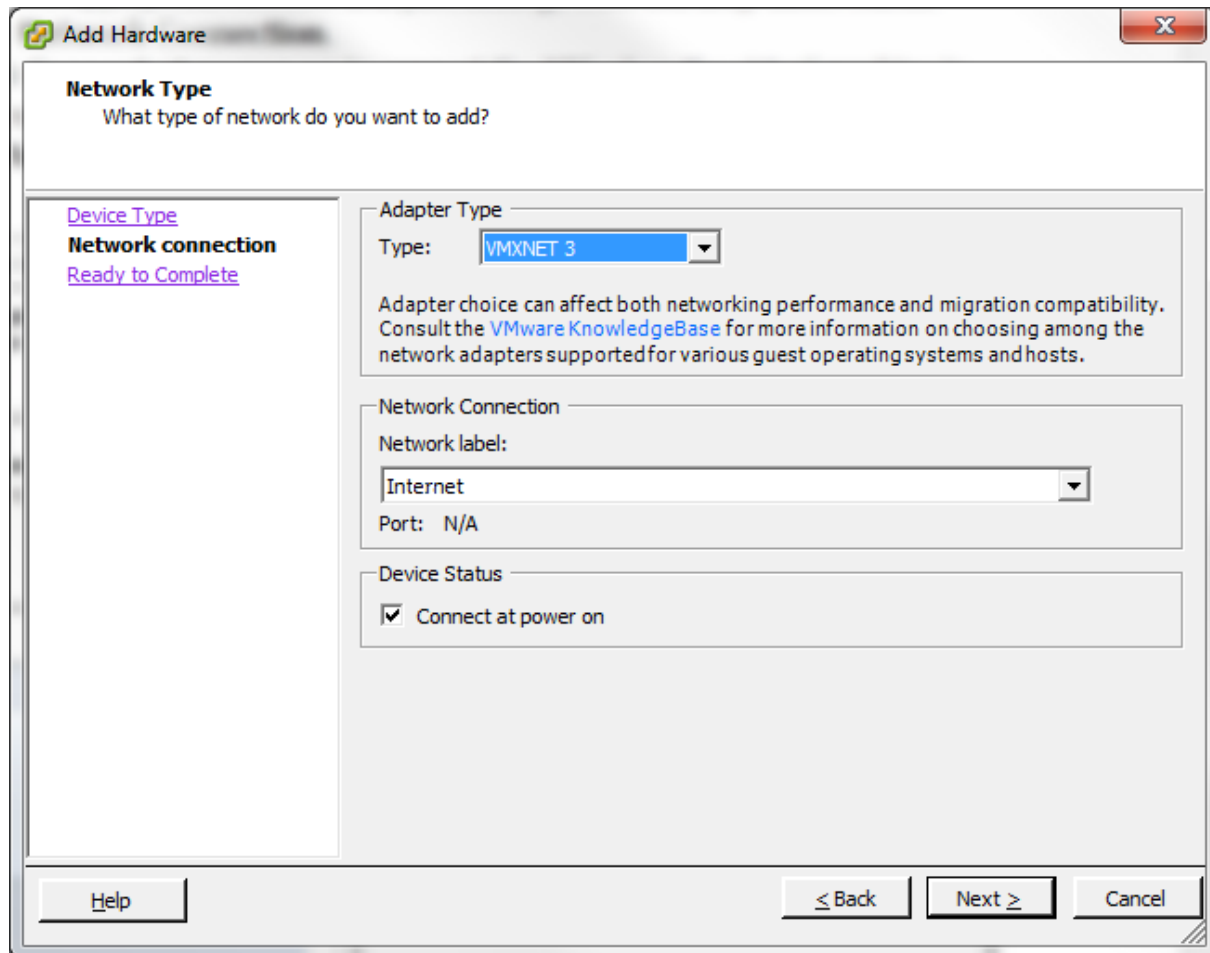
13. Click Add, found under the Hardware tab on the FusionHub – Virtual Machine Properties dialog.



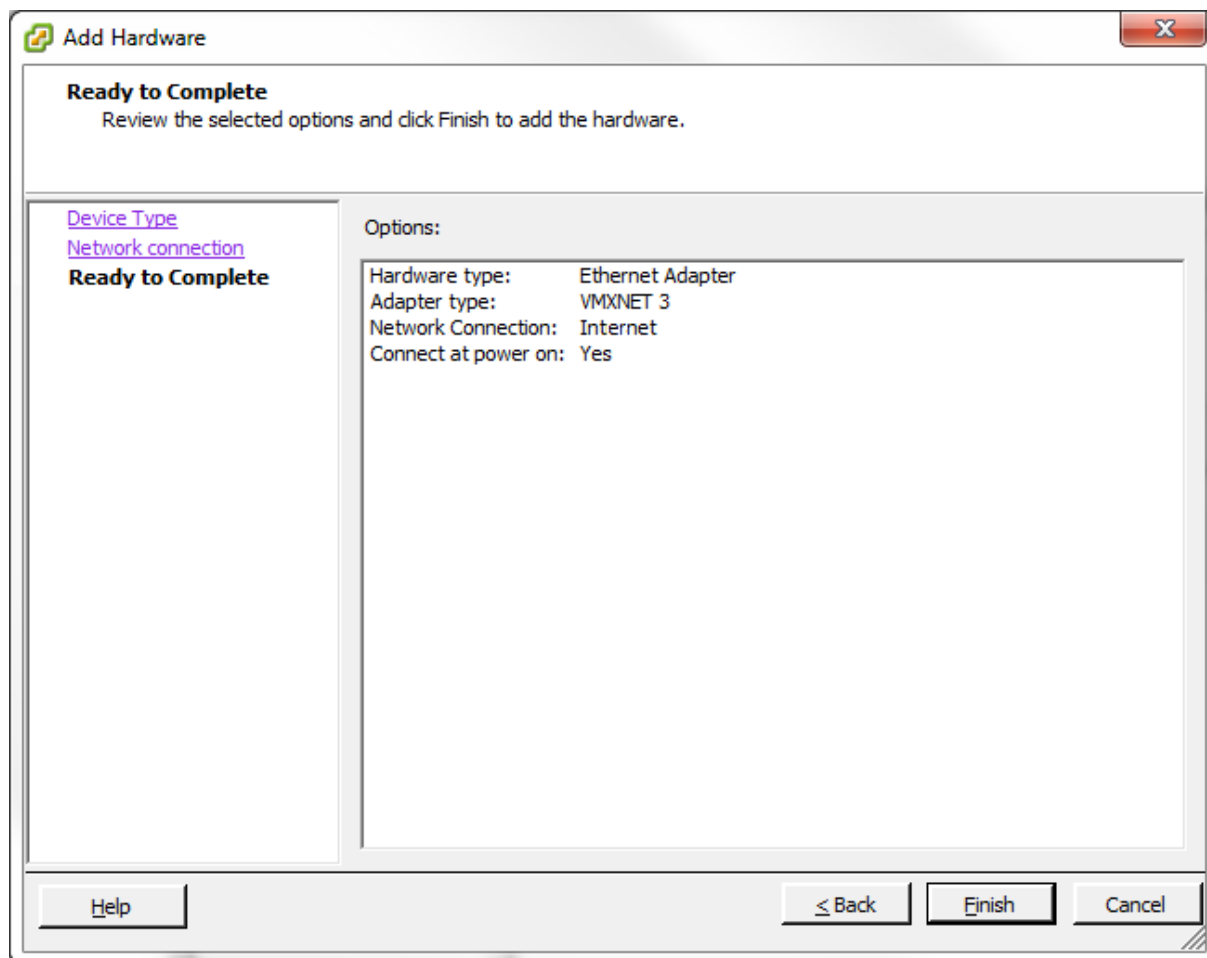
14. On the **Add Hardware** dialog, select **Ethernet Adapter**. Click **Next**.



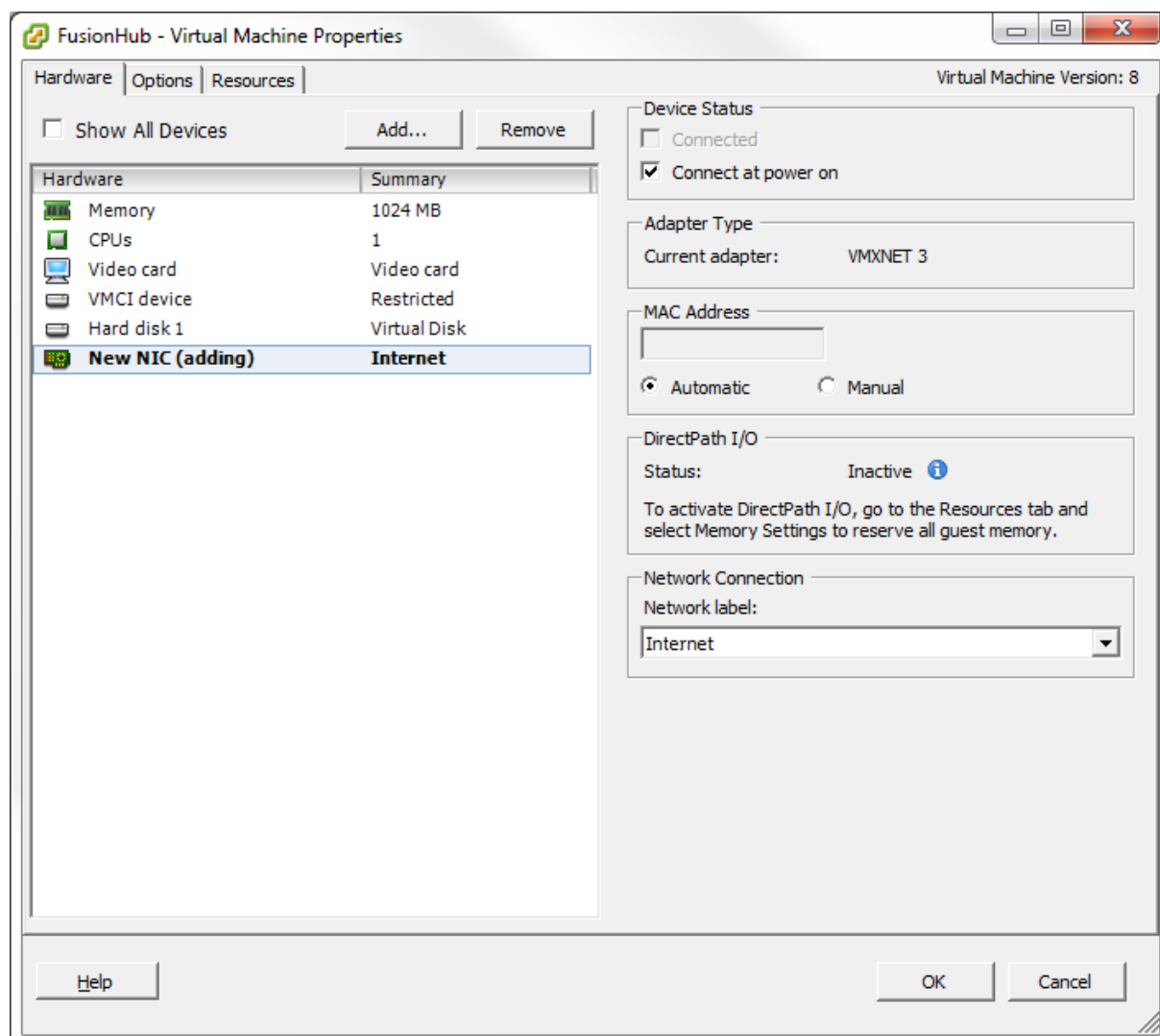
15. On the **Network Type** dialog, select **VMXNET 3** as the **Adapter Type**. Select the appropriate network and port settings from the drop-down menus under **Network Connection**.
16. Check **Connect at power on** to connect the NIC when the virtual machine is powered on.
17. Click **Next**.



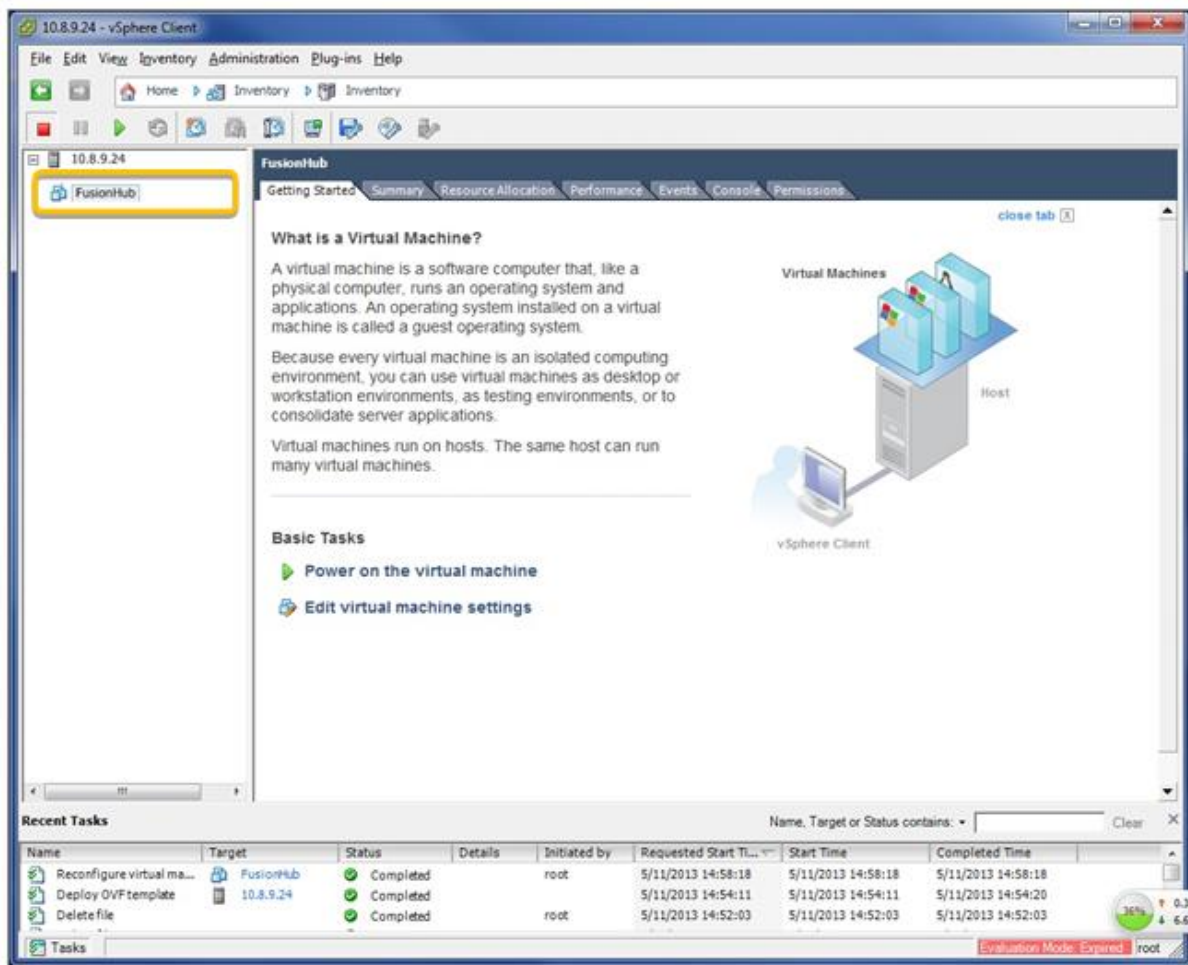
18. On the **Ready to Complete** dialog, review your settings and click **Finish**.



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



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



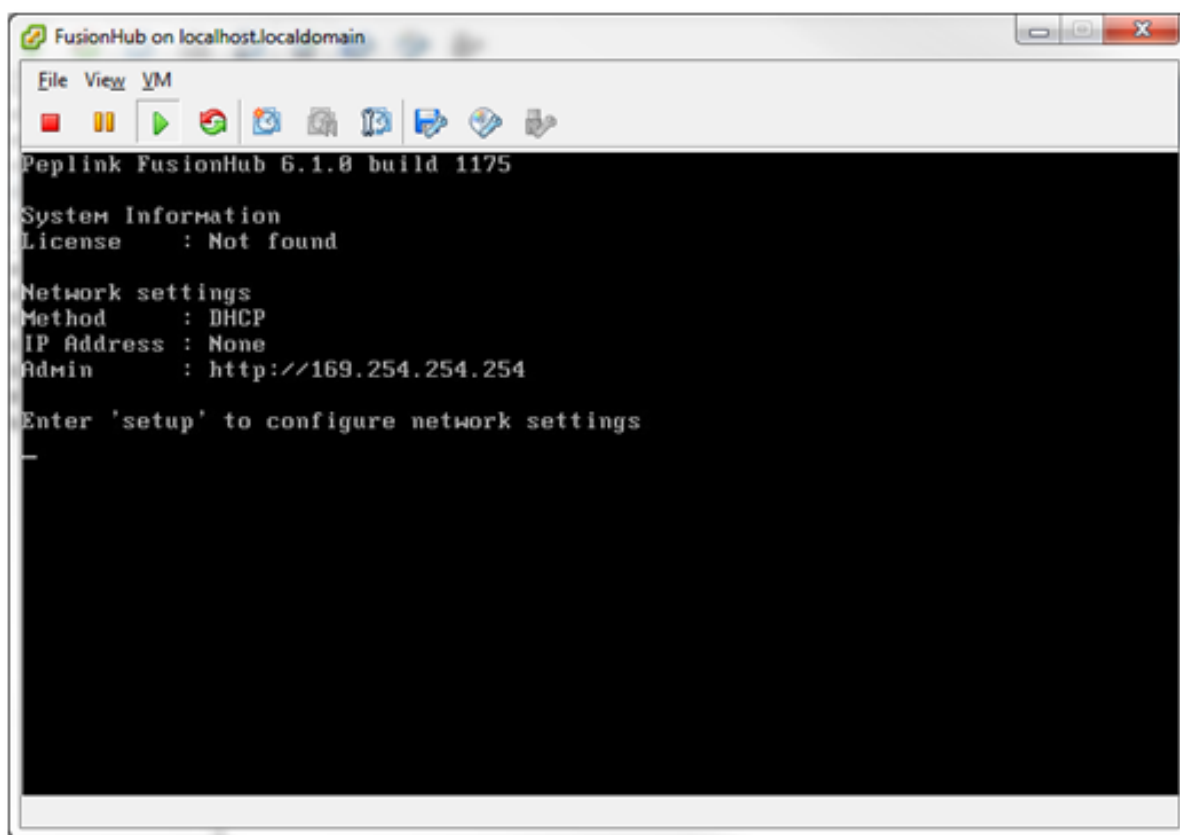
21. When the FusionHub virtual machine is powered on, right-click **FusionHub**. Select **Open Console** for general information about FusionHub, including:

- FusionHub version
- System information
- Network settings:

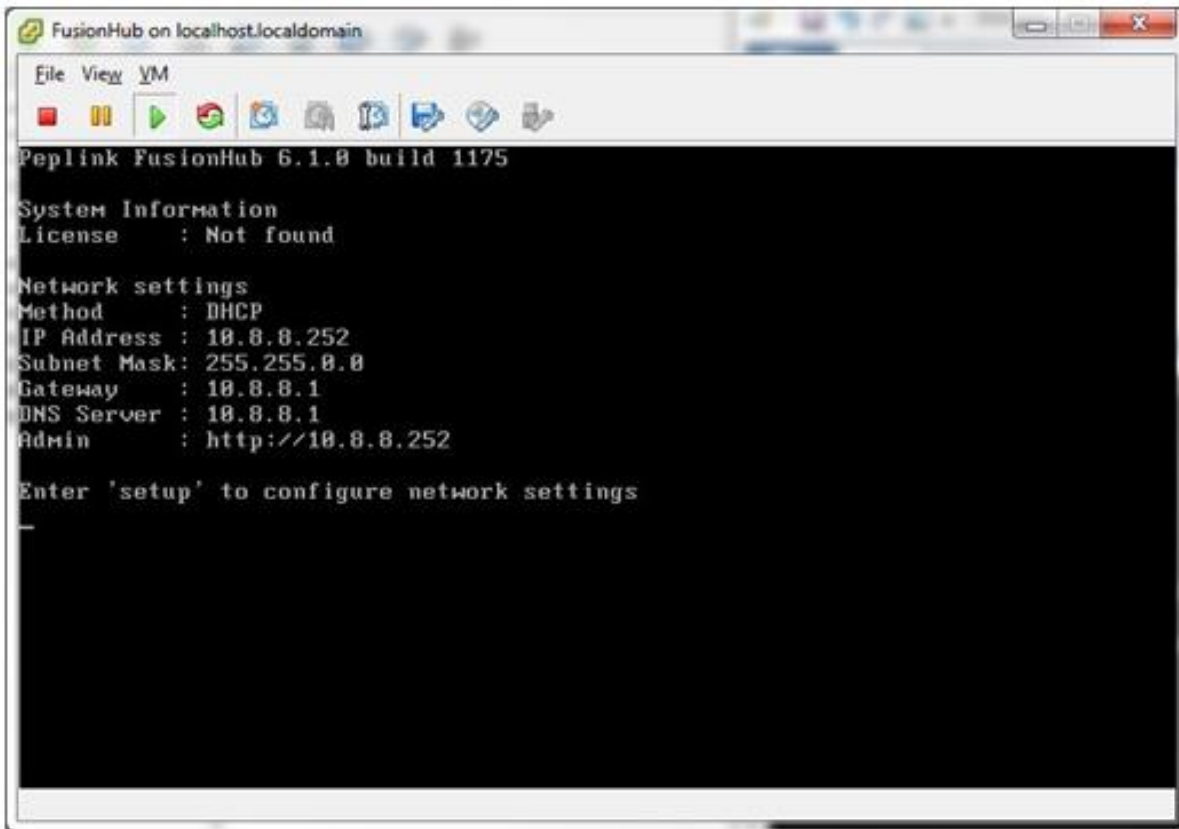
Method: DHCP

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:



```
FusionHub on localhost.localdomain
File View VM
Peplink FusionHub 6.1.8 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
_
```

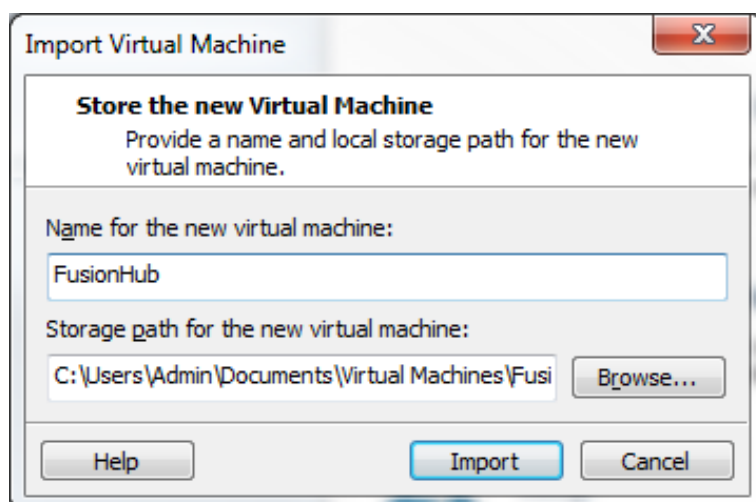
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.2 VMware Workstation

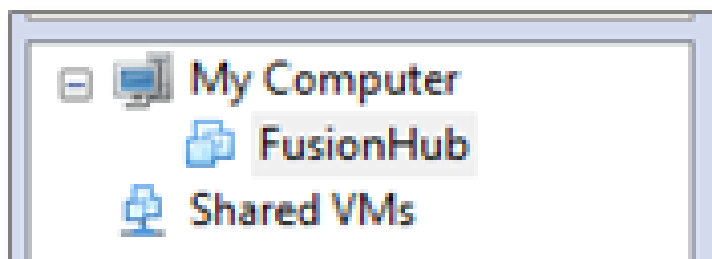
1. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter to the FusionHub virtual machine.
2. Download **VMware Workstation 10** from <http://www.vmware.com/products/workstation/> and 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.



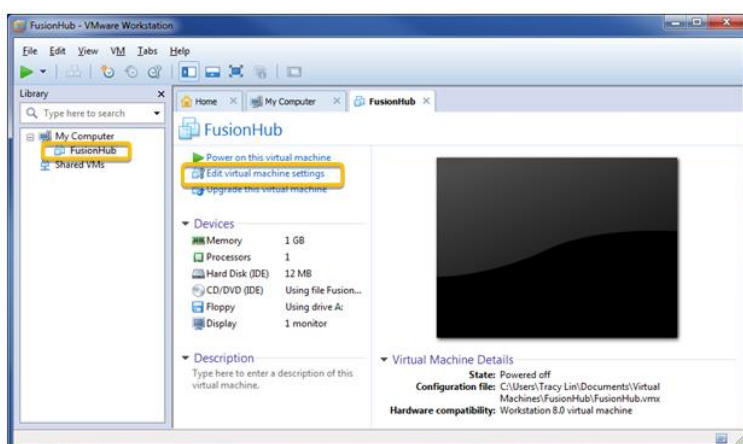
5. On the Store the new Virtual Machine dialog, type a name for the new virtual machine (i.e., FusionHub) and select the storage path. Please note that the storage path for this FusionHub virtual machine should not be the same as for the downloaded FusionHub OVF template file. Click Import.



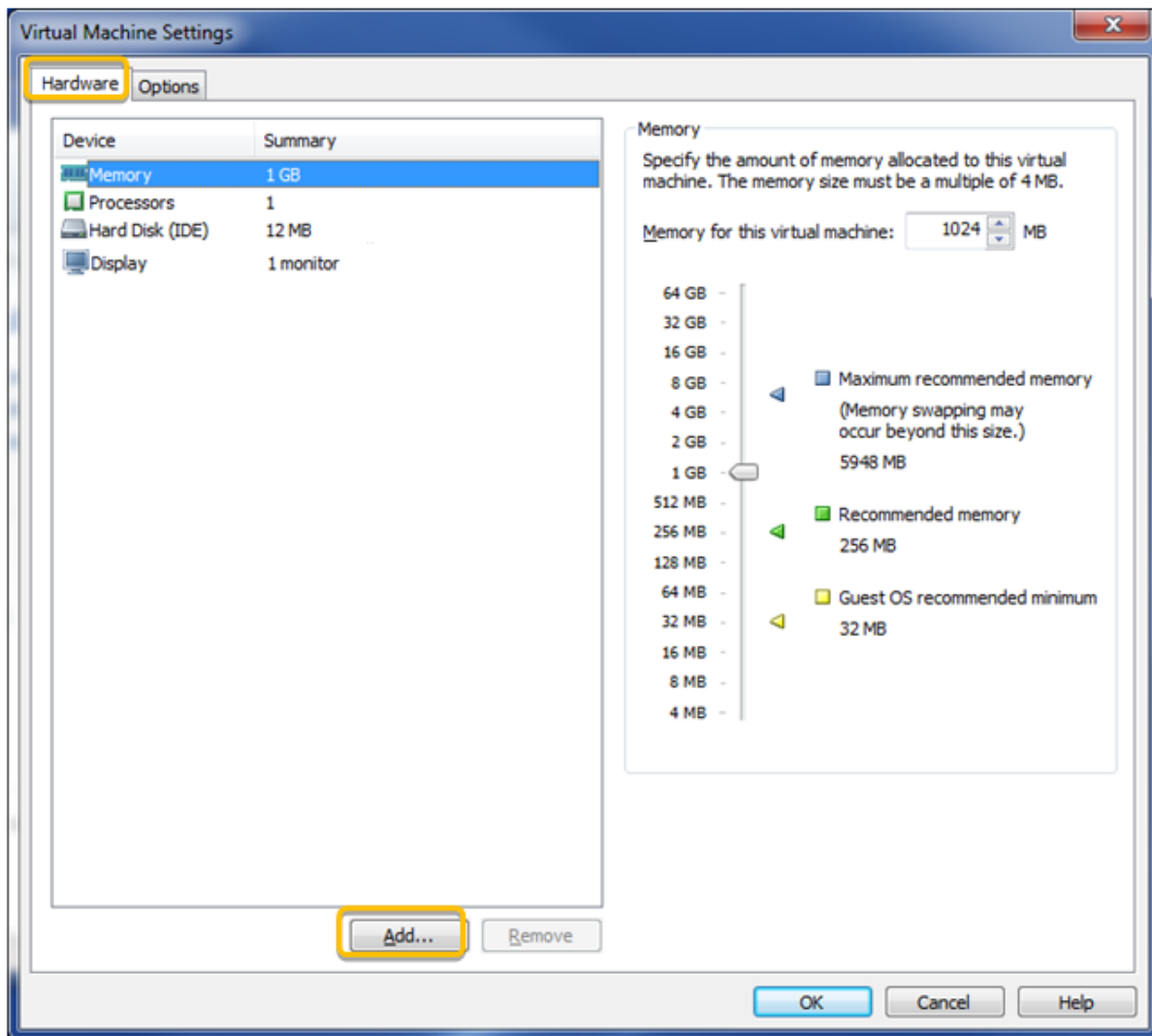
6. After successful import, a FusionHub virtual machine is created.



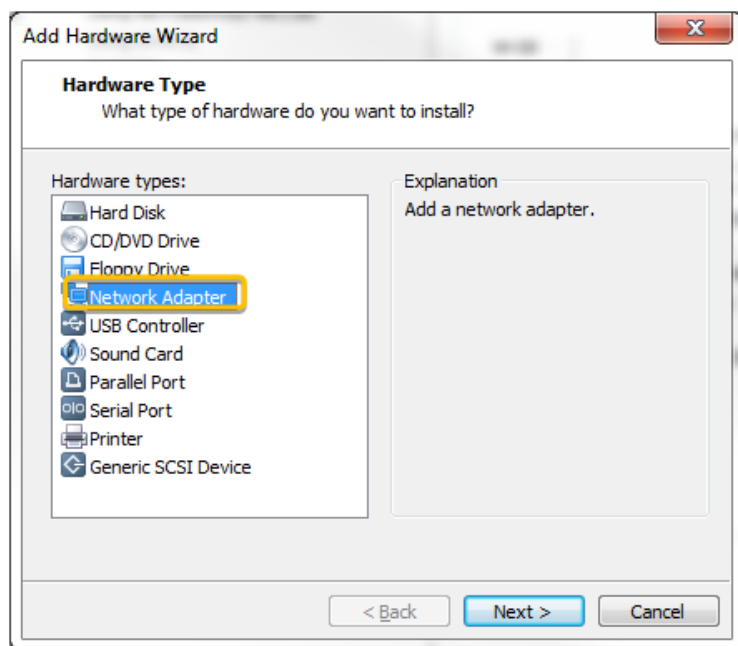
7. Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter.



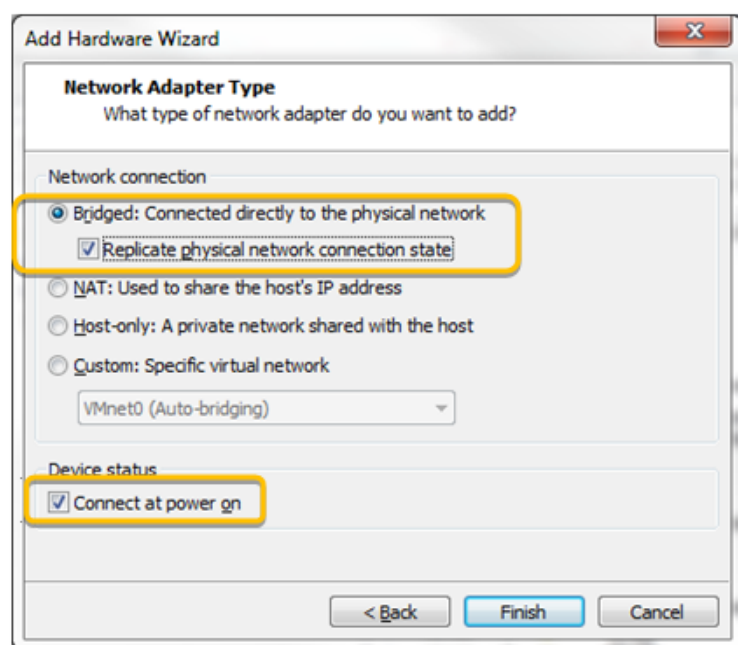
8. Click **Add**, found under the **Hardware** tab on the **Virtual Machine Settings** dialog.



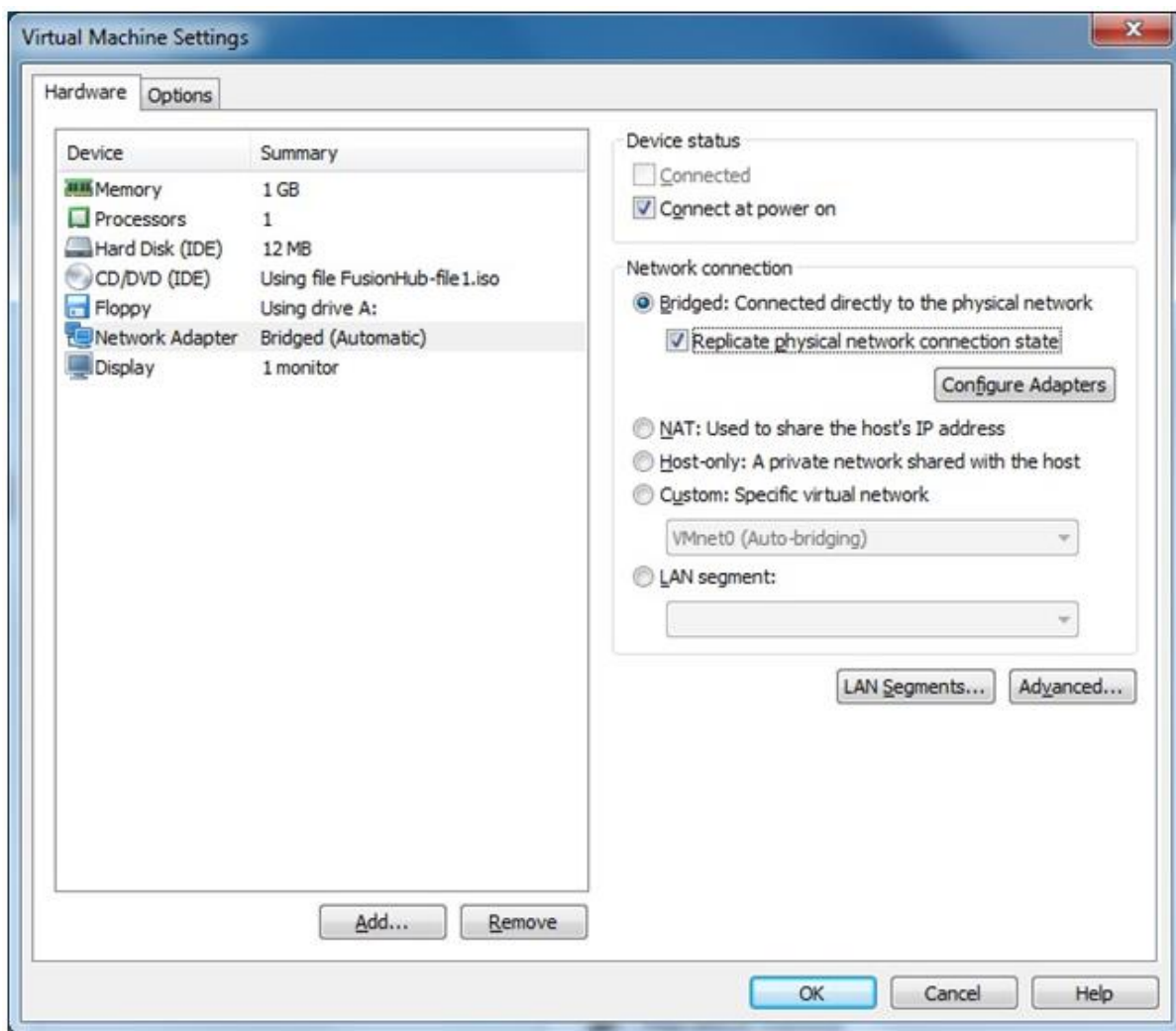
9. On the Add Hardware Wizard dialog, select Network Adapter. Click Next.



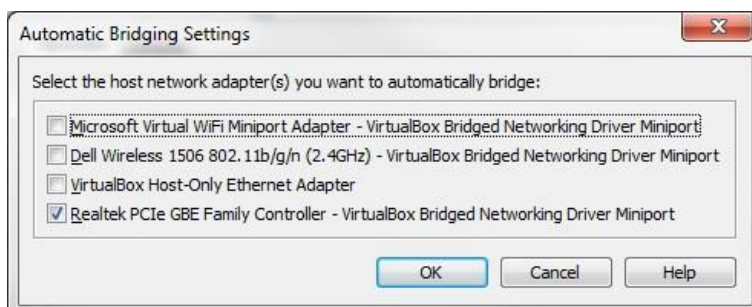
10. On the Network Adapter Type dialog, select Bridged: Connected directly to the physical network and Replicate physical network connection state. Check Connect at power on and click Finish.



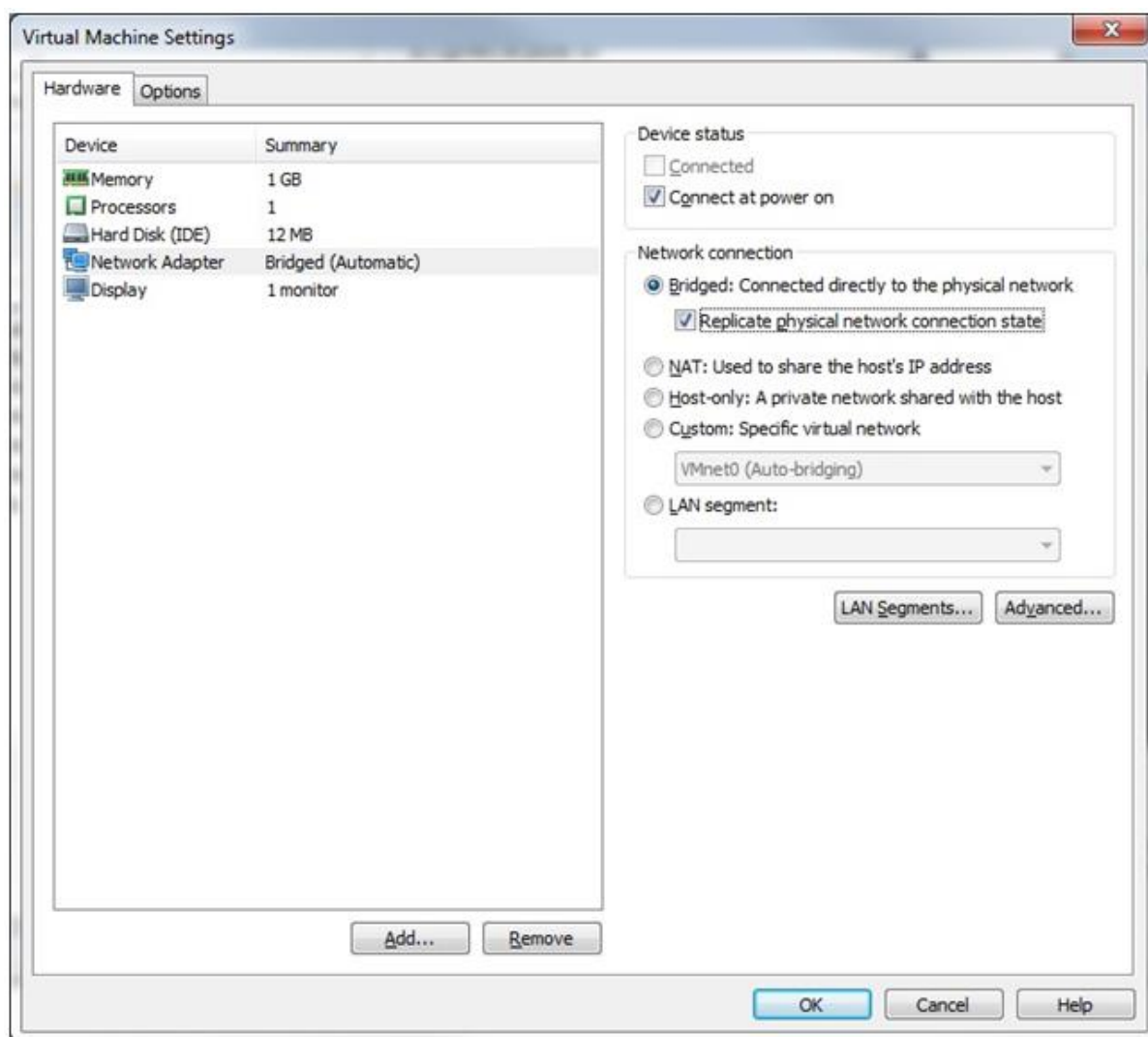
11. Click **Configure Adapters** to select the host adapter. This will apply only if you have more than one network adapter. Otherwise, skip this step.



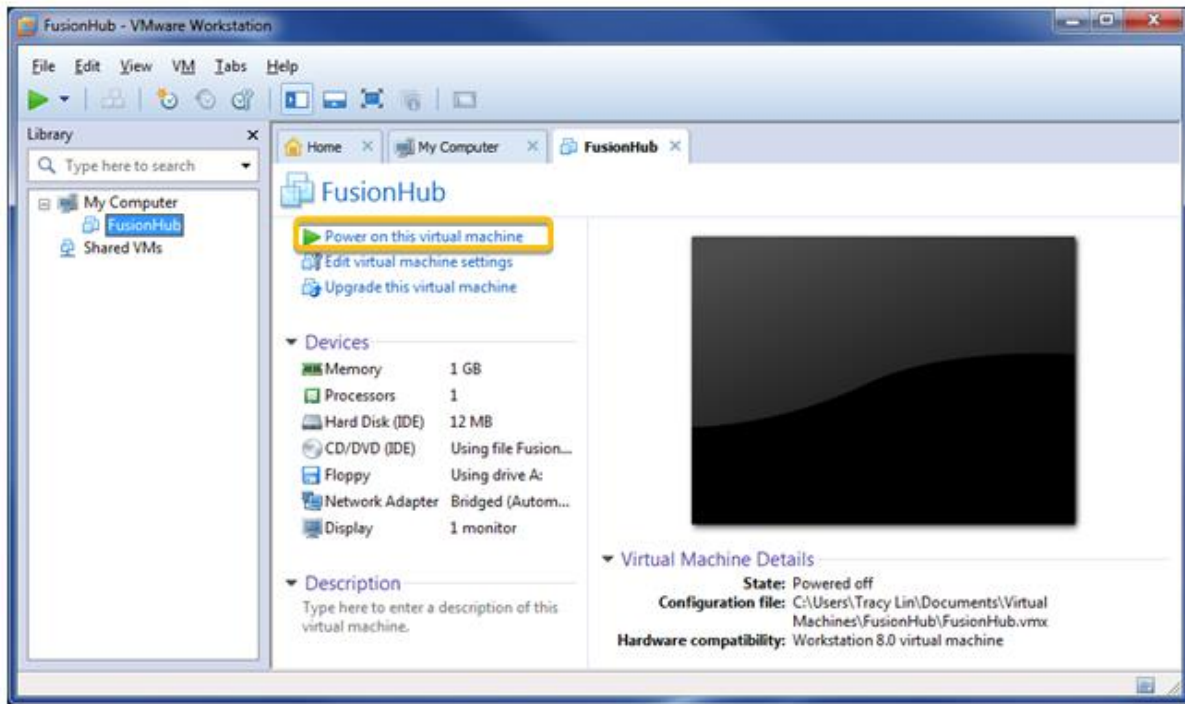
12. When the **Automatic Bridging Settings** dialog opens, select the host network adapter you want to automatically bridge and click **OK**.



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

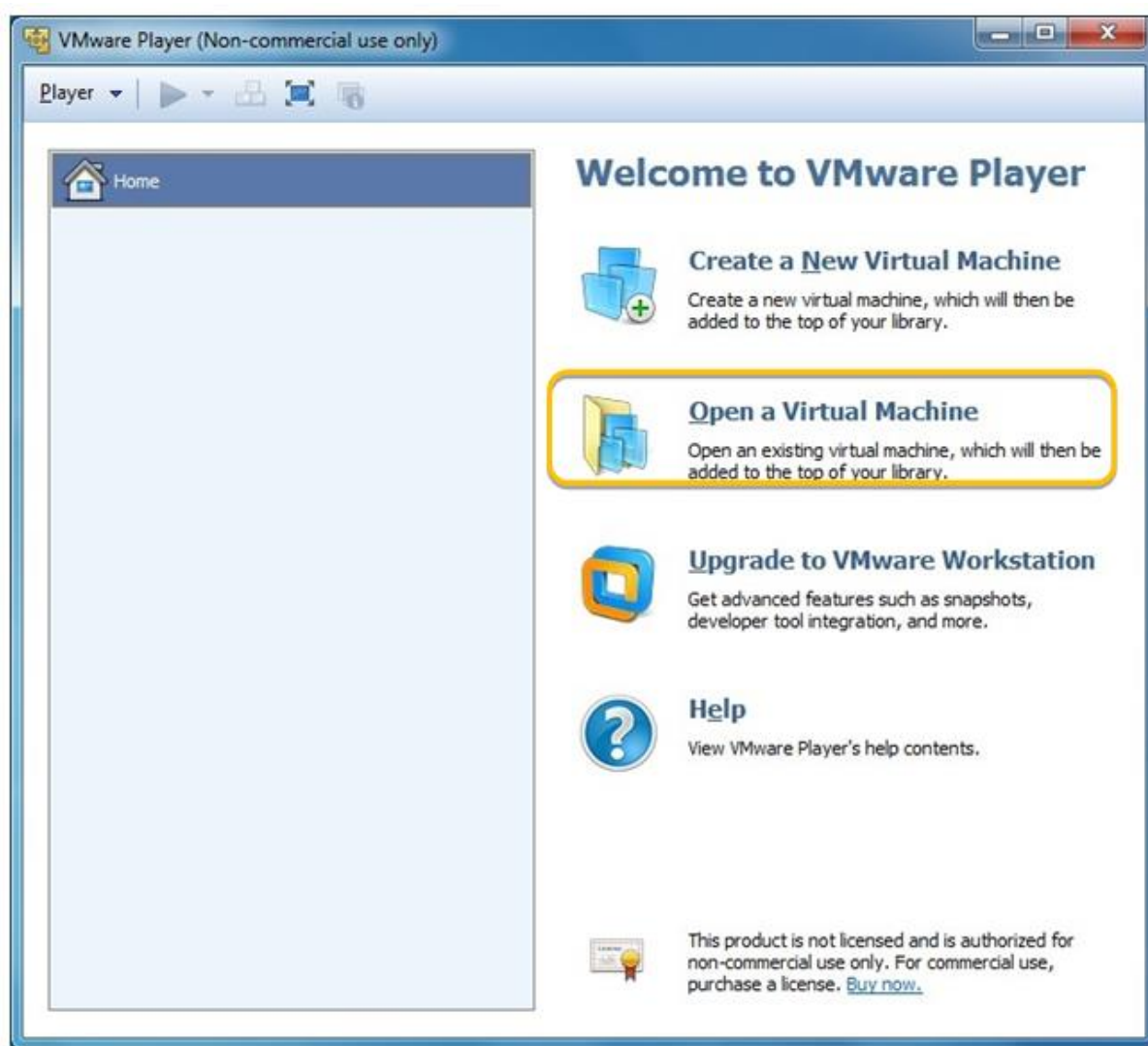
Network settings
Method       : DHCP
IP Address   : 10.8.8.252
Subnet Mask  : 255.255.0.0
Gateway      : 10.8.8.1
DNS Server   : 10.8.8.1
Admin        : http://10.8.8.252

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

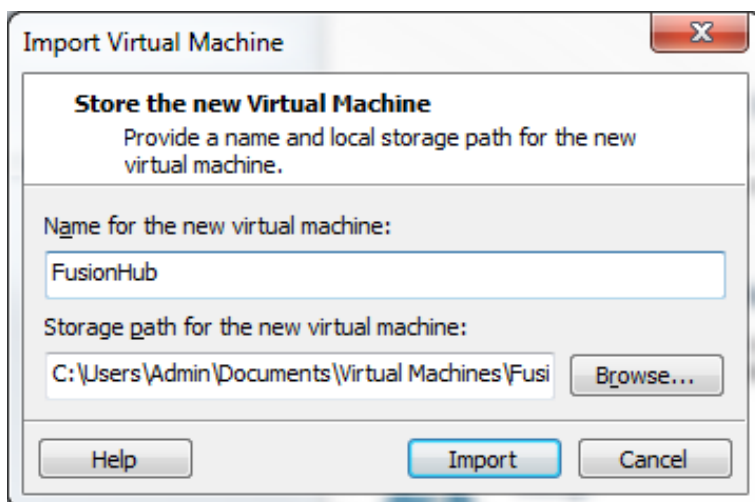
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

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.



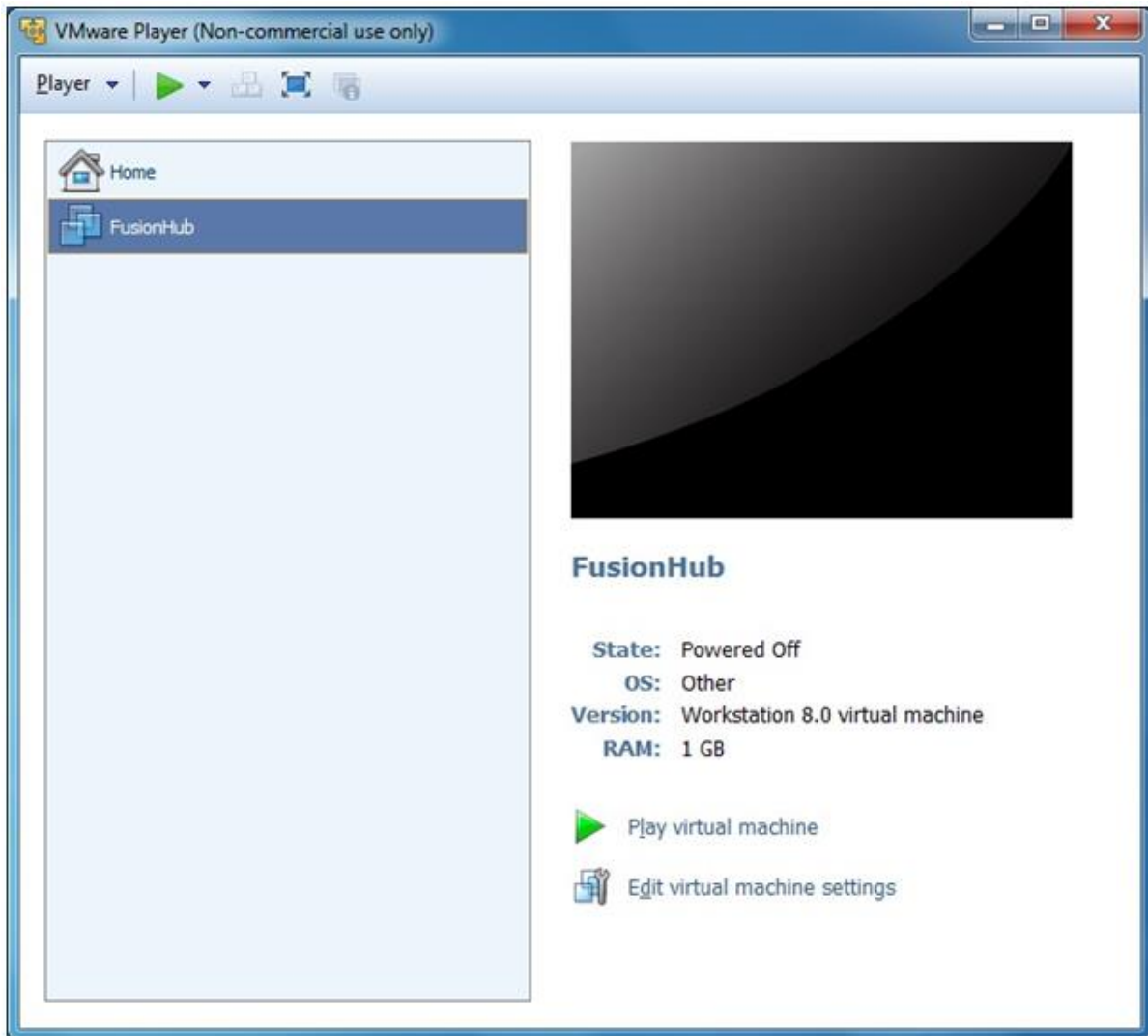
4. On the Store the new Virtual Machine dialog, type a name for the new virtual machine (i.e., FusionHub) and select the storage path. Please note that the storage path for this FusionHub virtual machine should not be the same as that for the downloaded FusionHub OVF template file. Click Import.



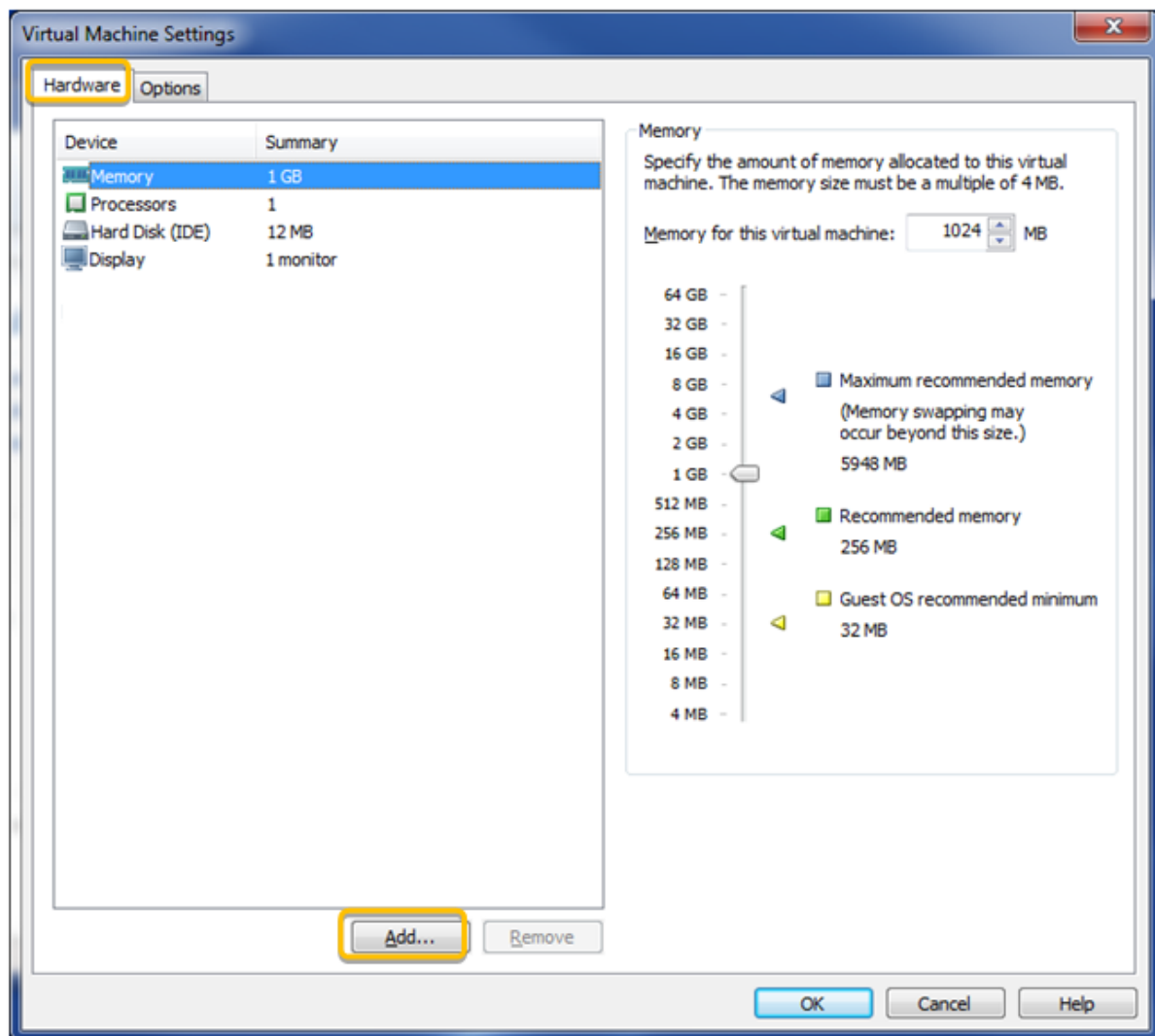
5. After successful import, a FusionHub virtual machine is created.



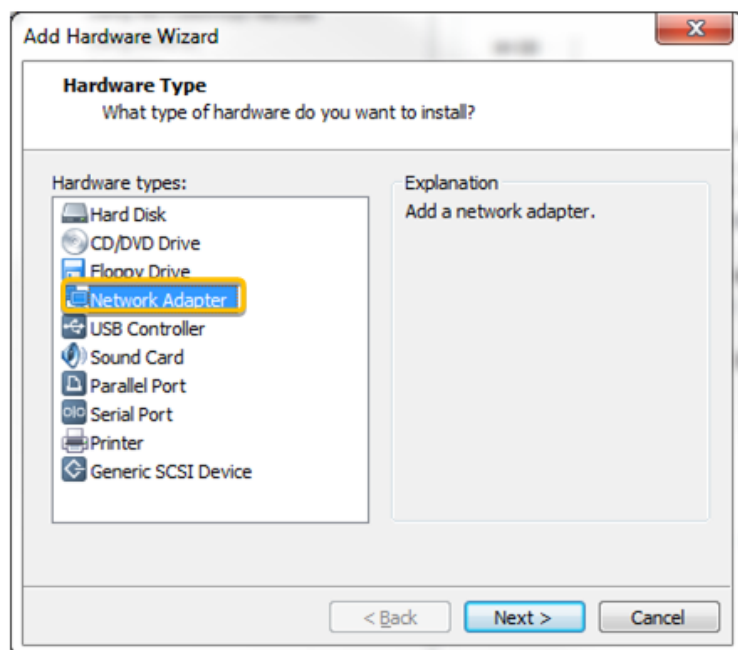
- Click **FusionHub** in the column on the left side of the dialog to select the virtual machine. Click **Edit virtual machine settings** to begin adding an Ethernet adapter to the FusionHub virtual machine.



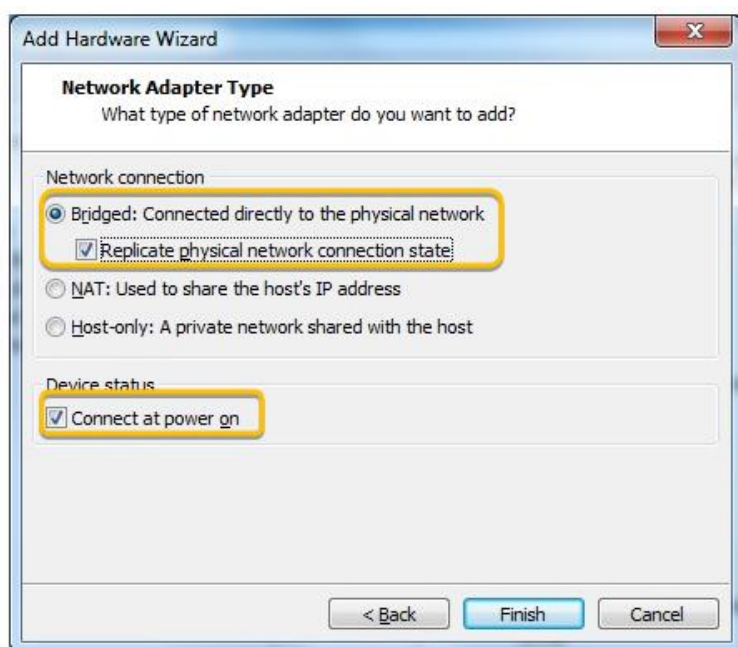
7. Click **Add**, found under the **Hardware** tab on the **Virtual Machine Settings** dialog.



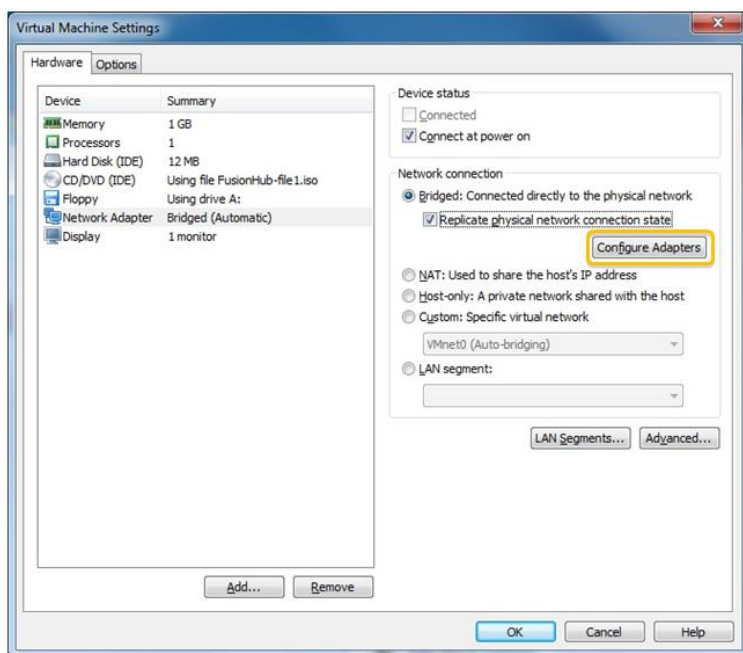
8. On the Add Hardware Wizard dialog, select Network Adapter. Click Next.



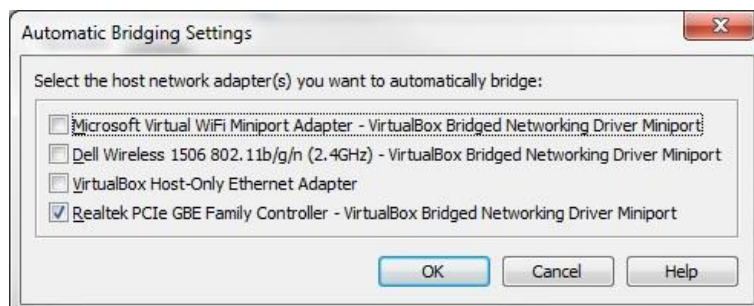
9. On the Network Adapter Type dialog, select Bridged: Connected directly to the physical network and Replicate physical network connection state. Check Connect at power on and click Finish.



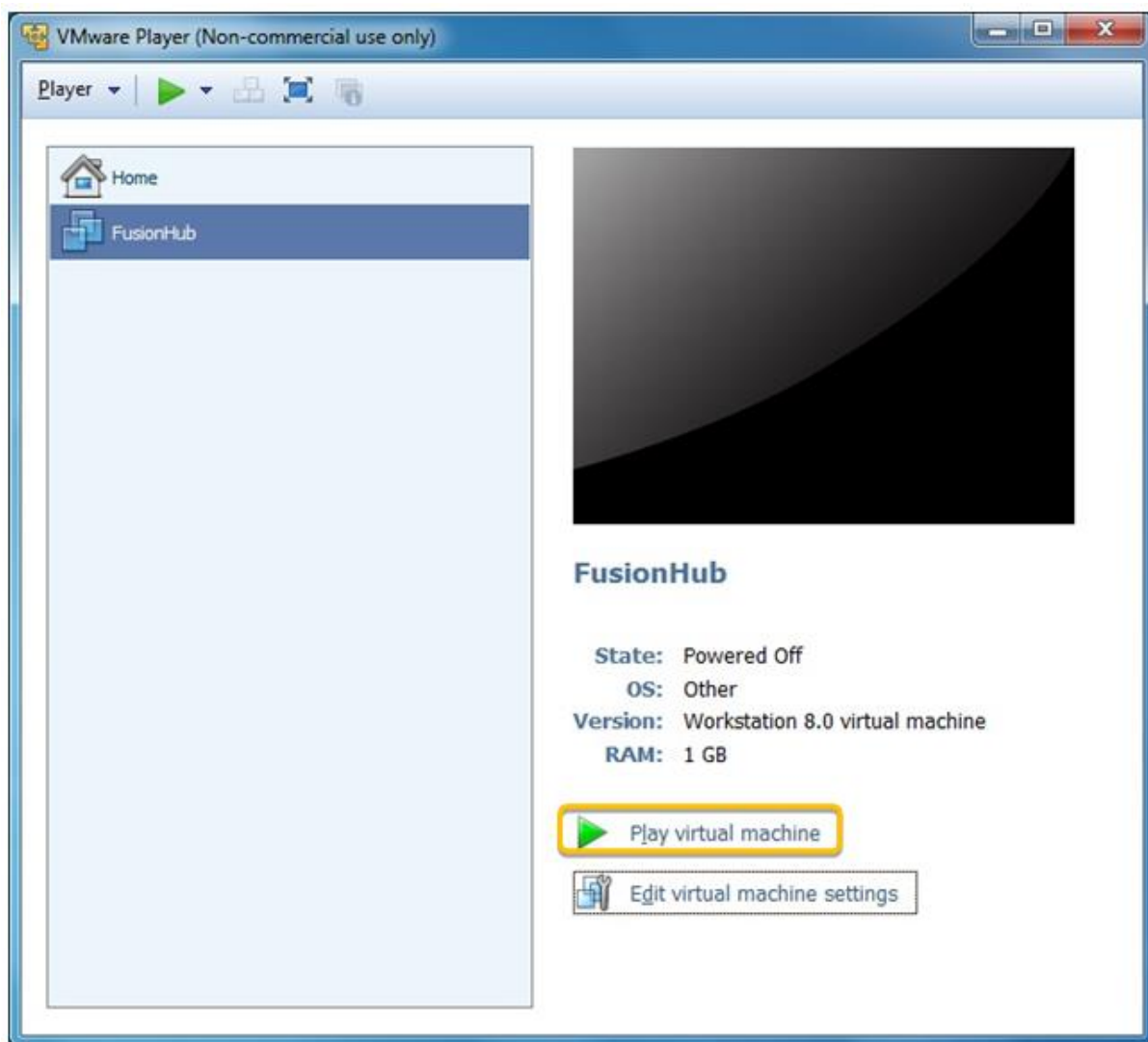
10. Click **Configure Adapters** to select the host network adapter.



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

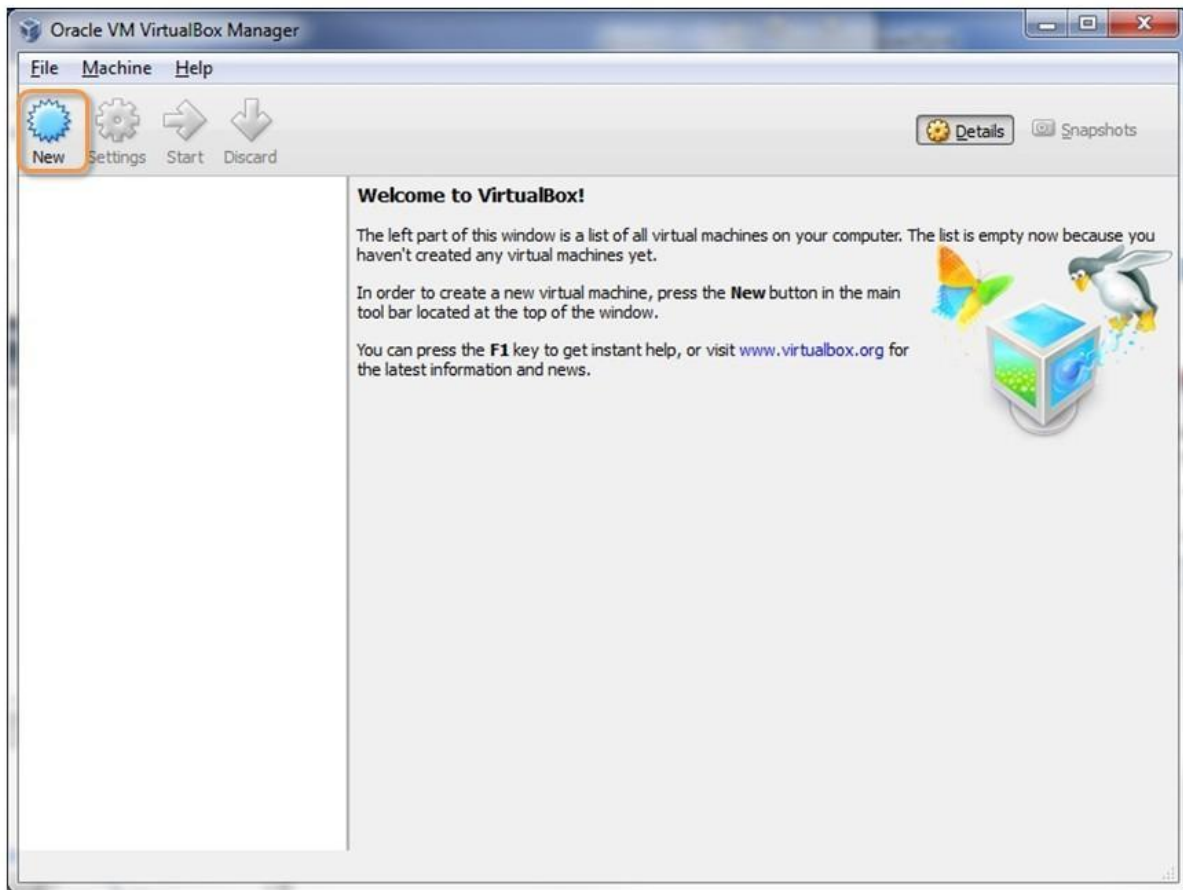
Network settings
Method       : DHCP
IP Address   : 10.8.8.252
Subnet Mask  : 255.255.0.0
Gateway      : 10.8.8.1
DNS Server   : 10.8.8.1
Admin        : http://10.8.8.252

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

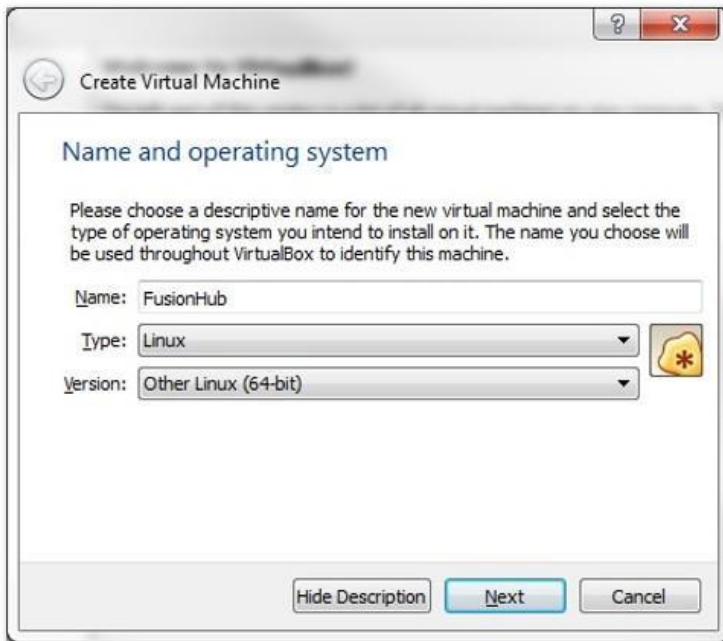
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.4 Oracle VirtualBox

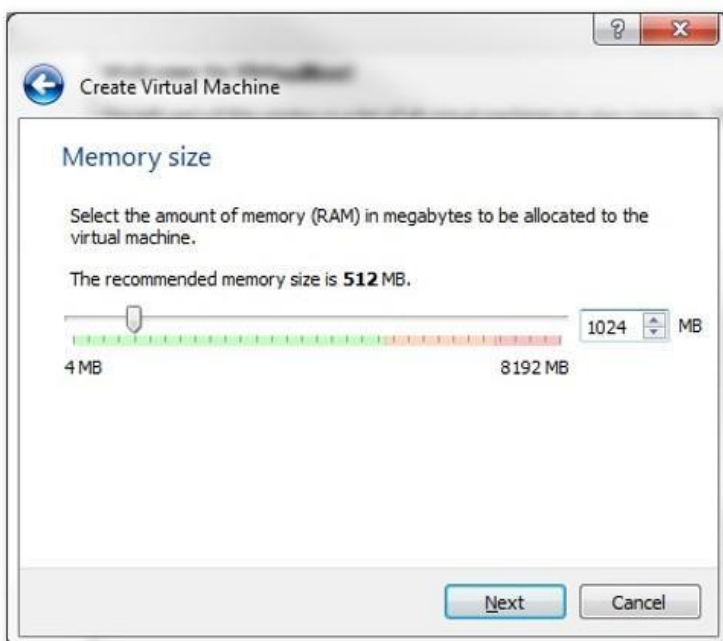
1. Download VirtualBox from <https://www.virtualbox.org/wiki/Downloads> and install it.
2. Open **VirtualBox**. Click **New** to create a virtual machine for FusionHub.



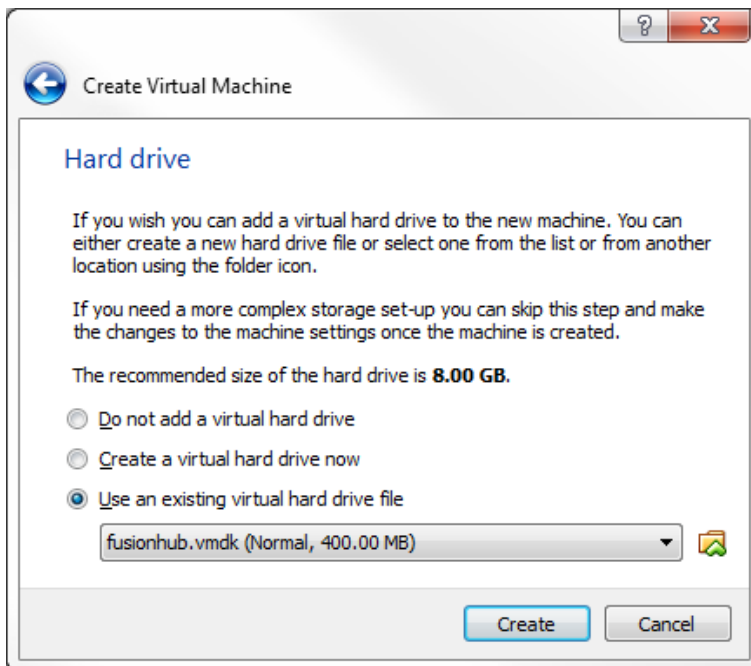
- On the **Create Virtual Machine** dialog, specify a **Name** for the virtual machine. Select **Linux** from the **Type** drop-down menu. Select **Other Linux (64-bit)** from the **Version** drop-down menu. Click **Next** to continue.



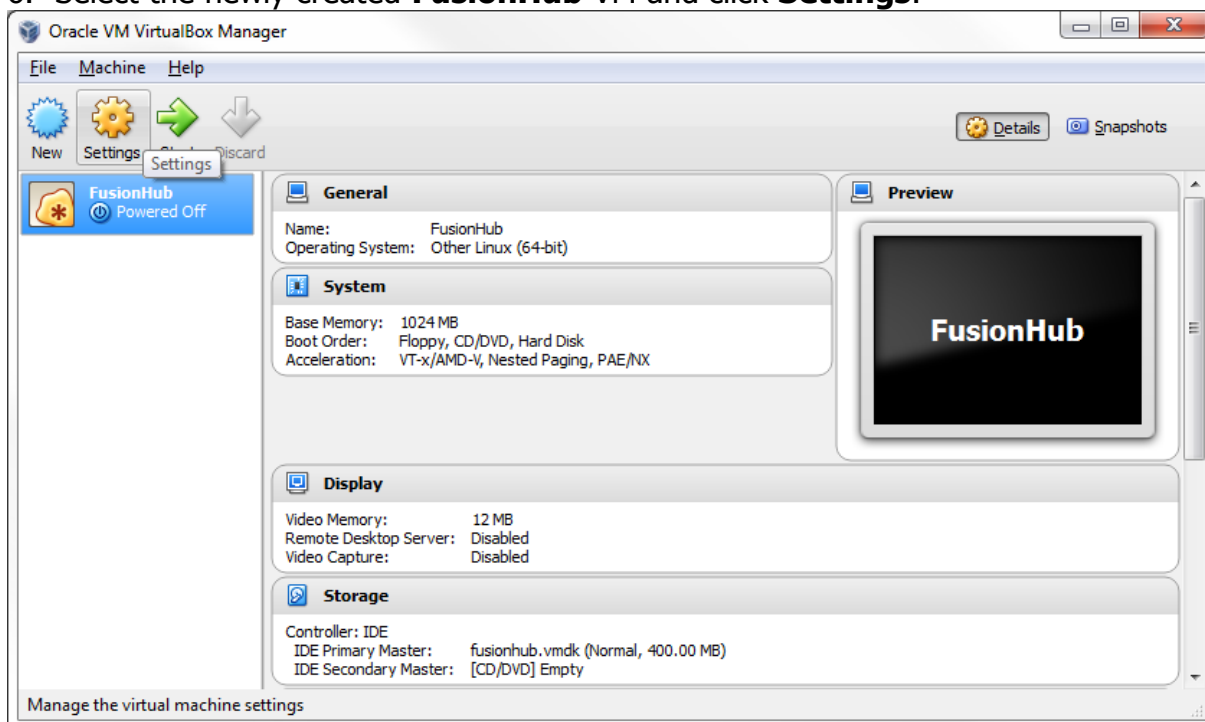
- Set the memory size to **1024MB**. Click **Next**.



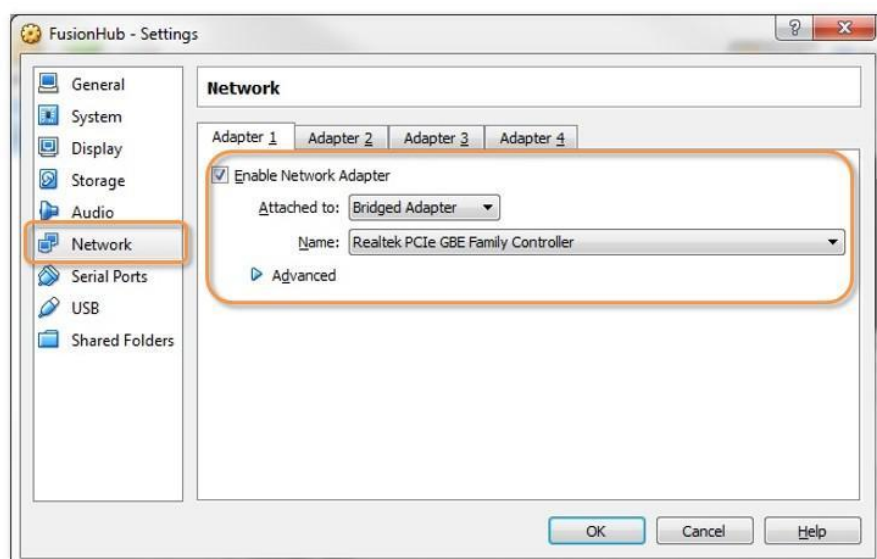
5. Click **Use an existing virtual hard drive file**. Select the **fusionhub.vmdk** file downloaded from InControl 2. Click **Create** to create a virtual machine.



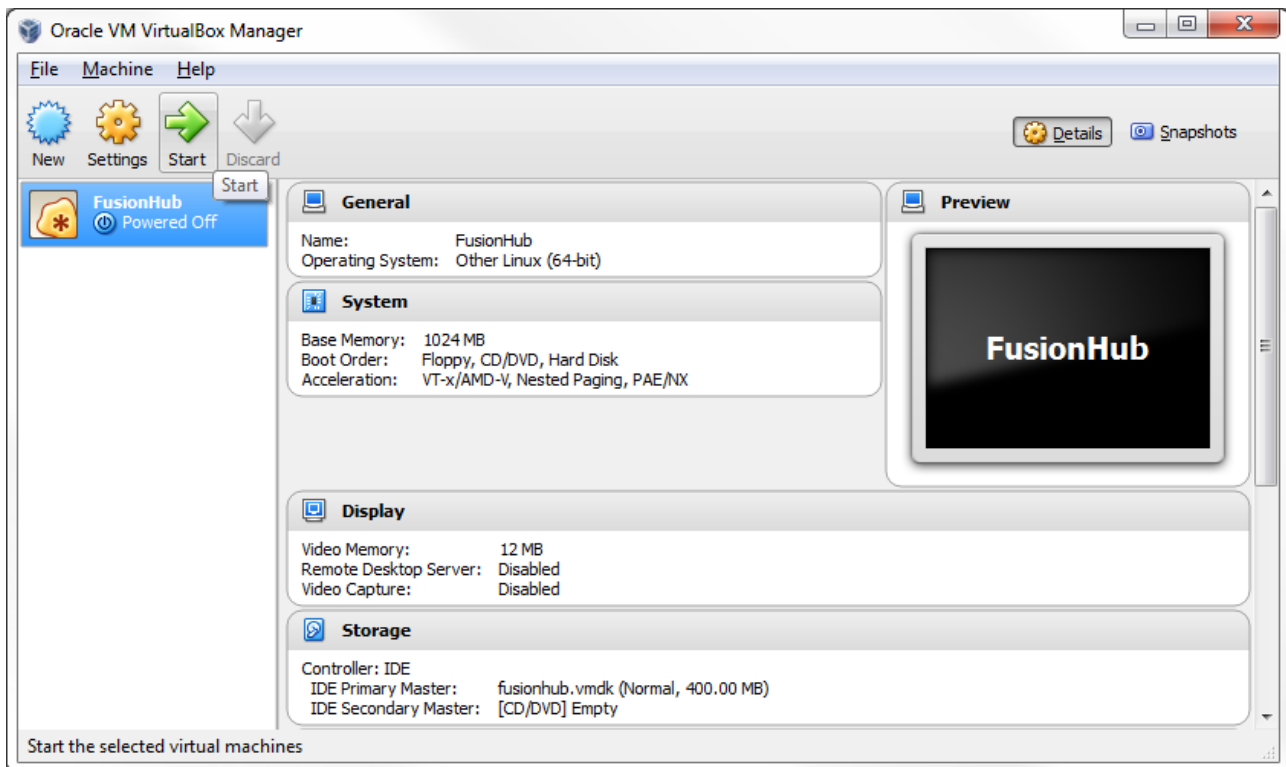
6. Select the newly created **FusionHub** VM and click **Settings**.



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.



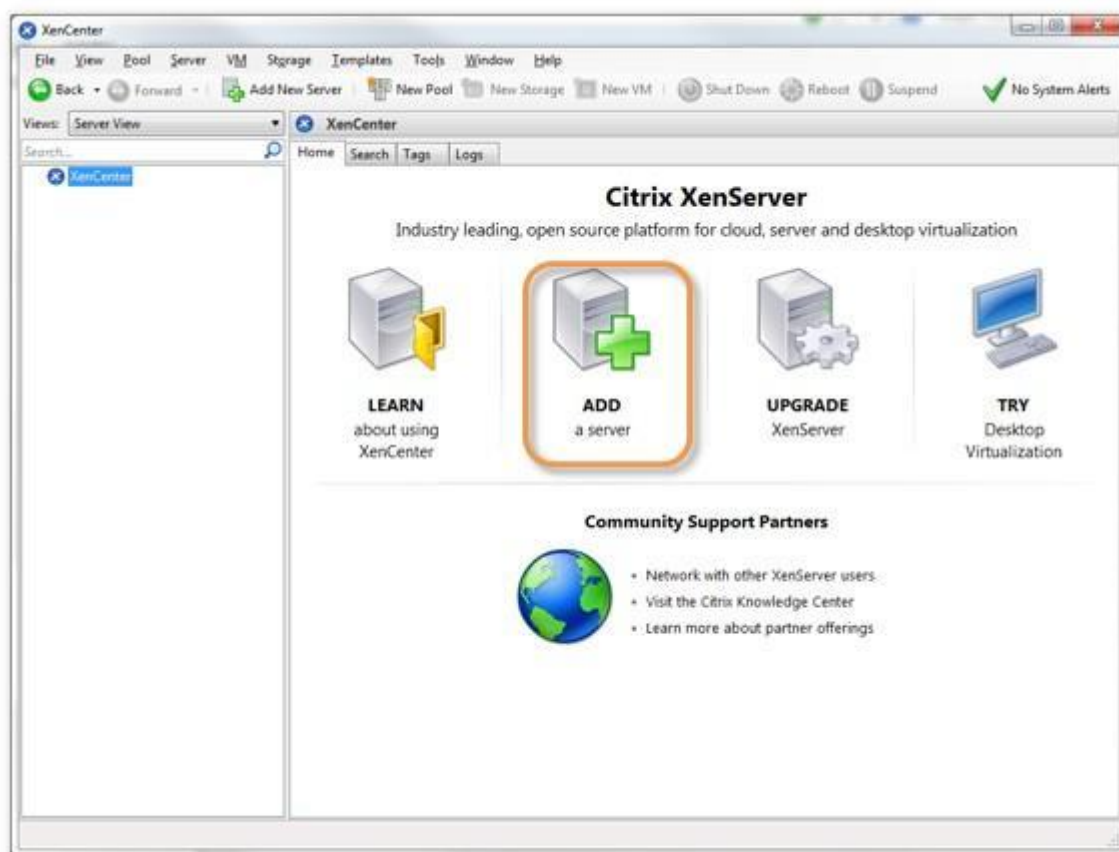
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.5 Citrix XenServer

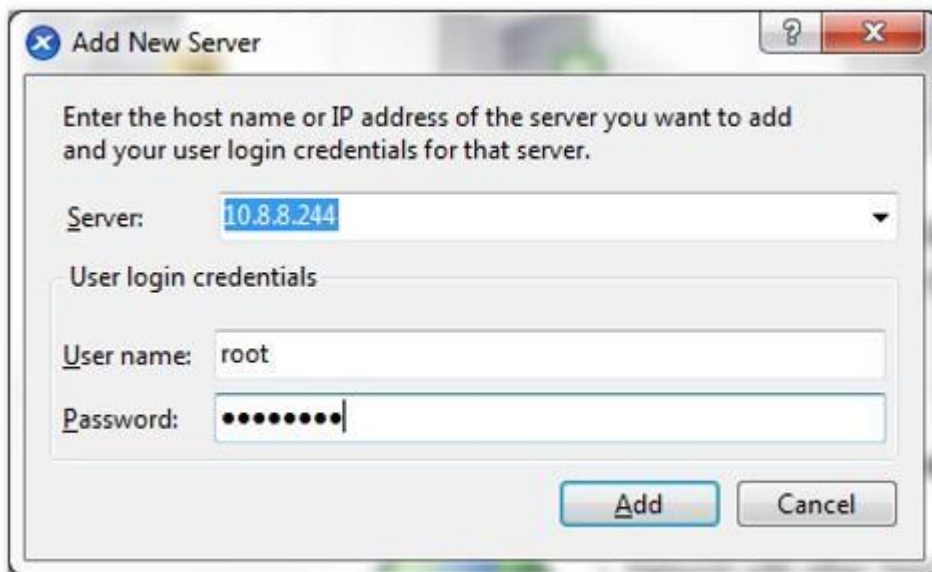
1. Download and install the **XenCenter installer** from your XenCenter server.



2. Open XenCenter. Click ADD a server.



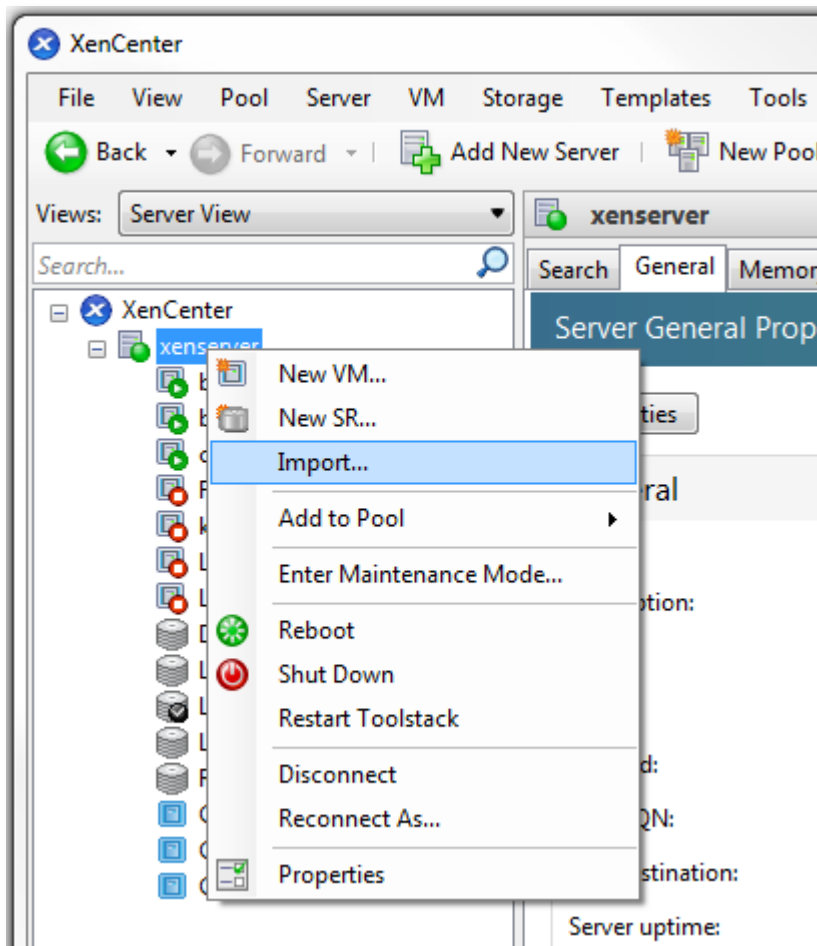
3. On the **Add New Server** dialog, enter the appropriate **Server** IP address/name, **User name**, and **Password**. Click **Add** to add the XenServer.



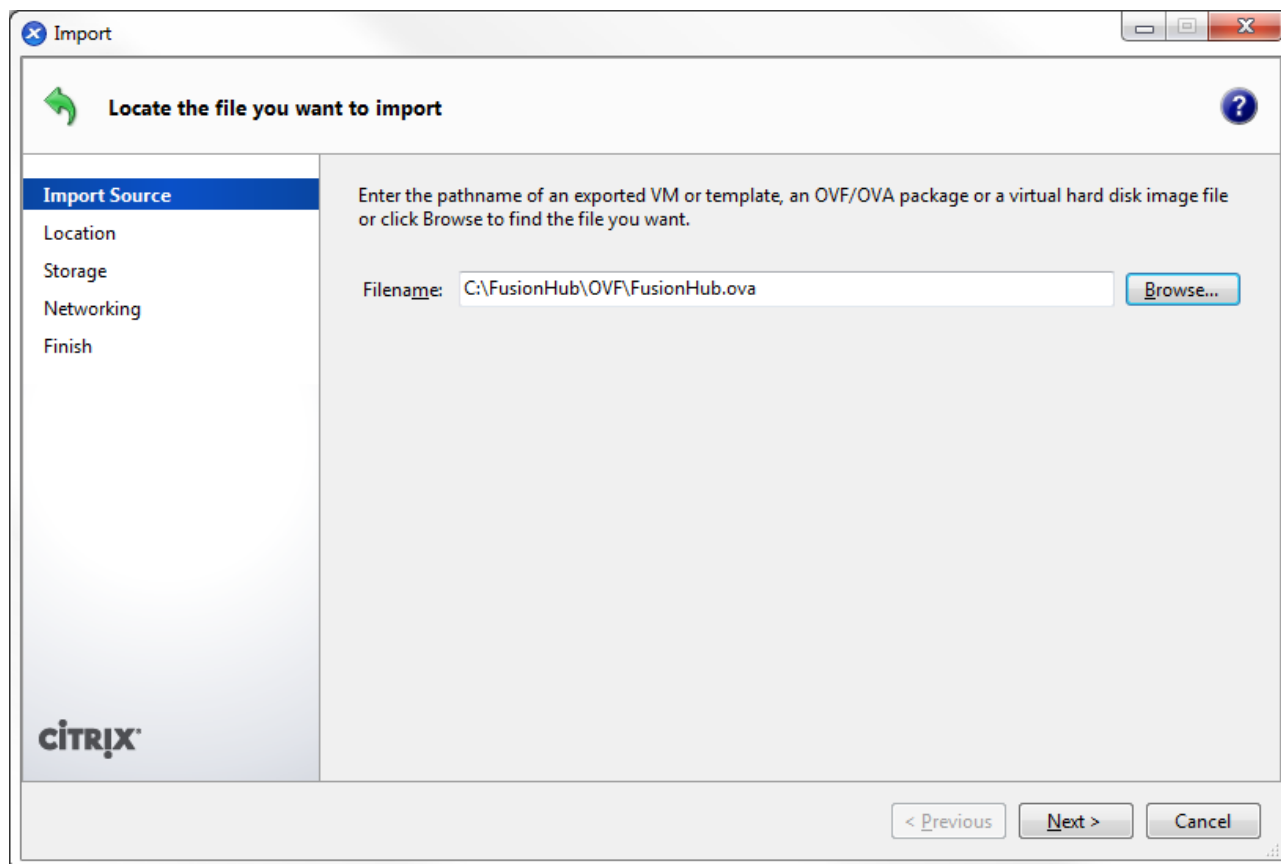
The image shows a screenshot of the 'Add New Server' dialog box. The dialog has a title bar with a close button (X) and a help button (?). The main content area contains the following fields and controls:

- Server:** A dropdown menu with the value '10.8.8.244' selected.
- User login credentials:** A section containing two input fields:
 - User name:** A text field with the value 'root'.
 - Password:** A password field with masked characters (dots).
- Buttons:** Two buttons at the bottom right: 'Add' and 'Cancel'.

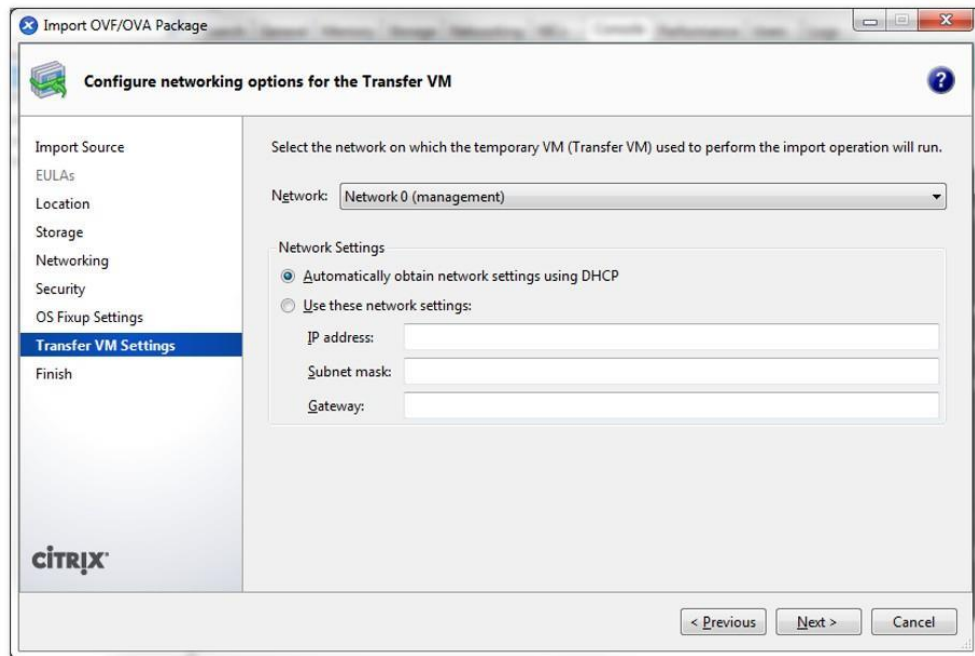
4. Enable E1000 gigabit device emulation in Citrix XenServer to take advantage of FusionHub's support for E1000 gigabit devices. For details, please refer to: http://www.netservers.co.uk/articles/open-source-howtos/citrix_e1000_gigabit
5. Right-click the XenServer and select **Import** to begin importing the OVA file to this XenServer.



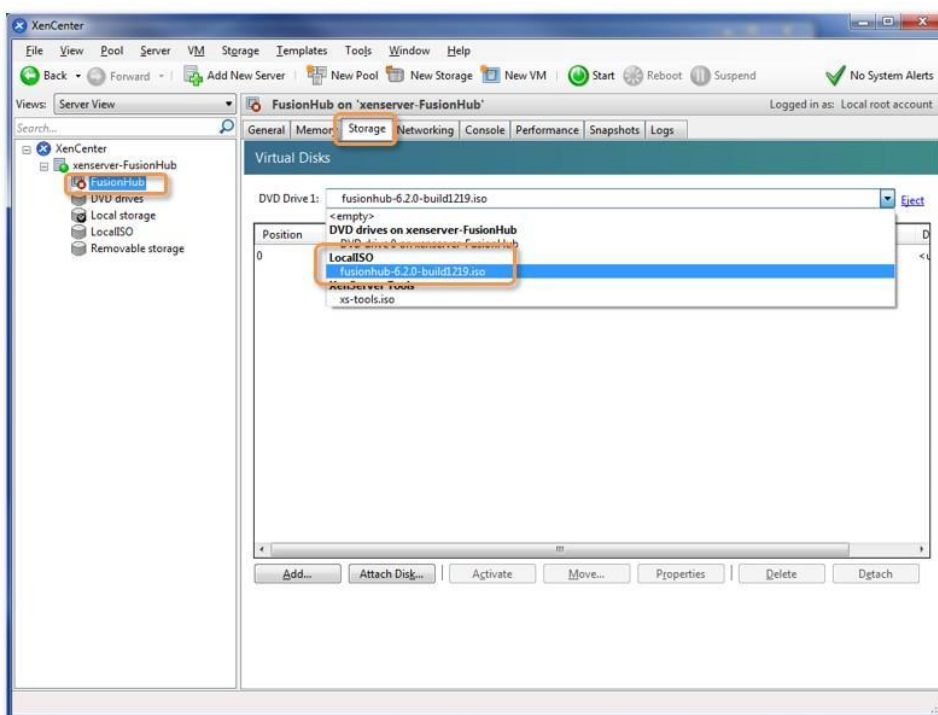
6. On the **Import** dialog, select the **FusionHub.ova** file downloaded from InControl 2.



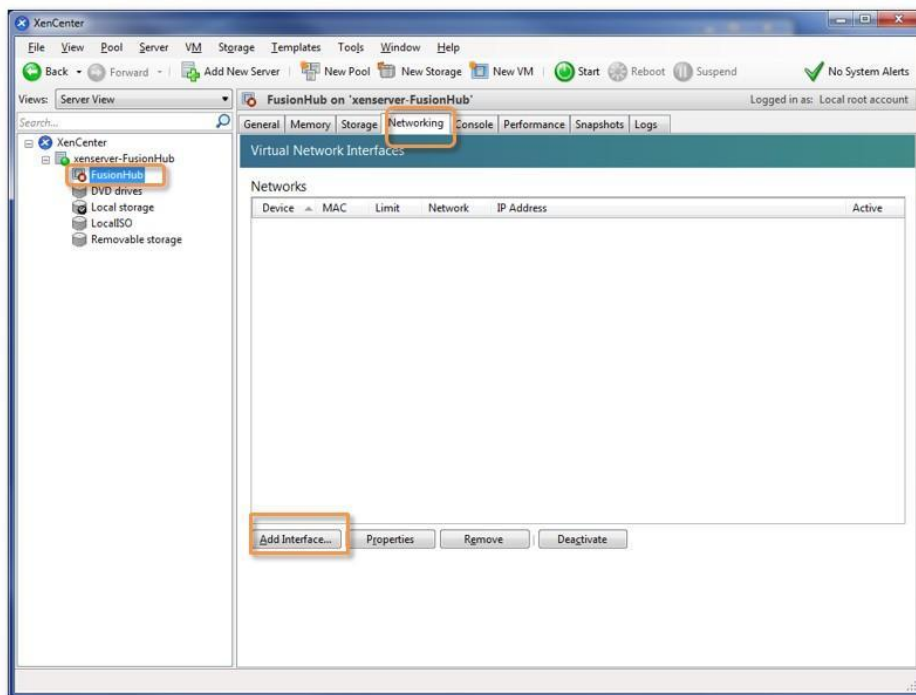
7. Click **Next** to keep the default settings and display the **Configure networking options for the Transfer VM** dialog. Select an appropriate network on which the temporary VM used to perform the import operation will run. Click **Next**. Click **Finish** to import the OVF file.



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



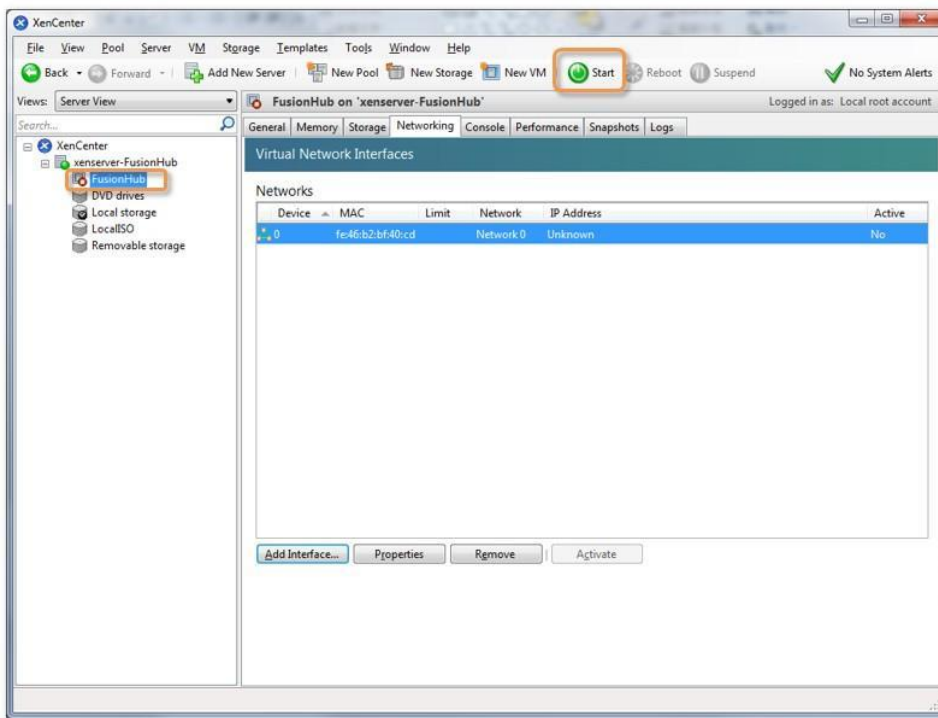
8. Click **FusionHub -> Networking -> Add Interface** to add a network interface.



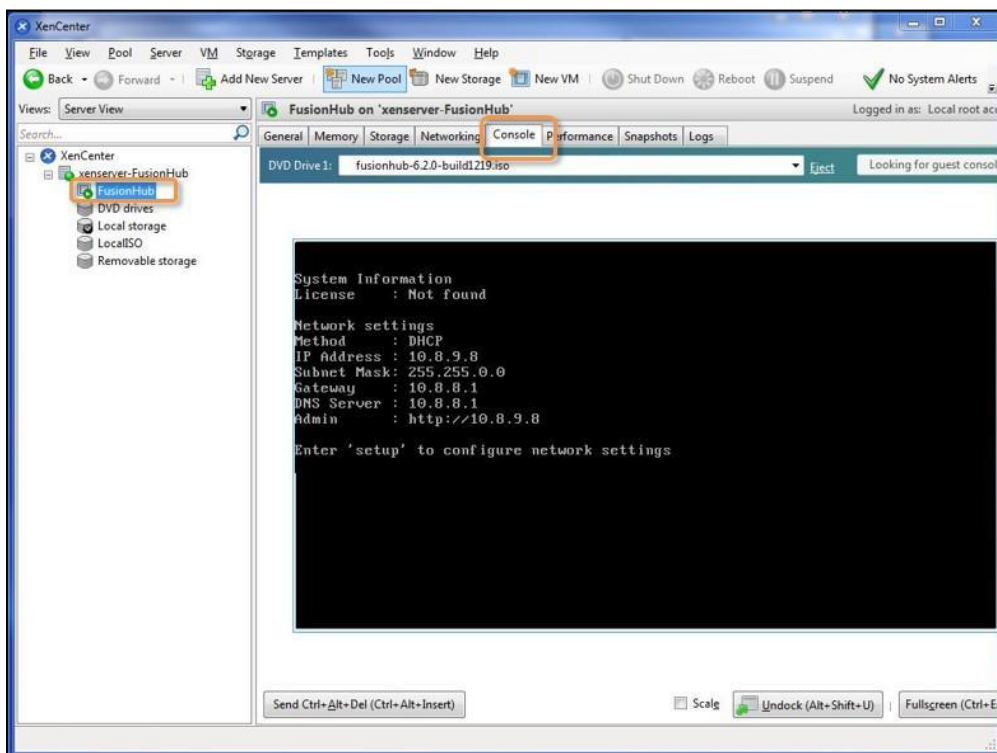
9. On the **Add Virtual Interface** dialog, select the network and click **Add**.



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



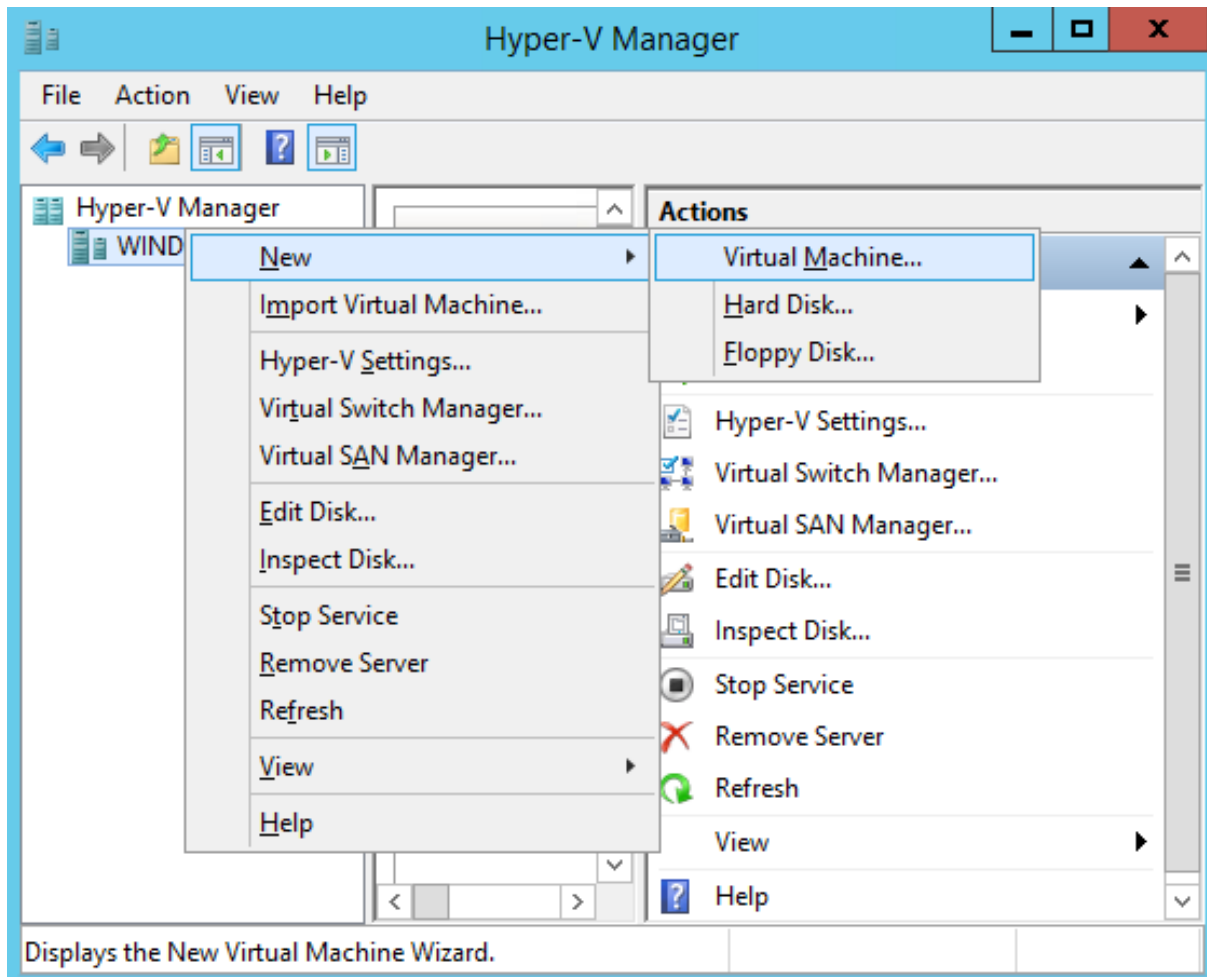
11. Click **FusionHub** -> **Console** to open the console.



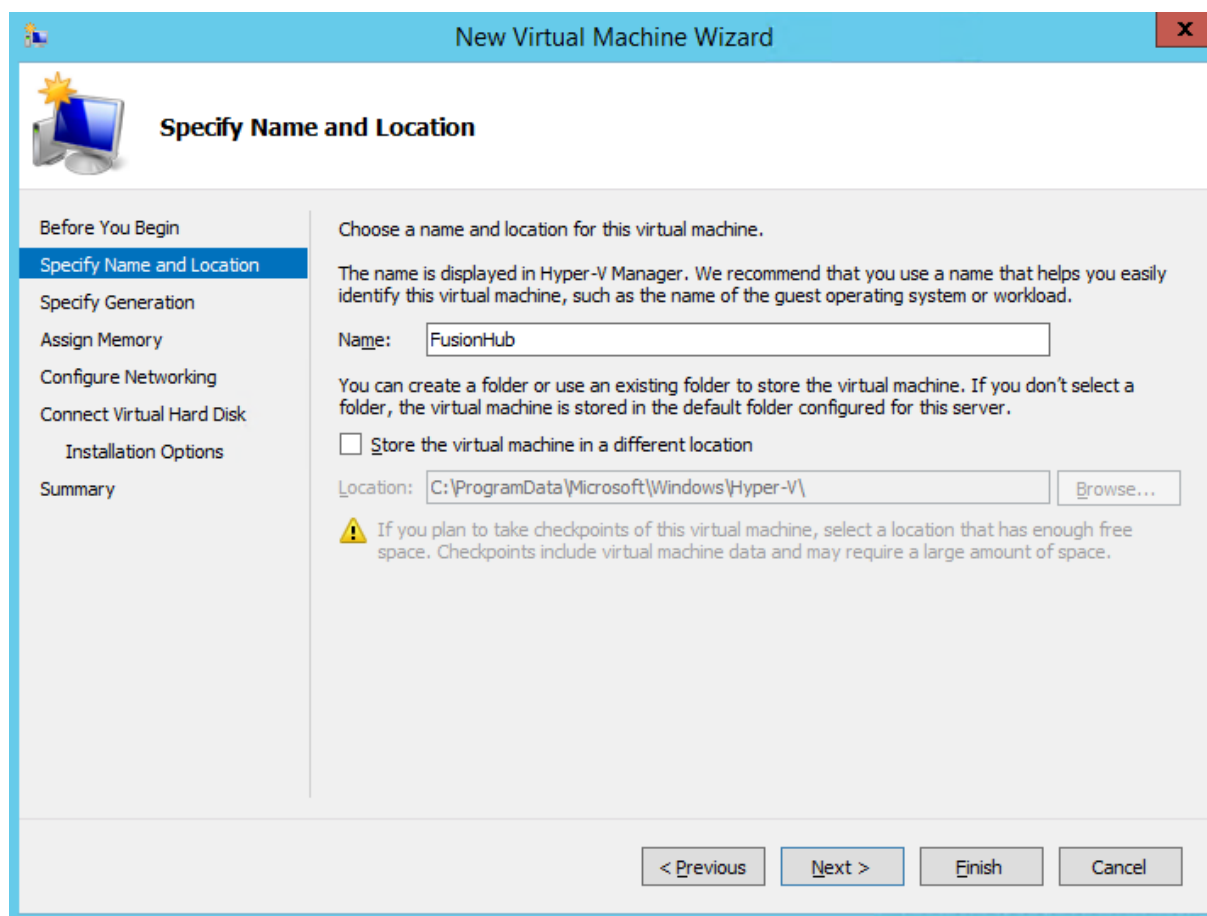
Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

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 image shows a screenshot of the 'New Virtual Machine Wizard' window, specifically the 'Specify Name and Location' step. The window has a blue title bar with the text 'New Virtual Machine Wizard' and a close button. On the left, there is a sidebar with a list of steps: 'Before You Begin', 'Specify Name and Location' (which is highlighted with a blue background), 'Specify Generation', 'Assign Memory', 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area of the window is titled 'Specify Name and Location' and contains the following text: 'Choose a name and location for this virtual machine.' followed by 'The name is displayed in Hyper-V Manager. We recommend that you use a name that helps you easily identify this virtual machine, such as the name of the guest operating system or workload.' Below this, there is a text box labeled 'Name:' with the value 'FusionHub' entered. Further down, there is a text box labeled 'Location:' with the value 'C:\ProgramData\Microsoft\Windows\Hyper-V\' entered, and a 'Browse...' button to its right. A checkbox labeled 'Store the virtual machine in a different location' is present and is currently unchecked. At the bottom of the main area, there is a warning icon (a yellow triangle with an exclamation mark) and the text: '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.' At the bottom of the window, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

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: FusionHub

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.

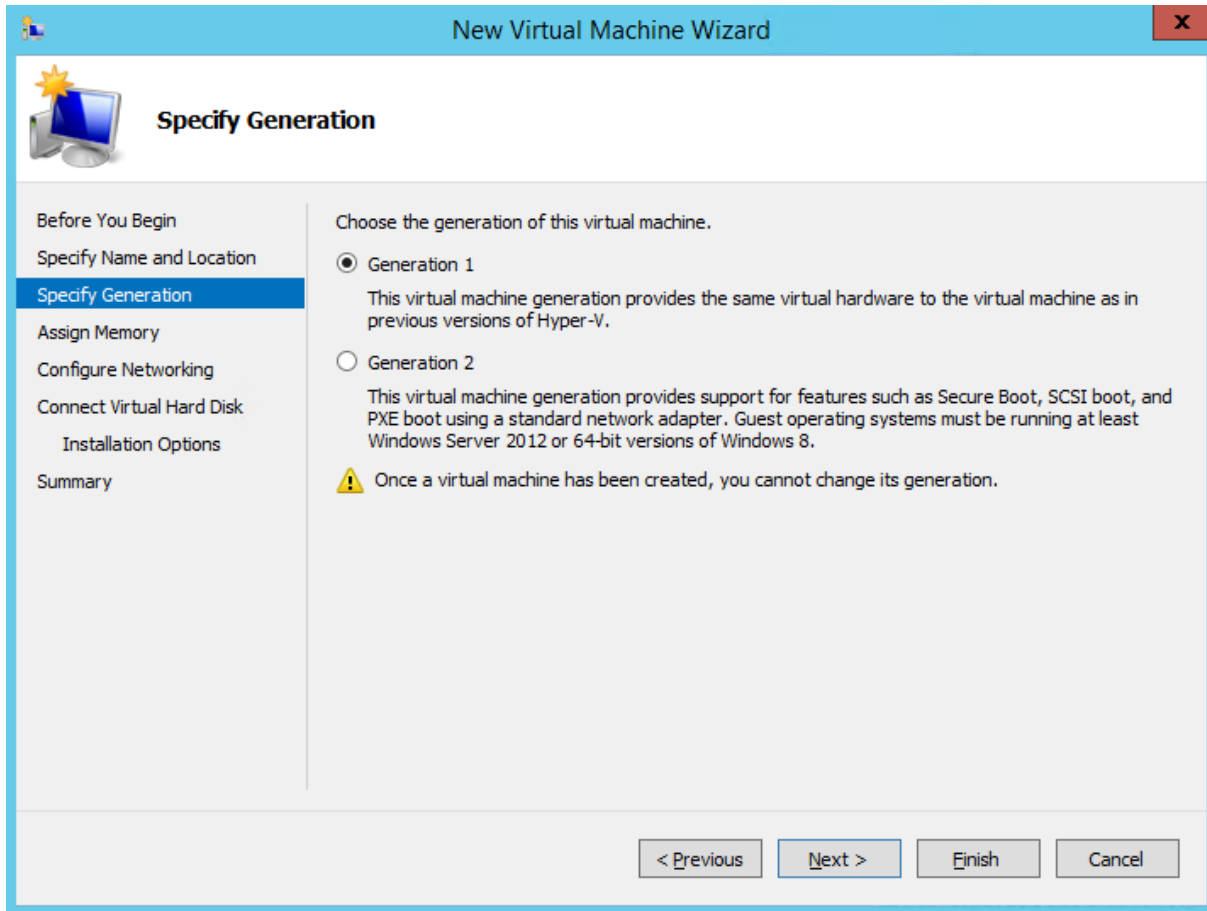
☐ Store the virtual machine in a different location

Location: C:\ProgramData\Microsoft\Windows\Hyper-V\ Browse...

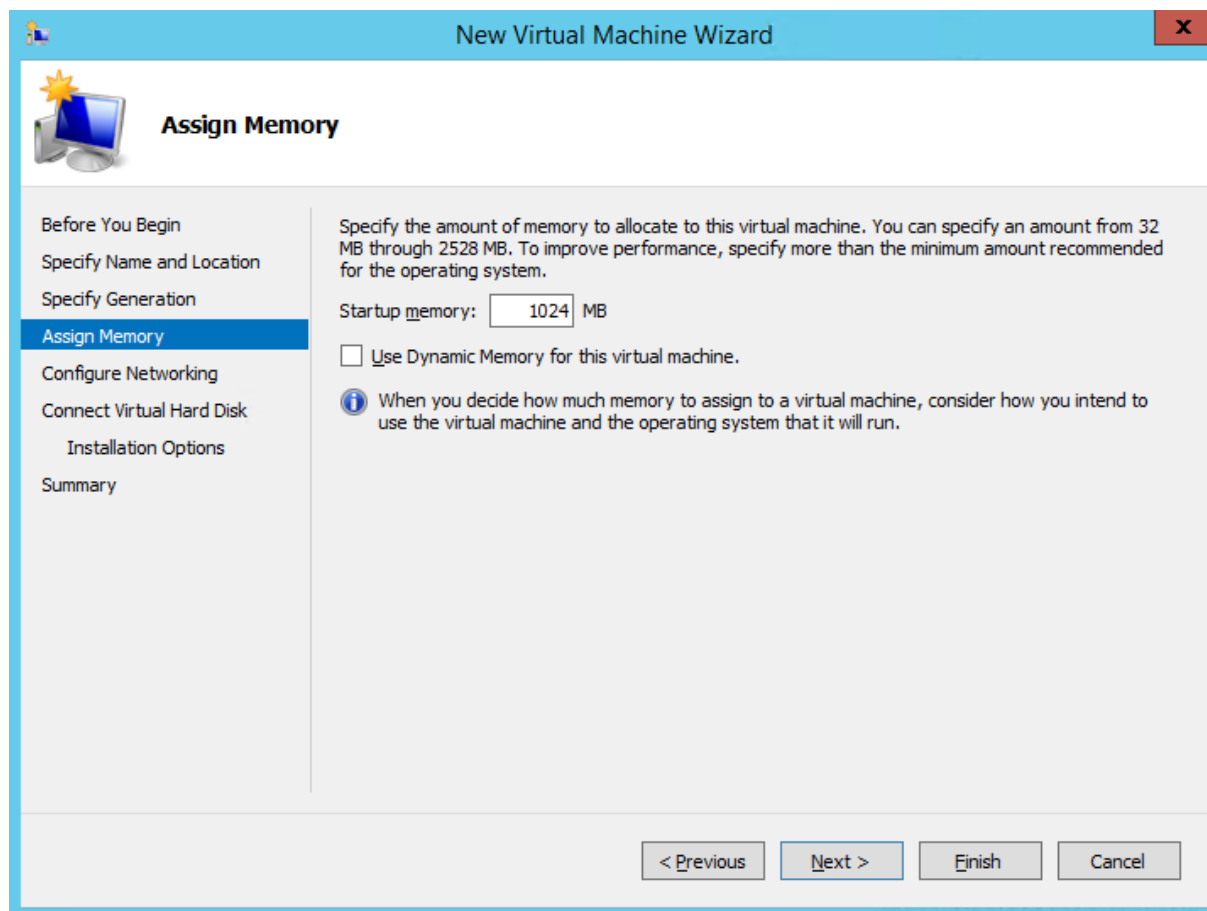
 If you plan to take checkpoints of this virtual machine, select a location that has enough free space. Checkpoints include virtual machine data and may require a large amount of space.

< 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**.



The image shows the 'New Virtual Machine Wizard' window, specifically the 'Assign Memory' step. The window has a blue title bar with the text 'New Virtual Machine Wizard' and a close button. On the left, there is a sidebar with a list of steps: 'Before You Begin', 'Specify Name and Location', 'Specify Generation', 'Assign Memory' (which is highlighted with a blue background and a star icon), 'Configure Networking', 'Connect Virtual Hard Disk', 'Installation Options', and 'Summary'. The main area of the window is titled 'Assign Memory' and contains the following text: '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.' Below this text, there is a label 'Startup memory:' followed by a text box containing the value '1024' and the unit 'MB'. There is also a checkbox labeled 'Use Dynamic Memory for this virtual machine.' which is currently unchecked. Below the checkbox, there is an information icon (a blue circle with a white 'i') followed by the text: '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.' At the bottom of the window, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

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.

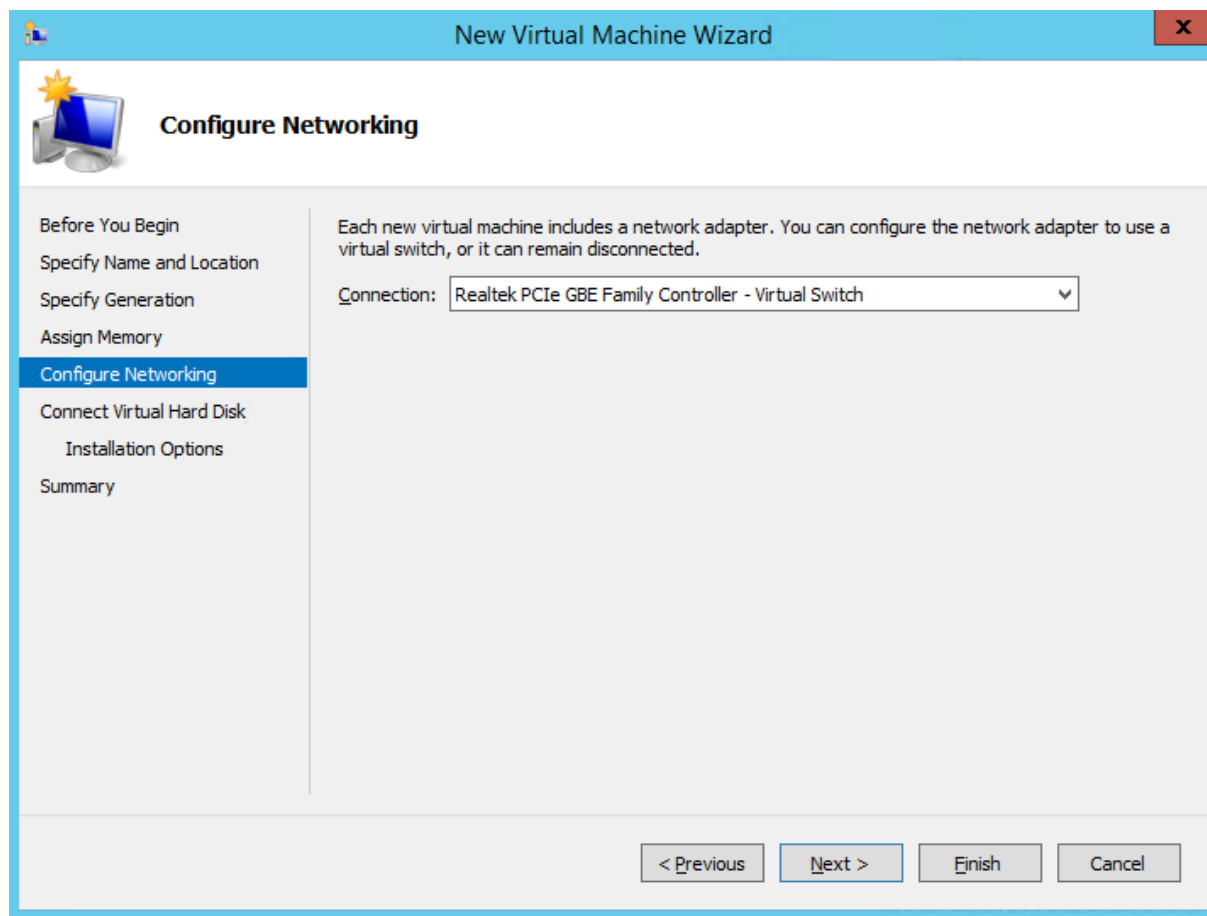
Startup memory: MB

☐ Use Dynamic Memory for this virtual machine.

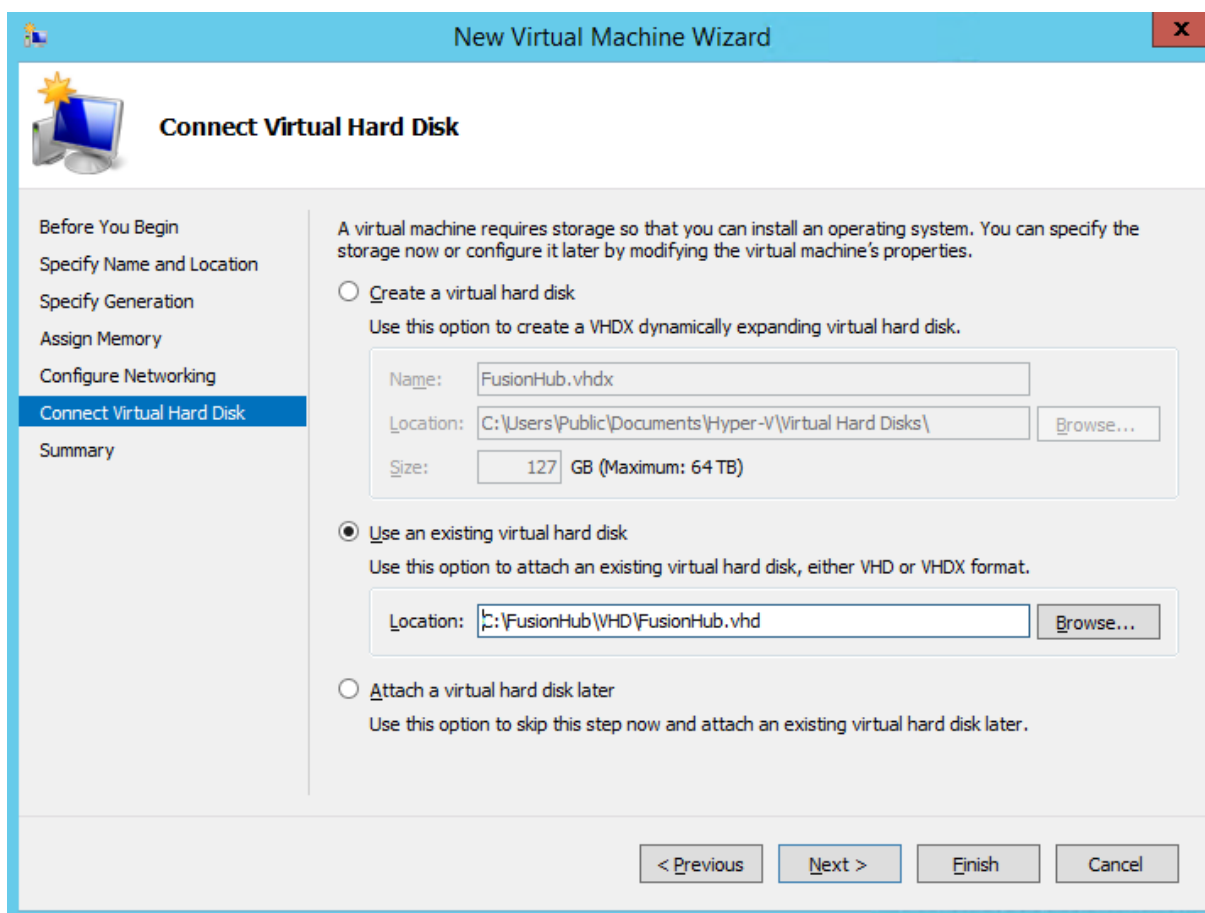
i When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.

< Previous Next > Finish Cancel

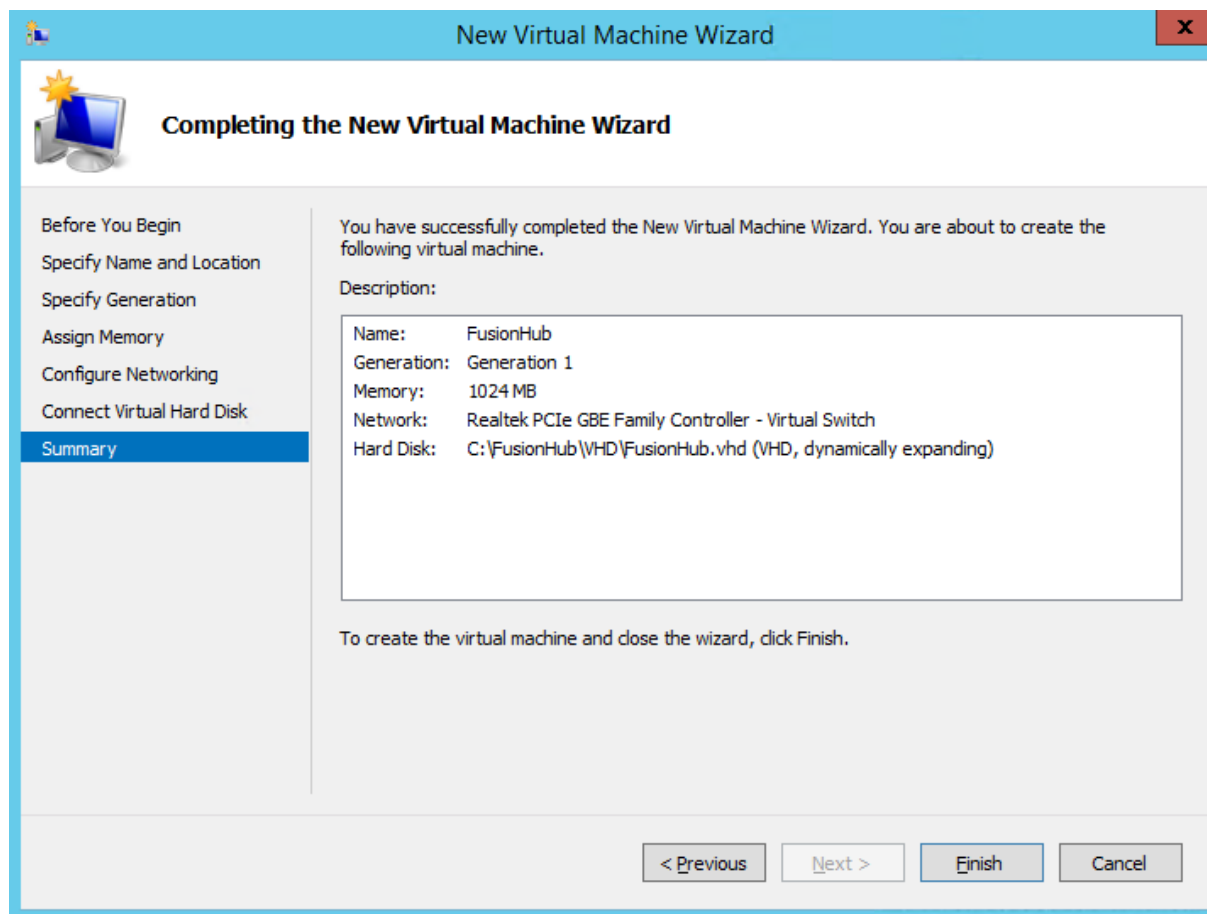
5. On the **Configure Networking** dialog, select a network adapter and click **Next**



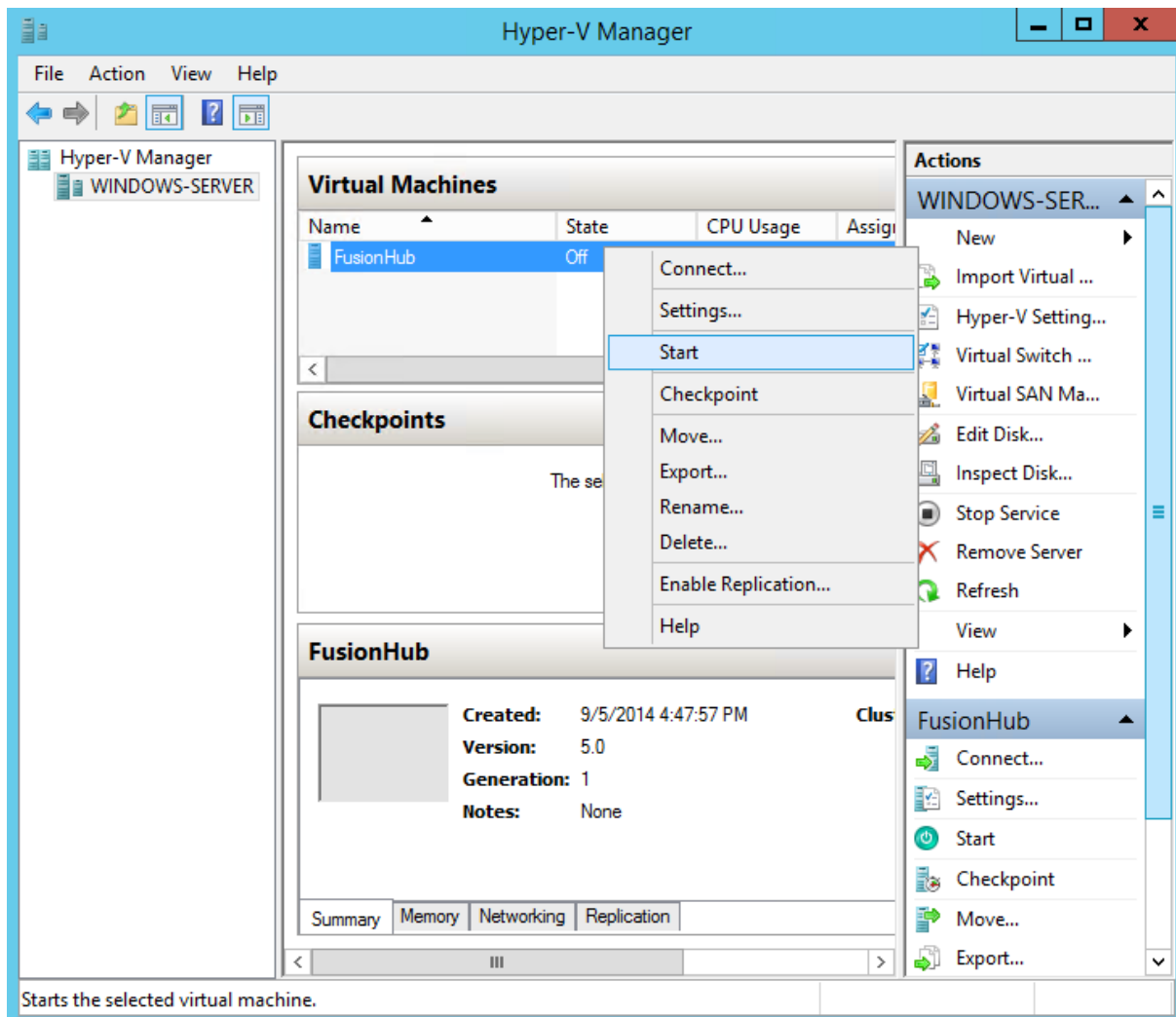
6. On the **Connect Virtual Hard Disk** dialog, select “**Use an existing virtual hard disk**” and select FusionHub.vhd from the location you downloaded FusionHub. Click **Next**.



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



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

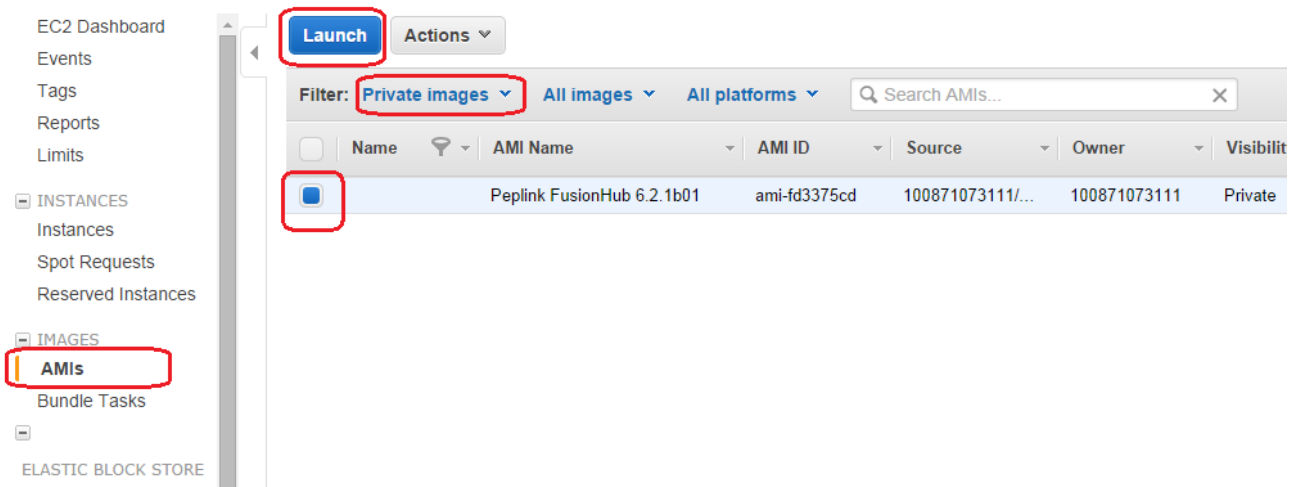


Please navigate to [FusionHub Interface Configuration](#) to continue your installation.

4.7 Amazon Web Services

Acquiring FusionHub for AWS

1. Currently, the only means to acquiring FusionHub for AWS is through private sharing. You would need to provide the following information to trial@peplink.com. Peplink will then share the AMI image to your account:
 - InControl2 account username
 - Amazon EC2 region (e.g. Oregon)
 - 12-digit Amazon ID
2. Login to your AWS Management Console
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.



Setting the Instance type

1. In the next screen “Choose an Instance Type, click to highlight “**Micro instances**”
2. Then click “**Review and Launch**” 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 All generations Show/Hide Columns

Current	Micro instances	t1.micro	Free tier eligible			EBS-Optimized Available	Network Performance
<input checked="" type="checkbox"/>	Micro instances	t1.micro	Free tier eligible	1	0.613	EBS only	Very Low
<input checked="" type="checkbox"/>	General purpose	t2.micro	Free tier eligible	1	1	EBS only	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.small		1	2	EBS only	Low to Moderate
<input checked="" type="checkbox"/>	General purpose	t2.medium		2	4	EBS only	Low to Moderate
<input type="checkbox"/>	General purpose	m3.medium		1	3.75	1 x 4 (SSD)	Moderate
<input type="checkbox"/>	General purpose	m3.large					Moderate
<input type="checkbox"/>	General purpose	m3.xlarge				Yes	High
<input type="checkbox"/>	General purpose	m3.2xlarge		8	30	2 x 80 (SSD)	High
<input type="checkbox"/>	General purpose	m1.small		1	1.7	1 x 160	Low

Previous **Review and Launch** Next: Configure Instance Details

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	New network interface	subnet-ca606cbe	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](#)

AMI Details
[Edit AMI](#)

Instance Type
[Edit instance type](#)

Security Groups

Instance Details
[Edit instance details](#)

Storage
[Edit storage](#)

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

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

Security Groups

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

Type	Protocol	Port Range	Source
SSH	TCP	22	0.0.0.0/0

Instance Details [Edit instance details](#)

Storage [Edit 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.

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

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

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](#)

▼ AMI Details Edit AMI

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

▼ Instance Type Edit instance type

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

▼ Security Groups Edit security groups

Security group name: launch-wizard-3
Description: launch-wizard-3 created 2014-09-05T11:48:41.983+08:00

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

Cancel Previous **Launch**

Tweak the running Instance

1. In the left hand panel, expand “Instances” and click on “**Instances**”.
2. 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

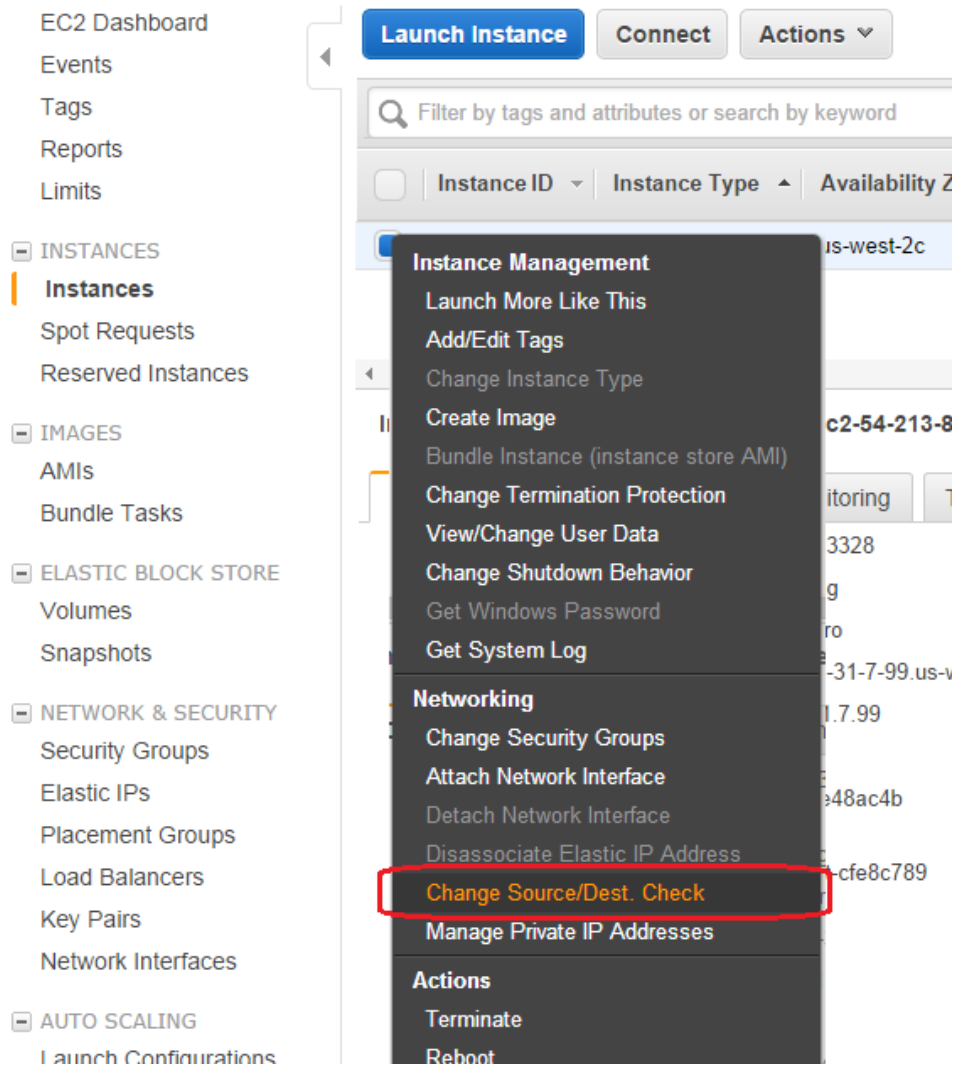
<input type="checkbox"/>	Instance ID ▾	Instance Type ▾	Availability Zone ▾	Instance State ▾	Status Checks ▾	Alarm Status	Public DNS
<input checked="" type="checkbox"/>	i-20353328	t1.micro	us-west-2c	● running	✓ 2/2 checks ...	None	ec2-54-213-85-

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 IP
Instance type	t1.micro	Elastic IP

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



The screenshot displays the AWS Management Console interface for EC2 instances. On the left, a navigation pane lists various services: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (with 'Instances' selected), IMAGES (AMIs, Bundle Tasks), ELASTIC BLOCK STORE (Volumes, Snapshots), NETWORK & SECURITY (Security Groups, Elastic IPs, Placement Groups, Load Balancers, Key Pairs, Network Interfaces), and AUTO SCALING (Launch Configurations). The main content area shows a table of instances with columns for Instance ID, Instance Type, and Availability Zone. Above the table are buttons for 'Launch Instance', 'Connect', and 'Actions'. A search bar and filter options are also present. The 'Actions' dropdown menu is open, showing a list of actions categorized into 'Instance Management', 'Networking', and 'Actions'. The 'Change Source/Dest. Check' option under the 'Networking' section is highlighted with a red rectangle.

Instance Management

- Launch More Like This
- Add/Edit Tags
- Change Instance Type
- Create Image
- Bundle Instance (instance store AMI)
- Change Termination Protection
- View/Change User Data
- Change Shutdown Behavior
- Get Windows Password
- Get System Log

Networking


- Change Security Groups
- Attach Network Interface
- Detach Network Interface
- Disassociate Elastic IP Address
- Change Source/Dest. Check**
- Manage Private IP Addresses

Actions

- Terminate
- Reboot

Accessing FusionHub

1. Note down FusionHub's public IP address.

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

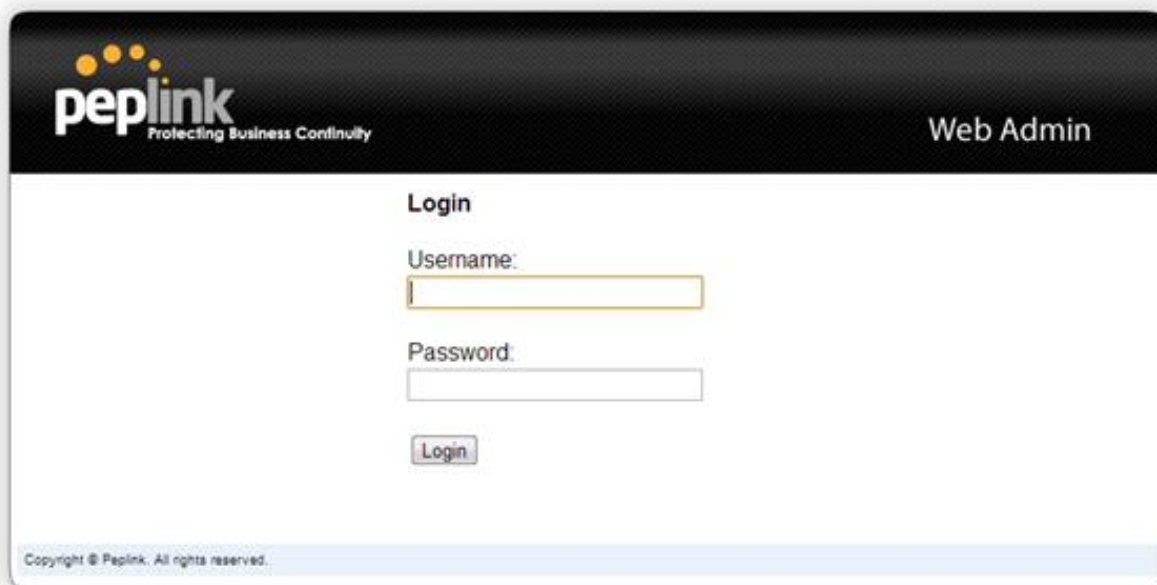
Public DNS	ec2-54-213-85-2.us-west-2.compute.amazonaws.com
Public IP	54.213.85.2
Elastic IP	-
Availability zone	us-west-2c
Security groups	launch-wizard-2. view rules
Scheduled events	No scheduled events

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**.



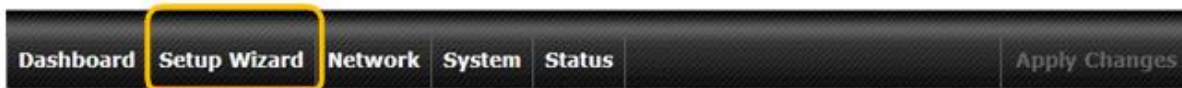
7. Once you have successfully logged in, the **Setup Wizard** will be displayed.



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

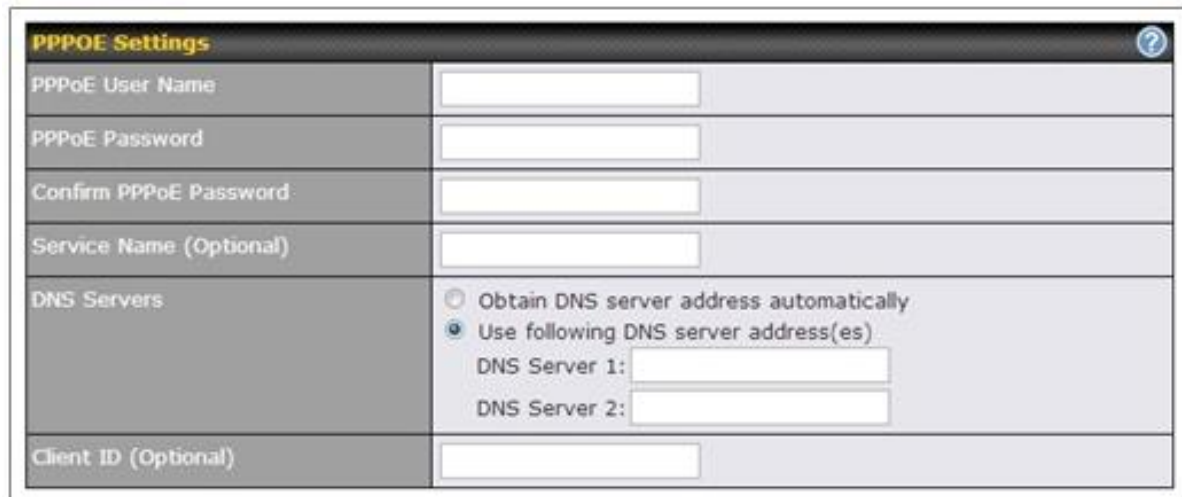
Static IP Settings	
IP Address	<input type="text"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text"/>
DNS Servers	DNS Server 1: <input type="text"/> DNS Server 2: <input type="text"/>

- 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**

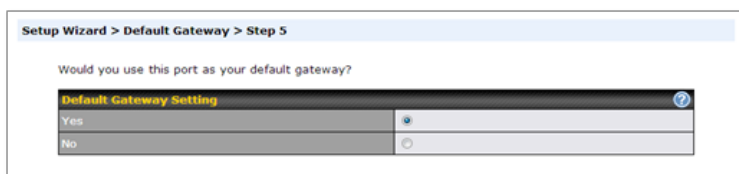
Default gateway: **10.8.8.1**

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"/>

5. 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

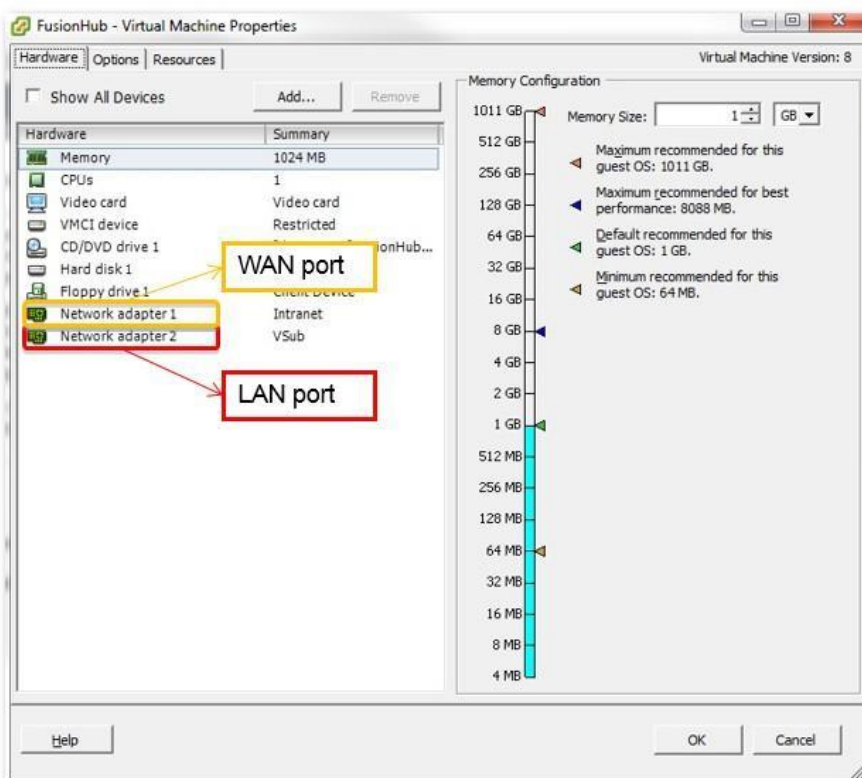
- If **DHCP** is selected, the Setup Wizard will display **DHCP Settings**.

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.



- 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.

Please define a local ID before using the PepVPN.
Remote units can identify this unit by this "Local ID", in addition to the serial number.

PepVPN Local ID ?

Local ID

- 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 ?

☐ 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


<< Back **Save and Apply Settings** Cancel

9. 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:



The screenshot shows a web-based form titled "Setup Wizard > License > License Activation". Below the title is the instruction "Enter license information". The form has a header "License Information" with a help icon. It contains three input fields: "License Key" (text input), "Virtual Machine Model" (dropdown menu showing "VMware ESXi"), and "ESXi Server Address" (text input). Each field has a help icon. At the bottom, a small note states "(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:



This screenshot is similar to the previous one, but the "Virtual Machine Model" dropdown menu now shows "Other". The rest of the form, including the "License Key" and "ESXi Server Address" fields and the footer note, remains the same.

- **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 : 10.0.0.252
Subnet Mask: 255.255.0.0
Gateway    : 10.0.0.1
DNS Server : 10.0.0.1
Admin      : http://10.0.0.252

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

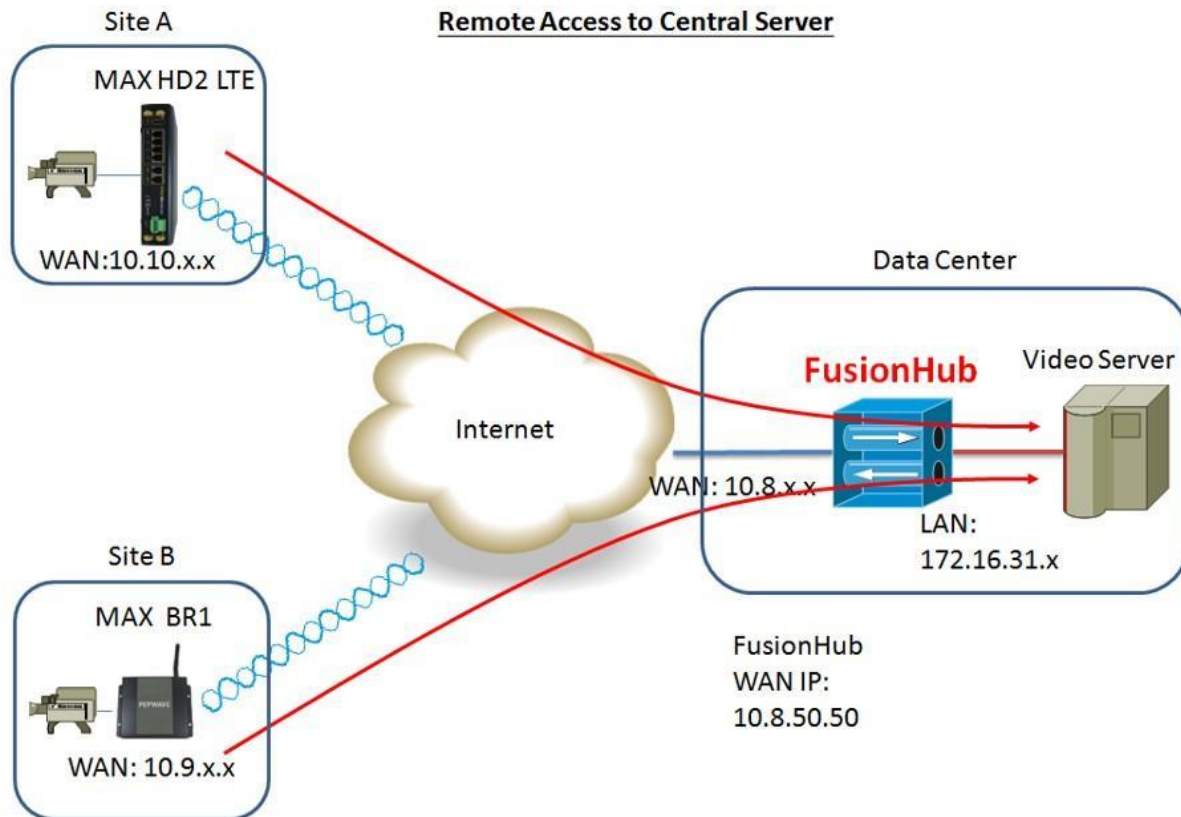


Figure 5.1 Remote Access to Central Server

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 FusionHub web interface. The top navigation bar includes 'Dashboard', 'Setup Wizard', 'Network' (selected), 'System', and 'Status'. A 'Logout' button is visible in the left sidebar. The main content area is titled 'Network' and contains three sections: 'Connection Settings', 'SpeedFusion™ Peers Access Internal Network', and 'Physical Interface Settings'. The 'Connection Settings' section is expanded, showing fields for 'Connection Method' (Static), 'IP Address' (10.8.50.50), 'Subnet Mask' (255.255.0.0), 'Gateway' (10.8.8.1), 'DNS Server 1' (10.8.8.1), and 'DNS Server 2'. The 'SpeedFusion™ Peers Access Internal Network' section has an 'Enable' checkbox. The 'Physical Interface Settings' section shows 'MTU' set to 1440 and 'MSS' set to Auto.

Connection Settings	
Connection Method	Static
IP Address	10.8.50.50
Subnet Mask	255.255.0.0
Gateway	10.8.8.1
DNS Server 1	10.8.8.1
DNS Server 2	

SpeedFusion™ Peers Access Internal Network	
Enable	<input type="checkbox"/>

Physical Interface Settings	
MTU	1440
MSS	Auto

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**

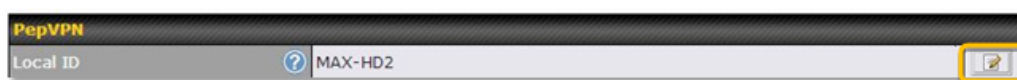
WAN 2 IP address: **10.10.13.50**

LAN IP address: **192.168.150.1**

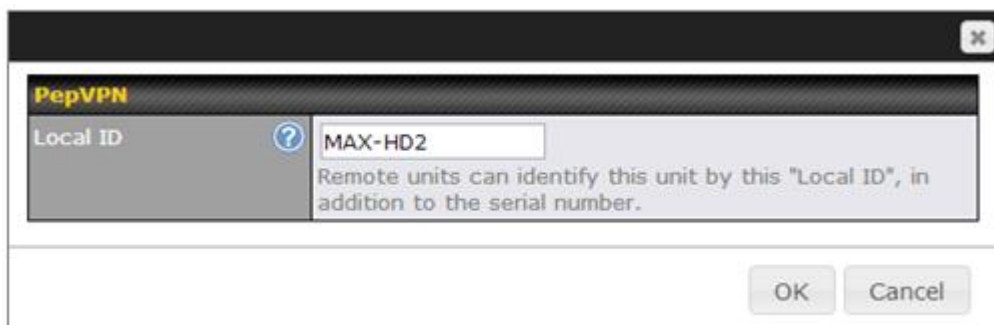
1. To configure, connect to the Web admin interface of the MAX HD2, and then navigate to **Advanced > SpeedFusion**.



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



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



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



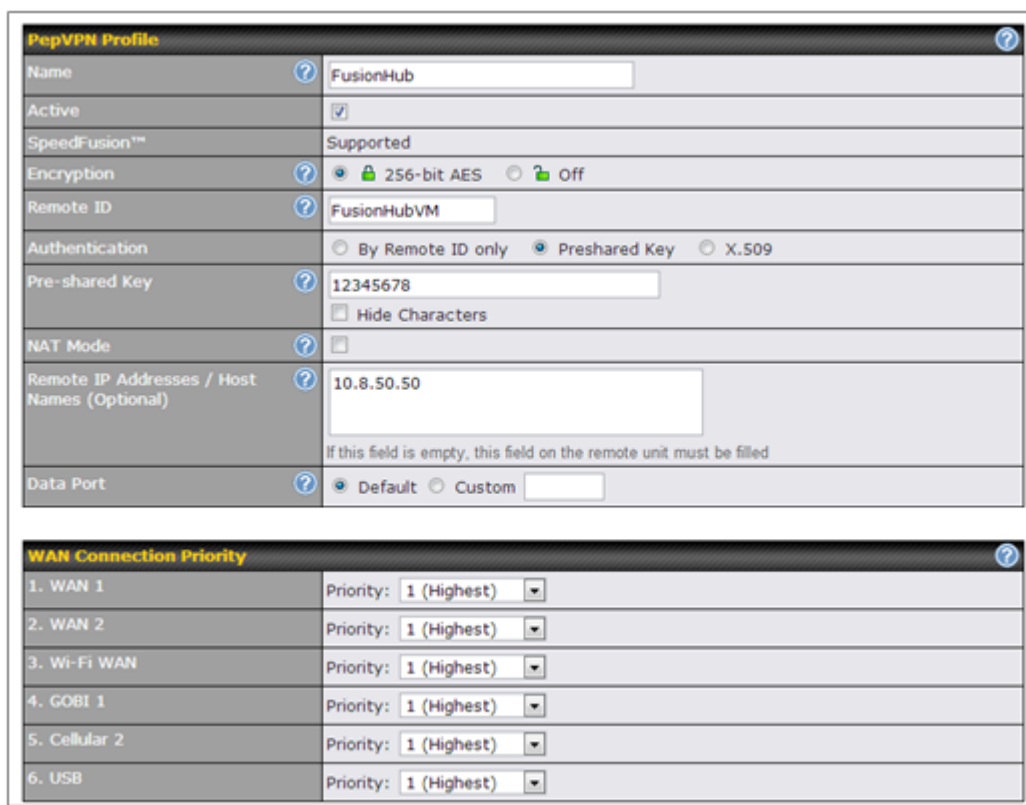
5. On the dialog displayed next, fill the form as follows:

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.



WAN Connection Priority	
1. WAN 1	Priority: 1 (Highest)
2. WAN 2	Priority: 1 (Highest)
3. Wi-Fi WAN	Priority: 1 (Highest)
4. GOBI 1	Priority: 1 (Highest)
5. Cellular 2	Priority: 1 (Highest)
6. USB	Priority: 1 (Highest)

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

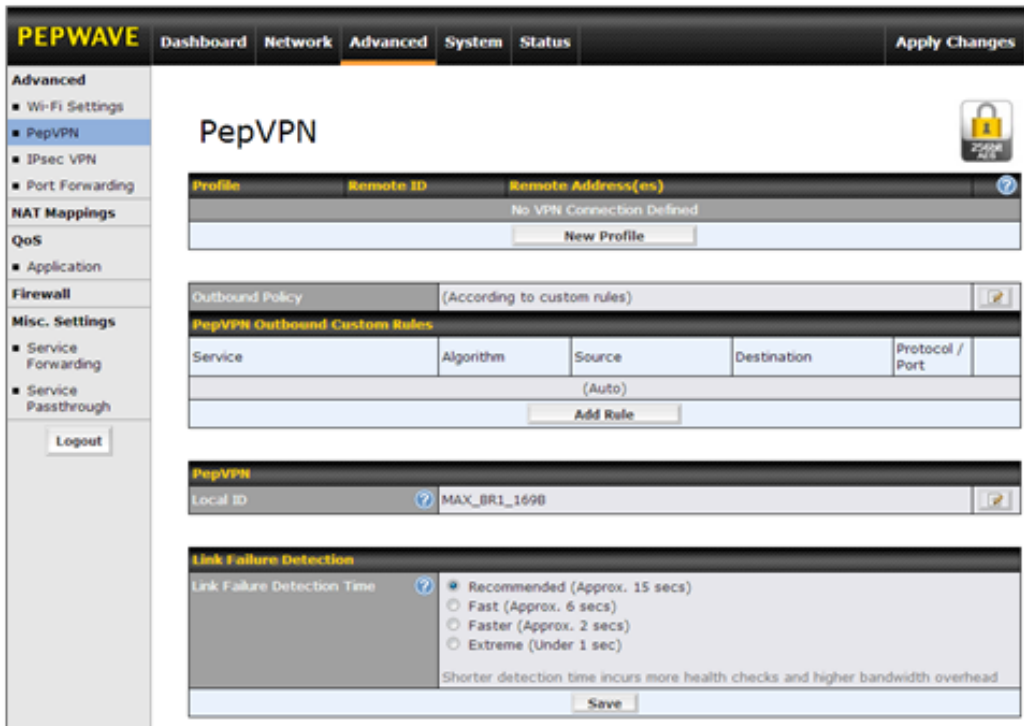
MAX BR1 configuration (Site B)

Assume the MAX BR1's IP settings are:

WAN IP address: **10.9.3.167**

LAN IP address: **192.168.71.1**

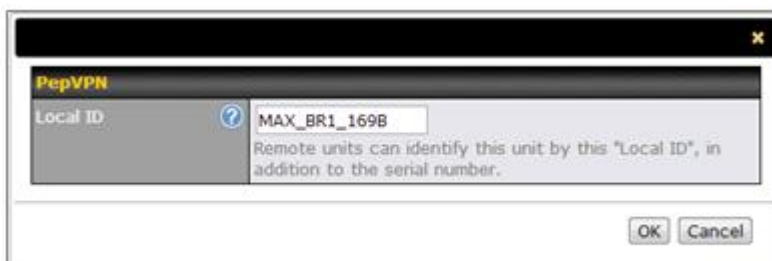
1. To configure the MAX BR1, connect to the MAX BR1's Web admin interface (in our case, the Web admin interface address is **http://192.168.71.1**), and then navigate to **Advanced > PepVPN**.



2. Click  under **PepVPN**.



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



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



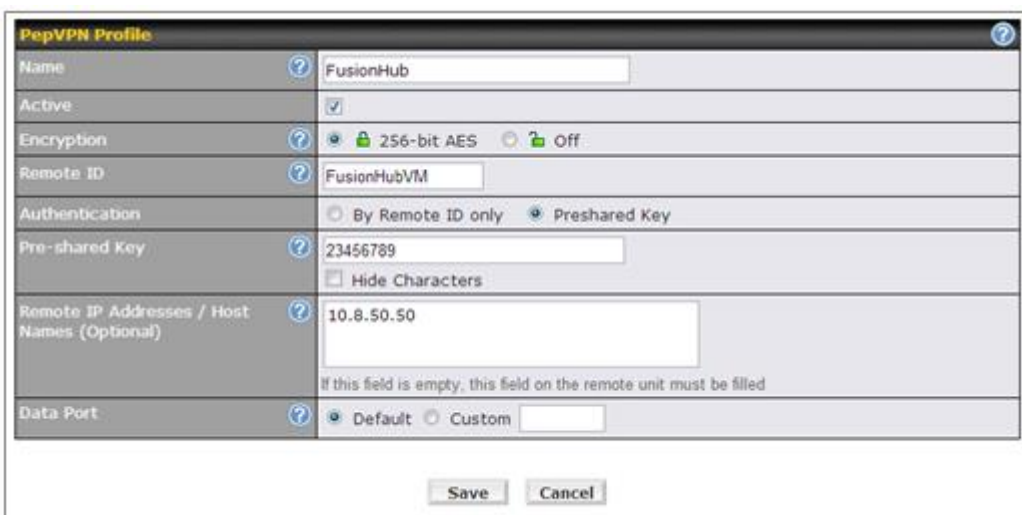
5. On the dialog displayed next, fill the form as follows:

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.

A screenshot of the 'PepVPN Profile' configuration dialog. The dialog has a title bar 'PepVPN Profile' and a close button. It contains several fields: 'Name' (FusionHub), 'Active' (checked), 'Encryption' (256-bit AES), 'Remote ID' (FusionHubVM), 'Authentication' (By Remote ID only), 'Pre-shared Key' (23456789), 'Remote IP Addresses / Host Names (Optional)' (10.8.50.50), and 'Data Port' (Default). There is a 'Hide Characters' checkbox next to the Pre-shared Key field. At the bottom, there are 'Save' and 'Cancel' buttons. A note at the bottom of the 'Remote IP Addresses' field states: 'If this field is empty, this field on the remote unit must be filled'.

6. 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**.

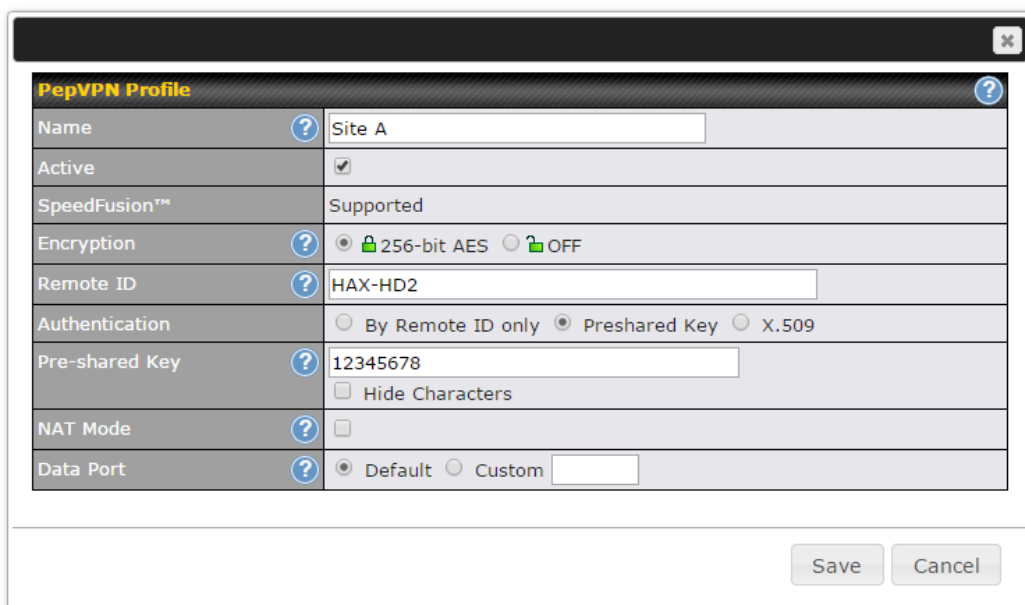


2. To add a new profile, click the **New Profile** button. On the dialog displayed next, fill the form as follows:

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"/>
SpeedFusion™	Supported
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF
Remote ID	MAX-HD2
Authentication	<input type="radio"/> By Remote ID only <input checked="" type="radio"/> Preshared Key <input type="radio"/> X.509
Pre-shared Key	12345678 <input type="checkbox"/> Hide Characters
NAT Mode	<input type="checkbox"/>
Data Port	<input checked="" type="radio"/> Default <input type="radio"/> Custom

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

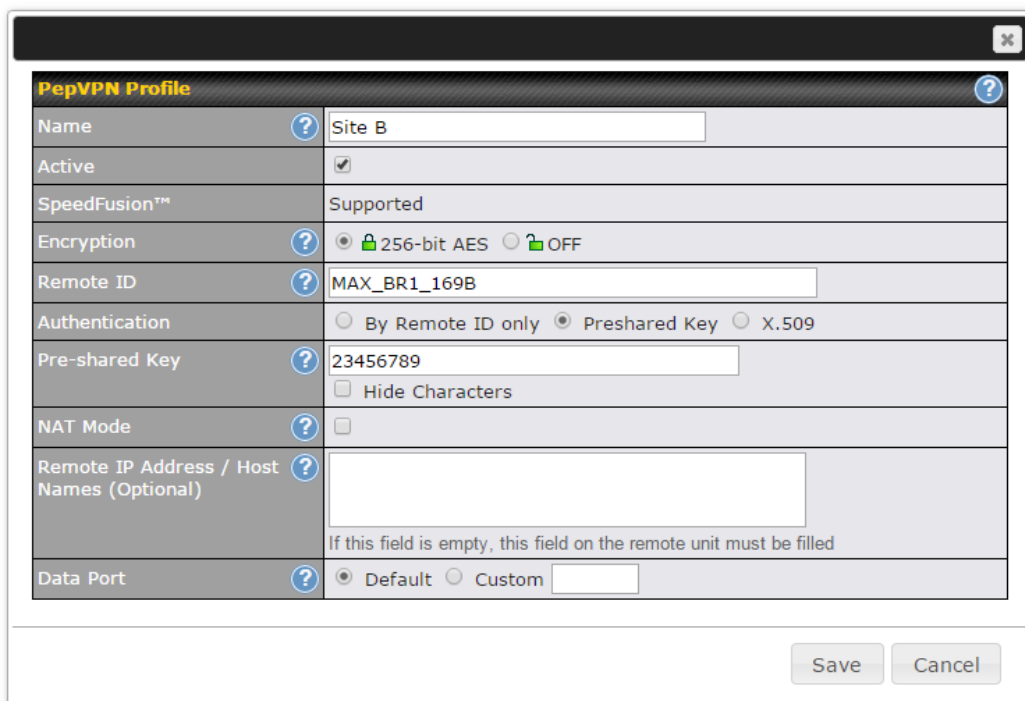
4. Click **New Profile** again to add the MAX BR1 to Site B.

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.

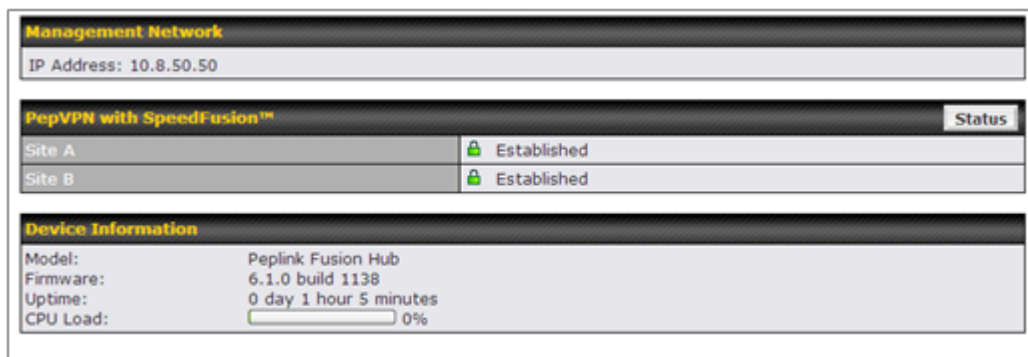
5. After completing the form, click **Save** and then **Apply Changes**.



PepVPN Profile	
Name	Site B
Active	<input checked="" type="checkbox"/>
SpeedFusion™	Supported
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF
Remote ID	MAX_BR1_169B
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
NAT Mode	<input type="checkbox"/>
Remote IP Address / Host Names (Optional)	 If this field is empty, this field on the remote unit must be filled
Data Port	<input checked="" type="radio"/> Default <input type="radio"/> Custom

Save Cancel

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

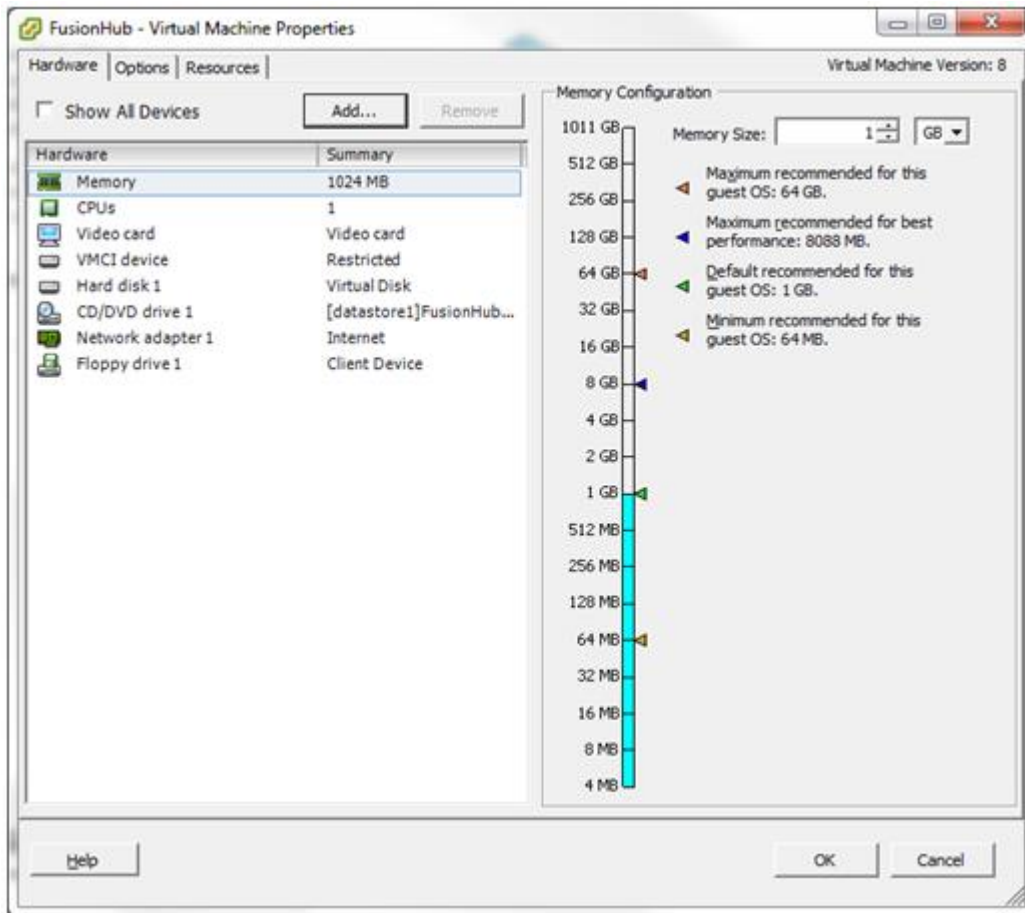


Management Network	
IP Address: 10.8.50.50	
PepVPN with SpeedFusion™	
Site A	Established
Site B	Established
Device Information	
Model:	Peplink Fusion Hub
Firmware:	6.1.0 build 1138
Uptime:	0 day 1 hour 5 minutes
CPU Load:	0%

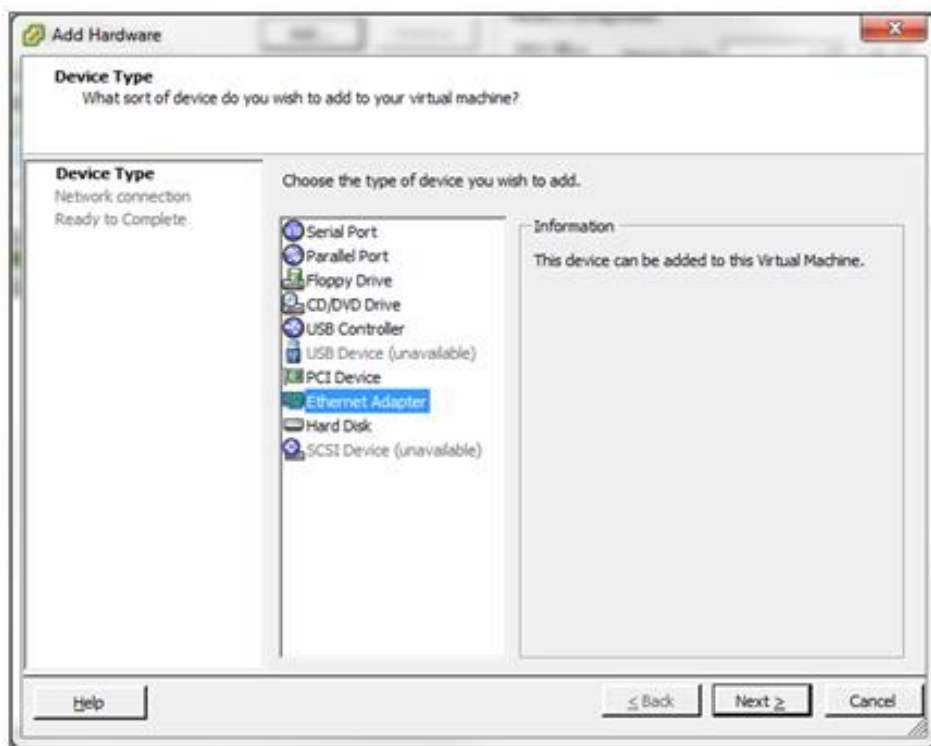
7. In order to make a direct link between FusionHub and the video server shown on the right-hand side of Figure 5.1, we need to add one more port (a network adapter) to FusionHub's virtual machine.

Adding a network adapter when using ESXi server

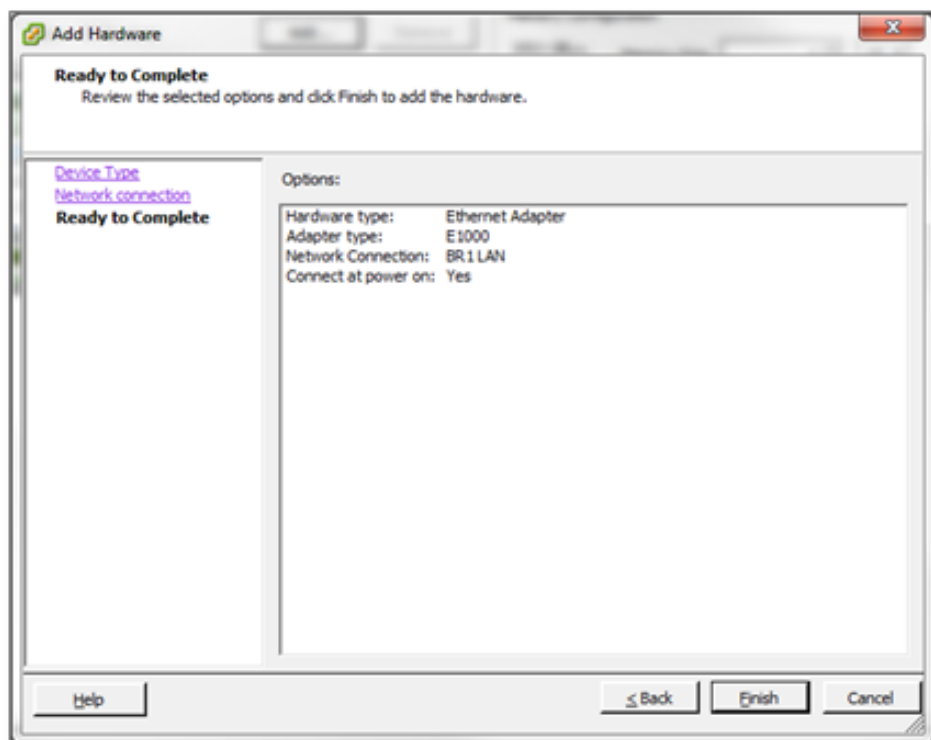
- a. Login to the ESXi server again, and then power off the FusionHub virtual machine. Next, click **Edit virtual machine settings**. On the **FusionHub – Virtual Machine Properties** dialog, click **Add** to add another network adapter.



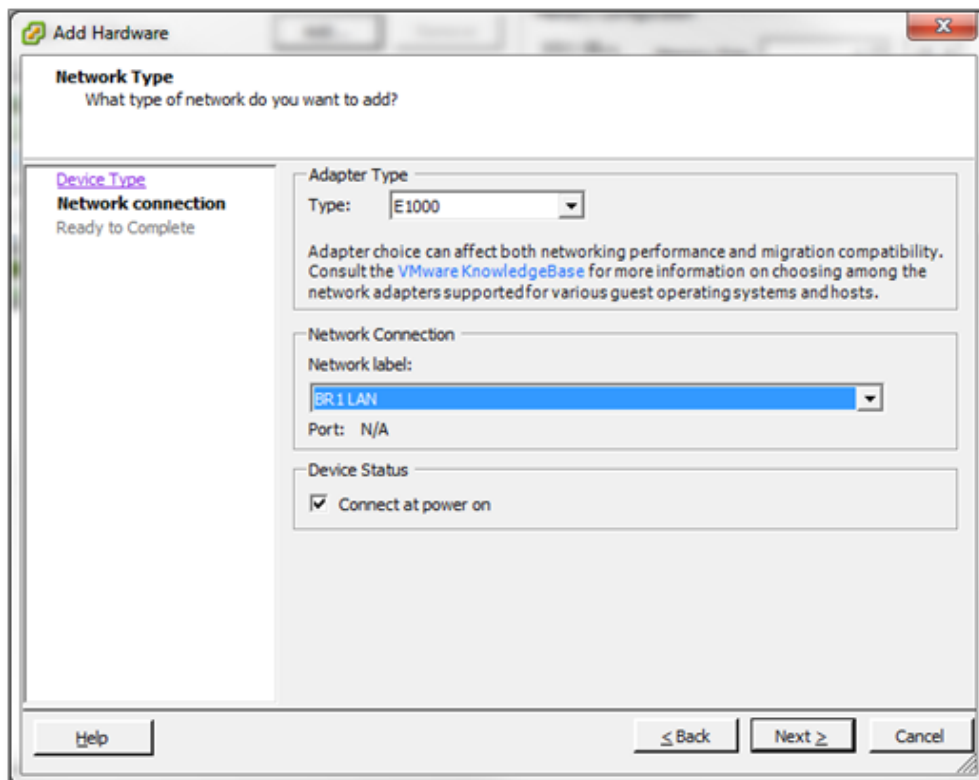
- b. Select **Ethernet Adapter**, and then click **Next**.



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

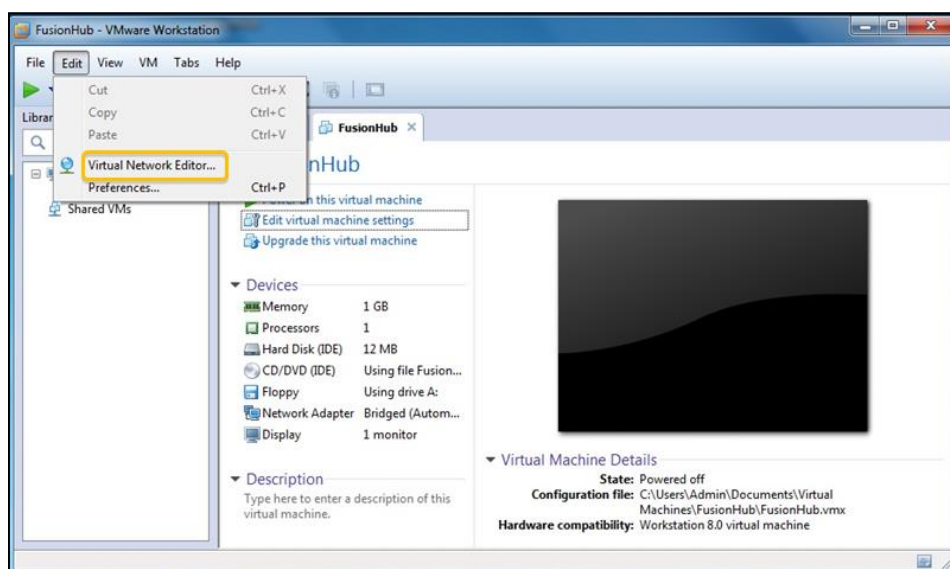


- d. Click **Finish** and then **OK** to save your settings.

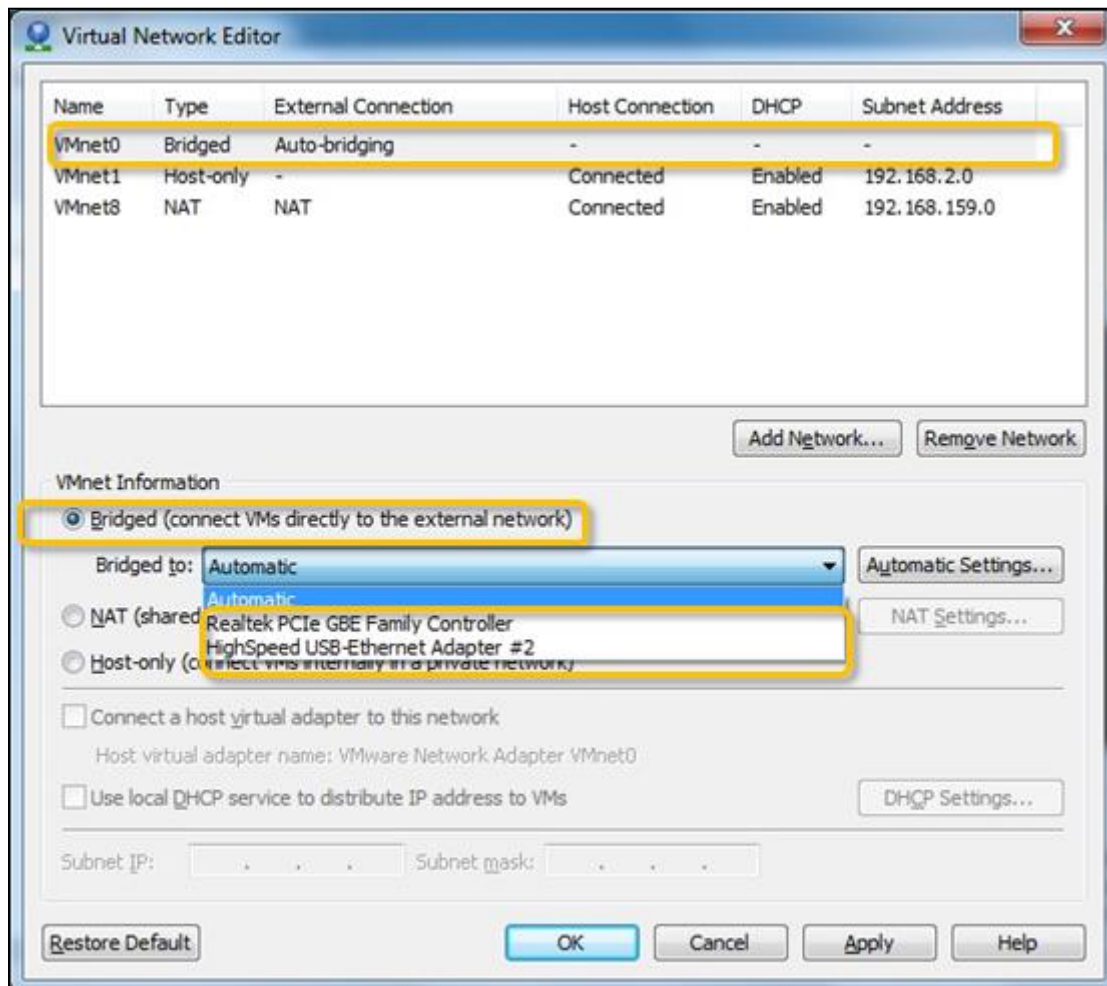


Adding a network adapter when using VMware Workstation

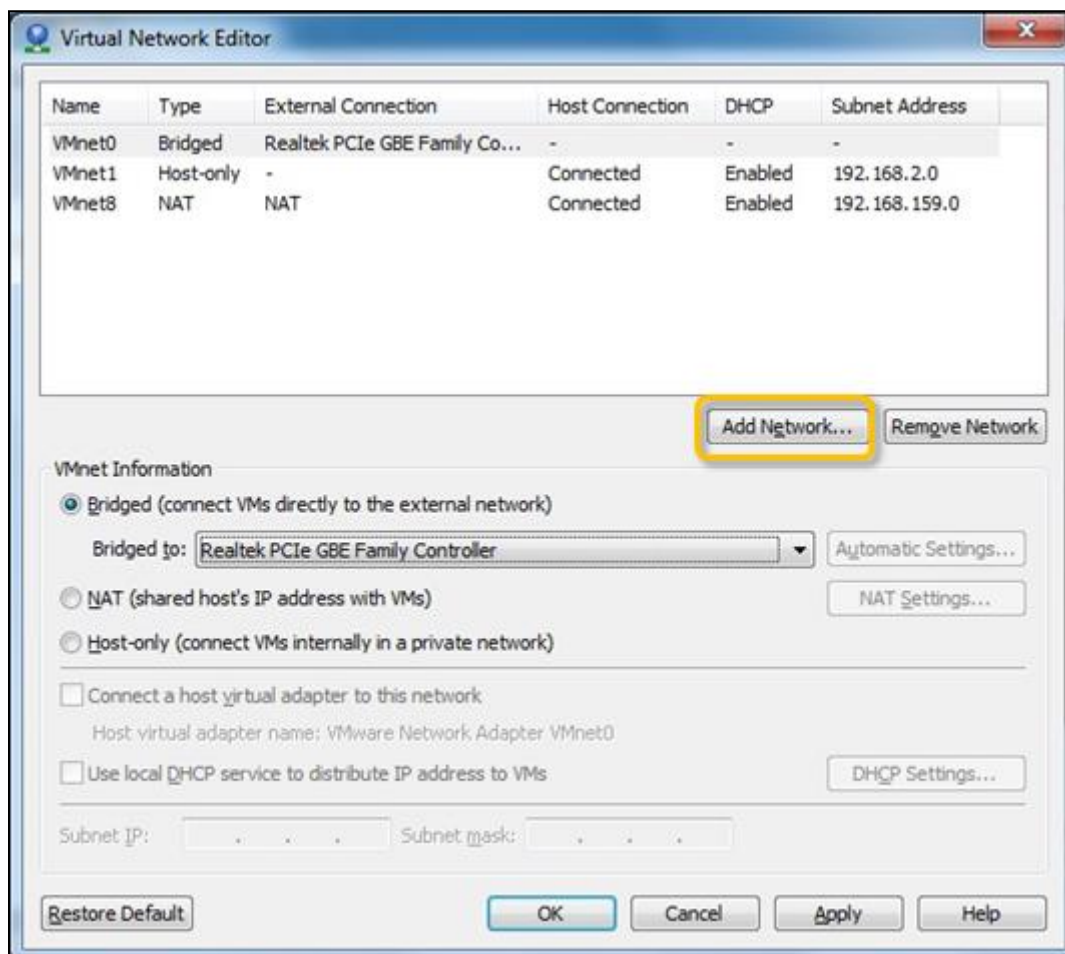
- a. Power off the FusionHub virtual machine and select **Edit > Virtual Network Editor**



- 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**.



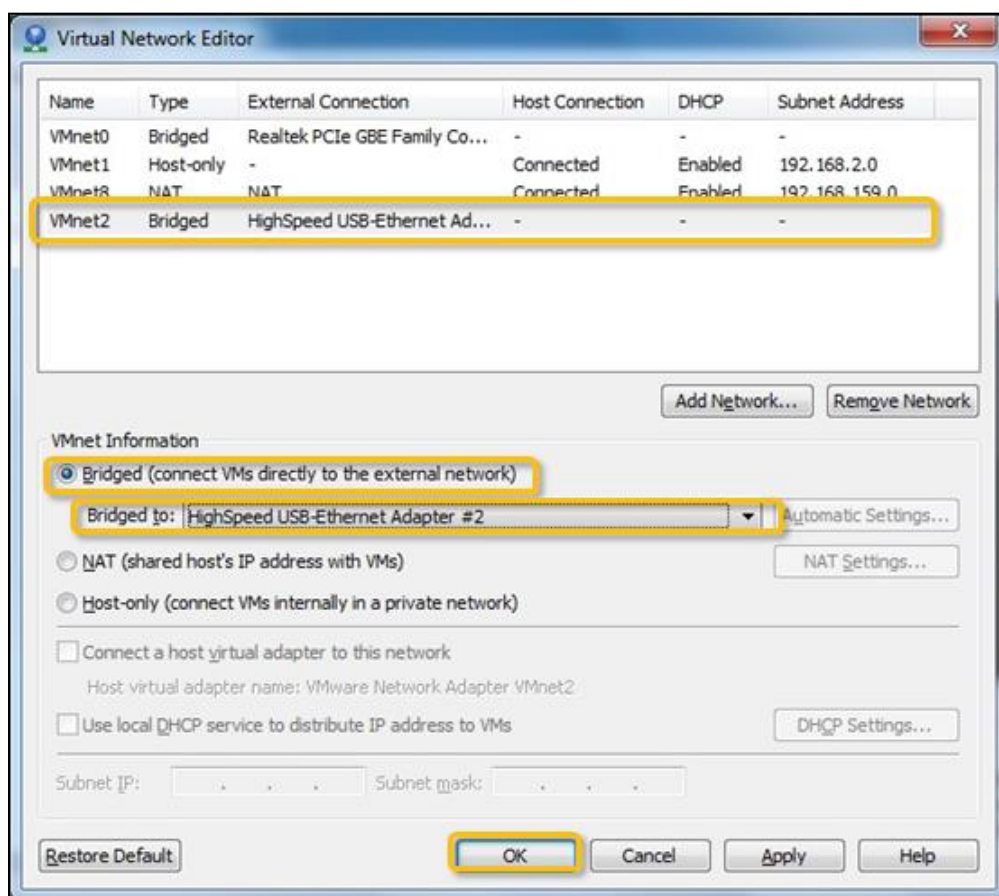
c. Click Add Network.



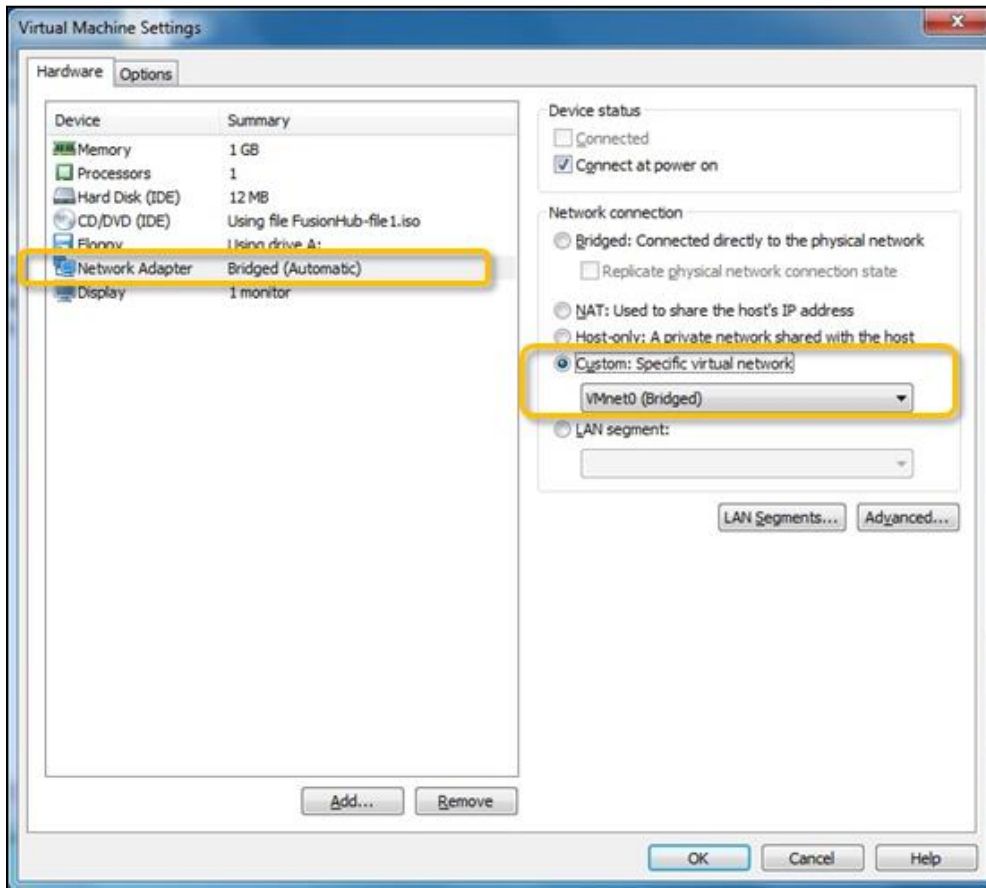
d. On the **Add a Virtual Network** dialog, select a network to add from the drop-down menu and click OK. In this example, we selected **VMnet2**.



- 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**.



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**.

peplink		Dashboard	Setup Wizard	Network	System	Status	Apply Changes
Interfaces <ul style="list-style-type: none"> LAN WAN SpeedFusion™ 							
QoS <ul style="list-style-type: none"> Application 							
Connection Settings							
Connection Method	Static						
IP Address	172.16.31.100						
Subnet Mask	255.240.0.0						

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.

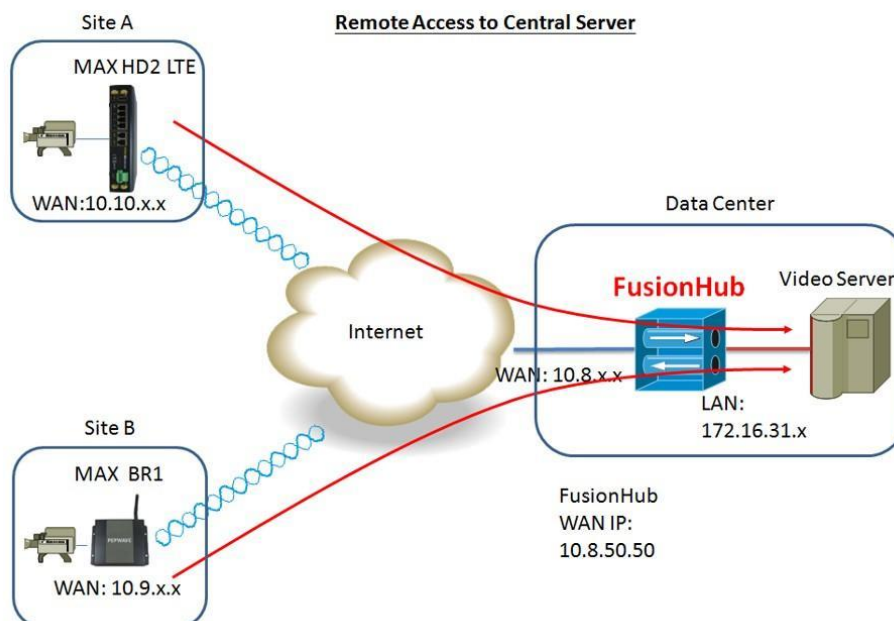


Figure 5.1 Remote access to central server

6.3 Example Two

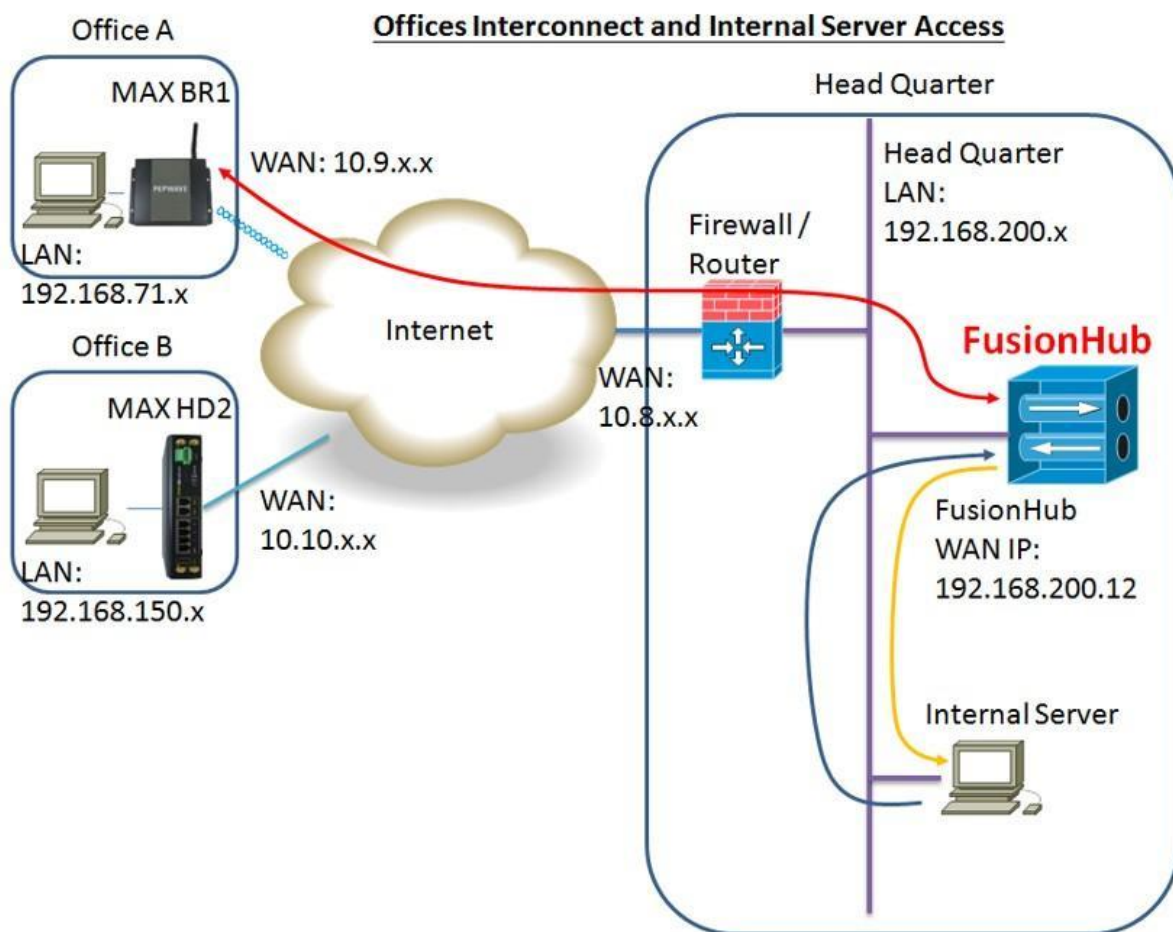



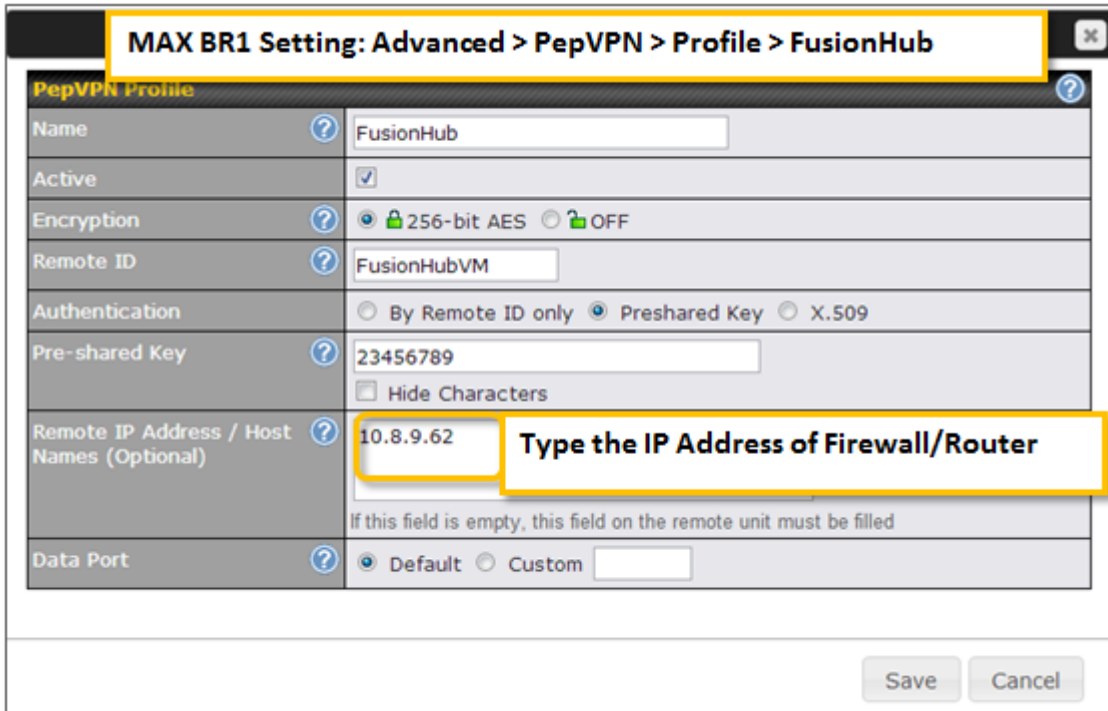
Figure 5.2 Offices interconnect

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 <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:

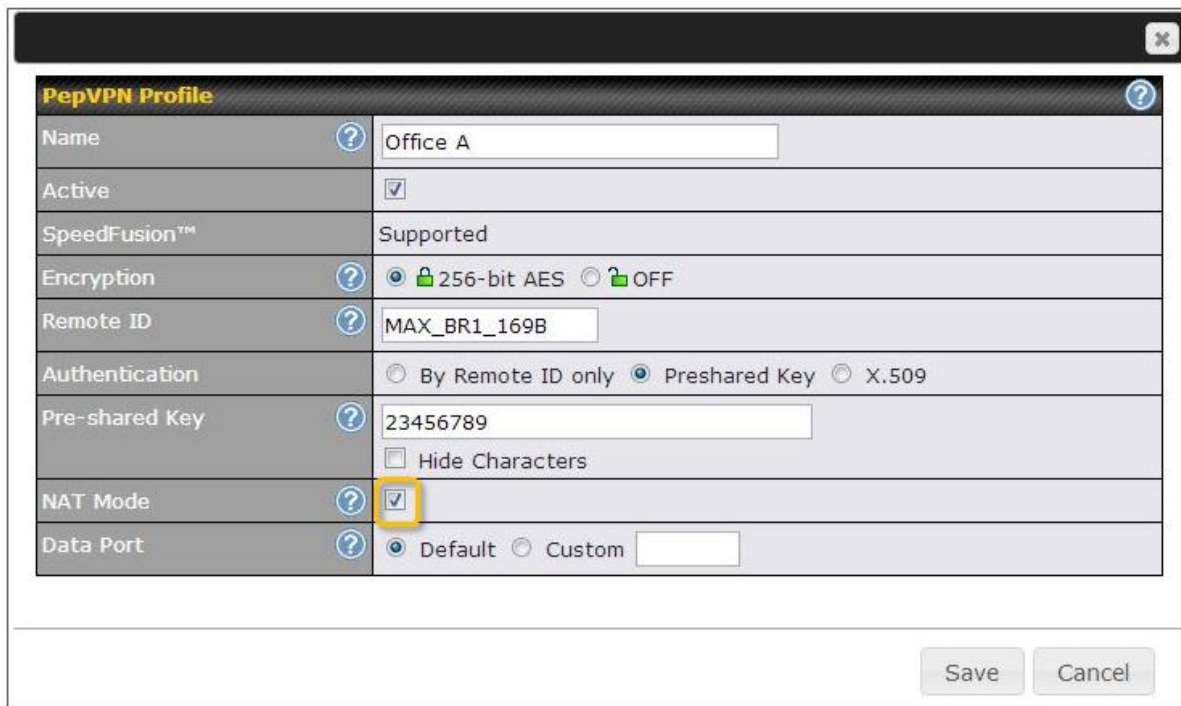
1. Power off the FusionHub
2. Remove the network adapter added in Example One
3. Power on the FusionHub

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**.



peplink		Dashboard	Setup Wizard	Network	System	Status	Apply Changes
Interfaces							
■ WAN							
■ SpeedFusion™							
QoS							
■ Application							
Misc. Settings							
■ Certificate Manager							
Logout							
Connection Settings							
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							
SpeedFusion™ Peers Access Internal Network							
Enable	<input checked="" type="checkbox"/>						
Physical Interface Settings							
MTU	1440 Default						
MSS	<input checked="" type="radio"/> Auto <input type="radio"/> Custom						

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



PepVPN Profile	
Name	Office A
Active	<input checked="" type="checkbox"/>
SpeedFusion™	Supported
Encryption	<input checked="" type="radio"/> 256-bit AES <input type="radio"/> OFF
Remote ID	MAX_BR1_169B
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
NAT Mode	<input checked="" type="checkbox"/>
Data Port	<input checked="" type="radio"/> Default <input type="radio"/> Custom

Save Cancel

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

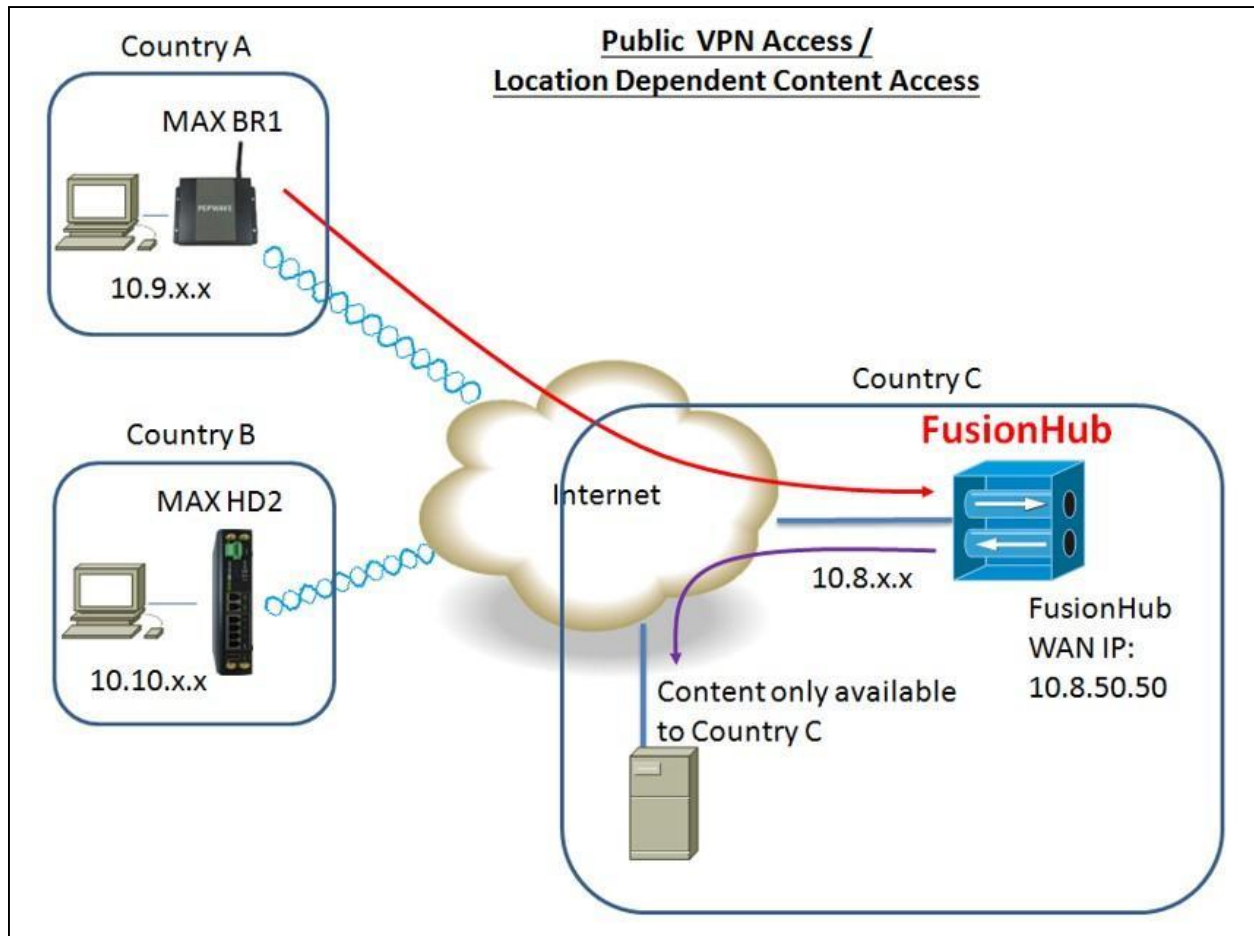

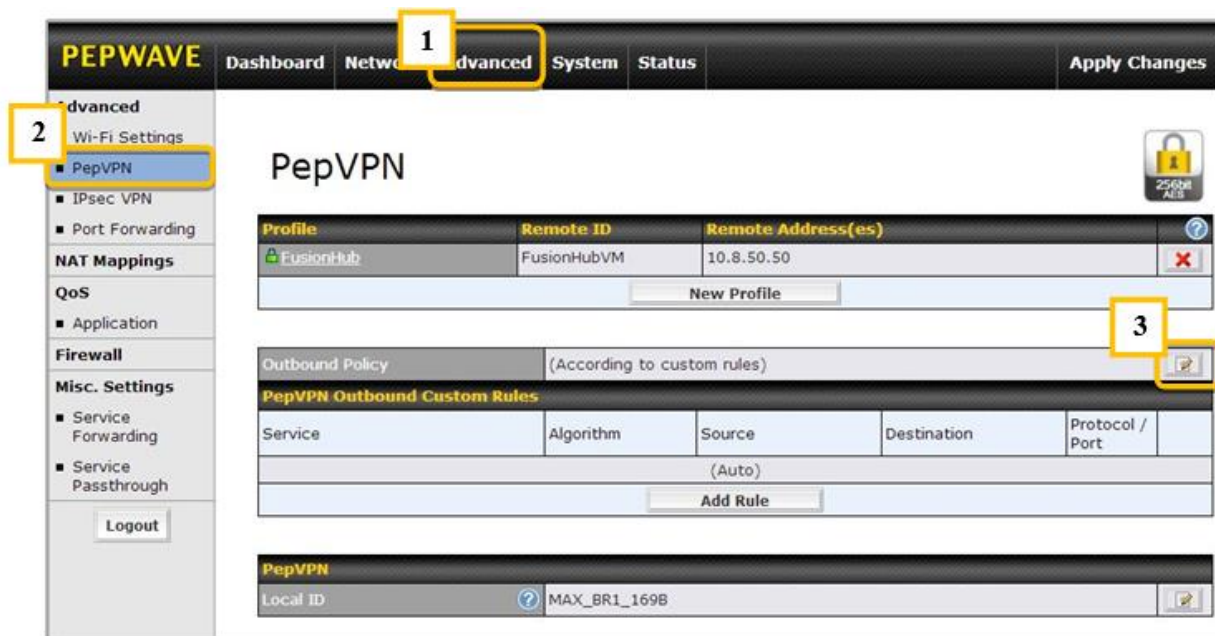


Figure 5.3 Public VPN Access / Location Dependent Content Access

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 Logout

PepVPN

256bit AES

Profile	Remote ID	Remote Address(es)
FusionHub	FusionHubVM	10.8.50.50

New Profile

Outbound Policy (According to custom rules)

PepVPN Outbound Custom Rules

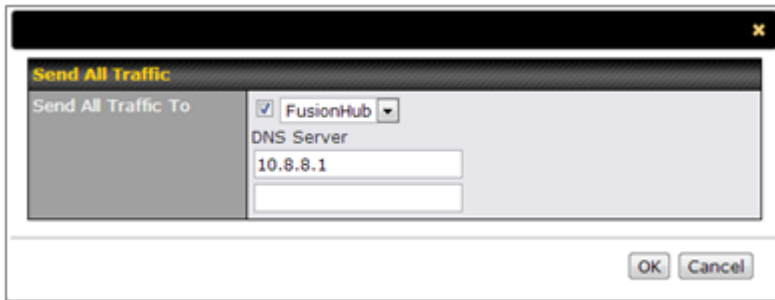
Service	Algorithm	Source	Destination	Protocol / Port
(Auto)				

Add Rule

PepVPN

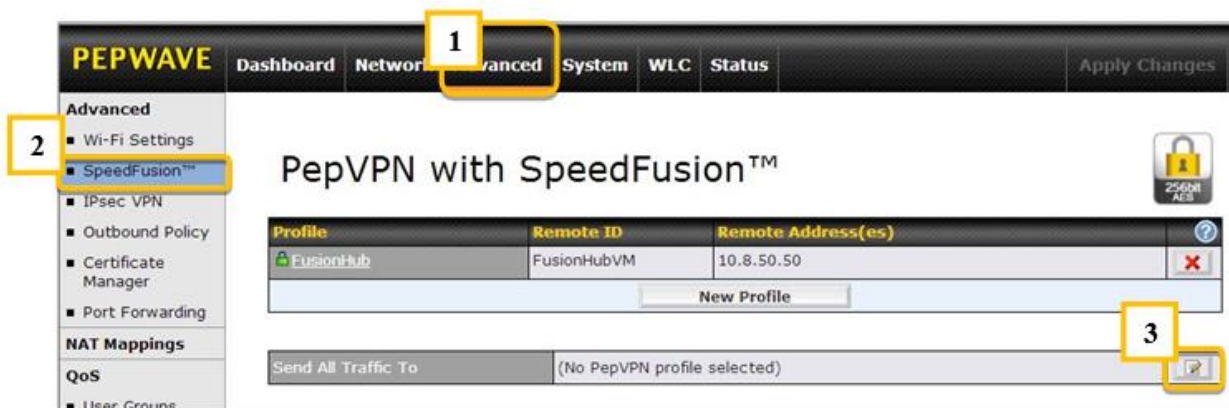
Local ID MAX_BR1_169B

- 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**.

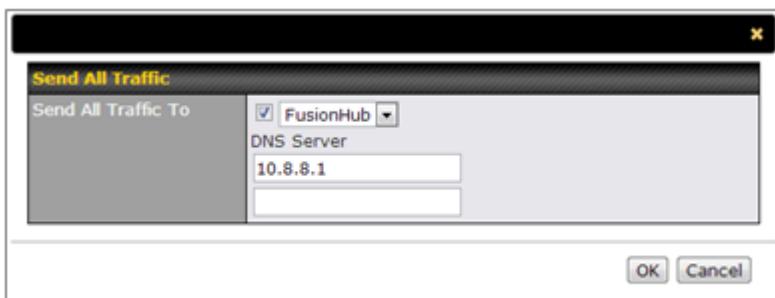


MAX HD2 Settings

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



- 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.

