

# FusionHub

# SpeedFusion Virtual Appliance

Installation Guide Release 6.3.2

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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.

Company			
Language	English	•	

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

importanti itanie jour gi	
Group name:	Peplink FusionHub
	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	(UTC-12:00) International Date Line West
Address	
Country	United States
Address	United States Virgin Islands
	Rhymer Hwy Hoffman Couge Map Data Terms of Use Report a map error
Location	18.335765 -64.89633500
	Create group Cancel



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

nControl 2 can check the warr Peplink Balance family Pepwave MAX family Pepwave Surf SOHO	anty status of the following devices:
or InControl 2 to manage a de Device needs to be in warran Device needs to run Firmware	vice, it needs to meet the following criteria: ty e version 6.1
	e.g.: XXXX-XXXX-XXXX

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





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

						New! jim	my@testing.com   Sign out
InC	ontrol <sup>2</sup>	Organization Leve	Ocean Vent	ures >	Settings 〉 Warran	nty & License >	
	erview 🔅 <u>Settings</u>					Groups	Ocean Ventures
Warran	ity 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		2014-02-06
	Pepwave MAX HD2	2345-BCDE-2345 (2	2345-BCDE-2345)		2014-05-22		2013-05-23
_					F	irst Previous	1 Next Last
Fusior	hHub License Key	Serial Number	No. of Peers	Max. Bandy	vidth (Mbps)	License Type	Expiry Date
MHU9	987HG157S91D3	1234-ABCD-1234	2	50		EVALUATION	2014-04-07
IUQYS	98H58HG906A3	3456-CDEF-3456	2	50		EVALUATION	2014-04-07
Import Fu	usionHub License	Click to create a n	Import ew evaluation l	icense			
Downloa	d Lastest FusionHub	Click to download	the latest Fusic	nHub			

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**.

	Groups	Ocean Venture	:5
	Organ	nization Level	
🕂 Add Devices	🗘 Se	ettings	×
📃 Device Management		cean Ventures	
🌣 Create Group			
📃 Group Management			
🚇 Operation Log			
🔅 Settings			
Warranty & License			



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

Peplink Balance family Pepwave MAX family Pepwave Surf SOHO	anty status of the following devices:
or InControl 2 to manage a de Device needs to be in warran Device needs to run Firmware	evice, it needs to meet the following criteria: ty a version 6.1
Serial numbers:	e.g.: XXXX-XXXX-XXXX



#### **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 VN	Mware ESXi Server	8
4.2 VN	Mware Workstation	
4.3 VN	Mware Player	
4.4 Or	racle VirtualBox	42
4.5 Cit	itrix XenServer	47
4.6 Mi	licrosoft Hyper-V	54
4.7 Ar	mazon Web Services	62

#### 4.1 VMware ESXi Server

- 1. Download VMware ESXi 5.5.0 from <u>www.vmware.com/go/download-vsphere</u> and install it.
- 2. For VMware vSphere server installation hardware requirements, refer to <a href="http://www.vmware.com/products/vsphere-hypervisor/gettingstarted.html">http://www.vmware.com/products/vsphere-hypervisor/gettingstarted.html</a>
- 3. Open VMware vSphere. Enter the appropriate IP address / Name, User name, and Password. Click Login to login to the ESXi server. <u>Make sure that your</u> <u>computer and ESXi server are on the same network.</u> 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 <u>4 FusionHub Interface Configuration</u> to connect to FusionHub's Web admin interface.



VMware vSphere Client	
wwware vspriere	
Client	
In vSphere 5.5, all n through the vSphere will continue to oper vSphere 5.0, but no vSphere 5.5. The vSphere Client i Manager (VUM) and (e.g. Site Recovery	ew vSphere features are available only Web Client. The traditional vSphere Client ate, supporting the same feature set as t exposing any of the new features in s stil used for the vSphere Update Host Client, along with a few solutions Manager).
To directly manage a sing To manage multiple hosts, vCenter Server.	e host, enter the IP address or host name. , enter the IP address or name of a
IP address / <u>N</u> ame:	•
User name:	
Password:	
	Use Windows session credentials
	Login Close Help

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

le <u>E</u> dit Vie <u>w</u>	Inventory Administrat	tion Plug-ins	þ	
	Home			
wentory				
<b>11</b>				
Inventory				
,		/		
dministration				
22				
Roles	System Logs			

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

10.8.9.24 - vSphere Client		
Eile Edit View Inventory	Administration Plug-ins Help	
🖸 🖾 🛕 Home 1	all Inventory a 📑 Inventory	
6 6		
10.8.9.24	localhost.peplink.com VMware ESXI, 5.1.0, 1065491   Evaluation (Expired)	
	Getting Started Summary Virtual Machines Resource Allocation Performa	nce Coofiguration Local Users & Groups Events Permissions
	What is a Host?	close tab 📧 🦛
	A host is a computer that uses virtualization software, such as ESX or ESX), to run virtual machines. Hosts provide the CPU and memory resources that virtual machines use and give virtual machines access to storage and network connectivity.	Virtual Machines



 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.

10	0.8.9.24 - vSphere Client		a x
File	Edit View Inventory Adm	istration Plug-ins Help	
	New	tory > [1] Inventory	
	Deploy OVF Template		
-	Export	1	
	Report	localhost.peplink.com VMware ESXI, 5.1.0, 1065491   Evaluation (Expired)	
	Browse VA Marketplace	Getting Started Summary Virtual Machines Resource Allocation Performance Configuration Local Users & Groups Events Permission	
	Print Maps	close tab 🗷	-
	Exit	What is a Host?	
		A host is a computer that uses virtualization software, such as ESX or ESXI, to run virtual machines. Hosts provide the CPU and memory resources that virtual machines use and	

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**.



🕗 Deploy OVF Template	
Source Select the source location.	
Source OVF Template Details Name and Location Disk Format Ready to Complete	Deploy from a file or URL C:\FusionHub\OVF\FusionHub.ova Browse Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.
	≤Back Next ≥ Cancel



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

Deploy OVF Template	
Name and Location Specify a name and location	n for the deployed template
Source OVF Template Details Name and Location Disk Format Ready to Complete	Name:           FusionHub           The name can contain up to 80 characters and it must be unique within the inventory folder.
Help	< Back Next > Cancel



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

Deploy OVF Template				
Disk Format In which format do you wa	int to store the virtual disks?			
Source OVF Template Details Name and Location Disk Format Ready to Complete	Datastore: Available space (GB): ( Thick Provision Lazy Ze Thick Provision Eager Z Thin Provision	datastore 1 583.7 roed eroed		
Нер			< Back Nex	t > Cancel

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

🕝 Deploy OVF Template			
Ready to Complete Are these the options yo	ou want to use?		
Source OVF Template Details Name and Location Disk Format Ready to Complete	When you dick Finish, the deploymen Deployment settings: OVF file: Download size: Size on disk: Name: Host/Cluster: Datastore: Disk provisioning:	nt task will be started. C:\FusionHub\OVF\FusionHub.ova 71.7 MB 400.0 MB FusionHub localhost. datastore1 Thick Provision Lazy Zeroed	
	Dever on after deployment		
Help		<u>≤</u> Back Finish	Cancel

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.

ardware   Ootions   Door	Properties	Virtual Machine Versions
Options   Resources		Memory Configuration
Show All Devices	Add Remove	
Hardware Memory CPUs Video card VMCI device Hard disk 1	Summary 1024 MB 1 Video card Restricted Virtual Disk	Memory Size:       1 → GB ◆         512 GB       Maximum recommended for this         256 GB       Maximum recommended for best         128 GB       Maximum recommended for this         64 GB       Default recommended for this         32 GB       Minimum recommended for this         16 GB       Default recommended for this         9 uest OS: 1 GB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB.       Minimum recommended for this         9 uest OS: 64 MB       Minimum recommended for this         1 GB       Minimum recommended for this </th
Help		OK Cancel



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

Device Type	Choose the type of device you v	vish to add.
Ready to Complete	Serial Port Parallel Port Floppy Drive CD/DVD Drive USB Controller USB Device (unavailable) CD/DVD Drive USB Device (unavailable) CD/DVD Drive USB Device (unavailable) CD/DVD Drive USB Device (unavailable)	Information This device can be added to this Virtual Machine.



- 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 y	/ou 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 I Connect at power on
Help	≤Back Next ≥ Cancel



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

🕝 Add Hardware					x
Ready to Complete Review the selected opt	ions and dick Finish to add t	he hardware.			
Device Type Network connection	Options:				
Ready to Complete	Hardware type: Adapter type: Network Connection: Connect at power on:	Ethernet Adapter VMXNET 3 Internet Yes			
Help			≤Back	Einish	Cancel



# 19. Click ${\bf OK}$ to finish adding hardware.

🕗 FusionHub - Virtual Machine Pro	perties	
Hardware Options Resources		Virtual Machine Version: 8
Show All Devices	Add Remove	Device Status
Hardware	Summary	Connect at power on
Memory CPUs Video card VMCI device Hard disk 1 New NIC (adding)	1024 MB 1 Video card Restricted Virtual Disk Internet	Adapter Type Current adapter: VMXNET 3 MAC Address Automatic C Manual DirectPath I/O Status: Inactive 1 To activate DirectPath I/O, go to the Resources tab and select Memory Settings to reserve all guest memory. Network Connection Network label: Internet
Help		OK Cancel



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

2 10.8.9.24 - vSphere Client								- • • ×
Eile Edit View Igventory Ad	Iministration Plug	-ins <u>H</u> elp						
🖸 🖬 🛕 Home 🕽 🔊	Inventory > (9)	Inventory						
B II > 6 B	(h 13 C							
10.8.9.24	FusionHub							
FusionHub	Getting Star	ted Summary R	esource Allocat	ion Performa	ce Events Console	Permissions		
	-						close tab 🔅	1
	What is	a Virtual Mach	ine?				~	
	A virtual physical applicatio machine	machine is a so computer, runs ons. An operatin is called a gues	ftware compu an operating g system ins t operating s	uter that, like system and talled on a v ystem.	a irtual	Virtual Machines		
	Because environm workstati consolida	every virtual ma ent, you can us on environment ite server applic	achine is an i e virtual mac s, as testing ations.	solated com hines as de: environment	puting sktop or s, or to		Host	
	Virtual m many virt	achines run on ual machines.	hosts. The s	ame host car	n run			
	Basic Ta	sks				utabase Churt		
	Pow	er on the virtu	al machine			Appreis Coent		
	D. F. all	- determined as a shirt						
	Cy Eur	virtual machin	ie settings					
								_
*								-1
Recent Tasks						Name, Target or Status o	ontains: •	Clear ×
Name	rget	Status	Details	Initiated by	Requested Start Ti v	Start Time	Completed Time	L
Reconfigure virtual ma     Deploy OVFtemplate     Delete file	FusionHub 10.8.9.24	Completed Completed		root	5/11/2013 14:58:18 5/11/2013 14:54:11 5/11/2013 14:52:03	5/11/2013 14:58:18 5/11/2013 14:54:11 5/11/2013 14:52:03	5/11/2013 14:58:18 5/11/2013 14:54:20 5/11/2013 14:52:03	365 1 0.3
ST Tasks		-		20.00			Contraction of the	Front A
								(10)



- 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:



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.

mpo	rt Virtual Machine				
	Store the new Virtual Machine				
Provide a name and local storage path for the new virtual machine.					
Na	ne for the new virtual machine:				
Fu	sionHub				
Sto	rage <u>p</u> ath for the new virtual machine:				
C:	Users\Admin\Documents\Virtual Machines\Fusi Browse				
_					
	Help Import Cancel				
		i			

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.

Virtual Machine Settings		
Hardware Options		
Device Memory Processors Hard Disk (IDE) Display	Summary 1 GB 1 12 MB 1 monitor	Memory         Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.         Memory for this virtual machine:       1024 → MB         64 GB -       32 GB -         16 GB -       8 GB -         8 GB -       ■ Maximum recommended memory         4 GB -       ■ Maximum recommended memory         2 GB -       ■ Maximum recommended memory         1 GB -       ● S948 MB         512 MB -       ■ Recommended memory         256 MB -       ■ Recommended memory         256 MB -       ■ Guest OS recommended minimum         32 MB -       ■ Guest OS recommended minimum         32 MB -       ■ MB         16 MB -       ■ MB
	Add	OK Cancel Help



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

dd Hardware Wizard			X
Hardware Type What type of hardware do yo	ou want	to install?	
Hardware types: Hard Disk CD/DVD Drive Floopy Drive Hetwork Adapter USB Controller USB Controller Sound Card Parallel Port Parallel Port Frinter Generic SCSI Device		Explanation Add a network adapter.	
(	< <u>B</u> a	ack Next > C	ancel

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.

Network Adapter Typ What type of netwo	e k adapter do y	ou want to add	?	
Network connection				
Bridged: Connected dire	tly to the phys	ical network		
Replicate physical ne	twork connection	on state		
NAT: Used to share the	osťs IP addre	ss		
Host-only: A private net	vork shared wit	th the host		
© <u>C</u> ustom: Specific virtual	etwork			
VMnet0 (Auto-bridging)		T		
Device status				
Connect at power on				

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.





tual Machine Settings		
lardware Options		
Device Memory Processors Hard Disk (IDE) CD/DVD (IDE) Floppy Network Adapter Display	Summary 1 GB 1 1 2 MB Using file FusionHub-file1.iso Using drive A: Bridged (Automatic) 1 monitor	Device status  Connected  Cgnnect at power on  Network connection  Findged: Connected directly to the physical network  Findged: Connected directly to the physical network  Findged: Connected directly to the physical network  Configure Adapters  NAT: Used to share the host's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the host 's IP address  NAT: Used to share the h
	Add <u>R</u> emove	
		OK Cancel Help

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

elect the host network adapter(s)	you want to automatically bridge:
Microsoft Virtual WiFi Miniport A	Adapter - VirtualBox Bridged Networking Driver Miniport
Dell Wireless 1506 802.11b/g/n	n (2.4GHz) - VirtualBox Bridged Networking Driver Miniport
VirtualBox Host-Only Ethernet	Adapter
Realtek PCIe GBE Family Contro	oller - VirtualBox Bridged Networking Driver Miniport



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

ardware Options		
Device Memory Hard Disk (IDE) Network Adapter Display	Summary 1 GB 1 12 MB Bridged (Automatic) 1 monitor Add Remove	Device status  Connected  Cgnnect at power on  Network connection  Pridged: Connected directly to the physical network  Preplicate physical network connection state  NAT: Used to share the host's IP address  Host-only: A private network shared with the host  Custom: Specific virtual network  VMnet0 (Auto-bridging)  LAN segment:  LAN Segments  Advanced



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
Sustem Information
License : Not found
Network settings
Method : NHCP
IP Address : 19.8.8.252
Subnet Mask: 255 255 0 0
numin . nttp://10.0.0.252
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 <u>https://my.vmware.com/web/vmware/free#desktop\_end\_user\_computing</u> <u>/vmware\_player/6\_0</u> 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.

WWware Player (Non-commercial use only)	
Player 🕶 🕨 👻 😹 💌	
Home	Welcome to VMware Player
	Create a <u>New Virtual Machine</u> Create a new virtual machine, which will then be added to the top of your library.
	Open a Virtual Machine Open an existing virtual machine, which will then be added to the top of your library.
	Upgrade to VMware Workstation           Get advanced features such as snapshots, developer tool integration, and more.
	Help View VMware Player's help contents.
	This product is not licensed and is authorized for non-commercial use only. For commercial use, purchase a license. <u>Buy now.</u>



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.

Import Virtual Machine	x
Store the new Virtu Provide a name ar virtual machine.	al Machine nd local storage path for the new
Name for the new virtual r FusionHub	machine:
Storage <u>p</u> ath for the new C: \Users\Admin\Documer	virtual machine: hts\Virtual Machines\Fusi Browse
Help	Import Cancel

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.




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

Virtual Machine Settings					
Hardware Options					
Device Memory Processors Hard Disk (IDE) Display	Summary 1 GB 1 12 MB 1 monitor	Memory Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.  Memory for this virtual machine: $1024 \bigoplus MB$ $64 GB - 4 GB - $			
	Add				
		OK Cancel Help			



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

dd Hardware Wizard			
Hardware Type What type of hardware do y	you wan	t to install?	
Hardware types:		Explanation	
Hard Disk		Add a network adapter.	
Eloopy Drive			
USB Controller			
Sound Card     Parallel Port			
Serial Port			
Printer			
Generic SCST Device			
	< <u>E</u>	adk Next >	Cancel

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.

Network Adapter Typ	pe
What type of netwo	ork adapter do you want to add?
Network connection	
Bridged: Connected dire	ectly to the physical network
Replicate physical n	etwork connection state
NAT: Used to share the	host's IP address
Host-only: A private ne	twork shared with the host
Device status	
Connect at power on	J

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



rdware Options		
Device Memory Processors Hard Diak (IDE) Co/DVD (IDE) Plopy Network Adapter Display	Summary 1 GB 1 12 MB Using file FusionHub-file 1.iso Using drive A: Bridged (Automatic) 1 monitor	Device status Connected Connected Connected Connected Connected directly to the physical network Replicate physical network connection state Configure Adapters NAT: Used to share the host's IP address Host-only: A private network shared with the host Custom: Specific virtual network VMnet0 (Auto-bridging) LAN segment:
	Add Remove	

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

select the host network adapter(s) y	you want to automatically bridge:
Microsoft Virtual WiFi Miniport A	dapter - VirtualBox Bridged Networking Driver Miniport
Dell Wireless 1506 802.11b/g/n	(2.4GHz) - VirtualBox Bridged Networking Driver Miniport
VirtualBox Host-Only Ethernet A	Adapter
and a second	Ilea Makadora Oridead Makadira Datas Matasat



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

WWware Player (Non-commercial use only)	
Player -   🕨 - 🔒 🖼 🍓	
Home FusionHub	<section-header><section-header><section-header><section-header><section-header><section-header><section-header><text><text><text><text><text></text></text></text></text></text></section-header></section-header></section-header></section-header></section-header></section-header></section-header>



- 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 <a href="https://www.virtualbox.org/wiki/Downloads">https://www.virtualbox.org/wiki/Downloads</a> and install it.
- 2. Open **VirtualBox**. Click **New** to create a virtual machine for FusionHub.





3. 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.

Name and	operating syste	m		
Please choos type of opera be used throu	a descriptive name for ting system you intend ghout VirtualBox to ide	the new virtual n to install on it. Th ntify this machine	nachine and sele le name you cho	ct the ose will
Name: Fusi	onHub			
Type: Linu	(		•	
Version: Oth	r Linux (64-bit)		•	
	a candix (o r ong			

4. 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.

8 ×				
Create Virtual Machine				
Hard drive				
If you wish you can add a virtual hard drive to the new machine. You can either create a new hard drive file or select one from the list or from another location using the folder icon.				
If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.				
The recommended size of the hard drive is <b>8.00 GB</b> .				
Do not add a virtual hard drive				
<u>C</u> reate a virtual hard drive now				
Use an existing virtual hard drive file				
fusionhub.vmdk (Normal, 400.00 MB) 🔹				
Create Cancel				



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

🥡 Oracle VM VirtualBox Manager	
<u>File Machine Help</u>	
New Settings Settings	Details 💿 Snapshots
FusionHub General	Preview
Name: FusionHub Operating System: Other Linux (64-bit)	
System	
Base Memory: 1024 MB Boot Order: Floppy, CD/DVD, Hard Disk Acceleration: VT-x/AMD-V, Nested Paging, PAE/NX	<b>FusionHub</b> ■
Display	
Video Memory: 12 MB Remote Desktop Server: Disabled Video Capture: Disabled	
Storage	
Controller: IDE IDE Primary Master: fusionhub.vmdk (Normal, 400.00 MB) IDE Secondary Master: [CD/DVD] Empty	•
Manage the virtual machine 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.

	Network
System Display Storage	Adapter <u>1</u> Adapter <u>2</u> Adapter <u>3</u> Adapter <u>4</u>
Audio	Attached to: Bridged Adapter 💌
P Network	Name: Realtek PCIe GBE Family Controller
<ul> <li>Serial Ports</li> <li>USB</li> <li>Shared Folders</li> </ul>	▶ A <u>d</u> vanced
Shared Folders	



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

🜍 Oracle VM VirtualBox Manager	
<u>F</u> ile <u>M</u> achine <u>H</u> elp	
New Settings Start Discard	😥 Details 💿 Snapshots
FusionHub Start General	Preview
Name: FusionHub Operating System: Other Linux (64-bit)	
🧾 System	
Base Memory: 1024 MB Boot Order: Floppy, CD/DVD, Hard Disk Acceleration: VT-x/AMD-V, Nested Paging, PAE/NX	<b>FusionHub</b> ■
Display	
Video Memory: 12 MB Remote Desktop Server: Disabled Video Capture: Disabled	
Storage	
Controller: IDE IDE Primary Master: fusionhub.vmdk (Normal, 400.00 MB) IDE Secondary Master: [CD/DVD] Empty	*
Start the selected virtual machines	th.

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.

and your use	er login credentials for that server.
<u>S</u> erver:	10.8.8.244
User login c	redentials
<u>U</u> ser name:	root
Darguardu	•••••



- 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: <u>http://www.netservers.co.uk/articles/open-source-howtos/citrix\_e1000\_gigabit</u>
- 5. Right-click the XenServer and select **Import** to begin importing the OVA file to this XenServer.

😣 XenCenter							
File View Poo	Server	VM	Stor	age	Te	mplates	Tools
🕒 Back 🔹 🔘 Fo	rward 👻 🛛	- <mark></mark> -	dd N	ew Se	rver	1	New Pool
Views: Server View			•		xer	iserver	
Search			$\mathbf{\rho}$	Sea	rch	General	Memory
Conter				Se	erve	r Gener	al Prope
	New VM						
🔂 t 🛅	New SR					ties	
	Import					ral	
	Add to Poo	ol			►	iai	
R I	Enter Main	tenanc	e Mo	de		tion	
<b>₩</b>	Reboot					, cion.	
<b>€</b> ! <b>⊘</b>	Shut Down	ı				I	
	Restart Too	olstack				I	
	Disconnec	t				d:	
i i i i i i i i i i i i i i i i i i i	Reconnect	As				2N:	
	Properties					stinatior	1:
				S	erve	r uptime:	



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

🗴 Import		X
👆 Locate the file yo	want to import	?
Import Source Location	Enter the pathname of an exported VM or template, an OVF/OVA package or a virtual hard disk image for or click Browse to find the file you want.	ile
Storage Networking Finish	Filena <u>m</u> e: C:\FusionHub\OVF\FusionHub.ova	
CİTRIX <sup>.</sup>	< Previous Next > Can	cel



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.

Security OS Fixup Settings Transfer VM Settings Finish	Automatically obtain network settings using DHCP     Use these network settings:     IP address:     Subnet mask:     Gateway:
---	--

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

3 XenCenter	
File View Pool Server VM Stor	age Iemplates Tools Window Help ew Server   🏪 New Pool 🛅 New Storage 🛅 New VM   🎯 Start 🋞 Reboot 🕕 Suspend 🛛 🖋 No System Ale
ews: Server View	TusionHub on 'xenserver-FusionHub' Logged in as: Local root accou
earch 🔎	General Memory Storage Networking Console Performance Snapshots Logs
XenCenter     XenCenter     XenCenter     XenCenter     XenCenter     Your and the second secon	Virtual Disks DVD Drive 1: fusionhub-6.2.0-build1219.iso scempty> Position DVD drives on xenserver FusionHub DVD drives on xenserver fusionHub CostISO Kastare fusion xs-tools.iso xs-tools.iso xs-tools.iso terminet and the properties of the proper

- 8. Click **FusionHub** -> **Networking** -> **Add Interface** to add a network interface.
- © 2016 Peplink



XenCenter	and the second se	
Eile View Pool Server VM Stor	rage Iemplates Tools <u>Window H</u> elp ew Server   🏪 New Pool 🛅 New Storage 🛅 New VM   🎯 Start 🎲 Reboot 🕕 Susp	vend 🖌 No System Alerts
Views: Server View	FusionHub on 'xenserver-FusionHub'	Logged in as: Local root account
Search P	General Memory Storage Networking Console Performance Snapshots Logs	
XenCenter     XenCenter     XenServer-FusionHub	Virtual Network Interfaces	
DVD drives	Networks	
Removable storage	Add Interface Properties Remove   Desgtivate	

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

rou can a	lso optionally de	fine a QoS li	mit.
<u>N</u> etwork:	Network 0		•
MAC addr	ess:		
Auto-g	generate a MAC	address	
🔊 <u>U</u> se th	is MAC address:	aa:bb:cc:d	d:ee:ff
Qo <mark>S settin</mark>	gs:		
Enable	a <u>Q</u> oS limit of:		Kbytes/s

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



🔁 Back 🔹 🔘 Forward 🕘 🗒 Add	l New Server 🕴 🏪 New Pool 🛅 New Storage 🛅 New VM 🛛 🎯 Start 🎲 Reboot 🕧 Su	uspend 🛛 🖌 No System Alerts
ews: Server View	FusionHub on 'xenserver-FusionHub'	Logged in as: Local root account
orch	General Memory Storage Networking Console Performance Snapshots Logs     Virtual Network Interfaces     Networks	
Local storage	Device A MAC Limit Network IP Address	Active
Removable storage	Add Interface Properties Remove Activate	

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

XenCenter		×
File View Pool Server VM Stor	age Iemplates Tools Window Help ex Server : 🙀 New Pool 🛅 New Storage 🛅 New VM : 🔘 Shut Down 🛞 Reboot 🕧 Suspend	V No System Alerts
Views: Server View	ResionHub on 'xenserver-FusionHub'	Logged in as: Local root ac
Search	General Memory Storage Networking Consols Putformance Spapshots Logs	
XenCenter     XenServer-FusionHub     FusionHub     DVD drives	DVD Drive 1: fusionhub-62.0-build1219.iso	Looking for guest conso
kocal storage	System Information License : Not found Metwork settings Method : DHCP IP Address : 10.8.9.8 Submet Mask: 255.255.0.0 Gateway : 10.8.8.1 DNS Server: 10.8.8.1 PMS Server: 10.8.8.1 Admin : http://10.8.9.8 Enter 'setup' to configure network settings	

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.

	Hyper-V N	lana	ger 🕒	- 🗆	x
File Action	View Help				
📑 Hyper-V N	Manager ^	Act	tions		
WIND	<u>N</u> ew		Virtual <u>M</u> achine		<u> </u>
	Import Virtual Machine		<u>H</u> ard Disk		•
	Hyper-V <u>S</u> ettings		Eloppy Disk		
	Virtual Switch Manager	2	Hyper-V Settings		
	Virtual S <u>A</u> N Manager	3	Virtual Switch Manager		
	Edit Disk		Virtual SAN Manager		
	Inspect Disk		Edit Disk		≡
	Stop Service		Inspect Disk		
	<u>R</u> emove Server		Stop Service		
	<u>Ne</u>	×	Remove Server		
	View	G	Refresh		
	Help		View		•
		?	Help		~
Displays the N	ew Virtual Machine Wizard.				



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

80	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 Testallation Options	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	
Summary	Location: C:\ProgramData\Microsoft\Windows\Hyper-V\	
	< Previous Next > Einish Cancel	]



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

8	New Virtual Machine Wizard	x
Specify Gene	ration	
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	<ul> <li>Choose the generation of this virtual machine.</li> <li>● Generation 1 This virtual machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V. </li> <li>O Generation 2 This virtual machine generation provides support for features such as Secure Boot, SCSI boot, at PXE boot using a standard network adapter. Guest operating systems must be running at least Windows Server 2012 or 64-bit versions of Windows 8. </li> <li>Once a virtual machine has been created, you cannot change its generation.</li> </ul>	nd
	< <u>P</u> revious <u>N</u> ext > <u>E</u> inish Cancel	



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

8	New Virtual Machine Wizard								
Assign Memo	νrγ								
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 3 MB through 2528 MB. To improve performance, specify more than the minimum amount recommende for the operating system.         Startup memory:       1024       MB         Use Dynamic Memory for this virtual machine.       Image: Consider how you intend to use the virtual machine and the operating system that it will run.         Image: 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.         Image: 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.	2 :d							



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

8	New Virtual Machine Wizard								
Configure No	etworking								
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Each new virtual machine includes a network adapter. You can configure the network adapter to use virtual switch, or it can remain disconnected. <u>Connection:</u> Realtek PCIE GBE Family Controller - Virtual Switch	a							
	< Previous Next > Finish Cancel								



# 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**.

30	New Virtual Machine Wizard								
Connect Virt	ual 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.								
	< <u>P</u> revious <u>N</u> ext > <u>F</u> inish Cancel								



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

Ъ.	New Virtual Machine Wizard									
Completing t	the New Virtual Machine Wizard									
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Summary	You have successfully completed the New Virtual Machine Wizard. You are about to create the following virtual machine. Description: Name: FusionHub Generation: Generation 1 Memory: 1024 MB Network: Realtek PCIe GBE Family Controller - Virtual Switch Hard Disk: C:\FusionHub\VHD\FusionHub.vhd (VHD, dynamically expanding)									
	To create the virtual machine and close the wizard, click Finish.									
	< Previous Next > Finish Cancel	I								



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

	Нуре	r-V Mana	ager		_ <b>D</b> X
File     Action     View     Help       Image: Constraint of the second seco					
Hyper-V Manager	Virtual Machines	State	CPULISage	Accia	Actions WINDOWS-SER
	Fusion Hub	Off	Connect Settings	Assigi	New  Import Virtual Hyper-V Setting
	< Checkpoints		Start Checkpoint		Virtual Switch Virtual SAN Ma
	Т	Edit Disk     Inspect Disk			
	Delete Enable Replication				Remove Server     Refresh
	FusionHub	ionHub			View
	Created:         9/5/2014 4:47:57 PM         Clust           Version:         5.0         6eneration:         1				FusionHub       Connect       Settings
	Summary Memory Networking	g Replicati	ion		<ul> <li>Start</li> <li>Checkpoint</li> <li>Move</li> </ul>
Starts the selected virtual machi	< III ine.	- 1		>	Export V

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 <u>trial@peplink.com</u>. 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.

EC	2 Dashboard	▲	Launch	Actions	v						
Eve	ents										
Тар	gs		Filter: Priva	ate image	s 👻 All images	s 👻 🛛 All pla	tforms 👻	Q, Sea	arch AMIs		×
Re	ports										
Lim	nits		Name	9 -	AMI Name	Ψ	AMI ID		Source -	Owner	Visibilit
INS	STANCES				Peplink FusionHub	6.2.1b01	ami-fd3375c	:d 1	100871073111/	100871073111	Private
Inst	stances		$\square$								
Spo	ot Requests										
Res	served Instances										
E IMA	AGES MIS Indle Tasks	L									
ELAS	TIC BLOCK STORE										

#### **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.



Step 2 Amazon E combinatio	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 nstance types and how they can meet your computing needs.									
Filter by:	Filter by: All instance types V Current generation V Show/Hide Columns									
Current	Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)									
	Family -	туре -	vCPUs (j) 👻	Memory (GiB) –	Instance Storage (GB)	EBS-Optimized Available (i)	Network Performance			
	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate			
	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate			
	General purpose	t2.small	1	2	EBS only	-	Low to Moderate			
	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate			
	General purpose	t2.large	2	8	EBS only	-	Low to Moderate			
	General purpose	m4.large	2	8	EBS only	Yes	Moderate			
	General purpose	m4.xlarge	4	16	EBS only	Yes	High			
	General purpose	m4.2xlarge	8	32	EBS only Yes		High			
	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 Al	MI 2. Choose Instance Type	3. Configure Instance	4. Add Storage	5. Tag Instance	6. Configure Security Group	7. Review
Step 3: Configure the	Configure Instan	ce Details ements. You can launch r	nultiple instances f	rom the same AMI	request Spot Instances to ta	ake advantage of th
	Number of instances	(j) 1				
	Purchasing option	(i) Request Sp	oot Instances			
	Network	(i) vpc-2e48ac4t	) (172.31.0.0/16) (d	lefault)	Create new VPC	
	Subnet	i subnet-ca606 4091 IP Addre	cbe(172.31.16.0/20 sses available	))   Default in us-w	e ▼ Create new subn	et
	Auto-assign Public IP	(i) Use subnet se	etting (Enable)		¥	
	IAM role	(i) None			T	
	Shutdown behavior	(i) Stop			•	
Ena	ble termination protection	(i) Protect aga	inst accidental tern	nination		
	Monitoring	(i) Enable Clou Additional cha	udWatch detailed n rges apply.	nonitoring		
	Tenancy	(i) Shared tenan Additional cha	cy (multi-tenant har rges will apply for o	rdware) ledicated tenancy.	T	
▼ Netwo	rk interfaces					
Device	Network Interface	Subnet P	rimary IP	Secondary IP	addresses	
eth0	New network interface	subnet-ca606cb∈ ▼	uto opoigo	Add ID		

#### 3. In the next page "Review Instance Launch", click on "Edit security groups".

Add IP

1. Choose AMI	2. Choose Insta	ince Type 3.	Configure Instance	4. Add Storage	5. Tag Instance	3. Configure Security Group	7. Review					
Step 7: Re Please review yo	eview Inst our instance laun	tance Lau	unch can go back to	edit changes for each	section. Click Laun	<b>ch</b> to assign a key pair t	o your instance and comp	lete the launch pr	rocess.			
	ve your insta	nce's securit	y. Your secu	rity group, launch-	wizard-3, is ope	n to the world.						
Your ins	stance may be a	ccessible from	any IP address.	We recommend that y	ou update your sec	urity group rules to allow	access from known IP a	ddresses only. ervers Edit secu	rity groups			
100 001	raioo operi ada	norma porto m y	our occurry gro	up to racimate access	to the oppression of	centree you're running,		Lan boot	Ny groupo			-
<ul> <li>AMI Detai</li> </ul>	ils										Edit /	AMI
▲ P R ▼ Instance 1	Peplink Fusion Peplink FusionHul Root Device Type: et Type	hHub 6.2.1b01 b 6.2.1b01 bs Virtualization t	- ami-fd3375c	d							Edit instance t	ype
Instance 1	Туре	ECUs	vCPUs	Memory (GiB)	Instance Sto	rage (GB)	EBS-Optimized Availab	ble	Network Performance			
t1.micro		Variable	1	0.613	EBS only				v Low			
<ul> <li>Security G</li> </ul>	Groups					E	dit security	group	S	E	dit security gro	ups
Security gro Description	oup name I	launch-wiza launch-wiza	ard-3 ard-3 created 20	014-09-05T11:47:15.2	29+08:00							
Туре 🕕			Proto	icol (i)		Port Range (i)		Source (				
SSH			TCP			22		0.0.0/0				
Instance [	Details									Ed	lit instance det	ails
<ul> <li>Storage</li> </ul>											Edit store	age ,
										Cancel	Previous	aunch

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

New network interface 
Subnet-ca606cbt 
Auto-assign



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

#### 5. Click "Review and Launch"

1. Choose AMI Step 6: C A security group instance, add ru	2. Choose instance Type configure Security to a set of frewall rules that of less that allow unrestricted acc Assign a security group Security group name: Description	Configure Instance     Group     control the traffic for you     ress to the HTTP and HT	Add Storage 5. Tag Instance instance. On this page, you ca TPS ports. You can create a n urity group security group eated 2014-09-05T11:48:41.983	6. Configure Security Group     add rules to allow specific tra ew security group or select from +08.00	7. Review     The to reach your instance. For example, an existing one below. Learn more about the statement of the top of top of the top of	If you want to set up a web server and allow interne out Amazon EC2 security groups.	t traffic to reach your
Custom Custom Custom Custom HTTPS HTTP	TCP Rule  TCP Rule TOP Rule TOP Rule T	Protoc	TCP TCP UDP TCP TCP TCP	Port Bar	ge 1 2222 32015 4500 443 80	Source () ere + 0.0.0.0/0 ere + 0.0.0.0/0 ere + 0.0.0.0/0 ere + 0.0.0.0/0 ere + 0.0.0.0/0	
Au Kur Au Warni You wi Rules	ing III not be able to connect to thi Ing with source of 0.0.0.0/0 allow :	s instance as the AMI re all IP addresses to acce	quires port(s) 22 to be open in ss your instance. We recomme	order to have access. Your curr nd setting security group rules t	ent security group doesn't have port(s) 22 o allow access from known IP addresses Review and La	2 open. s only.	Review and Launch

#### 6. Confirm that the details are correct, and then click "Launch".

1. Choose AMI	2. Choose Inst	ance Type 3.	Configure Instance	4. Add Storage	5. Tag Instance	6. Configure Security Group	7. Review			
Step 7: Re lease review yo	eview Ins ur instance laur	tance La	unch u can go back to e	edit changes for eacl	h section. Click La	unch to assign a key pair	to your instance and comple	te the launch pr	rocess.	
	ve your insta	ince's securi	ty. Your secur	ity group, launch	-wizard-3, is o	pen to the world.				
Your ins You can	stance may be a also open add	accessible from titional ports in	n any IP address. your security grou	We recommend that up to facilitate access	you update your s to the application	security group rules to allo or service you're running,	w access from known IP add e.g., HTTP (80) for web sen	resses only. vers. Edit secu	rity groups	
AMI Detai	ils									Edit AMI
A P R	Peplink Fusion Peplink FusionHu Root Device Type: e	nHub 6.2.1b0 ub 6.2.1b01 bs Virtualization	1 - ami-fd3375c	d						
Instance 1	Туре									Edit instance type
Instance 1	Туре	ECUs	vCPUs	Memory (GiB)	Instance S	itorage (GB)	EBS-Optimized Available	,	Network Performance	
t1.micro		Variable	1	0.613	EBS only				Very Low	]
Security C	Groups									Edit security groups
Security gro Description	oup name	launch-wi launch-wi	zard-3 zard-3 created 20	14-09-05T11:48:41.	983+08:00					
Туре 🕕			Proto	col (j)		Port Range ()		Source (		
Custom TC	CP Rule		TCP			2222		0.0.0/0		
Custom TC	CP Rule		TCP			32015		0.0.0/0		
Custom U	DP Rule		UDP			4500		0.0.0/0	Launch	
HTTPS			TCP 443 0.0.0/0							
HTTP			TCP			80		0.0.0/0		- <u> </u>
										Cancel Previous Laund

#### 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.
- © 2016 Peplink



EC2 Dashboard Events Tags	Launch Instance     Connect     Actions ♥       Q Filter by tags and attributes or search by keyword	
Reports Limits	Instance ID v Instance Type Availability Zone v Instance State v Status Checks v Alarm Status Pub	olic DNS
INSTANCES     Instances     Spot Requests     Reserved Instances	■ i-20353328 t1.micro us-west-2c ● running ⊘ 2/2 checks None 🍃 ec2:	•54-213-85-
IMAGES     AMIs     Bundle Taska	Instance: i-20353328 Public DNS: ec2-54-213-85-222.us-west-2.compute.amazonaws.com Description Status Checks Monitoring Tags	
ELASTIC BLOCK STORE     Volumes	Instance ID i-20353328 Instance state running	Public DN: Public II

- 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".







#### **Accessing FusionHub**

1. Note down FusionHub's public IP address.

		0 K K	1 to 2 of 2 🔿
larm 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: <a href="http://54.213.85.2/">http://54.213.85.2/</a>
- 3. Follow <u>Section 5</u> 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**.

Protecting Business Continuit	,	Web Admin
	Login Username: Password:	
opyright @ Peplink, All rights reserved.	Login	



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.





3. 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	0	
DHCP	۲	
PPPoE	0	

- 4. 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		
Subnet Mask	255.255.255.0	
Gateway		
DNS Servers	DNS Server 1:	

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

Enter the parameters of D	HCP setting for this port
DHCP Settings	
DNS Servers	Obtain DNS server address automatically     Use following DNS server address(es)     DNS Server 1:     DNS Server 2:
Client ID (Optional):	


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

PPPOE Secongs PPPoE User Name	
PPPoE Password	
Confirm PPPoE Password	
Service Name (Optional)	
DNS Servers	<ul> <li>Obtain DNS server address automatically</li> <li>Use following DNS server address(es)</li> <li>DNS Server 1:</li> <li>DNS Server 2:</li> </ul>
lient ID (Optional)	

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	0
Yes	٠
No	0

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	۲
DHCP	0
Disable	O



• If **Static** is selected, the Setup Wizard will display **Static IP Setting**s.

Enter the parameters of S	tatic IP setting for LAN port	
Static IP Settings		2
IP Address		
Subnet Mask	255.255.255.0 💌	

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

Enter the parameters of DHCP sett	ing for LAN port	
DHCP Settings		
Client ID (Optional)		

• 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.

ardware Options Resources		Virtual Machine Version: 8
Ardware Options Resources Show All Devices Hardware Memory CPUs Video card VMCI device CD/DVD drive 1 Hard disk 1 Floppy drive 1 Network adapter 1 Network adapter 2	Add Rem Summary 1024 MB 1 Video card Restricted WAN port Intranet VSub	Virtual Machine Version:         1011 GB         1011 GB         S12 GB         256 GB         128 GB         128 GB         268         GH GB         164 GB         16 GB <tr< th=""></tr<>
Help		256 MB = 128 MB - 64 MB - 32 MB - 16 MB - 8 MB - 4 MB - 0K



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.

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

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 y	our Country / Region.			
Time Zone Settings				
Time Zone	Time Zone (GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi 💌			

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

save and Apply Setting	is when you are done.
Summary of Configu	ration
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:

entry from the second			
Enter license information			
License Information	-		
License Key	0		
Virtual Machine Model	0	VMware ESXi 💌	
ESXi Server Address	(2)		

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:

nter license information			
License Information			0
License Key	0		
Virtual Machine Model	<li>Other</li>	•	

• **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:



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

peplink	Dashboard Setup Wizard Network System Status Apply Change
Interfaces	
- WAN	Connection Settings
■ SpeedFusion <sup>™</sup>	Connection Method Static 💌
QoS	IP Address 10.8.50.50
Application	Subnet Mask 255.255.0.0 💌
Certificate	Gateway 10.8.8.1
Manager	DNS Server 1 10.8.8.1
Logout	DNS Server 2
	SpeedFusion™ Peers Access Internal Network
	Enable 🕜 🗖
	Physical Interface Settings
	MTU 21440 Default
	MSS 📀 Auto O Custom



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**.

PEPWAVE	Dashboard Network Advanced System WLC Status Apply Changes
Advanced • Wi-Fi Settings	
SpeedFusion <sup>***</sup>	PepVPN with SpeedFusion <sup>™</sup>
<ul> <li>IPsec VPN</li> </ul>	1
<ul> <li>Outbound Policy</li> </ul>	Profile Remote ID Remote Address(es)
Cerbficate     Manager	No VPN Connection Defined New Profile
Port Forwarding	
NAT Mappings	(the Basility and a selected)
QoS User Groups Bandwidth Control Application	PepVIIN Local ID (9) MAX+HD2
Access Rules     Web Blocking	Link Failure Detection Link Failure Detection Time
Misc. Settings • High Availability • PPTP Server	Faster (Approx. 2 secs)     Extreme (Under 1 sec)     Shortar detection time incurs more health checks and higher bandwidth overhead.
Service     Ecowarding	Save

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

		***************************************
Local ID	MAX-HD2	

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

ical ID	MAX-HD2	
	Remote units can ident addition to the serial ne	ify this unit by this "Local ID", in umber.



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

Profile	Remote ID	Remote Address(es)	0
		No VPN Connection Defined	- 10 - 10 - 10 - 10 - 20 - 20 - 20 - 20
		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.

PepVPN Profile	0
Name 🤅	FusionHub
Active	2
SpeedFusion'''	Supported
Encryption	) 🖲 🖴 256-bit AES 🔿 🚡 Off
Remote ID 🥝	FusionHubVM
Authentication	◎ By Remote ID only      Preshared Key      X.509
Pre-shared Key 🕜	12345678
	Hide Characters
NAT Mode 🕜	
Remote IP Addresses / Host 🤇 🤇 Names (Optional)	10.8.50.50
	If this field is empty, this field on the remote unit must be filled
Data Port 🕜	Default      Custom
WAN Connection Priority	0
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** 



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	PepVPN		2010
IPsec VPN	-		*23*
<ul> <li>Port Forwarding</li> </ul>	Profile	Remote ID Remote Address(es)	
NAT Mappings		No VPN Connection Defined	
QoS		New Profile	
<ul> <li>Application</li> </ul>			
Firewall	Outbound Policy	(According to custom rules)	2
Misc. Settings	PepVPN Outbound C	istom Rules	
<ul> <li>Service</li> <li>Forwarding</li> </ul>	Service	Algorithm Source	Destination Protocol / Port
<ul> <li>Service</li> </ul>		(Auto)	
Passthrough		Add Rule	
Logout			
	PepVPN		
	Local ID	MAX_0R1_1690	8
	Link Failure Detectio		
	Link Failure Detection	Time 😢 🖷 Recommended (Approx. 15 secs) O Fast (Approx. 6 secs) O Faster (Approx. 2 secs) O Extreme (Under 1 sec)	
		Shorter detection time incurs more healt	h 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.

Local ID	0	MAX_BR1_1698
		Remote units can identify this unit by this "Local ID", in



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

Profile	Remote ID	Remote Address(es)	0
		No VPN Connection Defined	
		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.

Margan .	0	and the second se
		FusionHub
Active		<b>V</b>
Encryption	0	256-bit AES O a Off
Remote ID	3	FusionHubVM
Authentication		💿 By Remote ID only 🔹 Preshared Key
Pre-shared Key	3	23456789
		🖾 Hide Characters
Remote IP Addresses / Host Names (Optional)	0	10.8.50.50
		If this field is empty, this field on the remote unit must be filled
Data Port	3	Default O Custom

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.

peplink	Dashboard Setup Wizard	Network System Status	Apply Changes
Interfaces WAN			
<ul> <li>SpeedFusion<sup>™</sup></li> <li>QoS</li> <li>Application</li> </ul>	PepVPN wit	Ch SpeedFusion™ enabled. Settings can now be configured of	an <u>InControl</u> .
<ul> <li>Application</li> <li>Misc. Settings</li> <li>Certificate Manager</li> </ul>	Profile Rei	mote ID Remote Address(ee No VPN Connection D New Profile	e) Pefined
Logout	PepVPN Local ID	PusionHubVM	

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.

		ж
PepVPN Profile		
Name	?	Site A
Active		
SpeedFusion™		Supported
Encryption	?	● 🔒 256-bit AES 🗢 🚡 OFF
Remote ID	?	HAX-HD2
Authentication		$\odot$ By Remote ID only $\odot$ Preshared Key $\odot$ X.509
Pre-shared Key	?	12345678
		Hide Characters
NAT Mode	?	
Data Port	?	Default      Custom
		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**.

lame	?	Site B
Active		$\checkmark$
SpeedFusion™		Supported
Encryption	?	● 🔒 256-bit AES 🗢 🚡 OFF
Remote ID	?	MAX_BR1_169B
Authentication		$\odot$ By Remote ID only ${\ensuremath{  extsf{ only }}}$ Preshared Key ${\ensuremath{  extsf{ only }}}$ X.509
Pre-shared Key	?	23456789
NAT Mode	?	
Remote IP Address / He Names (Optional)	ost 🥐	
		If this field is empty, this field on the remote unit must be filled
Data Port	?	• Default O Custom

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

Management Net	work 0.50	
PepVPN with Spe	edFusion™	Status
Site A		A Established
Site B		🔒 Established
Device Information	ne	
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.

ardware Options Resources		Virtual Machine Version
Show All Devices	Add Remove	Memory Configuration
Show All Devices  Ardware  Memory  CPUs  Video card  VMCI device  Hard disk 1  CD/DVD drive 1  Network adapter 1  Floppy drive 1	Add Summary 1024 MB 1 Video Card Restricted Virtual Disk [datastore1]FusionHub Internet Client Device	1011 GB       Memory Size:       1 →       GB ▼         512 GB       Maximum recommended for this       guest OS: 64 GB.         128 GB       Maximum recommended for best         128 GB       Performance: 8088 MB.         64 GB       Perfoult recommended for this         32 GB       Minimum recommended for this         16 GB       Minimum recommended for this         9 GB GB       Minimum recommended for this         9 GB GB       Minimum recommended for this         9 GB       Minimum recommende
		8 MB 4 MB
Help		OK Canal



b. Select Ethernet Adapter, and then click Next.

Device Type Network connection Ready to Complete	Choose the type of device you v Serial Port Parallel Port Floppy Drive CD/DVD Drive USB Controller USB Device (unavailable) Ethernet Adapter Hard Disk SCSI Device (unavailable)	vish to add. Information This device can be added to this Virtual Machine.
--	---	--

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

Add Hardware				×
Ready to Complete Review the selected opt	ions and click Finish to add the	e hardware.		
Device Type Network connection	Options:			
Ready to Complete	Hardware type: Adapter type: Network Connection: Connect at power on:	Ethernet Adapter E 1000 BR 1 LAN Yes		
Help			_≤Back(	Cancel



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

🕗 Add Hardware	×
Network Type What type of network do	you want to add?
Device Type Network connection Ready to Complete	Adapter Type Type: E1000  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: <b>PRI LAN</b> Port: N/A Device Status <b>Connect</b> at power on
Help	≤Back Next ≥ Cancel

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**.

Name	Туре	External Connection	Host Connection	DHCP	Subnet Address
VMnet0	Bridged	Auto-bridging			•
VMnet1	Host-only	•	Connected	Enabled	192.168.2.0
VMnet8	NAT	NAT	Connected	Enabled	192.168.159.0
VMnet Info	rmation			Add Netwo	rk Rem <u>o</u> ve Networ
VMnet Info Bridged Bridged	rmation f (connect VI d to: Autor	Ms directly to the external n	etwork)	Add Netwo	rk Remove Networ
VMnet Info Bridged Bridge MAT (sl Dist-or	rmation J (connect VI d to: Auton hared Realte hared Realte hily (connect	Ms directly to the external m natic satic ek PCIe GBE Family Controlle peed USB-Ethernet Adapter	etwork) r #2 etworkj	Add Netwo	Automatic Settings
VMnet Info Bridged Bridged NAT (sh Dast-or Host-or Host v Use loc	rmation f (connect VI d to: Autor hared Realte Highs; hily (connect tria host girt irtual adapte al DHCP serv	Ms directly to the external m natic ex PCIE GBE Family Controlle peed USB-Ethernet Adapter rest internary in a private m ual adapter to this network er name: VMware Network A vice to distribute IP address	etwork) #2 dapter VMnet0 to VMs	Add Netwo	Remove Networ



c. Click Add Network.

	Туре	External Connection	Host Connection	DHCP	Subnet Address
VMnet0	Bridged	Realtek PCIe GBE Family Co			-
VMnet1	Host-only	2	Connected	Enabled	192.168.2.0
VMnet8	NAT	NAT	Connected	Enabled	192. 168. 159.0
	5			Add Ngtwo	rk
VMnet Int	ormation		13		
Bridge	ed (connect vi	Ms directly to the external netwo	к)		
Bridg	ed to: Realt	ek PCIe GBE Family Controller		•	Automatic Settings
◎ NAT (	shared host's	IP address with VMs)			NAT Settings
O Host-	only (connect	VMs internally in a private netwo	rk)		
Com	ant a bant sint	cal advantas to this anti-adv			
Coun	victual adapti	uai auapter to tris network ar nama: VMwara Network ûdante	w VMnaH0		
Host	and DLICD and	den in distribute 10 address to US	4- 11-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		
Host	cal price ser	vice to distribute 1P address to Vi	15		DHQP Settings
Host					
Host		Subnet mask:	14 14 14		

d. On the **Add a Virtual Network** dialog, select a network to add from the dropdown 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.

	Type	External Connection	Host Connection	DHCP	Subnet Address
/Mnet0	Bridged	Realtek PCIe GBE Family Co	•		•
/Mnet1	Host-only	-	Connected	Enabled	192.168.2.0
Mnet8	NAT	ΝΔΤ	Connected	Enabled	192 168 159 0
/Mnet2	Bridged	HighSpeed US8-Ethernet Ad	-		· ·
Black Tel					
Mnet Inf	formation ed (connect VI jed <u>t</u> o: HighS	Ms directly to the external networ peed USB-Ethernet Adapter #2	K)		Automatic Settings
VMnet Inf	formation ed (connect VI ed <u>t</u> o: HighS (shared host's	Ms directly to the external networ peed USB-Ethernet Adapter #2 IP address with VMs)	K)	•	Automatic Settings
VMnet Inf Bridge Bridge MAT ( MAT (	formation ed (connect VI red <u>to: HighS</u> shared host's only (connect	Ms directly to the external networ peed USB-Ethernet Adapter #2 IP address with VMs) VMs internally in a private netwo	K)	•	Automatic Settings NAT Settings
VMnet Inf Bridge Bridge NAT ( Host-	formation ed (connect VI ed to: HighS (shared host's only (connect ect a host <u>vi</u> rt	Ms directly to the external networ peed USB-Ethernet Adapter #2 IP address with VMs) VMs internally in a private networ wal adapter to this network	श् <u>र</u> १)	•	Automatic Settings NAT Settings
Mnet Inf Bridge Bridge MAT ( Mathematical Host- Host	formation ed (connect VI ed to: HighS (shared host's only (connect ect a host <u>vi</u> rt virtual adapte	Ms directly to the external networ peed USB-Ethernet Adapter #2 IP address with VMs) VMs internally in a private networ ual adapter to this network er name: VMware Network Adapte	k) rr YMnet2	•	Automatic Settings NAT Settings
Mnet Inf Bridge NAT ( Host- Conne Host Use k	formation ed (connect VI ed to: HighS (shared host's only (connect ect a host <u>virt</u> virtual adapte ocal <u>D</u> HCP serv	Ms directly to the external networ peed USB-Ethernet Adapter #2 IP address with VMs) VMs internally in a private networ wal adapter to this network er name: VMware Network Adapte vice to distribute IP address to VM	K) rr YMnet2 Is	· · · · · · · · · · · · · · · · · · ·	Automatic Settings NAT Settings DHCP Settings



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.

ardware Options		
Device Memory Processors Hard Disk (IDE) CD/DVD (IDE) Floony Network Adapter Display	Summary 1 GB 1 12 MB Using file FusionHub-file 1.iso Usion drive A: Bridged (Automatic) 1 monitor	Device status     Gonnected     Connected     Connection     Network connection     Gridged: Connected directly to the physical network     Replicate physical network connection state
		NAT: Used to share the host's IP address     Host-only: A private network shared with the host     Qustom: Specific virtual network     VMnet0 (Bridged)     VMnet0 (Bridged)     LAN segment:     LAN segments     Advanced
	Add Remov	e



g. Select Network Adapter and click Next.

Hardware Type What type of hardware do y	ou want to install?
Hardware types:	Explanation
Hard Disk CD/DVD Drive Floppy Drive VEWork Adapter USB Controller Sound Card Parallel Port Parallel Port Printer	Add a network adapter.
Seneric SCSI Device	Cancel



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

Network Adapter What type of ne	<b>Γγρε</b> twork adapter do γou want to add?
Network connection	
Bridged: Connected	directly to the physical network
Replicate physic	al network connection state
NAT: Used to share	the host's IP address
Host-only: A private	network shared with the host
Oustom: Specific vir	tual network
(VMnet2 (Bridged)	-
Device status	
Connect at power o	n

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 <a href="http://www.eightforums.com/virtualization/5137-how-add-virtual-network-editor-vmware-player-2.html#post275406">http://www.eightforums.com/virtualization/5137-how-add-virtual-network-editor-vmware-player-2.html#post275406</a>

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	Connect	ion Settings				
WAN	Connectio	on 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**.

peplink	Dashboard	Setup Wizard	Network	System	Status	Apply Changes
Interfaces						
LAN	Connection Settings					
WAN	Connecti	on Method	Static	•		
<ul> <li>SpeedFusion<sup>™</sup></li> </ul>	IP Addres	35	172.16.3	31.100		
QoS Application	Subnet M	lask	255.240	0.0.0	•	

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		2			
Name	0	FusionHub			
Active					
Encryption	0				
Remote ID	0	FusionHubVM			
Authentication		◎ By Remote ID only      Preshared Key      X.509			
Pre-shared Key	0	23456789			
		Hide Characters			
Remote IP Address / Host Names (Optional)	0	<sup>10.8.9.62</sup> Type the IP Address of Firewall/Router			
		If this field is empty, this field on the remote unit must be filled			
Data Port	0	Default      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	d Network System Status Apply Changes			
Interfaces	Si				
WAN	Connection Settings				
■ SpeedFusion <sup>™</sup>	Connection Method	Static 💌			
QoS	IP Address	192.168.200.12			
<ul> <li>Application</li> </ul>	Subnet Mask	255.255.255.0			
Misc. Settings  Certificate	Gateway	192.168.1.1			
Manager	DNS Server 1	192.168.1.1			
Logout	DNS Server 2				
	SpeedFusion <sup>™</sup> Peers A Enable	ccess Internal Network			
	Physical Interface Sett	ings (?) 1440 Default			
	MSS	Image: Autor I			



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

Name	?	Office A				
Active						
SpeedFusion™	Supported					
Encryption	?	● 🔒 256-bit AES 🔘 🚡 OFF				
Remote ID	?	MAX_BR1_169B				
Authentication	◎ By Remote ID only					
Pre-shared Key	0	23456789 Hide Characters				
NAT Mode	?					
Data Port	?	Oefault O Custom				

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**.

dvanced Wi-Fi Settings									
PepVPN	PepVPN				1				
<ul> <li>IPsec VPN</li> <li>Port Forwarding</li> </ul>	Profile	Remote ID	Remote Addres	s(es)	22				
NAT Mappings	EusionHub	FusionHubVM	10.8.50.50		2				
QoS Application			New Profile		3				
Firewall	Outbound Policy	(According to a	ustom rules)						
Misc. Settings	PepVPN Outbound Custom Rules								
<ul> <li>Service</li> <li>Forwarding</li> </ul>	Service	Algorithm	Source	Destination	Protocol / Port				
Service     Desetbrough	(Auto)								
Passonough			Add Rule						
Logout									
	PepVPN								
	Local ID	MAX BR1 1698			10				



 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.

Send All Traffic		×
Send All Traffic To	FusionHub  DNS Server 10.8.8.1	
		OK Cancel

### MAX HD2 Settings

1. 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.

		×
Send All Traffic		
Send All Traffic To	FusionHub  DNS Server 10.8.8.1	
		OK Cancel



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.

SpeedFusion™ Peers Acceps unexnal Network							
Enable 🕜		Do not check this box.					
			N. C.				