

Using a USB 3.0 Dual Gigabit Ethernet Bypass Adapter with VMware vSphere for VXOA

This document describes how to use a USB 3.0 Dual Gigabit Ethernet Bypass Adapter to add bypass functionality to an existing Silver Peak virtual appliance running the VMware vSphere hypervisor on a Compact PC.

USB 3.0 Dual Gigabit Ethernet Bypass Adapter (front view)



Prerequisites

- The Compact PC has been appropriately prepared with VMware vSphere for VXOA ISO. Click <u>here</u> for instructions.
- The VXOA OVF template has been deployed on the Compact PC with the VMware vSphere / vSphere Hypervisor.
 - If you're using a 4th generation NUC, click <u>here</u> for the Quick Start Guide.
 - If you're using a 3rd generation NUC, click <u>here</u> for the Quick Start Guide.

Cabling Instructions

Begin by cabling the adapter to the VXOA host:



- 1 Connect the USB 3.0 Type A M/Micro B cable to the Micro B port on the USB 3.0 Dual Gigabit Adapter.
- 2 Connect the USB 3.0 Type A M/Micro B cable to an available USB port on the Compact PC.

Configuring the Adapter

- I Log into the vSphere client
 - a Select the Silver Peak virtual appliance.
 - b Click the **Summary** tab.



2 Add a USB Controller

a Click Edit Settings. The Virtual Machine Properties dialog appears.



b Click Add. The Device Type dialog appears.

c Select USB Controller and click Next.

Device Type What sort of device de	o you wish to add to your virtual machin	ie?
Device Type USB Controller Ready to Complete	Choose the type of device you v Serial Port Parallel Port CD/DVD Drive CD/DVD Drive USB Controler USB Controler USB Controler Ethernet Adapter Ethernet Adapter	wish to add. — Information ———— This device can be added to this Virtual Machine.

The USB Controller dialog appears.

d From the **Controller type** list, select **EHBI+UHCI**.



NOTE: Don't use the "XHCI" Controller type.

e Click Next. The Ready to Complete screen appears.

🕢 Add Hardware			x
Ready to Complete Review the selected opt	ions and click Finish to add th	e hardware.	
Device Type USB Controller	Options:		
Ready to Complete	Hardware type: Controller type: Automatically Connect (USB Controller EHCI+UHCI Devices: Yes	

f Review the settings and click **Finish**. The **Virtual Machine Properties** dialog appears, with the new USB controller added.

🖉 V)	(-5000 - Virtual Machine Proper	ties	
Hard	ware Options Resources		Virtual Machine Version: vmx-09
	Show All Devices	Add Remove	The presence of a virtual USB controller allows this virtual machine to connect to USB 2.0 and USB 1.1 devices, but the machine the Viet Res of the second la device is the
Haro	dware	Summary	controller itself has no configurable options.
110	Memory	4096 MB	Used 1970 devices and accorded to victorial exceptions
	CPUs	4	persistently, in that they are recorded in the virtual machine
	Video card	Video card	configuration and will be connected when the virtual machine
	VMCI device	Restricted	powers on, if the device is present and available.
0	SCSI controller 0	Paravirtual	
	Hard disk 1	Virtual Disk	
	Hard disk 2	Virtual Disk	
	Network adapter 1	VM Network	
3	New USB Controller (addi	Present	

3 Add a USB device

- a In the **Virtual Machine Properties** dialog, click **Add**. The Device Type dialog appears.
- b Select **USB Device** and click **Next**.

you wish to add to your virtual machin	ne?
Changes the turns of device your	with to add
choose the type of device you	Hist to dou.
Serial Port	Information
Parallel Port	This device can be added to this Virtual Machine.
Floppy Drive	
CD/DVD Drive	
SUSB Controller	
USB Device	
PCI Device (unavailable)	
Ethernet Adapter	
Hard Dick	
	you wish to add to your virtual machin Choose the type of device you v Serial Port Parallel Port Parallel Port Propy Drive CUSB Controller USB Device USB Device Chorvaliable) Ctheret Adapter Ethernet Adapter

The **Select USB device** dialog appears.

c Select ASIX AX88179.

Select USB device Which USB device do	you want to use?	
Device Type USB Device Ready to Complete	VMotion Support Support vMotion while device is connected Select the host USB device below:	
	Description	Connection
	ASIX AX88179	Available
	ASIX AX88179 Available	
	Future Devices FT230X Basic UART	Available

d Click Next. The Ready to Complete screen appears.

🕢 Add Hardware			X
Ready to Complete Review the selected opt	ions and click Finish to add the hardware.		
Device Type USB Device	Options:		
Ready to Complete	Hardware type: USB device: Support vMotion while device is connected:	USB Device ASIX AX88179 No	

e Review the settings and click **Finish**. The **Virtual Machine Properties** dialog appears, with the new USB device added.

🕜 VX-5000 - Virtual Machine Proper	ties)
Hardware Options Resources		Virtual Machine Version: vmx-09	
□ Show All Devices □ Show All Devices □ Ardware ■ Memory □ CPUs □ VMCI device ⊙ SCSI controller 0	Add Remove	ASIX AV88179 US8 Unique ID: (host: localhost path:2/0/6/0 version:2 Device Status: Disconnected Cannot migrate using vMotion while device is connected.	—— This localhost path, 2/0/6/0, specifies the first USB ID.
Hard disk 1 Hard disk 2 New VSB Controller (addi	Virtual Disk Virtual Disk VM Network Present Host Device - ASIX		
Help		OK Cancel	

- 4 Add a second USB device
 - a In the **Virtual Machine Properties** dialog, click **Add**. The Device Type dialog appears.
 - b Select **USB Device** and click **Next**. The **Select USB device** dialog appears.
 - c Select the available **ASIX AX88179**.

Add Hardware		×
Which USB device do yo	u want to use?	
Device Type USB Device	vMotion Support	nected
Ready to Complete	Select the host USB device below:	
	Description	Connection
	ASIX AX88179	VX-5000
	ASIX AX88179	Available
	Future Devices FT230XBasic UART	Available
Help		< Back Next > Cancel

d Click Next. The Ready to Complete screen appears.

e Review the settings and click **Finish**. The **Virtual Machine Properties** dialog appears, now with the second USB device added.

🛿 VX-5000 - Virtual Machine Proper	ties		
Hardware Options Resources		Virtual Machine Version: vmx-09	
Hardware Options Resources	Add Summary 4095 MB 4 Video card Restricted Paravirtual Virtual Disk Virtual Disk Virtual Disk VM Network Present Host Device - ASIX	Virtual Machine Version: vmx-09 ASIX AX88179 USB Linicue ID: Inost: localhost path:2/0/6/1 version:2 Device Status: Disconnected Cannot migrate using vMotion while device is connected.	—— This localhost path, 2/0/6/1, specifies the second USB ID.
Help		OKCancel	

- 5 Add a third USB device. This will support the bypass feature.
 - a In the **Virtual Machine Properties** dialog, click **Add**. The Device Type dialog appears.
 - b Select **USB Device** and click **Next**. The **Select USB device** dialog appears.
 - c Select the available Future Devices FT230XBasicUART.

Select USB device Which USB device do y	ou want to use?	
Device Type USB Device Ready to Complete	VMotion Support	nected
	Select the host USB device below:	
	Description	Connection
	ASIX AX88179	VX-5000
	ASIX AX88179	VX-5000
	Future Devices FT230X Basic UART	Available
Help		< Back Next > Cancel

d Click Next. The Ready to Complete screen appears.

e Review the settings and click **Finish**. The **Virtual Machine Properties** dialog appears, now with the third USB device added.

🔗 VX-5000 - Virtual Machine Properties		1
Hardware Options Resources	Virtual Machine Version: vmx-09	
Show All Devices Add Remove Hardware CPUs CPUS 4 CPUS	Future Devices FT230X Basic UART USS Linicue ID: host: localhost path:2/0/6/2 version:2 Device Status: Disconnected Cannot migrate using vMotion while device is connected.	This localhost path, 2/0/6/ 2 , specifies the third USB ID.
Help	OK Cancel	

f Click **OK**. The dialog closes, and you are returned to the tabbed vSphere client page. Click **Power On**.

💋 172.23.43.87 - vSphere Client	
File Edit View Inventory Administration Plug-ins Help	
💽 💽 🏠 Home 🕨 🚮 Inventory 👂 🎁 Inventory	
Image: Source of the second	Resources Consumed Host CPU: Consumed Host Memory: Active Guest Memory: Refresh Storage Usage Provisioned Storage: 100.00 GB Storage Drive Type Capacity datastore1 SSD Network Type YM Network
Recent Tasks	Name, Target or Status contains: - Clear ×
Name Target Status Details Initiated by Requ	ested Start Time Completed Time
v Reconfigure virtual ma… m vx-suu	2014 2:15:01 PM 11/7/2014 2:15:01 PM 11/7/2014 2:15:01 PM 2014 2:05:26 PM 11/7/2014 2:05:26 PM 11/7/2014 2:05:26 PM
Tasks	root

g Click the **Console** tab. The Silver Peak Console User Interface appears.



h To finish applying the bypass feature, press function key, **FI**, and enter the following command sequence:

[vx-appliance] > enable	[ENTER]
[vx-appliance] > config -t	[ENTER]
[vx-appliance] # interface mgmt0 mac address < Press Tab two Record the address that does not begin with 00:E0:ED.>	ice, and three MAC addresses appear [ENTER]
[vx-appliance] # system bypass type bpusb mac address addresses appear. Record the lowest one that begins with 00:E0:ED .>	<pre><press [enter]<="" and="" mac="" pre="" tab="" three="" twice,=""></press></pre>

[vx-appliance] # write memory	[ENTER]
[vx-appliance] # reboot	[ENTER]

i To verify connectivity, press function key, **FI**, and enter the following command sequence:

[vx-appliance] > enable	[ENTER]
vx-appliance] # show ip default-gateway	[ENTER]
vx-appliance] # ping <default-gateway></default-gateway>	[ENTER]

To stop the pinging, enter **CTRL-C**.

- j The next task is to determine the virtual appliance's IP address:
 - If you're using DHCP, the virtual appliance IP address displays in Silver Peak's Console User Interface.



• If you're <u>not</u> using DHCP, then you must configure the static IP address and default gateway.



In the virtual appliance console, press function key, **F4**, and complete the remaining steps. When prompted to choose the type of management interface, select **Static** (as opposed to **DHCP**). After selecting **Apply**, you can review the settings by selecting function key, **F2**.

You are now ready to complete the Silver Peak virtual appliance initial configuration wizard.

6 Run the Appliance Manager initial configuration wizard

a In a browser, enter the IP address that you just discovered or configured. The Silver Peak Appliance Management Console login page appears.

🔺 silver	peak-240435	×							
€ ⇒	C 172.23.4	3.89/webui/php/user	_login.php						☆ =
Apps	🔺 DM-GXV - Login	🔺 dmerwin-vx1000a	🕥 dmerwin-vx1000b	🔦 Tallinn - Login	🕥 laine-gxv - Login	🕥 laine-vxa - Login	🕥 laine-vxb - Login	🔦 HA-1700-Branch-A	39
人	silver peak~						22	Silver Peak Appliance Man	agement Console
si	lverpeak-240	435							
Us Pa	er Name	Login							
	gin Message			<i>l</i> i					

- b For both the User Name and Password, enter admin. The initial configuration wizard appears.
- c Complete the remaining wizard screens.
 - When you reach the screen which calls for assigning MAC addresses, you'll need to select the MAC addresses from the drop-down lists.
 - If you've selected router (out-of-path) mode, you'll only select the MAC address for **wan0**. If you've selected bridge (in-path) mode, you'll also select the MAC address for **lan0**.

• For **wan0**, select the numerically smaller MAC address.

Configuration Wizard				
1 Management Settings	2 5	letwork settings	3 Summary	
Confi	ure Annlian	a Interface Acc	ianment	
Conng			ignment	
	MAC Address Assig	Inment		
	mant0	00:00:29:43:87:34		
	wan0	00:E0:ED:2A:92:A2 V		
	lan0	Unassigned		
	Show All	00:E0:ED:2A:92:A2		
Quick Start Guide		<back next=""></back>		Skip Wizard
User Manual				

• For lan0, select the numerically greater MAC address.

Configuration Wizard 1 Management Settings	2 \$	letwork ettings	3 Summary	
Config	ure Applianc	e Interface Ass	ignment	
	MAC Address Assig	nment		
	Interface Name	Assign to MAC Address		
	mgmt0	00:0C:29:43:87:34. V		
	wan0	00:E0:ED:2A:92:A2 V		
	lan0	00:E0:ED:2A:92:A3 V		
	Show All			
<u>Quick Start Guide</u> <u>User Manual</u>		Back Next>		Skip Wizard

d On the last wizard screen, click **Apply**. When the virtual appliance asks permission to reboot, allow it. The Appliance Manager takes a few minutes to reboot and return to the login page.

7 Verify that the bypass feature is enabled

- a Log into the vSphere client
- b Select the Silver Peak virtual appliance, and click **Power On**.



c Click the Console tab. The Silver Peak Console User Interface appears.



d To verify that the bypass feature is enabled, press function key, **FI**, and enter the following command sequence:

[vx-appliance] > enable	[ENTER]
[vx-appliance] > config -t	[ENTER]
[vx-appliance] # show system	[ENTER]

When the results display, verify the values highlighted here in red:

```
[vx-appliance] # show system
Appliance System Settings:
    Running mode: * BYPASS *
    System Name: [vx-appliance]
    System Contact:
    System Location:
    Manual Bypass: Enabled
    .
    .
    .
```

e To specifically validate the **wan0** interface, enter the command sequence:

[vx-appliance] # show interfaces wan0 [ENTER]

When the results display, verify the values highlighted here in red:

```
[vx-appliance] # show interfaces wan0
Interface wan0 state
Admin up: yes
Link up: yes
IP address:
Netmask:
Speed: 1000Mb/s (auto)
```

```
Duplex: full (auto)
Interface type: ethernet
MTU: 1500
```

f To specifically validate the lan0 interface, enter the command sequence:

```
[vx-appliance] # show interfaces lan0
```

[ENTER]

When the results display, verify the values highlighted here in red:

[vx-appliance] # show interfaces lan0 Interface wan0 state Admin up: yes Link up: yes IP address: Netmask: 1000Mb/s (auto) Speed: Duplex: full (auto) Interface type: ethernet MTU: 1500 . . .

8 If your results in **Steps 7d**, **7e**, or **7f** disagree, contact Silver Peak Support for assistance. Otherwise, you are now ready to start using the appliance.