Silver Peak Virtual Appliances

Frequently Asked Questions (FAQ)

VX Installation

This section addresses questions or problems you may encounter during Silver Peak VX installation.

1. **I need to increase the disk allocated to the Silver Peak virtual appliance from its default. How should I do it?**

   There are two virtual hard disks in Silver Peak Virtual Appliances:

   - The first virtual hard disk is 30GB of system storage and cannot be increased.

   - The second virtual hard disk is for Network Memory (NM). Its size varies by VX model.

   - The VX Virtual Appliance Host System Requirements document specifies the recommended combined storage of the system disk and NM disk.

   Silver Peak virtual appliances do not utilize NM storage when the network memory is set to **ram** (see the figure below). Therefore, set Network Memory to **ram and disk** before increasing the NM disk size.
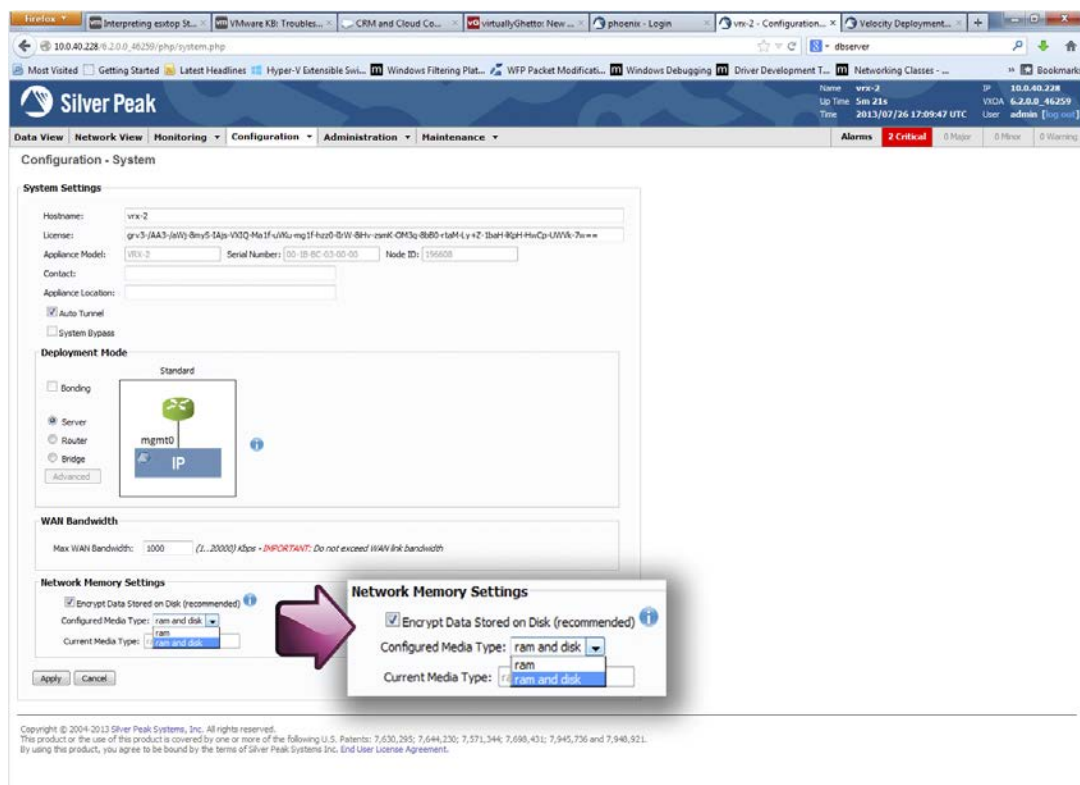
The following screenshot shows where to modify the size of **Hard disk 2** (the NM disk) in vSphere.
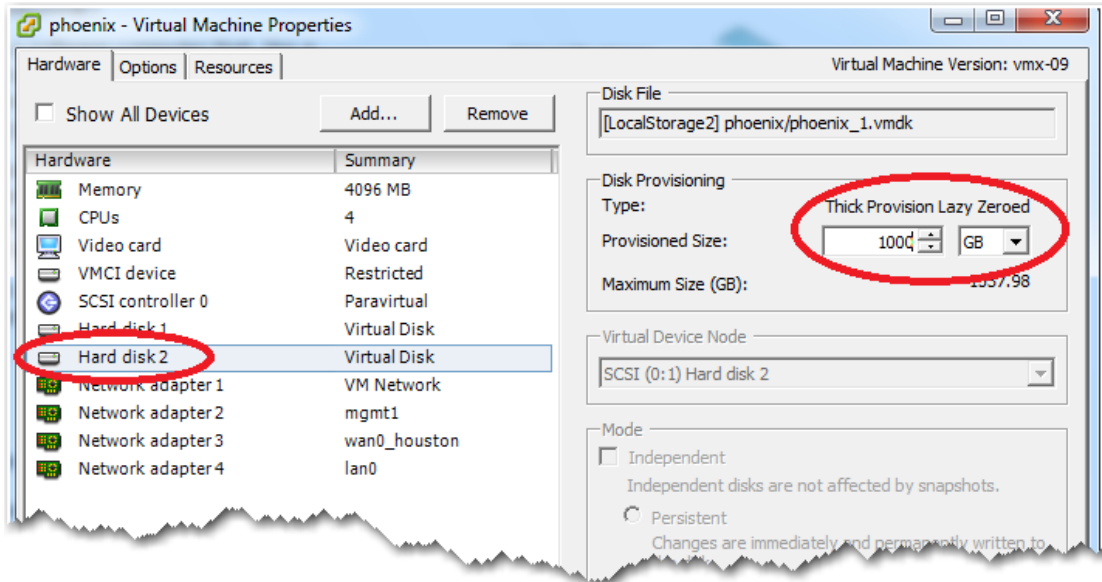
2. **After installation, how do I know if my hard disks meet Silver Peak VX host requirements?**

To check if your storage supports the IOPS required by installed Silver Peak VX, you can use the console command, **selftest start disk**.

This command has the following consequences:

* **selftest start disk** puts the system in bypass mode and performs read/write operations on the disks.
* **The system will not process any network traffic for the duration of the test**.
* After the tests are complete, you will be prompted to enter **show selftest disk** to see the results.
* If you attempt to run other commands while the test is running, you will receive errors.
* After viewing the results, you will be prompted to reboot the system.

WARNING: If you are remote and management connectivity goes through the data path, you will lose connectivity to your virtual appliance. In this case, you can only reboot the virtual appliance via remote access to the host.

Following is sample output for the command, **selftest start disk**:

```
houston (config) # selftest start disk
```

```
This is an intrusive self test. This test will put the system in
bypass mode and perform read/write operations on the disks. The
system will not process any network traffic for the duration of
the test. At the end of the test, you need to reboot the system
using 'reboot clean'. While the test is running, if you attempt
to run other commands, you will receive errors.

Do you want to proceed? (y/n) y
Disk self test started. Use 'show selftest disk' to see the
results of the test.
houston (config) # show selftest disk

Disk self test results:
Disk read results:
      Duration: 26 seconds
      I/O operations per second (IOPS): 577
      Rate (MBytes/second): 144
      Latency (ms): average: 27 max: 190

Disk write results:
      Duration: 60 seconds
      I/O operations per second (IOPS): 250
      Rate (MBytes/second): 62
      Latency (ms): average: 62 max: 590

Supported maximum WAN bandwidth:
4     Mbps          : Yes
10    Mbps          : Yes
20    Mbps          : Yes
50    Mbps          : Yes
100   Mbps          : No
200   Mbps          : No
622   Mbps          : No
1000  Mbps          : No

A reboot is required after disk selftest. Do you want to restart
the appliance? (y/n)
```
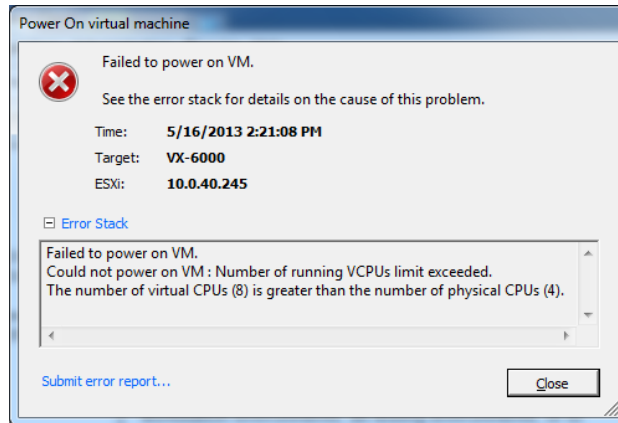
3. **I couldn't power on my Silver Peak virtual appliance, and I received an error message about resources. What should I do?**

Here are two possible error messages that you could receive from the vSphere client when powering on the Silver Peak virtual appliance:

- The host doesn't have a sufficient number of physical CPUs to support your VX model.

- The host doesn't have sufficient CPU or RAM resources to meet the required reservation for your VX model.
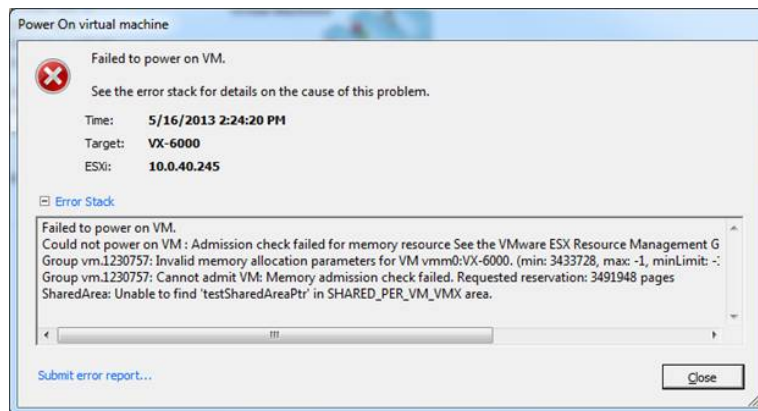
For more information about the resources requirements for your VX model, check the VX Virtual Appliance Host System Requirements document.

4. **I received this error message in vSphere when setting up the Silver Peak Virtual Appliance: "Insufficient resources to satisfy configured failover level for vSphere HA". What should I do?**
   This is associated with VMware's admission control, which ensures that sufficient resources are reserved for virtual machine recovery in the event of host failure. These policies can be expressed by either an absolute number or a percentage.

   The document, see VMware vSphere High Availability 5.0 Deployment Best Practices, addresses the issue with the following statement:

   "Select the Percentage of Cluster Resources Reserved policy for admission control. This policy offers the most flexibility in terms of host and virtual machine sizing and is sufficient for most situations.

When configuring this policy, the user should choose a percentage for CPU and memory that reflects the number of host failures they wish to support."

So, switching to the percentage of cluster resources reserved should resolve this error.
Refer to VMware's document for further details.

5. **Should I enable NIC teaming on my ESXi host? What's the benefit?**

It depends on load balancing scheme:

- With **Port-based load balancing**, all traffic going through the virtual appliance is sent to the same physical adapter. This method of load balancing achieves link redundancy when NIC teaming is used, but does not increase the Silver Peak Virtual Appliance's throughput.

- **IP-based load balancing** uses the hash value of the packet's source and destination IP addresses to determine the physical adapter. Therefore:

    o Silver Peak tunnel traffic (optimized traffic) is sent to the same physical adapter.

    o Un-optimized traffic is load balanced based on its IP address, across multiple physical interfaces.

This approach achieves both link redundancy and bandwidth aggregation.

6. **Which hypervisor doesn't support Bridge (in-line) mode?**

The Silver Peak virtual appliance cannot be deployed in Bridge (in-line) mode with Microsoft Hyper-V.

VX Configuration and Operation

This section addresses problems and questions you may encounter after a Silver Peak VX instance is installed and running.

1. **My VX is installed on vSphere in Bridge mode, but there's no traffic going through the VX. What should I do?**

   - If you have a vSphere standard switch, set **Promiscuous Mode** to **Accept**.

   - If you have a vSphere distributed switch, set **Promiscuous Mode** to **Accept** and set **Forged Transmit** to **Accept**.

   The screen below shows an example how to set both **Promiscuous Mode** and **Forged Transmit** to **Accept** in vSphere.
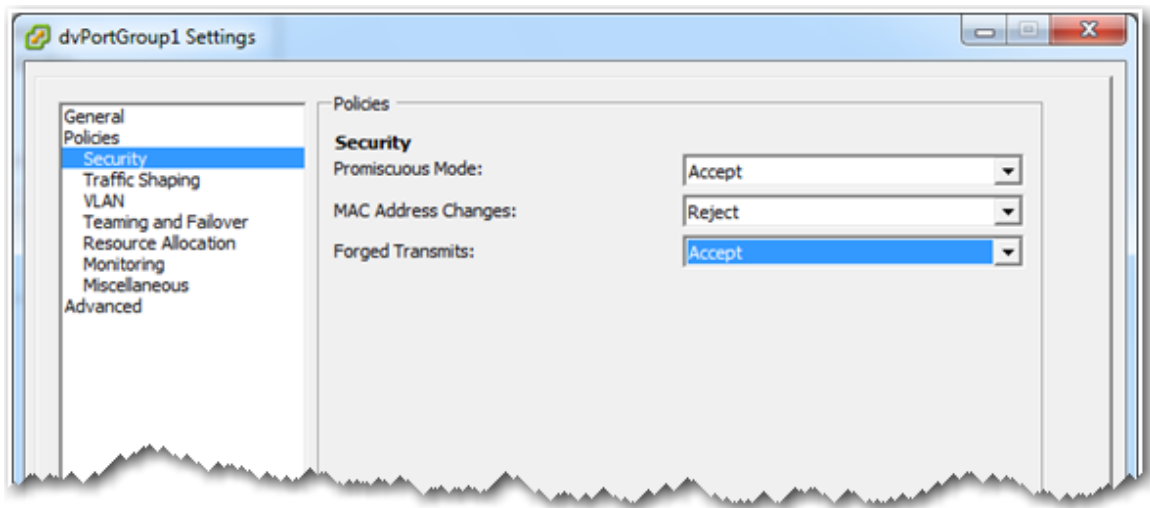
2. **I experienced significant packet loss after configuring NIC teaming on my ESXi host. What could be the problem?**
   If IP-based load balancing is selected, you must configure EtherChannel on the neighboring switch. You can find a sample of EtherChannel configuration in the VMware Knowledge Base:
   http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1004048

3. **How do I upgrade one Silver Peak model to another (e.g., upgrade from a VX-1000 to VX-6000)?**

VXOA 5.2 and later releases enable Virtual Appliance model upgrades on running systems without requiring redeployment of the virtual appliance. To upgrade to a new model, simply apply the new license in the *Configuration System* page of the Appliance Manager and reboot.

4. **I have to manually power on the Silver Peak Virtual Appliance when I power on the host. Is there a way I can enable automatic power on in VMware?**
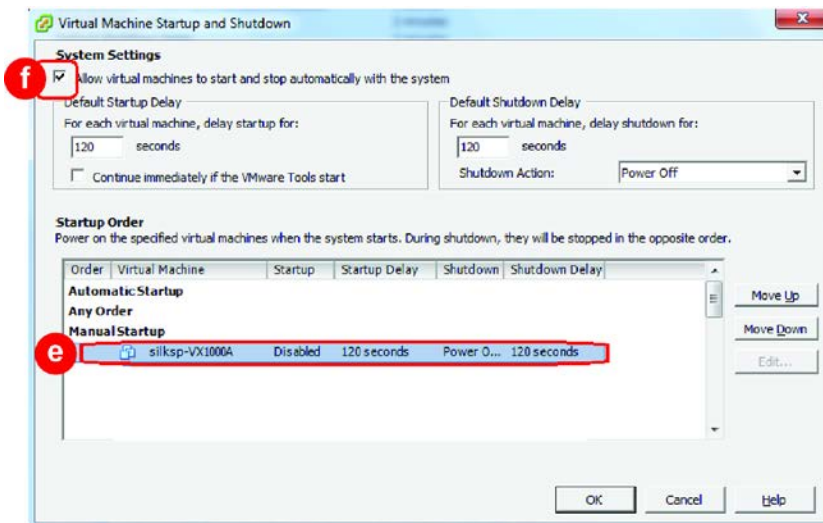
To enable automatic power on, do the following:

a) In the left navigation pane, select the host.
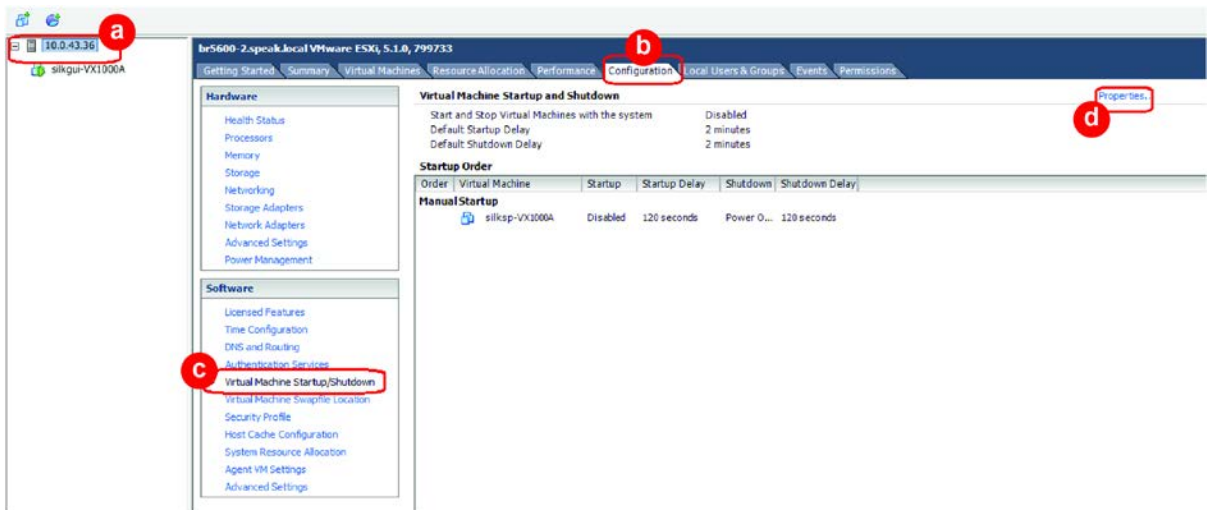
b) Select the **Configuration** tab.
c) Under **Software**, select **Virtual Machine Startup/Shutdown**.
d) In the upper right corner, click **Properties**.
   The Virtual Machine Startup and Shutdown window appears.

e) Select the Silver Peak virtual machine.

f) Select Allow **virtual machines to start and stop automatically with the system**.
   Leave all other settings in the window at their defaults.

5. **Can I roll back a Silver Peak virtual appliance using VMware's snapshot?**

   Technically, yes, but it's not recommended for the following reasons:

   - When a snapshot is taken, VMware freezes the virtual disks that belong to a VX, and all subsequent disk writes are stored on new data disks. It increases the disk usage.
   - Snapshot can cause disk I/O performance degradation.
   - When a VX is rolled back to an earlier snapshot, the restored network memory pages might be out of sync with other VX peers in the network. As a result, the connections are reset by the Silver Peak appliance.

6. **Can I upgrade the VMware VMTool in the Silver Peak Virtual Appliance?**

   No, the VMTool is integrated into the Silver Peak virtual appliance and cannot be upgraded separately. The VMTool in the Silver Peak Virtual Appliance has the latest para-virtual drivers.

7. **Can I use vMotion to migrate my Silver Peak virtual appliance from one host to another?**

   Yes, vMotion can move a live, running Silver Peak virtual appliance from one host to another. For more information about VMware vMotion, see http://www.vmware.com/files/pdf/VMware-VMotion-DS-EN.pdf

8. **Can I use VMware Fault Tolerance with a Silver Peak virtual appliance?**

   Up to and including ESXi 5.1, VMware Fault Tolerance can't work with virtual machines that have more than 1 vCPU. Therefore, it cannot support the Silver Peak virtual appliance.

VX Performance Issues

The Silver Peak Virtual Appliance's performance can be affected by the Hypervisor setting, the host setting, or the VX settings. Here are some troubleshooting guidelines:

1. **Check your Silver Peak's VX host BIOS setting.** The BIOS should be set to maximize the performance. Setting BIOS to other values could have a significant negative impact on the Silver Peak Virtual Appliance's performance. Please refer to the vendor's documentation for guidance on setting the power mode in the BIOS. Here are two examples:

   - On HP servers, find the **Power Management Options** in the BIOS. Then do the following:

     o For the HP Power Regulator, select the **HP Static High Performance Mode** option, and

     o For the HP Power Profile, select the **Maximum Performance** option.

   - On Dell servers, find the **Power Management** options in the BIOS. Set **Power Management** to **Static Max Performance**.

2. **Check your hard disk.** Use the `selftest start disk` command to check if your storage supports the IOPS required by the installed Silver Peak VX. For more details, refer to Question #2 in this document's *VX Installation* section, on page 2.

3. **Is Hyper-threading enabled?** If your servers support Hyper-threading, we recommend that you enable it for better appliance performance.

4. **Which hypervisor and version are you using?** Check out the Silver Peak VX & Hypervisor Compatibility Matrix. Silver Peak runs regular performance tests on VXOA software against major releases of vSphere, Hyper-V, XenServer, and KVM. The Compatibility Matrix summarizes the performance results, as well as the workarounds for some performance issues.

5. **Do you have other VMs on the same host where VX is installed?** The Silver Peak virtual appliance can share the physical adapter with other VMs on the same host. However, other VMs could impact Silver Peak virtual appliance's performance if they overload the physical adapter with their traffic.

6. **If you're using NIC teaming with Silver Peak VX, are the other VMs configured to share the same physical adapter?** You can use NIC teaming with the Silver Peak virtual appliance. However, if your Silver Peak virtual appliance and other VMs share the same physical adapters, the other VMs could impact the Silver Peak virtual appliance's performance when they overload the physical adapters with their traffic. This can happen even when load balancing is configured.

VX Licenses

1. **Can I extend my Evaluation License? If so, how?**

   You can extend your evaluation license as long as it's not expired. To do so, please contact your account executive. If your evaluation license is already expired, it cannot be extended and you need a new license.

2. **Can I convert my eval license to a paid license (perpetual or subscription)?**

   The eval license cannot be directly converted to a paid License. You need to purchase a new license and apply the new license to the Silver Peak VX.

3. **What happens to traffic when my license expires?**

   When the license expires, the Silver Peak virtual appliance stops traffic optimization, tears down the tunnel, and allows traffic to pass through.

4. **What happens if the WAN circuit is larger than the Silver Peak VX's WAN bandwidth capacity?**

   In this case, traffic is shaped to the WAN bandwidth setting of the Silver Peak VX.

5. **What would happen if the traffic exceeds the flow count capacity of my Silver Peak VX?**

   When the flow count capacity is reached, you can configure the excess flow traffic to be bypassed or dropped. The default behavior is to bypass the excess flow traffic.

6. **Am I required to reinstall VX and rebuild the configuration when I switch from an eval to a paid license?**

   With VXOA 5.2 and later releases, you only need to apply the new license to the Silver Peak VX and reboot the software.

7. **How do I convert between VX and VRX models?**

   You need a license for the new model. Apply the new license and reboot the virtual appliance.
   NOTE: You may need to adjust the host resources and VX configuration for the new model.

8. **How do I get back my license if I lose it?**
   You can login to the Silver Peak support portal, where you can retrieve your license.