VSE Deployment Using VSE-Passthrough

This chapter contains the following sections:

About VSE-Passthrough

Pasthrough devices provide means to use the host network resources more efficiently and improve performance in VSE.By passing through the PCI network device to VSE, the control of traffic is given from the host to VSE over that PCI device for uplink configuration of nexus 1000ve VSE switch. This helps to improve the performance of VSE in traffic handling.

Guidelines and Limitations for VSE-Passthrough

VSE-Passthrough has the following guidelines and limitations:

- The live migration option in case of suspension and subsequent migration of a VM to a new physical host is not available.

- You cannot suspend or migrate the VM with vMotion or take snapshots of the VSE.

- You must ensure that a VMNIC (other thanthe passthrough enabled VMNICs) is available for host to handle the management traffic.

Note If passthrough is activated on all the VMNICs, the host will get disconnected. When you reset the host configuration, you cannot recover the host configuration.

- Adding the ESX host to an external-DVS should be avoided if the VSE is deployed with passthrough in that host. An external DVS in the host for the Cisco Nexus 1000VE configuration is not needed in this case.

- The VSE-Passthrough feature is verified successfully only with the Intel network adapters. The Cisco, Broadcom, and Emulex adapters are not supported or recommended for using Cisco Nexus 1000VE VSE with the corresponding PCI devices.

- You can install the VSE VM manually with the VSE-Passthrough feature.

- After the VSE VM is installed, the PCI devices must be added before you power on the VM.

Enabling Passthrough Devices

You must enable the Passthrough devices in the ESX Host before using the PCI device in VSE.

Note You cannot install VSE with the PCI devices passthrough option without enabling them in ESX Host, where the VSE is installed.

Before you begin

Before you enable the Passthrough devices, you must do the following:

- Login in to ESX Host.

- Enable the PCI devices in the host.

- Ensure the link state of the VMNICs are up, for which passthrough is activated.

Procedure

Step 1	Login and navigate to **Home** on VMware vCenter Web Client.
Step 2	Click **Manage** > **Settings**.
Step 3	From the **Hardware** tab, click **PCI Devices**.
Step 4	Select the network device to be used for passthrough and click **OK**. Alternatively, click **Toggle Passthrough**.
Step 5	Click **Reboot** to reoboot the host to make the PCI network device available for use.

Installing VSE with PCI-Passthrough

Before you begin

You must do the following before you install VSE:

- Know the OVF image location and name that are required for the VSE installation.

- Ensure that VSM is already deployed as per the requirement.

Procedure

Step 1   Log into VMware Vsphere web client.

Step 2   Right click the Host to deploy the VSE OVA and select the **Deploy OVF Template** option from the pop-up menu.

Step 3   In the **Deploy OVF Template** window, complete the following steps:

   a) In the **Select Template** page, select the **Local file**option and click **Browse** to navigate to the location of the VSE OVF. Select the applicable VSE OVF file and click **OK**. Click **Next** to continue.

   b) In the **Select name and location** page, enter a name for VSE in the Name text field and click the **Browse** tab to navigate, and then select the datacenter to deploy the VSE.

   c) Click **Next**.

   d) In the **Select a resource** page, click the **Browse** tab, and then select the ESXi host to deploy the VSE. Click **Next** to continue.

   e) In the **Review details** page, verify the OVA details, and then click **Next** to continue.

   f) In the **Select storage** page, select the storage to be used, and then click **Next** to continue.

   g) In the **Select networks** page, select the networks to use for Management destination Networks.

   h) Select **VM Network** for Outside Networks, and click **Next** to continue.

   i) In the **Customize template** page, do the following:

   1.   In the **Enter the Domain Id** text field, enter Domain ID for the VSM.

   Note   The Cisco Nexus 1000VE domain ID should be the same as the domain iD of the Cisco Nexus 1000V VSM.

   2.   In the **L3 Control IP Address** text field, enter the VSM IP.

   3.   In the **IP Setting(static/dhcp)** text field, enter static.

   4.   In the **ESX host IP address** text field, enter the HOST IP address.

   5.   In the **Network 1 IP Address** text field, assign proper IP for VSE.

   6.   In the **Network 1 Netmask** text field, enter network mask.

   7.   In the **Default Gateway** text field, enter gateway IP address.

   8.   In the **DNS**, **DNS Domain**, and the **Uplink Port-profile** fields, retain the default strings.

   9.   In the **Admin password** text field, enter the password for VSE.

   10.   In the **Outside Trunk Mode(passthrough/uplink**) text field, enter the mode as passthrough.

   11.   In the **Number of Passthrough nics configured** text field, enter the number of Passthrough enabled NICs that are going to be used for this VSE.

   12.   In the **Passthrough dev-prof map 1** field, enter a uplink trunk-profile name, which is used to forward traffic to outside network using Passthrough. In similar way, fill the fields Passthrough dev-prof map x, with same or different uplink trunk-profiles upto the count given in the Step 11 or all the Passthrough enabled VMNICs(maximum 5).

   13.   Click **Next**.

   14.   In the **Ready to complete** page, verify all the details, and then click **Finish** to start VSE deployment.

Note	VSE must not be powered on at this stage before completing the VSE VM deployment.

Configuring VSM

Configure all the Ethernet Port-groups/profiles in VSM with the same name as given in the Passthrough dev-prof map-1 to 8 fields while deploying VSE. These Profiles are called as Passthrough Profiles.

Ensure that the physical uplinks are trunk ports that should carry all the VLANs that are configured in the Passthrough Profiles.

Use the **port-profile type ethernet** command to create Ethernet port groups. For example:

```
N1KV-NG(config)# port-profile type ethernet < Passthrough dev-prof >
N1KV-NG(config-port-prof)# switchport mode trunk
N1KV-NG(config-port-prof)# switchport trunk vlan 300
N1KV-NG(config-port-prof)# no shut
N1KV-NG(config-port-prof)# state enabled
N1KV-NG(config-port-prof)# vmware port-group
N1KV-NG(config-port-prof)# end
N1KV-NG#
Save the configuration by running copy r s
N1KV-NG# copy r s
[#####################################] 100%
Copy complete, now saving to disk (please wait)...
N1KV-NG#
```

Note	The veth port-profiles created on the VSM are available on the N1KVE-VDS. These can be assigned to workload VMs.

Attaching PCI Passthrough Devices in VSE

Procedure

Step 1	Login and navigate to **Home** on VMware vCenter Web Client.
Step 2	From the Inventory panel, select the VSE.
Step 3	Right click the VSE and select **Edit Settings**.
Step 4	On the Virtual Hardware tab, in the the New Device field, select **PCI Device**.
Step 5	Click **Add**.
Step 6	From the **New PCI Device** drop-down, select the appropriate passthrough device to use.
Step 7	Select **Reserve all memory**.
Step 8	Power on the VSE.