



## Appendix

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### Creating VLANs for HX Servers

- Step 1** Open a web browser and enter the IP address for Cisco UCS Manager. Enter the login credentials.
- Step 2** Navigate to **LAN tab > LAN > LAN Cloud > VLANs**.
- Step 3** Right-click and select Create VLANs as shown in the table below:

VLAN Name	Description	Multicast Policy Name	VLAN ID (by default)
<b>hx-inband-mgmt</b>	Used for: <ul style="list-style-type: none"><li>• ESX management</li><li>• SSH to storage controller VM</li><li>• HX Cluster management IP - using multicast traffic.</li><li>• vCenter connectivity to the HyperFlex VM for the HX Data Platform plug-in</li></ul>	HyperFlex	3091
<b>hx-storage-data</b>	Used for: <ul style="list-style-type: none"><li>• ESX NFS client(IOvisor)</li><li>• HyperFlex replication/cluster</li><li>• Cluster data VIP</li></ul>	HyperFlex	3092

VLAN Name	Description	Multicast Policy Name	VLAN ID (by default)
hx-vmotion	Used for: <ul style="list-style-type: none"> <li>VM and storage vmotion, FT, iSCSI</li> </ul>	HyperFlex	3093
insert existing vlan name	Used for: <ul style="list-style-type: none"> <li>VM data traffic</li> </ul>	HyperFlex	Any*

Note:

- Configuration option is Common/Global. It applies to both fabrics and uses the same configuration parameters in both cases.
- \*There is no specific recommendation for VM data VLANs. You can create your own VLANs for the VM data traffic. By default, the HXDP installer will not create VLANs for the VM data traffic.
- Installer sets the VLANs as non-native by default. Ensure to configure the upstream switches to accommodate the non-native VLANs.

## Creating MAC Address Pools

You can change the default MAC address blocks to avoid duplicate MAC addresses. Each block contains 100 MAC addresses by default to allow for up to 100 HX server for deployment per UCS system. We recommend that you use one MAC pool per vNIC for easier troubleshooting.



**Note** The 8th digit is set to A or B. "A" is set on vNICs pinned to Fabric Interconnect A. And "B" is set on vNICs pinned to Fabric Interconnect B.

- Step 1** Open a web browser and enter the IP address for Cisco UCS Manager. Enter the login credentials.
- Step 2** In Cisco UCS Manager, navigate to **LAN tab > Pools > root > Sub-org > hx-cluster > MAC Pools**.
- Step 3** Right-click **MAC Pools** and select **Create MAC Pool**.
- Step 4** In the **Define Name and Description** page of the **Create MAC Pool** wizard, complete the required fields as shown below:

MAC Pool Name	Description	Assignment Order	MAC Address block
hv-mgmt-a	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:01:01-64
hv-mgmt-b	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:02:01-64
storage-data-a	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:03:01-64

<b>storage-data-b</b>	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:04:01-64
<b>vm-network-a</b>	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:05:01-64
<b>vm-network-b</b>	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:06:01-64
<b>hv-vmotion-a</b>	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:07:01-64
<b>hv-vmotion-b</b>	MAC pool for HyperFlex System	Sequential	00:25:B5:XX:08:01-64

**Step 5** Click **Next**.

**Step 6** In the **Add MAC Addresses** page of the **Create MAC Pool** wizard, click **Add**.

**Step 7** In the **Create a Block of MAC Addresses** dialog box, complete the following fields:

<b>Name</b>	<b>Description</b>
<b>First MAC Address</b> field	The first MAC address in the block.
<b>Size</b> field	The number of MAC addresses in the block.

**Step 8** Click **OK**.

**Step 9** Click **Finish**.

After the MAC address change, ESXi will be reconfigured as it was configured earlier. If management IP was DHCP assigned, then the IP will change.

#### **Impact of Manufacturing process on MAC address change**

- The MAC address will change between the manufacturing process and the customer site, especially if the customer orders HyperFlex servers without UCS Fabric Interconnects.
- A MAC address is configured during Service Profile association. It is un-configured during Service Profile disassociation.
- At the end of manufacturing process, the service profiles are disassociated, hence the MAC addresses are un-configured.
- When a HyperFlex server is deployed, configure the MAC address pools as described above.
- VMWare supports Consistent Device Naming, but issues have been reported since 5.5.SR has been opened.

## **Configure the vSwitches**

In both VMware ESX and ESXi host, you can configure vSwitches from either the GUI or the command line.

The CLI configurations are very helpful when you are installing multiple ESX servers and planning to script the vSwitch configuration.

After the ESX installation, configure your vSwitches on the ESX host with the following steps:

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**Step 1** Log in to the command line of each ESX Server.

**Step 2** Create three vSwitches on each ESX server using the listed names.

- **vswitch-hx-storage-data**

Set the MTU to 9000 on this switch.

- **vmotion**

Set the MTU to 9000 on this switch.

- **vswitch-hx-vm-network**

**Step 3** Use the following CLI commands to create the three new vSwitches:

```
# esxcli network vswitch standard add -v vswitch-hx-storage-data
# esxcli network vswitch standard set -v vswitch-hx-storage-data -mtu= 9000
# esxcli network vswitch standard add -v vswitch-vmotion
# esxcli network vswitch standard set -v vswitch-vmotion -mtu=9000
# esxcli network vswitch standard add -v vswitch-hx-vm-network
```

**Step 4** The default vSwitch **vSwitch0** created during installation of ESXi needs to be renamed to **vswitch-hx-inband-mgmt** for the Hx Data Platform node set up scripts to work properly. Use the following command to rename the switch and then reboot the host so that the vmkernel re-reads its configuration file to use the new name.

```
# sed -i 's/vSwitch0/vswitch-hx-inband-mgmt/g' /etc/vmware/esx.conf
# reboot
```

**Step 5** You can verify the creation and renaming of the vSwitches after a host reboot with the following command:

```
# esxcli network vswitch standard list
```

Confirm that you see the four previously listed vSwitches in the command output. Only the switch-hx-inband-mgmt vSwitch will have Uplinks and Port groups listed. The HX Data Platform installer scripts perform the rest of the network configuration.

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# Migrating vMotion Networks to Virtual Distributed Switches (VDS) or Cisco Nexus 1000v (N1Kv)

**Note**

- The HX Data Platform can be configured with VMware DVS or Cisco Nexus 1000v for specific non-HX dependent networks:  
vMotion networks  
and virtual machine networks
- For further details, see [Cisco Nexus 1000v documentation](#).

To migrate non-HX dependent vSwitches and associated port groups to DVS or N1Kv networks, follow the listed steps:

**Step 1**

From vCenter, create DVS Switch and port groups.

- a) Select **vCenter Inventory Lists > Datacenters > datacenter > Related Objects > Distributed Switches**. Click **Add Distributed Switch** icon.
- b) Complete the New Distributed Switch wizard. Create each DVS switch with two uplinks.

For example: VM network and vmotion pg

- DVSwitch-VMNetwork: DVPortGroup-VMNetwork
- DVSwitch-Vmotion: DVPortGroup-Vmotion

**Step 2**

Migrate the vSwitch, VMNetwork. Perform the following steps to migrate VMNetwork from legacy vSwitch to DVS.

- a) Select **vCenter Inventory Lists > Datacenters > datacenter > Related Objects > Distributed Switches**.
- b) Select the **DVSwitch-VMNetwork** vSwitch. Click the **Add and Manage Hosts** icon. This starts the **Add and Manage Hosts** wizard.
- c) On the Select task page, select **Add Hosts**. Click **Next**.
- d) On the Select hosts page, click **Add New Hosts**. Select all hosts in the cluster. Click **Next**.
- e) On the Select network adapter tasks page, select **Manage physical adapters** and **Migrate virtual machine** networking. Click **Next**.
- f) On the Manage physical network adapters page, the physical adapters part of vswitch-hx-vm-network:VM Network are assigned to the DVSwitch-VMNetwork.
- g) Under the **On other switches/unclaimed list**, select the vmnic corresponding to the **In Use by Switch**, vswitch-hx-vm-network.
- h) Click **Assign** uplink.
- i) Select Auto-assign.
- j) Click **OK**. The page refreshes with the newly assigned vmnic listed under **On this switch**.
- k) The **Analyze impact** page shows the impact of this migration. Verify the impact is all green. Click **Next**.
- l) On the Migrate VM networking page, select the VMs to migrate to the new network, DVPortGroup-VMNetwork.  
Next

Select all the VMs, except the controller VMs, stCtlVM, from all the hosts. Select the DVPortGroup-VMNetwork. Click **Next**.

**Note** The list of VMs for each host includes all the VMs, including the controller VMs. DO NOT select any controller VMs. Migrating the controller VMs will break your storage cluster.

m) On the Ready to complete page, confirm the summary of the migration. Click Finish.

**Note** Post migration system generates several network related alarms. Verify and clear the alarms.

**Step 3** Migrate the vSwitch to vmotion pg. Perform the following steps to migrate vmotion pg from legacy vSwitch to DVS.

- a) Select **vCenter Inventory Lists > Datacenters > datacenter > Related Objects > Distributed Switches**.
- b) Select the DVSwitch-Vmotion vSwitch. Click the **Add and Manage Hosts** icon. This starts the **Add and Manage Hosts** wizard.
- c) On the Select task page, select **Add Hosts**. Click **Next**.
- d) On the Select hosts page, click **Add New Hosts**. Select all hosts in the cluster. Click **Next**.
- e) On the Select network adapter tasks page, select the tasks Manage physical adapters and Manage VMkernel adapters. Click **Next**.
- f) On the **Manage physical network adapters** page, the physical adapters part of vmotion:vmotion pg are assigned to the DVSwitch-Vmotion.

Under the **On other switches/unclaimed** list, select the vmnic corresponding to the In Use by Switch, vmotion. Click **Assign uplink**, select Auto-assign, and click OK. The page refreshes with the newly assigned vmnic listed under **On this switch**. Click **Next**.

- g) On the **Manage VMkernel network adapters** page, migrate the VMkernel adapter to the port group, DVPortGroup-Vmotion.

For each host, under the **On other switches** list, select the VMKernel adapter corresponding to the **In Use by Switch**, vmotion. Click **Assign port group**. Select the destination port group, DVPortGroup-Vmotion. Click **OK**. The page refreshes with the Reassigned VMkernel network adapters, listing the Source Port Group and Destination Port Group.

- h) Select the hosts to migrate to the new network, DVPortGroup-Vmotion. Click **Next**.
- i) On the Ready to complete page, confirm the summary of the migration, click **Finish**.

**Step 4** Post migration step. Verify there is no impact on the VMs with respect to IO, Network connectivity and VM Migration.

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