# vNICs



# Default vNIC Behavior Policy

Default vNIC behavior policy allows you to configure how vNICs are created for a service profile. You can choose to create vNICS manually, or you can create them automatically.

You can configure the default vNIC behavior policy to define how vNICs are created. This can be one of the following:

- **None**— does not create default vNICs for a service profile. All vNICs must be explicitly created.
- **HW Inherit**—If a service profile requires vNICs and none have been explicitly defined, creates the required vNICs based on the adapter installed in the server associated with the service profile.

**Note** If you do not specify a default behavior policy for vNICs, **HW Inherit** is used by default.

## Configuring a Default vNIC Behavior Policy

### Procedure

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | UCSC# **connect policy-mgr** | Enters policy manager mode. |
| **Step 2** | UCSC(policy-mgr)# **scope org /** | Enters the root organization mode. |
| **Step 3** | UCSC(policy-mgr)/org # **scope vnic-beh-policy** | Enters default vNIC behavior policy mode. |
| **Step 4** | UCSC(policy-mgr)/org/vnic-beh-policy # **set action** {**hw-inherit** [**template_name** *name*] \| **none**} | Specifies the default vNIC behavior policy. This can be one of the following: |

| | Command or Action | Purpose |
|---|---|---|
| | | • **hw-inherit**—If a service profile requires vNICs and none have been explicitly defined, Cisco UCS Central creates the required vNICs based on the adapter installed in the server associated with the service profile.<br>If you specify **hw-inherit**, you can also specify a vNIC template to create the vNICs.<br>• **none**—Cisco UCS Central does not create default vNICs for a service profile. All vNICs must be explicitly created. |
| **Step 5** | UCSC(policy-mgr)/org/vnic-beh-policy # **commit-buffer** | Commits the transaction to the system configuration. |

### Example

This example shows how to set the default vNIC behavior policy to **hw-inherit**:

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope org /
UCSC(policy-mgr)/org # scope vnic-beh-policy
UCSC(policy-mgr)/org/vnic-beh-policy # set action hw-inherit
UCSC(policy-mgr)/org/vnic-beh-policy* # commit-buffer
UCSC(policy-mgr)/org/vnic-beh-policy #
```

# vNIC Template

This policy defines how a vNIC on a server connects to the LAN. This policy is also referred to as a vNIC LAN connectivity policy.

It does not automatically create a VM-FEX port profile with the correct settings when you create a vNIC template. If you want to create a VM-FEX port profile, you must configure the target of the vNIC template as a VM.

You need to include this policy in a service profile for it to take effect.

**Note** If your server has two Emulex or QLogic NICs (Cisco UCS CNA M71KR-E or Cisco UCS CNA M71KR-Q), you must configure vNIC policies for both adapters in your service profile to get a user-defined MAC address for both NICs. If you do not configure policies for both NICs, Windows still detects both of them in the PCI bus. Then because the second eth is not part of your service profile, Windows assigns it a hardware MAC address. If you then move the service profile to a different server, Windows sees additional NICs because one NIC did not have a user-defined MAC address.

When modifying the Native VLAN settings, a warning message will inform you about the required port flap and its brief connectivity impact (20-40 seconds). You can choose to proceed with the changes by selecting Yes, No, or Cancel.

# Configuring a vNIC Template

### Procedure

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | UCSC# **connect policy-mgr** | Enters policy manager mode. |
| **Step 2** | UCSC(policy-mgr) # **scope org** *org-name* | Enters organization mode for the specified organization. To enter the root organization mode, enter **/** as the *org-name*. |
| **Step 3** | UCSC(policy-mgr) /org # **create vnic-templ** *vnic-templ-name* [**eth-if** *vlan-name*] [**fabric** {**a** \| **b**}] [**target** [**adapter** \| **vm**]] | Creates a vNIC template and enters organization vNIC template mode.<br>The target you choose determines whether or not Cisco UCS Central automatically creates a VM-FEX port profile with the appropriate settings for the vNIC template. This can be one of the following:<br>• **Adapter** —The vNICs apply to all adapters. No VM-FEX port profiles is created if you choose if you this option.<br>• **VM** —The vNICs apply to all virtual machines. A VM-FEX port profiles is created if you choose this option. |
| **Step 4** | UCSC(policy-mgr) /org/vnic-templ # **set cdn-source** {**user-defined** \| **vnic-name**} | Specifies the source for the consistent device naming. |
| **Step 5** | UCSC(policy-mgr) /org/vnic-templ # **set cdn-name** *cnd_name* | If you selected user-defined CDN name, enter the CDN name that you want to use. |
| **Step 6** | (Optional) UCSC(policy-mgr) /org/vnic-templ # **set descr** *description* | Provides a description for the vNIC template. |

| | Command or Action | Purpose |
|---|---|---|
| **Step 7** | (Optional) UCSC(policy-mgr) /org/vnic-templ # **set fabric** {**a** \| **a-b** \| **b** \| **b-a**} | Specifies the fabric to use for the vNIC. If you did not specify the fabric when creating the vNIC template in Step 2, you have the option to specify it with this command.<br>If you want this vNIC to be able to access the second fabric interconnect if the default one is unavailable, choose **a-b** (A is the primary) or **b-a** (B is the primary) .<br>**Note**<br>Do not enable fabric failover for the vNIC under the following circumstances:<br>• If the Cisco UCS domain is running in Ethernet Switch Mode. vNIC fabric failover is not supported in that mode. If all Ethernet uplinks on one fabric interconnect fail, the vNICs do not fail over to the other.<br>• If you plan to associate this vNIC with a server that has an adapter which does not support fabric failover, such as the Cisco UCS 82598KR-CI 10-Gigabit Ethernet Adapter. If you do so,Cisco UCS Central generates a configuration fault when you associate the service profile with the server. |
| **Step 8** | UCSC(policy-mgr) /org/vnic-templ # **set mac-pool** *mac-pool-name* | The MAC address pool that vNICs created from this vNIC template should use. |
| **Step 9** | UCSC(policy-mgr) /org/vnic-templ # **set mtu** *mtu-value* | The maximum transmission unit, or packet size, that vNICs created from this vNIC template should use.<br>Enter an integer between 1500 and 9216.<br>**Note**<br>If the vNIC template has an associated QoS policy, the MTU specified here must be equal to or less than the MTU specified in the associated QoS system class. If this MTU value exceeds the MTU value in the QoS system class, packets may be dropped during data transmission. |
| **Step 10** | UCSC(policy-mgr) /org/vnic-templ # **set nw-control-policy** *policy-name* | The network control policy that vNICs created from this vNIC template should use. |

| | Command or Action | Purpose |
|---|---|---|
| **Step 11** | UCSC(policy-mgr) /org/vnic-templ # **set pin-group** *group-name* | The LAN pin group that vNICs created from this vNIC template should use. |
| **Step 12** | UCSC(policy-mgr) /org/vnic-templ # **set qos-policy** *policy-name* | The quality of service policy that vNICs created from this vNIC template should use. |
| **Step 13** | UCSC(policy-mgr) /org/vnic-templ # **set redundancy-peer-template-name** | Creates a name for the peer template. |
| **Step 14** | UCSC(policy-mgr) /org/vnic-templ # **set redundancy-type** {*no-redundancy* \| *primary-template* \| *secondary-template* | Select a redundancy type:<br>• No-redundancy—No redundancy pair association<br>• Primary-template—Primary template drives changes in the redundancy template<br>• Secondary-template—Secondary template inherits common properties from template |
| **Step 15** | UCSC(policy-mgr) /org/vnic-templ # **set stats-policy** *policy-name* | The statistics collection policy that vNICs created from this vNIC template should use. |
| **Step 16** | UCSC(policy-mgr) /org/vnic-templ # **set type** {**initial-template** \| **updating-template**} | Specifies the vNIC template update type. If you do not want vNIC instances created from this template to be automatically updated when the template is updated, use the **initial-template** keyword; otherwise, use the **updating-template** keyword to ensure that all vNIC instances are updated when the vNIC template is updated. |
| **Step 17** | UCSC(policy-mgr) /org/vnic-templ # **commit-buffer** | Commits the transaction to the system configuration. |

### Example

The following example configures a vNIC template:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org* # create vnic-template VnicTempFoo
UCSC(policy-mgr) /org/vnic-templ* # set descr "This is a vNIC template example."
UCSC(policy-mgr) /org/vnic-templ* # set cdn-name eth0
UCSC(policy-mgr) /org/vnic-templ* # set fabric a
UCSC(policy-mgr) /org/vnic-templ* # set mac-pool pool137
UCSC(policy-mgr) /org/vnic-templ* # set mtu 8900
UCSC(policy-mgr) /org/vnic-templ* # set nw-control-policy ncp5
UCSC(policy-mgr) /org/vnic-templ* # set pin-group PinGroup54
UCSC(policy-mgr) /org/vnic-templ* # set qos-policy QosPol5
UCSC(policy-mgr) /org/vnic-templ* # set stats-policy ServStatsPolicy
UCSC(policy-mgr) /org/vnic-templ* # set type updating-template
```

```
UCSC(policy-mgr) /org/vnic-templ* # commit-buffer
UCSC(policy-mgr) /org/vnic-templ #
```

# Deleting a vNIC Template

### Procedure

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | UCSC# **connect policy-mgr** | Enters policy manager mode. |
| **Step 2** | UCSC(policy-mgr) # **scope org** *org-name* | Enters organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*. |
| **Step 3** | UCSC(policy-mgr) /org # **delete vnic-templ** *vnic-templ-name* | Deletes the specified vNIC template. |
| **Step 4** | UCSC(policy-mgr) /org* # **commit-buffer** | Commits the transaction to the system configuration. |

### Example

The following example deletes the vNIC template named VnicTemp42:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)UCS-A# scope org /
UCSC(policy-mgr) /org # delete vnic template VnicTemp42
UCSC(policy-mgr) /org* # commit-buffer
UCSC(policy-mgr) /org #
```