



# Configuring Port Profiles

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This chapter includes the following sections:

- [Port Profiles, page 1](#)
- [Port Profile Clients, page 1](#)
- [Configuring a Port Profile, page 2](#)
- [Deleting a Port Profile, page 4](#)
- [Adding a Named VLAN to a Port Profile, page 4](#)
- [Deleting a Named VLAN from a Port Profile, page 5](#)
- [Adding a Port Profile Client to a Port Profile, page 6](#)
- [Deleting a Port Profile Client from a Port Profile, page 8](#)

## Port Profiles

Port profiles contain the properties and settings used to configure virtual interfaces in Cisco UCS for VN-Link in hardware. The port profiles are created and administered in Cisco UCS Manager. There is no clear visibility into the properties of a port profile from VMware vCenter.

In VMware vCenter, a port profile is represented as a port group. Cisco UCS Manager pushes the port profile names to vCenter, which displays the names as port groups. None of the specific networking properties or settings in the port profile are visible in VMware vCenter.

After a port profile is created, assigned to, and actively used by one or more DVSEs, any changes made to the networking properties of the port profile in Cisco UCS Manager are immediately applied to those DVSEs.

You must configure at least one port profile client for a port profile, if you want Cisco UCS Manager to push the port profile to VMware vCenter.

## Port Profile Clients

The port profile client determines the DVSEs to which a port profile is applied. By default, the port profile client specifies that the associated port profile applies to all DVSEs in the vCenter. However, you can configure

the client to apply the port profile to all DVSEs in a specific datacenter or datacenter folder, or only to one DVS.

## Configuring a Port Profile

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope system</b>	Enters system mode.
<b>Step 2</b>	UCS-A /system # <b>scope vm-mgmt</b>	Enters system VM management mode.
<b>Step 3</b>	UCS-A /system/vm-mgmt # <b>scope vmware</b>	Enters system VM management VMware mode.
<b>Step 4</b>	UCS-A /system/vm-mgmt/vmware # <b>scope profile-set</b>	Enters system VM management VMware profile set mode.
<b>Step 5</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>create port-profile</b> <i>profile-name</i>	Creates the specified port profile and enters system VM management VMware profile set port profile mode.
<b>Step 6</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>set descr</b> <i>description</i>	(Optional) Provides a description for the port profile.  <b>Note</b> If your description includes spaces, special characters, or punctuation, you must begin and end your description with quotation marks. The quotation marks will not appear in the description field of any <b>show</b> command output.
<b>Step 7</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>set max-ports</b> <i>max-num</i>	Specifies the maximum number of ports the port profile can use.  The maximum number of ports that can be associated with a single distributed virtual switch (DVS) is 4096. If the DVS has only one associated port profile, that port profile can be configured with up to 4096 ports. However, if the DVS has more than one associated port profile, the total number of ports associated with all of those port profiles combined cannot exceed 4096.
<b>Step 8</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>set nw-control-policy</b> <i>policy-name</i>	Specifies the network control policy to use for the port profile.

	Command or Action	Purpose
Step 9	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>set pin-group</b> <i>group-name</i>	Specifies the LAN pin group to use for the port profile.
Step 10	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>set qos-policy</b> <i>policy-name</i>	Specifies the QoS policy to use for the port profile.
Step 11	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>create client</b> <i>client-name</i>	Creates the specified port profile client and enters system VM management VMware profile set port profile client mode.
Step 12	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set descr</b> <i>description</i>	(Optional) Provides a description for the port profile client.  <b>Note</b> If your description includes spaces, special characters, or punctuation, you must begin and end your description with quotation marks. The quotation marks will not appear in the description field of any <b>show</b> command output.
Step 13	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set data-center</b> <i>data-center-name</i>	(Optional) Specifies the datacenter to which the port profile is applied.
Step 14	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set folder</b> <i>folder-name</i>	(Optional) Specifies the datacenter folder to which the port profile is applied.
Step 15	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set dvs</b> <i>folder-name</i>	(Optional) Specifies the DVS to which the port profile is applied.
Step 16	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>commit-buffer</b>	Commits the transaction.

The following example creates a port profile client named MyClient that applies the port profile to all DVSEs in the datacenter named MyDatacenter and commits the transaction:

```
UCS-A# scope system
UCS-A /system # scope vm-mgmt
UCS-A /system/vm-mgmt # scope vmware
UCS-A /system/vm-mgmt/vmware # scope profile-set
UCS-A /system/vm-mgmt/vmware/profile-set # create port-profile MyProfile
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # set descr "This is my port profile"
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # set max-ports 24
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # set nw-control-policy ncp5
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # set pin-group PinGroup54
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # set qos-policy QosPolicy34
```

```

UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # create client MyClient
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client* # set descr "This is the
client for my port profile"
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client* # set data-center MyDatacenter
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client* # commit-buffer
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client #

```

## Deleting a Port Profile

You cannot delete a port profile if a VM is actively using that port profile.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope system</b>	Enters system mode.
<b>Step 2</b>	UCS-A /system # <b>scope vm-mgmt</b>	Enters system VM management mode.
<b>Step 3</b>	UCS-A /system/vm-mgmt # <b>scope vmware</b>	Enters system VM management VMware mode.
<b>Step 4</b>	UCS-A /system/vm-mgmt/vmware # <b>scope profile-set</b>	Enters system VM management VMware profile set mode.
<b>Step 5</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>delete port-profile profile-name</b>	Deletes the specified port profile.
<b>Step 6</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>commit-buffer</b>	Commits the transaction. Cisco UCS Manager deletes the port profile and all associated port profile clients.

The following example deletes the port profile named MyProfile and commits the transaction:

```

UCS-A# scope system
UCS-A /system # scope vm-mgmt
UCS-A /system/vm-mgmt # scope vmware
UCS-A /system/vm-mgmt/vmware # scope profile-set
UCS-A /system/vm-mgmt/vmware/profile-set # delete port-profile MyProfile
UCS-A /system/vm-mgmt/vmware/profile-set* # commit-buffer
UCS-A /system/vm-mgmt/vmware/profile-set #

```

## Adding a Named VLAN to a Port Profile

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope system</b>	Enters system mode.
<b>Step 2</b>	UCS-A /system # <b>scope vm-mgmt</b>	Enters system VM management mode.

	Command or Action	Purpose
<b>Step 3</b>	UCS-A /system/vm-mgmt # <b>scope vmware</b>	Enters system VM management VMware mode.
<b>Step 4</b>	UCS-A /system/vm-mgmt/vmware # <b>scope profile-set</b>	Enters system VM management VMware profile set mode.
<b>Step 5</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>scope port-profile profile-name</b>	Enters system VM management VMware profile set port profile mode for the specified port profile.
<b>Step 6</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>create vlan vlan-name</b>	Specifies a named VLAN to use for the port profile.
<b>Step 7</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/vlan # <b>set native no</b>	(Optional) Sets the named VLAN as a non-native VLAN.
<b>Step 8</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/vlan # <b>commit-buffer</b>	Commits the transaction.

The following example adds the VLAN named accounting to the port profile named MyProfile, sets the VLAN as non-native, and commits the transaction:

```
UCS-A# scope system
UCS-A /system # scope vm-mgmt
UCS-A /system/vm-mgmt # scope vmware
UCS-A /system/vm-mgmt/vmware# scope profile-set
UCS-A /system/vm-mgmt/vmware/profile-set # scope port-profile MyProfile
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # create vlan accounting
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/vlan* # set native no
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/vlan* # commit-buffer
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/vlan #
```

## Deleting a Named VLAN from a Port Profile

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope system</b>	Enters system mode.
<b>Step 2</b>	UCS-A /system # <b>scope vm-mgmt</b>	Enters system VM management mode.
<b>Step 3</b>	UCS-A /system/vm-mgmt # <b>scope vmware</b>	Enters system VM management VMware mode.
<b>Step 4</b>	UCS-A /system/vm-mgmt/vmware # <b>scope profile-set</b>	Enters system VM management VMware profile set mode.

	Command or Action	Purpose
<b>Step 5</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>scope port-profile</b> <i>profile-name</i>	Enters system VM management VMware profile set port profile mode for the specified port profile.
<b>Step 6</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>delete vlan</b> <i>vlan-name</i>	Deletes the specified named VLAN from the port profile.
<b>Step 7</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>commit-buffer</b>	Commits the transaction.

The following example deletes the VLAN named accounting from the port profile named MyProfile and commits the transaction:

```
UCS-A# scope system
UCS-A /system # scope vm-mgmt
UCS-A /system/vm-mgmt # scope vmware
UCS-A /system/vm-mgmt/vmware# scope profile-set
UCS-A /system/vm-mgmt/vmware/profile-set # scope port-profile MyProfile
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # delete vlan accounting
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # commit-buffer
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile #
```

## Adding a Port Profile Client to a Port Profile

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope system</b>	Enters system mode.
<b>Step 2</b>	UCS-A /system # <b>scope vm-mgmt</b>	Enters system VM management mode.
<b>Step 3</b>	UCS-A /system/vm-mgmt # <b>scope vmware</b>	Enters system VM management VMware mode.
<b>Step 4</b>	UCS-A /system/vm-mgmt/vmware # <b>scope profile-set</b>	Enters system VM management VMware profile set mode.
<b>Step 5</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>scope port-profile</b> <i>profile-name</i>	Enters system VM management VMware profile set port profile mode for the specified port profile.
<b>Step 6</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>create client</b> <i>client-name</i>	Creates the specified port profile client and enters system VM management VMware profile set port profile client mode.  The port profile client determines the DVSEs to which the port profile is applied. By default, a port profile applies to all DVSEs in the vCenter; however,

	Command or Action	Purpose
		you can use the optional <b>set data-center</b> , <b>set folder</b> , and <b>set dvs</b> commands to apply the port profile to all DVSES in a specific datacenter or datacenter folder, or to a specific DVS.
<b>Step 7</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set descr</b> <i>description</i>	(Optional) Provides a description for the port profile client.  <b>Note</b> If your description includes spaces, special characters, or punctuation, you must begin and end your description with quotation marks. The quotation marks will not appear in the description field of any <b>show</b> command output.
<b>Step 8</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set data-center</b> <i>data-center-name</i>	(Optional) Specifies the datacenter to which the port profile is applied.
<b>Step 9</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set folder</b> <i>folder-name</i>	(Optional) Specifies the datacenter folder to which the port profile is applied.
<b>Step 10</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>set dvs</b> <i>folder-name</i>	(Optional) Specifies the DVS to which the port profile is applied.
<b>Step 11</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client # <b>commit-buffer</b>	Commits the transaction.

The following example creates a port profile client named OtherClient that applies the port profile named MyProfile to all DVSES in the datacenter named OtherDatacenter and commits the transaction:

```
UCS-A# scope system
UCS-A /system # scope vm-mgmt
UCS-A /system/vm-mgmt # scope vmware
UCS-A /system/vm-mgmt/vmware # scope profile-set
UCS-A /system/vm-mgmt/vmware/profile-set # scope port-profile MyProfile
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # create client OtherClient
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client* # set descr "This is my other
client for my port profile"
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client* # set data-center
OtherDatacenter
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client* # commit-buffer
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile/client #
```

## Deleting a Port Profile Client from a Port Profile

You cannot delete a port profile client if a VM is actively using the port profile with which the client is associated.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	UCS-A# <b>scope system</b>	Enters system mode.
<b>Step 2</b>	UCS-A /system # <b>scope vm-mgmt</b>	Enters system VM management mode.
<b>Step 3</b>	UCS-A /system/vm-mgmt # <b>scope vmware</b>	Enters system VM management VMware mode.
<b>Step 4</b>	UCS-A /system/vm-mgmt/vmware # <b>scope profile-set</b>	Enters system VM management VMware profile set mode.
<b>Step 5</b>	UCS-A /system/vm-mgmt/vmware/profile-set # <b>scope port-profile <i>profile-name</i></b>	Enters system VM management VMware profile set port profile mode for the specified port profile.
<b>Step 6</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>delete client <i>client-name</i></b>	Deletes the specified port profile client.
<b>Step 7</b>	UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # <b>commit-buffer</b>	Commits the transaction.

The following example deletes the port profile client named OtherClient from the port profile named MyProfile and commits the transaction:

```
UCS-A# scope system
UCS-A /system # scope vm-mgmt
UCS-A /system/vm-mgmt # scope vmware
UCS-A /system/vm-mgmt/vmware # scope profile-set
UCS-A /system/vm-mgmt/vmware/profile-set # scope port-profile MyProfile
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile # delete client OtherClient
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile* # commit-buffer
UCS-A /system/vm-mgmt/vmware/profile-set/port-profile #
```