Storage Policies

This chapter includes the following sections:

Global VSAN

Cisco UCS Central enables you to define global VSAN in the SAN cloud, at the domain group root, or at a domain group level. The global VSANs created in Cisco UCS Central are specific to the fabric interconnect where you create them. You can assign a VSAN to either Fabric A or Fabric B, or to both Fabric A and B. Global VSANs are not common VSANs in Cisco UCS Central.

Resolution of global VSANs takes place in Cisco UCS Central prior to deployment of global service profiles that reference them to Cisco UCS Manager. If a global service profile references a global VSAN, and that VSAN does not exist, deployment of the global service profile to Cisco UCS Manager will fail due to insufficient resources. All global VSANs created in Cisco UCS Central must be resolved before deploying that global service profile.

Note Beginning with Cisco UCS Manager Release 1.3, you can push global VSANs to Cisco UCS Manager without deploying a service profile. For more information, see Enabling Global VSANs in a Cisco UCS Manager Instance, on page 5.

VSANs deployed with a global service profile are visible to Cisco UCS Manager only if a global service profile is deployed that references the VSANs. Once a VSAN deployed with a global service profile becomes available in Cisco UCS Manager, locally-defined service profiles and policies can reference it. A global VSAN is not deleted when a global service profile that references it is deleted.

Global VSANs that are referenced by a global service profile available to a Cisco UCS Manager instance remain available unless they are specifically deleted for use from the domain group. Global VSANs can be localized in Cisco UCS Manager, in which case they act as local VSANs. Unless a global VSAN is localized, it cannot be deleted from Cisco UCS Manager.

Creating VSANs

This procedure describes how to create VSANs in a domain group inCisco UCS Central.

Before You Begin

Procedure

	Command or Action	Purpose
Step 1	UCSC# **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC(resource-mgr) #**scope domain-group** *domain-group*	Enters the UCS domain group configuration mode.
Step 3	UCSC(resrouce-mgr) /domain-group #**scope fc-uplink**	Enters fabric configuration command mode.
Step 4	UCSC(resrouce-mgr) /domain-group/fc-uplink #**scope fabric** *{a	b}*.	Enters the configuration mode for the chosen fabric interconnect .
Step 5	UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # **create vsan** *vsan-name vsan-id fcoe-id*	Enters the VSAN configuration command mode, and creates a VSAN with the VSAN name, VSAN ID, and FCoE VLAN ID that you enter.
Step 6	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #**set zoningstate** *{enabled	disabled}* • disabled—The upstream switch configures and controls the Fibre Channel zoning, or Fibre Channel zoning is not implemented on this VSAN. • enabled—Cisco UCS Manager will configure and control Fibre Channel zoning when the VSAN is deployed.	Configures Fibre Channel zoning for the VSAN, as follows:
Step 7	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #**commit-buffer**	Commits the transaction to the system.
Step 8	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # **up**	Returns to the the fabric interconnect configuration mode .
Step 9	UCSC(resource-mgr) /domain-group/fc-uplink/fabric # **up**	Returns to the fabric uplink configuration mode.

The following example shows how to create two VSANs each for both fabric interconnect A and B in domain group 12, and commit the transactions:

```
UCSC#connect resource-mgr
UCSC(resource-mgr) #scope domain-group 12
UCSC(resrouce-mgr) /domain-group #scope fc-uplink
UCSC(resrouce-mgr) /domain-group/fc-uplink #scope fabric a
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # create vsan VSANA 21 21
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # up
UCSC(resource-mgr) /domain-group/fc-uplink/fabric # up
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # create vsan VSANA2 23 23
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # up
UCSC(resource-mgr) /domain-group/fc-uplink/fabric # up
UCSC(resource-mgr) /domain-group/fc-uplink/up
UCSC(resrouce-mgr) /domain-group/fc-uplink #scope fabric b
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # create vsan VSANB 22 22
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # up
UCSC(resource-mgr) /domain-group/fc-uplink/fabric # up
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # create vsan VSANB2 24 24
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # up
UCSC(resource-mgr) /domain-group/fc-uplink/fabric # up
UCSC(resource-mgr) /domain-group/fc-uplink/up
```

The following example shows how to create a VSAN for fabric interconnect A in domain group 12, set the Fibre Channel zoning state, and commit the transaction:

```
UCSC#connect resource-mgr
UCSC(resource-mgr) #scope domain-group 12
UCSC(resrouce-mgr) /domain-group #scope fc-uplink
UCSC(resrouce-mgr) /domain-group/fc-uplink #scope fabric a
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # create vsan VSANC 25 25
ForDoc(resource-mgr) /domain-group/fc-uplink/fabric/vsan* # set zoningstate enabled
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # up
UCSC(resource-mgr) /domain-group/fc-uplink/fabric # up
```

Modifying VSAN Settings

This procedure describes how to modify VSAN settings for either fabric interconnect A or B in a domain group inCisco UCS Central.

Before You Begin

Procedure

	Command or Action	Purpose
Step 1	UCSC# **connect resource-mgr**	Enters resource manager mode.

	Command or Action	Purpose
Step 2	UCSC(resource-mgr) #**scope domain-group** *domain-group*	Enters the UCS domain group configuration mode.
Step 3	UCSC(resource-mgr) /domain-group #**scope fc-uplink**	Enters fabric configuration command mode.
Step 4	UCSC(resource-mgr) /domain-group/fc-uplink #**scope fabric***{a	b}*	Enters configuration mode for the chosen fabric interconnect.
Step 5	UCSC(resource-mgr)#/domain-group/fc-uplink #/fc-uplink/fabric # **scope vsan***vsan-name*	Enters VSAN configuration mode for the chosen VSAN.
Step 6	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # **set id***vsan-id*	Sets the VSAN ID to the value you enter.
Step 7	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* # **set fcoevlan***fcoe-vlan-id*	Sets the FCoE VLAN ID to the value you enter.
Step 8	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #**set zoningstate** *{enabled	disabled}* • disabled—The upstream switch configures and controls the Fibre Channel zoning, or Fibre Channel zoning is not implemented on this VSAN. • enabled—Cisco UCS Manager will configure and control Fibre Channel zoning when the VSAN is deployed.	Sets the Fibre Channel zoning for the VSAN, as follows:
Step 9	UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* # **commit-buffer**	Commits the transaction to the system.

The following example shows how to modify the settings for a VSAN associated with fabric interconnect A in domain group 12:

```
UCSC#connect resource-mgr
UCSC(resource-mgr)# scope domain-group 12
UCSC(resource-mgr)#/domain-group #scope fc-uplink
UCSC(resource-mgr)#/domain-group/fc-uplink #scope fabric a
UCSC(resource-mgr)#/domain-group/fc-uplink #/fc-uplink/fabric # scope vsanVSANC
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # set id2021
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* # set fcoevlan2021
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* # set zoningstatedisabled
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* # commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan #
```

Enabling Global VSANs in a Cisco UCS Manager Instance

The **publish vsan** command allows you to use global VSANs that were created in Cisco UCS Central in a Cisco UCS Manager instance without deploying a service profile.

Procedure

	Command or Action	Purpose
Step 1	UCSC# **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC(resource-mgr) #**scope domain-mgmt**	Enters the UCS domain management configuration mode.
Step 3	UCSC(resource-mgr) /domain-mgmt #**scope ucs-domain** *domain-ID*	Enters the UCS domain configuration mode for the specified domain ID. **Note** If you do not know the UCS domain ID, use the **show ucs-domain** command.
Step 4	UCSC(resource-mgr) /domain-mgmt/ucs-domain #**publish vsan** *vsan_name [a \ b]*.	Pushes the selected global VSAN to the Cisco UCS Manager instance in the specified fabric interconnect.

The following example shows how to enable global VSAN globVSAN for fabric interconnect A in the local domain 1008:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resrouce-mgr) /domain-mgmt # scope ucs-domain 1008
UCSC(resrouce-mgr) /domain-mgmt/ucs-domain # publish vsan globVSAN a

Publish Vsan is a standalone operation. You may lose any uncommitted changes in this CLI
session.
Do you want to continue? (yes/no): yes
UCSC(resource-mgr) /domain-mgmt/ucs-domain #
```

Deleting VSANs

This procedure describes how to delete one or more VSANs from a Cisco UCS Central domain group.

Before You Begin

Procedure

	Command or Action	Purpose
Step 1	UCSC# **connect resource-mgr**	Enters resource manager mode.
Step 2	UCSC(resource-mgr) #**scope domain-group** *domain-group*	Enters the UCS domain group configuration mode.

	Command or Action	**Purpose**
Step 3	UCSC(resource-mgr) /domain-group #**scope fc-uplink**	Enters fabric configuration command mode.
Step 4	UCSC(resource-mgr) /domain-group/fc-uplink #**scope fabric**{a	b}	Enters configuration mode for the selected fabric interconnect.
Step 5	UCSC(resource-mgr)#/domain-group/fc-uplink #/fc-uplink/fabric # **scope vsan**vsan-name	Enters VSAN configuration mode for the selected VSAN.
Step 6	UCSC(resource-mgr)#/domain-group/fc-uplink #/fc-uplink/fabric/vsan # **delete vsan**	Deletes the VSAN.
Step 7	UCSC(resource-mgr)#/domain-group/fc-uplink #/fc-uplink/fabric/vsan* # **commit-buffer**	Commits the transaction to the system.

The following example shows how to delete one VSAN from fabric interconnect A and one from fabric interconnect B for domain group 12, and commit the transactions:

```
UCSC#connect resource-mgr
UCSC(resource-mgr) #scope domain-group 12
UCSC(resrouce-mgr) /domain-group #scope fc-uplink
UCSC(resrouce-mgr) /domain-group/fc-uplink #scope fabric a
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # scope vsan VSANA
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan # up
UCSC(resource-mgr) /domain-group/fc-uplink/fabric # up
UCSC(resource-mgr) /domain-group/fc-uplink/up
UCSC(resrouce-mgr) /domain-group/fc-uplink #scope fabric b
UCSC(resrouce-mgr) /domain-group/fc-uplink/fabric # delete vsan VSANB
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan* #commit-buffer
UCSC(resource-mgr) /domain-group/fc-uplink/fabric/vsan #
```

Configuring Storage Pools

WWN Pools

A WWN pool is a collection of WWNs for use by the Fibre Channel vHBAs in a Cisco UCS domain. WWN pools created in Cisco UCS Central can be shared between Cisco UCS domains. You create separate pools for the following:

- WW node names assigned to the server

- WW port names assigned to the vHBA

- Both WW node names and WW port names

Important A WWN pool can include only WWNNs or WWPNs in the ranges from 20:00:00:00:00:00:00:00 to 20:FF:FF:FF:FF:FF:FF:FF or from 50:00:00:00:00:00:00:00 to 5F:FF:FF:FF:FF:FF:FF:FF. All other WWN ranges are reserved. To ensure the uniqueness of the Cisco UCS WWNNs and WWPNs in the SAN fabric, we recommend that you use the following WWN prefix for all blocks in a pool: 20:00:00:25:B5:XX:XX:XX

If you use WWN pools in service profiles, you do not have to manually configure the WWNs that will be used by the server associated with the service profile. In a system that implements multi-tenancy, you can use a WWN pool to control the WWNs used by each organization.

You assign WWNs to pools in blocks.

WWNN Pools

A WWNN pool is a WWN pool that contains only WW node names. If you include a pool of WWNNs in a service profile, the associated server is assigned a WWNN from that pool.

WWPN Pools

A WWPN pool is a WWN pool that contains only WW port names. If you include a pool of WWPNs in a service profile, the port on each vHBA of the associated server is assigned a WWPN from that pool.

WWxN Pools

A WWxN pool is a WWN pool that contains both WW node names and WW port names. You can specify how many ports per node are created with WWxN pools. The pool size for WWxN pools must be a multiple of *ports-per-node* + 1. For example, if there are 7 ports per node, the pool size must be a multiple of 8. If there are 63 ports per node, the pool size must be a multiple of 64.

Creating a WWN Pool

Important A WWN pool can include only WWNNs or WWPNs in the ranges from 20:00:00:00:00:00:00:00 to 20:FF:FF:FF:FF:FF:FF:FF or from 50:00:00:00:00:00:00:00 to 5F:FF:FF:FF:FF:FF:FF:FF. All other WWN ranges are reserved. To ensure the uniqueness of the Cisco UCS WWNNs and WWPNs in the SAN fabric, we recommend that you use the following WWN prefix for all blocks in a pool: 20:00:00:25:B5:XX:XX:XX

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, type / as the *org-name*.

	Command or Action	**Purpose**
Step 3	UCSC(policy-mgr) /org # **create wwn-pool** *wwn-pool-name* {**node-and-port-wwn-assignment** | **node-wwn-assignment** | **port-wwn-assignment**}	Creates a WWN pool with the specified name and purpose, and enters organization WWN pool mode. This can be one of the following: • **node-and-port-wwn-assignment**—Creates a WWxN pool that includes both world wide node names (WWNNs) and world wide port names (WWPNs). • **node-wwn-assignment**—Creates a WWNN pool that includes only WWNNs. • **port-wwn-assignment**—Creates a WWPN pool that includes only WWPNs.
Step 4	UCSC(policy-mgr) /org/wwn-pool # **set descr** *description*	(Optional) Provides a description for the WWN pool. **Note** 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 **show** command output.
Step 5	UCSC(policy-mgr) /org/wwn-pool # **set descr** *description*	(Optional) Provides a description for the WWN pool. **Note** 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 **show** command output.
Step 6	UCSC(policy-mgr) /org/wwn-pool # **set max-ports-per-node** {**15-ports-per-node** | **3-ports-per-node** | **31-ports-per-node** | **63-ports-per-node** | **7-ports-per-node**}	For WWxN pools, specify the maximum number of ports that can be assigned to each node name in this pool. The default value is **3-ports-per-node**. **Note** The pool size for WWxN pools must be a multiple of *ports-per-node* + 1. For example, if you specify **7-ports-per-node**, the pool size must be a multiple of 8. If you specify **63-ports-per-node**, the pool size must be a multiple of 64.
Step 7	UCSC(policy-mgr) /org/wwn-pool # **create block** *first-wwn last-wwn*	Creates a block (range) of WWNs, and enters organization WWN pool block mode. You must specify the first and last WWN in the block using the form *nn:nn:nn:nn:nn:nn:nn:nn*, with the WWNs separated by a space. **Note** A WWN pool can contain more than one WWN block. To create multiple WWN blocks, you must enter multiple **create block** commands from organization WWN pool mode.
Step 8	UCSC(policy-mgr) /org/wwn-pool/block # **exit**	Exits organization WWN pool block mode.

	Command or Action	Purpose
Step 9	UCSC(policy-mgr) /org/iqn-pool/block # **commit-buffer**	Commits the transaction to the system configuration.
		Note If you plan to create another pool, wait at least 5 seconds.

The following example shows how to create a WWNN pool named GPool1, provide a description for the pool, specify a block of WWNs and an initiator to be used for the pool, and commit the transaction:

```
UCSC # connect policy-mgr
UCSC(policy-mgr) # scope org /
UCSC(policy-mgr) /org # create wwn-pool GPool1 node-wwn-assignment
UCSC(policy-mgr) /org/wwn-pool* # set descr "This is my WWNN pool"
UCSC(policy-mgr) /org/wwn-pool* # create block 20:00:00:25:B5:00:00:00 20:00:00:25:B5:00:00:01
UCSC(policy-mgr) /org/wwn-pool/block* # exit
UCSC(policy-mgr) /org/wwn-pool/initiator* # commit-buffer
UCSC(policy-mgr) /org/wwn-pool/initiator #
```

The following example shows how to create a WWxN pool named GPool1, provide a description for the pool, specify seven ports per node, specify a block of eight WWNs to be used for the pool, and commit the transaction:

```
UCSC # connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org # create wwn-pool GPool1 node-and-port-wwn-assignment
UCSC(policy-mgr) /org/wwn-pool* # set descr "This is my WWxN pool"
UCSC(policy-mgr) /org/wwn-pool* # set max-ports-per-node 7-ports-per-node
UCSC(policy-mgr) /org/wwn-pool* # create block 20:00:00:25:B5:00:00:00 20:00:00:25:B5:00:00:08
UCSC(policy-mgr) /org/wwn-pool/block* # commit-buffer
UCSC(policy-mgr) /org/wwn-pool/block #
```

What to Do Next

- Include the WWPN pool in a vHBA template.

- Include the WWNN pool in a service profile and/or template.

- Include the WWxN pool in a service profile and/or template.

Deleting a WWN Pool

If you delete a pool, Cisco UCS Central does not reallocate any addresses from that pool that have been assigned to vNICs or vHBAs in Cisco UCS Manager. All assigned addresses from a deleted pool remain with the vNIC or vHBA to which they are assigned until one of the following occurs:

- The associated service profiles are deleted.

- The vNIC or vHBA to which the address is assigned is deleted.

- The vNIC or vHBA is assigned to a different pool.

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, type / as the *org-name*.
Step 3	UCSC(policy-mgr) /org # **delete wwn-pool** *wwn-pool-name*	Deletes the specified WWN pool.
Step 4	UCSC(policy-mgr) /org # **commit-buffer**	Commits the transaction to the system configuration. **Note** If you plan to delete another pool, wait at least 5 seconds.

The following example shows how to delete the WWNN pool named GPool1 and commit the transaction:

```
UCSC # connect policy-mgr
UCSC(policy-mgr) # scope org /
UCSC(policy-mgr) /org # delete wwn-pool GPool1
UCSC(policy-mgr) /org* # commit-buffer
UCSC(policy-mgr) /org #
```

Configuring Storage-Related Policies

vHBA Template

This template is a policy that defines how a vHBA on a server connects to the SAN. It is also referred to as a vHBA SAN connectivity template.

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

Configuring a vHBA 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, type / as the *org-name* .
Step 3	UCSC(policy-mgr) /org # **create vhba-templ** *vhba-templ-name* [**fabric** {**a** | **b**}] [**fc-if** *vsan-name*]	Creates a vHBA template and enters organization vHBA template mode.

	Command or Action	Purpose
Step 4	UCSC(policy-mgr) /org/vhba-templ # **set descr** *description*	(Optional) Provides a description for the vHBA template.
Step 5	UCSC(policy-mgr) /org/vhba-templ # **set fabric** {**a** | **b**}	(Optional) Specifies the fabric to use for the vHBA. If you did not specify the fabric when creating the vHBA template in Step 2, then you have the option to specify it with this command.
Step 6	UCSC(policy-mgr) /org/vhba-templ # **set fc-if** *vsan-name*	(Optional) Specifies the Fibre Channel interface (named VSAN) to use for the vHBA template. If you did not specify the Fibre Channel interface when creating the vHBA template in Step 2, you have the option to specify it with this command.
Step 7	UCSC(policy-mgr) /org/vhba-templ # **set max-field-size** *size-num*	Specifies the maximum size of the Fibre Channel frame payload (in bytes) that the vHBA supports.
Step 8	UCSC(policy-mgr) /org/vhba-templ # **set pin-group** *group-name*	Specifies the pin group to use for the vHBA template.
Step 9	UCSC(policy-mgr) /org/vhba-templ # **set qos-policy** *mac-pool-name*	Specifies the QoS policy to use for the vHBA template.
Step 10	UCSC(policy-mgr) /org/vhba-templ # **set stats-policy** *policy-name*	Specifies the server and server component statistics threshold policy to use for the vHBA template.
Step 11	UCSC(policy-mgr) /org/vhba-templ # **set type** {**initial-template** | **updating-template**}	Specifies the vHBA template update type. If you do not want vHBA 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 vHBA instances are updated when the vHBA template is updated.
Step 12	UCSC(policy-mgr) /org/vhba-templ # **set wwpn-pool** *pool-name*	Specifies the WWPN pool to use for the vHBA template.
Step 13	UCSC(policy-mgr) /org/vhba-templ # **commit-buffer**	Commits the transaction to the system configuration.

The following example configures a vHBA template and commits the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org* # create vhba template VhbaTempFoo
UCSC(policy-mgr) /org/vhba-templ* # set descr "This is a vHBA template example."
UCSC(policy-mgr) /org/vhba-templ* # set fabric a
UCSC(policy-mgr) /org/vhba-templ* # set fc-if accounting
UCSC(policy-mgr) /org/vhba-templ* # set max-field-size 2112
UCSC(policy-mgr) /org/vhba-templ* # set pin-group FcPinGroup12
UCSC(policy-mgr) /org/vhba-templ* # set qos-policy policy34foo
UCSC(policy-mgr) /org/vhba-templ* # set stats-policy ServStatsPolicy
```

```
UCSC(policy-mgr) /org/vhba-templ* # set type updating-template
UCSC(policy-mgr) /org/vhba-templ* # set wwpn-pool SanPool7
UCSC(policy-mgr) /org/vhba-templ* # commit-buffer
UCSC(policy-mgr) /org/vhba-templ #
```

Deleting a vHBA 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, type / as the *org-name* .
Step 3	UCSC(policy-mgr) /org # **delete vhba-templ** *vhba-templ-name*	Deletes the specified vHBA template.
Step 4	UCSC(policy-mgr) /org # **commit-buffer**	Commits the transaction to the system configuration.

The following example deletes the vHBA template named VhbaTempFoo and commits the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org # delete vhba template VhbaTempFoo
UCSC(policy-mgr) /org* # commit-buffer
UCSC(policy-mgr) /org #
```

Default vHBA Behavior Policy

Default vHBA behavior policy allow you to configure how vHBAs are created for a service profile. You can choose to create vHBAs manually, or you can allow them to be created automatically.

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

- **None**—Cisco UCS Central does not create default vHBAs for a service profile. All vHBAs must be explicitly created.

- **HW Inherit**—If a service profile requires vHBAs and none have been explicitly defined, Cisco UCS Central creates the required vHBAs based on the adapter installed in the server associated with the service profile.

Note If you do not specify a default behavior policy for vHBAs, **none** is used by default.

Configuring a Default vHBA 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 vhba-beh-policy**	Enters default vHBA behavior policy mode.
Step 4	UCSC(policy-mgr)/org/vhba-beh-policy # **set action** {**hw-inherit** [**template_name** *name*] | **none**}	Specifies the default vHBA behavior policy. This can be one of the following: • **hw-inherit**—If a service profile requires vHBAs and none have been explicitly defined, Cisco UCS Central creates the required vHBAs based on the adapter installed in the server associated with the service profile. If you specify **hw-inherit**, you can also specify a vHBA template to create the vHBAs. • **none**—Cisco UCS Central does not create default vHBAs for a service profile. All vHBAs must be explicitly created.
Step 5	UCSC(policy-mgr)/org/vhba-beh-policy # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to set the default vHBA behavior policy to **hw-inherit**.

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

Configuring Fibre Channel Adapter Policies

Ethernet and Fibre Channel Adapter Policies

These policies govern the host-side behavior of the adapter, including how the adapter handles traffic. For example, you can use these policies to change default settings for the following:

• Queues

• Interrupt handling

- Performance enhancement

- RSS hash

- Failover in an cluster configuration with two fabric interconnects

Note For Fibre Channel adapter policies, the values displayed by Cisco UCS Central may not match those displayed by applications such as QLogic SANsurfer. For example, the following values may result in an apparent mismatch between SANsurfer and Cisco UCS Central:

- Max LUNs Per Target—SANsurfer has a maximum of 256 LUNs and does not display more than that number. Cisco UCS Central supports a higher maximum number of LUNs.

- Link Down Timeout—In SANsurfer, you configure the timeout threshold for link down in seconds. In Cisco UCS Central, you configure this value in milliseconds. Therefore, a value of 5500 ms in Cisco UCS Central displays as 5s in SANsurfer.

- Max Data Field Size—SANsurfer has allowed values of 512, 1024, and 2048. Cisco UCS Central allows you to set values of any size. Therefore, a value of 900 in Cisco UCS Central displays as 512 in SANsurfer.

Operating System Specific Adapter Policies

By default, Cisco UCS provides a set of Ethernet adapter policies and Fibre Channel adapter policies. These policies include the recommended settings for each supported server operating system. Operating systems are sensitive to the settings in these policies. Storage vendors typically require non-default adapter settings. You can find the details of these required settings on the support list provided by those vendors.

Important We recommend that you use the values in these policies for the applicable operating system. Do not modify any of the values in the default policies unless directed to do so by Cisco Technical Support.

However, if you are creating an Ethernet adapter policy for a Windows OS (instead of using the default Windows adapter policy), you must use the following formulas to calculate values that work with Windows:

Completion Queues = Transmit Queues + Receive Queues
Interrupt Count = (Completion Queues + 2) rounded up to nearest power of 2

For example, if Transmit Queues = 1 and Receive Queues = 8 then:

Completion Queues = 1 + 8 = 9
Interrupt Count = (9 + 2) rounded up to the nearest power of 2 = 16

Configuring a Fibre Channel Adapter Policy

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, type **/** as the *org-name* .
Step 3	UCSC(policy-mgr) /org # **create fc-policy** *policy-name*	Creates the specified Fibre Channel adapter policy and enters organization Fibre Channel policy mode.
Step 4	UCSC(policy-mgr) /org/fc-policy # **set descr** *description*	(Optional) Provides a description for the policy. **Note** 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 **show** command output.
Step 5	UCSC(policy-mgr) /org/fc-policy # **set error-recovery {fcp-error-recovery {disabled | enabled} | link-down-timeout** *timeout-msec* | **port-down-io-retry-count** *retry-count* | **port-down-timeout** *timeout-msec*}	(Optional) Configures the Fibre Channel error recovery.
Step 6	UCSC(policy-mgr) /org/fc-policy # **set interrupt mode {intx | msi | msi-x}}**	(Optional) Configures the driver interrupt mode.
Step 7	UCSC(policy-mgr) /org/fc-policy # **set port {io-throttle-count** *throttle-count* | **max-luns** *max-num*}	(Optional) Configures the Fibre Channel port.
Step 8	UCSC(policy-mgr) /org/fc-policy # **set port-f-logi {retries** *retry-count* | **timeout** *timeout-msec*}	(Optional) Configures the Fibre Channel port fabric login (FLOGI).
Step 9	UCSC(policy-mgr) /org/fc-policy # **set port-p-logi {retries** *retry-count* | **timeout** *timeout-msec*}	(Optional) Configures the Fibre Channel port-to-port login (PLOGI).
Step 10	UCSC(policy-mgr) /org/fc-policy # **set recv-queue {count** *count* | **ring-size** *size-num*}	(Optional) Configures the Fibre Channel receive queue.
Step 11	UCSC(policy-mgr) /org/fc-policy # **set scsi-io {count** *count* | **ring-size** *size-num*}	(Optional) Configures the Fibre Channel SCSI I/O.

	Command or Action	Purpose
Step 12	UCSC(policy-mgr) /org/fc-policy # **set trans-queue ring-size** *size-num*}	(Optional) Configures the Fibre Channel transmit queue.
Step 13	UCSC(policy-mgr) /org/fc-policy # **commit-buffer**	Commits the transaction to the system configuration.

The following example configures a Fibre Channel adapter policy and commits the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org* # create fc-policy FcPolicy42
UCSC(policy-mgr) /org/fc-policy* # set descr "This is a Fibre Channel adapter policy example."
UCSC(policy-mgr) /org/fc-policy* # set error-recovery error-detect-timeout 2500
UCSC(policy-mgr) /org/fc-policy* # set port max-luns 4
UCSC(policy-mgr) /org/fc-policy* # set port-f-logi retries 250
UCSC(policy-mgr) /org/fc-policy* # set port-p-logi timeout 5000
UCSC(policy-mgr) /org/fc-policy* # set recv-queue count 1
UCSC(policy-mgr) /org/fc-policy* # set scsi-io ring-size 256
UCSC(policy-mgr) /org/fc-policy* # set trans-queue ring-size 256
UCSC(policy-mgr) /org/fc-policy* # commit-buffer
UCSC(policy-mgr) /org/fc-policy #
```

Deleting a Fibre Channel Adapter Policy

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, type / as the *org-name* .
Step 3	UCSC(policy-mgr) /org # **delete fc-policy** *policy-name*	Deletes the specified Fibre Channel adapter policy.
Step 4	UCSC(policy-mgr) /org # **commit-buffer**	Commits the transaction to the system configuration.

The following example deletes the Fibre Channel adapter policy named FcPolicy42 and commits the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org # delete fc-policy FcPolicy42
UCSC(policy-mgr) /org* # commit-buffer
UCSC(policy-mgr) /org #
```

Configuring SAN Connectivity Policies

LAN and SAN Connectivity Policies

Connectivity policies determine the connections and the network communication resources between the server and the LAN or SAN on the network. These policies use pools to assign MAC addresses, WWNs, and WWPNs to servers and to identify the vNICs and vHBAs that the servers use to communicate with the network.

✎

Note   We do not recommend that you use static IDs in connectivity policies, because these policies are included in service profiles and service profile templates and can be used to configure multiple servers.

Privileges Required for LAN and SAN Connectivity Policies

Connectivity policies enable users without network or storage privileges to create and modify service profiles and service profile templates with network and storage connections. However, users must have the appropriate network and storage privileges to create connectivity policies.

Privileges Required to Create Connectivity Policies

Connectivity policies require the same privileges as other network and storage configurations. For example, you must have at least one of the following privileges to create connectivity policies:

- admin—Can create LAN and SAN connectivity policies

- ls-server—Can create LAN and SAN connectivity policies

- ls-network—Can create LAN connectivity policies

- ls-storage—Can create SAN connectivity policies

Privileges Required to Add Connectivity Policies to Service Profiles

After the connectivity policies have been created, a user with ls-compute privileges can include them in a service profile or service profile template. However, a user with only ls-compute privileges cannot create connectivity policies.

Creating a SAN Connectivity Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# **connect policy-mgr**	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # **scope org** *org-name*	Enter organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.

	Command or Action	**Purpose**
Step 3	UCSC(policy-mgr) /org # **create san-connectivity-policy** *policy-name*	Creates the specified SAN connectivity policy, and enters organization network control policy mode.
		This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period) and you cannot change this name after the object has been saved.
Step 4	UCSC(policy-mgr) /org/san-connectivity-policy # **set descr** *policy-name*	(Optional) Adds a description to the policy. We recommend that you include information about where and how the policy should be used.
		Enter up to 256 characters. you can use any characters or spaces except ' (accent mark), \ (backslash), ^ (carat), " (double quote), = (equal sign), > (greater than), < (less than), or ' (single quote).
Step 5	UCSC(policy-mgr) /org/service-profile # **set identity** {**dynamic-uuid** {*uuid* | **derived**} | **dynamic-wwnn** {*wwnn* | **derived**} | **uuid-pool** *pool-name* | **wwnn-pool** *pool-name*}	Specifies how the server acquires a UUID or WWNN. You can do one of the following:
		• Create a unique UUID in the form *nnnnnnnn-nnnn-nnnn-nnnnnnnnnnnn*
		• Derive the UUID from the one burned into the hardware at manufacture
		• Use a UUID pool
		• Create a unique WWNN in the form $hh : hh : hh : hh : hh : hh : hh : hh$
		• Derive the WWNN from one burned into the hardware at manufacture
		• Use a WWNN pool
Step 6	UCSC(policy-mgr) /org/san-connectivity-policy # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to create a SAN connectivity policy named SanConnect242 and commit the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org* # create san-connectivity-policy SanConnect242
UCSC(policy-mgr) /org/san-connectivity-policy* # set descr "SAN connectivity policy"
UCSC(policy-mgr) /org/san-connectivity-policy* # set identity wwnn-pool SanPool7
UCSC(policy-mgr) /org/san-connectivity-policy* # commit-buffer
UCSC(policy-mgr) /org/san-connectivity-policy #
```

What to Do Next

Add one or more vHBAs and/or initiator groups to this SAN connectivity policy.

Creating a vHBA for a SAN Connectivity Policy

If you are continuing from Creating a SAN Connectivity Policy, on page 17, begin this procedure at Step 3

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 # **scope san-connectivity-policy** *policy-name*	Enters SAN connectivity policy mode for the specified SAN connectivity policy.
Step 4	UCSC(policy-mgr) /org/san-connectivity-policy # **create vhba** *vhba-name* [**fabric** {**a**	**b**}] [**fc-if** *fc-if-name*]	Creates a vHBA for the specified SAN connectivity policy and enters vHBA mode. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object has been saved.
Step 5	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set adapter-policy** *policy-name*	Specifies the adapter policy to use for the vHBA.
Step 6	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set identity** {**dynamic-wwpn** {*wwpn*	**derived**}	**wwpn-pool** *wwn-pool-name*}	Specifies the WWPN for the vHBA. You can set the storage identity using one of the following options: • Create a unique WWPN in the form *hh:hh:hh:hh:hh:hh:hh:hh*. You can specify a WWPN in the range from 20:00:00:00:00:00:00:00 to 20:FF:FF:FF:FF:FF:FF:FF or from 50:00:00:00:00:00:00:00 to 5F:FF:FF:FF:FF:FF:FF:FF. If you want the WWPN to be compatible with Cisco MDS Fibre Channel switches, use the WWPN template **20:00:00:25:B5:XX:XX:XX**. • Derive the WWPN from one burned into the hardware at manufacture. • Assign a WWPN from a WWN pool.
Step 7	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set max-field-size** *size-num*	Specifies the maximum size of the Fibre Channel frame payload (in bytes) that the vHBA supports.

	Command or Action	Purpose
		Enter an integer between 256 and 2112. The default is 2048.
Step 8	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set order** {*order-num* | **unspecified**}	Specifies the PCI scan order for the vHBA.
Step 9	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set pers-bind** {**disabled** | **enabled**}	Disables or enables persistent binding to Fibre Channel targets.
Step 10	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set pin-group** *group-name*	Specifies the SAN pin group to use for the vHBA.
Step 11	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set qos-policy** *policy-name*	Specifies the QoS policy to use for the vHBA.
Step 12	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set stats-policy** *policy-name*	Specifies the statistics threshold policy to use for the vHBA.
Step 13	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set template-name** *policy-name*	Specifies the vHBA template to use for the vHBA. If you choose to use a vHBA template for the vHBA, you must still complete all of the configuration not included in the vHBA template, including Steps 4, 7, and 8.
Step 14	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **set vcon** {**1** | **2** | **3** | **4** | **any**}	Assigns the vHBA to one or all virtual network interface connections.
Step 15	UCSC(policy-mgr) /org/san-connectivity-policy/vhba # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to configure a vHBA for a SAN connectivity policy named SanConnect242 and commit the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org* # scope san-connectivity-policy SanConnect242
UCSC(policy-mgr) /org/san-connectivity-policy* # create vhba vhba3 fabric a
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set adapter-policy AdaptPol2
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set identity wwpn-pool SanPool7
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set max-field-size 2112
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set order 0
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set pers-bind enabled
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set pin-group FcPinGroup12
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set qos-policy QosPol5
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set stats-policy StatsPol2
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set template-name SanConnPol3
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # set vcon any
UCSC(policy-mgr) /org/san-connectivity-policy/vhba* # commit-buffer
UCSC(policy-mgr) /org/san-connectivity-policy/vhba #
```

What to Do Next

If desired, add another vHBA or an initiator group to the SAN connectivity policy. If not, include the policy in a service profile or service profile template.

Creating an Initiator Group for a SAN Connectivity Policy

If you are continuing from , begin this procedure at Step 3.

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 # **scope san-connectivity-policy** *policy-name*	Enters SAN connectivity policy mode for the specified SAN connectivity policy.
Step 4	UCSC(policy-mgr) /org/san-connectivity-policy # **create initiator-group** *group-name* **fc**	Creates the specified initiator group for Fibre Channel zoning and enters initiator group mode.
		This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and .(period), and you

	Command or Action	Purpose
		cannot change this name after the object has been saved.
Step 5	UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group # **create initiator** *vhba-name*	Creates the specified vHBA initiator in the initiator group. If desired, repeat this step to add a second vHBA initiator to the group.
Step 6	UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group # **set storage-connection-policy** *policy-name*	Associates the specified storage connection policy with the SAN connectivity policy.

	Command or Action	**Purpose**
		Note This step assumes that you want to associate an existing storage connection policy to associate with the SAN connectivity policy. If you do, continue with Step 10. If you want to create a local storage definition for this policy instead, continue with Step 6.
Step 7	UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group/storage-connection-def # **create storage-target** *wwpn*	Creates a storage target endpoint with the specified WWPN, and enters storage target mode.
Step 8	UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group/storage-connection-def/storage-target # **set target-path** {**a**	**b**}	Specifies which fabric interconnect is used for communications with the target endpoint.
Step 9	UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group/storage-connection-def/storage-target # **set target-vsan** *vsan*	Specifies which VSAN is used for communications

Storage Policies

Configuring SAN Connectivity Policies

	Command or Action	Purpose
		with the target endpoint.
Step 10	UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to configure an initiator group named initGroupZone1 with two initiators for a a SAN connectivity policy named SanConnect242, configure a local storage connection policy definition named scPolicyZone1, and commit the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org* # scope san-connectivity-policy SanConnect242
UCSC(policy-mgr) /org/san-connectivity-policy # create initiator-group initGroupZone1 fc
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group* # set zoning-type sist
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group* # create initiator vhba1
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group* # create initiator vhba2
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group* # create storage-connection-def
 scPolicyZone1
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group/storage-connection-def* #
create storage-target
20:10:20:30:40:50:60:70
UCSC(policy-mgr)
/org/san-connectivity-policy/initiator-group/storage-connection-def/storage-target* # set
target-path a
UCSC(policy-mgr)
/org/san-connectivity-policy/initiator-group/storage-connection-def/storage-target* # set
target-vsan default
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group* # commit-buffer
UCSC(policy-mgr) /org/san-connectivity-policy/initiator-group #
```

What to Do Next

If desired, add another initiator group or a vHBA to the SAN connectivity policy. If not, include the policy in a service profile or service profile template.

Deleting a vHBA from a SAN Connectivity Policy

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 # **scope san-connectivity-policy** *policy-name*	Enters SAN connectivity policy mode for the specified SAN connectivity policy.

Cisco UCS Central CLI Reference Manual, Release 1.3

24

	Command or Action	Purpose
Step 4	UCSC(policy-mgr) /org/san-connectivity-policy # **delete vHBA** *vhba-name*	Deletes the specified vHBA from the SAN connectivity policy.
Step 5	UCSC(policy-mgr) /org/san-connectivity-policy # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to delete a vHBA named vHBA3 from a SAN connectivity policy named SanConnect242 and commit the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org # scope san-connectivity-policy SanConnect242
UCSC(policy-mgr) /org/san-connectivity-policy # delete vHBA vHBA3
UCSC(policy-mgr) /org/san-connectivity-policy* # commit-buffer
UCSC(policy-mgr) /org/san-connectivity-policy #
```

Deleting an Initiator Group from a SAN Connectivity Policy

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 # **scope san-connectivity-policy** *policy-name*	Enters SAN connectivity policy mode for the specified SAN connectivity policy.
Step 4	UCSC(policy-mgr) /org/san-connectivity-policy # **delete initiator-group** *group-name*	Deletes the specified initiator group from the SAN connectivity policy.
Step 5	UCSC(policy-mgr) /org/san-connectivity-policy # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to delete an initiator group named initGroup3 from a SAN connectivity policy named SanConnect242 and commit the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr)# scope org /
UCSC(policy-mgr) /org # scope san-connectivity-policy SanConnect242
UCSC(policy-mgr) /org/san-connectivity-policy # delete initiator-group initGroup3
UCSC(policy-mgr) /org/san-connectivity-policy* # commit-buffer
UCSC(policy-mgr) /org/san-connectivity-policy #
```