Configuring Switch Profiles

This chapter contains the following sections:

Information About Switch Profiles

Several applications require consistent configuration across Cisco Nexus Series switches in the network. Mismatched configurations can cause errors or misconfigurations that can result in service disruptions.

The configuration synchronization (config-sync) feature allows you to configure one switch profile and have the configuration be automatically synchronized to the peer switch. A switch profile provides the following benefits:

- Allows configurations to be synchronized between switches.

- Merges configurations when connectivity is established between two switches.

- Provides control of exactly which configuration gets synchronized.

- Ensures configuration consistency across peers through merge and mutual-exclusion checks.

- Provides verify and commit semantics.

Switch Profile Configuration Modes

The switch profile feature includes the following configuration modes:

- Configuration Synchronization Mode

- Switch Profile Mode

- Switch Profile Import Mode

Configuration Synchronization Mode

The configuration synchronization mode (config-sync) allows you to create switch profiles using the **config sync** command on the local switch that you want to use as the master. After you create the profile, you can enter the **config sync** command on the peer switch that you want to synchronize.

Switch Profile Mode

The switch profile mode allows you to add supported configuration commands to a switch profile that is later synchronized with a peer switch. Commands that you enter in the switch profile mode are buffered until you enter the **commit** command.

Switch Profile Import Mode

When you upgrade from an earlier release, you have the option to enter the **import** command to copy supported running-configuration commands to a switch profile. After entering the **import** command, the switch profile mode (config-sync-sp) changes to the switch profile import mode (config-sync-sp-import). The switch profile import mode allows you to import existing switch configurations from the running configuration and specify which commands you want to include in the switch profile.

Because different topologies require different commands that are included in a switch profile, the **import** command mode allows you to modify the imported set of commands to suit a specific topology.

You need to enter the **commit** command to complete the import process and move the configuration into the switch profile. Because configuration changes are not supported during the import process, if you added new commands before entering the **commit** command, the switch profile remains unsaved and the switch remains in the switch profile import mode. You can remove the added commands or abort the import. Unsaved configurations are lost if the process is aborted. You can add new commands can be added to the switch profile after the import is complete.

Configuration Validation

Two types of configuration validation checks can identify two types of switch profile failures:

- Mutual Exclusion Checks

- Merge Checks

Mutual Exclusion Checks

To reduce the possibility of overriding configuration settings that are included in a switch profile, mutual exclusion (mutex) checks the switch profile commands against the commands that exist on the local switch and the commands on the peer switch. A command that is included in a switch profile cannot be configured outside of the switch profile or on a peer switch. This requirement reduces the possibility that an existing command is unintentionally overwritten.

As a part of the commit process, the mutex-check occurs on both switches if the peer switch is reachable, otherwise the mutex-check is performed locally. Configuration changes made from the configuration terminal occur only on the local switch.

If a mutex-check identifies errors, they are reported as a mutex failure and they must be manually corrected.

The following exceptions apply to the mutual exclusion policy:

- Interface configuration—An interface configuration can be partially present in a switch profile and partially present in the running configuration as long as there are no conflicts.

- Shutdown/no shutdown

- System QoS

Merge Checks

Merge checks are done on the peer switch that is receiving a configuration. The merge checks ensure that the received configuration does not conflict with the switch profile configuration that already exists on the receiving switch. The merge check occurs during the merge or commit process. Errors are reported as merge failures and must be manually corrected.

When one or both switches are reloaded and the configurations are synchronized for the first time, the merge check verifies that the switch profile configurations are identical on both switches. Differences in the switch profiles are reported as merge errors and must be manually corrected.

Software Upgrades and Downgrades With Switch Profiles

When you downgrade to an earlier release, you are prompted to remove an existing switch profile that is not supported on earlier releases.

When you upgrade from an earlier release, you have the option to move some of the running-configuration commands to a switch profile. The import command allows you to import relevant switch profile commands. An upgrade can occur if there are buffered configurations (uncommitted); however, the uncommitted configurations are lost.

When you perform an In Service Software Upgrade (ISSU) on one of the switches included in a switch profile, a configuration synchronization cannot occur because the peer is unreachable.

Prerequisites for Switch Profiles

Switch profiles have the following prerequisites:

- You must enable CFSoIP distribution over mgmt0 on both switches by entering the **cfs ipv4 distribute** command.

- You must configure a switch profile with the same name on both peer-switches by entering the **config sync** and **switch-profile** commands.

- Configure each switch as peer switch by entering the **sync-peers destination** command

Configuration Guidelines and Limitations

Switch profiles have the following configuration guidelines and limitations:

- You can only enable configuration synchronization using the mgmt0 interface.

- You must configure synchronized peers with the same switch profile name.

- Commands that are qualified for a switch profile configuration are allowed to be configured in the configuration switch profile (config-sync-sp) mode.

- One switch profile session can be in progress at a time. Attempts to start another session will fail.

- Supported command changes made from the configuration terminal mode are blocked when a switch profile session is in progress. You should not make unsupported command changes from the configuration terminal mode when a switch profile session is in progress..

- When you enter the **commit** command and a peer switch is reachable, the configuration is applied to both peer switches or neither switch. If there is a commit failure, the commands remain in the switch profile buffer. You can then make necessary corrections and try the commit again.

Configuring Switch Profiles

You can create and configure a switch profile. Enter the switch-profile *name* command in the configuration synchronization mode (config-sync).

Before You Begin

You must create the switch profile with the same name on each switch and the switches must configure each other as a peer. When connectivity is established between switches with the same active switch profile, the switch profiles are synchronized.

SUMMARY STEPS

1. configuration terminal
2. cfs ipv4 distribute
3. config sync
4. switch-profile *name*
5. sync-peers destination *IP-address*
6. show switch-profile *name* status
7. exit
8. copy running-config startup-config

DETAILED STEPS

	Command or Action	Purpose

Step 1	configuration terminal
	
	Example:
	`switch# configuration terminal`
	`switch(config)#`
		Enters the configuration terminal mode.

Step 2	cfs ipv4 distribute
	
	Example:
	`switch(config)# cfs ipv4 distribute`
	`switch(config)#`
		Enables CFS distribution between the peer switches.

Step 3	config sync
	
	Example:
	`switch# config sync`
	`switch(config-sync)#`
		Enters the configuration synchronization mode.

Step 4	switch-profile *name*
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)#`
		Configures the switch profile, names the switch profile, and enters the switch profile synchronization configuration mode.

Step 5	sync-peers destination *IP-address*
	
	Example:
	`switch(config-sync-sp)# sync-peers destination`
	`10.1.1.1`
	`switch(config-sync-sp)#`
		Configures the peer switch.

Step 6	show switch-profile *name* status
	
	Example:
	`switch(config-sync-sp)# show switch-profile abc`
	`status`
	`switch(config-sync-sp)#`
		(Optional) Views the switch profile on the local switch and the peer switch information.

Step 7	exit
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits the switch profile configuration mode and returns to EXEC mode.

Step 8	copy running-config startup-config
	
	Example:
	`switch# copy running-config startup-config`
	`switch#`
		(Optional) Copies the running configuration to the startup configuration.

The following example shows how to configure a switch profile and shows the switch profile status.

```
switch# configuration terminal
switch(config)# cfs ipv4 distribute
switch(config-sync)# switch-profile abc
switch(config-sync-sp)# sync-peers destination 10.1.1.1
switch(config-sync-sp)# show switch-profile abc status
Start-time:  15801 usecs after Mon Aug 23 06:21:08 2010
End-time:   6480 usecs after Mon Aug 23 06:21:13 2010

Profile-Revision: 1
Session-type: Initial-Exchange
Peer-triggered: Yes
Profile-status: Sync Success

Local information:
----------------
Status: Commit Success
Error(s):

Peer information:
----------------
IP-address: 10.1.1.1
Sync-status: In Sync.
Status: Commit Success
Error(s):
switch(config-sync-sp)# exit
switch#
```

Adding a Switch to a Switch Profile

Enter the **sync-peers destination** *destination IP* command in the switch profile configuration mode to add the switch to a switch profile.

Follow these guidelines when adding switches:

- Switches are identified by their IP address.

- Destination IPs are the IP addresses of the switches that you want to synchronize.

- The committed switch profile is synchronized with the newly added peers (when they are online) providing that the peer switch is also configured with configuration synchronization.

Before You Begin

After creating a switch profile on the local switch, you must add the second switch that will be included in the synchronization.

SUMMARY STEPS

1. **config sync**
2. **switch-profile** *name*
3. **sync-peers destination** *destination IP*
4. **exit**
5. (Optional)   **show switch-profile peer**
6. (Optional)   **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

Step 1	**config sync**
	
	Example:
	`switch# config sync`
	`switch(config-sync)#`
		Enters configuration synchronization mode.

Step 2	**switch-profile** *name*
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)#`
		Configures the switch profile, names the switch profile, and enters the switch profile synchronization configuration mode.

Step 3	**sync-peers destination** *destination IP*
	
	Example:
	`switch(config-sync-sp)# sync-peers destination`
	`10.1.1.1`
	`switch(config-sync-sp)#`
		Adds a switch to the switch profile.

Step 4	**exit**
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits switch profile configuration mode.

Step 5	**show switch-profile peer** **Example:** `switch# show switch-profile peer`	(Optional) Displays the switch profile peer configuration.
Step 6	**copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	(Optional) Copies the running configuration to the startup configuration.

Adding or Modifying Switch Profile Commands

To modify a command in a switch profile, add the modified command to the switch profile and enter the commit command to apply the command and synchronize the switch profile to the peer switch if it is reachable.

Follow these guidelines when adding or modifying switch profile commands:

- Commands that are added or modified are buffered until you enter the commit command.

- Commands are executed in the same order in which they are buffered. If there is an order-dependency for certain commands, for example, a QoS policy must be defined before being applied, you must maintain that order; otherwise, the commit might fail. You can use utility commands, such as the show switch-profile name buffer command, the buffer-delete command, and the buffer-move command, to change the buffer and correct the order of already entered commands.

Before You Begin

After configuring a switch profile on the local and the peer switch, you must add and commit the supported commands to the switch profile. The commands are added to the switch profile buffer until you enter the **commit** command. The **commit** command does the following:

- Triggers the mutex check and the merge check to verify the synchronization.
- Creates a checkpoint with a rollback infrastructure.
- Applies the configuration on the local switch and the peer switch.
- Executes a rollback on all switches if there is a failure with an application on any of the switches in the switch profile.
- Deletes the checkpoint.

SUMMARY STEPS

1. **config sync**
2. **switch-profile** *name*
3. **command** *arugument*
4. (Optional) **show switch-profile** *name* **buffer**
5. **verify**
6. **commit**
7. (Optional) **show switch-profile** *name* **status**
8. **exit**
9. (Optional) **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

Step 1	**config sync**
	
	Example:
	`switch# config sync`
	`switch(config-sync)#`
		Enters configuration synchronization mode.

Step 2	**switch-profile** *name*
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)#`
		Configures the switch profile, names the switch profile, and enters switch profile synchronization configuration mode.

Step 3	**command** *arugument*
	
	Example:
	`switch(config-sync-sp)# interface Port-channel100`
	`switch(config-sync-sp-if)# speed 1000`
	`switch(config-sync-sp-if)# interface Ethernet1/1`
	`switch(config-sync-sp-if)# speed 1000`
	`switch(config-sync-sp-if)# channel-group 100`
		Adds a command to the switch profile.

	Command or Action	Purpose

Step 4	**show switch-profile** *name* **buffer**
	
	Example:
	`switch(config-sync-sp)# show switch-profile abc buffer`
	`switch(config-sync-sp)#`
		(Optional)
		Displays the configuration commands in the switch profile buffer.

Step 5	**verify** **Example:** `switch(config-sync-sp)# verify`	Verifies the commands in the switch profile buffer.
Step 6	**commit** **Example:** `switch(config-sync-sp)# commit`	Saves the commands in the switch profile and synchronizes the configuration with the peer switch.

Step 7	**show switch-profile** *name* **status**
	
	Example:
	`switch(config-sync-sp)# show switch-profile abc status`
	`switch(config-sync-sp)#`
		(Optional)
		Displays the status of the switch profile on the local switch and the status on the peer switch.

Step 8	**exit**
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits the switch profile configuration mode.

Step 9	**copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	(Optional) Copies the running configuration to the startup configuration.

The following example shows how to create a switch profile, configure a peer switch, and add commands to the switch profile.

```
switch# configuration terminal
switch(config)# cfs ipv4 distribute
switch(config-sync)# switch-profile abc
switch(config-sync-sp)# sync-peers destination 10.1.1.1
switch(config-sync-sp)# interface port-channel100
switch(config-sync-sp-if)# speed 1000
switch(config-sync-sp-if)# interface Ethernet1/1
switch(config-sync-sp-if)# speed 1000
switch(config-sync-sp-if)# channel-group 100
switch(config-sync-sp)# verify
switch(config-sync-sp)# commit
switch(config-sync-sp)# exit
switch#
```

The following example shows an existing configuration with a defined switch profile. The second example shows how the switch profile command changed by adding the modified command to the switch profile.

```
switch# show running-config
switch-profile abc
  interface Ethernet1/1
```

```
        switchport mode trunk
        switchport trunk allowed vlan 1-10

Switch# config sync
Switch(config-sync)# switch-profile abc
Switch(config-sync-sp)# interface Ethernet1/1
Switch(config-sync-sp-if)# switchport trunk allowed vlan 5-10
Switch(config-sync-sp-if)# commit

Switch# show running-config
switch-profile abc
  interface Ethernet1/1
    switchport mode trunk
    switchport trunk allowed vlan 5-10
```

Importing a Switch Profile

You can import a switch profile based on the set of commands that you want to import. The following three ways can be used to import commands that were added using the configuration terminal mode:

- Add selected commands to the switch profile.

- Add supported commands that were specified for an interface.

- Add supported system-level commands.

- Add supported system-level commands excluding the physical interface commands.

When you import commands to a switch profile, the switch profile buffer must be empty.

If new commands are added during the import, the switch profile remains unsaved and the switch remains in the switch profile import mode. You can enter the **abort** command to stop the import. For additional information importing a switch profile, see the "Switch Profile Import Mode" section.

SUMMARY STEPS

1. **config sync**
2. **switch-profile** *name*
3. **import** {*interface port/slot* | *running-config* [**exclude interface ethernet**]}
4. **commit**
5. (Optional) **abort**
6. **exit**
7. (Optional) **show switch-profile**
8. (Optional) **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

Step 1	**config sync**
	
	 Example:
	 ```switch# config sync```
	 ```switch(config-sync)#```
		Enters the configuration synchronization mode.

	Command or Action	Purpose

Step 2	**switch-profile** *name*
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)#`
		Configures the switch profile, names the switch profile, and enters the switch profile synchronization configuration mode.

Step 3	**import** {*interface port/slot* | *running-config* [**exclude interface ethernet**]}
	
	Example:
	`switch(config-sync-sp)# import ethernet 1/2`
	`switch(config-sync-sp-import)#`
		Identifies the commands that you want to import and enters switch profile import mode.
		
		• <CR>—Adds selected commands.
		
		• interface—Adds the supported commands for a specified interface.
		
		• running-config—Adds supported system-level commands.
		
		• running-config exclude interface ethernet—Adds supported system-level commands excluding the physical interface commands.

Step 4	**commit** **Example:** `switch(config-sync-sp-import)# commit`	Imports the commands and saves the commands to the switch profile.
Step 5	**abort** **Example:** `switch(config-sync-sp-import)# abort`	(Optional) Aborts the import process.

Step 6	**exit**
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits the switch profile import mode.

Step 7	**show switch-profile** **Example:** `switch# show switch-profile`	(Optional) Displays the switch profile configuration.
Step 8	**copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	(Optional) Copies the running configuration to the startup configuration.

The following example shows how to import supported system-level commands excluding the Ethernet interface commands into the switch profile named sp.

```
switch(config-vlan)# conf sync
switch(config-sync)# switch-profile sp
Switch-Profile started, Profile ID is 1
switch(config-sync-sp)# show switch-profile buffer
```

```
switch-profile  : sp
-------------------------------------------------------
Seq-no  Command
-------------------------------------------------------

switch(config-sync-sp)# import running-config exclude interface ethernet
switch(config-sync-sp-import)#
switch(config-sync-sp-import)# show switch-profile buffer

switch-profile  : sp
-------------------------------------------------------
Seq-no  Command
-------------------------------------------------------
3       vlan 100-299
4       vlan 300
4.1       state suspend
5       vlan 301-345
6       interface port-channel100
6.1       spanning-tree port type network
7       interface port-channel105

switch(config-sync-sp-import)#
```

Verifying Commands in a Switch Profile

You can verify the commands that are included in a switch profile, enter the verify command in switch profile mode.

SUMMARY STEPS

1. **config sync**
2. **switch-profile** *name*
3. **verify**
4. **exit**
5. (Optional)   **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

Step 1	**config sync**
	
	Example:
	`switch# config sync`
	`switch(config-sync)#`
		Enters configuration synchronization mode.

Step 2	**switch-profile** *name*
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)#`
		Configures the switch profile, names the switch profile, and enters switch profile synchronization configuration mode.

Step 3	**verify** **Example:** `switch(config-sync-sp)# verify`	Verifies the commands in the switch profile buffer.

	Command or Action	Purpose

Step 4	**exit**
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits the switch profile configuration mode.

Step 5	**copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	(Optional) Copies the running configuration to the startup configuration.

Isolating a Peer Switch

You can isolate a peer switch in order to make changes to a switch profile. This process can be used when you want to block a configuration synchronization or when you want to debug configurations.

Isolating a peer switch requires that you remove the switch from the switch profile and then add the peer switch back to the switch profile.

Note For specific information on the following steps, see the appropriate sections in this chapter.

To temporarily isolate a peer switch, follow these steps:

1 Remove a peer switch from a switch profile.

2 Make changes to the switch profile and commit the changes.

3 Enter debug commands.

4 Undo the changes that were made to the switch profile in Step 2 and commit.

5 Add the peer switch back to the switch profile.

Deleting a Switch Profile

You can delete a switch profile by selecting the all-config or the local-config option:

- all-config—Deletes the switch profile on both peer switches (when both are reachable). If you choose this option and one of the peers is unreachable, only the local switch profile is deleted. the all-config option completely deletes the switch profile on both peer switches.

- local-config—Deletes the switch profile on the local switch only.

SUMMARY STEPS

1. **config sync**
2. **no switch-profile name** {*all-config* | *local-config*}
3. **exit**
4. (Optional)   **copy running-config startup-config**

DETAILED STEPS

	Command or Action	**Purpose**

Step 1	**config sync**
	
	Example:
	`switch# config sync`
	`switch(config-sync)#`
		Enters the configuration synchronization mode.

Step 2	**no switch-profile name** {*all-config*	*local-config*}
		
		Example:
		`switch(config-sync)# no switch-profile abc`
		`local-config`
		`switch(config-sync-sp)#`
			Deletes the switch profile as follows:
			
			• all-config—Deletes the switch profile on the local and peer switch. If the peer switch is not reachable, only the local switch profile is deleted.
			• local-config—Deletes the switch profile and local configuration.

Step 3	**exit**
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits configuration synchronization mode.

Step 4	**copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	(Optional) Copies the running configuration to the startup configuration.

Deleting a Switch From a Switch Profile

You can delete a switch from a switch profile.

SUMMARY STEPS

1. **config sync**
2. **switch-profile** *name*
3. **no sync-peers destination** *destination IP*
4. **exit**
5. (Optional)   **show switch-profile**
6. (Optional)   **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose

Step 1	**config sync**
	
	Example:
	`switch# config sync`
	`switch(config-sync)#`
		Enters configuration synchronization mode.

Step 2	**switch-profile** *name*
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)#`
		Configures the switch profile, names the switch profile, and enters the switch profile synchronization configuration mode.

Step 3	**no sync-peers destination** *destination IP*
	
	Example:
	`switch(config-sync-sp)# no sync-peers destination 10.1.1.1`
	`switch(config-sync-sp)#`
		Removes the specified switch from the switch profile.

Step 4	**exit**
	
	Example:
	`switch(config-sync-sp)# exit`
	`switch#`
		Exits the switch profile configuration mode.

Step 5	**show switch-profile** **Example:** `switch# show switch-profile`	(Optional) Displays the switch profile configuration.
Step 6	**copy running-config startup-config** **Example:** `switch# copy running-config startup-config`	(Optional) Copies the running configuration to the startup configuration.

Switch Profile Configuration show Commands

The following **show** commands display information about the switch profile.

Command	Purpose
show switch-profile *name*	Displays the commands in a switch profile.
show switch-profile *name* **buffer**	Displays the uncommitted commands in a switch profile, the commands that were moved, and the commands that were deleted.
show switch-profile *name* **peer** *IP-address*	Displays the synchronization status for a peer switch.
show switch-profile *name* **session-history**	Displays the status of the last 20 switch profile sessions.
show switch-profile *name* **status**	Displays the configuration synchronization status of a peer switch.
show running-config exclude-provision	Displays the configurations for offline pre-provisioned interfaces that are hidden.
show running-config switch-profile	Displays the running configuration for the switch profile on the local switch.
show startup-config switch-profile	Displays the startup configuration for the switch profile on the local switch.

For detailed information about the fields in the output from these commands, see the *Cisco Nexus 3000 Series Command Reference*.

Configuration Examples for Switch Profiles

Creating a Switch Profile on a Local and Peer Switch Example

The following example shows how to create a successful switch profile configuration on a local and peer switch.

SUMMARY STEPS

1. Enable CFSoIP distribution on the local and the peer switch.
2. Create a switch profile on the local and the peer switch.
3. Verify that the switch profiles are the same on the local and the peer switch.
4. Add the configuration commands to the switch profile on the local switch. The commands will be applied to the peer switch when the commands are committed.
5. Verify the commands in the switch profile.
6. Apply the commands to the switch profile and to synchronize the configurations between the local and the peer switch.

DETAILED STEPS

	Command or Action	Purpose

Step 1	Enable CFSoIP distribution on the local and the peer switch.
	
	Example:
	`switch# configuration terminal`
	`switch(config)# cfs ipv4 distribute`	

Step 2	Create a switch profile on the local and the peer switch.
	
	Example:
	`switch(config-sync)# switch-profile abc`
	`switch(config-sync-sp)# sync-peers destination 10.1.1.1`	

Step 3	Verify that the switch profiles are the same on the local and the peer switch.
	
	Example:
	`switch(config-sync-sp)# show switch-profile abc status`
	
	`Start-time:  15801 usecs after Mon Aug 23 06:21:08 2010`
	`End-time:   6480 usecs after Mon Aug 23 06:21:13 2010`
	
	`Profile-Revision: 1`
	`Session-type: Initial-Exchange`
	`Peer-triggered: Yes`
	`Profile-status: Sync Success`
	
	`Local information:`
	`----------------`
	`Status: Commit Success`
	`Error(s):`
	
	`Peer information:`
	`----------------`
	`IP-address: 10.1.1.1`
	`Sync-status: In Sync.`
	`Status: Commit Success`
	`Error(s):`	

Step 4	Add the configuration commands to the switch profile on the local switch. The commands will be applied to the peer switch when the commands are committed. **Example:** `switch(config-sync-sp)# class-map type qos c1`	

Step 5	Verify the commands in the switch profile.
	
	Example:
	`switch(config-sync-sp-if)# verify`
	`Verification Successful`	

Step 6	Apply the commands to the switch profile and to synchronize the configurations between the local and the peer switch.
	
	Example:
	`switch(config-sync-sp)# commit`
	`Commit Successful`
	`switch(config-sync)#`	

Verifying the Synchronization Status Example

The following example shows how to verify the synchronization status between the local and the peer switch.

SUMMARY STEPS

1. Enter the **show switch-profile switch-profile status** command.

DETAILED STEPS

	Command or Action	Purpose

Step 1	Enter the **show switch-profile switch-profile status** command.
	
	Example:
	`switch(config-sync)# `**`show switch-profile switch-profile status`**
	
	`Start-time: 804935 usecs after Mon Aug 23 06:41:10 2010`
	`End-time: 956631 usecs after Mon Aug 23 06:41:20 2010`
	
	`Profile-Revision: 2`
	`Session-type: Commit`
	`Peer-triggered: No`
	`Profile-status: Sync Success`
	
	`Local information:`
	`----------------`
	`Status: Commit Success`
	`Error(s):`
	
	`Peer information:`
	`----------------`
	`IP-address: 10.1.1.1`
	`Sync-status: In Sync.`
	`Status: Commit Success`
	`Error(s):`
	
	`switch(config-sync)#`	

Showing the Running Configuration

The following example shows the running configuration of the switch profile on the local switch:

```
switch(config-sync)# show running-config switch-profile

switch(config-sync)#
```

Displaying the Switch Profile Synchronization Between the Local and the Peer Switch

The following example shows how to display the initial successful synchronization between the two peers:

```
switch1# show switch-profile sp status

Start-time: 491815 usecs after Thu Aug 12 11:54:51 2010
End-time: 449475 usecs after Thu Aug 12 11:54:58 2010

Profile-Revision: 1
Session-type: Initial-Exchange
Peer-triggered: No
Profile-status: Sync Success

Local information:
----------------
Status: Commit Success
Error(s):

Peer information:
----------------
IP-address: 10.193.194.52
Sync-status: In Sync.
Status: Commit Success
Error(s):

switch1#


switch2# show switch-profile sp status

Start-time: 503194 usecs after Thu Aug 12 11:54:51 2010
End-time: 532989 usecs after Thu Aug 12 11:54:58 2010

Profile-Revision: 1
Session-type: Initial-Exchange
Peer-triggered: Yes
Profile-status: Sync Success

Local information:
----------------
Status: Commit Success
Error(s):

Peer information:
----------------
IP-address: 10.193.194.51
Sync-status: In Sync.
Status: Commit Success
Error(s):

switch2#
```

Displaying the Verify and Commit on the Local and the Peer Switch

The following example shows how to configure a successful verify and commit of the local and peer switch.

```
switch1# configure sync
Enter configuration commands, one per line.  End with CNTL/Z.
sw01(config-sync)# switch-profile sp
Switch-Profile started, Profile ID is 1
sw01(config-sync-sp)# interface Ethernet1/1
sw01(config-sync-sp-if)# description foo
sw01(config-sync-sp-if)# verify
Verification Successful
```

```
sw01(config-sync-sp)# commit
Commit Successful
sw01(config-sync)# show running-config switch-profile
switch-profile sp
  sync-peers destination 10.193.194.52
  interface Ethernet1/1
    description foo
sw01(config-sync)# show switch-profile sp status

Start-time: 171513 usecs after Wed Aug 11 17:51:28 2010
End-time: 676451 usecs after Wed Aug 11 17:51:43 2010

Profile-Revision: 3
Session-type: Commit
Peer-triggered: No
Profile-status: Sync Success

Local information:
----------------
Status: Commit Success
Error(s):

Peer information:
----------------
IP-address: 10.193.194.52
Sync-status: In Sync.
Status: Commit Success
Error(s):

switch1(config-sync)#


switch2# show running-config switch-profile
switch-profile sp
  sync-peers destination 10.193.194.51
  interface Ethernet1/1
    description foo
switch2# show switch-profile sp status

Start-time: 265716 usecs after Wed Aug 11 16:51:28 2010
End-time: 734702 usecs after Wed Aug 11 16:51:43 2010

Profile-Revision: 3
Session-type: Commit
Peer-triggered: Yes
Profile-status: Sync Success

Local information:
----------------
Status: Commit Success
Error(s):

Peer information:
----------------
IP-address: 10.193.194.51
Sync-status: In Sync.
Status: Commit Success
Error(s):

switch2#
```

Displaying the Successful and Unsuccessful Synchronization Between the Local and the Peer Switch

The following example shows how to configure the synchronization status of the switch profile on the peer switch. The first example shows a successful synchronization and the second example shows a peer not reachable status.

```
switch1# show switch-profile abc peer

switch1# show switch-profile sp peer 10.193.194.52
Peer-sync-status          : In Sync.
Peer-status               : Commit Success
Peer-error(s)             :
switch1#


switch1# show switch-profile sp peer 10.193.194.52
Peer-sync-status          : Not yet merged. pending-merge:1 received_merge:0
Peer-status               : Peer not reachable
Peer-error(s)             :
switch1#
```

Displaying the Switch Profile Buffer

The following example shows how to configure the switch profile buffer, the buffer-move configuration, and the buffer-delete configuration:

```
switch1# configure sync
Enter configuration commands, one per line.  End with CNTL/Z.
switch1(config-sync)# switch-profile sp
Switch-Profile started, Profile ID is 1
switch1(config-sync-sp)# vlan 101
switch1(config-sync-sp-vlan)# ip igmp snooping querier 10.101.1.1
switch1(config-sync-sp-vlan)# exit
switch1(config-sync-sp)# mac address-table static 0000.0000.0001 vlan 101 drop
switch1(config-sync-sp)# interface Ethernet1/2
switch1(config-sync-sp-if)# switchport mode trunk
switch1(config-sync-sp-if)# switchport trunk allowed vlan 101
switch1(config-sync-sp-if)# exit
switch1(config-sync-sp)# show switch-profile sp buffer
-----------------------------------------------------------
Seq-no  Command
-----------------------------------------------------------
1       vlan 101
1.1       ip igmp snooping querier 10.101.1.1
2       mac address-table static 0000.0000.0001 vlan 101 drop
3       interface Ethernet1/2
3.1       switchport mode trunk
3.2       switchport trunk allowed vlan 101

switch1(config-sync-sp)# buffer-move 3 1
switch1(config-sync-sp)# show switch-profile sp buffer
-----------------------------------------------------------
Seq-no  Command
-----------------------------------------------------------
1       interface Ethernet1/2
1.1       switchport mode trunk
1.2       switchport trunk allowed vlan 101
2       vlan 101
2.1       ip igmp snooping querier 10.101.1.1
3       mac address-table static 0000.0000.0001 vlan 101 drop

switch1(config-sync-sp)# buffer-delete 1
switch1(config-sync-sp)# show switch-profile sp buffer
-----------------------------------------------------------
```

```
Seq-no  Command
-------------------------------------------------------
2       vlan 101
2.1       ip igmp snooping querier 10.101.1.1
3       mac address-table static 0000.0000.0001 vlan 101 drop

switch1(config-sync-sp)# buffer-delete all
switch1(config-sync-sp)# show switch-profile sp buffer
switch1(config-sync-sp)#
```

Synchronizing Configurations

Synchronizing Configurations After a Switch Reboots

If a Cisco Nexus Series switch reboots while a new configuration is committed on a peer switch using a switch-profile, follow these steps to synchronize the peer switches after the reload.

1 Reapply configurations that were changed on the peer switch during the reboot.

2 Enter the **commit** command.

3 Verify that the configuration is applied correctly and both peers are back synchronized.

Synchronizing Configurations When the mgmt0 Interface Connectivity is Lost

When the mgmt0 interface connectivity is lost and configuration changes are required, apply the configuration changes on both switches using the switch-profile. When connectivity to the mgmt0 interface is restored, both switches are synchronized.

If a configuration change is made only on one switch in this scenario, a merge will succeed when the mgmt0 interface comes up and the configuration gets applied on the other switch.