Configuring SPAN

This document describes the Switched Port Analyzer (SPAN) feature and configuration steps to implement SPAN.

Prerequisites for Configuring SPAN

- You must enable SPAN globally to support the desired SPAN configuration.
- NID must have an IP address.
- You must select a SPAN source from the following options:
  - Interface—one or more source interfaces.
  - VLAN— one or more source VLANs.
  - CPU— to monitor CPU traffic.

Restrictions for Configuring SPAN

- You cannot configure a port as both a source and destination port.
- VLAN SPAN monitors only the traffic that leaves or enters Layer 2 ports in the VLAN.
- SPAN sources interface and VLAN cannot exit together.

Information About SPAN

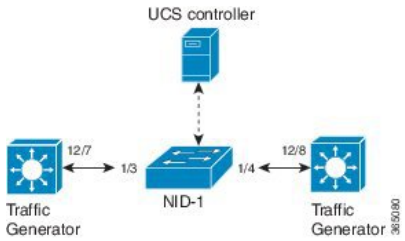
Switched Port Analyzer (SPAN) feature, sometimes called port mirroring or port monitoring, selects network traffic for analysis by a network analyzer. The SPAN feature is local when the monitored ports are all located on the same switch as the destination port. A local SPAN session is an association of a destination port with source ports. You can monitor incoming or outgoing traffic on a series or range of ports.

SPAN is used to monitor traffic within the switch. Traffic source can be from:

- Single or multiple ports
- Single or multiple VLANs
- Source CPU

Destination can be an interface on the same switch. The following figure shows the topology used for provisioning SPAN on a NID using a UPE NID Controller.

Figure 1: SPAN Topology



How to Provision SPAN

Enabling SPAN Globally to Start a Monitoring Session

DETAILED STEPS

	Command or Action	Purpose
Step 1	**ConfigureNID** **Example:** `UCS# Configure NID 1`	Opens a new session for NID 1.
Step 2	**span** **Example:** `UCS# span`	Enters the SPAN mode.
Step 3	**setSpanGlobalConfReq** {**enable** | **disbale**}	Enters SPAN global configuration mode.

	Command or Action	Purpose
	Example: `UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable`	Sub-command options. • **enable—**Enables SPAN globally. • **disbale—**Disables SPAN globally.
Step 4	**setSpanGlobalConf review** **Example:** `UCS(SPAN)# setSpanGlobalConf review`	(Optional) Displays the configuration.
Step 5	**setSpanGlobalConf commit** **Example:** `UCS(SPAN)# setSpanGlobalConf commit`	Sends the configuration to NID.
Step 6	**exit** **Example:** `UCS(SPAN)# exit`	Exits the Opens a new session for NID 1. mode.

Configuration Example

- The example shows how to enable SPAN globally:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
UCS(SPAN)# exit
```

Configuring SPAN Source Interface

Before You Begin

Perform the steps to enable SPAN globally.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**setSpanSrcConfRequest** {**source** {**cpu** {**rx** | **tx** | **both**} | {**vlan** *vlan_list*} | **interface** {*intf_range* | **traffic-type** {**rx** | **tx** | **both**}} **Example:** `UCS(SPAN)# setSpanSrcConf commitsetSpanSrcConf setSpanSrcConfRequest source interface intf_range 1-2`	Configures SPAN source interface. • **source—**Mirrors source interface or VLAN. • **cpu—**Mirrors source CPU. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic.

	Command or Action	Purpose
		• **both—**Mirrors received and transmitted traffic. • **vlan—**Mirrors source VLAN. • *vlan_list***—**Mirrors source VLAN. • **interface—** Mirrors source interface and traffic type. • *intf_range***—**Mirrors an interface number or a range from 1 to 6. • **traffic-type—**Mirrors traffic type. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic.
Step 2	**setSpanSrcConfRequest** {**source** {**cpu** {**rx** | **tx** | **both**} | {**vlan** vlan_list} | **interface** {*intf_range* | **traffic-type** {**rx** | **tx** | **both**}} **Example:** `UCS(SPAN)# setSpanSrcConf commitsetSpanSrcConf setSpanSrcConfRequest source interface traffic-type both`	Configures SPAN source traffic type as both, receive and transmit. • **source—**Mirrors source interface or VLAN. • **cpu—**Mirrors source CPU. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic. • **vlan—**Mirrors source VLAN. • *vlan_list***—**Mirrors source VLAN. • **interface—** Mirrors source interface and traffic type. • *intf_range***—**Mirrors an interface number or a range from 1 to 6. • **traffic-type—**Mirrors traffic type. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic.
Step 3	**setSpanSrcConf review** **Example:** `UCS(SPAN)# setSpanSrcConf review`	(Optional) Displays the configuration.
Step 4	**setSpanGlobalConf commit** **Example:** `UCS(SPAN)# setSpanSrcConf commit`	Sends the configuration to NID.

	Command or Action	Purpose
Step 5	**exit** **Example:** `UCS(SPAN)# exit`	Exits the SPAN mode.

Configuration Example

- The example shows how to configure SPAN on an interface range:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
UCS(SPAN)# exit
UCS(SPAN)# setSpanSrcConf commitsetSpanSrcConf setSpanSrcConfRequest source interface
 intf_range 1-2
UCS(SPAN)# setSpanSrcConf commitsetSpanSrcConf setSpanSrcConfRequest source interface
 traffic-type both
UCS(SPAN)# setSpanSrcConf review
UCS(SPAN)# setSpanSrcConf commit
UCS(SPAN)# exit
```

Configuring SPAN Source CPU

Before You Begin

Perform the steps to enable SPAN globally.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**setSpanSrcConfRequest** {**source** {**cpu** {**rx** | **tx** | **both**} | {**vlan** *vlan_list*} | **interface** {*intf_range* | **traffic-type** {**rx** | **tx** | **both**}} **Example:** `UCS(SPAN)# setSpanSrcConf setSpanSrcConfRequest source cpu both`	Configures SPAN source CPU. • **source—**Mirrors source interface or VLAN. • **cpu—**Mirrors source CPU. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic. • **vlan—**Mirrors source VLAN. • *vlan_list*—Mirrors source VLAN. • **interface—** Mirrors source interface and traffic type.

	Command or Action	Purpose
		• *intf_range*—Mirrors an interface number or a range from 1 to 6. • **traffic-type—**Mirrors traffic type. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic.
Step 2	**setSpanSrcConf review** **Example:** `UCS(SPAN)# setSpanSrcConf review`	(Optional) Displays the configuration.
Step 3	**setSpanGlobalConf commit** **Example:** `UCS(SPAN)# setSpanSrcConf commit`	Sends the configuration to NID.
Step 4	**exit** **Example:** `UCS(SPAN)# exit`	Exits the SPAN mode.

Configuration Example

- The example shows how to configure SPAN on an interface range:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
UCS(SPAN)# exit
UCS(SPAN)# setSpanSrcConf setSpanSrcConfRequest source cpu both
UCS(SPAN)# setSpanSrcConf review
UCS(SPAN)# setSpanSrcConf commit
UCS(SPAN)# exit
```

Configuring SPAN Source VLAN

Before You Begin

Perform the steps to enable SPAN globally.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**setSpanSrcConfRequest** {**source** {**cpu** {**rx** | **tx** | **both**} | {**vlan** *vlan_list*} | **interface** {*intf_range* | **traffic-type** {**rx** | **tx** | **both**}} **Example:** `UCS(SPAN)# setSpanSrcConf setSpanSrcConfRequest source vlan vlan_list 100`	Configures SPAN source VLAN. • **source—**Mirrors source interface or VLAN. • **cpu—**Mirrors source CPU. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic. • **vlan—**Mirrors source VLAN. • *vlan_list*—Mirrors source VLAN. • **interface—** Mirrors source interface and traffic type. • *intf_range*—Mirrors an interface number or a range from 1 to 6. • **traffic-type—**Mirrors traffic type. • **rx—**Mirrors received traffic. • **tx—**Mirrors transmitted traffic. • **both—**Mirrors received and transmitted traffic.
Step 2	**setSpanSrcConf review** **Example:** `UCS(SPAN)# setSpanSrcConf review`	(Optional) Displays the configuration.
Step 3	**setSpanGlobalConf commit** **Example:** `UCS(SPAN)# setSpanSrcConf commit`	Sends the configuration to NID.
Step 4	**exit** **Example:** `UCS(SPAN)# exit`	Exits the SPAN mode.

Configuration Example

- The example shows how to configure SPAN on an interface range:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
UCS(SPAN)# exit
```

```
UCS(SPAN)# setSpanSrcConf setSpanSrcConfRequest source vlan vlan_list 100
UCS(SPAN)# setSpanSrcConf review
UCS(SPAN)# setSpanSrcConf commit
UCS(SPAN)# exit
```

Configuring SPAN Destination

Before You Begin

Perform the steps to enable SPAN globally.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**setSpanDestConfRequest destination intf_id** **Example:** `UCS(SPAN)# setSpanDestConf setSpanDestConfRequest destination intf_id 4`	Configures SPAN destination. • **destination—**Mirrors destination interface. • **intf_id—**Specifies single port ID range from 1 to 6.
Step 2	**setSpanDestConf review** **Example:** `UCS(SPAN)# setSpanDestConf review`	(Optional) Displays the configuration.
Step 3	**setSpanDestConf commit** **Example:** `UCS(SPAN)# setSpanDestConf commit`	Sends the configuration to NID.
Step 4	**exit** **Example:** `UCS(SPAN)# exit`	Exits the SPAN mode.

Configuration Example

- The example shows how to configure SPAN destination:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
UCS(SPAN)# exit
UCS(SPAN)# setSpanDestConf setSpanDestConfRequest destination intf_id 4
UCS(SPAN)# setSpanDestConf review
UCS(SPAN)# setSpanDestConf commit
UCS(SPAN)# exit
```

Deleting SPAN Source Configuration

Before You Begin

Perform the steps to enable SPAN globally.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**delSpanSrcConfRequest** {**source** {**cpu** {**rx** | **tx** | **both**} | {**vlan** *vlan_list*} | **interface** {*intf_range* | **traffic-type** {**rx** | **tx** | **both**}} **Example:** `UCS(SPAN)# delSpanSrcConf delSpanSrcConfRequest source cpu rx`	Deletes SPAN source configuration. • **source—**Removes mirror of source interface or VLAN. • **cpu—**Removes mirror of source CPU. • **rx—**Removes mirror of received traffic. • **tx—**Removes mirror of transmitted traffic. • **both—**Removes mirror of received and transmitted traffic. • **vlan—**Removes mirror of source VLAN. • *vlan_list*—Removes mirror of source VLAN. • **interface—** Removes mirror of source interface and traffic type. • *intf_range*—Removes mirror of interface number or a range from 1 to 6. • **traffic-type—**Removes mirror of traffic type. • **rx—**Removes mirror of received traffic. • **tx—**Removes mirror of transmitted traffic. • **both—**Removes mirror of received and transmitted traffic.
Step 2	**delSpanSrcConf review** **Example:** `UCS(SPAN)# delSpanSrcConf review`	(Optional) Displays the configuration.
Step 3	**delSpanSrcConf commit** **Example:** `UCS(SPAN)# delSpanSrcConf commit`	Sends the configuration to NID.
Step 4	**exit** **Example:** `UCS(SPAN)# exit`	Exits the SPAN mode.

Configuration Example

- The example shows how to configure SPAN on an interface range:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
UCS(SPAN)# exit
UCS(SPAN)# delSpanSrcConf delSpanSrcConfRequest source cpu rx
UCS(SPAN)# delSpanSrcConf review
UCS(SPAN)# delSpanSrcConf commit
UCS(SPAN)# exit
```

Deleting SPAN Destination Configuration

Before You Begin

Perform the steps to enable SPAN globally.

DETAILED STEPS

	Command or Action	Purpose
Step 1	**delSpanDestConfRequest destination intf_id** **Example:** `UCS(SPAN)# delSpanDstConf delSpanDstConfRequest detination intf_id 4`	Deletes SPAN destination configuration. • **destination—**Removes mirror of destination interface. • **intf_id—**Specifies single port ID range from 1 to 6.
Step 2	**delSpanDstConf review** **Example:** `UCS(SPAN)# delSpanDstConf review`	(Optional) Displays the configuration.
Step 3	**delSpanDstConf commit** **Example:** `UCS(SPAN)# delSpanDstConf commit`	Sends the configuration to NID.
Step 4	**exit** **Example:** `UCS(SPAN)# exit`	Exits the SPAN mode.

Configuration Example

- The example shows how to configure SPAN destination:

```
UCS# span
UCS(SPAN)# setSpanGlobalConf setSpanGlobalConfReq enable
UCS(SPAN)# setSpanGlobalConf review
UCS(SPAN)# setSpanGlobalConf commit
```

```
UCS(SPAN)# exit
UCS(SPAN)# delSpanDstConf delSpanDstConfRequest detination intf_id 4
UCS(SPAN)# delSpanDstConf review
UCS(SPAN)# delSpanDstConf commit
UCS(SPAN)# exit
```

Verifying Diagnostics POST

Use the following commands to verify the diagnostics test status.

- **showDiagResults showDiagTestResults**

  The following is a sample output from the command:

```
UCS(Diagnostics)#  showDiagResults showDiagTestResults
UCS(Diagnostics)#  showDiagResults review

Commands in queue:
                 showDiagResults showDiagTestResults

UCS(Diagnostics)#  showDiagResults commit

ShowDiagResults_Output.diagTestResults.testresult[0] = 'External Port
 Loopback Test =>'
ShowDiagResults_Output.diagTestResults.testresult[1] = 'Passed'
ShowDiagResults_Output.diagTestResults.testresult[2] = 'Sync-E
Reference Source Clock Test =>'
ShowDiagResults_Output.diagTestResults.testresult[3] = 'Passed'
ShowDiagResults_Output.diagTestResults.testresult[4] = 'PTP One PPS
Test =>'
ShowDiagResults_Output.diagTestResults.testresult[5] = 'Passed'
 ShowDiagResults Commit Success!!!
```

Additional References

Related Documents

Related Topic	Document Title
Cisco ME 3800x and ME 3600x Switches Software Configuration Guide, Cisco IOS Release 15.4(1)S	http://www.cisco.com/c/en/us/td/docs/switches/metro/me3600x_3800x/software/release/15-4_1_S/configuration/guide/3800x3600xscg.html

MIBs

MIB	MIBs Link
MIBs Supporting Cisco IOS	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/support