MGCP Layer 2 Teardown for IUA DPNSS Trunks

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The MGCP Layer 2 Teardown for IUA DPNSS Trunks featurette prevents layer-2 voice calls from being lost during a wide-area-network (WAN) failure by tearing them down and notifying the PBX of the out-of-service trunk.

Finding Feature Information in This Module

Your Cisco IOS software release may not support all of the features documented in this module. To reach links to specific feature documentation in this module and to see a list of the releases in which each feature is supported, use the "Feature Information for MGCP Layer 2 Teardown for IUA DPNSS Trunks" section on page 9.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

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Restrictions for MGCP Layer 2 Teardown for IUA DPNSS Trunks

- If a fractional PRI is configured for backhaul, you must configure the feature to take down the entire E1 or T1 trunk.

Information About MGCP Layer 2 Teardown for IUA DPNSS Trunks

ISDN User Adaptation Layer (IUA) Digital Private Network Signaling System (DPNSS) is an industry-standard interface between a PBX and an access network. It expands the facilities normally available only between extensions on a single PBX to all extensions on PBXs that are connected together in a private network.

When an IUA DPNSS trunk on a voice gateway loses registration, many PBXs continue to transmit calls on the trunk. This feature enables the gateway to signal the PBX to play a busy tone or stop transmitting calls on the trunk, thus preventing calls from being lost and, in some cases, tying up all the DS0s on the trunk.

How to Configure MGCP Layer 2 Teardown for IUA DPNSS Trunks

To configure MGCP Layer 2 Teardown for IUA DPNSS Trunks, perform the following steps.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice-port**
4. **busyout monitor backhaul**
5. **busyout monitor action** {**graceful** | **shutdown** [**alarm blue**]}
6. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.

	Command or Action	Purpose
Step 3	**voice-port** *slot*/*port*:*group* **Example:** `Router(config)# voice-port 2/0:15`	Enters voice-port configuration mode for the specified voice port. **Note** Command syntax varies by platform.
Step 4	**busyout monitor backhaul** **Example:** `Router(config-voiceport)# busyout monitor backhaul`	Configures a voice port to enter busyout-monitor state with backhaul-L3 connectivity monitoring during a WAN failure.
Step 5	**busyout monitor action** {**graceful** | **shutdown** | [**alarm blue**]} **Example:** `Router(config-voiceport)# busyout monitor action shutdown alarm blue`	Places a voice port into busyout state. Keywords are as follows: • **graceful**—Graceful busyout state • **shutdown** [**alarm blue**]—D-channel shutdown busyout state, optionally with a blue alarm, also known as an alarm-indication signal (AIS)
Step 6	**exit** **Example:** `Router(config-voiceport)# exit`	Exits the current mode.

Configuration Examples for MGCP Layer 2 Teardown for IUA DPNSS Trunks

Original DPNSS Configuration (Relevant Parts Only)

```
isdn switch-type primary-dpnss

iua
  AS dpnss-node 1.3.105.10 9900
   ASP hmt2-n1125 AS dpnss-node 1.3.105.6 9900

controller E1 1/0
 framing NO-CRC4
 pri-group timeslots 1-31 service mgcp

interface Serial1/0:15
.
.
.
 isdn bind-l3 iua-backhaul dpnss-node
.
.
.
```

Configuration Added by the MGCP Layer 2 Teardown for IUA DPNSS Trunks Feature

```
voice-port 1/0:15
  busyout monitor backhaul
  busyout monitor action alarm blue
!
```

Additional References

The following sections provide references related to MGCP Layer 2 Teardown for IUA DPNSS Trunks.

Related Documents

Related Topic	Document Title
Technical documentation, including feedback and assistance	*What's New in Cisco Product Documentation* (including monthly listings of new and revised documents) at http://www.cisco.com/univercd/cc/td/doc/abtunicd/136957.htm Feedback form for this document at http://www.cisco.com/univercd/cc/td/doc/product/software/ios124/124newft/124t/124t9/htteardn.htm

Standards

Standard	Title
DPNSS	*Digital Private Network Signaling System*. An industry standard interface defined between a PBX and an access network. DPNSS expands the facilities normally available only between extensions on a single PBX to all extensions on PBXs that are connected together in a private network. DPNSS was originally derived from British Telecom's Digital Access Signaling System I (DASS I), and enhanced where necessary to meet private network requirements.
ISDN	*Integrated Services Digital Network*. Communication protocol offered by telephone companies that permits telephone networks to carry data, voice, and other source traffic.

MIBs

MIB	MIBs Link
None	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

RFCs

RFC	Title
None	—

Technical Assistance

Description	Link
The Cisco Technical Support & Documentation website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

This section documents new and modified commands only:

Modified Command

- busyout monitor action

New Command

- busyout monitor backhaul

busyout monitor action

To place a voice port into graceful or shutdown busyout state when triggered by the busyout monitor, use the **busyout monitor action** command in voice-port configuration mode. To remove the voice port from the busyout state, use the **no** form of this command.

busyout monitor action {**graceful** | **shutdown** [**alarm blue**]}

no busyout monitor action {**graceful** | **shutdown** [**alarm blue**]}

Syntax Description

graceful	Graceful busyout state.
shutdown	D-channel shutdown busyout state.
alarm blue	(Optional) Shutdown state with a blue alarm, also known as an alarm-indication signal (AIS).

Command Default

Default voice busyout behavior without this command is a forced busyout.

Default voice busyout behavior for PRI depends on whether or not the ISDN switch type supports service messages:

- If the switch type supports service messages, default voice busyout behavior is to transmit B-channel out-of-service (OOS) messages and to keep the D channel active. ISDN switch types that support service messages are NI, 4ESS (user side only), 5ESS (user side only), and DMS100.
- If the switch type does not support service messages, default voice busyout behavior is to bring down the D channel.

Command Modes

Voice-port configuration

Command History

Release	Modification
12.2(13)T	The **busyout monitor action graceful** command was introduced on the following platforms: Cisco 2600 series, Cisco 2600XM, Cisco 2691, Cisco 3640, Cisco 3660, Cisco 3725, and Cisco VG200.
12.3(6)	The **busyout monitor action shutdown** command was introduced on the following platforms: Cisco 1700 series, Cisco IAD2420 series, Cisco 2600 series, Cisco 2600XM series, Cisco 2691, Cisco 3600 series, Cisco 3700 series, Cisco 4224, Cisco 7200 series, Cisco 7301, Cisco 7400 series, Cisco MC3810, Cisco WS-X4604-GWY, and Cisco VG200.
12.3(7)T	The **busyout monitor action shutdown** command was integrated into Cisco IOS Release 12.3(7)T and support was added for the Cisco IAD2430 series.
12.4(9)T	This command was introduced to combine the **busyout monitor action graceful** and **busyout monitor action shutdown** commands. The **shutdown alarm blue** keywords were added.

Usage Guidelines

Use this command to control busyout behavior that is triggered by the **busyout monitor** command.

This command with the **graceful** keyword busies out the voice port immediately or, if there is an active call on this voice port, waits until the call is over.

This command with the **shutdown** keyword has the following attributes:

- Before Cisco IOS Release 12.2(8)T, when voice busyout is triggered on a PRI voice port, the D channel is deactivated until the busyout trigger is cleared. Some ISDN switch types, however, support in-service and OOS Q.931 messages that permit B channels to be taken out of service while still keeping the D channel active. Starting in Cisco IOS Release 12.3(8)T for these ISDN switch types, OOS messages are sent and the D channel is kept active when a voice busyout is triggered.
- This keyword is available only for PRI voice ports.

Examples

The following example shows analog voice-port busyout state set to graceful:

```
voice-port 2/0:15
 busyout monitor action graceful
```

The following example shows E1 PRI voice-port busyout state set to shutdown:

```
voice-port 1/1:15 (E1 PRI)
 busyout monitor gatekeeper
 busyout monitor action shutdown
```

The following example shows T1 PRI voice-port busyout state set to shutdown:

```
voice-port 0/1:23 (T1 PRI)
 busyout monitor gatekeeper
 busyout monitor action shutdown
```

Related Commands

Command	Description
busyout forced	Forces a voice port into busyout state.
busyout monitor	Configures a voice port to monitor an interface for events that would trigger voice-port busyout.
busyout monitor backhaul	Configures a voice port to enter busyout-monitor state with backhaul-L3 connectivity monitoring during a WAN failure.
busyout monitor gatekeeper	Configures a voice port to enter busyout state if connectivity to the gatekeeper is lost.
busyout monitor probe	Configures a voice port to enter busyout state if an SAA probe signal returned from a remote, IP-addressable interface crosses a specified delay or loss threshold.
busyout seize	Changes the busyout seize procedure for a voice port.
show voice busyout	Displays information about voice-busyout state.
voice-port	Enters voice-port configuration mode and identifies the voice port to be configured.

busyout monitor backhaul

To configure a voice port to enter busyout-monitor state with backhaul-L3 connectivity monitoring during a wide-area-network (WAN) failure, use the **busyout monitor backhaul** command in voice-port configuration mode. To disable busyout-monitor state, use the **no** form of this command.

busyout monitor backhaul

no busyout monitor backhaul

Syntax Description

This command has no arguments or keywords.

Command Default

If this command is not used, the voice port is not configured to enter busyout state during a WAN failure.

Command Modes

Voice-port configuration

Command History

Release	Modification
12.4(9)T	This command was introduced.

Usage Guidelines

Use this command to implement backhaul-L3 connectivity monitoring.

Examples

The following example configures a voice port to enter busyout-monitor state with backhaul-L3 connectivity monitoring during a WAN failure:

```
Router(config-voiceport)# busyout monitor backhaul
```

Related Commands

Command	Description
busyout monitor action	Places a voice port into busyout state.
busyout monitor	Configures a voice port to enter busyout-monitor state.

Feature Information for MGCP Layer 2 Teardown for IUA DPNSS Trunks

Table 1 lists the release history for this feature.

Not all commands may be available in your Cisco IOS software release. For release information about a specific command, see the command-reference documentation.

Use Cisco Feature Navigator to find information about platform support and software image support. Cisco Feature Navigator enables you to determine which Cisco IOS and Catalyst OS software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to http://www.cisco.com/go/cfn. An account on Cisco.com is not required.

Note Table 1 lists only the Cisco IOS software release that introduced support for a given feature in a given Cisco IOS software release train. Unless noted otherwise, subsequent releases of that Cisco IOS software release train also support that feature.

Table 1 *Feature Information for* **MGCP Layer 2 Teardown for IUA DPNSS Trunks**

Feature Name	Releases	Feature Information
MGCP Layer 2 Teardown for IUA DPNSS Trunks	12.4(9)T	Stops voice calls from being lost during a WAN failure by tearing down all Layer-2 calls and notifying the PBX of the out-of-service trunk. The **busyout monitor action** command was modified and the **busyout monitor backhaul** command was introduced.