Dialing Number Enhancement

Feature History

Release	Modification
12.2(11)T	This feature was introduced.

This document describes the Asynchronous Line Monitoring feature feature. It includes the following sections:

Feature Overview

The Asynchronous Line Monitoring feature feature removes previous restrictions on the number of dialed digits accepted as a valid telephone number in the Called Party number information element (IE) for the National or International numbering types.

Benefits

The Asynchronous Line Monitoring feature feature is a change to the Cisco IOS software that makes the ISDN dialing plan more flexible by allowing a range rather than a restricted number of digits to be accepted for dialing.

Restrictions

The Asynchronous Line Monitoring feature feature was developed for interfaces configured for network-side ISDN where the Called Party IE digits are of National or International numbering types.

Related Documents

Refer to the chapter "Configuring Network Side ISDN PRI Signaling, Trunking, and Switching" in the part "Signaling Configuration" in the *Cisco IOS Dial Technologies Configuration Guide*, Release 12.2, for more information about configuring network-side ISDN switches.

Supported Platforms

The Asynchronous Line Monitoring feature feature is supported on the following platforms:

Cisco 2600 series

Cisco 3620

Cisco 3640

Cisco 3660

Cisco AS5300 series

Cisco AS5350

Cisco AS5400 series

Cisco AS5800 series

Cisco AS5850

Cisco 7200 series

Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. Under the release section, you can compare releases side by side to display both the features unique to each software release and the features in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions at http://www.cisco.com/register.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

http://www.cisco.com/go/fn

Supported Standards, MIBs, and RFCs

Standards

None

MIBs

None

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

RFCs

None

Configuration Tasks

No new commands are associated with the Asynchronous Line Monitoring feature feature. See the "Troubleshooting Tips" section for information about verifying numbering plans and switch types configured. See the "Configuration Examples" section for configuration examples.

Troubleshooting Tips

To learn and, if necessary, change the numbering plan and type currently configured on the ISDN interface, perform the following steps:

Step 1   To learn the numbering plan and type currently configured, use the **debug isdn q931** command in EXEC mode:

```
Router# debug isdn q931

4w1d: ISDN Se0:23: TX ->  SETUP pd = 8  callref = 0x000D
4w1d:          Bearer Capability i = 0x8890
4w1d:          Channel ID i = 0xA98397
4w1d:          Called Party Number i = 0xA1, '12345', Plan:ISDN, Type:National
4w1d: ISDN Se0:23: RX <-  RELEASE_COMP pd = 8  callref = 0x800D
```

The Called Party Number report lists the numbering plan and type.

Step 2   To change the numbering plan and type, use the **isdn map** command in interface configuration mode. Use the command line interface help feature to list the choices.

```
Router(config-if)# isdn map address 78886 plan ?

  data       Data plan
  isdn       ISDN plan
  national   National plan
  privacy    Private plan
  reserved   Reserved extension
```

```
.
.
.
reserved/7    Reserved value 7
telex         TELEX plan
unknown       Unknown plan

Router(config-if)# isdn map address 78886 plan isdn type ?

abbreviated    Abbreviated type
international   International type
national       National type
network        Network type
reserved       Reserved type
reserved/5     Reserved value 5
subscriber     Subscriber type
unknown        Unknown type
```

Step 3 To force the ISDN numbering plan and National type on the peer (calling number) side, use the **isdn map** command with the following keywords in interface configuration mode:

```
Router(config-if)# isdn map address telephone-number plan isdn type national
```

Monitoring and Maintaining Asynchronous Line Monitoring feature

To monitor and maintain the Asynchronous Line Monitoring feature feature, use the procedure in the "Troubleshooting Tips" section.

You may also find the following EXEC command useful for displaying an extensive report about the ISDN interfaces, including the switch type and the status of ISDN Layers 1 through 3:

| Command	Purpose
`Router# show isdn status [interface-type number]`	Displays the status of all ISDN interfaces, or just the specified interface.

Configuration Examples

This section provides the following configuration examples:

- Data Call Asynchronous Line Monitoring feature Example
- Voice Call Asynchronous Line Monitoring feature Example

Data Call Asynchronous Line Monitoring feature Example

The following example shows configurations for inserting telephone numbers with varying numbers of digits for data calls.

Figure 1　　　　*Data Call Asynchronous Line Monitoring*
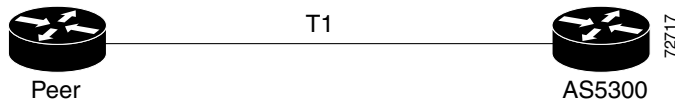
Peer Router Configuration

```
interface Serial0:23
 ip address 10.10.1.1 255.255.255.0
 encapsulation ppp
 dialer string 19165551213
 dialer-group 1
 isdn switch-type primary-ni
 isdn map address 19165551213 plan isdn type national
```

AS5300 Router Configuration

```
interface Serial0:23
 ip address 10.10.1.2 255.255.255.0
 encapsulation ppp
 dialer string 5551212
 dialer-group 1
 isdn switch-type primary-ni
 isdn protocol-emulate network
```

Voice Call Asynchronous Line Monitoring feature Example

The following example shows configurations for inserting both PBX and public telephone service telephone numbers with varying numbers of digits for voice calls. The PBX is is configured for National ISDN with numbering type National.

Figure 2　　　　*Voice Call Asynchronous Monitoring*

Cisco Voice Gateway 1 Configuration

```
interface Serial0:23
 no ip address
 isdn switch-type primary-ni
 isdn protocol-emulate network
 isdn incoming-voice modem
dial-peer voice 100 pots
 destination-pattern 50001
 no digit-strip
 direct-inward-dial
 port 0:D
dial-peer voice 200 voip
 destination-pattern 14085551213
 session target ipv4:10.0.194.2
 dtmf-relay h245-signal h245-alphanumeric
```

Cisco Voice Gateway 2 Configuration

```
dial-peer voice 100 voip
 destination-pattern 50001
```

```
session target ipv4:10.0.194.52
dtmf-relay h245-signal h245-alphanumeric
```

Command Reference

This feature uses no new or modified commands. For information about all Cisco IOS commands, go to the Command Lookup Tool at http://tools.cisco.com/Support/CLILookup or to the *Cisco IOS Master Commands List*.