



## Cisco IOS Voice Commands: N

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This chapter contains commands to configure and maintain Cisco IOS voice applications. The commands are presented in alphabetical order. Some commands required for configuring voice may be found in other Cisco IOS command references. Use the command reference master index or search online to find these commands.

For detailed information on how to configure these applications and features, refer to the *Cisco IOS Voice Configuration Guide*.

## name (dial peer cor custom)

To specify the name for a custom class of restrictions (COR), use the **name** command in dial peer COR custom configuration mode. To remove a specified COR, use the **no** form of this command.

**name** *class-name*

**no name** *class-name*

| Syntax Description | <i>class-name</i> | Name that describes the specific COR. |
|--------------------|-------------------|---------------------------------------|
|--------------------|-------------------|---------------------------------------|

| Command Default | No default behavior or values. |
|-----------------|--------------------------------|
|-----------------|--------------------------------|

| Command Modes | Dial peer COR custom configuration |
|---------------|------------------------------------|
|---------------|------------------------------------|

| Command History | Release  | Modification                 |
|-----------------|----------|------------------------------|
|                 | 12.1(3)T | This command was introduced. |

| Usage Guidelines | The <b>dial-peer cor custom</b> and <b>name</b> commands define the names of capabilities on which to apply COR operation. Examples of names might include any of the following: call1900, call527, call9, or call 911. You must define the capabilities before you specify the COR rules. |
|------------------|--|
|------------------|--|

You can define a maximum of 64 COR names.

| Examples | The following example defines three COR names: |
|----------|--|
|----------|--|

```
dial-peer cor custom
 name 900_call
 name 800_call
 name catchall
```

| Related Commands | Command                     | Description                                    |
|------------------|-----------------------------|--|
|                  | <b>dial-peer cor custom</b> | Specifies that named CORs apply to dial peers. |

# nat symmetric check media-src

To enable the gateway to check the media source of incoming Real-time Transport Protocol (RTP) packets in symmetric Network Address Translation (NAT) environments, use the **nat symmetric check media-src** command in SIP UA configuration mode. To disable media source checking, use the **no** form of this command.

**nat symmetric check media-src**

**no nat symmetric check media-src**

**Syntax Description** This command has no arguments or keywords.

**Command Default** Default behavior is media source checking enabled.

**Command Modes** SIP UA configuration

| Command History | Release   | Modification                 |
|-----------------|-----------|------------------------------|
|                 | 12.2(13)T | This command was introduced. |

**Usage Guidelines** This command provides the ability to enable or disable symmetric NAT settings for the Session Initiation Protocol (SIP) user agent. Use the **nat symmetric check media-src** command to configure the gateway to check the media source address and port of the first incoming Realtime Transport Protocol (RTP) packet. Use the **nat symmetric role** command to set the symmetric NAT endpoint role to active or passive.

**Examples** The following example enables checking the media source:

```
Router(config)# sip-ua
Router(config-sip-ua)# nat symmetric check-media-src
```

| Related Commands | Command                   | Description  |
|------------------|---------------------------|--|
|                  | <b>debug ccsip all</b>    | Enables all SIP-related debugging.   |
|                  | <b>debug ip nat sip</b>   | Displays information about SIP messages and IP packets translated by the IP NAT feature. |
|                  | <b>nat symmetric role</b> | Specifies NAT endpoint settings.   |

# neighbor (annex g)

To configure the neighboring border elements (BEs) that interact with the local BE for the purpose of obtaining addressing information and aiding in address resolution, enter the **neighbor** command in Annex G configuration mode. To reset the default value, use the **no** form of this command.

**neighbor** *ip-address*

**no neighbor**

|                           |                   |  |
|---------------------------|-------------------|--|
| <b>Syntax Description</b> | <i>ip-address</i> | IP address of the neighbor that is used for exchanging Annex G messages. |
|---------------------------|-------------------|--|

|                        |                               |  |
|------------------------|-------------------------------|--|
| <b>Command Default</b> | No default behavior or values |  |
|------------------------|-------------------------------|--|

|                      |                       |  |
|----------------------|-----------------------|--|
| <b>Command Modes</b> | Annex G configuration |  |
|----------------------|-----------------------|--|

| <b>Command History</b> | <b>Release</b>   | <b>Modification</b>          |
|------------------------|--|------------------------------|
|                        | 12.2(2)XA  | This command was introduced. |
| 12.2(4)T               | This command was integrated into Cisco IOS Release 12.2(4)T. Support for the Cisco AS5300, Cisco AS5350, and Cisco AS5400 is not included in this release.                 |                              |
| 12.2(2)XB1             | This command was implemented on the Cisco AS5850.  |                              |
| 12.2(11)T              | This command was integrated into Cisco IOS Release 12.2(11)T. This command is supported on the Cisco AS5300, Cisco AS5350, Cisco AS5400, and Cisco AS5850 in this release. |                              |

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example configures a neighboring BE that has an IP address and border element ID: |
|-----------------|---|

```
Router(config)# call-router h323-annexg be20
Router(config-annexg)# neighbor 121.90.10.42
Router(config-annexg-neighbor)# id be30
Router(config-annexg-neighbor)# exit
```

| <b>Related Commands</b> | <b>Command</b>     | <b>Description</b>   |
|-------------------------|--------------------|--|
|                         |                    | <b>advertise</b>   |
|                         | <b>call-router</b> | Enables the Annex G border element configuration commands. |
|                         | <b>id</b>          | Configures the local ID for the neighboring BE.            |

| <b>Command</b>        | <b>Description</b>   |
|-----------------------|--|
| <b>port</b>           | Configures the port number of the neighbor that is used for exchanging Annex G messages. |
| <b>query-interval</b> | Configures the interval at which the local BE will query the neighboring BE.             |

## neighbor (tgrep)

To create a TGREP session with another device, use the **neighbor** command in TGREP configuration mode. To disable a TRIP connection, use the **no** form of this command.

**neighbor** *ip\_address*

**no neighbor** *ip\_address*

|                           |                   |   |
|---------------------------|-------------------|---|
| <b>Syntax Description</b> | <i>ip_address</i> | IP address of a peer device with which TGREP information will be exchanged. |
|---------------------------|-------------------|---|

|                        |                                    |
|------------------------|------------------------------------|
| <b>Command Default</b> | No neighboring devices are defined |
|------------------------|------------------------------------|

|                      |                     |
|----------------------|---------------------|
| <b>Command Modes</b> | TGREP configuration |
|----------------------|---------------------|

|                        |                |                              |
|------------------------|----------------|------------------------------|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>          |
|                        | 12.3(1)        | This command was introduced. |

**Examples** The following example shows that the gateway with the IP address 192.116.56.10 is defined as a neighbor for ITAD 1234:

```
Router(config)# tgrep local-itad 1234
Router(config-tgrep)# neighbor 192.116.56.10
```

|                         |                         |  |
|-------------------------|-------------------------|--|
| <b>Related Commands</b> | <b>Command</b>          | <b>Description</b>                                   |
|                         | <b>tgrep local-itad</b> | Enters TGREP configuration mode and defines an ITAD. |

# network-clock base-rate

To configure the network clock base rate for universal I/O serial ports 0 and 1, use the **network-clock base-rate** command in global configuration mode. To disable the current network clock base rate, use the **no** form of this command.

**network-clock base-rate {56k | 64k}**

**no network-clock base-rate {56k | 64k}**

| Syntax Description | 56k | Sets the network clock base rate to 56 kbps. |
|--------------------|-----|--|
|                    | 64k | Sets the network clock base rate to 64 kbps. |

**Command Default** 56 kbps

**Command Modes** Global configuration

| Command History | Release   | Modification                                     |
|-----------------|-----------|--|
|                 | 11.3(1)MA | This command was introduced on the Cisco MC3810. |

**Usage Guidelines** This command applies to Voice over Frame Relay and Voice over ATM.

**Examples** The following example sets the network clock base rate to 64 kbps:

```
network-clock base-rate 64k
```

| Related Commands | Command                     | Description   |
|------------------|-----------------------------|---|
|                  | <b>network-clock-select</b> | Uses the network clock source to provide timing to the system backplane PCM bus.  |
|                  | <b>network-clock-switch</b> | Configures the switch delay time to the next priority network clock source when the current network clock source fails. |

# network-clock-participate

To allow the ports on a specified network module or voice/WAN interface card (VWIC) to use the network clock for timing, use the **network-clock-participate** command in global configuration mode. To restrict the device to use only its own clock signals, use the **no** form of this command.

**network-clock-participate** [**slot** *slot-number* | **wic** *wic-slot* | **aim** *aim-slot-number*]

**no network-clock-participate** [**nm** *slot* | **wic** *wic-slot*]

## Syntax Description

|                                   |  |
|-----------------------------------|--|
| <b>slot</b> <i>slot-number</i>    | (Optional) Network module slot number on the router chassis. Valid values are from 1 to 6.   |
| <b>wic</b> <i>wic-slot</i>        | Configures the WAN interface card (WIC) slot number on the router chassis. Valid values are 0 or 1.  |
| <b>aim</b> <i>aim-slot-number</i> | Configures the Advanced Integration Module (AIM) in the specified slot. The <i>aim-slot-number</i> values are 0 or 1 for the Cisco 3660 and 0 or 1 for the Cisco 3725, and Cisco 3745. |

## Command Default

No network clocking is enabled, and interfaces are restricted to using the clocking generated on their own modules.

## Command Modes

Global configuration

## Command History

| Release   | Modification  |
|-----------|---|
| 12.1(5)XM | This command was introduced on the Cisco 3660.  |
| 12.2(4)T  | This command was integrated into Cisco IOS Release 12.2(4)T.  |
| 12.2(2)XB | The <b>slot</b> keyword was replaced by the <b>nm</b> keyword and the <b>wic</b> keyword and the <i>wic-slot</i> argument were added.   |
| 12.2(8)T  | This command was integrated into Cisco IOS Release 12.2(8)T.  |
| 12.2(15)T | This command was integrated into Cisco IOS Release 12.2(15)T with support for the Cisco 3660, Cisco 3725, and Cisco 3745. Clocks can be synchronized on two ports. The <b>aim</b> keyword was added. The <b>nm</b> keyword was replaced by the <b>slot</b> keyword. |

## Usage Guidelines

This command is used for ATM segmentation and reassembly or digital signal processing and Cisco 3660, Cisco 3725, and Cisco 3745 routers.

This command applies to any network module with T1/E1 controllers to provide clocks from a central source (MIX module for the Cisco 3660) to the network module and to the port on the network module. Then that port can be selected as the clock source with the **network-clock-select** command to supply clock to other ports or network modules that choose to participate in network clocking with the **network-clock-participate** command. This command synchronizes the clocks for two ports.

On the Cisco 3700 series, you must use the **network-clock-participate** command and either the **wic** *wic-slot* keyword and argument or the **slot** *slot-number* keyword and argument.

**Note**

If the AIM takes its clock signals from a T1 or E1 controller, it is mandatory to use the **network-clock-select** and **network-clock-participate** commands for ATM. The clocks for the ATM and voice interfaces do not need to be synchronous, but improved voice quality may result if they are.

**Note**

The only VWICs that can participate in network clocking are digital T1/E1 packet voice trunk network modules (NM-HDV), and Fast Ethernet network modules (NM-2W, NM-1FE, and NM-2FE).

**Examples**

The following example configures the network module in slot 5 to participate in network clocking on a Cisco 3660 with a MIX module:

```
network-clock-participate slot 5
network-clock-select 1 e1
```

The following example on a Cisco 3700 series router specifies that the AIM participates in network clocking and selects port E1 0/1 to provide the clock signals.

```
Router(config)# network-clock-participate wic 0
Router(config)# network-clock-participate aim 0
Router(config)# network-clock-select 2 E1 0/1
```

The following example on a Cisco 3660 specifies the slot number that participates in network clocking and selects port E1 5/0:

```
Router(config)# network-clock-participate slot 5
Router(config)# network-clock-select 1 E1 5/0
```

**Related Commands**

| Command                     | Description  |
|-----------------------------|--|
| <b>network-clock-select</b> | Specifies selection priority for the clock sources.  |
| <b>network-clock-source</b> | Selects the port to be the clock source to supply clock resources to other ports or network modules. |

# network-clock-select

To name a source to provide timing for the network clock and to specify the selection priority for this clock source, use the **network-clock-select** command in global configuration mode. To cancel the network clock selection, use the **no** form of this command.

**network-clock-select** *priority* { **bri** | **atm** | **t1** | **e1** } *slot/port*

**no network-clock-select** *priority* { **bri** | **atm** | **t1** | **e1** } *slot/port*

## Syntax Description

|                   |   |
|-------------------|---|
| <i>priority</i>   | Selection priority for the clock source (1 is the highest priority). The clock with the highest priority is selected to drive the system time-division-multiplexing (TDM) clocks. When the higher-priority clock source fails, the next-higher-priority clock source is selected. Ranges are as follows: <ul style="list-style-type: none"> <li>• Cisco 2600 series: 1 to 4</li> <li>• Cisco 3660: 1 to 8</li> <li>• Cisco 2800 series: 1 to 8</li> </ul> |
| <b>bri</b>        | Specifies that the slot is configured as BRI.   |
| <b>atm</b>        | Specifies that the slot is configured as ATM.   |
| <b>t1</b>         | Specifies that the slot is configured as T1.  |
| <b>e1</b>         | Specifies that the slot is configured as E1.  |
| <i>slot</i>       | Slot number identifying the controller that is the clock source. <ul style="list-style-type: none"> <li>• Cisco 2600 series or Cisco 2600XM—0 (built-in WIC slot) or 1 (network module slot).</li> <li>• Cisco 3660, Cisco 3725, and Cisco 3745—1 to 6.</li> <li>• Cisco 2800 series—0, 1, or 2.</li> </ul>   |
| <i>port</i>       | Port number identifying the controller that is the clock source. The range is from 0 to 3. For the Cisco 2800 series, the range is 0 to 7 (for example, BRI interface can be 2/0 to 2/7).   |
| <b>serial 0</b>   | (Optional) Specifies serial interface 0 as the clock source. This option is not available on the Cisco 2800 series or Cisco 3800 series.  |
| <b>system</b>     | (Optional) Specifies the system clock as the clock source. This option is not available on the Cisco 2800 series or Cisco 3800 series.  |
| <b>bvm</b>        | Clocking priority for the BRI voice module (BVM). This option is not available on the Cisco 2800 series or Cisco 3800 series.   |
| <i>controller</i> | (Optional) Specifies which controller is the clock source. You can specify either the trunk controller (T1/E1 0) or the digital voice module (T1/E1 1). This option is not available on the Cisco 2800 series or Cisco 3800 series.   |

**Command Default****Cisco 2600 series and Cisco 2600XM**

The network clock source is the Advanced Integration Module (AIM) phase-locked loop (PLL) with priority 5, which indicates that the network clock is in free running mode.

**Cisco 3660, Cisco 3725, and Cisco 3745**

The network clock source is the backplane PLL with priority 9, which indicates that the network clock is in free running mode.

**Note**

Default clock values can fall outside the configurable range because they are derived from an external source.

**Command Modes**

Global configuration

**Command History**

| Release   | Modification   |
|-----------|--|
| 11.3 MA   | This command was introduced on the Cisco MC3810.   |
| 12.0(3)XG | The BVM as a possible network clock source was added.  |
| 12.1(5)XM | This command was implemented on the Cisco 3660. The keywords <b>t1</b> and <b>e1</b> were introduced.  |
| 12.2(4)T  | This command was integrated into Cisco IOS Release 12.2(4)T.   |
| 12.2(2)XB | This command was implemented on the Cisco 2600 series and Cisco 3660 with AIMs installed.  |
| 12.2(8)T  | This command was integrated into Cisco IOS Release 12.2(8)T.   |
| 12.2(15)T | This command was implemented on the Cisco 2600XM, Cisco 2691, Cisco 3725, and Cisco 3745.  |
| 12.3(8)T4 | This command was integrated into Cisco IOS Release 12.3(8)T4 and the <b>bri</b> keyword was added. Support was also added for the Cisco 2800 series. |
| 12.3(11)T | This command was integrated into Cisco IOS Release 12.3(11)T and the <b>atm</b> keyword was added. Support was also added for the Cisco 3800 series. |

**Usage Guidelines**

When an active clock source fails, the system chooses the next lower priority clock source specified by this command. When a higher-priority clock becomes available, the system automatically reselects the higher-priority clock source.

**Cisco 2600 series and Cisco 3660**

This command is used on Cisco 2600 series and Cisco 2600XM with AIMs installed or on the Cisco 3660 with Multiservice Interchange (MIX) modules installed. This command names a controller to provide clocking signals to the backplane, which then provides the names to all the network modules that are participating in network clocking.

## network-clock-select

### Examples

The following example shows how to select the controller in slot 5, port 1, to provide the clock at priority 3:

```
network-clock-select 3 t1 5/1
```

### Related Commands

| Command                          | Description   |
|----------------------------------|---|
| <b>network-clock-participate</b> | Configures a network module to participate in network clocking.   |
| <b>network-clock-switch</b>      | Configures the switch delay time to the next priority network clock source when the current network clock source fails or a higher priority clock source is up and available. |
| <b>show network-clocks</b>       | Displays the network clock configuration and current primary clock source.  |

# network-clock-switch

To configure the switch delay time to the next priority network clock source when the current network clock source fails, use the **network-clock-switch** command in global configuration mode. To cancel the network clock delay time selection, use the **no** form of this command.

**network-clock-switch** [*switch-delay* | **never**] [*restore-delay* | **never**]

**no network-clock-switch**

## Syntax Description

|                      |   |
|----------------------|---|
| <i>switch-delay</i>  | (Optional) Delay time, in seconds, before the next-priority network clock source is used when the current network clock source fails. Range is from 0 to 99. Default is 10. |
| <b>never</b>         | (Optional) No delay time before the current network clock source recovers.  |
| <i>restore-delay</i> | (Optional) Delay time, in seconds, before the current network clock source recovers. Range is from 0 to 99.   |
| <b>never</b>         | (Optional) No delay time before the next-priority network clock source is used when the current network clock source fails.   |

## Command Default

10 seconds

## Command Modes

Global configuration

## Command History

| Release   | Modification                                     |
|-----------|--|
| 11.3(1)MA | This command was introduced on the Cisco MC3810. |

## Usage Guidelines

This command applies to Voice over Frame Relay and Voice over ATM.

## Examples

The following example switches the network clock source after 20 seconds and sets the delay time before the current network clock source recovers to 20 seconds:

```
network-clock-switch 20 20
```

## Related Commands

| Command                     | Description  |
|-----------------------------|--|
| <b>network-clock-select</b> | Uses the network clock source to provide timing to the system backplane PCM bus. |

## notify (MGCP profile)

To specify the order in which automatic number identification (ANI) and dialed number identification service (DNIS) digits are reported to the Media Gateway Control Protocol (MGCP) call agent, use the **notify** command in MGCP profile configuration mode. To revert to the default, use the **no** form of this command.

**notify** { **ani-dnis** | **dnis-ani** }

**no notify** { **ani-dnis** | **dnis-ani** }

### Syntax Description

|                 |   |
|-----------------|---|
| <b>ani-dnis</b> | ANI digits are sent in the first notify message, followed by DNIS. This is the default. |
| <b>dnis-ani</b> | DNIS digits are sent in the first notify message, followed by ANI.                      |

### Command Default

The default order is ANI first and DNIS second.

### Command Modes

MGCP profile configuration

### Command History

| Release  | Modification                 |
|----------|------------------------------|
| 12.4(4)T | This command was introduced. |

### Usage Guidelines

This command controls the order of ANI and DNIS when using the Feature Group D (FGD) Exchange Access North American (EANA) protocol on a T1 interface. Selecting the **ani-dnis** keyword causes the ANI digits to be sent in the first NTFY message to the MGCP call agent and the DNIS digits to be sent in a second NTFY message. Selecting the **dnis-ani** keyword causes the DNIS digits to be sent in the first NTFY message to the MGCP call agent and the ANI digits to be sent in a second NTFY message.

### Examples

The following example sets the digit order to DNIS first and ANI second for the default MGCP profile:

```
Router(config)# mgcp profile default
Router(config-mgcp-profile)# notify dnis-ani
```

### Related Commands

| Command                        | Description  |
|--------------------------------|--|
| <b>mgcp package-capability</b> | Specifies an MGCP package capability type for a media gateway.           |
| <b>mgcp profile</b>            | Defines an MGCP profile to be associated with one or more MGCP endpoints |
| <b>show mgcp</b>               | Displays MGCP configuration information.                                 |
| <b>show mgcp profile</b>       | Displays information for MGCP profiles.                                  |

# non-linear

To enable nonlinear processing (NLP) in the echo canceller and set its threshold or comfort-noise attenuation, use the **non-linear** command in voice-port configuration mode. To disable nonlinear processing, use the **no** form of this command.

**non-linear** [**comfort-noise attenuation** {**0db** | **3db** | **6db** | **9db**} | **threshold** *dB*]

**no non-linear** [**comfort-noise attenuation** | **threshold**]

## Syntax Description

|   |  |
|---|--|
| <b>0db</b>   <b>3db</b>   <b>6db</b>   <b>9db</b> | (Optional) Attenuation level of the comfort noise in dB. Default is <b>0db</b> , which means that comfort noise is not attenuated. |
| <b>threshold</b> <i>dB</i>                        | (Optional) Sets the threshold in dB. Range is -15 to -45. Default is -21.  |
| <b>Note</b>                                       | This keyword is not supported when using the extended G.168 echo canceller.  |

## Command Default

NLP is enabled; comfort-noise attenuation is disabled; threshold is -21 dB.

## Command Modes

Voice-port configuration

## Command History

| Release   | Modification  |
|-----------|---|
| 11.3(1)T  | This command was introduced.  |
| 12.2(11)T | The <b>threshold</b> keyword was added.   |
| 12.2(13)T | This command was implemented on routers that support the extended G.168 echo canceller. |
| 12.3(6)   | The <b>comfort-noise</b> keyword was added.   |

## Usage Guidelines

This command enables functionality that is also generally known as residual echo suppression. Use this command to shut off any signal if no near-end speech is detected. Enabling this command normally improves performance, although some users might perceive truncation of consonants at the end of sentences when this command is enabled.

Use the **comfort-noise** keyword if the comfort noise generated by the NLP sounds like hissing. Using this keyword makes the hissing sound less audible.



### Note

The **echo-cancel enable** command must be enabled for this command to take effect.

## Examples

The following example enables nonlinear call processing on a Cisco 3600 series router:

```
voice-port 1/0/0
non-linear
```

The following example sets the attenuation level to 9 dB on a Cisco 3600 series router:

```
voice-port 1/0/0
non-linear comfort-noise attenuation 9db
```

---

**Related Commands**

| <b>Command</b>            | <b>Description</b>   |
|---------------------------|--|
| <b>echo-cancel enable</b> | Enables echo cancellation for voice that is sent and received on the same interface. |

---

# notify telephone-event

To configure the maximum interval between two consecutive NOTIFY messages for a particular telephone event, use the **notify telephone-event** command in SIP UA configuration mode. To reset the interval to the default, use the **no** form of this command.

**notify telephone-event max-duration** *milliseconds*

**no notify telephone-event**

|                           |  |   |
|---------------------------|--|---|
| <b>Syntax Description</b> | <b>max-duration</b><br><i>milliseconds</i> | Time interval between consecutive NOTIFY messages for a single DTMF event, in milliseconds. Range is from 500 to 3000. Default is 2000. |
|---------------------------|--|---|

|                        |                   |
|------------------------|-------------------|
| <b>Command Default</b> | 2000 milliseconds |
|------------------------|-------------------|

|                      |                      |
|----------------------|----------------------|
| <b>Command Modes</b> | SIP UA configuration |
|----------------------|----------------------|

|                        |                |  |
|------------------------|----------------|--|
| <b>Command History</b> | <b>Release</b> | <b>Modification</b>  |
|                        | 12.2(15)ZJ     | This command was introduced.                                 |
|                        | 12.3(4)T       | This command was integrated into Cisco IOS Release 12.3(4)T. |

**Usage Guidelines**

The **notify telephone-event** command works with the **dtmf-relay sip-notify** command. The **dtmf-relay sip-notify** command forwards out-of-band DTMF tones by using SIP NOTIFY messages. The **notify telephone-event** command sets the maximum time interval between consecutive NOTIFY messages for a single DTMF event. The maximum time is negotiated between two SIP endpoints and the lowest duration value is the one selected. This duration is negotiated during call establishment as part of negotiating the SIP-NOTIFY DTMF relay.

The originating gateway sends an indication of DTMF relay in an Invite message using the SIP Call-Info header. The terminating gateway acknowledges the message with an 18x/200 Response message, also using the Call-Info header. The set duration appears in the Call-Info header in the following way:

```
Call-Info: <sip: address>; method="Notify;Event=telephone-event;Duration=msec"
```

For example, if the maximum duration of gateway A is set to 1000 ms, and gateway B is set to 700 ms, the resulting negotiated duration would be 700 ms. Both A and B would use the value 700 in all of their NOTIFY messages for DTMF events.

**Examples**

The following example sets the maximum duration for a DTMF event to 500 ms.

```
Router(config)# sip-ua
Router(config-sip-ua)# notify telephone-event max-duration 500
```

■ notify telephone-event

**Related Commands**

| <b>Command</b>               | <b>Description</b>                             |
|------------------------------|--|
| <b>dtmf-relay sip-notify</b> | Forwards DTMF tones using SIP NOTIFY messages. |

# nsap

To specify the network service access point (NSAP) address for a local video dial peer, use the **nsap** command in dial peer configuration mode. To remove any configured NSAP address from the dial peer, use the **no** form of this command.

**nsap** *nsap-address*

**no nsap**

|                           |                     |   |
|---------------------------|---------------------|---|
| <b>Syntax Description</b> | <i>nsap-address</i> | A 40-digit hexadecimal number; the number must be unique on the device. |
|---------------------------|---------------------|---|

|                        |   |
|------------------------|---|
| <b>Command Default</b> | No NSAP address for a video dial peer is configured |
|------------------------|---|

|                      |                         |
|----------------------|-------------------------|
| <b>Command Modes</b> | Dial peer configuration |
|----------------------|-------------------------|

| <b>Command History</b> | <b>Release</b>   | <b>Modification</b>  |
|------------------------|--|--|
|                        | 12.0(5)XK  | This command was introduced for ATM video dial peer configuration on the Cisco MC3810. |
| 12.0(7)T               | This command was integrated into Cisco IOS Release 12.0(9)T. |  |

|                         |   |
|-------------------------|---|
| <b>Usage Guidelines</b> | The address must be unique on the router. |
|-------------------------|---|

|                 |   |
|-----------------|---|
| <b>Examples</b> | The following example sets up an NSAP address for the local video dial peer designated as 10: |
|-----------------|---|

```
dial-peer video 10 videocodec
nsap 47.009181000000002F26D4901.33333333332.02
```

| <b>Related Commands</b>     | <b>Command</b>                    | <b>Description</b>   |
|-----------------------------|-----------------------------------|--|
|                             | <b>dial-peer video</b>            | Defines a video ATM dial peer for a local or remote video codec, specifies video-related encapsulation, and enters dial peer configuration mode. |
| <b>show dial-peer video</b> | Displays dial peer configuration. |  |

# numbering-type

To match on a number type for a dial-peer call leg, use the **numbering-type** command in dial peer configuration mode. To remove the numbering type for a dial-peer call leg, use the **no** form of this command.

```
numbering-type {international | abbreviated | national | network | reserved | subscriber | unknown}
```

```
no numbering-type {international | abbreviated | national | network | reserved | subscriber | unknown}
```

## Syntax Description

|                      |                               |
|----------------------|-------------------------------|
| <b>international</b> | International numbering type. |
| <b>abbreviated</b>   | Abbreviated numbering type.   |
| <b>national</b>      | National numbering type.      |
| <b>network</b>       | Network numbering type.       |
| <b>reserved</b>      | Reserved numbering type.      |
| <b>subscriber</b>    | Subscriber numbering type.    |
| <b>unknown</b>       | Numbering type unknown.       |

## Command Default

No default behaviors or values

## Command Modes

Dial peer configuration

## Command History

| Release    | Modification  |
|------------|---|
| 12.0(7)XR1 | This command was introduced on the Cisco AS5300.  |
| 12.0(7)XK  | This command was implemented as follows: <ul style="list-style-type: none"> <li>VoIP: Cisco 2600 series, Cisco 3600 series, Cisco MC3810</li> <li>VoFR: Cisco 2600 series, Cisco 3600 series, Cisco MC3810</li> <li>VoATM: Cisco 3600 series, Cisco MC3810</li> </ul> |
| 12.1(1)T   | This command was integrated into Cisco IOS Release 12.1(1)T and implemented as follows: <ul style="list-style-type: none"> <li>VoIP: Cisco 1750, Cisco 2600 series, Cisco 3600 series, Cisco AS5300, Cisco 7200 series, Cisco 7500 series</li> </ul>                  |
| 12.1(2)T   | This command was implemented as follows: <ul style="list-style-type: none"> <li>VoIP: Cisco MC3810</li> <li>VoFR: Cisco 2600 series, Cisco 3600 series, Cisco MC3810</li> <li>VoATM: Cisco 3600 series, Cisco MC3810</li> </ul>                                       |
| 12.2(2)XB1 | This command was implemented on the Cisco AS5850.   |
| 12.2(11)T  | This command was integrated into Cisco IOS Release 12.2(11)T.   |

**Usage Guidelines**

This command is supported for POTS, VoIP, VoFR, and VoATM dial peers. The numbering type options are implemented as defined by the ITU Q.931 specification.

**Examples**

The following example shows how to configure a POTS dial peer for network usage:

```
dial-peer voice 100 pots
 numbering-type network
```

The following example shows how to configure a VoIP dial peer for subscriber usage:

```
dial-peer voice 200 voip
 numbering-type subscriber
```

**Related Commands**

| Command                               | Description   |
|---------------------------------------|---|
| <b>rule</b>                           | Applies a translation rule to a calling party number or a called party number for both incoming and outgoing calls. |
| <b>show translation-rule</b>          | Displays the contents of all the rules that have been configured for a specific translation name.                   |
| <b>test translation-rule</b>          | Tests the execution of the translation rules on a specific name-tag.  |
| <b>translate</b>                      | Applies a translation rule to a calling party number or a called party number for incoming calls.                   |
| <b>translate-outgoing</b>             | Applies a translation rule to a calling party number or a called party number for outgoing calls.                   |
| <b>translation-rule</b>               | Creates a translation name and enters translation-rule configuration mode.  |
| <b>voip-incoming translation-rule</b> | Captures calls that originate from H.323-compatible clients.  |

# num-exp

To define how to expand a telephone extension number into a particular destination pattern, use the **num-exp** command in global configuration mode. To cancel the configured number expansion, use the **no** form of this command.

**num-exp** *extension-number expanded-number*

**no num-exp** *extension-number*

## Syntax Description

|                         |  |
|-------------------------|--|
| <i>extension-number</i> | One or more digits that define an extension number for a particular dial peer.                                       |
| <i>expanded-number</i>  | One or more digits that define the expanded telephone number or destination pattern for the extension number listed. |

## Command Default

No number expansion is defined

## Command Modes

Global configuration

## Command History

| Release   | Modification   |
|-----------|--|
| 11.3(1)T  | This command was introduced on the Cisco 3600 series.        |
| 12.0(3)T  | This command was implemented on the Cisco AS5300.            |
| 12.0(4)XL | This command was implemented on the Cisco AS5800.            |
| 12.0(7)T  | This command was integrated into Cisco IOS Release 12.0(7)T. |
| 12.0(7)XK | This command was implemented on the Cisco MC3810.            |
| 12.1(2)T  | This command was integrated into Cisco IOS Release 12.1(2)T. |

## Usage Guidelines

Use this command to define how to expand a particular set of numbers (for example, a telephone extension number) into a particular destination pattern. With this command, you can bind specific extensions and expanded numbers together by explicitly defining each number, or you can define extensions and expanded numbers using variables. You can also use this command to convert seven-digit numbers to numbers containing less than seven digits.

Use a period (.) as a variable or wildcard, representing a single number. Use a separate period for each number that you want to represent with a wildcard—for example, if you want to replace four numbers in an extension with wildcards, type in four periods.

## Examples

The following example expands the extension number 55541 to the number 14085555541:

```
num-exp 55541 14085555541
```

The following example expands all five-digit extensions beginning with 5 such that the 5 is replaced with the digits 1408555 at the beginning of the extension number:

```
num-exp 5.... 1408555....
```

| Related Commands | Command                     | Description   |
|------------------|-----------------------------|---|
|                  | <b>dial-peer terminator</b> | Designates a special character to be used as a terminator for variable length dialed numbers. |
|                  | <b>forward-digits</b>       | Specifies which digits to forward for voice calls.  |
|                  | <b>prefix</b>               | Specifies a prefix for a dial peer.   |

