Survivable Remote Site Telephony

Feature History

Release	Modification
12.1(5)YD	This feature was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.1(5)YD1	Added support of 144 Cisco IP phones on the Cisco 3660 multiservice routers.
12.2(2)XG	This feature was implemented only on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This feature was integrated into Cisco IOS Release 12.2(2)XB, and support of 480 Cisco IP phones was added on the Cisco 7200 series routers.
12.2(8)T	This feature was integrated into Cisco IOS Release 12.2(8)T.

This document describes the Survivable Remote Site (SRS) Telephony feature, under the IP Telephony services umbrella based on Cisco IOS software, on the Cisco 2600 series and Cisco 3600 series multiservice routers, Cisco MC3810-V3 concentrators, Cisco IAD2420 series IADs, and Cisco 7200 series routers.

Note Use Cisco IOS Release 12.2(2)XG for the Cisco MC3810-V3 concentrators and use Cisco IOS Release 12.2(8)T for the Cisco 2600 series, Cisco 3600 series, and Cisco 7200 series routers.

Although the Cisco IAD2420 series IADs support the Survivable Remote Site Telephony feature, it is not recommended as a solution for the enterprise branch office.

This document includes the following sections:

Feature Overview

The Survivable Remote Site (SRS) Telephony feature, under the IP Telephony services umbrella, provides the Cisco CallManager with fallback support for the Cisco IP phones attached to the Cisco router on your local Ethernet. The SRS Telephony feature enables the routers to provide call handling support for the Cisco IP phones when the Cisco IP phones lose connection to the remote primary, secondary, or tertiary Cisco CallManager or when the WAN connection is down.

Cisco CallManager 3.0 supports Cisco IP phones at remote sites attached to Cisco branch office multiservice routers across the WAN. Prior to the SRS Telephony feature, when the WAN connection between the remote branch office router and the Cisco CallManager failed or connectivity with the Cisco CallManager was lost for some reason, the Cisco IP phones at the branch office became unusable for the duration of the failure. The SRS Telephony feature overcomes this problem and enables the basic features of the Cisco IP phones by providing call-handling support on the branch office router for its attached Cisco IP phones. The system automatically detects the failure and uses the Simple Network Auto Provisioning (SNAP) technology to autoconfigure the branch office router to provide call processing for the local Cisco IP phones. When the WAN link or connection to the primary Cisco CallManager is restored, call-handling capabilities for the Cisco IP phones switch back to the primary Cisco CallManager. During a failure when SRS Telephony feature is enabled, the Cisco IP phone displays a message to inform you that the Cisco IP phones are in the Cisco CallManager fallback mode and are able to perform limited functions.

Note The Cisco IP Phone 7960 and Cisco IP Phone 7940 display the message "CM Fallback Service Operating." The Cisco IP Phone 7910 displays the message "CM Fallback Service."

The following features are supported on the Cisco IP phones:

- Rehoming of Cisco IP phones to use call processing on the local router
- Cisco IP phone and plain old telephone system (POTS) telephones on the router
- Graying out of all Cisco IP phone function keys that are not supported during SRS Telephony mode
  - CFwdAll (call forward all)
  - MeetMe
  - PickUp
  - GPickUp (group pickup)
  - Park
  - Confrn (conference)
- Extension-to-extension dialing
- Direct inward dial (DID)
- Direct outward dial (DOD)
- Calling party ID (Caller ID/ANI) display
- Last number redial
- Maintain local extension to extension calls when WAN link fails

- Maintain local extension to Public Switched Telephone Network (PSTN) calls when WAN link fails
- Maintain existing calls when failed WAN link is reestablished
- Call transfer of local calls (blind transfer)
- Multiple lines per Cisco IP phone
- Multiple line appearance across telephones
- Call hold (shared lines)
- Analog Foreign Exchange Station (FXS) and Foreign Exchange Office (FXO) ports
- BRI support for EuroISDN
- PRI support for NET5 switch type
- Supports 1 to 480 Cisco IP phones, depending on the platforms.

Note The Cisco 7200 series routers support a range from 200 to 480 Cisco IP phones, depending on the network processing engine (NPE) type.

Table 1 lists the Cisco platforms, maximum number of Cisco IP phones, maximum number of directory numbers, memory requirements, and corresponding Cisco IOS release.

Table 1 Maximum Number of Cisco IP Phones and Directory Number Support per Platform

Cisco Platform	Maximum Cisco IP Phones	Maximum Directory Numbers	DRAM Memory	Flash Memory	Cisco IOS Release
Cisco 2600 series routers	24	48	64 MB	16 MB	12.2(8)T
Cisco 3620 routers	24	48	64 MB	16 MB	12.2(8)T
Cisco IAD2420 series IADs	24	48	64 MB	16 MB	12.2(8)T
Cisco MC3810-V3 concentrators	24	48	64 MB	16 MB	12.2(2)XG
Cisco 3640 routers	48	96	96 MB	16 MB	12.2(8)T
Cisco 3660 routers	144	288	128 MB	16 MB	12.2(8)T
Cisco 7200 series routers with NPE-225	200	400	256 MB	16 MB	12.2(8)T
Cisco 7200 series routers with NPE-300	240	480	256 MB	16 MB	12.2(8)T
Cisco 7200 series routers with NPE-400	240	480	256 MB	16 MB	12.2(8)T
Cisco 7200 series routers with NPE-400	480	960	512 MB	16 MB	12.2(8)T

Note In Cisco IOS Release 12.2(2)XG, the SRS Telephony feature is supported only on the Cisco MC3810-V3 concentrators.

Although the Cisco IAD2420 series IADs supports the SRS Telephony feature, it is not recommended as a solution for the enterprise branch office.

Fallback Behavior

When the Cisco IP phones lose contact with all primary, secondary, and tertiary Cisco CallManagers, the Cisco IP phones rehome to the Cisco router to provide the call processing capability required to place and receive calls. The Cisco IP phone lists the IP address of the local SRS Telephony router as the default router in the Network Configuration area of the Settings menu. This list currently supports a maximum of five default router entries; however, currently Cisco CallManager uses a maximum of three entries. When a secondary Cisco CallManager is not configured, the SRS Telephony router is listed as the standby Cisco CallManager during normal operation hosted by a single Cisco CallManager.

When the WAN link fails, calls in progress are sustained where possible for the duration of the call. Calls in transition have to be attempted again after the Cisco IP phones rehome to the local branch office SRS Telephony router. The telephone service is unavailable from the time the connection is lost from the remote Cisco CallManager until the Cisco IP phone has rehomed to the router with the SRS Telephony feature.

The time taken to rehome to the remote Cisco CallManger depends in part on the keepalive period set by the Cisco CallManager. Typically, it takes three times the keepalive period for the phone to discover that its connection to the Cisco CallManager has failed. The default keepalive period is 30 seconds. If the phone has an active standby connection established with the SRS Telephony router, the fallback process itself takes 10 to 20 seconds, after the primary Call Manager has failed. An active standby connection to the SRS Telephony router only exists if the phone has only a single Cisco CallManager in its CallManager list. Otherwise, the phone maintains a standby connection to its secondary Cisco CallManager.

If the phone has multiple CallManagers in its CallManager list, it has to search through the list of secondary and tertiary CallManagers, and so the fallback time increases. The phone attempts connection to each of its alternate CallManagers in turn, before attempting to connect to the SRS Telephony router as a last resort. Each CallManager connection attempt takes around one minute.

A message is displayed on the Cisco IP phone display, indicating that the Cisco IP phones are in the Cisco CallManager fallback mode.

Note The Cisco IP Phone 7960 and Cisco IP Phone 7940 display the message "CM Fallback Service Operating" at the bottom of the screen.
The Cisco IP Phone 7910 displays the message "CM Fallback Service" every 30 seconds for 5 seconds, because the Cisco IP Phone 7910 has a 2-line display area and the display panel is also used to display the telephone number.

The telephone services are restricted to those Cisco IP phones that are supported by the router with the SRS Telephony feature.

The Cisco IP phones periodically attempt to reestablish connections with the Cisco CallManagers at the remote central office. When a connection is reestablished with a Cisco CallManager at the remote central office, the Cisco IP phones unregister from the local router with SRS Telephony feature and register with the Cisco CallManager at the remote central office. The connection to the primary Cisco CallManager at the remote office cannot be reestablished if the telephone has active calls.

Figure 1 shows a branch office with several Cisco IP phones connected to a Cisco voice-enabled router. The router is connected to the WAN and PSTN. The Cisco IP phones are connected to the remote centralized Cisco CallManager by a WAN connection.

Figure 1   Branch Office Cisco IP Phones Connected to the Remote Central Cisco CallManager
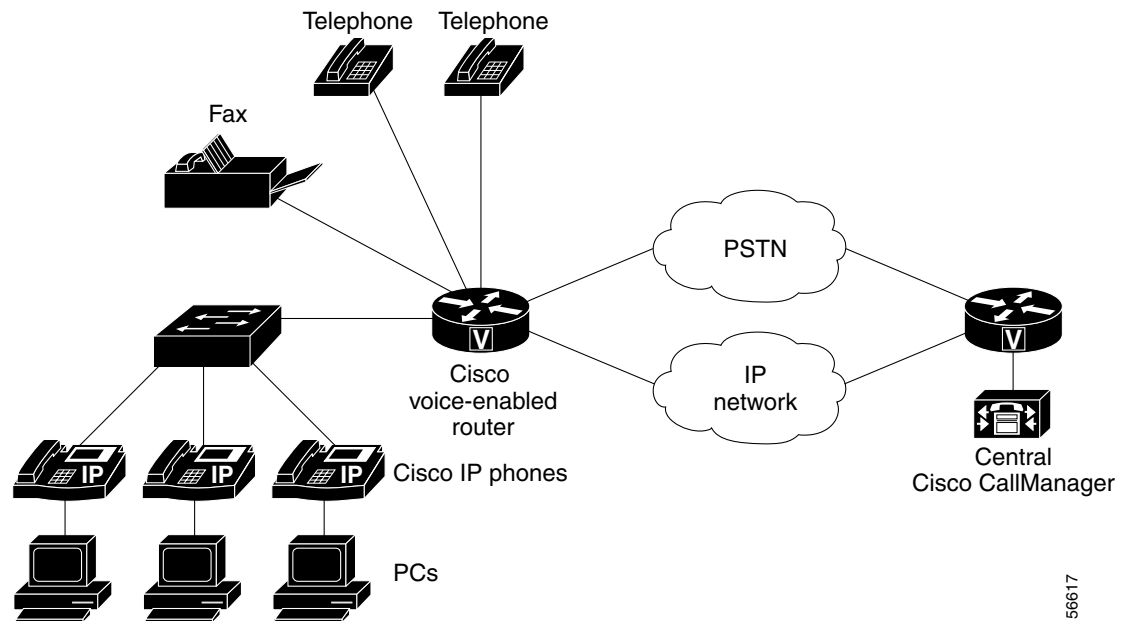
Figure 2 shows that the WAN connection to the branch office is down and the Cisco IP phones are able to make calls by being connected to the Cisco IP Telephony router with the SRS Telephony feature. This router acts as a fallback Cisco CallManager. The branch office Cisco IP phones on the LAN network, connected to the PSTN, are capable of making off-net calls outside the network using the SRS Telephony router.

Figure 2   Branch Office Cisco IP Phones Operating in Survivable Remote Site (SRS) Telephony Mode
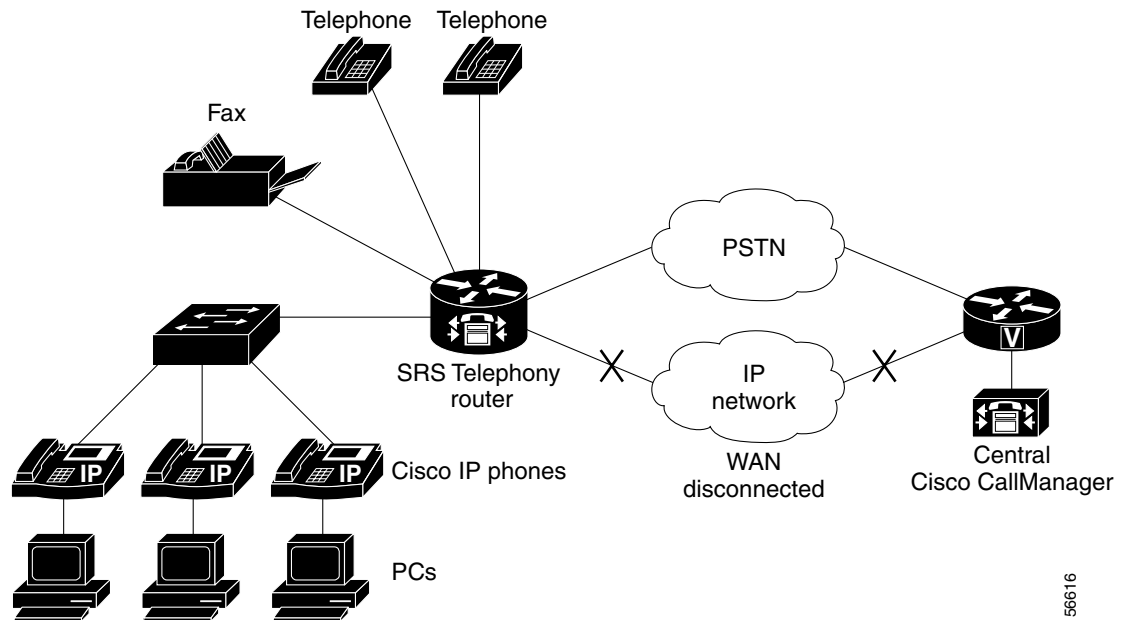
Benefits

- Centralized call processing with backup for telephony services including off-net calls to 911 and other services.

- Data back up can be done by dialing in.

Restrictions

- Cisco IOS Release 12.2(8)T or later release.

- Supports only the Cisco IP Phone 7960, Cisco IP Phone 7940, and Cisco IP Phone 7910 models.

> **Note**   This feature does not support first generation Cisco IP phones, such as Cisco IP Phone 30 VIP and Cisco IP Phone 12 SP+.

- Cisco CallManager Release 3.0.5.

- Does not support other Cisco CallManager applications or services: Cisco IP SoftPhone, Cisco uOne—Voice and Unified Messaging Application, or Cisco IP Contact Center.

- Supports 1 to 480 Cisco IP phones, depending on the platforms. See Table 1 for details.

- Supports 1 to 960 directory numbers, depending on the platforms. See Table 1 for details.

- This feature does not support Centralized Automatic Message Accounting (CAMA) trunks on the Cisco 3660 routers.

Note If you are in one of the states in the United States of America where there is a regulatory requirement for CAMA trunks to interface to 911 emergency services, and you would like to connect more than 48 Cisco IP phones to the Cisco 3660 multiservice routers in your network, please contact your local Cisco account team for help in understanding and meeting the CAMA regulatory requirements.

Related Documents

- *Cisco IOS Voice, Video, and Fax Configuration Guide, Release 12.2*
- *Cisco IOS Voice, Video, and Fax Command Reference, Release 12.2*
- *Cisco IOS DHCP Server*
- *Getting Started with the Cisco IP Phone 7910*
- *Getting Started with the Cisco IP Phone 7960/7940*
- *Quick Reference Cisco IP Phone 7910 for Survivable Remote Site Telephony*
- *Quick Reference Cisco IP Phone 7960/7940 for Survivable Remote Site Telephony*

Related Information

- Cisco CallManager 3.0

Supported Platforms

- Cisco IAD2420 series

Note Although the Cisco IAD2420 series IADs supports the Survivable Remote Site Telephony feature, it is not recommended as a solution for the enterprise branch office.

- Cisco 2600 series
- Cisco 3600 series
- Cisco MC3810-V3 concentrators

Note In Cisco IOS Release 12.2(2)XG, the SRS Telephony feature is supported only on the Cisco MC3810-V3 concentrators.

- Cisco 7200 series

Supported Standards, MIBs, and RFCs

Standards

No new or modified standards are supported by this feature.

MIBs

No new or modified MIBs are supported by this feature.

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

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

RFCs

No new or modified RFCs are supported by this feature.

Prerequisites

- IP Routing enabled.
- The SRS Telephony router must be configured as the default router for the Cisco IP phones.
- Cisco IOS Release 12.2(8)T for the Cisco 2600 series, Cisco 3600 series, Cisco IAD2420 series, and Cisco 7200 series.
- Cisco IOS Release 12.2(2)XG only for the Cisco MC3810-V3 concentrators.
- Cisco CallManager Release 3.0.5.
- Appropriate Cisco IP phone load versions that support the Cisco IP Phone 7960, Cisco IP Phone 7940, and Cisco IP Phone 7910 models. To get the appropriate Cisco IP phone firmware versions, go to the following URL: http://www.cisco.com/cgi-bin/tablebuild.pl/ip-key.

Note You need to purchase a feature license to turn this new feature on. You also need an account on Cisco.com to access the Cisco IP phone load versions.

- Memory requirement is platform dependent. See Table 1 for details.

Configuration Tasks

See the following sections for configuration tasks for the SRS Telephony feature. Each task in the list is identified as either required or optional.

Configuring Survivable Remote Site Telephony (required)

Tip The Cisco IP phones do not need to be reconfigured individually during the Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled, because the Cisco IP phones retain the same configuration used with the primary Cisco CallManager.

To configure Survivable Remote Site (SRS) Telephony on the routers to support the Cisco IP phone functions, use the following commands beginning in global configuration mode:

	Command	Purpose
Step 1	`Router(config)# `**`call-manager-fallback`**	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback mode.
Step 2	`Router(config-cm-fallback)# `**`ip source-address`** *`ip-address`* **`port`** *`port`*	Enables the router to receive messages from the Cisco IP phones through the specified IP addresses and ports. The default port is 2000.
Step 3	`Router(config-cm-fallback)# `**`max-ephones`** *`max phones`*	Configures the maximum number of Cisco IP phones that can be supported by the router. The default is 0. The maximum number is platform dependent:
		• Cisco 2600 series—24 Cisco IP phones
		• Cisco 3620 routers—24 Cisco IP phones
		• Cisco IAD2420 series—24 Cisco IP phones
		• Cisco MC3810-V3 concentrators—24 Cisco IP phones
		• Cisco 3640 routers—48 Cisco IP phones
		• Cisco 3660 routers—144 Cisco IP phones
		• Cisco 7200 series—200 - 480 Cisco IP phones, depending on the NPE type
		– NPE-225—200 Cisco IP phones
		– NPE-300—240 Cisco IP phones
		– NPE-400—240 Cisco IP phones
		– NPE-400—480 Cisco IP phones
		See Table 1 for details.
		Note You cannot reduce the limit of the Cisco IP phones after the maximum allowable number is configured, without rebooting the router.

	Command	Purpose
Step 4	Router(config-cm-fallback)# **max-dn** *max directory numbers*	Sets the maximum number of directory numbers or virtual voice ports that can be supported by the router. The default is 0. The maximum number is platform dependent: • Cisco 2600 series—48 directory numbers • Cisco 3620 routers—48 directory numbers • Cisco IAD2420 series—48 directory numbers • Cisco MC3810-V3 concentrators—48 directory numbers • Cisco 3640 routers—96 directory numbers • Cisco 3660 routers—288 directory numbers • Cisco 7200 series—400 - 960 directory numbers depending on the NPE type – NPE-225—400 directory numbers – NPE-300—480 directory numbers – NPE-400—480 directory numbers – NPE-400—960 directory numbers See Table 1 for details. **Note** You cannot reduce the limit of the directory numbers or virtual voice ports after the maximum allowable number is configured, without rebooting the router.
Step 5	Router(config-cm-fallback)# **keepalive** *seconds*	(Optional) Configures the time interval between sending keepalive messages to the router used by the Cisco IP phones when SRS Telephony is enabled. The default is 30 seconds.
Step 6	Router(config-cm-fallback)# **default-destination** *telephone number*	(Optional) Assigns default destination number for incoming telephone calls.
Step 7	Router(config-cm-fallback)# **dialplan-pattern** *tag pattern* **extension-length** *number*	(Optional) Creates a global prefix that can be used to expand the abbreviated extension numbers into fully qualified E.164 numbers. The **extension-length** keyword enables the system to convert a full E.164 telephone number back to an extension number for the purposes of caller ID display, received, and missed call lists.
Step 8	Router(config-cm-fallback)# **transfer-pattern** *transfer-pattern*	(Optional) Allows transfer of telephone calls by Cisco IP phones to other phone numbers (IP and non-IP phone numbers).

	Command	Purpose
Step 9	Router(config-cm-fallback)# **access-code** {**bri** | **e&m** |**fxo** | **pri**}	(Optional) Configures trunk access codes for each type of line—Basic Rate Interface (BRI), E&M, Foreign Exchange Office (FXO), and Primary Rate Interface (PRI)— so that the Cisco IP phones can access the trunk lines during Cisco CallManager fallback mode when the SRS Telephony feature is enabled.
Step 10	Router(config-cm-fallback)# **voicemail** *phone-number*	(Optional) Configures the telephone number that is speed-dialed when the message button on a Cisco IP phone is pressed.
Step 11	Router(config-cm-fallback)# **timeouts interdigit** *seconds*	(Optional) Configures the interdigit timeout value for all Cisco IP phones attached to the router. The interdigit timeout specifies the number of seconds that the system waits after the caller has entered the initial digit or a subsequent digit of the dialed string. If the timeout ends before the destination is identified, a tone sounds and the call ends. **Note** This value setting is important when using variable-length dial peer destination patterns (dial plans). For more information on setting dial plans, see the "Configuration Dial Plans, Dial Peers, and Digit Manipulation" chapter of the *Cisco IOS Voice, Video, and Fax Configuration Guide, Release 12.2.* The *seconds* argument is the interdigit timeout wait time in seconds. A valid entry is an integer from 2 to 120 seconds. The default is 10 seconds.
Step 12	Router(config-cm-fallback)# **exit**	Exits from call-manager-fallback configuration mode.
Step 13	Router(config)# **exit**	Exits from global configuration mode.

Disabling and Reenabling Huntstop

Note In the call-manager-configuration mode huntstop is set by default.

To disable huntstop or to reenable huntstop, use the following command in call-manager-configuration mode:

	Command	Purpose
Step 1	Router(config-cm-fallback)# **no huntstop**	Disables huntstop.
Step 1	Router(config-cm-fallback)# **huntstop**	Enables huntstop.

Verifying Survivable Remote Site Telephony (optional)

To verify that the SRS Telephony feature is enabled, follow these steps:

Step 1 Enter the **show run** command to verify the configuration.

Step 2 Enter the **show call-manager-fallback all** command to verify that SRS Telephony feature is enabled.

Step 3 Verify that the default router IP address on the Cisco IP phone is same as the IP address of the SRS Telephony router by using the settings display on a Cisco IP phone.

Step 4 Temporarily block the TCP port 2000 Skinny Client Control Protocol (SCCP) connection for one of the Cisco IP phones to force the Cisco IP phone to lose its connection to the Cisco CallManger and register with the SRS Telephony router. Perform the following:

　　a. Use the appropriate IP **access-list** command to temporarily disconnect a Cisco IP phone from the Cisco CallManager.

> **Note** The Cisco IP Phone 7960 and Cisco IP Phone 7940 display the message "CM Fallback Service Operating" at the bottom of the display screen.
> The Cisco IP Phone 7910 displays the message "CM Fallback Service" every 30 seconds for 5 seconds on the display screen because the Cisco IP Phone 7910 has a 2-line display area and the display panel is also used to display the telephone number.

　　b. Delete the **access-list** command to restore normal service for the phone, by entering the **no** form of the appropriate **access-list** command.

　　c. Use the **debug ephone register** command to observe the registration process of the Cisco IP phone on the SRS Telephony router.

　　d. You can also enter the **show ephone** command to display the Cisco IP phones that have registered to the SRS Telephony router.

Troubleshooting Tips (optional)

To troubleshoot the SRS Telephony feature, perform the following steps:

Step 1 Use the **debug ephone keepalive** command to set keepalive debugging for the Cisco IP phone.

Step 2 Use the **debug ephone register** command to set registration debugging for the Cisco IP phone.

Step 3 Use the **debug ephone state** command to set state debugging for the Cisco IP phone.

To troubleshoot other areas of the SRS Telephony feature, use the following commands:

- Use the **debug ephone detail** command to set detail debugging for the Cisco IP phones.
- Use the **debug ephone error** command to set error debugging for the Cisco IP phones.
- Use the **debug ephone statistics** command to set call statistics debugging for the Cisco IP phones.
- Use the **debug ephone pak** command to provide voice packet level debugging and print the contents of one voice packet in every 1024 voice packets.

- Use the **debug ephone raw** command to provide raw low-level protocol debugging display for all Skinny Client Control Protocol messages.

For further debugging, you can use the debug commands in the *Cisco IOS Debug Command Reference*.

Monitoring and Maintaining Survivable Remote Site Telephony

Use the following commands to monitor and maintain the router with SRS Telephony feature:

Command	Purpose
Router# **show run**	Displays the configuration.
Router# **show call-manager-fallback all**	Displays the detailed configuration of all the Cisco IP phones, voice ports, and dial peers of the SRS Telephony router.
Router# **show call-manager-fallback dial-peer**	Displays the output of the dial peers of the SRS Telephony router.
Router# **show call-manager-fallback ephone-dn**	Displays Cisco IP phone destination number.
Router# **show call-manager-fallback voice-port**	Displays output for the voice ports.
Router# **show ephone**	Displays Cisco IP phone output.
Router# **show ephone-dn**	Displays Cisco IP phone destination number.
Router# **show ephone summary**	Displays a summary of all Cisco IP phones.
Router# **show voice port summary**	Displays a summary of all voice ports.
Router# **show dial-peer voice summary**	Displays a summary of all voice dial peers.

Configuration Examples

This section provides the following configuration example for the SRS Telephony feature:

```
!
version 12.2
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
!
logging rate-limit console 10 except errors
!
!
!
ip subnet-zero
!
!
no ip finger
no ip domain-lookup
!
ip dhcp pool PHONE1
   host 10.1.0.2 255.255.0.0
   client-identifier 0100.3094.c337.cb
   option 150 ip 172.198.0.2
```

```
           default-router 10.1.0.1
!
ip dhcp pool PHONE2
   host 10.1.0.3 255.255.0.0
   client-identifier 0100.3094.c3f9.6a
   default-router 10.1.0.1
   option 150 ip 172.198.0.2
!
!
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 10.1.0.1 255.255.0.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 172.198.0.1 255.255.0.0
 duplex auto
 speed auto
!
ip kerberos source-interface any
ip classless
no ip http server
!
!
snmp-server packetsize 4096
snmp-server manager
call rsvp-sync
!
mgcp modem passthrough voip mode ca
no mgcp timer receive-rtcp
!
mgcp profile default
!
dial-peer cor custom
!
!
!
!
call-manager-fallback
 ip source-address 10.1.0.1 port 2000 strict-match
 max-ephones 24
 max-dn 24
 dialplan-pattern 1 408734.... extension-length 4
 transfer-pattern 510650....
 voicemail 11111
!
!
line con 0
 transport input none
line aux 0
line vty 0 4
 login
!
end
```

Command Reference

This section documents new commands. All other commands used with the Survivable Remote Site (SRS) Telephony feature are documented in the Cisco IOS Release 12.2 command reference publications.

- **access-code (cm-fallback)**
- **call-manager-fallback**
- **debug ephone detail**
- **debug ephone error**
- **debug ephone keepalive**
- **debug ephone pak**
- **debug ephone raw**
- **debug ephone register**
- **debug ephone state**
- **debug ephone statistics**
- **default-destination (cm-fallback)**
- **dialplan-pattern (cm-fallback)**
- **huntstop (cm-fallback)**
- **ip source-address (cm-fallback)**
- **keepalive (cm-fallback)**
- **max-dn (cm-fallback)**
- **max-ephones (cm-fallback)**
- **reset (cm-fallback)**
- **show call-manager-fallback all**
- **show call-manager-fallback dial-peer**
- **show call-manager-fallback ephone-dn**
- **show call-manager-fallback voice-port**
- **show ephone**
- **show ephone-dn**
- **show ephone summary**
- **timeouts interdigit (cm-fallback)**
- **transfer-pattern (cm-fallback)**
- **voicemail (cm-fallback)**

access-code (cm-fallback)

To configure trunk access codes for each type of line so that the Cisco IP phones can access the trunk lines only during Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled, use the **access-code** call-manager-fallback configuration command. To remove the telephone access code configuration from the Cisco IP phones, use the **no** form of this command.

access-code {**fxo** | **e&m** | **bri** | **pri**} *dial-string*

no access-code {**fxo** | **e&m** | **bri** | **pri**} [*dial-string*]

Syntax Description

fxo	Enables a Foreign Exchange Office (FXO) interface.
e&m	Enables an analog ear and mouth (E&M) interface.
bri	Enables a Basic Rate Interface (BRI).
pri	Enables a Primary Rate Interface (PRI).
dial-string	Sets up dial access codes for each specified line type by creating dial peers.

Defaults   No default behavior or values.

Command Modes   Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **access-code** command configures trunk access codes for each type of line—BRI, E&M, FXO, and PRI—so that the Cisco IP phones can access the trunk lines in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled. This provides system-wide access.

Note   The **access-code** command creates temporary dial peers in Cisco CallManager fallback mode. In many cases, you may already have the local PSTN ports configured with appropriate access codes provided by dial peers (for example, dial 9 to select a FXO PSTN line), in which case this command is not needed.

The **access-code** command creates temporary POTS voice dial-peers for all router voice-ports of the selected type, during the time Cisco CallManager fallback mode is active. To remove the telephone access code configuration from the Cisco IP phones, use the **no** form of this command. Use this

command only if your normal network dialplan configuration prevents you from configuring permanent POTS voice dial-peers to provide trunk access for use in the fallback mode. When the **access-code** command is used, it is important to ensure that all ports covered by the command have valid trunk connections. Selection between ports for outgoing calls is random.

The dialstring is used to set up temporary dial peers for each specified line type. If there are multiple lines of the same type, then a dial peer is set up for each line. The dial peers are active only during Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled. The result of this configuration is that all PSTN interfaces of the same type, for example BRI, are treated as equivalent, and any port may be selected to place the outgoing PSTN call.

Note This feature supports only BRI for EuroISDN and PRI for NET5 switch type.

Examples

The following example shows how to set the **access-code** command for BRI 8:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code bri 8
```

The following example shows how to set the **access-code** command for E&M 8:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code e&m 8
```

The following example shows how to set the **access-code** command for FXO 9:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code fxo 9
```

The following example shows how to set the **access-code** command for PRI 9:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# access-code pri 9
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

call-manager-fallback

To enable Survivable Remote Site (SRS) Telephony support and enter call-manager-fallback mode, use the **call-manager-fallback** global configuration command. To disable SRS Telephony (call-manager-fallback mode) support, use the **no** form of this command.

call-manager-fallback

no call-manager-fallback

Syntax Description	This command has no argument or keywords.

Defaults	No default behavior or values.

Command Modes	Global configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines	The **call-manager-fallback** command is a top-level command for all other commands related to call-manager-fallback configuration.

Examples

The following example shows how to enter the call-manager-fallback configuration mode:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)#
```

Related Commands

Command	Description
access-code	Configures trunk access codes for each type of line so that the Cisco IP phones can access the trunk lines during Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
default-destination	Assigns default destination number for incoming telephone calls.

Command	Description
dialplan-pattern	Creates a global prefix that can be used to expand the abbreviated extension numbers (automatically obtained from the Cisco IP phones) to expand into fully qualified E.164 numbers.
huntstop	Sets huntstop for the dial peers associated with the Cisco IP phone lines.
ip source-address	Enables the router to receive messages from the Cisco IP phones through the specified IP addresses and ports.
keepalive	Configures the time interval between sending keepalive messages to the router used by the Cisco IP phones.
max-dn	Sets the maximum number of directory numbers or virtual voice ports that can be supported by the router.
max-ephone	Configures the maximum number of Cisco IP phones that can be supported by the router.
reset	Resets the Cisco IP phones.
timeouts interdigit	Configures the interdigit timeout value for all Cisco IP phones attached to the router.
transfer-pattern	Allows transfer of telephone calls by Cisco IP phones to other phone numbers.
voicemail	Configures the telephone number that is speed-dialed when the message button on a Cisco IP phone is pressed.

debug ephone detail

To set detail debugging for the Cisco IP phone, use the **debug ephone detail** debug command. To disable debugging, use the **no** form of this command.

debug ephone detail [**mac-address** *mac-address*]

no debug ephone detail [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

The **debug ephone detail** command includes the error and state levels.

If the **mac-address** keyword is not used, the **debug ephone detail** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples

The following example shows a sample output of detail debugging of the Cisco IP phone with MAC address 0030.94c3.8724. The sample is an excerpt of some of the activities that takes place during call setup, connected state, active call, and the call getting disconnected:

```
Router# debug ephone detail mac-address 0030.94c3.8724

Ephone detail debugging is enabled

1d04h: ephone-1[1]:OFFHOOK
.
.
1d04h: Skinny Call State change for DN 1 SIEZE
.
```

```
.
1d04h: ephone-1[1]:SetCallState line 1 DN 1 TsOffHook
.
.
1d04h: ephone-1[1]:SetLineLamp 1 to ON
.
.
1d04h: ephone-1[1]:KeypadButtonMessage 5
.
.
1d04h: ephone-1[1]:KeypadButtonMessage 0
.
.
1d04h: ephone-1[1]:KeypadButtonMessage 0
.
.
1d04h: ephone-1[1]:KeypadButtonMessage 2
.
.
1d04h: ephone-1[1]:Store ReDial digit: 5002
.
SkinnyTryCall to 5002 instance 1
.
.
1d04h: ephone-1[1]:Store ReDial digit: 5002
1d04h: ephone-1[1]:
SkinnyTryCall to 5002 instance 1
.
.
1d04h: Skinny Call State change for DN 1 ALERTING
.
.
1d04h: ephone-1[1]:SetCallState line 1 DN 1 TsRingOut
.
.
1d04h: ephone-1[1]:SetLineLamp 1 to ON
1d04h: SetCallInfo calling dn 1 dn 1
calling [5001] called [5002]
.
.
1d04h: ephone-1[1]: Jane calling
1d04h: ephone-1[1]: Jill
.
.
1d04h: SkinnyUpdateDnState by EFXS_RING_GENERATE
  for DN 2 to state RINGING
.
.
1d04h: SkinnyGetCallState for DN 2 CONNECTED
.
.
1d04h: ephone-1[1]:SetLineLamp 3 to ON
1d04h: ephone-1[1]:UpdateCallState DN 1 state 4 calleddn 2
.
.
1d04h: Skinny Call State change for DN 1 CONNECTED
.
.
1d04h: ephone-1[1]:OpenReceive DN 1 codec 4:G711Ulaw64k  duration 10 ms bytes 80
.
.
1d04h: ephone-1[1]:OpenReceiveChannelAck 1.2.172.21 port=20180
1d04h: ephone-1[1]:Outgoing calling DN 1 Far-ephone-2 called DN 2
1d04h: SkinnyGetCallState for DN 1 CONNECTED
```

```
.
.
1d04h: ephone-1[1]:SetCallState line 3 DN 2 TsOnHook
.
.
1d04h: ephone-1[1]:SetLineLamp 3 to OFF
.
.
1d04h: ephone-1[1]:SetCallState line 1 DN 1 TsOnHook
.
.
1d04h: ephone-1[1]:Clean Up Speakerphone state
1d04h: ephone-1[1]:SpeakerPhoneOnHook
1d04h: ephone-1[1]:Clean up activeline 1
1d04h: ephone-1[1]:StopTone sent to ephone
1d04h: ephone-1[1]:Clean Up phone offhook state
1d04h: SkinnyGetCallState for DN 1 IDLE
1d04h: called DN -1, calling DN -1 phone -1
1d04h: ephone-1[1]:SetLineLamp 1 to OFF
1d04h: UnBinding ephone-1 from DN 1
1d04h: UnBinding called DN 2 from DN 1
1d04h: ephone-1[1]:ONHOOK
1d04h: ephone-1[1]:SpeakerPhoneOnHook
1d04h: ephone-1[1]:ONHOOK NO activeline
.
.
.
```

	Command	Description
Related Commands	**debug ephone error**	Sets error debugging for the Cisco IP phone.
	debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
	debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
	debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
	debug ephone register	Sets registration debugging for the Cisco IP phone.
	debug ephone state	Sets state debugging for the Cisco IP phone.
	debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
	show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone error

To set error debugging for the Cisco IP phone, use the **debug ephone error** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone error** [**mac-address** *mac-address*]

> **no debug ephone error** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **debug phone error** command cancels debugging at the detail and state level. This command is used to detect significant internal errors.

If the **mac-address** keyword is not used, the **debug ephone error** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples   The following example shows a sample output of error debugging for the Cisco IP phone with MAC address 0030.94c3.8724:

```
Router# debug ephone error mac-address 0030.94c3.8724

EPHONE error debugging is enabled

socket [2] send ERROR 11
Skinny Socket [2] retry failure
```

Related Commands

Command	Description
debug ephone detail	Sets detail debugging for the Cisco IP phone.
debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
debug ephone register	Sets registration debugging for the Cisco IP phone.
debug ephone state	Sets state debugging for the Cisco IP phone.
debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone keepalive

To set keepalive debugging for the Cisco IP phone, use the **debug ephone keepalive** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone keepalive** [**mac-address** *mac-address*]

> **no debug ephone keepalive** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **debug ephone keepalive** command sets keepalive debugging.

If the **mac-address** keyword is not used, the **debug ephone keepalive** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples   The following example shows a sample output of the keepalive status for the Cisco IP phone with MAC address 0030.94C3.E1A8:

```
Router# debug ephone keepalive mac-address 0030.94c3.E1A8

EPHONE keepalive debugging is enabled for phone 0030.94C3.E1A8

1d05h: ephone-1 Set interface FastEthernet0/0  ETHERNET
1d05h: ephone-1[1]:Keepalive socket[1] SEP003094C3E1A8
1d05h: ephone-1 Set interface FastEthernet0/0  ETHERNET
1d05h: ephone-1[1]:Keepalive socket[1] SEP003094C3E1A8
1d05h: Skinny Checking for stale sockets
1d05h: ephone-1 Set interface FastEthernet0/0  ETHERNET
```

```
1d05h: ephone-1[1]:Keepalive socket[1] SEP003094C3E1A8
1d05h: ephone-1 Set interface FastEthernet0/0  ETHERNET
1d05h: ephone-1[1]:Keepalive socket[1] SEP003094C3E1A8
1d05h: Skinny active socket list (3/96):  1 2 4
```

Related Commands

Command	Description
debug ephone detail	Sets detail debugging for the Cisco IP phone.
debug ephone error	Sets error debugging for the Cisco IP phone.
debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
debug ephone register	Sets registration debugging for the Cisco IP phone.
debug ephone state	Sets state debugging for the Cisco IP phone.
debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone pak

To provide voice packet level debugging and to print the contents of one voice packet in every 1024 voice packets, use the **debug ephone pak** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone pak** [**mac-address** *mac-address*]

> **no debug ephone pak** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

The **debug ephone pak** command provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.

If the **mac-address** keyword is not used, the **debug ephone pak** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples

The following example shows a sample output of packet debugging for the Cisco IP phone with MAC address 0030.94c3.8724:

```
Router# debug ephone pak mac-address 0030.94c3.8724

EPHONE packet debugging is enabled

01:29:14: ***ph_xmit_ephone DN 3 tx_pkts 5770 dest=10.2.1.1 orig len=32
 pakcopy=0 discards 27 ip_enctype 0 0 last discard: unsupported payload type
01:29:14: to_skinny_duration 130210 offset -30 last -40 seq 0 adj 0
01:29:14: IP:   45B8 003C 0866 0000 3F11 3F90 2800 0001 0A02 0101
```

```
01:29:14: TTL 63 TOS B8 prec 5
01:29:14: UDP:  07D0 6266 0028 0000
01:29:14: sport 2000 dport 25190 length 40 checksum 0
01:29:14: RTP:  8012 16AF 9170 6409 0E9F 0001
01:29:14: is_rtp:1 is_frf11:0 vlen:0 delta_t:160 vofr1:0 vofr2:0
scodec:11 rtp_bits:8012 rtp_codec:18 last_bad_payload 19
01:29:14: vencap FAILED
01:29:14: PROCESS SWITCH
01:29:15: %SYS-5-CONFIG_I: Configured from console by console
01:29:34: ***SkinnyPktIp DN 3 10.2.1.1 to 40.0.0.1 pkts 4880 FAST sw
01:29:34: from_skinny_duration 150910
01:29:34: nw 3BBC2A8 addr 3BBC2A4 mac 3BBC2A4 dg 3BBC2C4 dgs 2A
01:29:34: MAC:  1841 0800
01:29:34: IP:   45B8 0046 682E 0000 3E11 E0BD 0A02 0101 2800 0001
01:29:34: TTL 62 TOS B8 prec 5
01:29:34: UDP:  6266 07D0 0032 0000
01:29:34: sport 25190 dport 2000 length 50 checksum 0
01:29:34: RTP:  8012 55FF 0057 8870 3AF4 C394
01:29:34: RTP: rtp_bits 8012 seq 55FF ts 578870 ssrc 3AF4C394
01:29:34: PAYLOAD:
01:29:34:      1409 37C9 54DE 449C 3B42 0446 3AAB 182E
01:29:34:      56BC 5184 58E5 56D3 13BE 44A7 B8C4
01:29:34:
01:29:37: ***ph_xmit_ephone DN 3 tx_pkts 6790 dest=10.2.1.1 orig len=32
 pakcopy=0 discards 31 ip_enctype 0 0 last discard: unsupported payload type
01:29:37: to_skinny_duration 153870 offset -150 last -40 seq 0 adj 0
01:29:37: IP:   45B8 003C 0875 0000 3F11 3F81 2800 0001 0A02 0101
01:29:37: TTL 63 TOS B8 prec 5
01:29:37: UDP:  07D0 6266 0028 0000
01:29:37: sport 2000 dport 25190 length 40 checksum 0
01:29:37: RTP:  8012 1AAF 9173 4769 0E9F 0001
01:29:37: is_rtp:1 is_frf11:0 vlen:0 delta_t:160 vofr1:0 vofr2:0
```

Related Commands	Command	Description
	debug ephone detail	Sets detail debugging for the Cisco IP phone.
	debug ephone error	Sets error debugging for the Cisco IP phone.
	debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
	debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
	debug ephone register	Sets registration debugging for the Cisco IP phone.
	debug ephone state	Sets state debugging for the Cisco IP phone.
	debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
	show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone raw

To provide raw low-level protocol debugging display for all Skinny Client Control Protocol messages, use the **debug ephone raw** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone raw** [**mac-address** *mac-address*]

> **no debug ephone raw** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **debug ephone raw** command provides raw low-level protocol debug display for all Skinny Client Control Protocol messages. The debug display provides byte level display of Skinny TCP socket messages.

If the **mac-address** keyword is not used, the **debug ephone raw** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples   The following example shows a sample output of raw protocol debugging for the Cisco IP phone with MAC address 0030.94C3.E1A8:

```
Router# debug ephone raw mac-address 0030.94c3.E1A8

EPHONE raw protocol debugging is enabled for phone 0030.94C3.E1A8

1d05h: skinny socket received 4 bytes on socket [1]
0  0  0  0
1d05h:
1d05h: SkinnyMessageID = 0
```

```
1d05h: skinny send 4 bytes
4  0  0  0  0  0  0  0  0  1  0  0
1d05h: socket [1] sent 12 bytes OK (incl hdr) for ephone-(1)

1d06h: skinny socket received 4 bytes on socket [1]
0  0  0  0
1d06h:
1d06h: SkinnyMessageID = 0
1d06h: skinny send 4 bytes
4  0  0  0  0  0  0  0  0  1  0  0
1d06h: socket [1] sent 12 bytes OK (incl hdr) for ephone-(1)
```

Related Commands

Command	Description
debug ephone detail	Sets detail debugging for the Cisco IP phone.
debug ephone error	Sets error debugging for the Cisco IP phone.
debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
debug ephone register	Sets registration debugging for the Cisco IP phone.
debug ephone state	Sets state debugging for the Cisco IP phone.
debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone register

To set registration debugging for the Cisco IP phone, use the **debug ephone register** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone register** [**mac-address** *mac-address*]

> **no debug ephone register** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **debug ephone register** command sets registration debugging for the Cisco IP phones.

If the **mac-address** keyword is not used, the **debug ephone register** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Syntax Description   The following example shows a sample output of registration debugging for the Cisco IP phone with MAC address 0030.94c3.8724:

```
Router# debug ephone register mac-address 0030.94c3.8724

Ephone registration debugging is enabled

1d06h: New Skinny socket accepted [1] (2 active)
1d06h: sin_family 2, sin_port 50778, in_addr 10.1.0.21
1d06h: skinny_add_socket 1 10.1.0.21 50778
1d06h: ephone-(1)[1] StationRegisterMessage (2/3/12) from 10.1.0.21
1d06h: ephone-(1)[1] Register StationIdentifier DeviceName SEP003094C3E1A8
1d06h: ephone-(1)[1] StationIdentifier Instance 1    deviceType 7
```

```
1d06h: ephone-1[-1]:stationIpAddr 10.1.0.21
1d06h: ephone-1[-1]:maxStreams 0
1d06h: ephone-(1) Allow any Skinny Server IP address 10.1.0.6
.
.
.
1d06h: ephone-1[1]:RegisterAck sent to ephone 1: keepalive period 30
.
.
```

Related Commands	Command	Description
	debug ephone detail	Sets detail debugging for the Cisco IP phone.
	debug ephone error	Sets error debugging for the Cisco IP phone.
	debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
	debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
	debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
	debug ephone state	Sets state debugging for the Cisco IP phone.
	debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
	show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone state

To set state debugging for the Cisco IP phone, use the **debug ephone state** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone state** [**mac-address** *mac-address*]

> **no debug ephone state** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes   Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **debug ephone state** command sets state debugging for the Cisco IP phones.

If the **mac-address** keyword is not used, the **debug ephone state** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples   The following example shows a sample output of state debugging for the Cisco IP phone with MAC address 0030.94c3.E1A8:

```
Router# debug ephone state mac-address 0030.94c3.E1A8

EPHONE state debugging is enabled for phone 0030.94C3.E1A8

1d06h: ephone-1[1]:OFFHOOK
1d06h: ephone-1[1]:SIEZE on activeline 0
1d06h: ephone-1[1]:SetCallState line 1 DN 1 TsOffHook
1d06h: ephone-1[1]:Skinny-to-Skinny call DN 1 to DN 2 instance 1
1d06h: ephone-1[1]:SetCallState line 1 DN 1 TsRingOut
1d06h: ephone-1[1]:Call Info DN 1 line 1 ref 158 called 5002 calling 5001
```

```
1d06h: ephone-1[1]: Jane calling
1d06h: ephone-1[1]: Jill
1d06h: ephone-1[1]:SetCallState line 3 DN 2 TsRingIn
1d06h: ephone-1[1]:Call Info DN 2 line 3 ref 159 called 5002 calling 5001
1d06h: ephone-1[1]: Jane calling
1d06h: ephone-1[1]: Jill
1d06h: ephone-1[1]:SetCallState line 3 DN 2 TsCallRemoteMultiline
1d06h: ephone-1[1]:SetCallState line 1 DN 1 TsConnected
1d06h: ephone-1[1]:OpenReceive DN 1 codec 4:G711Ulaw64k  duration 10 ms bytes 80
1d06h: ephone-1[1]:OpenReceiveChannelAck 1.2.172.21 port=24010
1d06h: ephone-1[1]:StartMedia 1.2.172.22 port=24612
1d06h: DN 1 codec 4:G711Ulaw64k duration 10 ms bytes 80
1d06h: ephone-1[1]:CloseReceive
1d06h: ephone-1[1]:StopMedia
1d06h: ephone-1[1]:SetCallState line 3 DN 2 TsOnHook
1d06h: ephone-1[1]:SetCallState line 1 DN 1 TsOnHook
1d06h: ephone-1[1]:SpeakerPhoneOnHook
1d06h: ephone-1[1]:ONHOOK
1d06h: ephone-1[1]:SpeakerPhoneOnHook
1d06h: SkinnyReportDnState DN 1 ONHOOK
```

Related Commands

Command	Description
debug ephone detail	Sets detail debugging for the Cisco IP phone.
debug ephone error	Sets ephone debugging for the Cisco IP phone.
debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
debug ephone register	Sets registration debugging for the Cisco IP phone.
debug ephone statistics	Sets statistics debugging for the Cisco IP phone.
show debugging	Displays information about the types of debugging that are enabled for your router.

debug ephone statistics

To set call statistics debugging for the Cisco IP phone, use the **debug ephone statistics** debug command. To disable debugging, use the **no** form of this command.

> **debug ephone statistics** [**mac-address** *mac-address*]

> **no debug ephone statistics** [**mac-address** *mac-address*]

Syntax Description

mac-address	(Optional) Defines the MAC address of the Cisco IP phone.
mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

The **debug ephone statistics** command provides a debug monitor display of the periodic messages from the Cisco IP phone to the router. These include transmit-and-receive packet counts and an estimate of drop packets. The call statistics can also be displayed for live calls using the **show ephone** command.

If the **mac-address** keyword is not used, the **debug ephone statistics** debug command debugs all Cisco IP phones that are registered to the router. You can remove debugging for the Cisco IP phones that you do not want to debug by using the **mac-address** keyword with the **no** form of this command.

Debugging can be enabled or disabled on any number of Cisco IP phones. The Cisco IP phones that have debugging enabled can be seen by entering the **show ephone** command and looking at the debug field in the output. When debugging is enabled for a Cisco IP phone, the debug output is displayed for any Cisco IP phone directory numbers or virtual voice ports associated with the Cisco IP phone.

Examples

The following example shows a sample output of statistics debugging for the Cisco IP phone with MAC address 0030.94C3.E1A8:

```
Router# debug ephone statistics mac-address 0030.94C3.E1A8

EPHONE statistics debugging is enabled for phone 0030.94C3.E1A8

1d06h: Clear Call Stats for DN 1 call ref 162
1d06h: Clear Call Stats for DN 1 call ref 162
1d06h: Clear Call Stats for DN 1 call ref 162
1d06h: Clear Call Stats for DN 2 call ref 163
```

```
1d06h: ephone-1[1]:GetCallStats line 1 ref 162 DN 1: 5001
1d06h: ephone-1[1]:Call Stats for line 1 DN 1 5001 ref 162
1d06h: ephone-1[1]:TX Pkts 0 bytes 0 RX Pkts 0 bytes 0
1d06h: ephone-1[1]:Pkts lost 4504384 jitter 0 latency 0
1d06h: ephone-1[1]:Src 0.0.0.0 0 Dst 0.0.0.0 0 bytes 80 vad 0 G711Ulaw64k
1d06h: ephone-1[1]:GetCallStats line 1 ref 162 DN 1: 5001
1d06h: STATS: DN 1 Packets Sent 0
1d06h: STATS: DN 2 Packets Sent 0
1d06h: ephone-1[1]:Call Stats found DN -1 from Call Ref 162
1d06h: ephone-1[1]:Call Stats for line 0 DN -1 5001 ref 162
1d06h: ephone-1[1]:TX Pkts 275 bytes 25300 RX Pkts 275 bytes 25300
1d06h: ephone-1[1]:Pkts lost 0 jitter 0 latency 0
```

Related Commands

Command	Description
debug ephone detail	Sets detail debugging for the Cisco IP phone.
debug ephone error	Sets error debugging for the Cisco IP phone.
debug ephone keepalive	Sets keepalive debugging for the Cisco IP phone.
debug ephone pak	Provides voice packet level debugging and prints the contents of one voice packet in every 1024 voice packets.
debug ephone raw	Provides raw low-level protocol debugging display for all Skinny Client Control Protocol messages
debug ephone register	Sets registration debugging for the Cisco IP phone.
debug ephone state	Sets state debugging for the Cisco IP phone.
show debugging	Displays information about the types of debugging that are enabled for your router.

default-destination (cm-fallback)

To assign a default destination number for incoming telephone calls on the Survivable Remote Site (SRS) Telephony router, use the **default-destination** call-manager-fallback configuration command. To disable the default destination number on the SRS Telephony router, use the **no** form of this command.

default-destination *telephone number*

no default-destination *telephone number*

Syntax Description

telephone number	The telephone number of the default destination.

Defaults   No default behavior or values.

Command Modes   Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **default-destination** command assigns default destination numbers when an incoming call on an FXO port arrives without the called number information. A default directory number is required to route the call.

If a default destination number is set, calls arriving on an FXO port are routed to the default destination number that is provided. If a default destination number is not set, the calls arriving on an FXO port receive (secondary) dial tone. Then you need to enter the extension number of the person you are trying to reach.

Examples   The following example shows how to set the default destination as 40802:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# default-destination 40802
```

default-destination (cm-fallback)

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

dialplan-pattern (cm-fallback)

To create a global prefix that can be used to expand the abbreviated extension numbers (automatically obtained from the Cisco IP phones) to expand into fully qualified E.164 numbers, use the **dialplan-pattern** call-manager-fallback configuration command. To disable a global prefix, use the **no** form of this command.

> **dialplan-pattern** *tag pattern* **extension-length** *length*

> **no dialplan-pattern** *tag* [*pattern* **extension-length** *length*]

Syntax Description

tag	Dial-plan string tag used before a ten-digit telephone number. The tag number is from 1 to 5.
pattern	Dial-plan pattern, such as the area code, the prefix, and the first one or two digits of the extension number plus wildcards.
extension-length	The number of digits in an extension number.
length	The number of digits.

Defaults

No default behavior or values.

Command Modes

Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

You need to enter the directory numbers or virtual voice ports for the Cisco IP phones in extension number format. The extension number should be greater or equal to the extension length. Otherwise, the extension number cannot be converted to a qualified E.164 number. The **dialplan-pattern** command creates a global prefix that can be used to expand the abbreviated extension numbers to fully qualified E.164 numbers. The dialplan pattern is also required to register the Cisco IP phone lines with a gatekeeper. The **dialplan-pattern** command can resolve an incoming call into a fully qualified E.164 number.

The **extension-length** keyword enables the system to convert a full E.164 telephone number back to an extension number for the purposes of caller ID display, received, and missed call lists. For example, a company uses extension number range 5000-5099 across several sites, with only the extensions 5000-5009 present on the local router. An incoming call from 5044 arrives from the company's internal ISDN network and this call includes the calling number as 4083335044 in its full E.164 format.

Examples

The following example shows how to create dialplan-pattern 1 for extension numbers 5001 to 5099 with the telephone prefix starting with 408333. If the following example is set, the router sees that the 4083335044 matches dialplan pattern 1, and uses the **extension-length** keyword to extract the last four digits of the number 5044 and present this as the caller ID for the incoming call.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# dialplan-pattern 1 40833350.. extension-length 4
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

huntstop (cm-fallback)

To set the huntstop attribute for the dial peers associated with the Cisco IP phone phone lines when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **huntstop** call-manager-fallback configuration command. To disable huntstop, use the **no** form of this command.

huntstop

no huntstop

Syntax Description	This command has no arguments or keywords.
Defaults	Huntstop is set by default.
Command Modes	Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

In the call-manager-fallback configuration mode, the huntstop attribute by default is set uniformly to all Cisco IP phone lines (for example, all or none).

Note Use the **no huntstop** command only if you want to disable huntstop.

Examples

The following example shows how to disable huntstop to the destination dial peer with the extension 5001. The huntstop for the dial peer is set to OFF and prevents calls to extension 5001 from being re-routed to the on-net H-323 dial peer for 5... (The three decimal points are used here as wild cards.) destination when 5001 is busy.

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# no huntstop
```

Related Commands	Command	Description
	call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.
	huntstop (dial-peer)	Disables all further dial-peer hunting if a call fails using hunt groups.

ip source-address (cm-fallback)

To enable the router to receive messages from the Cisco IP phones through the specified IP addresses and ports when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **ip source-address** call-manager-fallback configuration command. To disable the router from receiving messages from the Cisco IP phones, use the **no** form of this command.

ip source-address *ip-address* [**port** *port*] [**any-match** | **strict-match**]

no ip source-address [*ip-address* **port** *port*] [**any-match** | **strict-match**]

Syntax Description

ip-address	The IP address is the preexisting router IP address, typically one of the addresses of the Ethernet port of the router.
port	(Optional) The port to which the gateway router connects to receive messages from the Cisco IP phones.
port	(Optional) The port number. The default port number is 2000.
any-match	(Optional) Disable strict IP address checking for registration.
strict-match	(Optional) Require strict IP address checking for registration.

Defaults

The default port is 2000.

The default for the server address match is **any-match**.

Command Modes

Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

The **ip source-address** command is a mandatory command, and the fallback subsystem does not start if the IP address is not provided. If the port number is not provided, then the default value (2000) is used. The IP address is usually the IP address of the Ethernet port to which the phones are connected.

Use the **any-match** keyword to instruct the router to permit Cisco IP phone registration even when the IP server address used by the phone does not match the ip source-address. This option can be used to allow registration of Cisco IP phones on different subnets that have different DHCP default-router or TFTP server addresses.

Use the **strict-match** keyword to instruct the router to reject Cisco IP phone registration attempts if the IP server address used by the phone does not exactly match the source-address. This option can be used to restrict the number of Cisco IP phones allowed to register, by dividing the Cisco IP phones into groups on different subnets and giving each group different DHCP default-router or TFTP server addresses.

The **ip source-address** command enables the router to receive messages from the Cisco IP phones through the specified IP addresses and port. If the router receives a registration request from a Cisco IP phone, the router in return requests the phone configuration and dial-plan information from the Cisco IP phone. This data is stored locally in the memory of the router and is used to create voice port and dial-plan information. The voice port and dial-plan information is used to handle telephony calls to and from the Cisco IP phone if the Cisco CallManager is unreachable.

Examples

The following example shows how to set the IP source address and port:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# ip source-address 1.6.21.4 port 2002 strict-match
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

keepalive (cm-fallback)

To configure the time interval between sending keepalive messages to the router used by the Cisco IP phones during Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled, use the **keepalive** call-manager-fallback configuration command. To return to the default, use the **no** form of this command.

> **keepalive** *seconds*

> **no keepalive** *seconds*

Syntax Description	*seconds*	The interval time in seconds. The default timeout is set at 30 seconds.

Defaults 30 seconds

Command Modes Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines The **keepalive** command configures the time interval between sending keepalive messages to the router used by the Cisco IP phones at the time. If the router fails to receive three successive keepalive messages, it considers the phone to be out of service until the phone re-registers.

Note The **keepalive** command is applicable only after the phone has registered with a router with the SRS Telephony feature.

Examples The following example shows how to set keepalive timeout at 60 seconds:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# keepalive 60
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

max-dn (cm-fallback)

To set the maximum number of directory numbers or virtual voice ports that can be supported by the router when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **max-dn** call-manager-fallback configuration command. To return to the default directory numbers or virtual voice ports, use the **no** form of this command.

> **max-dn** *max directory numbers*
>
> **no max-dn**

Syntax Description	*max directory numbers*	The maximum number of directory numbers or virtual voice ports supported by the router. The maximum number is platform dependent:

- Cisco 2600 series—48 directory numbers
- Cisco 3620 routers—48 directory numbers
- Cisco IAD2420 series—48 directory numbers
- Cisco MC3810-V3 concentrators—48 directory numbers
- Cisco 3640 routers—96 directory numbers
- Cisco 3660 routers—288 directory numbers
- Cisco 7200 series—400 - 960 directory numbers depending on the NPE type
  - NPE-225—400 directory numbers
  - NPE-300—480 directory numbers
  - NPE-400—480 directory numbers
  - NPE-400—960 directory numbers

Defaults   The default is 0.

Command Modes   Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

■ **max-dn (cm-fallback)**

Usage Guidelines   The **max-dn** command limits the number of Cisco IP phone directory numbers or virtual voice ports available on the router.

> **Note**   You cannot reduce the limit of the directory numbers or virtual voice ports after the maximum allowable number is configured, without rebooting the router.

Examples   The following example shows how to set the maximum number of directory numbers or virtual voice ports to 12:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# max-dn 12
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

max-ephones (cm-fallback)

To configure the maximum number of Cisco IP phones that can be supported by the router when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **max-ephones** call-manager-fallback configuration command. To return to the default number of Cisco IP phones, use the **no** form of this command.

max-ephones *max phones*

no max-ephones

Syntax Description	*max phones* The maximum number of Cisco IP phones supported by the router. The maximum number is platform dependent:

> *max phones*   The maximum number of Cisco IP phones supported by the router. The maximum number is platform dependent:
>
> - Cisco 2600 series—24 Cisco IP phones
> - Cisco 3620 routers—24 Cisco IP phones
> - Cisco IAD2420 series—24 Cisco IP phones
> - Cisco MC3810-V3 concentrators—24 Cisco IP phones
> - Cisco 3640 routers—48 Cisco IP phones
> - Cisco 3660 routers—144 Cisco IP phones
> - Cisco 7200 series—200 - 480 Cisco IP phones, depending on the NPE type
>   - NPE-225—200 Cisco IP phones
>   - NPE-300—240 Cisco IP phones
>   - NPE-400—240 Cisco IP phones
>   - NPE-400—480 Cisco IP phones

Defaults The default is 0.

Command Modes Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **max-ephones** command limits the number of Cisco IP phones supported on the router.

Note   You cannot reduce the limit of the Cisco IP phones after the maximum allowable number is configured, without rebooting the router.

Examples   The following example shows how to set the maximum Cisco IP phones to 24 for a Cisco router:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# max-ephones 24
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

reset (cm-fallback)

To reset the Cisco IP phones when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **reset** call-manager-fallback configuration command.

reset {**all** | **mac-address** *mac-address*}

✎
Note   The **reset** command does not have a **no** form.

Syntax Description

all	All the Cisco IP phones.
mac-address *mac-address*	MAC address of a particular Cisco IP phone.

Defaults   No default behavior or values.

Command Modes   Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **reset** command resets the Cisco IP phones attached to the router. You can use the **all** keyword to reset all the Cisco IP phones attached to the router or reset a specific Cisco IP phone by using the **mac-address** keyword and by entering the mac-address of that specific Cisco IP phone.

The **reset** command does not have a **no** form.

Examples   The following example shows how to reset all the Cisco IP phones:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# reset all
```

The following example shows how to reset the Cisco IP phone with the MAC address CFBA.321B.96FA:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# reset mac-address CFBA.321B.96FA
```

Related Commands	Command	Description
	call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

show call-manager-fallback all

To display the detailed configuration of all the Cisco IP phones, voice ports, and dial peers in your network during Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled, use the **show call-manager-fallback all** EXEC command.

show call-manager-fallback all

Syntax Description   This command has no arguments or keywords.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Examples   The following is sample output from the **show call-manager-fallback all** command:

```
Router# show call-manager-fallback all

CONFIG
======
ip source-address 10.1.0.1 port 2000
max-ephones 24
max-dn 24
huntstop
voicemail 11111
keepalive 30


ephone-dn 1
number 1000
huntstop

ephone-dn 2
number 5003
huntstop

ephone-dn 3
number 9000
huntstop

ephone-dn 4
huntstop
```

```
!
!
!
voice-port 50/0/1
 station-id number 1000
!
voice-port 50/0/2
 station-id number 5003
!
voice-port 50/0/3
 station-id number 9000
!
voice-port 50/0/4
!!
!
!
dial-peer voice 20114 pots
 destination-pattern 1000
 huntstop
 port 50/0/1

dial-peer voice 20115 pots
 destination-pattern 5003
 huntstop
 port 50/0/2

dial-peer voice 20116 pots
 destination-pattern 9000
 huntstop
 port 50/0/3

dial-peer voice 20117 pots
huntstop
 port 50/0/4
```

Table 2 provides an alphabetical listing of the command fields in the sample output.

Table 2   show call-manager-fallback all Field Descriptions

Field	Description
destination-pattern	Destination pattern (telephone number) configured for this dial peer.
dial-peer voice	Voice dial peer.
huntstop	Huntstop is set.
ip source address	IP address used by the Cisco IP phones to register with the router for service.
keepalive	The Cisco IP phone keepalive period in seconds.
max-ephones	Maximum number of Cisco IP phones.
max-dn	Maximum number of directory numbers or virtual voice ports.
port	The TCP port number used by the Cisco IP phones to communicate with the router.
station-id number	The number used for caller-ID purposes when calls are made using the line.

Table 2   show call-manager-fallback all Field Descriptions (continued)

Field	Description
voicemail	A voice-mail (speed-dial) number is set.
voice-port	(Virtual) voice port designator.

	Command	Description
Related Commands	**show call-manager fallback dial-peer**	Displays output for the dial peers in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
	show call-manager fallback ephone-dn	Displays output for the Cisco IP phone directory numbers or virtual voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
	show call-manager fallback voice-port	Displays output for the voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.

show call-manager-fallback dial-peer

To display output for the dial peers in Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled, use the **show call-manager-fallback dial-peer** EXEC command.

show call-manager-fallback dial-peer

Syntax Description   This command has no arguments or keywords.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Examples   The following is sample output from the **show call-manager-fallback dial-peer** command:

```
Router# show call-manager-fallback dial-peer

dial-peer voice 20114 pots
 destination-pattern 1000
 huntstop
 port 50/0/1

dial-peer voice 20115 pots
 destination-pattern 5003
 huntstop
 port 50/0/2

dial-peer voice 20116 pots
 destination-pattern 9000
 huntstop
 port 50/0/3

dial-peer voice 20117 pots
 destination-pattern 9001
 huntstop
 port 50/0/4

dial-peer voice 20118 pots
 destination-pattern 5007
 huntstop
 port 50/0/5

dial-peer voice 20119 pots
 destination-pattern 5017
```

```
 huntstop
 port 50/0/6

dial-peer voice 20120 pots
 destination-pattern 5001
 huntstop
 port 50/0/7

dial-peer voice 20121 pots
 huntstop
 port 50/0/8
```

Table 3 provides an alphabetical listing of the command fields in the sample output.

Table 3   show call-manager-fallback dial-peer Field Descriptions

Field	Description
destination pattern	Destination pattern (telephone number) configured for this dial peer.
dial-peer voice	Voice dial peer.
huntstop	Huntstop is set.
port	(Virtual) voice port designator.

Related Commands	Command	Description
	show call-manager fallback all	Displays the detailed configuration of all the Cisco IP phones, voice ports, and dial peers in your network in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
	show call-manager fallback ephone-dn	Displays output for the Cisco IP phone directory numbers or virtual voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
	show call-manager fallback voice-port	Displays output for the voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.

show call-manager-fallback ephone-dn

To display output for the Cisco IP phone directory numbers or virtual voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **show call-manager-fallback ephone-dn** EXEC command.

> **show call-manager-fallback ephone-dn**

Syntax Description   This command has no arguments or keywords.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Examples   The following is sample output from the **show call-manager-fallback ephone-dn** command:

```
Router# show call-manager-fallback ephone-dn

ephone-dn 1
number 1000
huntstop

ephone-dn 2
number 5003
huntstop

ephone-dn 3
number 9000
huntstop

ephone-dn 4
number 9001
huntstop

ephone-dn 5
huntstop
```

Table 4 provides an alphabetical listing of the command fields in the sample output.

Table 4   *show call-manager-fallback ephone-dn Field Descriptions*

Field	Description
ephone-dn	Cisco IP phone directory number.
huntstop	Huntstop is set.
number	Cisco IP phone number.

Related Commands

Command	Description
show call-manager fallback all	Displays the detailed configuration of all the Cisco IP phones, voice ports, and dial peers in your network in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
show call-manager fallback dial-peer	Displays output for the dial peers in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
show call-manager fallback voice-port	Displays output for the voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.

show call-manager-fallback voice-port

To display output for the voice ports in Cisco CallManager fallback mode when Survivable Remote Site (SRS) Telephony feature is enabled, use the **show call-manager-fallback voice-port** EXEC command.

show call-manager-fallback voice-port

Syntax Description   This command has no arguments or keywords.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Examples   The following is sample output from the **show call-manager-fallback voice-port** command:

```
Router# show call-manager-fallback voice-port

voice-port 50/0/1
 station-id number 8005
!
voice-port 50/0/2
 station-id number 8006
!
voice-port 50/0/3
 station-id number 8003
!
voice-port 50/0/4
 station-id number 8007
!
voice-port 50/0/5
 station-id number 8004
!
```

Table 5 provides an alphabetical listing of the command fields in the sample output.

Table 5   *show call-manager-fallback voice-port Field Descriptions*

Field	Description
station-id number	The phone number used for caller-ID purposes for calls made from this voice port.
voice-port	(Virtual) voice port.

Related Commands	Command	Description
	show call-manager fallback all	Displays the detailed configuration of all the Cisco IP phones, voice ports, and dial peers in your network in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
	show call-manager fallback dial-peer	Displays fallback output for the dial peers in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.
	show call-manager fallback ephone-dn	Displays fallback output for the Cisco IP phone directory numbers or virtual voice ports in Cisco CallManager fallback mode when the Survivable Remote Site (SRS) Telephony feature is enabled.

show ephone

To display Cisco IP phone output, use the **show ephone** EXEC command.

show ephone [*mac-address*]

Syntax Description

mac-address	(Optional) Specifies the MAC address of the Cisco IP phone.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **show ephone** command displays the registered Cisco IP phones. If a MAC address is not specified, all phones are displayed.

Examples   The following is sample output from the **show ephone** command:

```
Router# show ephone

ephone-2 Mac:0030.94C3.F96A TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:0
IP:10.1.1.2 52531 Telecaster 7960  keepalive 9
button 1: dn 5  number 5007  CM Fallback IDLE
button 2: dn 6  number 5017  CM Fallback IDLE

ephone-1 Mac:0030.94C3.37CB TCP socket:[4] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:0
IP:10.1.1.1 51611 Telecaster 7910  keepalive 9
button 1: dn 7  number 5001  CM Fallback IDLE

ephone-4 Mac:0030.94C3.F946 TCP socket:[3] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:0
IP:10.2.1.2 51969 Telecaster 7960  keepalive 10
button 1: dn 2  number 5003  CM Fallback IDLE
button 2: dn 4  number 9001  CM Fallback IDLE

ephone-3 Mac:0030.94C3.F43A TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:0
IP:10.2.1.1 51500 Telecaster 7960  keepalive 10
button 1: dn 1  number 1000  CM Fallback IDLE
button 2: dn 3  number 9000  CM Fallback IDLE
```

The following example shows how to display the status of the Cisco IP phone with the MAC address 0003.E3E7.F627:

```
Router# show ephone 0003.E3E7.F627

ephone-1 Mac:0003.E3E7.F627 TCP socket:[1] activeLine:1 REGISTERED
mediaActive:1 offhook:1 ringing:0 reset:0 reset_sent:0 debug:0
IP:10.0.0.51 50570 Telecaster 7940  keepalive 49
button 1: dn 1  number 3001 CONNECTED
Active Call on DN 1:3001  10.0.0.51 31808 to  1.2.159.100 22708
Tx Pkts 452 bytes 41584 Rx Pkts 452 bytes 41584 Lost 0
Jitter 0 Latency 0
```

Table 6 provides an alphabetical listing of the command fields in the sample output.

Table 6   show ephone Field Descriptions

Field	Description
Active Call	An active call is in progress.
activeLine	Indicates the line (button) on the phone that is in use. Zero indicates that no line is in use.
button 1 : dn 1	Shows the directory number (DN) tag number associated with the phone button.
bytes	Total number of voice data bytes sent or received by the phone.
CM Fallback IDLE	Information regarding the DN and phone numbers derived from the CallManager fallback mechanism (by querying the phones as opposed to entered by CLI) and the state of the DN, in this case IDLE.
debug	If set to 1, indicates debug for the phone is enabled; otherwise, set to 0.
ephone-1	Cisco IP phone tag number.
IP	Assigned IP address of the Cisco IP phone.
Jitter	The amount of variation (in milliseconds) of the time interval between voice packets received by the Cisco IP phone.
keepalive	Number of keepalive messages received from the Cisco IP phone by the router.
Latency	The estimated playout delay for voice packets received by the Cisco IP phone.
Lost	Number of voice packets lost, as calculated by the Cisco IP phone, based on examining voice packet timestamp and sequence numbers during playout.
Mac	MAC address.
mediaActive	If set to 1, indicates that an active conversation is going on; otherwise, it is set to 0.
number	The telephone number associated with the Cisco IP phone button and its DN tag.
offhook	If set to 1, indicates that the Cisco IP phone is off the hook.

Table 6   show ephone Field Descriptions (continued)

Field	Description
REGISTERED	Indicates that the Cisco IP phone is active and registered. Alternatives states are UNREGISTERED (indicating that the connection to the Cisco IP phone was closed in a normal manner) and DECEASED (indicating that the connection to the Cisco IP phone was closed because of a keepalive timeout).
reset	Pending reset.
reset_sent	Request for reset sent to the Cisco IP phone.
ringing	If set to 1, indicates that the Cisco IP phone's ringer is turned on and the phone is ringing; otherwise, it is set to 0.
Rx Pkts	Number of received voice packets.
TCP socket	Indicates the TCP socket number used to communicate with the Cisco IP phone. This can be correlated with the output of various other **debug** and **show** commands.
Telecaster *model number*	Indicates the type and model of the Cisco IP phone. This information is received from the phone during its registration with the router.
Tx Pkts	Number of transmitted voice packets.

Related Commands	**Command**	**Description**
	show ephone-dn	Displays Cisco IP phone destination number.

show ephone-dn

To display a Cisco IP phone destination number, use the **show ephone-dn** EXEC command.

show ephone-dn [*tag* | **summary**]

Syntax Description

tag	(Optional) Destination number tag. The destination number can be from 1 to 24.
summary	Summary of all Cisco IP phone destination number.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Examples   The following is sample output from the **show ephone-dn** command:

```
Router# show ephone-dn 24

EFXS 50/0/24 Slot is 50, Sub-unit is 0, Port is 24
 Type of VoicePort is EFXS
 Operation State is UP
 Administrative State is UP
 No Interface Down Failure
 Description is not set
 Noise Regeneration is enabled
 Non Linear Processing is enabled
 Music On Hold Threshold is Set to -38 dBm
 In Gain is Set to 0 dB
 Out Attenuation is Set to 0 dB
 Echo Cancellation is enabled
 Echo Cancel Coverage is set to 8 ms
 Playout-delay Mode is set to default
 Playout-delay Nominal is set to 60 ms
 Playout-delay Maximum is set to 200 ms
 Connection Mode is normal
 Connection Number is not set
 Initial Time Out is set to 10 s
 Interdigit Time Out is set to 10 s
 Ringing Time Out is set to 180 s
 Companding Type is u-law
 Region Tone is set for US
 Wait Release Time Out is 30 s
 Station name None, Station number None
```

```
   Caller ID Info Follows:
   Standard BELLCORE

   Voice card specific Info Follows:
   Digit Duration Timing is set to 100 ms
```

The following is sample output from the **show ephone-dn summary** command:

Router# **show ephone-dn summary**

```
PORT       DN STATE    CODEC    VAD VTSP STATE            VPM STATE
========   =========   ======== === ==================== =========
50/0/1     DOWN        -        -   -                     EFXS_ONHOOK

50/0/2     DOWN        -        -   -                     EFXS_ONHOOK

50/0/3     DOWN        -        -   -                     EFXS_ONHOOK

50/0/4     INVALID     -        -   -                     EFXS_INIT

50/0/5     INVALID     -        -   -                     EFXS_INIT

50/0/6     INVALID     -        -   -                     EFXS_INIT
```

Table 7 provides an alphabetical listing of the command fields in the sample output.

Table 7   show ephone-dn Field Descriptions

Field	Description
Administrative State	Administrative (configured) state of the voice port.
Caller ID Info	Information about the caller ID.
CODEC	Codec type.
Companding Type	Not applicable to the Cisco IP phone.
Connection Mode	Not applicable to the Cisco IP phone.
Connection Number	Not applicable to the Cisco IP phone.
Description	Not applicable to the Cisco IP phone.
DN STATE	State of the Cisco IP phone line associated with a directory number (DN).
Echo Cancellation	Not applicable to the Cisco IP phone.
Echo Cancel Coverage	Not applicable to the Cisco IP phone.
EFXS	The voice port type.
In Gain	Not applicable to the Cisco IP phone.
Initial Time Out	Amount of time the system waits for an initial input digit from the caller.
Interdigit Time Out	Amount of time the system waits for a subsequent input digit from the caller.
Music-On-Hold Threshold	Not applicable to the Cisco IP phone.
No Interface Down Failure	State of the interface.

Table 7 **show ephone-dn Field Descriptions (continued)**

Field	Description
Noise Regeneration	Not applicable to the Cisco IP phone.
Non-Linear Processing	Not applicable to the Cisco IP phone.
Operational State	Operational state of the voice port.
Out Attenuation	Not applicable to the Cisco IP phone.
Playout-delay Maximum	Not applicable to the Cisco IP phone.
Playout-delay Mode	Not applicable to the Cisco IP phone.
Playout-delay Nominal	Not applicable to the Cisco IP phone.
Port	Port number for this interface associated with the voice interface card.
Region Tone	Not applicable to the Cisco IP phone.
Ringing Time Out	Ringing time out duration.
Station name	Station name.
Station number	Station number.
Slot	Slot used in the voice interface card for this port.
Sub-unit	Subunit used in the voice interface card for this port.
Type of VoicePort	Indicates the voice port type.
VAD	Voice activity detection.
Voice card specific Info	Information specific to the voice card.
VPM STATE	State indication for the VPM software component.
VTSP STATE	State indication for the VTSP software component.
Wait Release Time Out	The time that a voice port stays in the call-failure state while the router sends a busy tone, reorder tone, or an out-of-service tone to the port.

Related Commands	Command	Description
	show ephone	Displays Cisco IP phone output.

show ephone summary

To display a summary of all Cisco IP phones, use the **show ephone summary** EXEC command.

> **show ephone summary**

Syntax Description   This command has no arguments or keywords.

Command Modes   EXEC

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines   The **show ephone summary** command is similar to the **show ephone** command. However, the **show ephone summary** command does not display the destination numbers listed. If you do not specify a MAC address, you get the status information about all the Cisco IP phones.

Examples   The following is sample output from the **show ephone summary** command:

```
Router# show ephone summary

ephone-1 Mac:0030.94C3.37CB TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:1
IP:10.1.1.1 Telecaster 7910  keepalive 75

ephone-2 Mac:0030.94C3.F96A TCP socket:[2] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:1
IP:10.1.1.2 Telecaster 7960  keepalive 90

ephone-3 Mac:0030.94C3.F43A TCP socket:[-1] activeLine:0 DECEASED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:1
IP:10.2.1.1 Telecaster 7960  keepalive 2258

ephone-4 Mac:0030.94C3.F946 TCP socket:[-1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 debug:1
IP:0.0.0.0 Unknown 0  keepalive 0
```

Table 8 provides an alphabetical listing of the command fields in the sample output.

Table 8   show ephone summary Field Descriptions

Field	Description
activeLine	Indicates the line (button) on the phone that is in use. Zero indicates that no line is in use
debug	If set to 1, indicates debug for the phone is enabled; otherwise, it is set to 0.
ephone-1	Cisco IP phone tag number.
IP	Assigned IP address of the Cisco IP phone.
keepalive	Number of keepalive messages received from the Cisco IP phone by the router.
Mac	MAC address.
mediaActive	If set to 1, indicates that an active conversation is going on; otherwise it is set to 0.
offhook	If set to 1, indicates that the phone is off the hook.
REGISTERED	Indicates that the Cisco IP phone is active and registered. Alternatives states are UNREGISTERED (indicating that the connection to the Cisco IP phone was closed in a normal manner) and DECEASED (indicating that the connection to the Cisco IP phone was closed because of a keepalive timeout).
reset	Pending reset.
reset_sent	Request for reset sent to the Cisco IP phone.
ringing	If set to 1, indicates that the Cisco IP phone's ringer is turned on and the phone is ringing, otherwise set to 0.
TCP socket	Indicates the TCP socket number used to communicate with the Cisco IP phone. This can be correlated with the output of various other **debug** and **show** commands.
Telecaster *model number*	Indicates the type and model of the Cisco IP phone. This information is received from the phone during its registration with the router.

Related Commands

Command	Description
show ephone	Displays Cisco IP phone output.

timeouts interdigit (cm-fallback)

To configure the interdigit timeout value for all Cisco IP phones attached to the router when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **timeouts interdigit** command in call-manager-fallback configuration mode. To disable the interdigit timeout value, use the **no** form of this command.

> **timeouts interdigit** *seconds*
>
> **no timeouts interdigit** *seconds*

Syntax Description		
	seconds	Interdigit timeout duration, set on the timer, in seconds for all the Cisco IP phones. Valid entries are any integer from 2 to 120.

Defaults The default is 10 seconds.

Command Modes Call-manager-fallback configuration

Command History

Release	Modification
12.2(2)XB	This command was introduced on the Cisco 2600 series, Cisco 3600 series multiservice routers, Cisco IAD2420 series integrated access devices (IADs), and Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines The **timeouts interdigit** command specifies the number of seconds the system waits after a caller enters the initial digit or a subsequent digit of the dialed string. The timeouts interdigit timer is activated when the caller enters a digit and is restarted each time the caller enters subsequent digits until the destination address is identified. If the configured timeout value is exceeded before the destination address is identified, a tone sounds and the call is terminated. The default is 10 seconds.

To disable the timeouts interdigit timer, set the *seconds* value to zero.

Examples The following example shows the interdigit timeout value set to 8 seconds for all Cisco IP phones:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# timeouts interdigit 8
```

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.
timeouts interdigit	Configures the interdigit timeout value for a specified voice port.

transfer-pattern (cm-fallback)

To allow transfer of telephone calls by Cisco IP phones to other phone numbers when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **transfer-pattern** call-manager-fallback configuration command. To disable transfer of calls to other numbers, use the **no** form of this command.

transfer-pattern *transfer-pattern*

no transfer-pattern

Syntax Description

transfer-pattern	Digit string for permitted call transfers.

Defaults

Cisco IP phone to Cisco IP phone transfer

Command Modes

Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines

The **transfer-pattern** command allows you to transfer the call to non-IP phone numbers. The call is established between the other calling party and the new recipient. By default, all Cisco IP phone directory numbers or virtual voice ports are allowed as transfer targets.

Examples

The following example shows how to set the transfer pattern:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# transfer-pattern 52540..
```

A maximum of 32 transfer patterns can be entered. In the previous example, 52540.. (The two decimal points are used here as wild cards.) permits transfers to any numbers in the range 525-4000 to 525-4099.

Related Commands

Command	Description
call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

voicemail (cm-fallback)

To configure the telephone number that is speed-dialed when the message button on a Cisco IP phone is pressed when the Survivable Remote Site (SRS) Telephony feature is enabled, use the **voicemail** call-manager-fallback configuration command. To disable the messages button, use the **no** form of this command.

> **voicemail** *phone-number*

> **no voicemail**

Syntax Description

phone-number	The phone number that is configured as a speed-dial number to retrieve messages.

Defaults No phone number is configured and the messages button is ineffective.

Command Modes Call-manager-fallback configuration

Command History

Release	Modification
12.1(5)YD	This command was introduced on the Cisco 2600 series and Cisco 3600 series multiservice routers, and Cisco IAD2420 series integrated access devices (IADs).
12.2(2)XG	This command was implemented on the Cisco MC3810-V3 concentrators.
12.2(2)XB	This command was integrated into Cisco IOS Release 12.2(2)XB and was implemented on the Cisco 7200 series routers.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T.

Usage Guidelines The **voicemail** command configures the telephone number that is speed-dialed when the message button on a Cisco IP phone is pressed. The same voicemail telephone number is configured for all Cisco IP phones connected to the router.

The default behavior is that no phone number is configured and the messages button is ineffective.

Examples The following example shows that the phone number 4085551000 is set as the speed-dial number that is dialed to retrieve messages when the messages button is pressed:

```
Router(config)# call-manager-fallback
Router(config-cm-fallback)# voicemail 914085551000
```

The number 914085551000 is called when the Cisco IP phone messages button is pressed to retrieve messages.

Related Commands	Command	Description
	call-manager-fallback	Enables Survivable Remote Site (SRS) Telephony feature support and enters call-manager-fallback configuration mode.

- voicemail (cm-fallback)