Configuring Single Number Reach (SNR)

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This chapter describes the Single Number Reach (SNR) feature in Cisco Unified Communications Manager Express (Cisco Unified CME) 7.1 and later versions.

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Information About Single Number Reach

To configure SNR, you should understand the following concepts:

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- Single Number Reach for Cisco Unified SIP IP Phones, page 1318
- Virtual SNR DN for Cisco Unified SCCP IP Phones, page 1319

Single Number Reach: Overview

The Single Number Reach (SNR) feature allows users to answer incoming calls to their extension on either their desktop IP phone or at a remote destination, such as a mobile phone. Users can pick up active calls on the desktop phone or the remote phone without losing the connection. This enables callers to dial a single number to reach the phone user. Calls that are not answered can be forwarded to voice mail.

Remote destinations may include the following devices:

- Mobile (cellular) phones.
- Smart phones.
- IP phones not belonging to the same Cisco Unified CME router as the desktop phone.
- Home phone numbers in the PSTN. Supported PSTN interfaces include PRI, BRI, SIP, and FXO.

For incoming calls to the SNR extension, Cisco Unified CME rings the desktop IP phone first. If the IP phone does not answer within the configured amount of time, it rings the configured remote number while continuing to ring the IP phone. Unanswered calls are sent to a configured voice-mail number.

The IP phone user has these options for handling calls to the SNR extension:

- Pull back the call from the remote phone—Phone user can manually pull back the call to the SNR extension by pressing the Resume soft key, which disconnects the call from the remote phone.
- Send the call to remote phone—Phone user can send the call to the remote phone by using the Mobility soft key. While connected to the call, the phone user can press the Mobility soft key and select “Send call to mobile.” The call is forwarded to the remote phone.
- Enable or disable Single Number Reach—While the IP phone is in the idle state, the user can toggle the SNR feature on and off by using the Mobility soft key. If the user disables SNR, Cisco Unified CME does not ring the remote number.

IP phone users can modify their own SNR settings directly from the phone by using the menu available with the Services feature button. You must enable the feature on the phone to allow a phone user to access the user interface.

This feature is supported in Cisco Unified CME 7.1 and later versions on SCCP IP phones that support soft keys.

SNR Enhancements

Cisco Unified CME 8.5 supports the following enhancements in the Single Number Reach (SNR) feature:

Hardware Conference

In Cisco Unified CME 8.5, you can send a call to a mobile phone after joining a hardware conference. After joining the hardware conference, all conference callers are blind-transferred to hardware DN. The call character of the ephone changes from incoming call to outgoing call and you are able to send a call to the mobile.

Call Park, Call Pickup, and Call Retrieval

In earlier versions of Cisco Unified CME, Call Park, Call Pickup, and Call Retrieval features were not supported for SNR. Cisco Unified CME 8.5 and later versions allows you to park, pickup, or retrieve an SNR call,

Cisco Unified CME 8.5 enhances the SNR feature to allow you to see the local number on your cell phone instead of the calling party number, You can configure the **snr calling number local** command under **ephone-dn** configuration mode to view the caller ID of the SNR phone. For information on configuring SNR calling number local, see the "SCCP: Configuring Single Number Reach Enhancements" section on page 1324.

Answer Too Soon Timer

On non-FXO ports, you can set an **snr answer too soon timer** to prevent the calls from rolling to the voice mailbox of your cell phone. When the cell phone rolls to the voice mail within the answer too soon timer range (1 to 5 seconds), the mobile phone call leg is immediately disconnected. You can configure the **snr answer too soon** command under **ephone-dn** mode. For more information, see the "SCCP: Configuring Single Number Reach Enhancements" section on page 1324. The **answer-too soon timer** is not applicable when sending the call to a mobile.

SNR Phone Stops Ringing After Mobile Phone Answers

When SNR is deployed on non-FXO ports, if cell phone picks up an SNR call, you are connected to the call. The ephone stops ringing further and is placed on hold. You can configure the **snr ring-stop** command under **ephone-dn** configuration mode to stop the ephone from ringing and to place the phone on hold. For more information, see the "SCCP: Configuring Single Number Reach Enhancements" section on page 1324.

Single Number Reach for Cisco Unified SIP IP Phones

Before Cisco Unified CME 9.0, the Single Number Reach (SNR) feature enabled the user to be reached on two numbers: a regular directory number (DN) on the ephone and a public switched telephone network (PSTN) connection (either a PRI/BRI/FXO port or a SIP interface). For incoming calls to the ephone, the Cisco Unified CME called the ephone DN first. When the ephone DN did not answer within a configured time, the Cisco Unified CME called a preconfigured PSTN number while continually calling the ephone DN.

In Cisco Unified CME 9.0 and later versions, the following SNR features are supported for Cisco Unified SIP IP phones:

- Enable and disable the Extension Mobility (EM) feature on a Cisco Unified SIP IP phone—Use the Mobility soft key or PLK as a toggle or use the **mobility** and **no mobility** commands to enable or disable the Mobility feature on a Cisco Unified SIP IP phone.
- Manual pull back of a call on a mobile phone—Use the Resume soft key to manually bring a call back to the SNR DN.
- Send a call to a mobile PSTN phone—Send a call to the mobile PSTN phone using the Mobility soft key while the Cisco Unified SIP IP phone is on a call. Select “Send call to mobile” and the call is handed off to the mobile phone.
- Send a call to a mobile phone regardless of whether the SNR phone is the originating or the terminating side—Ensure that the SNR feature is configured in voice register dn or ephone-dn configuration mode to send a call to a mobile phone regardless of whether the SNR phone is the originating or terminating side. Use the Mobility soft key, select “Send call to mobile,” and the call is handed off to the mobile phone.

For calls from a PSTN, local, or VoIP phone to a Cisco Unified SIP IP phone configured as an SNR phone, the Cisco Unified CME calls the SIP SNR or the mobile phone DN.

When you answer the call on the SIP SNR phone, you can send the call to the PSTN/BRI/PRI/SIP phone.

When you answer the call on the mobile phone, the Resume soft key is displayed on the SIP SNR phone and allows the call to be pulled back to the SIP SNR phone. You can repeatedly pull the call back from the PSTN phone to the SIP SNR phone or from the SIP SNR phone to the PSTN phone.

If the **cfwd-noan** keyword is configured and both the mobile and SIP SNR phones do not answer, the call is redirected to a preconfigured extension number when the end of a preconfigured time delay is reached.

The following shows how SNR phones configured with Cisco Unified SIP IP phones behave differently from those configured with Cisco Unified SCCP IP phones when sending a call to a mobile:

- For Cisco Unified SCCP IP phones, the Resume soft key is displayed on the SCCP SNR phone as soon as the call is sent to the mobile phone.
- For Cisco Unified SIP IP phones, the Resume soft key is displayed on the SIP SNR phone as soon as the mobile phone answers the call.

Note When the Resume soft key is pressed, the call is returned to the SNR phone.

Cisco Unified CME 9.0 supports the SNR feature in Cisco Unified SIP 7906, 7911, 7941, 7942, 7945, 7961, 7962, 7965, 7970, 7971, 7975, 8961, 9951, and 9971 IP Phones.

Virtual SNR DN for Cisco Unified SCCP IP Phones

A virtual SNR DN is a DN not associated with any registered phone. It can be called, forwarded to a preconfigured mobile phone, or put on an Auto Hold state when the mobile phone answers the call or the time delay is reached. In the Auto Hold state, the DN can either be floating or unregistered. A floating DN is a DN not configured for any phone while an unregistered DN is one associated with phones not registered to a Cisco Unified CME system.

Before Cisco Unified CME 9.0, an SNR DN feature did not launch when the SNR DN was not associated with any registered phone. Although a call could be forwarded to the mobile phone using the **call-forward busy** command, the SNR DN had to be configured under a phone. Users who were assigned floating DNs could not forward calls unless they had a phone assigned to them.

In Cisco Unified CME 9.0 and later versions, an SNR DN is not required to be associated with a registered phone to have the SNR DN feature launched. A call can be made to a virtual SNR DN and the SNR feature can be launched even when the SNR DN is not associated with any phone. A call to a virtual SNR DN can be forwarded to an auto-attendant service when the preconfigured mobile phone is out of service and the voice mail can be retrieved using the telephone or extension number assigned to the voice mailbox.

Although the virtual SNR DN feature is designed for SNR DNs that are not associated with registered phones, this feature also supports virtual SNR DNs that complete phone registration or login and registered DNs that become virtual when all associated registered phones become unregistered.

How to Configure Single Number Reach

This section contains the following task:

- SCCP: Configuring Single Number Reach, page 1320
- SCCP: Configuring Single Number Reach Enhancements, page 1324
- SIP: Configuring Single Number Reach, page 1327
- SCCP: Configuring a Virtual SNR DN, page 1330

SCCP: Configuring Single Number Reach

To enable the Single Number Reach (SNR) feature on SCCP IP phones, perform the following steps.

Prerequisites

- Cisco Unified CME 7.1 or a later version
- Cisco IP Communicator requires version 2.1.4 or later

Restrictions

- Each IP phone supports only one SNR directory number.
- SNR feature is not supported for the following:
  - SCCP-controlled analog FXS phones
  - MLPP calls
  - Secure calls
  - Video calls
  - Hunt group directory numbers (voice or ephone)
  - MWI directory numbers
  - Trunk directory numbers
- An overlay set can support only one SNR directory number and that directory number must be the primary directory number.
- Call forward no answer (CFNA), configured with the **call-forward noan** command, is disabled if SNR is configured on the directory number. To forward unanswered calls to voice mail, use the **cfwd-noan** keyword in the **snr** command.
- Call forwarding of unanswered calls, configured with the **cfwd-noan** keyword in the **snr** command, is not supported for PSTN calls from FXO trunks because the calls connect immediately.
- Calls from an internal extension to an extension which is busy, is forwarded to the SNR destination even if **no forward local-calls** is configured under the Directory Number.
- Calls always remain private. If a call is answered on a remote phone, the desktop IP phone can not listen to the call unless it resumes the call.
- U.S. English is the only locale supported for SNR calls.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag*
4. **number** *number*
5. **mobility**
6. **snr** *e164-number* **delay** *seconds* **timeout** *seconds* [**cfwd-noan** *extension-number*]
7. **snr calling-number local**
8. **exit**
9. **ephone-template** *template-tag*
10. **softkeys connected** {[**Acct**] [**ConfList**] [**Confrn**] [**Endcall**] [**Flash**] [**HLog**] [**Hold**] [**Join**] [**LiveRcd**] [**Mobility**] [**Park**] [**RmLstC**] [**Select**] [**TrnsfVM**] [**Trnsfer**]}
11. **softkeys idle** {[**Cfwdall**] [**ConfList**] [**Dnd**] [**Gpickup**] [**HLog**] [**Join**] [**Login**] [**Mobility**] [**Newcall**] [**Pickup**] [**Redial**] [**RmLstC**]}
12. **exit**
13. **ephone** *phone-tag*
14. **ephone-template** *template-tag*
15. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**ephone-dn** *dn-tag* **Example:** `Router(config)# ephone-dn 10`	Enters directory number configuration mode.
Step 4	**number** *number* **Example:** `Router(config-ephone-dn)# number 1001`	Associates an extension number with this directory number. • *number*—String of up to 16 digits that represents an extension or E.164 telephone number.
Step 5	**mobility** **Example:** `Router(config-ephone-dn)# mobility`	Enables the Mobility feature on the directory number.

	Command or Action	Purpose
Step 6	**snr** *e164-number* **delay** *seconds* **timeout** *seconds* [**cfwd-noan** *extension-number*] **Example:** `Router(config-ephone-dn)# snr 4085550133 delay 5 timeout 15 cfwd-noan 2001`	Enables SNR on the extension. • *e164-number*—E.164 telephone number to ring if IP phone extension does not answer. • **delay** *seconds*—Sets the number of seconds that the call rings the IP phone before ringing the remote phone. Range is from 0 to 10. Default: disabled. • **timeout** *seconds*—Sets the number of seconds that the call rings after the configured delay. Call continues to ring for this length of time on the IP phone even if the remote phone answers the call. Range is from 5 to 60. Default: disabled. • **cfwd-noan** *extension-number*—(Optional) Forwards the call to this target number if the phone does not answer after both the **delay** and **timeout** seconds have expired. This is typically the voice-mail number. **Note** The **cfwd-noan** option is not supported for calls from FXO trunks because the calls connect immediately.
Step 7	**snr calling-number local** **Example:** `Router(config-ephone-dn)# snr calling-number local`	(Optional) Replaces the original calling party number with the SNR extension number in the caller ID display of the remote phone. • This command is supported in Cisco Unified CME 8.0 and later versions.
Step 8	**exit** **Example:** `Router(config-ephone-dn)# exit`	Exits ephone-dn configuration mode.
Step 9	**ephone-template** *template-tag* **Example:** `Router(config)# ephone-template 1`	Enters ephone-template configuration mode to create an ephone template. • *template-tag*—Unique identifier for the ephone template that is being created. Range is from 1 to 20.
Step 10	**softkeys connected** {[**Acct**] [**ConfList**] [**Confrn**] [**Endcall**] [**Flash**] [**HLog**] [**Hold**] [**Join**] [**LiveRcd**] [**Mobility**] [**Park**] [**RmLstC**] [**Select**] [**TrnsfVM**] [**Trnsfer**]} **Example:** `Router(config-ephone-template)# softkeys connected endcall hold livercd mobility`	Modifies the order and type of soft keys that display on an IP phone during the connected call state. • Pressing the Mobility soft key during the connected call state forwards the call to the PSTN number defined in Step 6.
Step 11	**softkeys idle** {[**Cfwdall**] [**ConfList**] [**Dnd**] [**Gpickup**] [**HLog**] [**Join**] [**Login**] [**Mobility**] [**Newcall**] [**Pickup**] [**Redial**] [**RmLstC**]} **Example:** `Router(config-ephone-template)# softkeys idle dnd gpickup pickup mobility`	Modifies the order and type of soft keys that display on an IP phone during the idle call state. • Pressing the Mobility soft key during the idle call state enables the SNR feature. This key is a toggle; pressing it a second time disables SNR.

	Command or Action	Purpose
Step 12	**exit** **Example:** `Router(config-ephone-template)# exit`	Exits ephone-template configuration mode.
Step 13	**ephone** *phone-tag* **Example:** `Router(config)# ephone 21`	Enters ephone configuration mode. • *phone-tag*—Unique number that identifies this ephone during configuration tasks.
Step 14	**ephone-template** *template-tag* **Example:** `Router(config-ephone)# ephone-template 1`	Applies the ephone template to the phone. • *template-tag*—Unique identifier of the ephone template that you created in Step 12.
Step 15	**end** **Example:** `Router(config-ephone-template)# end`	Exits configuration mode.

Examples

The following example shows extension 1001 is enabled for SNR on IP phone 21. After a call rings at this number for 5 seconds, the call also rings at the remote number 4085550133. The call continues ringing on both phones for 15 seconds. If the call is not answered after a total of 20 seconds, the call no longer rings and it is forwarded to the voice-mail number 2001.

```
ephone-template  1
 softkeys idle  Dnd Gpickup Pickup Mobility
 softkeys connected  Endcall Hold LiveRcd Mobility
!
ephone-dn 10
 number 1001
 mobility
 snr 4085550133 delay 5 timeout 15 cfwd-noan 2001
 snr calling-number local
!
!
ephone  21
 mac-address 02EA.EAEA.0001
 ephone-template 1
 button  1:10
```

SCCP: Configuring Single Number Reach Enhancements

To enable the Single Number Reach (SNR) enhancement feature on Cisco IP phones, follow these steps:

Prerequisites

Cisco Unified CME 8.5 or a later version.

Restrictions

- Software Conference— After a software conference is initiated and committed on an ephone, you cannot send the call to a mobile phone. You can only enable or disable mobility after software conference is committed.
- SNR Call Pickup on FXO port— For a call routed through FXO port to the PSTN, the call is signaled as "connected" as soon as FXO port is seized outbound. The mobile phone is on FXO interface and the call (session) is in active state as soon as FXO is in connect state. The ephone will be in ringing state but you can not pick up the ephone call.
- Music on hold (MOH) is not supported if the SNR call originates from the line side. MOH is supported on an SNR call if the call originates from the trunk side.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag*
4. **number** *number* [**secondary** *number*] [**no-reg** [**both** | **primary**]]
5. **mobility**
6. **snr calling number local**
7. **snr answer too soon timer** *time*
8. **snr ring-stop**
9. **end**

DETAILED STEPS

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

	Command or Action	Purpose
Step 3	**ephone-dn** *dn-tag* **Example:** `Router(config)# ephone-dn 10`	Enters directory number configuration mode.
Step 4	**number** *number* [**secondary** *number*] [**no-reg** [**both** | **primary**]] **Example:** `Router(config-ephone-dn)# number 1001`	Associates an extension number with this directory number. • *number*—String of up to 16 digits that represents an extension or E.164 telephone number.
Step 5	**mobility** **Example:** `Router(config-ephone-dn)# mobility`	Enables the Mobility feature on the directory number.
Step 6	**snr calling number local** **Example:** `Router(config-ephone-dn)#snr calling-number local`	Displays local number as calling number on your SNR mobile phone.
Step 7	**snr answer too soon** *time* **Example:** `Router(config-ephone-dn)#snr answer-too-soon 4`	Enables a timer for answering the call on SNR mobile phone. • *time*—Time, in seconds. Range is from 1 to 5.
Step 8	**snr ring-stop** **Example:** `Router(config-ephone-dn)#snr ring-stop`	Allows you to stop the IP phone from ringing after the SNR call is answered on a mobile phone.
Step 9	**exit** **Example:** `Router(config-ephone-dn)# exit`	Exits ephone-dn configuration mode.

Examples

The following example shows SNR enhancements configured for ephone-dn 10:

```
Router#show running config
!
!
telephony-service
 sdspfarm units 1
 sdspfarm tag 1 confprof1
 conference hardware
 max-ephones 262
 max-dn 720
 ip source-address 172.19.153.114 port 2000
 service phone thumbButton PTTH6
 load 7906 SCCP11.8-5-3S.loads
 load 7911 SCCP11.8-5-3S.loads

!
ephone-template  6
 feature-button 1 Hold
!
!
ephone-dn  10
 mobility
 snr calling-number local
 snr ring-stop
 snr answer-too-soon 4
!
```

SIP: Configuring Single Number Reach

To configure the SNR feature on Cisco Unified SIP IP phones, perform the following steps.

Prerequisites

Cisco Unified CME 9.0 or a later version.

Restrictions

- Hardware Conferencing and Privacy on Hold for Cisco Unified SIP IP phones are not supported.
- Mixed shared lines between Cisco Unified SIP and SCCP IP phones are not supported.
- Subscribe and Notify modes for SIP shared lines are not supported.
- Incoming calls from the H323 IP trunk are not supported.
- Media flow around for SIP-SIP trunk calls is not supported.
- SIP SNR phones that initiate software conferencing are unable to send or receive calls to or from mobile phones because the Cisco Unified SIP IP phones are put on hold after a software conference is committed.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice register template** *template-tag*
4. **softkeys idle** {[**Cfwdall**] [**DND**] [**Gpickup**] [**Newcall**] [**Pickup**] [**Redial**]}
5. **softkeys connected** {[**Confrn**] [**Endcall**] [**Hold**] [**Park**] [**Trnsfer**] [**iDivert**]}
6. **exit**
7. **voice register pool** *pool-tag*
8. **session-transport** {**tcp**}
9. **exit**
10. **voice register dn** *dn-tag*
11. **number** *number*
12. **name** *name*
13. **mobility**
14. **snr calling-number local**
15. **snr** *e164-number* **delay** *seconds* **timeout** *seconds* [**cfwd-noan** *extension-number*]
16. **snr ring-stop**
17. **snr answer-too-soon** *time*
18. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**voice register template** *template-tag* **Example:** `Router(config)# voice register template 1`	Enters voice register template configuration mode. • *template-tag*—Identifier for the template being created. Range: 1 to 10.
Step 4	**softkeys idle** {[**Cfwdall**] [**DND**] [**Gpickup**] [**Newcall**] [**Pickup**] [**Redial**]} **Example:** `Router(config-register-temp)# softkeys idle Redial Cfwdall`	Modifies the display of soft keys on Cisco Unified SIP IP phones during the idle call state. • **Cfwdall**—(Optional) Soft key for "call forward all." Forwards all calls. • **DND**—(Optional) Soft key that enables the Do-Not-Disturb feature. • **Gpickup**—(Optional) Soft key that allows a user to pickup a call that is ringing on another phone. • **Newcall**—(Optional) Soft key that opens a line on a speakerphone to place a new call. • **Pickup**—(Optional) Soft key that allows a user to pickup a call that is ringing on another phone that is a member of the same pickup group. • **Redial**—(Optional) Soft key that redials the last number dialed.
Step 5	**softkeys connected** {[**Confrn**] [**Endcall**] [**Hold**] [**Park**] [**Trnsfer**] [**iDivert**]} **Example:** `Router(config-register-temp)# softkeys connected Confrn Hold Endcall`	Modifies the display of soft keys on Cisco Unified SIP IP phones during the connected call state. • **Confrn**—(Optional) Soft key that connects callers to a conference call. • **Endcall**—(Optional) Soft key that ends the current call. • **Hold**—(Optional) Soft key that places an active call on hold and resumes the call. • **Park**—(Optional) Soft key that places an active call on hold, so it can be retrieved from another phone in the system. • **Trnsfer**—(Optional) Soft key that transfers active calls to another extension. • **iDivert**—(Optional) Soft key that immediately diverts a call to a voice-messaging system.

	Command or Action	Purpose
Step 6	**exit** **Example:** `Router(config-register-temp)# exit`	Exits voice register template configuration mode.
Step 7	**voice register pool** *pool-tag* **Example:** `Router(config)# voice register pool 10`	Enters voice register pool configuration mode. • *pool-tag*—Unique number assigned to the pool. Range: 1 to 100. **Note** For Cisco Unified CME systems, the upper limit for this argument is defined by the **max-pool** command.
Step 8	**session-transport** {**tcp**} **Example:** `Router(config-register-pool)# session-transport tcp`	Specifies the transport layer protocol that a Cisco Unified SIP IP phone uses to connect to Cisco Unified CME. • **tcp**—Transmission Control Protocol (TCP) is used.
Step 9	**exit** **Example:** `Router(config-register-pool)# exit`	Exits voice register pool configuration mode.
Step 10	**voice register dn** *dn-tag* **Example:** `Router(config)# voice register dn  3`	Enters voice register dn configuration mode. • *dn-tag*—Unique sequence number that identifies a particular directory number during configuration tasks. Range is 1 to 150 or the maximum defined by the **max-dn** command.
Step 11	**number** *number* **Example:** `Router(config-register-dn)# number 1004`	Associates a telephone or extension number with a Cisco Unified SIP IP phone in a Cisco Unified CME system. • *number*—String of up to 16 characters that represents an E.164 telephone number. Normally, the string is composed of digits, but the string may contain alphabetic characters when the number is dialed only by the router, as with an intercom number.
Step 12	**name** *name* **Example:** `Router(config-register-dn)# name John Smith`	Associates a name with a directory number in Cisco Unified CME. • *name*—Name of the person associated with a given extension. Name must follow the order specified in the **directory** (telephony-service) command, either **first-name-first** or **last-name-first**.
Step 13	**mobility** **Example:** `Router(config-register-dn)# mobility`	Enables the Mobility feature on an extension of a Cisco Unified SIP IP phone.
Step 14	**snr calling-number local** **Example:** `Router(config-register-dn)# snr calling-number local`	Replaces the calling party number displayed on the configured mobile phone with the local SNR number.

	Command or Action	Purpose
Step 15	**snr** *e164-number* **delay** *seconds* **timeout** *seconds* [**cfwd-noan** *extension-number*] **Example:** `Router(config-register-dn)# snr 9900 delay 1 timeout 10`	Enables the SNR feature on an extension of a Cisco Unified SIP IP phone. • *e164-number*—E.164 telephone number to call when the Cisco Unified SIP IP phone extension does not answer. • **delay** *seconds*—Sets the number of seconds that the Cisco Unified SIP IP phone rings when called. When the time delay is reached, the call is tranferred to the PSTN phone and the SNR directory number. Range: 0 to 30. Default: 5. • **timeout** *seconds*—Sets the number of seconds that the Cisco Unified SIP IP phone rings after the configured time delay. When the timeout value is reached, no call is displayed on the phone. You have to use the Resume soft key to pull back or the Mobility soft key to send the call to a mobile phone. Range: 30 to 60. Default: 60. **Note** When the default is enabled, the Cisco Unified SIP IP phone continues to ring for 60 seconds even if the remote phone answers the call. • **cfwd-noan** *extension-number*—(Optional) Forwards the call to the extension number when the phone does not answer after both the time delay and timeout values are reached. The extension number is typically the voice mail number. **Note** This option is not supported for calls from FXO trunks because the calls connect immediately.
Step 16	**snr ring-stop** **Example:** `Router(config-register-dn)# snr ring-stop`	Ends the ringing on a Cisco Unified SIP IP phone after the SNR call is answered on the configured mobile phone.
Step 17	**snr answer-too-soon** *time* **Example:** `Router(config-register-dn)# snr answer-too-soon 2`	Sets the time in which SNR calls are prevented from being diverted to the voice mailbox of a mobile phone. • *time*—Time, in seconds. Range: 1 to 5.
Step 18	**end** **Example:** `Router(config-register-dn)# end`	Exits voice register dn configuration mode and enters privileged EXEC mode.

SCCP: Configuring a Virtual SNR DN

To configure a virtual SNR DN on Cisco Unified SCCP IP phones, perform the following steps.

Prerequisites

Cisco Unified CME 9.0 or a later version.

Restrictions

- Virtual SNR DN only supports Cisco Unified SCCP IP phone DNs.
- Virtual SNR DN provides no mid-call support.

  Mid-calls are either of the following:

  – Calls that arrive before the DN is associated with a registered phone and is still present after the DN is associated with the phone.

  – Calls that arrive for a registered DN that changes state from registered to virtual and back to registered.
- Mid-calls cannot be pulled back, answered, or terminated from the phone associated with the DN.
- State of the virtual DN transitions from ringing to hold or remains on hold as a registered DN.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag*
4. **number** *number*
5. **mobility**
6. **snr mode** [**virtual**]
7. **snr** *e164-number* **delay** *seconds* **timeout** *seconds* [**cfwd-noan** *extension-number*]
8. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**ephone-dn** *dn-tag* **Example:** `Router(config)# ephone-dn 10`	Enters ephone-dn configuration mode to configure a directory number for an IP phone line. • *dn-tag*—Unique number that identifies an ephone-dn during configuration tasks. Range is 1 to the number set by the **max-dn** command.

	Command or Action	Purpose
Step 4	**number** *number* **Example:** `Router(config-ephone-dn)# number 1001`	Associates a telephone or extension number with this ephone-dn. • *number*—String of up to 16 characters that represents an E.164 telephone number. Normally, the string is composed of digits, but the string may contain alphabetic characters when the number is dialed only by the router, as with an intercom number.
Step 5	**mobility** **Example:** `Router(config-ephone-dn)# mobility`	Enables the Mobility feature on an extension of a Cisco Unified SCCP IP phone.
Step 6	**snr mode** [**virtual**] **Example:** `Router(config-ephone-dn)# snr mode virtual`	Sets the mode for the SNR directory number. • **virtual**—Enables the virtual mode for an SNR DN when it is unregistered or floating.
Step 7	**snr** *e164-number* **delay** *seconds* **timeout** *seconds* [**cfwd-noan** *extension-number*] **Example:** `Router(config-ephone-dn)# snr 408550133 delay 5 timeout 15 cfwd-noan 2001`	Enables the Single Number Reach feature on the extension of a Cisco Unified SCCP IP phone. • *e164-number*—E.164 telephone number to ring if IP phone extension does not answer. • **delay** *seconds*—Sets the number of seconds that the call rings the IP phone before ringing the remote phone. Range: 0 to 10. Default: disabled. • **timeout** *seconds*—Sets the number of seconds that the call rings after the configured delay. Call continues to ring for this length of time on the IP phone even if the remote phone answers the call. Range: 5 to 60. Default: disabled. • **cfwd-noan** *extension-number*—(Optional) Forwards the call to this target number if the phone does not answer after both the delay and timeout seconds have expired. This is typically the voice mail number.
Step 8	**end** **Example:** `Router(config-ephone-dn)# end`	Exits to privileged EXEC mode.

Additional References

The following sections provide references related to Cisco Unified CME features.

Related Documents

Related Topic	Document Title
Cisco Unified CME configuration	• *Cisco Unified CME Command Reference* • Cisco Unified CME Documentation Roadmap
Cisco IOS commands	• *Cisco IOS Voice Command Reference* • Cisco IOS Software Releases 12.4T Command References
Cisco IOS configuration	• *Cisco IOS Voice Configuration Library* • Cisco IOS Software Releases 12.4T Configuration Guides
Phone documentation for Cisco Unified CME	• User Documentation for Cisco Unified IP Phones

Technical Assistance

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

Feature Information for Single Number Reach

Table 78 lists the features in this module and enhancements to the features by version.

To determine the correct Cisco IOS release to support a specific Cisco Unified CME version, see the *Cisco Unified CME and Cisco IOS Software Version Compatibility Matrix* at http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/requirements/guide/33matrix.htm.

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

Note Table 78 lists the Cisco Unified CME version that introduced support for a given feature. Unless noted otherwise, subsequent versions of Cisco Unified CME software also support that feature.

Table 78 Feature Information for Single Number Reach

Feature Name	Cisco Unified CME Version	Modification
Single Number Reach for Cisco Unified SIP IP Phones	9.0	Supports the following SNR features for Cisco Unified SIP IP phones: • Enable and disable the EM feature. • Manual pull back of a call on a mobile phone. • Send a call to a mobile PSTN phone. • Send a call to a mobile phone regardless of whether the SNR phone is the originating or the terminating side.
Virtual SNR DN for Cisco Unified SCCP IP Phones		Allows a call to be made to a virtual SNR DN and allows the SNR feature to be launched even when the SNR DN is not associated with any phone.
SNR Enhancements	8.5	Added support for the following SNR enhancements: – Hardware Conference – Call Park, Call Pickup, and Call Retrieval – Answer Too Soon Timer – SNR Phone Stops Ringing After Mobile Phone Answers
Calling Number Local	8.0	Added the **snr calling-number local** command to replace the calling party number with the SNR extension in the caller ID display.
Single Number Reach	7.1	Introduced the SNR feature.