Configuring Call Coverage Features

Last Updated: March 15, 2013

This chapter describes features that can be used to provide appropriate, flexible coverage for incoming calls in Cisco Unified Communications Manager Express (Cisco Unified CME).

Finding Feature Information in This Module

Your Cisco Unified CME version may not support all of the features documented in this module. For a list of the versions in which each feature is supported, see the "Feature Information for Call Coverage" section on page 937.

Contents

Information About Call Coverage Features

To configure call coverage features, you should understand the following concepts:

Call Coverage Summary

Call coverage features are used to ensure that all incoming calls to Cisco Unified CME are answered by someone, regardless of whether the called number is busy or does not answer.

Some single-dialed-number call coverage features, such as hunt groups, can send incoming calls to a single extension to a pool of phone agents, while other features, such as call hunt, call waiting, and call forwarding increase the chance of a call being answered by giving it another chance for a connection if the dialed number is not available.

Multiple-dialed-number call coverage features, such as call pickup, night service, and overlaid directory numbers, provide different ways for one person to answer incoming calls to multiple numbers.

Any of the call coverage features can be combined with other call coverage features and with shared lines and secondary numbers to design the call coverage plan that is best suited to your needs.

Table 22 summarizes call coverage features.

Table 22 Call Coverage Feature Summary

Feature	Description	Example	How Configured
Call Forwarding	Calls are automatically diverted to a designated number on busy, no answer, all calls, or only during night-service hours.	Extension 3444 is configured to send calls to extension 3555 when it is busy or does not answer.	SCCP: Enabling Call Forwarding for a Directory Number, page 792 or SIP: Configuring SIP-to-SIP Phone Call Forwarding, page 820
Call Hunt	System automatically searches for an available directory number from a matching group of directory numbers until the call is answered or the hunt is stopped.	Three ephone-dns have the same extension number, 755. One is on the manager's phone and the others are on the assistants' phones. Preference and huntstop are used to make sure that calls always come to the manager's phone first but if they can't be answered, they will ring on the first assistant's phone and if not answered, on the second assistant's phone.	SCCP: Configuring Call Hunt, page 872 or SIP: Configuring Call Hunt, page 875
Call Pickup	Calls to unstaffed phones can be answered by other phone users using a soft key or by dialing a short code.	Extension 201 and 202 are both in pickup group 22. A call is received by 201, but no one is there to answer. The agent at 202 presses the GPickUp soft key to answer the call.	Enabling Call Pickup, page 876
Call Waiting	Calls to busy numbers are presented to phone users, giving them the option to answer them or let them be forwarded.	Extension 564 is in conversation when a call-waiting beep is heard. The phone display shows the call is from extension 568 and the phone user decides to let the call go to voice mail.	SCCP: Configuring Call-Waiting Indicator Tone, page 880 or SIP: Enabling Call Waiting, page 884

Table 22 Call Coverage Feature Summary (continued)

Feature	Description	Example	How Configured
Cisco CME B-ACD	Calls to a pilot number are automatically answered by an interactive application that presents callers with a menu of choices before sending them to a queue for a hunt group.	The DID number 555-0125 is the pilot number for the XYZ Company. Incoming calls to this pilot number hear a menu of choices; they can press 1 for sales, 2 for service, or 3 to leave a message. The call is forwarded appropriately when callers make a choice.	See *Cisco Unified CME B-ACD and Tcl Call-Handling Applications.*
Hunt Groups	Calls are forwarded through a pool of agents until answered or sent to a final number.	Extension 200 is a pilot number for the sales department. Extensions 213, 214, and 215 belong to sales agents in the hunt group. When a call to extension 200 is received, it proceeds through the list of agents until one answers. If all the agents are busy or do not answer, the call is sent to voice mail.	SCCP: Configuring Ephone-Hunt Groups, page 886 or Configuring Voice-Hunt Groups, page 894.
Night Service	Calls to ephone-dns that are not staffed during certain hours can be answered by other phones using call pickup.	Extension 7544 is the cashier's desk but the cashier only works until 3 p.m. A call is received at 4:30 p.m. and the service manager's phone is notified. The service manager uses call pickup to answer the call.	SCCP: Configuring Night Service, page 903.
Overlaid Ephone-dns	Calls to several numbers can be answered by a single agent or multiple agents.	Extensions 451, 452, and 453 all appear on button 1 of a phone. A call to any of these numbers can be answered from button 1.	SCCP: Configuring Overlaid Ephone-dns, page 909.

Call Hunt

Call hunt allows you to use multiple directory numbers to provide coverage for a single called number. You do this by assigning the same number to several primary or secondary ephone-dns or by using wildcards in the number associated with the directory numbers.

Calls are routed based on a match between the number dialed and the destination patterns that are associated with dial peers. Through the use of wildcards in destination patterns, multiple dial peers can match a particular called number. Call hunt is the ability to search through the dial peers that match the called number until the call is answered. Call hunt uses a technique called preference to control the order in which dial peers are matched to an incoming call and a technique called huntstop to determine when the search for another matching peer ends.

In Cisco Unified CME, incoming calls search through the virtual dial peers that are automatically created when you define directory numbers. These virtual dial peers are not directly configurable; you must configure the directory number to control call hunt for virtual dial peers.

Channel huntstop is used to stop the search for the two channels of a dual-line directory number. Channel huntstop keeps incoming calls from hunting to the second channel if the first channel is busy or does not answer. This keeps the second channel free for call transfer, call waiting, or three-way conferencing.

Huntstop prevents hunt-on-busy from redirecting a call from a busy phone into a dial peer that has been setup with a catch-all default destination.

For configuration information, see the "SCCP: Configuring Call Hunt" section on page 872 or the "SIP: Configuring Call Hunt" section on page 875.

Call Pickup

Call Pickup allows a phone user to answer a call that is ringing on another phone. Cisco Unified CME 7.1 introduces Call Pickup features for SIP phones. SCCP and SIP phones support three types of Call Pickup:

- Directed Call Pickup—Call pickup, explicit ringing extension. Any local phone user can pick up a ringing call on another phone by pressing a soft key and then dialing the extension. A phone user does not need to belong to a pickup group to use this method. The soft key that the user presses, either GPickUp or PickUp, depends on your configuration.
- Group Pickup, Different Group—Call pickup, explicit group ringing extension. A phone user can answer a ringing phone in any pickup group by pressing the GPickUp soft key and then dialing the pickup group number. If there is only one pickup group defined in the Cisco Unified CME system, the phone user can pick up the call simply by pressing the GPickUp soft key. A phone user does not need to belong to a pickup group to use this method.
- Local Group Pickup—Call pickup, local group ringing extension. A phone user can pick up a ringing call on another phone by pressing a soft key and then the asterisk (*) if both phones are in the same pickup group. The soft key that the user presses, either GPickUp or PickUp, depends on your configuration.

The specific soft keys used to access different Call Pickup features on SCCP and SIP phones depends on the configuration in Cisco Unified CME. See the **service directed-pickup** command in *Cisco Unified CME Command Reference* for a description.

You can assign each directory number to only one pickup group and a directory number must have a pickup group configured to use Local Group Pickup. There is no limit to the number of directory numbers that can be assigned to a single pickup group, or to the number of pickup groups that can be defined in a Cisco Unified CME system.

If more than one call is ringing on the same number, the calls are picked up in the order in which they were received; the call that has been ringing the longest is the first call picked up from that extension number. Remote call pickup is not supported.

Call Pickup features are enabled globally for all phones through Cisco Unified CME. The PickUp and GpickUp soft keys display on supported SCCP and SIP phones by default and can be modified by using a phone template. For configuration information, see the "Enabling Call Pickup" section on page 876.

Figure 23 shows four call-pickup scenarios.

Figure 23 Call Pickup


```
ephone-dn 55
 number 5555
 pickup-group 33

ephone-dn 56
 number 5556
 pickup-group 33

ephone-dn 57
 number 5557
 pickup-group 44

ephone-dn 58
 number 5558
.
.
.
ephone 1
 mac-address 1111.1111.1111
 button 1:55

ephone 2
 mac-address 2222.2222.2222
 button 1:56

ephone 3
 mac-address 3333.3333.3333
 button 1:57

ephone 4
 mac-address 4444.4444.4444
 button 1:58
.
.
.
```

This scenario assumes that every phone in the Cisco CME system is in pickup group 33, which differs slightly from the sample configuration shown to the right.

Call Waiting

Call waiting allows phone users to be alerted when they receive an incoming call while they are on another call. Phone users hear a call-waiting tone when another party is trying to reach them and, on IP phones, see the calling party information on the phone screen.

Call-waiting calls to IP phones with soft keys can be answered using the Answer soft key. Call-waiting calls to analog phones controlled by Cisco Unified CME systems are answered using hookflash. When phone users answer a call-waiting call, their original call is automatically put on hold. If a phone user does not respond to a call-waiting notification, the call is forwarded as specified in the **call-forward noan** command for that extension.

For an IP phone running SCCP, call waiting for single-line ephone-dns requires two ephone-dns to handle the two calls. Call waiting on a dual-line ephone-dn requires only one ephone-dn because the two channels of the ephone-dn handle the two calls. The audible call-waiting indicator can be either a call-waiting beep or a call-waiting ring. For configuration information, see the "SCCP: Configuring Call-Waiting Indicator Tone" section on page 880.

For a SIP phone, call waiting is automatically enabled when you configure a voice register pool. For SIP phones directly connected to Cisco Unified CME, call waiting can be disabled at the phone-level. For configuration information, see the "SIP: Enabling Call Waiting" section on page 884.

For information on call waiting using Overlaid ephone-dns, see the "Overlaid Ephone-dns" section on page 866.

Call-Waiting Beep for SCCP Phones

Call-waiting beeps are enabled by default. You can disable the call-waiting beeps that are generated from and accepted by directory numbers. If beep generation is disabled, incoming calls to the directory number do not generate call-waiting beeps. If beep acceptance is disabled, the phone user does not hear beeps when using the directory number for an active call.

Table 23 shows the possible beep behaviors of one ephone-dn calling another ephone-dn that is connected to another caller.

Table 23 Call-Waiting Beep Behavior

Ephone-dn 1 Configuration	Ephone-dn 2 Configuration	Active Call on DN	Incoming Call on DN	Expected Behavior
—	`no call-waiting beep`	DN 1	DN 2	No beep
`no call-waiting beep`	—	DN 1	DN 2	No beep
—	`no call-waiting beep generate`	DN 1	DN 2	No beep
—	`no call-waiting beep accept`	DN 1	DN 2	Beep
—	`no call-waiting beep accept` `no call-waiting beep generate`	DN 1	DN 2	No beep
`no call-waiting beep`	—	DN 1	DN 1	No beep
`no call-waiting beep generate`	—	DN 1	DN 1	No beep
`no call-waiting beep accept`	—	DN 1	DN 1	No beep
`no call-waiting beep accept no call-waiting beep generate`	—	DN 1	DN 1	No beep
`no call-waiting beep generate`	—	DN 1	DN 2	Beep

Table 23 Call-Waiting Beep Behavior (continued)

Ephone-dn 1 Configuration	Ephone-dn 2 Configuration	Active Call on DN	Incoming Call on DN	Expected Behavior
`no call-waiting beep accept`	—	DN 1	DN 2	No beep
—	`no call-waiting beep`	DN 1	DN 1	Beep

Call-Waiting Ring for SCCP Phones

Instead of the standard call-waiting beep sound through the handset, you can use a short ring for call-waiting notification. The default is for directory numbers to accept call interruptions, such as call waiting, and to issue a beeping sound for notification.

To use a ring sound, the directory number must accept call-waiting indicator tones. For configuration information, see the "SCCP: Configuring Call-Waiting Indicator Tone" section on page 880 or the "SIP: Enabling Call Waiting" section on page 884.

Cancel Call Waiting

Cancel Call Waiting (CCW) enables an SCCP phone user to disable Call Waiting for a call they originate. The user activates CCW, and thereby disables call waiting, by pressing the cancel call waiting (CW Off) soft key or by dialing the feature access code (FAC) before placing a call. Call Waiting is inactive during that call; anyone calling the user receives normal busy treatment and no call waiting tone interrupts the user's active call. CCW automatically deactivates when the user disconnects from the call. CCW is supported on all lines that support the Call Waiting feature, including dual-lines and octo-lines.

This feature is supported in Cisco Unified CME 8.0 and later versions for SCCP IP phones and SCCP analog phones; it is not supported on SIP phones.

For configuration information, see the "SCCP: Configuring Cancel Call Waiting" section on page 882.

Callback Busy Subscriber

This feature allows callers who dial a busy extension number to request a callback from the system when the called number is available. Callers can also request callbacks for extensions that do not answer, and the system will notify them after the called phone is next used.

There can be only one callback request pending against a particular extension number, although a caller can initiate more than one callback to different numbers. If a caller attempts to place a callback request on a number that already has a pending callback request, the caller hears a fast-busy tone. If the called number has call forwarding enabled, the callback request is placed against the final destination number.

No configuration is required for this feature. To display a list of phones that have pending callback requests, use the **show ephone-dn callback** command.

Hunt Groups

Hunt groups allow incoming calls to a specific number (pilot number) to be directed to a defined group of extension numbers.

Incoming calls are redirected from the pilot number to the first extension number as defined by the configuration. If the first number is busy or does not answer, the call is redirected to the next phone in the list. A call continues to be redirected on busy or no answer from number to number in the list until it is answered or until the call reaches the number that is defined as the final number.

The redirect from one directory number to the next in the list is also known as a *hop*. You can set the maximum number of redirects for specific peer or longest-idle hunt groups, and for the maximum number of redirects allowed in a Cisco Unified CME system, both inside and outside hunt groups. If a call makes the maximum number of hops or redirects without being answered, the call is dropped.

In Cisco Unified CME 9.0 and later versions, support for call statistics is added for voice hunt groups. To write all the ephone and voice hunt group statistics to a file, the **ephone-hunt statistics write-all** command is enhanced and renamed to **hunt-group statistics write-all** command. If applicable, the TFTP statistics report consists of both ephone and voice hunt group statistics.

The **show telephony-service all** command is also enhanced to display the total number of ephone and voice hunt groups that have statistics collection turned on.

The **statistics collect** command under voice hunt-group configuration mode is introduced to enable the collection of call statistics for a voice hunt group.

The **show voice hunt-group statistics** command is introduced to display call statistics from voice hunt groups.

For information on displaying statistics for ephone hunt groups, see *Cisco Unified CME B-ACD and Tcl Call-Handling Applications.*

There are four different types of hunt groups. Each type uses a different strategy to determine the first number that rings for successive calls to the pilot number, as described below.

- Sequential Hunt Groups—Numbers always ring in the left-to-right order in which they are listed when the hunt group is defined. The first number in the list is always the first number to be tried when the pilot number is called. Maximum number of hops is not a configurable parameter for sequential hunt groups. Figure 24 shows an illustrated example.
- Peer Hunt Groups—The first number to ring is the number to the right of the directory number that was the last to ring when the pilot number was last called. Ringing proceeds in a circular manner, left to right, for the number of hops specified in the hunt group configuration. Figure 25 shows an illustrated example.
- Longest-Idle Hunt Groups—Calls go first to the number that has been idle the longest for the number of hops specified when the hunt group was defined. The longest-idle time is determined from the last time that a phone registered, reregistered, or went on-hook. Figure 26 shows an illustrated example.
- Parallel Hunt Groups (Call Blast)—Calls ring all numbers in the hunt group simultaneously.

Hunt-group chains can be configured in any length, but the actual number of hops that can be reached in a chain is determined by the **max-redirect** command configuration. In the following example, a maximum redirect number 15 or greater must be configured for callers to reach the final 5000 number. If a lower number is configured, the call disconnects.

```
ephone-hunt 1 sequential
 pilot 8000
 list 8001, 8002, 8003, 8004
 final 9000

ephone-hunt 2 sequential
 pilot 9000
 list 9001, 9002, 9003, 9004
 final 7000

ephone-hunt 3 sequential
 pilot 7000
 list 7001, 7002, 7003, 7004
 final 5000
```

Cisco Unified CME 4.3 and later versions support the following Voice Hunt-Group features:

- Call Forwarding to a Parallel Voice Hunt-Group (Call Blast)
- Call Transfer to a Voice Hunt-Group
- Member of Voice Hunt-Group can be a SIP phone, SCCP phone, FXS analog phone, DS0-group, PRI-group, or SIP trunk.

Ephone-Hunt Groups and Voice Hunt-Groups Comparison

SIP phones support Voice Hunt-Groups. SCCP phones support Ephone-Hunt Groups, and in Cisco Unified CME 4.3 and later versions, SCCP phones also support Voice Hunt-Groups. Table 24 compares the features of Ephone-Hunt Groups and Voice Hunt-Groups.

Table 24 Feature Comparison of Ephone-Hunt Groups and Voice Hunt-Groups

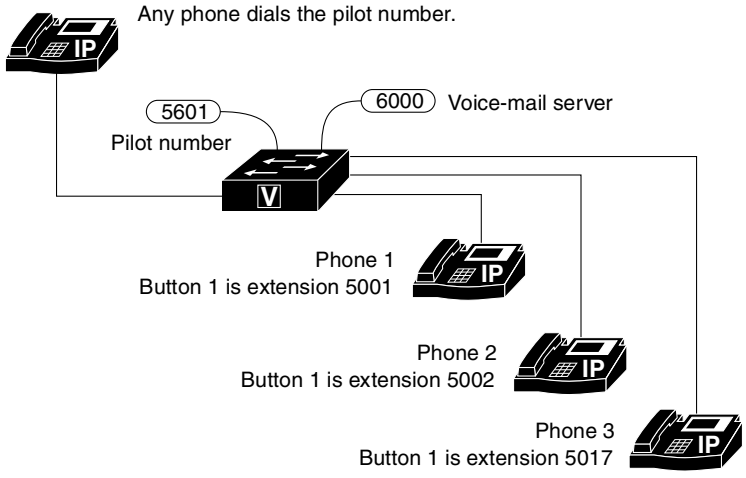
Feature	Ephone Hunt	Voice Hunt Group
Endpoints Supported	SCCP only	SIP, SCCP, PSTN, and FXS
Parallel Hunt Groups (Call Blast)	No (for alternative, see the "Shared-Line Overlays" section on page 867)	Yes
Hunt Statistics Support	Yes	No
B-ACD Support	Yes	No
Features such as present-call and login/logout	Yes	No

Sequential Hunt Groups

In a sequential hunt group, extensions always ring in the order in which they are listed, left to right, when the hunt group is defined. The first number in the list is always the first number to be tried when the pilot number is called. Maximum number of hops is not a configurable parameter for sequential hunt groups.

Figure 24 Sequential hunt Group

1. Any phone dials the pilot number, 5601.
2. Extension 5001, the leftmost number in the hunt group list, rings first on phone 1. If extension 5001 is busy or does not answer, the call is redirected to extension 5002 on phone 2.
3. If extension 5002 on phone 2 is busy or does not answer, the call is redirected to extension 5017 on phone 3.
4. If phone 3 is busy or does not answer, the call is redirected to the final number, extension 6000, which is associated with a voice-mail server.




```
ephone-dn 88
 number 5001

ephone-dn 89
 number 5002

ephone-dn 90
 number 5017

ephone 1
 mac-address 1111.1111.1111
 button 1:88

ephone 2
 mac-address 2222.2222.2222
 button 1:89

ephone 3
 mac-address 3333.3333.3333
 button 1:90

ephone-hunt 1 sequential
 pilot 5601
 list 5001, 5002, 5017
 final 6000
 preference 1
 timeout 30
```

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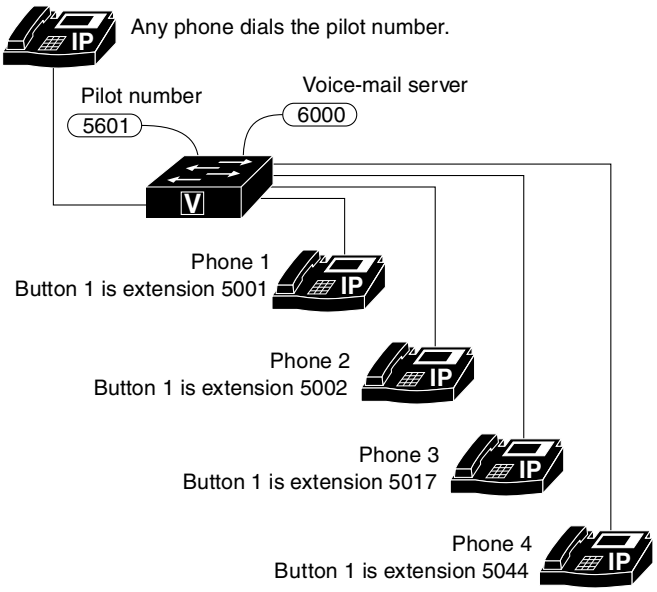
Peer Hunt Groups

In a peer hunt group, extensions ring in a round-robin order. The first extension to ring is the number in the list to the right of the last extension to ring when the pilot number was last called. Ringing proceeds in a circular manner, left to right, for the number of hops specified when the hunt group was defined.

Figure 25 illustrates a peer hunt group.

Figure 25 Peer hunt Group

1. Any phone dials the pilot number, 5601, which is not associated with a physical phone instrument.
2. Extension 5017 on phone 3 is selected to ring first because extension 5002 was the last number to ring the last time that the pilot number was called.
3. If extension 5017 is busy or does not answer, the call is redirected to extension 5044 on phone 4 (first hop).
4. If extension 5044 is busy or does not answer, the call is redirected to extension 5001 on phone 1 (second hop).
5. If extension 5001 is busy or does not answer, the call has reached the maximum number of hops (3), and it is redirected to the final number, extension 6000, which is associated with a voice-mail server.




```
ephone-dn 88
 number 5001

ephone-dn 89
 number 5002

ephone-dn 90
 number 5017

ephone-dn 91
 number 5044

ephone 1
 mac-address 1111.1111.1111
 button 1:88

ephone 2
 mac-address 2222.2222.2222
 button 1:89

ephone 3
 mac-address 3333.3333.3333
 button 1:90

ephone 4
 mac-address 4444.4444.4444
 button 1:91

ephone-hunt 1 peer
 pilot 5601
 list 5001, 5002, 5017, 504
 final 6000
 hops 3
 preference 1
 timeout 30
 no-reg
```

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Longest-Idle Hunt Groups

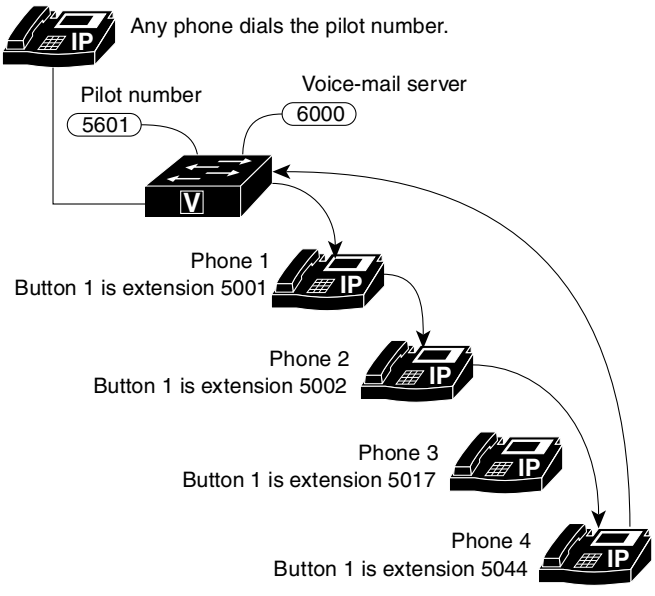
In a longest-idle hunt group, the algorithm for choosing the next extension to receive a call is based on a comparison of on-hook time stamps. The extension with the smallest on-hook time stamp value is chosen when the next call comes to the hunt group.

The default behavior is that an on-hook time stamp value for an extension is updated only when the agent answers a call. In Cisco Unified CME 4.0 and later versions, you can specify that an on-hook time stamp is updated when a call rings an extension and also when a call is answered by an agent.

Figure 26 illustrates a longest-idle hunt group.

Figure 26 Longest-Idle hunt Group

1. Any phone dials the pilot number, 5601, which is not associated with a physical phone instrument.
2. Extension 5001 on phone 1 is selected to ring first because it has been idle the longest.
3. If extension 5001 does not answer, the call is redirected to extension 5002 on phone 2 because it has been idle the longest (first hop).
4. If extension 5002 does not answer, the call is redirected to extension 5044 on phone 4 because it has been idle the longest (second hop).
5. If extension 5044 does not answer, the call has reached the maximum number of hops (3), and it is redirected to the final number, extension 6000, which is associated with a voice-mail server




```
ephone-dn 88
 number 5001

ephone-dn 89
 number 5002

ephone-dn 90
 number 5017

ephone-dn 91
 number 5044

ephone 1
 mac-address 1111.1111.1111
 button 1:88

ephone 2
 mac-address 2222.2222.2222
 button 1:89

ephone 3
 mac-address 3333.3333.3333
 button 1:90

ephone 4
 mac-address 4444.4444.4444
 button 1:91

ephone-hunt 1 longest-idle
 pilot 5601
 list 5001, 5002, 5017, 504
 final 6000
 hops 3
 preference 1
 timeout 30
 no-reg
```

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Parallel Hunt Groups (Call Blast)

In a parallel hunt group, calls simultaneously ring multiple phones. Using parallel hunt groups is also referred to as application-level forking because it enables the forking of a call to multiple destinations. In versions earlier than Cisco Unified CME 4.3, only SIP phones support parallel hunt groups. In Cisco Unified CME 4.3 and later versions, SCCP phones also support voice hunt groups.

You can enable functionality similar to parallel hunt groups on SCCP phones by using the ephone-dn overlay feature for shared lines. See the "Shared-Line Overlays" section on page 867.

In the following parallel hunt group example, when callers dial extension 1000, extension 1001, 1002, and so on ring simultaneously. The first extension to answer is connected. If none of the extensions answers, the call is forwarded to extension 2000, which is the number for the voice-mail service.

```
voice hunt-group 4 parallel
 pilot 1000
 list 1001, 1002, 1003, 1004
 final 2000
 timeout 20
```

The number of ringing calls that a parallel hunt group can support depends on whether call-waiting is enabled on the SIP phones.

If call-waiting is enabled (the default), parallel hunt groups support multiple calls up to the limit of call-waiting calls supported by a particular SIP phone model. You may not want to use unlimited call-waiting, however, with parallel hunt-groups if agents do not want a large number of waiting calls when they are already handling a call.

If call waiting is disabled, parallel hunt groups support only one call at a time in the ringing state. After a call is answered (by one of the phones in the hunt group), a second call is allowed. The second and subsequent calls ring only the idle phones in the hunt group, and bypass the busy phone that answered the first call (because this phone is connected to the first call). After the second call is answered, a third call is allowed, and so on until all the phones in the parallel hunt group are busy. The hunt group does not accept further calls until at least one phone returns to the idle/on-hook state.

When two or more phones within the same parallel hunt group attempt to answer the same call, only one phone can connect to the call. Phones that fail to connect must return to the on-hook state before they can receive subsequent calls. Calls that arrive before a phone is placed on-hook are not presented to the phone. For example, if a second call arrives after Phone 1 has answered the original call, but before Phone 2 goes back on-hook, the second call bypasses Phone 2 (because it is offhook).

When a phone returns to the idle/on-hook state, it does not automatically re-synchronize to the next call waiting to be answered. For example, in the previous scenario, if the second call is still ringing Phone 3 when Phone 2 goes on-hook, Phone 2 does not ring because it was offhook when the second call arrived.

For configuration information, see the "Configuring Voice-Hunt Groups" section on page 894.

Displaying Support for the Name of a Called Voice Hunt-Group

A voice hunt-group is associated with a pilot number. But because there is no association with the name of the voice hunt-group when calls are forwarded from the voice hunt-group to the final number, the forwarding number is sent without the name of the forwarding party. The final number may be in the form of a voice mail, a Basic Automatic Call Distribution (BACD) script, or another extension.

In Cisco Unified CME 9.5, the display of the name of the called voice hunt-group pilot is supported by configuring the following command in voice hunt-group or the ephone-hunt configuration mode:

[**no**] **name** *"primary pilot name"* [**secondary** *"secondary pilot name"*]

The secondary name is optional and when the secondary pilot name is not explicitly configured, the primary pilot name is applicable to both pilot numbers.

The following example configures the primary pilot name for both the primary and secondary pilot numbers:

```
name SALES
```

The following example configures different names for the primary and secondary pilot numbers:

```
name SALES secondary SALES-SECONDARY
```

Note Use quotes (") when input strings have spaces in between as shown in the next three examples.

The following example associates a two-word name for the primary pilot number and a one-word name for the secondary pilot number:

```
name "CUSTOMER SERVICE" secondary CS
```

The following example associates a one-word name for the primary pilot number and a two-word name for the secondary pilot number:

```
name FINANCE secondary "INTERNAL ACCOUNTING"
```

The following example associates two-word names for the primary and secondary pilot numbers:

```
name "INTERNAL CALLER" secondary "EXTERNAL CALLER"
```

For configuration information, see the "Associating a Name with a Called Voice Hunt-Group" section on page 900.

For more configuration examples, see the "Associating a Name with a Called Voice Hunt-Group: Example" section on page 920.

For fonfiguration information, See the "SCCP: Configuring Ephone-Hunt Groups" section on page 886

The following **show** commands are modified to reflect the configured primary and secondary pilot names:

- **show ephone-hunt**
- **show voice hunt-group**

The information related to the name of the ephone-hunt group and voice hunt-group are sent to the phone and displayed on the phone's user interface.

Restrictions

- Display support applies to Cisco Unified SCCP IP phones in voice hunt-group and ephone-hunt configuration modes but are not supported in Cisco Unified SIP IP phones.
- Called name and called number information displayed on the caller's phone follows existing behavior, where the called names and called numbers are updated so that a sequential hunt reflects the name and number of the ringing phone.

Support for Voice Hunt Group Descriptions

In Cisco Unified CME 9.5, a description can be specified for a voice hunt group using the **description** command in voice hunt-group configuration mode.

For a configuration example, see the "Specifying a Description for a Voice Hunt-Group: Example" section on page 921.

Preventing Local Call Forwarding to the Final Agent in a Voice Hunt-Groups

Local or internal calls are calls originating from a Cisco Unified SIP or Cisco Unified SCCP IP phone in the same Cisco Unified CME system.

Before Cisco Unified CME 9.5, the **no forward local-calls** command was configured in ephone-hunt group to prevent a local call from being forwarded to the next agent.

In Cisco Unified CME 9.5, local calls are prevented from being forwarded to the final destination using the **no forward local-calls to-final** command in parallel configuration mode or the sequential voice hunt-group configuration mode.

When the **no forward local-calls to-final** command is configured in sequential voice hunt-group configuration mode, local calls to the hunt-group pilot number are sent sequentially only to the list of members of the group using the rotary-hunt technique. In case all the group members of the voice hunt group are busy, the caller hears a busy tone. If any of the group members are available but do not answer, the caller hears a ringback tone and is eventually disconnected after the specified timeout. The call is not forwarded to the final number.

When the **no forward local-calls to-final** command is configured in parallel voice hunt-group configuration mode, local calls to the hunt-group pilot number are sent simultaneously to the list of members of the group using the blast technique. In case all the group members of the voice hunt group are busy, the caller hears a busy tone. If any of the group members are available but do not answer, the caller hears a ringback tone and is eventually disconnected after the specified timeout.The call is not forwarded to the final number.

For configuration information, see the "Preventing Local Call Forwarding to Final Agent in Voice Hunt-Groups" section on page 902.

For a configuration example, see the "Preventing Local Call Forwarding in Parallel Voice Hunt-Groups: Example" section on page 919.

Enhancement of Support for Ephone-Hunt Group Agent Statistics

Before Cisco Unified CME 9.5, statistics were maintained for each ephone hunt group and each ephone-hunt group agent. Some of the statistics included the number of maximum and minimum agents, average time to answer, average time in a call, and average time on hold.

In Cisco Unified CME 9.5, support for hunt group agent statistics of Cisco Unified SCCP IP phones is enhanced to include the following information:

- Total logged in time—On an hourly basis, displays the duration (in seconds) since a specific agent logged into a hunt group.
- Total logged out time—On an hourly basis, displays the duration (in seconds) since a specific agent logged out of a hunt group.

The output of the **show ephone-hunt** *tag* **statistics** command is modified to display the additional information in the statistics.

For more configuration examples, see the "Displaying Total Logged-In Time and Total Logged-Out Time for Each Hunt-Group Agent : Example" section on page 921.

Restrictions

- Voice hunt-groups are not supported. Only ephone hunt groups in Cisco Unified SCCP IP phones are supported.
- Cisco Unified SCCP IP phones in Cisco Unified SRST are not supported.
- Cisco Unified SIP IP phones in Cisco Unified CME and Cisco Unified SRST are not supported.

Hunt Group Agent Availability Options

Three options increase the flexibility of hunt group agents by allowing them to dynamically join and leave hunt groups or to temporarily enter a not-ready state in which they do not receive calls.

Table 25 compares the following agent availability features:

- Dynamic Hunt Group Membership, page 862
- Agent Status Control, page 862
- Automatic Agent Status Not-Ready, page 863

Table 25 Comparison of Hunt Group Agent Availability Features

Comparison Factor	Dynamic Membership	Agent Status Control	Automatic Agent Status Not-Ready
Purpose	Allows an authorized agent to join and leave hunt groups.	Allows an agent to manually activate a toggle to temporarily enter a not-ready state, in which hunt-group calls bypass the agent's phone.	Automatically puts an agent's phone in a not-ready state after a specified number of hunt-group calls are unanswered by the agent's phone.
Example	Agent A joins a hunt group at 8 a.m. and takes calls until 1 p.m., when he leaves the hunt group. While Agent A is a member of the hunt group, he occupies one of the wildcard slots in the list of numbers configured for the hunt group. At 1 p.m., Agent B joins the hunt group using the same wildcard slot that Agent A relinquished when he left.	Agent A takes a coffee break at 10 a.m. and puts his phone into a not-ready status while he is on break. When he returns he puts his phone back into the ready status and immediately starts receiving hunt-group calls again. He retained his wildcard slot while he was in the not-ready status.	Agent B is suddenly called away from her desk before she can manually put her phone into the not-ready status. After a hunt-group call is unanswered at Agent B's phone, the phone is automatically placed in the not-ready status and it is not presented with further hunt-group calls. When Agent B returns, she manually puts her phone back into the ready status.
Hunt-group slot availability	An agent joining a hunt group occupies a wildcard slot in the hunt group list. An agent leaving the group relinquishes the slot, which becomes available for another agent.	An agent who enters the not-ready state does not give up a slot in the hunt group. The agent continues to occupy the slot regardless of whether the agent is in the not-ready status.	An agent who enters the not-ready does not give up a slot in the hunt group. The agent continues to occupy the slot regardless of whether the agent is in the not-ready status.

Table 25 Comparison of Hunt Group Agent Availability Features (continued)

Comparison Factor	Dynamic Membership	Agent Status Control	Automatic Agent Status Not-Ready
Agent activation method	An authorized agent uses a feature access code (FAC) to join a hunt group and a different FAC to leave the hunt group.	An agent uses the HLog soft key to toggle agent status between ready and not ready. Agents can also use the HLog ephone FAC or the HLog ephone-dn FAC to toggle between ready and not-ready if FACs are enabled. If the HLog soft key is not enabled, the DND soft key can be used to put an agent in the not-ready status and the agent will not receive any calls.	An agent who is a member of a hunt group configured with the **auto logout** command does not answer the specified number of calls, and the agent's phone is automatically changed to the not-ready status. The agent uses the HLog soft key or a FAC to return to the ready status. If the HLog soft key or FAC has not been enabled in the configuration, the agent uses the DND soft key to return to the ready status.
Configuration	The system administrator uses the **list** command to configure up to 20 wildcard slots in a hunt group and uses the **ephone-hunt login** command to authorize certain directory numbers to use these wildcard slots. See the "SCCP: Configuring Ephone-Hunt Groups" section on page 886.	The system administrator uses the **HLog** keyword with the **hunt-group logout** command to provide an HLog soft key on display phones and uses the **fac** command to enable standard FACs or create a custom FAC. See the "SCCP: Configuring Ephone-Hunt Groups" section on page 886.	The system administrator uses the **auto logout** command to enable automatic agent status not-ready for a hunt group. This functionality is disabled by default. See the "SCCP: Configuring Ephone-Hunt Groups" section on page 886.
Optional customizations	The system administrator can establish custom FACs for agents to use to enter or leave a hunt group.	The system administrator can use the **softkeys** commands to change the position or prevent the display of the HLog soft key on individual phones.	The system administrator can use the **auto logout** command to specify the number of unanswered calls that will trigger an agent status change to not-ready and whether this feature applies to dynamic hunt-group members, static hunt-group members, or both. The system administrator can use the **hunt-group logout** command to specify whether an automatic change to the not-ready status also places a phone in DND mode.

Dynamic Hunt Group Membership

Hunt groups allow you to set up pools of extension numbers to answer incoming calls. Up to 20 wildcard slots can be entered in the list of hunt group extension numbers to allow dynamic group membership, in which authorized phone users can join a hunt group whenever a vacant wildcard slot is available and they can leave when they like. Each phone user who joins a group occupies one slot. If no slots are available, a user who tries to join a group hears a busy signal.

Allowing dynamic membership in a hunt group is a three-step process:

1. Use the **list** command in ephone-hunt configuration mode to specify up to 20 wildcard slots in the hunt group.
2. Use the **ephone-hunt login** command under each directory number that should be allowed to dynamically join and leave hunt groups. Directory numbers are disallowed from joining hunt groups by default, so you have to explicitly allow this behavior for each directory number that you want to be able to log in to hunt groups.
3. Use the **fac standard** command to enable standard FACs or the **fac custom** command to define custom FACs. FACs must be enabled so that agents can use them to join and leave hunt groups.

To dynamically join a hunt group, a phone user dials a standard or custom FAC for joining a hunt group. The standard FAC to join a hunt group is *3. If multiple hunt groups have been created that allow dynamic membership, the phone user must also dial the hunt group pilot number. For example, if the following hunt groups are defined, a phone user dials *38000 to join the Sales hunt group:

```
ephone-hunt 24 sequential
 pilot 8000
 list 8001, 8002, *, *
 description Sales Group
 final 9000

ephone-hunt 25 sequential
 pilot 7000
 list 7001, 7002, *, *
 description Service Group
 final 9000
```

To leave a hunt group, a phone user dials the standard or custom FAC for leaving a hunt group. The standard FAC to leave a hunt group is #3. See the "Customizing Soft Keys" section on page 1335.

Note The Dynamic Membership feature is different from the Agent Status Control feature and the Automatic Agent Status Not-Ready feature. Table 25 compares the features.

Agent Status Control

The Agent Status Control feature allows ephone-hunt-group agents to control whether their phones are in the ready or not-ready status. A phone in the ready status is available to receive calls from the hunt group. A phone in the not-ready status blocks calls from the hunt group. Agents should use the not-ready status for short breaks or other temporary interruptions during which they do not want to receive hunt-group calls.

Agents who put their phones into the not-ready status do not relinquish their slots in the hunt group list.

Agents use the HLog soft key or the DND soft key to put a phone into the not-ready status. When the HLog soft key is used to put a phone in the not-ready status, it does not receive hunt group calls but can receive other calls. If the DND soft key is used, the phone does not receive any calls until it is returned to the ready status. The HLog and DND soft keys toggle the feature: if the phone is in the ready status, pressing the key puts the phone in the not-ready status and vice-versa.

The DND soft key is visible on phones by default, but the HLog soft key must be enabled in the configuration using the **hunt-group logout** command, which has the following options:

- **HLog**—Enables both an HLog soft key and a DND soft key on phones in the idle, seized, and connected call states. When you press the HLog soft key, the phone is changed from the ready to not-ready status or from the not-ready to ready status. When the phone is in the not-ready status, it does not receive calls from the hunt group, but it is still able to receive calls that do not come through the hunt group (calls that directly dial its extension). The DND soft key is also available to block all calls to the phone if that is the preferred behavior.
- **DND**—Enables only a DND soft key on phones. The DND soft key also changes a phone from the ready to not-ready status or from the not-ready to ready status, but the phone does not receive any incoming calls, including those from outside hunt groups.

Phones without soft-key displays can use a FAC to toggle their status from ready to not-ready and back to ready. The **fac** command must be used to enable the standard set of FACs or to create custom FACs. The standard FAC to toggle the not-ready status at the directory number (extension) level is *4 and the standard FAC to toggle the not-ready status at the ephone level (all directory numbers on the phone) is *5. See the "Where to Go Next" section on page 933.

Note The Agent Status Control feature is different from the Dynamic Membership feature and the Automatic Agent Status Not-Ready feature. Table 25 compares the features.

Automatic Agent Status Not-Ready

Before Cisco Unified CME 4.0, this feature was known as Automatic Hunt Group Logout. If the **auto logout** command was enabled for a hunt group, a phone was placed in DND mode when a line on the phone did not answer a call for that hunt group within the time limit specified in the **timeout** command.

In Cisco Unified CME 4.0 and later versions, the name and behavior of this feature has changed, although the Cisco IOS command remains the same. The **auto logout** command now specifies the number of unanswered hunt group calls after which the agent status of an directory number is automatically changed to not-ready. You can limit Automatic Agent Status Not-Ready to dynamic hunt group members (those who log in using a wildcard slot in the **list** command) or to static hunt group members (those who are explicitly named in the **list** command), or you can apply this behavior to all hunt group members.

A related command, **hunt-group logout**, specifies whether the phones that are automatically changed to the not-ready status should also be placed into DND mode. Phones in the not-ready status do not accept calls from hunt groups, but they do accept calls that directly dial their extensions. Phones in DND mode do not accept any calls. The default if the **hunt-group logout** command is not used is that the phones that are automatically placed in the not-ready status are also placed in DND mode.

Agents whose phones are automatically placed into the not-ready status do not relinquish their slots in the hunt group list.

Note The Automatic Agent Status Not-Ready feature is different from the Dynamic Membership feature and the Agent Status Control feature. Table 25 on page 860 compares the features.

Night Service

The night-service feature allows you to provide coverage for unstaffed extensions during hours that you designate as “night-service” hours. During the night-service hours, calls to the designated extensions, known as night-service directory numbers or night-service lines, send a special “burst” ring to night-service phones that have been specified to receive this special ring. Phone users at the night-service phones can then use the call-pickup feature to answer the incoming calls from the night-service directory numbers.

For example, the night-service feature can allow an employee working after hours to intercept and answer calls that are presented to an unattended receptionist’s phone. This feature is useful for sites at which all incoming public switched telephone network (PSTN) calls have to be transferred by a receptionist because the PSTN connection to the Cisco Unified CME system does not support Direct Inward Dialing (DID). When a call arrives at the unattended receptionist’s phone during hours that are specified as night service, a ring burst notifies a specified set of phones of the incoming call. A phone user at any of the night-service phones can intercept the call using the call-pickup feature. Night-service call notification is sent every 12 seconds until the call is either answered or aborted.

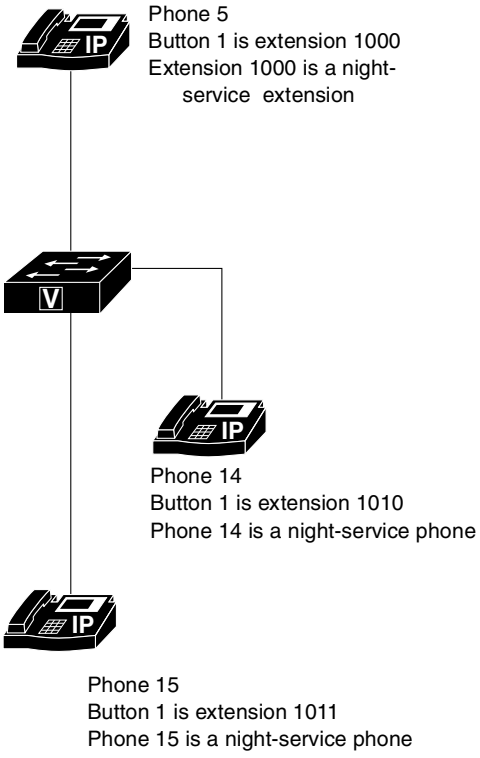
A user can enter a night-service code to manually toggle night-service treatment off and on from any phone that has a line assigned to night service. Before Cisco CME 3.3, using the night-service code turns night service on or off only for directory numbers on the phone at which the code is entered. In Cisco CME 3.3 and later versions, using the night-service code at any phone with a night-service directory number turns night service on or off for all phones with night-service directory numbers.

Figure 27 illustrates night service.

Figure 27 Night Service

1. Extension 1000 has been designated as a night-service extension (ephone-dn). When extension 1000 receives an incoming call during a night-service period, phone 5 rings and notification is made to the night-service phones.

2. Phones 14 and 15 have been designated as night-service phones. When phone 5 starts ringing, phones 14 and 15 ring once and display “Night Service 1000.” The incoming call on extension 1000 can be answered from phone 14 or phone 15 using call pickup.




```
telephony-service
 night-service day fri 17:01 17:00
 night-service day sat 17:01 17:00
 night-service day sun 17:01 07:59
 night-service date jan 1 00:00 00:00
 night-service code *1234
!
ephone-dn 1
 number 1000
 night-service bell
!
ephone-dn 10
 number 1010
!
ephone-dn 11
 number 1011
!
ephone 5
 mac-address 1111.2222.0001
 button 1:1
!
ephone 14
 mac-address 1111.2222.0002
 button 1:10
 night-service bell
!
ephone 15
 mac-address 1111.2222.0003
 button 1:11
 night-service bell
```

88951

Overlaid Ephone-dns

Overlaid ephone-dns are directory numbers that share the same button on a phone. Overlaid ephone-dns can be used to receive incoming calls and place outgoing calls. Up to 25 ephone-dns can be assigned to a single phone button. They can have the same extension number or different numbers. The same ephone-dns can appear on more than one phone and more than one phone can have the same set of overlaid ephone-dns.

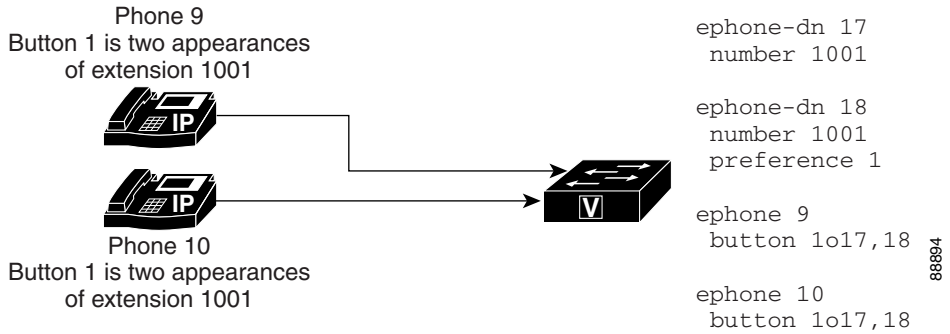
The order in which overlaid ephone-dns are used by incoming calls can be determined by the call hunt commands, **preference** and **huntstop**. For example, ephone-dn 1 to ephone-dn 4 have the same extension number, 1001. Three phones are configured with the **button 1o1,2,3,4** command. A call to 1001 will ring on the ephone-dn with the highest preference and display the caller ID on all phones that are on hook. If another incoming call to 1001 is placed while the first call is active (and the first ephone-dn with the highest preference is configured with the **no huntstop** command), the second call will roll over to the ephone-dn with the next-highest preference, and so forth. For more information, see the "Call Hunt" section on page 847.

If the ephone-dns in an ephone-dn overlay use different numbers, incoming calls go to the ephone-dn with the highest preference. If no preferences are configured, the **dial-peer hunt** command setting is used to determine which ephone-dns are used for incoming calls. The default setting for the **dial-peer hunt** command is to randomly select an ephone-dn that matches the called number.

Note To continue or to stop the search for ephone-dns, you must use, respectively, the **no huntstop** and **huntstop** commands under the individual ephone-dns. The huntstop setting is applied only to the dial peers affected by the **ephone-dn** command in telephony-service mode. Dial peers configured in global configuration mode comply with the global configuration huntstop setting.

Figure 28 shows an overlay set with two directory numbers and one number that is shared on two phones. Ephone-dn 17 has a default preference value of 0, so it will receive the first call to extension 1001. The phone user at phone 9 answers the call, and a second incoming call to extension 1001 can be answered on phone 10 using directory number 18.

Figure 28 Overlaid Ephone-dn (Simple Case)



When a call is answered on an ephone-dn, that ephone-dn is no longer available to other phones that share the ephone-dn in overlay mode. For example, if extension 1001 is answered by phone 1, caller ID for extension 1001 displays on phone 1 and is removed from the screens of phone 2 and phone 3. All actions pertaining to the call to extension 1001 (ephone-dn 17) are displayed on phone 1 only. If phone 1 puts extension 1001 on hold, the other phones will not be able to pick up the on-hold call using a simple shared-line pickup. In addition, none of the other four phones will be able to make outgoing calls from

the ephone-dn while it is in use. When phone users press button 1, they will be connected to the next available ephone-dn listed in the **button** command. For example, if phone 1 and phone 2 are using ephone-dn 1 and ephone-dn 2, respectively, phone 3 must pick up ephone-dn 3 for an outgoing call.

If there are more phones than ephone-dns associated with an ephone-dn overlay set, it is possible for some phones to find that all the ephone-dns within their overlay set are in use by other phones. For example, if five phones have a line button configured with the **button 1o1, 2, 3** command, there may be times when all three of the ephone-dns in the overlay set are in use. When that occurs, the other two phones will not be able to use an ephone-dn in the overlay set. When all ephone-dns in an overlay set are in use, phones with this overlay set will display the remote-line-in-use icon (a picture of a phone with a flashing X through it) for the corresponding line button. When at least one ephone-dn becomes available within the overlay set (that is, an ephone-dn is either idle or ringing), the phone display reverts to showing the status of the available ephone-dn (idle or ringing).

Shared-Line Overlays

Dual-line ephone-dns can also use overlays. The configuration parameters are the same as for single-line ephone-dns, except that the **huntstop channel** command must be used to keep calls from hunting to the ephone-dn's second channel.

The primary ephone-dn in a shared-line overlay set should be unique to the phone to guarantee that the phone has a line available for outgoing calls, and to ensure that the phone user can obtain dial-tone even when there are no idle lines available in the rest of the shared-line overlay set. Use a unique ephone-dn to provide for a unique calling party identity on outbound calls made by the phone so that the called user can see which specific phone is calling.

The following example shows the configuration for a simple shared-line overlay set. The primary ephone-dn that is configured for each phone is unique while the remaining ephone-dns 10, 11, and 12 are shared in the overlay set on both phones.

```
ephone 1
 mac-address 1111.1111.1111
 button 1o1,10,11,12
!
ephone 2
 mac-address 2222.2222.2222
 button 1o2,10,11,12
```

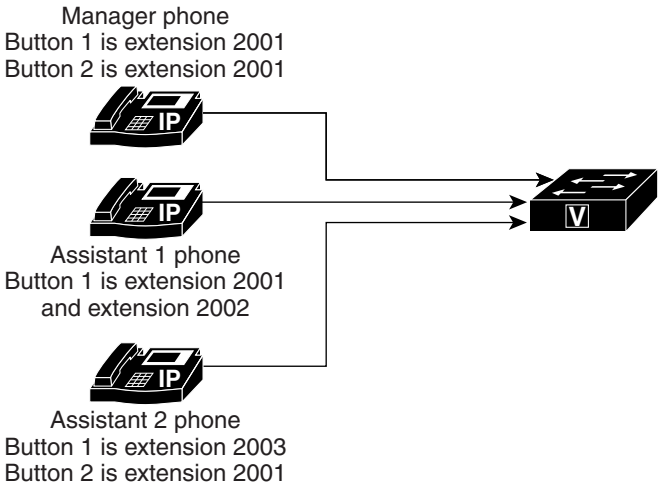
A more complex directory number configuration mixes overlaid directory numbers with shared directory numbers and plain dual-line directory numbers on the same phones. Figure 29 on page 868 illustrates the following example of a manager with two assistants. On the manager's phone the same number, 2001, appears on button 1 and button 2. The two line appearances of extension 2001 use two single-line directory numbers, so the manager can have two active calls on this number simultaneously, one on each button. The directory numbers are set up so that button 1 will ring first, and if a second call comes in, button 2 will ring. Each assistant has a personal directory number and also shares the manager's directory numbers. Assistant 1 has all three directory numbers in an overlay set on one button, whereas assistant 2 has one button for the private line and a second button with both of the manager's lines in an overlay set. A sequence of calls might be as follows.

1. An incoming call is answered by the manager on extension 2001 on button 1 (directory number 20).
2. A second call rings on 2001 and rolls over to the second button on the manager's phone (directory number 21). It also rings on both assistants' phones, where it is also directory number 21, a shared directory number.

3. Assistant 2 answers the call. This is a shared overlay line (one directory number, 21, is shared among three phones, and on two of them this directory number is part of an overlay set). Because it is shared with button 2 on the manager's phone, the manager can see when assistant 2 answers the call.
4. Assistant 1 makes an outgoing call on directory number 22. The button is available because of the additional directory numbers in the overlay set on the assistant 1 phone.

At this point, the manager is in conversation on directory number 20, assistant 1 is in conversation on directory number 22, and assistant 2 is in conversation on directory number 21.

Figure 29 Overlaid Ephone-dn (Complex Case)




```
ephone-dn 20
 number 2001
 no huntstop
! Manager number

ephone-dn 21
 number 2001
 preference 1
! Manager number

ephone-dn 22
 number 2002
! Assistant 1 personal number

ephone-dn 23
 number 2003
! Assistant 2 personal number

ephone 8
 button 1:20 2:21
! Manager phone

ephone 9
 button 1o22,20,21
! Assistant 1 phone

ephone 10
 button 1:23 2o20,21
! Assistant 2 phone
```

88895

For configuration information, see the "SCCP: Configuring Overlaid Ephone-dns" section on page 909.

Call Waiting for Overlaid Ephone-dns

Call waiting allows phone users to know that another person is calling them while they are talking on the phone. Phone users hear a call-waiting tone indicating that another party is trying to reach them. Calls to IP phones with soft keys can be answered with the Answer soft key. Calls to analog phones are answered using hookflash. When phone users answer a call-waiting call, their original call is automatically put on hold. If phone users ignore a call-waiting call, the caller is forwarded if call-forward no-answer has been configured.

In Cisco CME 3.2.1 and later versions, call waiting is available for overlaid ephone-dns. The difference in configuration between overlaid ephone-dns with call waiting and overlaid ephone-dns without call waiting is that overlaid ephone-dns with call waiting use the **c** keyword in the **button** command and overlaid ephone-dns without call waiting use the **o** keyword. For configuration information, see the "SCCP: Configuring Overlaid Ephone-dns" section on page 909.

The behavior of overlaid ephone-dns with call waiting and overlaid ephone-dns without call waiting is the same, except for the following:

- Calls to numbers included in overlaid ephone-dns with call waiting will cause inactive phones to ring and active phones connected to other parties to generate auditory call-waiting notification. The default sound is beeping, but you can configure an ephone-dn to use a ringing sound. (See the "SCCP: Configuring Call-Waiting Indicator Tone" section on page 880.) Visual call-waiting notification includes the blinking of handset indicator lights and the display of caller IDs.

  For example, if three of four phones are engaged in calls to numbers from the same overlaid ephone-dn with call-waiting and another call comes in, the one inactive phone will ring, and the three active phones will issue auditory and visual call-waiting notification.

- In Cisco Unified CME 4.0 and later versions, up to six waiting calls can be displayed on Cisco Unified IP Phone 7940G, 7941G, 7941G-GE, 7960G, 7961G, 7961G-GE, 7970G, and 7971G-GE. For all other phones and earlier Cisco Unified CME versions, two calls to numbers in an overlaid ephone-dn set can be announced. Subsequent calls must wait in line until one of the two original calls has ended. The callers who are waiting in the line will hear a ringback tone.

For example, a Cisco Unified IP Phone 7910 (maximum two call-waiting calls) has a button configured with a set of overlaid ephone-dns with call waiting (**button 1c1,2,3,4**). A call to ephone-dn 1 is answered. A call to ephone-dn 2 generates call-waiting notification. Calls to ephone-dn 3 and ephone-dn 4 will wait in line and remain invisible to the phone user until one of the two original calls ends. When the call to ephone-dn 1 ends, the phone user can then talk to the person who called ephone-dn 2. The call to ephone-dn 3 issues call-waiting notification while the call to ephone-dn 4 waits in line. (The Cisco Unified IP Phone 7960 supports six calls waiting.) Phones configured for call waiting do not generate call-waiting notification when they are transferring calls or hosting conference calls.

Note that if an overlaid ephone-dn has call-forward-no-answer configured, calls to the ephone-dn that are unanswered before the no-answer timeout expires are forwarded to the configured destination. If call-forward-no-answer is not configured, incoming calls receive ringback tones until the calls are answered.

More than one phone can use the same set of overlaid ephone-dns. In this case, the call-waiting behavior is slightly different. The following example demonstrates call waiting for overlaid ephone-dns that are shared on two phones:

```
ephone 1
 button 1c1,2,3,4
!
ephone 2
 button 1c1,2,3,4
```

1. A call to ephone-dn 1 rings on ephone 1 and on ephone 2. Ephone 1 answers, and the call is no longer visible to ephone 2.
2. A call to ephone-dn 2 issues a call-waiting notification to ephone 1 and rings on ephone 2, which answers. The second call is no longer visible to ephone 1.

3. A call to ephone-dn 3 issues a call-waiting notification to ephone 1 and ephone 2. Ephone 1 puts the call to ephone-dn 1 on hold and answers the call to ephone-dn 3. The call to ephone-dn 3 is no longer visible to ephone 2.
4. A call to ephone-dn 4 is issues a call-waiting notification on ephone 2. The call is not visible on ephone 1 because it has met the two-call maximum by handling the calls to ephone-dn 1 and ephone-dn 3. (Note that the call maximum is six for those phones that are able to handle six call-waiting calls, as previously described.)

Note Ephone-dns accept call interruptions, such as call waiting, by default. For call waiting to work, the default must be active. For more information, see the "SCCP: Configuring Call-Waiting Indicator Tone" section on page 880.

Extending Calls for Overlaid Ephone-dns to Other Buttons on the Same Phone

Phones with overlaid ephone-dns can use the **button** command with the **x** keyword to dedicate one or more additional buttons to receive overflow calls. If an overlay button is busy, an incoming call to any of the other ephone-dns in the overlay set rings on the first available overflow button on each phone that is configured to receive the overflow. This feature works only for overlaid ephone-dns that are configured with the **button** command and the **o** keyword; it is not supported with overlaid ephone-dns that are configured using the **button** command and the **c** keyword or other types of ephone-dns that are not overlaid.

Using the **button** command with the **c** keyword results in multiple calls on one button (the button is overlaid with multiple ephone-dns that have call waiting), whereas using the **button** command with the **o** keyword and the **x** keyword results in one call per button and calls on multiple buttons.

For example, an ephone has an overlay button with ten numbers assigned to it using the **button** command and the **o** keyword. The next two buttons on the phone are configured using the **button** command and the **x** keyword. These buttons are reserved to receive additional calls to the overlaid extensions on the first button when the first button is in use.

```
ephone 276
 button 1o24,25,26,27,28,29,30,31,32,33 2x1 3x1
```

For configuration information, see the "SCCP: Configuring Overlaid Ephone-dns" section on page 909.

How to Configure Call Coverage Features

This section contains the following procedures:

Call Hunt

- SCCP: Configuring Call Hunt, page 872 (required)
- SCCP: Verifying Call Hunt, page 874 (optional)
- SIP: Configuring Call Hunt, page 875 (required)

Call Pickup

- Enabling Call Pickup, page 876 (required)

Call Waiting

- SCCP: Configuring Call-Waiting Indicator Tone, page 880 (optional)
- SCCP: Configuring Cancel Call Waiting, page 882 (optional)
- SIP: Enabling Call Waiting, page 884 (required)

Hunt Groups

- SCCP: Configuring Ephone-Hunt Groups, page 886 (required)
- SCCP: Verifying Ephone Hunt Groups, page 892 (optional)
- Configuring Voice-Hunt Groups, page 894 (required)
- Enabling the Collection of Call Statistics for Voice Hunt-Groups, page 898 (optional)
- Associating a Name with a Called Voice Hunt-Group, page 900
- Preventing Local Call Forwarding to Final Agent in Voice Hunt-Groups, page 902

Night Service

- SCCP: Configuring Night Service, page 903 (required)
- SCCP: Verifying Night Service, page 907 (optional)

Overlaid Ephone-dns

- SCCP: Configuring Overlaid Ephone-dns, page 909 (required)
- SCCP: Verifying Overlaid Ephone-dns, page 913 (optional)

SCCP: Configuring Call Hunt

To configure a group of directory numbers to provide call coverage for a single called number, perform the following steps for each directory number in the group.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag* [**dual-line**]
4. **number** *number* [**secondary** *number*] [**no-reg** [**both** | **primary**]]
5. **preference** *preference-order* [**secondary** *secondary-order*]
6. **no huntstop**
   or
   huntstop
7. **huntstop channel**
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* [**dual-line**] **Example:** `Router(config)# ephone-dn 20 dual-line`	Enters ephone-dn configuration mode for the purpose of configuring a directory number.
Step 4	**number** *number* [**secondary** *number*] [**no-reg** [**both** | **primary**]] **Example:** `Router(config-ephone-dn)# number 101`	Associates a telephone or extension number with the directory number. • Assign the same number to several primary or secondary ephone-dns to create a group of virtual dial peers through which the incoming called number must search.

	Command or Action	Purpose
Step 5	**preference** *preference-order* [**secondary** *secondary-order*] **Example:** `Router(config-ephone-dn)# preference 2`	Sets the preference value for the ephone-dn. • Default: 0. • Increment the preference order for subsequent ephone-dns with the same number. That is, the first directory number is preference **0** by default and you must specify **1** for the second ephone-dn with the same number, **2** for the next, and so on. • **secondary** *secondary-order*—(Optional) Preference value for the secondary number of an ephone-dn. Default is 9.

Step 6	**no huntstop**
	or
	huntstop
	
	Example:
	`Router(config-ephone-dn)# no huntstop`
	or
	`Router(config-ephone-dn)# huntstop`
		Explicitly enables call hunting behavior for a directory number.
		• Configure **no huntstop** for all ephone-dns, *except* the final ephone-dn, within a set of ephone-dns with the same number.
		• Configure the **huntstop** command for the final ephone-dn within a set of ephone-dns with the same number.

Step 7	**huntstop channel** **Example:** `Router(config-ephone-dn)# huntstop channel`	(Optional) Enables channel huntstop, which keeps a call from hunting to the next channel of a directory number if the first channel is busy or does not answer. • Required for dual-line ephone-dns that are used for call hunting.
Step 8	**end** **Example:** `Router(config-ephone-dn)# end`	Returns to privileged EXEC mode.

What to Do Next

If you want to collect statistics for hunt groups, see *Cisco Unified CME B-ACD and Tcl Call-Handling Applications.*

SCCP: Verifying Call Hunt

To verify the configuration for call hunt, perform the following steps.

SUMMARY STEPS

1. **show running-config**
2. **show telephony-service ephone-dn**
3. **show telephony-service all**
   or
   show telephony-service dial-peer

DETAILED STEPS

Step 1 **show running-config**

This command displays your configuration. Preference and huntstop information is listed in the ephone-dn portion of the output.

```
Router# show running-config

ephone-dn  2  dual-line
 number 126
 description FrontDesk
 name Receptionist
 preference 1
 call-forward busy 500
 huntstop channel
 no huntstop
```

Step 2 **show telephony-service ephone-dn**

This command displays ephone-dn preference and huntstop configuration information.

```
Router# show telephony-service ephone-dn

ephone-dn 243
 number 1233
 preference 1
 huntstop
```

Step 3 **show telephony-service all**
or
show telephony-service dial-peer

These commands display preference and huntstop configurations for ephone-dn dial peers.

```
Router# show telephony-service dial-peer

!
dial-peer voice 20026 pots
 destination-pattern 5002
 huntstop
 call-forward noan 5001 timeout 45
 port 50/0/2
```

SIP: Configuring Call Hunt

To configure the call hunting feature and prevent hunt-on-busy from redirecting a call from a busy phone into a dial peer that has been setup with a catch-all default destination, perform the following steps.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice register dn** *dn-tag*
4. **number** *number*
5. **preference** *preference-order*
6. **huntstop**
7. **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 dn** *dn-tag* **Example:** `Router(config)# voice register dn 1`	Enters voice register dn configuration mode to define a directory number for a SIP phone, intercom line, voice port, or an MWI.
Step 4	**number** *number* **Example:** `Router(config-register-dn)# number 5001`	Associates a phone number with the directory number. • Assign the same number to several directory numbers to create a group of virtual dial peers through which the incoming called number must search.
Step 5	**preference** *preference-order* **Example:** `Router(config-register-dn)# preference 4`	Creates the preference order for matching the VoIP dial peers created for the number associated with this directory number to establish the hunt strategy for incoming calls. • Default is 0, which is the highest preference.

	Command or Action	Purpose
Step 6	**huntstop** **Example:** `Router(config-register-dn)# huntstop`	Disables call-hunting behavior for an extension on a SIP phone.
Step 7	**end** **Example:** `Router(config-register-dn)# end`	Exits configuration mode and enters privileged EXEC mode.

What to Do Next

If you want to collect statistics for hunt groups, see *Cisco Unified CME B-ACD and Tcl Call-Handling Applications.*

Enabling Call Pickup

To enable Call Pickup features on SCCP or SIP phones, perform the following steps.

Prerequisites

- SIP phones require Cisco Unified CME 7.1 or a later version.
- The PickUp and GPickUp soft keys display by default on supported SCCP and SIP phones. If previously disabled, you must enable these soft keys with the **softkeys idle** command.

Restrictions

- SIP phones that do not support the PickUp and GpickUp soft keys must use feature access codes (FACs) to access these features.
- Different directory numbers with the same extension number must have the same Pickup configuration.
- A directory number can be assigned to only one pickup group.
- Pickup group numbers can vary in length, but must have unique leading digits. For example, if you configure group number 17, you cannot also configure group number 177. Otherwise a pickup in group 17 is always triggered before the user can enter the final 7 for 177.
- Calls from H.323 trunks are not supported on SIP phones.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **telephony-service**
4. **service directed-pickup** [**gpickup**]
5. **fac** {**standard** | **custom pickup** {**direct** | **group** | **local**} *custom-fac*}
6. **exit**
7. **ephone-dn** *dn-tag* [**dual-line** | **octo-line**]
   or
   voice register dn *dn-tag*
8. **pickup-group** *group-number*
9. **pickup-call any-group**
10. **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	**telephony-service** **Example:** `Router(config)# telephony-service`	Enters telephony-service configuration mode.
Step 4	**service directed-pickup** [**gpickup**] **Example:** `Router(config-telephony)# service directed-pickup gpickup`	Enables Directed Call Pickup and modifies the function of the GPickUp and PickUp soft keys. • **gpickup**—(Optional) Enables using the GPickUp soft key to perform Directed Call Pickup on SCCP phones. This keyword is supported in Cisco Unified CME 7.1 and later versions. • This command determines the specific soft keys used to access different Call Pickup features on SCCP and SIP phones. For a description, see the **service directed-pickup** command in the *Cisco Unified CME Command Reference*.

	Command or Action	Purpose
Step 5	**fac** {**standard** | **custom pickup** {**direct** | **group** | **local**} *custom-fac*} **Example:** `Router(config-telephony)# fac custom pickup group #35`	Enables standard FACs or creates a custom FAC or alias for Pickup features on SCCP and SIP phones. • **standard**—Enables standard FACs for all phones. Standard FAC for Park Retrieval is **10. • **custom**—Creates a custom FAC for a feature. • *custom-fac*—User-defined code to dial using the keypad on an IP or analog phone. Custom FAC can be up to 256 characters and contain numbers 0 to 9 and * and #.
Step 6	**exit** **Example:** `Router(config-telephony)# exit`	Returns to privileged EXEC mode.

Step 7	**ephone-dn** *dn-tag* [**dual-line** | **octo-line**]
	or
	voice register dn *dn-tag*
	
	Example:
	`Router(config)# ephone-dn 20 dual-line`
	or
	`Router(config)# voice register dn 20`
		Enters directory number configuration mode.

Step 8	**pickup-group** *group-number*
	
	Example:
	`Router(config-ephone-dn)# pickup-group 30`
	or
	`Router(config-register-dn)# pickup-group 30`
		Creates a pickup group and assigns the directory number to the group.
		• *group-number*—String of up to 32 characters. Group numbers can vary in length but must have unique leading digits. For example, if there is a group number 17, there cannot also be a group number 177.
		• This command can also be configured in ephone-dn-template configuration mode and applied to one or more ephone-dns. The ephone-dn configuration has priority over the template configuration.

Step 9	**pickup-call any-group**
	
	Example:
	`Router(config-ephone-dn)# pickup-call any-group`
	or
	`Router(config-register-dn)# pickup-call any-group`
		Enables a phone user to pickup ringing calls on any extension belonging to a pickup group by pressing the GPickUp soft key and asterisk (*).
		• The ringing extension must be configured with a pickup group using the **pickup-group** command.
		• If this command is not configured, the user can pickup calls in other groups by pressing the GPickUp soft key and dialing the pickup group number.

Step 10	**end**
	
	Example:
	`Router(config-ephone-dn)# end`
	or
	`Router(config-register-dn)# end`
		Exits configuration mode.

Examples

The following example shows the Group Pickup and Local Group Pickup features enabled with the **service directed-pickup gpickup** command. Extension 1005 on phone 5 and extension 1006 on phone 6 are assigned to pickup group 1.

```
telephony-service
 load 7960-7940 P00308000500
 load E61 SCCP61.8-2-2SR2S
 max-ephones 100
 max-dn 240
 ip source-address 15.7.0.1 port 2000
 service directed-pickup gpickup
 cnf-file location flash:
 cnf-file perphone
 voicemail 8900
 max-conferences 8 gain -6
 call-park system application
 transfer-system full-consult
 fac standard
 create cnf-files version-stamp 7960 Sep 25 2007 21:25:47
!
!
!
ephone-dn  5
 number 1005
 pickup-group 1
!
!
ephone-dn  6
 number 1006
 pickup-group 1
!
!
ephone  5
 mac-address 0001.2345.6789
 type 7962
 button  1:5
!
!
!
ephone  6
 mac-address 000F.F758.E70E
 type 7962
 button  1:6
```

SCCP: Configuring Call-Waiting Indicator Tone

To specify the type of audible call-waiting indicator on a SCCP phone, perform the following steps. The default is for directory numbers to accept call interruptions, such as call waiting, and to issue a beep tone. Instead of the standard call waiting beep, you can enable a ring tone for call-waiting.

Restrictions

- The call-waiting ring option is not supported if the ephone-dn is configured with the **no call-waiting beep accept** command.
- If you configure a button to have a silent ring, you will not hear a call-waiting beep or call-waiting ring regardless of whether the ephone-dn associated with the button is configured to generate a call-waiting beep or call-waiting ring. To configure a button for silent ring, see the "SCCP: Assigning Directory Numbers to Phones" section on page 233.
- The call-waiting beep volume cannot be adjusted through Cisco Unified CME for the Cisco Unified IP Phone 7902G, Cisco Unified IP Phone 7905G, Cisco Unified IP Phone 7912G, Cisco ATA-186, and Cisco ATA-188.
- The call-waiting ring option is not supported on the Cisco Unified IP Phone 7902G, Cisco Unified IP Phone 7905G, or Cisco Unified IP Phone 7912G.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag* [**dual-line**]
4. **call-waiting beep** [**accept** | **generate**]
5. **call-waiting ring**
6. **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* [**dual-line**] **Example:** `Router(config)# ephone-dn 20 dual-line`	Enters ephone-dn configuration mode, creates an ephone-dn, and optionally assigns it dual-line status.
Step 4	**call-waiting beep** [**accept** | **generate**] **Example:** `Router(config-ephone-dn)# no call-waiting beep accept`	Enables an ephone-dn to generate or accept call-waiting beeps. • Default is directory number both accepts and generates call-waiting beep. • The beep is heard only if the other ephone-dn is configured to accept call-waiting beeps (default).
Step 5	**call-waiting ring** **Example:** `Router(config-ephone-dn)# call-waiting ring`	(Optional) Enables an ephone-dn to use a ring indicator for call-waiting notification. • To use this command, do not disable call-waiting beep by using the **no call-waiting beep accept** command.
Step 6	**end** **Example:** `Router(config-ephone-dn)# end`	Returns to privileged EXEC mode.

SCCP: Verifying Call-Waiting Indicator Tone

Step 1 Use the **show running-config** command to verify your configuration. Call-waiting settings are listed in the ephone-dn portion of the output. If the **no call-waiting beep generate** and the **no call-waiting beep accept** commands are configured, the **show running-config** command output will display the **no call-waiting beep** command.

```
Router# show running-config
!
ephone-dn 3 dual-line
 number 126
 name Accounting
 preference 2 secondary 9
 huntstop
 huntstop channel
 call-waiting beep
!
```

Step 2 Use the **show telephony-service ephone-dn** command to display call-waiting configuration information.

```
Router# show telephony-service ephone-dn

ephone-dn 1 dual-line
 number 126 secondary 1261
 preference 0 secondary 9
 no huntstop
 huntstop channel
 call-forward busy 500 secondary
 call-forward noan 500 timeout 10
 call-waiting beep
```

SCCP: Configuring Cancel Call Waiting

To enable a phone user to cancel call waiting by using the CWOff soft key or a FAC, perform the following steps.

Prerequisites

For information about standard and custom FACs, see "Configuring Feature Access Codes" section on page 1139.

Restrictions

- Call Waiting must be disabled by pressing the CWOff soft key or using the FAC before placing a call; it cannot be activated or deactivated during a call.
- The CWOff soft key is not available when initiating Call Transfer.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-template** *template-tag*
4. **softkeys seized** {[**CallBack**] [**Cfwdall**] [**CWOff**] [**Endcall**] [**Gpickup**] [**HLog**] [**MeetMe**] [**Pickup**] [**Redial**]}
5. **exit**
6. **ephone** *phone-tag*
7. **ephone-template** *template-tag*
8. **exit**
9. **telephony-service**
10. **fac** {**standard** | **custom ccw** *custom-fac*}
11. **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-template** *template-tag* **Example:** `Router(config)# ephone-template 5`	Enters ephone-template configuration mode to create an ephone template. • *template-tag*—Unique identifier for the ephone template. Range: 1 to 20.
Step 4	**softkeys seized** {[**CallBack**] [**Cfwdall**] [**CWOff**] [**Endcall**] [**Gpickup**] [**HLog**] [**MeetMe**] [**Pickup**] [**Redial**]} **Example:** `Router(config-ephone-template)# softkeys seized CWOff Cfwdall Endcall Redial`	(Optional) Modifies the order and type of soft keys that display on an IP phone during the seized call state. • You can enter any of the keywords in any order. • Default is all soft keys are displayed in alphabetical order. • Any soft key that is not explicitly defined is disabled.
Step 5	**exit** **Example:** `Router(config-ephone-template)# exit`	Exits ephone-template configuration mode.
Step 6	**ephone** *phone-tag* **Example:** `Router(config)# ephone 12`	Enters ephone configuration mode. • *phone-tag*—Unique number that identifies this ephone during configuration tasks.
Step 7	**ephone-template** *template-tag* **Example:** `Router(config-ephone)# ephone-template 5`	Applies the ephone template to the phone. • *template-tag*—Unique identifier of the ephone template that you created in Step 3.
Step 8	**exit** **Example:** `Router(config-ephone)# exit`	Exits ephone configuration mode.
Step 9	**telephony-service** **Example:** `Router(config)# telephony-service`	Enters telephony-service configuration mode.
Step 10	**fac** {**standard** | **custom ccw** *custom-fac*} **Example:** `Router(config-telephony)# fac custom ccw **8`	Enables standard FACs or creates a custom FAC or alias. • **standard**—Enables standard FACs for all phones. Standard FAC for cancel call waiting is *1. • **custom**—Creates a custom FAC for a FAC type. • *custom-fac*—User-defined code to be dialed using the keypad on an IP or analog phone. Custom FAC can be up to 256 characters long and contain numbers 0 to 9 and * and #.
Step 11	**end** **Example:** `Router(config-telephony)# end`	Returns to privileged EXEC mode.

Examples

The following example shows a configuration where the order of the CWOff soft key is modified for the seized call state in ephone template 5 and assigned to ephone 12. A custom FAC for cancel call waiting is set to **8.

```
telephony-service
 max-ephones 100
 max-dn 240
 voicemail 8900
 max-conferences 8 gain -6
 transfer-system full-consult
 fac custom cancel call waiting **8
!
!
ephone-template  5
 softkeys seized CWOff Cfwdall Endcall Redial
!
!
ephone  12
 ephone-template 5
 mac-address 000F.9054.31BD
 type 7960
 button  1:10 2:7
```

SIP: Enabling Call Waiting

To enable call waiting on an individual SIP phone, perform the following steps.

Prerequisites

- Cisco Unified CME 3.4 or a later version.
- **mode cme** command must be configured in Cisco Unified CME.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice register pool** *pool-tag*
4. **call-waiting**
5. **exit**
6. **voice register global**
7. **hold-alert** *timeout*
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	**voice register pool** *pool-tag* **Example:** `Router(config)# voice register pool 3`	Enters voice register pool configuration mode to set phone-specific parameters for a SIP phone in Cisco Unified CME.
Step 4	**call-waiting** **Example:** `Router(config-register-pool)# call-waiting`	Configures call waiting on the SIP phone being configured. **Note** This step is included to illustrate how to enable the command if it was previously disabled. • Default: Enabled.
Step 5	**exit** **Example:** `Router(config-register-pool)# exit`	Exits voice register pool configuration mode.
Step 6	**voice register global** **Example:** `Router(config)# voice register global`	Enters voice register global configuration mode to set parameters for all supported SIP phones in Cisco Unified CME.
Step 7	**hold-alert** *timeout* **Example:** `Router(config-register-global)# hold-alert 30`	Sets an audible alert notification when a call is on hold on a SIP phone. Default is disabled. • *timeout*—Interval after which an audible alert notification is repeated, in seconds. Range: 15 to 300.
Step 8	**end** **Example:** `Router(config-register-global)# end`	Exits to privileged EXEC mode.

SCCP: Configuring Ephone-Hunt Groups

To define a hunt group and optional agent availability parameters, perform the following steps.

Prerequisites

Directory numbers included in a hunt group must be configured in Cisco Unified CME. For configuration information, see the "SCCP: Creating Directory Numbers" section on page 227.

Restrictions

- The HLog soft key is available only on display phones. It is not available on Cisco Unified IP Phones 7902, 7905, and 7912; Cisco IP Communicator; and Cisco VG224.
- Shared ephone-dns cannot use the Agent Status Control or Automatic Agent Not-Ready feature.
- If directory numbers that are members of a hunt group are configured for called-name display, the following restrictions apply:
  - The primary or secondary pilot number must be defined using at least one wildcard character.
  - The phone numbers in the **list** command cannot contain wildcard characters.
- If Call Forward All or Call Forward Busy is configured for a hunt group member (directory number), the hunt group ignores it.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-hunt** *hunt-tag* {**longest-idle** | **peer** | **sequential**}
4. **pilot** *number* [**secondary** *number*]
5. **list** *number*[**,** *number...*]
6. **final** *final-number*
7. **hops** *number*
8. **timeout** *seconds*[**,** *seconds...*]
9. **max-timeout** *seconds*
10. **preference** *preference-order* [**secondary** *secondary-order*]
11. **no-reg** [**both** | **pilot**]
12. **fwd-final** {**orig-phone** | **final**}
13. **forward local-calls**
14. **secondary start** [**current** | **next** | *agent-position*]
15. **present-call** {**idle-phone** | **onhook-phone**}
16. **from-ring**
17. **description** *text-string*
18. **display-logout** *text-string*
19. **exit**

20. **telephony-service**
21. **max-redirect** *number*
22. **hunt-group logout** {**DND** | **HLog**}
23. **exit**
24. **ephone-dn** *dn-tag*
25. **ephone-hunt login**
26. **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-hunt** *hunt-tag* {**longest-idle** | **peer** | **sequential**} **Example:** `Router(config)# ephone-hunt 23 peer`	Enters ephone-hunt configuration mode to define an ephone hunt group. • *hunt-tag*—Unique sequence number that identifies this hunt group during configuration tasks. Range: 1 to 100. Cisco CME 3.3 and earlier—Range: 1 to 10 • **longest-idle**—Calls go to the ephone-dn that has been idle the longest for the number of hops specified when the ephone hunt group was defined. The longest-idle is determined from the last time that a phone registered, reregistered, or went on-hook. • **peer**—First ephone-dn to ring is the number to the right of the ephone-dn that was the last to ring when the pilot number was last called. Ringing proceeds in a circular manner, left to right, for the number of hops specified when the ephone hunt group was defined. • **sequential**—Ephone-dns ring in the left-to-right order in which they are listed when the hunt group is defined.
Step 4	**pilot** *number* [**secondary** *number*] **Example:** `Router(config-ephone-hunt)# pilot 5601`	Defines the pilot number, which is the number that callers dial to reach the hunt group. • *number*—E.164 number up to 27 characters. The dialplan pattern can be applied to the pilot number. • **secondary**—(Optional) Defines an additional pilot number for the ephone hunt group.

	Command or Action	Purpose
Step 5	**list** *number*[**,** *number*...] **Example:** `Router(config-ephone-hunt)# list 5001, 5002, 5017, 5028`	Defines the list of numbers (from 2 and 20) to which the ephone hunt group redirects the incoming calls. • *number*—E.164 number up to 27 characters. Primary or secondary number assigned to an ephone-dn.
Step 6	**final** *final-number* **Example:** `Router(config-ephone-hunt)# final 6000`	Defines the last number in the ephone hunt group, after which the call is no longer redirected. Can be an ephone-dn primary or secondary number, a voice-mail pilot number, a pilot number of another hunt group, or an FXS number. **Note** When a final number is defined as a pilot number of another hunt group, the pilot number of the first hunt group cannot be configured as a final number in any other hunt group. **Note** This command is not used for ephone hunt groups that are part of a Cisco Unified CME B-ACD service. The final destination for those groups is determined by the B-ACD service.
Step 7	**hops** *number* **Example:** `Router(config-ephone-hunt)# hops 7`	(Optional; peer and longest-idle hunt groups only) Sets the number of hops before a call proceeds to the final number. • *number*—Number of hops before the call proceeds to the final ephone-dn. Range is 2 to 20, but the value must be less than or equal to the number of extensions that are specified in the **list** command. Default automatically adjusts to the number of hunt group members.
Step 8	**timeout** *seconds*[**,** *seconds*...] **Example:** `Router(config-ephone-hunt)# timeout 7, 10, 15`	(Optional) Sets the number of seconds after which an unanswered call is redirected to the next number in the hunt-group list. • *seconds*—Number of seconds. Range: 3 to 60000. Multiple entries can be made, separated by commas, that must correspond to the number of ephone-dns in the **list** command. Each number in a multiple entry specifies the time that the corresponding ephone-dn will ring before a call is forwarded to the next number in the list. If a single number is entered, it is used for the no-answer period for each ephone-dn. • If this command is not used, the default is the number of seconds set by the **timeouts ringing** command, which defaults to 180 seconds. Note that the default of 180 seconds may be greater than you desire.

	Command or Action	Purpose
Step 9	**max-timeout** *seconds* **Example:** `Router(config-ephone-hunt)# max-timeout 25`	(Optional) Sets the maximum combined timeout for the no-answer periods for all ephone-dns in the ephone-hunt list. The call proceeds to the final destination when this timeout expires, regardless of whether it has completed the hunt cycle. • *seconds*—Number of seconds. Range is 3 to 60000. • If this command is not used, the default is that no combined timeout limit is set.
Step 10	**preference** *preference-order* [**secondary** *secondary-order*] **Example:** `Router(config-ephone-hunt)# preference 1`	(Optional) Sets a preference order for the ephone-dn associated with the hunt-group pilot number. • *preference-order*—See the CLI help for a range of numeric values, where 0 is the highest preference. Default is 0. • **secondary** *secondary-order*—(Optional) Preference order for the secondary pilot number. See the CLI help for a range of numeric values, where 0 is the highest preference. Default is 7.
Step 11	**no-reg** [**both** | **pilot**] **Example:** `Router(config-ephone-hunt)# no-reg`	(Optional) Prevents the hunt-group pilot number from registering with an H.323 gatekeeper. If this command is not used, the default is that the pilot number registers with the H.323 gatekeeper. • **both**—(Optional) Both the primary and secondary pilot numbers are not registered. • **pilot**—(Optional) Only the primary pilot number is not registered. • In Cisco CME 3.1 and later versions, if this command is used without the either the **both** or **pilot** keywords, only the secondary number is not registered.
Step 12	**fwd-final** {**orig-phone** | **final**} **Example:** `Router(config-ephone-hunt)# fwd-final orig-phone`	(Optional) For calls that have been transferred into an ephone hunt group by a local extension, determines the final destination of a call that is not answered in the hunt group. • **final**—Forwards the call to the ephone-dn number that is specified in the **final** command. • **orig-phone**—Forwards the call to the primary directory number of the phone that transferred the call into the hunt group.
Step 13	**forward local-calls** **Example:** `Router(config-ephone-hunt)# no forward local-calls`	(Optional; sequential hunt groups only) Specifies that local calls (calls from ephone-dns on the same Cisco Unified CME system) will not be forwarded past the first list member in a hunt group. If the first member is busy, the internal caller hears busy. If the first number does not answer, the internal caller hears ringback.

	Command or Action	Purpose
Step 14	**secondary start** [**current** | **next** | *list-position*] **Example:** `Router(config-ephone-hunt)# secondary start next`	(Optional) For calls that are parked by hunt group member phones, returns them to a different entry point in the hunt group (as specified in this command) if the calls are recalled from park to the secondary pilot number or transferred from park to an ephone-dn that forwards the call to the secondary pilot number. • **current**—The ephone-dn that parked the call. • **next**—The ephone-dn in the hunt group list that follows the ephone-dn that parked the call. • *list-position*—The ephone-dn at the specified position in the list specified by the **list** command. Range is 1 to 10.
Step 15	**present-call** {**idle-phone** | **onhook-phone**} **Example:** `Router(config-ephone-hunt)# present-call idle-phone`	(Optional) Presents ephone-hunt-group calls only to member phones that are idle or onhook, as specified. • **idle-phone**—A call from the ephone-hunt group is presented to an ephone only if all lines on the phone are idle. This option ignores monitored lines that have been configured on the phone using the **button m** command. • **onhook-phone**—A call from the ephone-hunt group is presented to an ephone only if the phone is in the on-hook state. When this keyword is configured, calls in the ringing or hold state that are unrelated to the hunt group do not prevent the presentation of calls from the ephone-hunt group.
Step 16	**from-ring** **Example:** `Router(config-ephone-hunt)# from-ring`	(Optional) Specifies that on-hook time stamps should be recorded when calls ring extensions and when calls are answered. The default is that on-hook time stamps are recorded only when calls are answered.
Step 17	**description** *text-string* **Example:** `Router(config-ephone-hunt)# description Marketing Hunt Group`	(Optional) Defines text that will appear in configuration output.
Step 18	**display-logout** *text-string* **Example:** `Router(config-ephone-hunt)# display-logout Night Service`	(Optional) Defines text that will appear on IP phones that are members of a hunt group when all the hunt-group members are in the not-ready status. This string can be used to inform hunt-group members where the calls are being sent when all members are unavailable to take calls.
Step 19	**exit** **Example:** `Router(config-ephone-hunt)# exit`	Exits ephone-hunt configuration mode.
Step 20	**telephony-service** **Example:** `Router(config)# telephony-service`	Enters telephony-service configuration mode.

	Command or Action	Purpose
Step 21	**max-redirect** *number* **Example:** `Router(config-telephony)# max-redirect 8`	(Optional) Sets the number of times that a call can be redirected within a Cisco Unified CME system. • *number*—Range is 5 to 20. Default is 10. **Note** This command is required if the number of hops is greater than 10.
Step 22	**hunt-group logout** {**DND** | **HLog**} **Example:** `Router(config-telephony)# hunt-group logout HLog`	(Optional) Specifies whether agent not-ready status applies only to ephone hunt group extensions on a phone (HLog mode) or to all extensions on a phone (DND mode). Agent not-ready status can activated by an agent using the HLog soft key or a FAC, or it can be activated automatically after the number of calls specified in the **auto logout** command are not answered. The default if this command is not used is **DND**. • **DND**—When phones are placed in agent not-ready status, all ephone-dns on the phone will not accept calls. • **HLog**—Enables the display of the HLog soft key. When phones are placed in the agent not-ready status, only the ephone-dns assigned to ephone hunt groups will not accept calls.
Step 23	**exit** **Example:** `Router(config-telephony)# exit`	Exits telephony-service configuration mode.
Step 24	**ephone-dn** *dn-tag* **Example:** `Router(config)# ephone-dn 29`	(Optional) Enters ephone-dn configuration mode. • *dn-tag*—Tag number for the ephone-dn to be authorized to join and leave ephone hunt groups.
Step 25	**ephone-hunt login** **Example:** `Router(config-ephone-dn)# ephone-hunt login`	(Optional) Enables this ephone-dn to join and leave ephone hunt groups (dynamic membership).
Step 26	**end** **Example:** `Router(config-ephone-dn)# end`	Returns to privileged EXEC mode.

SCCP: Verifying Ephone Hunt Groups

Step 1 Use the **show running-config** command to verify your configuration. Ephone hunt group parameters are listed in the ephone-hunt portion of the output.

```
Router# show running-config

ephone-hunt 1 longest-idle
 pilot 500
 list 502, 503, *
 max-timeout 30
 timeout 10, 10, 10
 hops 2
 from-ring
 fwd-final  orig-phone
!
!
ephone-hunt 2 sequential
 pilot 600
 list 621, *, 623
 final 5255348
 max-timeout 10
 timeout 20, 20, 20
 fwd-final  orig-phone
!
!
ephone-hunt 77 longest-idle
 from-ring
 pilot 100
 list 101, *, 102
!
```

Step 2 To verify the configuration of ephone hunt group dynamic membership, use the **show running-config** command. Look at the ephone-hunt portion of the output to ensure at least one wildcard slot is configured. Look at the ephone-dn section to see whether particular ephone-dns are authorized to join ephone hunt groups. Look at the telephony-service section to see whether FACs are enabled.

```
Router# show running-config

ephone-hunt 1 longest-idle
 pilot 500
 list 502, 503, *
 max-timeout 30
 timeout 10, 10, 10
 hops 2
 from-ring
 fwd-final  orig-phone
!
!
ephone-dn  2  dual-line
 number 126
 preference 1
 call-forward busy 500
 ephone-hunt login
!
telephony-service
 fac custom alias 5 *5 to *35000
 fac custom ephone-hunt cancel #5
```

Step 3 Use the **show ephone-hunt** command for detailed information about hunt groups, including dial-peer tag numbers, hunt-group agent status, and on-hook time stamps. This command also displays the dial-peer tag numbers of all ephone-dns that have joined dynamically and are members of the group at the time that the command is run.

```
Router# show ephone-hunt

Group 1
    type: peer
    pilot number: 450, peer-tag 20123
    list of numbers:
        451, aux-number A450A0900, # peers 5, logout 0, down 1
            peer-tag  dn-tag  rna  login/logout  up/down
             [20122     42     0       login      up  ]
             [20121     41     0       login      up  ]
             [20120     40     0       login      up  ]
             [20119     30     0       login      up  ]
             [20118     29     0       login      down]
        452, aux-number A450A0901, # peers 4, logout 0, down 0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20127     45     0       login      up  ]
             [20126     44     0       login      up  ]
             [20125     43     0       login      up  ]
             [20124     31     0       login      up  ]
        453, aux-number A450A0902, # peers 4, logout 0, down 0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20131     48     0       login      up  ]
             [20130     47     0       login      up  ]
             [20129     46     0       login      up  ]
             [20128     32     0       login      up  ]
        477, aux-number A450A0903, # peers 1, logout 0, down 0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20132     499    0       login      up  ]
    preference: 0
    preference (sec): 7
    timeout: 3, 3, 3, 3
    max timeout : 10
    hops: 4
    next-to-pick: 1
    E.164 register: yes
    auto logout: no
    stat collect: no
Group 2
    type: sequential
    pilot number: 601, peer-tag 20098
    list of numbers:
        123, aux-number A601A0200, # peers 1, logout 0, down 0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20097     56     0       login      up  ]
        622, aux-number A601A0201, # peers 3, logout 0, down 0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20101     112    0       login      up  ]
             [20100     111    0       login      up  ]
             [20099     110    0       login      up  ]
        623, aux-number A601A0202, # peers 3, logout 0, down 0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20104     122    0       login      up  ]
             [20103     121    0       login      up  ]
             [20102     120    0       login      up  ]
        *, aux-number A601A0203, # peers 1, logout 0, down 1
            peer-tag  dn-tag  rna  login/logout  up/down
             [20105     0      0       -          down]
        *, aux-number A601A0204, # peers 1, logout 0, down 1
```

```
            peer-tag  dn-tag  rna  login/logout  up/down
             [20106     0       0       -          down]
    final number: 5255348
    preference: 0
    preference (sec): 9
    timeout: 5, 5, 5, 5, 5
    max timeout : 40
    fwd-final: orig-phone
    E.164 register: yes
    auto logout: no
    stat collect: no
Group 3
    type: longest-idle
    pilot number: 100, peer-tag 20142
    list of numbers:
        101, aux-number A100A9700, # peers 3, logout 0, down 3
            on-hook time stamp 7616, off-hook agents=0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20141     132    0       login      down]
             [20140     131    0       login      down]
             [20139     130    0       login      down]
        *, aux-number A100A9701, # peers 1, logout 0, down 1
            on-hook time stamp 7616, off-hook agents=0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20143     0      0       -          down]
        102, aux-number A100A9702, # peers 2, logout 0, down 2
            on-hook time stamp 7616, off-hook agents=0
            peer-tag  dn-tag  rna  login/logout  up/down
             [20145     142    0       login      down]
             [20144     141    0       login      down]
    all agents down!
    preference: 0
    preference (sec): 7
    timeout: 100, 100, 100
    hops: 0
    E.164 register: yes
    auto logout: no
    stat collect: no
```

Configuring Voice-Hunt Groups

To redirect calls for a specific number (pilot number) to a defined group of directory numbers on Cisco Unified SCCP and SIP IP phones, perform the following steps.

Prerequisites

- Cisco Unified CME 3.4 or a later version for SIP phones.
- Cisco Unified CME 4.3 or a later version is required to include a SCCP phone, FXS analog phone, DS0-group, PRI-group, or SIP trunk in a voice hunt-group.
- Cisco Unified CME 4.3 or a later version is required for call transfer to a voice hunt-group.
- Directory numbers included in a hunt group must be configured in Cisco Unified CME. For configuration information, see the "Configuring Phones to Make Basic Calls" section on page 189.

Restrictions

- Before Cisco Unified CME 4.3, forwarding or transferring to a voice hunt group is not supported.
- In Cisco Unified CME 4.3 and later versions, Call Forwarding is supported to a parallel hunt-group (blast hunt group) only.
- SIP-to-H.323 calls are not supported.
- If Call Forward All or Call Forward Busy is configured for a hunt group member (directory number), the hunt group ignores it.
- Caller ID update is not supported for supplementary services.
- Voice hunt groups are subject to the max-redirect restriction.
- A pilot dial peer cannot be used for a voice hunt group and an ephone hunt group at the same time.
- Voice hunt groups do not support the expansion of pilot numbers using the **dialplan-pattern** command. To enable external phones to dial the pilot number, you must configure a secondary pilot number using a fully qualified E.164 number.
- If call-waiting is enabled (the default), parallel hunt groups support multiple calls up to the limit of call-waiting calls supported by the particular SIP phone model. If call waiting is disabled, parallel hunt groups support only one call at a time in the ringing state. Phones that fail to connect must return to the on-hook state before they can receive other calls.
- A phone number associated with an FXO port is not supported in parallel hunt groups.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice hunt-group** *hunt-tag* [**longest-idle** | **parallel** | **peer** | **sequential**]
4. **pilot** *number* [**secondary** *number*]
5. **list** *number*
6. **final** *number*
7. **preference** *preference-order* [**secondary** *secondary-order*]
8. **hops** *number*
9. **timeout** *seconds*
10. **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	**voice hunt-group** *hunt-tag* [**longest-idle** | **parallel** | **peer** | **sequential**] **Example:** `Router(config)# voice hunt-group 1 longest-idle`	Enters voice hunt-group configuration mode to define a hunt group. • *hunt-tag*—Unique sequence number of the hunt group to be configured. Range is 1 to 100. • **longest idle**—Hunt group in which calls go to the directory number that has been idle for the longest time. • **parallel**—Hunt group in which calls simultaneously ring multiple phones. • **peer**—Hunt group in which the first directory number is selected round-robin from the list. • **sequential**—Hunt group in which directory numbers ring in the order in which they are listed, left to right. • To change the hunt-group type, remove the existing hunt group first by using the **no** form of the command; then, recreate the group.
Step 4	**pilot** *number* [**secondary** *number*] **Example:** `Router(config-voice-hunt-group)# pilot number 8100`	Defines the telephone number that callers dial to reach a voice hunt group. • *number*—String of up to 16 characters that represents an E.164 telephone number. • Number string may contain alphabetic characters when the number is to be dialed only by the Cisco Unified CME router, as with an intercom number, and not from telephone keypads. • **secondary** *number*—(Optional) Keyword and argument combination defines the number that follows as an additional pilot number for the voice hunt group. • Secondary numbers can contain wild cards. A wildcard is a period (.), which matches any entered digit.
Step 5	**list** *number* **Example:** `Router(config-voice-hunt-group)# list 8000, 8010, 8020, 8030`	Creates a list of extensions that are members of a voice hunt group. To remove a list from a router configuration, use the **no** form of this command. • *number*—List of extensions to be added as members to the voice hunt group. Separate the extensions with commas. • Add or delete all extensions in a hunt-group list at one time. You cannot add or delete a single number in an existing list. • There must be from 2 to 10 extensions in the hunt-group list, and each number must be a primary or secondary number. • Any number in the list cannot be a pilot number of a parallel hunt group.

	Command or Action	Purpose
Step 6	**final** *number* **Example:** `Router(config-voice-hunt-group)# final 8888`	Defines the last extension in a voice hunt group. • If a final number in one hunt group is configured as a pilot number of another hunt group, the pilot number of the first hunt group cannot be configured as a final number in any other hunt group.
Step 7	**preference** *preference-order* [**secondary** *secondary-order*] **Example:** `Router(config-voice-hunt-group)# preference 6`	Sets the preference order for the directory number associated with a voice hunt-group pilot number. **Note** We recommend that the parallel hunt-group pilot number be unique in the system. Parallel hunt groups may not work if there are more than one partial or exact dial-peer match. For example, if the pilot number is "8000" and there is another dial peer that matches "8…". If multiple matches cannot be avoided, give parallel hunt groups the highest priority to run by assigning a lower preference to the other dial peers. Note that 8 is the lowest preference value. By default, dial peers created by parallel hunt groups have a preference of 0. • *preference-order*—Range is 0 to 8, where 0 is the highest preference and 8 is the lowest preference. Default is 0. • **secondary** *secondary-order*—(Optional) Keyword and argument combination is used to set the preference order for the secondary pilot number. Range is 1 to 8, where 0 is the highest preference and 8 is the lowest preference. Default is 7.
Step 8	**hops** *number* **Example:** `Router(config-voice-hunt-group)# hops 2`	For configuring a peer or longest-idle voice hunt group only. Defines the number of times that a call can hop to the next number in a peer or longest-idle voice hunt group before the call proceeds to the final number. • *number*—Number of hops. Range is 2 to 10, and the value must be less than or equal to the number of extensions specified by the **list** command. • Default is the same number as there are destinations defined under the **list** command.
Step 9	**timeout** *seconds* **Example:** `Router(config-voice-hunt-group)# timeout 100`	Defines the number of seconds after which a call that is not answered is redirected to the next directory number in a voice hunt-group list. • Default: 180 seconds.
Step 10	**end** **Example:** `Router(config-voice-hunt-group)# end`	Exits to privileged EXEC mode.

Enabling the Collection of Call Statistics for Voice Hunt-Groups

To enable the collection of call statistics for voice hunt groups, perform the following steps.

Prerequisites

Cisco Unified CME 9.0 or a later version.

Restrictions

Hold and resume statistics are not updated for remote SCCP voice hunt group agents.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice hunt-group** *hunt-tag* {**longest-idle** | **parallel** | **peer** | **sequential**}
4. **statistics collect**
5. **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	**voice hunt-group** *hunt-tag* {**longest-idle** | **parallel** | **peer** | **sequential**} **Example:** `Router(config)# voice hunt-group 60 longest-idle`	Enters voice hunt-group configuration mode. • *hunt-tag*—Unique sequence number that identifies the hunt group. Range: 1 to 100. • **longest-idle**—Hunt group in which calls go to the directory number that has been idle the longest. • **parallel**—Hunt group in which calls simultaneously ring multiple phones. • **peer**—Hunt group in which the first extension to ring is selected round-robin from the list. Ringing proceeds in a circular manner, left to right, for the number of hops specified when the hunt group is defined. The round-robin selection starts with the number left of the number that answered when the hunt-group was last called. • **sequential**—Hunt group in which extensions ring in the order in which they are listed, left to right, when the hunt group was defined.
Step 4	**statistics collect** **Example:** `Router(config-voice-hunt-group)# statistics collect`	Enables the collection of call statistics for a voice hunt group.
Step 5	**end** **Example:** `Router(config-voice-hunt-group)# end`	Exits to privileged EXEC mode.

Associating a Name with a Called Voice Hunt-Group

To associate a name with a called voice hunt group, perform the following steps.

Prerequisites

Cisco Unified CME 9.5 or a later version.

Restrictions

Cisco Unified SIP IP phones are not supported. The display support applies to Cisco Unified SCCP IP phones on voice hunt-group and ephone-hunt configuration modes only.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice hunt-group** *hunt-tag* {**parallel**}
4. **final** *number*
5. **list** *number*[, *number...*]
6. **timeout** *seconds*
7. **pilot** *number* [**secondary** *number*]
8. **name** *"primary pilot name"* [**secondary** *"secondary pilot name"*]

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 hunt-group** *hunt-tag* {**parallel**} **Example:** `Router(config)# voice hunt-group 20 parallel`	Creates a hunt group for phones in a Cisco Unified CME system. • *hunt-tag*—Unique sequence number that identifies the hunt group. Range is 1 to 100. • **parallel**—Hunt group in which calls simultaneously ring multiple phones.
Step 4	**final** *number* **Example:** `Router(config-voice-hunt-group)# final 4000`	Defines the last extension in a voice hunt group. • *number*—Telephone or extension number. Can be an E.164 number, voice-mail number, pilot number of another hunt group, or FXS caller-ID number.

	Command or Action	Purpose
Step 5	**list** *number*[, *number*...] **Example:** `Router(config-voice-hunt-group)# list 3001, 3002, 3003`	Defines a list of extensions that are members of a voice hunt group. • *number*—Extension or E.164 number assigned to a phone in Cisco Unified CME. List must contain 2 to 32 numbers.
Step 6	**timeout** *seconds* **Example:** `Router(config-voice-hunt-group)# timeout 20`	Defines the number of seconds after which a call that is not answered is redirected to the next number in a voice hunt-group list. • *seconds*—Number of seconds. Range is 3 to 60000. Default is 180.
Step 7	**pilot** *number* [**secondary** *number*] **Example:** `Router(config-voice-hunt-group)# pilot 4045550110 secondary 3125550120`	Defines the number that callers dial to reach a Cisco Unified CME voice hunt group. • *number*—String of up to 32 characters that represents an extension or E.164 telephone number. • **secondary** *number*—(Optional) Defines an additional pilot number for the voice hunt group.
Step 8	**name** *"primary pilot name"* [**secondary** *"secondary pilot name"*] **Example:** `Router(config-voice-hunt-group)# name Hospital secondary "Health Center"`	Associates a name with the called voice hunt group. • *"primary pilot name"*—Name for the primary pilot number. • **secondary** *"secondary pilot name"*—(Optional) Name for the secondary pilot number. **Note** Use quotes (") when input strings have spaces in between.

Preventing Local Call Forwarding to Final Agent in Voice Hunt-Groups

To prevent a local call from being forwarded to the final number in a voice hunt group, perform the following steps.

Prerequisites

Cisco Unified CME 9.5 or a later version.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice hunt-group** *hunt-tag* {**parallel** | **sequential**}
4. [**no**] **forward local-calls to-final**

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 hunt-group** *hunt-tag* {**parallel** | **sequential**} **Example:** `Router(config)# voice hunt-group 1 sequential`	Creates a hunt group for phones in a Cisco Unified CME system. • *hunt-tag*—Unique sequence number that identifies the hunt group. Range is 1 to 100. • **parallel**—Hunt group in which calls simultaneously ring multiple phones. • **sequential**—Hunt group in which extensions ring in the order in which they are listed, left to right, when the hunt group was defined.
Step 4	[**no**] **forward local-calls to-final** **Example:** `Router(config-voice-hunt-group)# no forward local-calls to-final`	Prevents local calls from being forwarded to the final destination number.

SCCP: Configuring Night Service

This procedure defines night-service hours, an optional night-service code, the ephone-dns that trigger the notification process, and the ephones that will receive notification.

Restrictions

- Night service notification is not supported on analog endpoints connected to FXS ports on a Cisco Integrated Services Router (ISR) or Cisco VG224 Analog Phone Gateway.
- In Cisco Unified CME 4.0 and later versions, silent ringing, configured on the phone by using the **s** keyword with the **button** command, is suppressed when used with the night service feature. Silent ringing is overridden and the phone audibly rings during designated night-service periods.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **telephony-service**
4. **night-service day** *day start-time stop-time*
5. **night-service date** *month date start-time stop-time*
6. **night-service everyday** *start-time stop-time*
7. **night-service weekday** *start-time stop-time*
8. **night-service weekend** *start-time stop-time*
9. **night-service code** *digit-string*
10. **timeouts night-service-bell** *seconds*
11. **exit**
12. **ephone-dn** *dn-tag*
13. **night-service bell**
14. **exit**
15. **ephone** *phone-tag*
16. **night-service bell**
17. **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	**telephony-service** **Example:** `Router(config)# telephony-service`	Enters telephony-service configuration mode.
Step 4	**night-service day** *day start-time stop-time* **Example:** `Router(config-telephony)# night-service day mon 19:00 07:00`	Defines a recurring time period associated with a day of the week during which night service is active. • *day*—Day of the week abbreviation. The following are valid day abbreviations: **sun**, **mon**, **tue**, **wed**, **thu**, **fri**, **sat**. • *start-time stop-time*—Beginning and ending times for night service, in an HH:MM format using a 24-hour clock. If the stop time is a smaller value than the start time, the stop time occurs the day following the start time. For example, "mon 19:00 07:00" means "from Monday at 7 p.m. until Tuesday at 7 a.m."
Step 5	**night-service date** *month date start-time stop-time* **Example:** `Router(config-telephony)# night-service date jan 1 00:00 00:00`	Defines a recurring time period associated with a month and date during which night service is active. • *month*—Month abbreviation. The following are valid month abbreviations: **jan**, **feb**, **mar**, **apr**, **may**, **jun**, **jul**, **aug**, **sep**, **oct**, **nov**, **dec**. • *date*—Date of the month. Range is 1 to 31. • *start-time stop-time*—Beginning and ending times for night service, in an HH:MM format using a 24-hour clock. The stop time must be greater than the start time. The value 24:00 is not valid. If 00:00 is entered as a stop time, it is changed to 23:59. If 00:00 is entered for both start time and stop time, calls are blocked for the entire 24-hour period on the specified date.

	Command or Action	Purpose
Step 6	**night-service everyday** *start-time stop-time* **Example:** `Router(config-telephony)# night-service everyday 1200 1300`	Defines a recurring night-service time period to be effective everyday. • *start-time stop-time*—Beginning and ending times for night service, in an HH:MM format using a 24-hour clock. If the stop time is a smaller value than the start time, the stop time occurs the day following the start time. For example, "19:00 07:00" means "from 7 p.m. to 7 a.m. the next morning." The value 24:00 is not valid. If 00:00 is entered as a stop time, it is changed to 23:59. If 00:00 is entered for both start time and stop time, the night service feature will be activated for the entire 24-hour period.
Step 7	**night-service weekday** *start-time stop-time* **Example:** `Router(config-telephony)# night-service weekday 1700 0700`	Defines a recurring night-service time period to be effective on all weekdays. • *start-time stop-time*—Beginning and ending times for night service, in an HH:MM format using a 24-hour clock. If the stop time is a smaller value than the start time, the stop time occurs the day following the start time. For example, "19:00 07:00" means "from 7 p.m. to 7 a.m. the next morning." The value 24:00 is not valid. If 00:00 is entered as a stop time, it is changed to 23:59. If 00:00 is entered for both start time and stop time, the night service feature will be activated for the entire 24-hour period.
Step 8	**night-service weekend** *start-time stop-time* **Example:** `Router(config-telephony)# night-service weekend 00:00 00:00`	Defines a recurring night-service time period to be effective on all weekend days (Saturday and Sunday). • *start-time stop-time*—Beginning and ending times for night service, in an HH:MM format using a 24-hour clock. If the stop time is a smaller value than the start time, the stop time occurs the day following the start time. For example, "19:00 07:00" means "from 7 p.m. to 7 a.m. the next morning." The value 24:00 is not valid. If 00:00 is entered as a stop time, it is changed to 23:59. If 00:00 is entered for both start time and stop time, the night service feature will be activated for the entire 24-hour period.
Step 9	**night-service code** *digit-string* **Example:** `Router(config-telephony)# night-service code *6483`	Designates a code that can be dialed from any night-service line (ephone-dn) to toggle night service on and off for all lines assigned to night service in the system. • *digit-string*—String of up to 16 keypad digits. The code must begin with an asterisk (*).
Step 10	**timeouts night-service-bell** *seconds* **Example:** `Router(config-telephony)# timeouts night-service-bell 15`	Defines the frequency of the night-service notification. • *seconds*—Range: 4 to 30. Default: 12.

	Command or Action	Purpose
Step 11	**exit** **Example:** `Router(config-telephony)# exit`	Exits telephony-service configuration mode.
Step 12	**ephone-dn** *dn-tag* **Example:** `Router(config)# ephone-dn 55`	Enters ephone-dn configuration mode to define an ephone-dn to receive night-service treatment.
Step 13	**night-service bell** **Example:** `Router(config-ephone-dn)# night-service bell`	Marks this ephone-dn for night-service treatment.
Step 14	**exit** **Example:** `Router(config-ephone-dn)# exit`	Exits ephone-dn configuration mode.
Step 15	**ephone** *phone-tag* **Example:** `Router(config)# ephone 12`	Enters ephone configuration mode. • *phone-tag*—The unique sequence number of the phone that will be notified when an incoming call is received by a night-service ephone-dn during a night-service period.
Step 16	**night-service bell** **Example:** `Router(config-ephone)# night-service bell`	Marks this phone to receive night-service bell notification when incoming calls are received on ephone-dns marked for night service during the night-service time period. • Night service notification is not supported on analog endpoints connected to SCCP FXS ports on a Cisco ISR or Cisco VG224.
Step 17	**end** **Example:** `Router(config-ephone)# end`	Returns to privileged EXEC mode.

SCCP: Verifying Night Service

Step 1 Use the **show running-config** command to verify the night-service parameters, which are listed in the telephony-service portion of the output, or use the **show telephony-service** command to display the same parameters.

```
Router# show running-config

telephony-service
 fxo hook-flash
 load 7910 P00403020214
 load 7960-7940 P00303020214
 max-ephones 48
 max-dn 288
 ip source-address 10.50.50.1 port 2000
 application segway0
 caller-id block code *321
 create cnf-files version-stamp 7960 Mar 07 2003 11:19:18
 voicemail 79000
 max-conferences 8
 call-forward pattern .....
 moh minuet.wav
 date-format yy-mm-dd
 transfer-system full-consult
 transfer-pattern .....
 secondary-dialtone 9
 night-service code *1234
 night-service day Tue 00:00 23:00
 night-service day Wed 01:00 23:59
!
!
Router# show telephony-service

CONFIG (Version=4.0(0))
=======================
Version 4.0(0)
Cisco Unified CallManager Express
For on-line documentation please see:
www.cisco.com/en/US/products/sw/voicesw/tsd_products_support_category_home.html

ip source-address 10.103.3.201 port 2000
load 7910 P00403020214
load 7961 TERM41.7-0-1-1
load 7961GE TERM41.7-0-1-1
load 7960-7940 P00307020300
max-ephones 100
max-dn 500
max-conferences 8 gain -6
dspfarm units 2
dspfarm transcode sessions 4
dspfarm 1 MTP00059a3d7441
dspfarm 2
hunt-group report delay 1 hours
Number of hunt-group configured: 14
hunt-group logout DND
max-redirect 20
voicemail 7189
cnf-file location: system:
cnf-file option: PER-PHONE-TYPE
network-locale[0] US   (This is the default network locale for this box)
user-locale[0] US    (This is the default user locale for this box)
moh flash:music-on-hold.au
```

```
time-format 12
date-format mm-dd-yy
timezone 0 Greenwich Standard Time
secondary-dialtone 9
call-forward pattern .T
transfer-pattern 92......
transfer-pattern 91..........
transfer-pattern .T
after-hours block pattern 1 91900 7-24
after-hours block pattern 2 9976 7-24
after-hours block pattern 4 91...976.... 7-24
night-service date Jan 1 00:00 23:59
night-service day Mon 17:00 07:00
night-service day Wed 17:00 07:00
keepalive 30
timeout interdigit 10
timeout busy 10
timeout ringing 100
caller-id name-only: enable
system message XYZ Company
web admin system name xyz password xxxx
web admin customer name Customer
edit DN through Web:  enabled.
edit TIME through web:  enabled.
Log (table parameters):
     max-size: 150
     retain-timer: 15
create cnf-files version-stamp Jan 01 2002 00:00:00
transfer-system full-consult
multicast moh 239.10.10.1 port 2000
fxo hook-flash
local directory service: enabled.
```

Step 2 Use the **show running-config** command to verify that the correct ephone-dns and ephones are configured with the **night-service bell** command. You can also use the **show telephony-service ephone-dn** and **show telephony-service ephone** commands to display these parameters.

```
Router# show running-config

ephone-dn 24 dual-line
 number 2548
 description FrontDesk
 night-service bell


ephone  1
 mac-address 110F.80C0.FE0B
 type 7960 addon 1 7914
 no dnd feature-ring
 keep-conference
 button  1f40 2f41 3f42 4:30
 button  7m20 8m21 9m22 10m23
 button  11m24 12m25 13m26
 night-service bell
```

SCCP: Configuring Overlaid Ephone-dns

To create ephone-dns, then assign multiple ephone-dns to a single phone button by using the **o** or **c** keyword with the **button** command, perform the following steps.

Restrictions

- Call waiting is disabled when you configure ephone-dn overlays using the **o** keyword with the **button** command. To enable call waiting, you must configure ephone-dn overlays using the **c** keyword with the **button** command.
- Rollover of overlay calls to another phone button by using the **x** keyword with the **button** command only works to expand coverage if the overlay button is configured with the **o** keyword in the **button** command. Overlay buttons with call waiting that use the **c** keyword in the **button** command are not eligible for overlay rollover.
- In Cisco Unified CME 4.0(3), the Cisco Unified IP Phone 7931G cannot support overlays that contain ephone-dn configured for dual-line mode.
- The primary ephone-dn on each phone in a shared-line overlay set should be an ephone-dn that is unique to the phone to guarantee that the phone will have a line available for outgoing calls, and to ensure that the phone user can obtain dial-tone even when there are no idle lines available in the rest of the shared-line overlay set. Use a unique ephone-dn in this manner to provide for a unique calling party identity on outbound calls made by the phone so that the called user can see which specific phone is calling.
- Octo-line directory numbers are not supported in button overlay sets.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **ephone-dn** *dn-tag* [**dual-line**]
4. **number** *number*
5. **preference** *preference-order*
6. **no huntstop**
   or
   huntstop
7. **huntstop channel**
8. **call-forward noan**
9. **call-forward busy**
10. **exit**
11. **ephone** *phone-tag*
12. **mac-address** *mac-address*
13. **button** *button-number*{**o** | **c**}*dn-tag*,*dn-tag*[,*dn-tag*...] *button-number*{**x**}*overlay-button-number*
14. **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** *phone-tag* [**dual-line**] **Example:** `Router(config)# ephone-dn 10 dual-line`	Enters ephone-dn configuration mode to create an extension (ephone-dn) for a Cisco Unified IP phone line. • For shared-line overlay set: Primary ephone-dn on a phone should be an ephone-dn that is unique to the phone.
Step 4	**number** *number* **Example:** `Router(config-ephone-dn)# number 1001`	Associates a telephone or extension number with the ephone-dn.
Step 5	**preference** *preference-order* **Example:** `Router(config-ephone-dn)# preference 1`	Sets dial-peer preference order for an ephone-dn. • *preference-order*—Preference order for the primary number associated with an extension (ephone-dn). Type **?** for a range of numeric options, where 0 is the highest preference. Default: 0.

Step 6	**no huntstop**
	or
	huntstop
	
	Example:
	`Router(config-ephone-dn)# no huntstop`
	or
	
	Example:
	`Router(config-ephone-dn)# huntstop`
		Explicitly enables call hunting behavior for a directory number.
		• Set this command on all ephone-dns in the overlay set except the final instance.
		• Required to allow call hunting allow call hunting across multiple numbers on the same line button on an IP phone.
		or
		Disables call hunting behavior for a directory number.
		• Set this command on the last ephone-dn within a overlay set.
		• Required to limit the call hunting to an overlay set.

Step 7	**huntstop channel** **Example:** `Router(config-ephone-dn)# huntstop channel`	Only for dual-line ephone-dns in overlay set; keeps incoming calls from hunting to the second channel if the first channel is busy or does not answer. • Reserves the second channel for outgoing calls, such as a consultation call to be placed during a call transfer attempt, or for conferencing

	Command or Action	Purpose
Step 8	**call-forward noan** **Example:** `Router(config-ephone-dn)# call-forward noan`	(Optional) Forwards incoming unanswered call to next line in the overlay set. • Set this command on all ephone-dns in the overlay set.
Step 9	**call-forward busy** **Example:** `Router(config-ephone-dn)# call-forward busy`	(Optional) Forwards incoming call if line is busy. • Set this command on the last ephone-dn in the overlay set only.
Step 10	**exit** **Example:** `Router(config-ephone-dn)# exit`	Exits ephone-dn configuration mode
Step 11	**ephone** *phone-tag* **Example:** `Router(config)# ephone 4`	Enters ephone configuration mode. • *phone-tag*—Unique sequence number that identifies the phone to which you are adding an overlay set.
Step 12	**mac-address** *mac-address* **Example:** `Router(config-ephone)# mac-address 1234.5678.abcd`	Specifies the MAC address of the registering phone.

	Command or Action	Purpose
Step 13	**button** *button-number*{**o** | **c**}*dn-tag*,*dn-tag*[,*dn-tag*...] *button-number*{**x**}*overlay-button-number* **Example:** `Router(config-ephone)# button 1o15,16,17,18,19 2c20,21,22 3x1 4x1`	Creates a set of ephone-dns overlaid on a single button. • **o**—Overlay button. Multiple ephone-dns share this button. A maximum of 25 ephone-dns can be specified for a single button, separated by commas. • **c**—Overlay button with call-waiting. Multiple ephone-dns share this button. A maximum of 25 ephone-dns can be specified for a single button, separated by commas. • **x**—Separator that creates a rollover button for an overlay button that was defined using the **o** keyword. When the overlay button specified in this command is occupied by an active call, a second call to one of its ephone-dns will be presented on this button. • *dn-tag*—Unique identifier previously defined with the **ephone-dn** command for the ephone-dn to be added to this overlay set. • *overlay-button-number*—Number of the overlay button that should overflow to this button. Note that the button must have been defined using the **o** keyword and not the **c** keyword. **Note** For other keywords, see the **button** command in the *Cisco Unified Communications Manager Express Command Reference*.
Step 14	**end** **Example:** `Router(config-ephone)# end`	Returns to privileged EXEC mode.

SCCP: Verifying Overlaid Ephone-dns

Step 1 Use the **show running-config** command or the **show telephony-service ephone** command to view button assignments.

```
Router# show running-config

ephone  5
 description Cashier1
 mac-address 0117.FBC6.1985
 type 7960
 button  1o4,5,6,200,201,202,203,204,205,206 2x1 3x1
```

Step 2 Use the **show ephone overlay** command to display the configuration and current status of registered overlay ephone-dns.

```
Router# show ephone overlay

ephone-1 Mac:0007.0EA6.353A TCP socket:[1] activeLine:0 REGISTERED
mediaActive:0 offhook:0 ringing:0 reset:0 reset_sent:0 paging 0 debug:0
IP:10.2.225.205 52486 Telecaster 7960  keepalive 2771 max_line 6
button 1: dn 11 number 60011 CH1 IDLE      overlay
button 2: dn 17 number 60017 CH1 IDLE      overlay
button 3: dn 24 number 60024 CH1 IDLE      overlay
button 4: dn 30 number 60030 CH1 IDLE      overlay
button 5: dn 36 number 60036 CH1 IDLE      CH2 IDLE      overlay
button 6: dn 39 number 60039 CH1 IDLE      CH2 IDLE      overlay
overlay 1: 11(60011) 12(60012) 13(60013) 14(60014) 15(60015) 16(60016)
overlay 2: 17(60017) 18(60018) 19(60019) 20(60020) 21(60021) 22(60022)
overlay 3: 23(60023) 24(60024) 25(60025) 26(60026) 27(60027) 28(60028)
overlay 4: 29(60029) 30(60030) 31(60031) 32(60032) 33(60033) 34(60034)
overlay 5: 35(60035) 36(60036) 37(60037)
overlay 6: 38(60038) 39(60039) 40(60040)
```

Step 3 Use the **show dialplan number** command to display all the number resolutions of a particular phone number, which allows you to detect whether calls are going to unexpected destinations. This command is useful for troubleshooting cases in which you dial a number but the expected phone does not ring.

Configuration Examples for Call Coverage Features

This section contains the following configuration examples:

Call Hunt: Examples

This section contains the following examples:

Ephone-dn Dial-Peer Preference: Example

The following example sets a preference number of 2 for the primary number of ephone-dn 3:

```
ephone-dn 3
 number 3001
 preference 2
```

Huntstop Disabled: Example

The following example shows an instance in which huntstop is not desired and is explicitly disabled. In this example, ephone 4 is configured with two lines, each with the same extension number 5001. This is done to allow the second line to provide call waiting notification for extension number 5001 when the first line is in use. Setting **no huntstop** on the first line (ephone-dn 1) allows incoming calls to hunt to the second line (ephone-dn 2) on the same phone when the ephone-dn 1 line is busy.

Ephone-dn 2 has call forwarding set to extension 6000, which corresponds to a locally attached answering machine connected to a foreign exchange station (FXS) voice port. The plain old telephone service (POTS) dial peer for extension 6000 also has the dial-peer huntstop attribute explicitly set to prevent further hunting.

```
ephone-dn 1
 number 5001
 no huntstop
 preference 1
 call-forward noan 6000

ephone-dn 2
 number 5001
 preference 2
 call-forward busy 6000
 call-forward noan 6000

ephone 4
 button 1:1 2:2
 mac-address 0030.94c3.8724

dial-peer voice 6000 pots
 destination-pattern 6000
 huntstop port 1/0/0
 description answering-machine
```

Channel Huntstop: Example

The following is an example that uses the **huntstop channel** command. It shows a dual-line ephone-dn configuration in which calls do not hunt to the second channel of any ephone-dn, but they do hunt through each ephone-dn's channel 1 in this order: ephone-dn 10, ephone-dn 11, ephone-dn 12.

```
ephone-dn 10 dual-line
 number 1001
 no huntstop
 huntstop channel

ephone-dn 11 dual-line
 number 1001
 no huntstop
 huntstop channel
 preference 1

ephone-dn 12 dual-line
 number 1001
 no huntstop
 huntstop channel
 preference 2
```

SIP Call Hunt: Example

The following example shows a typical configuration in which huntstop is required. The **huntstop** command is enabled and prevents calls to extension 5001 from being rerouted to the on-net H.323 dial peer for 5... when extension 5001 is busy (three periods are used as wild cards).

```
voice register dn 1
 number 5001
 huntstop

voice register pool 4
 number 1 dn 1
 id-mac 0030.94c3.8724

dial-peer voice 5000 voip
 destination-pattern 5...
 session target ipv4:192.168.17.225
 session protocol sipv2
```

Call Pickup: Example

The following example assigns the line that has an ephone-dn tag of 55 to pickup group 2345:

```
ephone-dn 55
 number 2555
 pickup-group 2345
```

The following example globally disables directed call pickup and changes the action of the PickUp soft key to perform local group call pickup rather than directed call pickup:

```
telephony-service
 no service directed-pickup
```

Call-Waiting Beep: Example

In the following example, ephone-dn 10 neither accepts nor generates a beep, ephone-dn 11 does not accept a beep, and ephone-dn 12 does not generate a beep:

```
ephone-dn 10
 no call-waiting beep
 number 4410

ephone-dn 11
 no call-waiting beep accept
 number 4411

ephone-dn 12
 no call-waiting beep generate
 number 4412
```

Call-Waiting Ring: Example

The following example specifies that a short ring will indicate a call is waiting for extension 5533:

```
ephone-dn 20
 number 5533
 call-waiting ring
```

Hunt Group: Examples

This section contains the following examples:

Sequential Ephone-Hunt Group: Example

The following example defines a sequential ephone hunt group with the pilot number 5600 and the final number 6000, with three numbers in the list of phones that answer for the pilot number:

```
ephone-hunt 2 sequential
 pilot 5600
 list 5621, *, 5623
 final 6000
 max-timeout 10
 timeout 20, 20, 20
 fwd-final  orig-phone
```

Peer Ephone-Hunt Group: Example

The following example defines peer ephone hunt group 10 with a pilot number 450, a final number 500, and four numbers in the list. After a call is redirected four times (makes four hops), it is redirected to the final number.

```
ephone-hunt 10 peer
 pilot 450
 list 451, 452, 453, 477
 final 500
 max-timeout 10
 timeout 3, 3, 3, 3
```

Longest-Idle Ephone-Hunt Group: Example

The following example defines longest-idle ephone hunt group 1 with a pilot number 7501 and 11 numbers in the list. After a call is redirected five times, it is redirected to the final number.

```
ephone-hunt 1 longest-idle
 pilot 7501
 list 7001, 7002, 7023, 7028, 7045, 7062, 7067, 7072, 7079, 7085, 7099
 final 8000
 preference 1
 hops 5
 timeout 20
 no-reg
```

Longest-Idle Ephone-Hunt Group Using From-Ring Option: Example

The following example defines longest-idle ephone hunt group 1 with a pilot number 7501, a final number 8000, and 11 numbers in the list. Because the **from-ring** command is used, on-hook time stamps will be recorded when calls ring extensions and when calls are answered. After a call is redirected six times (makes six hops), it is redirected to the final number, 8000. The **max-redirect** command is used to increase the number of redirects that are allowed because the number of hops (six) is larger than the default number of redirects that are allowed in the system (five).

```
ephone-hunt 1 longest-idle
 pilot 7501
 list 7001, 7002, 7023, 7028, 7045, 7062, 7067, 7072, 7079, 7085, 7099
 final 8000
 from-ring
 preference 1
 hops 6
 timeout 20

telephony-service
 max-redirect 8
```

Sequential Hunt Group: Example

In the following parallel hunt-group example, when callers dial extension 1000, extension 1001, 1002, 1003, and 1004 ring simultaneously. The first extension to answer is connected. If none of the extensions answers within 60 seconds, the call is forwarded to extension 2000, which is the number for voice mail.

```
voice hunt-group 4 parallel
 final 2000
 list 1001,1002,1003,1004
 timeout 60
 pilot 1000
 preference 1 secondary 9
!
!
ephone-dn  1  octo-line
 number 1001
!
ephone-dn  2
 number 1002
!
ephone-dn  3  dual-line
 number 1003
!
ephone-dn  4
 number 1004
!
!
ephone  1
 max-calls-per-button 4
 mac-address 02EA.EAEA.0001
 button  1:1
!
!
ephone  2
 mac-address 001C.821C.ED23
 button  1:2
!
!
ephone  3
 mac-address 002D.264E.54FA
 button  1:3
!
!
ephone  4
 mac-address 0030.94C3.053E
 button  1:4
```

Preventing Local Call Forwarding in Parallel Voice Hunt-Groups: Example

The following example shows how to prevent the forwarding of local calls to the final destination in parallel voice hunt-group 1:

```
Router# configure terminal
Router(config)# voice hunt-group 1 parallel
Router(config-voice-hunt-group)# no forward local-calls to-final
```

Associating a Name with a Called Voice Hunt-Group: Example

When incoming call A reaches voice hunt group B and lands on final C, extension C does not show the name of the forwarder because the voice hunt group is not configured to display the name. To display the name of the forwarder and the final number, two separate names are required for the primary and secondary pilot numbers.

ephone-hunt

The following is a sample output of the **show run** command when the primary and secondary pilot names are configured in ephone-hunt configuration mode:

```
ephone-hunt 10 sequential
 pilot 1010 secondary 1020
 list 2004, 2005
 final 2006
 timeout 8, 8
 name "EHUNT PRIMARY" secondary "EHUNT SECONDARY"

ephone-hunt 11 peer
 pilot 1012 secondary 1022
 list 2004, 2005
 final 2006
 timeout 8, 8
 name EHUNT1 secondary EHUNT1-SEC
```

The following is a sample output of the **show ephone-hunt** command when the primary and secondary pilot names are configured in ephone-hunt configuration mode:

```
show ephone-hunt 10
Group 10
    type: sequential
    pilot number: 1010, peer-tag 20010
    pilot name: EHUNT PRIMARY
    secondary number: 1020, peer-tag 20011
    secondary name: EHUNT SECONDARY
```

voice hunt-group

The following example shows how the primary and secondary pilot names are configured in voice hunt-group configuration mode:

```
voice hunt-group 24 parallel
   final 097
   list 885,886,124,154
   timeout 20
   pilot 021 secondary 621
   name SALES secondary SALES-SECONDARY
```

The following is a sample output of the **show voice hunt-group** command when the primary and secondary pilot names are configured in voice hunt-group configuration mode:

```
show voice hunt-group 1
Group 1
    type: parallel
    pilot number: 1000, peer-tag 2147483647
    secondary number: 2000, peer-tag 2147483646
    pilot name: SALES
    secondary name: SALES-SECONDARY
    list of numbers: 2004,2005
```

Specifying a Description for a Voice Hunt-Group: Example

The following example shows how to specify a description for voice hunt-group 12 using the **description** command and presents the description in the output of the **do show run** command:

```
Router(config)# voice hunt-group 12 parallel
Router (config-voice-hunt-group)# description ?
  LINE  description for this hunt group
Router (config-voice-hunt-group)# description specific huntgroup description


Router (config-voice-hunt-group)# do show run | sec voice hunt-group
voice hunt-group 12 parallel
 timeout 0
description specific huntgroup description
```

Logout Display: Example

In the following example, the description is set to "Marketing Hunt Group." This information will be shown in the configuration output and also on the display of IP phones that are receiving calls from this hunt group. The display-logout message is set to "Night Service," which will be displayed on IP phones that are members of the hunt group when all the members are logged out.

```
ephone-hunt 17 sequential
 pilot 3000
 list 3011, 3021, 3031
 timeout 10
 final 7600
 description Marketing Hunt Group
 display-logout Night Service
```

Displaying Total Logged-In Time and Total Logged-Out Time for Each Hunt-Group Agent : Example

The following example displays the duration (in sec) since a specific agent logged into and logged out of ephone hunt group 1 from 4:00 a.m. to 5:00 a.m. (0400 to 0500):

```
show ephone-hunt 1 statistics
Wed 04:00 - 05:00
               Max Agents: 3
               Min Agents: 3
               Total Calls: 9
               Answered Calls: 7
               Abandoned Calls: 2
               Average Time to Answer (secs): 6
               Longest Time to Answer (secs): 13
               Average Time in Call (secs): 75
               Longest Time in Call (secs): 161
               Average Time before Abandon (secs): 8
               Calls on Hold: 2
               Average Time in Hold (secs): 16
               Longest Time in Hold (secs): 21
               Per agent statistics:
                    Agent: 5012
                           From Direct Call:
                                 Total Calls Answered: 3
                                 Average Time in Call (secs): 70
                                 Longest Time in Call (secs): 150
                                 Totals Calls on Hold: 1
                                 Average Hold Time (secs): 21
                                 Longest Hold Time (secs): 21
                              From Queue:
```

```
                    Total Calls Answered: 3
                    Average Time in Call (secs): 55
                    Longest Time in Call (secs): 78
                    Total Calls on Hold: 2
                    Average Hold Time (secs): 19
                    Hold Time (secs): 26
                Total logged in Time (secs) : 3000
                Total logged out Time (secs) : 600

            Agent: 5013
                From Direct Call:
                    Calls Answered: 3
                    Average Time in Call (secs): 51
                    Longest Time in Call (secs): 118
                    Totals Calls on Hold: 1
                    Average Hold Time (secs): 11
                    Longest Hold Time (secs): 11
                From Queue:
                    Total Calls Answered: 1
                    Average Time in Call (secs): 4
                    Longest Time in Call (secs): 4
                Total logged in Time (secs) : 3000
                Total logged out Time (secs) : 600

            Agent: 5014
                From Direct Call:
                    Total Calls Answered: 1
                    Average Time in Call (secs): 161
                    Longest Time in Call (secs): 161
                From Queue:
                    Total Calls Answered: 1
                    Time in Call (secs): 658
                    Longest Time in Call (secs): 658
                Total logged in Time (secs) : 3000
                Total logged out Time (secs) : 600

        Queue related statistics:
            Total calls presented to the queue: 5
            Calls handoff to IOS: 5
            Number of calls in the queue: 0
            Average time to handoff (secs): 2
            Longest time to handoff (secs): 3
            Number of abandoned calls: 0
            Average time before abandon (secs): 0
            Calls forwarded to voice mail: 0
            Calls answered by voice mail: 0
            Number of error calls: 0
```

Dynamic Membership: Example

The following example creates four ephone-dns and a hunt group that includes the first ephone-dn and two wildcard slots. The last three ephone-dns are enabled for group hunt dynamic membership. Each of them can join and leave the hunt group whenever one of the wildcard slots is available. Standard FACs have been enabled, and the agents use standard FACs to join (*3) and leave (#3) the hunt group. You can also use the **fac** command to create custom FACs for these actions if you prefer.

```
ephone-dn 22
 number 4566

ephone-dn 24
 number 4568
 ephone-hunt login

ephone-dn 25
 number 4569
 ephone-hunt login

ephone-dn 26
 number 4570
 ephone-hunt login

ephone-hunt 1 peer
 list 4566,*,*
 timeout 10
 final 7777

telephony-service
 fac standard
```

Agent Status Control: Example

The following example sets up a peer ephone hunt group. It also establishes the appearance and order of soft keys for phones that are configured with ephone-template 7. These phones will have the HLog key available when they are idle, when they have seized a line, or when they are connected to a call. Phones without soft keys can use the standard HLog codes to toggle ready and not-ready status.

```
ephone-hunt 10 peer
 pilot 450
 list 451, 452, 453, 477
 final 500
 timeout 45

telephony-service
 hunt-group logout HLog
 fac standard

ephone-template 7
 softkeys connected Endcall Hold Transfer HLog
 softkeys idle Newcall Redial Pickup Cfwdall HLog
 softkeys seized Endcall Redial Pickup Cfwdall HLog
```

Automatic Agent Not-Ready: Example

The following example enables automatic status change to not-ready after one unanswered hunt group call (the default) for both dynamic and static hunt group members (the default). It also specifies that the phones which are automatically put into the not-ready status should only be blocked from further hunt-group calls and that they should be able to receive calls that directly dial their extensions.

```
ephone-hunt 3 peer
 pilot 4200
 list 1001, 1002, 1003
 timeout 10
 auto logout
 final 4500

telephony-service
 hunt-group logout HLog
```

The following example enables automatic status change to not-ready after two unanswered hunt group calls for any ephone-dn that dynamically logs in to the hunt group using the wildcard slot in the hunt group list. Phones that are automatically placed in the not-ready status when they do not answer two hunt-group calls are also placed into DND status (they will also not accept directly dialed calls).

```
ephone-hunt 3 peer
 pilot 4200
 list 1001, 1002, *
 timeout 10
 auto logout 2 dynamic
 final 4500

telephony-service
 hunt-group logout DND
```

Call Statistics From a Voice Hunt Group: Example

The following is a sample output from the **show voice hunt-group statistics** command. The output includes direct calls to a voice hunt group number and calls from queue/B-ACD.

```
Router# show voice hunt-group 1 statistics last 1 h
Wed 04:00 - 05:00
    Max Agents: 3
    Min Agents: 3
    Total Calls: 9
    Answered Calls: 7
    Abandoned Calls: 2
    Average Time to Answer (secs): 6
    Longest Time to Answer (secs): 13
    Average Time in Call (secs): 75
    Longest Time in Call (secs): 161
    Average Time before Abandon (secs): 8
    Calls on Hold: 2
    Average Time in Hold (secs): 16
    Longest Time in Hold (secs): 21
    Per agent statistics:
        Agent: 5012
            From Direct Call:
                Total Calls Answered: 3
                Average Time in Call (secs): 70
                Longest Time in Call (secs): 150
                Totals Calls on Hold: 1
                Average Hold Time (secs): 21
                Longest Hold Time (secs): 21
```

```
        From Queue:
            Total Calls Answered: 3
            Average Time in Call (secs): 55
            Longest Time in Call (secs): 78
            Total Calls on Hold: 2
            Average Hold Time (secs): 19
            Longest Hold Time (secs): 26
    Agent: 5013
        From Direct Call:
            Total Calls Answered: 3
            Average Time in Call (secs): 51
            Longest Time in Call (secs): 118
            Totals Calls on Hold: 1
            Average Hold Time (secs): 11
            Longest Hold Time (secs): 11
        From Queue:
            Total Calls Answered: 1
            Average Time in Call (secs): 4
            Longest Time in Call (secs): 4
    Agent: 5014
        From Direct Call:
            Total Calls Answered: 1
            Average Time in Call (secs): 161
            Longest Time in Call (secs): 161
        From Queue:
            Total Calls Answered: 1
            Average Time in Call (secs): 658
            Longest Time in Call (secs): 658
Queue related statistics:
    Total calls presented to the queue: 5
    Calls handoff to IOS: 5
    Number of calls in the queue: 0
    Average time to handoff (secs): 2
    Longest time to handoff (secs): 3
    Number of abandoned calls: 0
    Average time before abandon (secs): 0
    Calls forwarded to voice mail: 0
    Calls answered by voice mail: 0
    Number of error calls: 0
```

Night Service: Examples

The following example provides night service before 8 a.m. and after 5 p.m. Monday through Friday, before 8 a.m. and after 1 p.m. on Saturday, and all day Sunday. Extension 1000 is designated as a night-service extension. Incoming calls to extension 1000 during the night-service period ring on extension 1000 and provide night-service notification to phones that are designated as night-service phones. In this example, the night-service phones are ephone 14 and ephone 15. The night-service notification consists of a single ring on the phone and a display of "Night Service 1000." A night-service toggle code has been configured, *6483 (*NITE), by which a phone user can activate or deactivate night-service conditions during the hours of night service.

```
telephony-service
 night-service day mon 17:00 08:00
 night-service day tue 17:00 08:00
 night-service day wed 17:00 08:00
 night-service day thu 17:00 08:00
 night-service day fri 17:00 08:00
 night-service day sat 13:00 12:00
 night-service day sun 12:00 08:00
 night-service code *6483
!
ephone-dn 1
 number 1000
 night-service bell
!
ephone-dn 2
 number 1001
 night-service bell
!
ephone-dn 10
 number 2222
!
ephone-dn 11
 number 3333
!
ephone 5
 mac-address 1111.2222.0001
 button 1:1 2:2
!
ephone 14
 mac-address 1111.2222.0002
 button 1:10
 night-service bell
!
ephone 15
 mac-address 1111.2222.0003
 button 1:11
 night-service bell
```

Overlaid Ephone-dns Examples

This section contains the following examples:

Overlaid Ephone-dn: Example

The following example creates three lines (ephone-dns) that are shared across three IP phones to handle three simultaneous calls to the same telephone number. Three instances of a shared line with the extension number 1001 are overlaid onto a single button on each of three phones. A typical call flow is as follows. The first call goes to ephone 1 (highest preference) and rings button 1 on all three phones (huntstop is off). The call is answered on ephone 1. A second call to extension 1001 hunts onto ephone-dn 2 and rings on the two remaining ephones, 11 and 12. The second call is answered by ephone 12. A third simultaneous call to extension 1001 hunts onto ephone-dn 3 and rings on ephone 11, where it is answered. Note that the **no huntstop** command is used to allow hunting for the first two ephone-dns, and the **huntstop** command is used on the final ephone-dn to stop call-hunting behavior. The **preference** command is used to create different selection preferences for each ephone-dn.

```
ephone-dn 1
 number 1001
 no huntstop
 preference 0

ephone-dn 2
 number 1001
 no huntstop
 preference 1

ephone-dn 3
 number 1001
 huntstop
 preference 2

ephone 10
 button 1o1,2,3

ephone 11
 button 1o1,2,3

ephone 12
 button 1o1,2,3
```

Overlaid Dual-Line Ephone-dn: Example

The following example shows how to overlay dual-line ephone-dns. In addition to using the **huntstop** and **preference** commands, you must use the **huntstop channel** command to prevent calls from hunting to the second channel of an ephone-dn. This example overlays five ephone-dns on button 1 on five different ephones. This allows five separate calls to the same number to be connected simultaneously, while occupying only one button on each phone.

```
ephone-dn 10 dual-line
 number 1001
 no huntstop
 huntstop channel
 preference 0

ephone-dn 11 dual-line
 number 1001
 no huntstop
 huntstop channel
 preference 1

ephone-dn 12 dual-line
 number 1001
 no huntstop
 huntstop channel
 preference 2

ephone-dn 13 dual-line
 number 1001
 preference 3
 no huntstop
 huntstop channel

ephone-dn 14 dual-line
 number 1001
 preference 4
 huntstop
 huntstop channel

ephone 33
 mac 00e4.5377.2a33
 button 1o10,11,12,13,14

ephone 34
 mac 9c33.0033.4d34
 button 1o10,11,12,13,14

ephone 35
 mac 1100.8c11.3865
 button 1o10,11,12,13,14

ephone 36
 mac 0111.9c87.3586
 button 1o10,11,12,13,14

ephone 37
 mac 01a4.8222.3911
 button 1o10,11,12,13,14
```

Shared-line Overlaid Ephone-dns: Example

The following is an example of a unique ephone-dn as the primary dn in a simple shared-line overlay configuration. The **no huntstop** command is configured for all the ephone-dns except ephone-dn 12, the last one in the overlay set. Because the ephone-dns are dual-line dns, the **huntstop-channel** command is also configured to ensure that the second channel remains free for outgoing calls and for conferencing.

```
ephone-dn 1 dual-line
 number 101
 huntstop-channel
!
ephone-dn 2 dual-line
 number 102
 huntstop-channel
!
ephone-dn 10 dual-line
 number 201
 no huntstop
 huntstop-channel
!
ephone-dn 11 dual-line
 number 201
 no huntstop
 huntstop-channel
!
ephone-dn 12 dual-line
 number 201
 huntstop-channel
!
!The following ephone configuration includes (unique) ephone-dn 1 as the primary line in a
shared-line overlay

ephone 1
 mac-address 1111.1111.1111
 button 1o1,10,11,12
!
!The next ephone configuration includes (unique) ephone-dn 2 as the primary line in
another shared-line overlay
!
ephone 2
 mac-address 2222.2222.2222
 button 1o2,10,11,12
```

Overlaid Ephone-dn with Call Waiting: Example

In following example, button 1 on ephone 1 though ephone 3 uses the same set of overlaid ephone-dns with call waiting that share the number 1111. The button also accept calls to each ephone's unique (nonshared) ephone-dn number. Note that if ephone-dn 10 and ephone-dn 11 are busy, the call will go to ephone-dn 12. If ephone-dn 12 is busy, the call will go to voice mail.

```
ephone-dn 1 dual-line
 number 1001

ephone-dn 2 dual-line
 number 1001

ephone-dn 3 dual-line
 number 1001

ephone-dn 10 dual-line
 number 1111
```

```
 no huntstop
 huntstop channel
 call-forward noan 7000 timeout 30

ephone-dn 11 dual-line
 number 1111
 preference 1
 no huntstop
 huntstop channel
 call-forward noan 7000 timeout 30

ephone-dn 12 dual-line
 number 1111
 preference 2
 huntstop channel
 call-forward noan 7000 timeout 30
 call-forward busy 7000

ephone 1
 button 1c1,10,11,12

ephone 2
 button 1c2,10,11,12

ephone 3
 button 1c3,10,11,12
```

Overlaid Ephone-dns with Rollover Buttons: Example

The following example configures a "3x3" shared-line setup for three ephones and nine shared lines (ephone-dns 20 to 28). Each ephone has a unique ephone-dn for each of its three buttons (ephone-dns 11 to 13 on ephone 1, ephone-dns 14 to 16 on ephone 2, and ephone-dns 17 to 19 on ephone 3). The rest of the ephone-dns are shared among the three phones. Three phones with three buttons each can take nine calls. The overflow buttons provide the ability for an incoming call to ring on the first available button on each phone.

```
ephone-dn 11
 number 2011

ephone-dn 12
 number 2012

ephone-dn 13
 number 2013

ephone-dn 14
 number 2014
.
.
.
ephone-dn 28
 number 2028

ephone 1
 button 1o11,12,13,20,21,22,23,24,25,26,27,28 2x1 3x1

ephone 2
 button 1o14,15,16,20,21,22,23,24,25,26,27,28 2x1 3x1

ephone 3
 button 1o17,18,19,20,21,22,23,24,25,26,27,28 2x1 3x1
```

Called Directory Name Display for Overlaid Ephone-dns: Example

The following example demonstrates the display of a directory name for a called ephone-dn that is part of an overlaid ephone-dn set. For configuration information, see the "Configuring Directory Services" on page 1039.

This configuration of overlaid ephone-dns uses wildcards in the secondary numbers for the ephone-dns. Wildcards allow you to control the display according to the number that was dialed. The example is for a medical answering service with three IP phones that accept calls for nine doctors on one button. When a call to 5550101 rings on button 1 on phone 1 to phone 3, "doctor1" is displayed on all three phones.

```
telephony-service
 service dnis dir-lookup

 directory entry 1 5550101 name doctor1
 directory entry 2 5550102 name doctor2
 directory entry 3 5550103 name doctor3

 directory entry 4 5550110 name doctor4
 directory entry 5 5550111 name doctor5
 directory entry 6 5550112 name doctor6

 directory entry 7 5550120 name doctor7
 directory entry 8 5550121 name doctor8
 directory entry 9 5550122 name doctor9

ephone-dn 1
 number 5500 secondary 555000.

ephone-dn 2
 number 5501 secondary 555001.

ephone-dn 3
 number 5502 secondary 555002.

ephone 1
 button 1o1,2,3
 mac-address 1111.1111.1111

ephone 2
 button 1o1,2,3
 mac-address 2222.2222.2222

ephone 3
 button 1o1,2,3
 mac-address 3333.3333.3333
```

The following example shows a hunt-group configuration for a medical answering service with two phones and four doctors. Each phone has two buttons, and each button is assigned two doctors' numbers. When a patient calls 5550341, Cisco Unified CME matches the hunt-group pilot secondary number (555....), rings button 1 on one of the two phones, and displays "doctor1." For more information about hunt-group behavior, see the "Hunt Groups" section on page 852. Note that wildcards are used only in secondary numbers and cannot be used with primary numbers.

```
telephony-service
 service dnis dir-lookup
 max-redirect 20
 directory entry 1 5550341 name doctor1
 directory entry 2 5550772 name doctor1
 directory entry 3 5550263 name doctor3
 directory entry 4 5550150 name doctor4

ephone-dn 1
 number 1001
ephone-dn 2
 number 1002
ephone-dn 3
 number 1003
ephone-dn 4
 number 104

ephone 1
 button 1o1,2
 button 2o3,4
 mac-address 1111.1111.1111

ephone 2
 button 1o1,2
 button 2o3,4
 mac-address 2222.2222.2222


ephone-hunt 1 peer
 pilot 5100 secondary 555....
 list 1001, 1002, 1003, 1004
 final number 5556000
 hops 5
 preference 1
 timeout 20
 no-reg
```

Called Ephone-dn Name Display for Overlaid Ephone-dns: Example

The following example demonstrates the display of the name assigned to the called ephone-dn using the **name** command. For information about configuring this feature, see the "Configuring Directory Services" section on page 1039.

In this example, three phones have button 1 assigned to pick up three shared 800 numbers for three different catalogs.

The default display for the phones is the number of the first ephone-dn listed in the overlay set (18005550100). A call is made to the first ephone-dn (18005550100), and the caller ID (for example, 4085550123) is visible on all phones. The user for phone 1 answers the call. The caller ID (4085550123) remains visible on phone 1, and the displays on phone 2 and phone 3 return to the default display (18005550100). A call to the second ephone-dn (18005550101) is made. The default display on phone 2 and phone 3 is replaced with the called ephone-dn's name (catalog1) and number (18005550101).

```
telephony-service
 service dnis overlay

ephone-dn 1
 number 18005550100

ephone-dn 2
 name catalog1
 number 18005550101

ephone-dn 3
 name catalog2
 number 18005550102

ephone-dn 4
 name catalog3
 number 18005550103

ephone 1
 button 1o1,2,3,4

ephone 2
 button 1o1,2,3,4

ephone 3
 button 1o1,2,3,4
```

Where to Go Next

Dial-Peer Call Hunt and Hunt Groups

Dial peers other than ephone-dn dial peers can be directly configured as hunt groups or rotary groups, in which multiple dial peers can match incoming calls. (These are not the same as Cisco Unified CME ephone hunt groups.) For more information, see the "Hunt Groups" section of the "Dial Peers Features and Configuration" chapter of *Dial Peer Configuration on Voice Gateway Routers*.

Called-Name Display

This feature allows you to specify that the name of the called party, rather than the number, should be displayed for incoming calls. This feature is very helpful for agents answering calls for multiple ephone-dns that appear on a single line button in an ephone-dn overlay set. For more information, see the "Configuring Directory Services" section on page 1039.

Soft Key Control

If the **hunt-group logout** command is used with the **HLog** keyword, the HLog soft key appears on phones during the idle, connected, and seized call states. The HLog soft key is used to toggle an agent from the ready to not-ready status or from the not-ready to ready status. To move or remove the HLog soft key on one or more phones, create and apply an ephone template that contains the appropriate **softkeys** commands.

For more information, see the "Customizing Soft Keys" section on page 1335.

Feature Access Codes (FACs)

Dynamic membership allows agents at authorized ephones to join or leave a hunt group using a feature access code (FAC) after standard or custom FACs are enabled.

In Cisco Unified CME 4.0 and later versions, you can activate call pickup using a feature access code (FAC) instead of a soft key when standard or custom FACs have been enabled for your system. The following are the standard FACs for call pickup:

- Pickup group—Dial the FAC and a pickup group number to pick up a ringing call in a different pickup group than yours. Standard FAC is **4.
- Pickup local—Dial the FAC to pick up a ringing call in your pickup group. Standard FAC is **3.
- Pickup direct—Dial the FAC and the extension number to pick up a ringing call at any extension. Standard FAC is **5.

For more information about FACs, see the "Configuring Feature Access Codes" section on page 1139.

Controlling Use of the Pickup Soft Keys

To block the functioning of the group pickup (GPickUp) or local pickup (Pickup) soft key without removing the key display, create and apply an ephone template that contains the **features blocked** command. For more information, see the "Configuring Call Blocking" section on page 683.

To remove the group pickup (GPickUp) or local pickup (Pickup) soft key from one or more phones, create and apply an ephone template that contains the appropriate **softkeys** command. For more information, see the "Customizing Soft Keys" section on page 1335.

Ephone-dn Templates

The **ephone-hunt login** command authorizes an ephone-dn to dynamically join and leave an ephone hunt group. It can be included in an ephone-dn template that is applied to one or more individual ephone-dns. For more information, see the "Creating Templates" section on page 1525.

Ephone Hunt Group Statistics Reports

Several different types of statistics can help you track whether your current ephone hunt groups are meeting your call coverage needs. These statistics can be displayed on-screen or written to files.

For more information, see the "Cisco Unified CME Basic Automatic Call Distribution and Auto-Attendant Service" chapter in *Cisco Unified CME B-ACD and Tcl Call-Handling Applications*.

Voice Hunt Group Statistics Reports

The **hunt-group statistics write-all** command writes all the ephone and voice hunt group statistics to a file.

The **statistics collect** command enables the collection of call statistics for a voice hunt group.

The **show telephony-service all** command displays the total number of ephone and voice hunt groups that have statistics collection turned on.

The **show voice hunt-group statistics** command displays call statistics from voice hunt groups.

For more information, see *Cisco Unified Communications Manager Express Command Reference*.

Do Not Disturb

The Do Not Disturb (DND) feature can be used as an alternative to the HLog function for preventing incoming calls from ringing on a phone. The difference is that HLog prevents only hunt group calls from ringing, while DND prevents all calls from ringing. For more information, see the "Configuring Do Not Disturb" section on page 1061.

Automatic Call Forwarding During Night-Service

To have an ephone-dn forward all its calls automatically during night-service hours, use the **call-forward night-service** command. For more information, see the "SCCP: Enabling Call Forwarding for a Directory Number" section on page 792.

Ephone Templates

The **night-service bell** command specifies that a phone will receive night-service notification when calls are received at ephone-dns configured as night-service ephone-dns. This command can be included in an ephone template that is applied to one or more individual ephones.

For more information, see the "Creating Templates" section on page 1525.

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 Call Coverage Features

Table 26 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 Communications Manager Express 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 26 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 26 Feature Information for Call Coverage

Feature Name	Cisco Unified CME Version	Modification
Call Hunt	3.4	Added support for configuring call hunt features on SIP IP phones connected directly to Cisco Unified CME.
	3.0	• Preference for secondary numbers was introduced. • Channel huntstop was introduced.
	1.0	• Ephone-dn dial-peer preference was introduced. • Huntstop was introduced.
Call Pickup	7.1	Added Call Pickup support for SIP phones.
	4.0	• The ability to globally disable directed call pickup was introduced. • Feature access codes for call pickup were introduced. • The ability to block call pickup on individual phones was introduced.
	3.2	The ability to remove or rearrange soft keys on individual phones was introduced.
	3.0	Call pickup groups were introduced.
Call Waiting	8.0	Added Cancel Call Waiting feature.
	3.4	Added support for configuring call waiting for SIP phones directly connected to Cisco Unified CME.
Callback Busy Subscriber	3.0	Callback busy subscriber was introduced.

Table 26 Feature Information for Call Coverage (continued)

Feature Name	Cisco Unified CME Version	Modification
Hunt Groups	7.0/4.3	Added support for the following: • SCCP phones in Voice Hunt-Groups • Call Forwarding to a Parallel Voice Hunt-Group (Blast Hunt Group) • Call Transfer to a Voice Hunt-Group • Member of Voice Hunt-Group can be a SCCP phone, FXS analog phone, DS0-group, PRI-group, SIP phone, or SIP trunk

Table 26 Feature Information for Call Coverage (continued)

Feature Name	Cisco Unified CME Version	Modification
Hunt Groups	4.0	Added support for the following on IP phones running SCCP: • Maximum number of hunt groups in a system was increased from 20 to 100 and maximum number of agents in a hunt group was increased from 10 to 20. • Maximum number of hops automatically adjusts to the number of agents. • A description can be added to phone displays and configuration output to provide hunt group information associated with ringing and answered calls. • A configurable message can be displayed on agent phones when all agents are in the not-ready status to advise the destination to which calls are being forwarded or other useful information. • No-answer timeouts can be set individually for each ephone-dn in the list and a cumulative no-answer timeout can be set for all ephone-dns. • Automatic logout trigger criterion was changed from exceeding the specified timeout to exceeding the specified number of calls. The name of this feature was changed from automatic logout to automatic agent status not-ready. • Dynamic hunt group membership is introduced. Agents can join and leave hunt groups whenever a wildcard slot is available. • Agent status control using an HLog soft key or feature access code (FAC) is introduced. Agents can put their lines into not-ready state to temporarily block hunt group calls without relinquishing their slots in group. • Calls can be blocked from agent phones that are not idle or on hook. • Calls that are not answered by the hunt group can be returned to the party who transferred them into the hunt group. • Calls parked by hunt group agents can be returned to a different entry point. • (Sequential hunt groups only) Local calls to a hunt group can be restricted so that they will not be forwarded past the initial agent that is rung. • (Longest-idle hunt groups only) A new command, the **from-ring** command, specifies that on-hook time stamps should be updated when a call rings an agent and when a call is answered by an agent.

Table 26 Feature Information for Call Coverage (continued)

Feature Name	Cisco Unified CME Version	Modification
	3.4	Added support for configuring hunt groups for SIP phones directly connected to Cisco Unified CME.
	3.2.1	• Maximum number of hunt groups in a system was increased to 20. • Automatic logout capability was introduced.
	3.2	Longest-idle hunt groups were introduced.
	3.1	Secondary pilot numbers were introduced.
	3.0	Peer and sequential ephone hunt groups were introduced.
Night Service	4.0	The **night-service everyday**, **night-service weekday**, and **night-service weekend** commands were introduced.
	3.3	The behavior of the night-service code was changed. Previously, using the night-service code at a phone either enabled or disabled night service for the ephone-dns on that phone. Now, using the night-service code at a phone enables or disables night service for all night-service ephone-dns.
	3.0	Night service was introduced.
Overlaid Ephone-dns	4.0	• The number of ephone-dns that can be overlaid on a single button using the **button** command and the **o** or **c** keyword was increased from 10 to 25. • The ability to extend calls for overlaid ephone-dns to other buttons (rollover buttons) on the same phone was introduced. Rollover buttons are created by using the **x** keyword with the **button** command. • The number of waiting calls that can be displayed for overlaid ephone-dns that have call waiting configured has been increased to six for the following phone types: Cisco Unified IP Phone 7940G, 7941G, 7941G-GE, 7960G, 7961G, 7961G-GE, 7970G, and 7971G-GE.
	3.2.1	Call waiting for overlaid ephone-dns was introduced and the **c** keyword was added to the **button** command.
	3.0	Overlaid ephone-dns were introduced and the **o** keyword was added to the **button** command.
Voice Hunt Group Enhancements	9.0	Allows all ephone and voice hunt group call statistics to be written to a file using the **hunt-group statistics write-all** command.
Preventing Local-Call Forwarding to Final Agent in Voice Hunt Groups	9.5	The **no forward local-calls** command was introduced in ephone-hunt group to prevent a local call from being forwarded to the next agent.
Enhancement of Support for Hunt Group Agent Statistics	9.5	Hunt group agent statistics of Cisco Unified SCCP IP phones is enhanced to include Total logged in time and Total logged out.