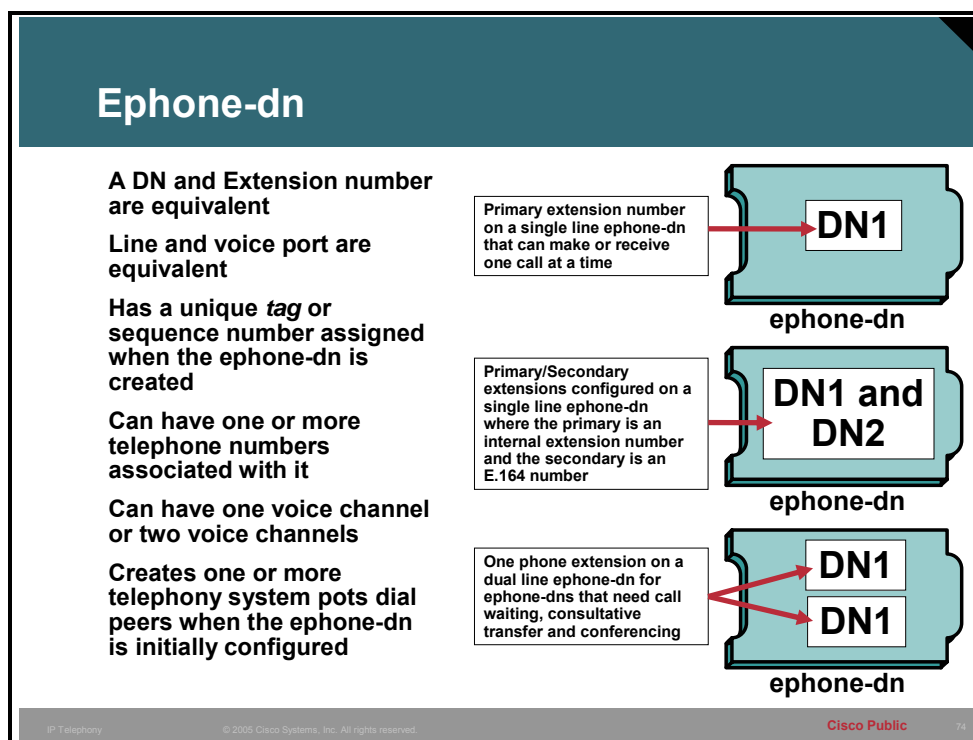


Ephone-dn and Ephone

Ephone-dn

This topic defines ephone-dn and describes examples.



An ephone-dn, or “Ethernet phone directory number,” is a software construct that represents the line that connects a voice channel to a phone instrument on which a user can receive and make calls. An ephone-dn has one or more extension or telephone numbers associated with it to allow call connections to be made. An ephone-dn is equivalent to a phone line in most cases, but not always. There are several types of ephone-dns, which have different characteristics.

Each ephone-dn has a unique dn-tag, or sequence number, to identify it during configuration. Ephone-dns are assigned to line buttons on ephones during configuration. The number of ephone-dns that you create corresponds to the number of simultaneous calls that you can have because each ephone-dn represents a virtual voice port in the router. This means that if you want more than one call to the same number to be answered simultaneously, you need multiple virtual voice ports (ephone-dns) with the same destination pattern (extension or telephone number).

Ephone-dns can be configured in various ways these include:

- Primary DN on a single line ephone-dn
- Primary and secondary DN on a single line the ephone-dn
- Primary DN on a dual-line ephone-dn (only one line has active voice at any time)

Ephone-dn (Cont.)

```
router(config)#
```

```
ephone-dn dn-tag [dual-line]
```

- This command is used to create an extension (ephone-dn) for a Cisco IP phone line, an intercom line, a paging line, a voice-mail port, or a message-waiting indicator (MWI).

```
router(config-ephone-dn)#
```

```
number dn-number secondary dn-number [no-reg [both |  
primary]]
```

- This command is used to associate a DN number with the ephone-dn instance

An ephone-dn is created by the **ephone-dn *dn-tag*** command, which builds one virtual voice port. The ***dn-tag*** field will need to contain a unique number if this is a new ephone-dn or an existing number if a current ephone-dn is being modified. If the ephone-dn is to be assigned an extension and assigned to a phone line it should be able to have two calls to the same line at the same time. The ephone-dn should then have the **dual-line** keyword at the end of the **ephone-dn** command. The **dual-line** keyword will need to be present to be able to use an ephone-dn for call-waiting, consultative transfers, and conferencing with only one line appearance on the phone. An ephone-dn without the **dual-line** keyword will be used when the ephone-dn is configured for paging functions, intercoms, voice mail ports, or MWI signals.

Note The ***dn-tag*** numbers do not have to be entered sequentially.

The command **number *dn-number*** assigns a primary and optionally a secondary number to the ephone-dn, and is entered in ephone-dn sub configuration mode.

The **no-reg** keyword can be used if either the primary extension or both the primary extension and the secondary extension should not be registered to either a H.323 gatekeeper or SIP proxy server. For example, a service provider that sells Cisco CME may not want to have the primary extension number registered because there may be many clients with the same dial plan. The secondary number which would most likely be an E.164 number would be registered with a H.323 Gatekeeper. The **number *dn-number* *secondary dn-number* *no-reg* *primary*** command would be added to the configuration of the ephone-dn to configure this.

Ephone

This topic defines ephone and describes examples.

Ephone

- Software configuration of a physical phone
- Has a unique tag or sequence number assigned when the ephone is created
- Can be an IP phone, analog phone attached to an ATA
- The MAC of the IP phone or ATA is used to tie the software configuration to the hardware
- The hardware is auto detected for all supported models except the ATA and 7914 expansion module
- Can have one or more ephone-dn(s) associated with the ephone
- Number of line buttons will vary based on the hardware

The diagram illustrates three types of ephones and their associated line buttons and MAC addresses:

- 7960:** A Cisco IP phone with 6 buttons (Button 1 to Button 6), each labeled 'DN'. The MAC address is 000F.2470.F92A.
- 7912:** A Cisco IP phone with 1 button (Button 1), labeled 'DN'. The MAC address is 000F.2470.F92B.
- ATA 188:** An analog telephone adaptor with 2 analog buttons (Analog 1 and Analog 2), each labeled 'DN'. The MAC address is 000F.2470.F92D.

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An ephone, or “Ethernet phone,” is a single instance of the software configuration of the physical instrument with which a phone user makes and receives calls in a Cisco CME system. The physical ephone is either a Cisco IP phone or an analog telephone adaptor (ATA) device with an attached analog phone or fax.

Note The Cisco IP Softphone and IP Communicator are not currently supported as valid ephones. However, certain third-party vendors have a softphone that works (IP Blue).

Each ephone has a unique *phone-tag*, or sequence number, to identify it during configuration. This phone tag number must be unique if configuring a new ephone or a preexisting number if modifying a current ephone. Once in the ephone sub-configuration mode the ephone must be tied to the physical device by using the MAC address. The type of phone must be defined if one or two 7914 add on module are present or if the device is an ATA 186 or ATA 188. All other types of phones will be auto detected by the Cisco CME system. The ephone-dns will then have to be assigned to the line buttons of the ephone or add on modules. The number of line buttons will vary with the model of IP phone.

Ephone (Cont.)

```
router(config)#
```

```
ephone phone-tag
```

- **Creates an ephone instance and enters ephone configuration mode**

```
router(config-ephone)#
```

```
mac-address mac-address
```

- **Assigns the physical IP phone by MAC address with this instance of an ephone**

The ephone is created or modified by entering the **ephone *phone-tag*** command from global configuration mode. Once the command is entered, the interface will be in ephone sub-configuration mode and the ephone-specific commands entered. The command **mac-address *mac-address*** is entered with twelve hex characters entered in groups of four separated by a period (Example 0000.0c12.3456). This associates the physical device the defined MAC address with the ephone.

Ephone (Cont.)

```
router(config-ephone)#
```

```
button button-number {separator} dn-tag [[button-number  
{separator} dn-tag]...]
```

- **Associates the ephone-dn(s) with a specific button(s) on the IP phone**

```
router(config-ephone)#
```

```
type {7940 | 7960} addon 1 7914 [2 7914]
```

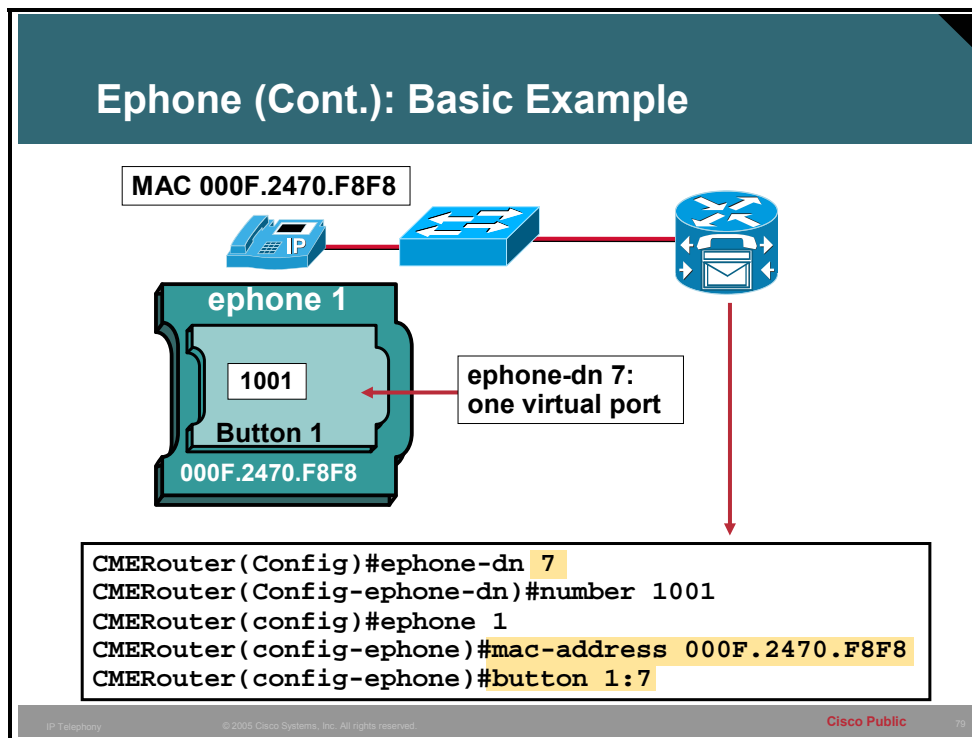
- **Defines the device as a 7914 module(s)**

The **button *button-number* {*separator*} *dn-tag*** command allows a line button to have an ephone-dn assigned to it. The button number is the button on the IP phone starting with the top button being number one. The dn-tag is the ephone-dn tag or sequence number. The separator is a single character that defines the properties of the button and the extension, these include the following:

- **:** (colon)—Normal ring. For incoming calls on this extension, the phone produces audible ringing, a flashing (< icon in the phone display, and a flashing red light on the handset. On the Cisco IP Phone 7914 Expansion Module, a flashing yellow light also accompanies incoming calls.
- **b**—Beep but no ring. Audible ring is suppressed for incoming calls, but call-waiting beeps are allowed. Visible cues are the same as those described for a normal ring.
- **f**—Feature ring. Differentiates incoming calls on a special line from incoming calls on other lines on the phone. The feature ring cadence is a triple pulse, as opposed to a single pulse for normal internal calls and a double pulse for normal external calls.
- **m**—Monitor mode for a shared line. Visible line status indicates in-use or not. Line cannot be used on this phone for incoming or outgoing calls.
- **o**—Overlay line. Multiple ephone-dns share a single button, up to a maximum of ten on a button. The *dn-tag* argument can contain up to ten individual dn-tags, separated by commas.
- **s**—Silent ring. Audible ring and call-waiting beep are suppressed for incoming calls. Visible cues are the same as those described for a normal ring.

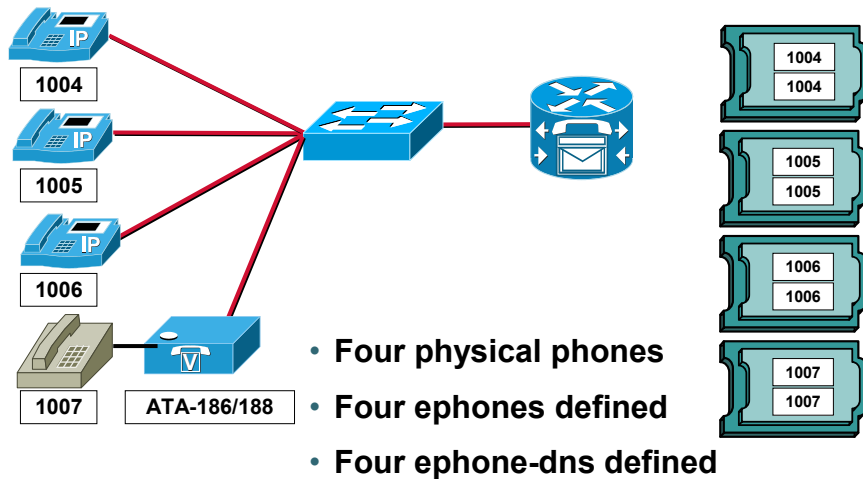
The command **type {7940 | 7960} addon 1 7914** sets the ephone to have either a 7940 or 7960 with either one or two 7914 expansion modules assigned to. This command is required if using the 7914 expansion module.

Example



This example shows an ephone-dn 7 being created and then assigned to the ephone 1. The ephone-dn is configured to be dual-line and is assigned to line button one on the IP phone at the specified MAC address.

Ephone (Cont.): Example Multiple Ephones



When there are multiple physical devices, there will need to be the same number of ephones defined. Each ephone will then have one or more ephone-dns assigned to line buttons on the physical device. The configuration for this example follows.

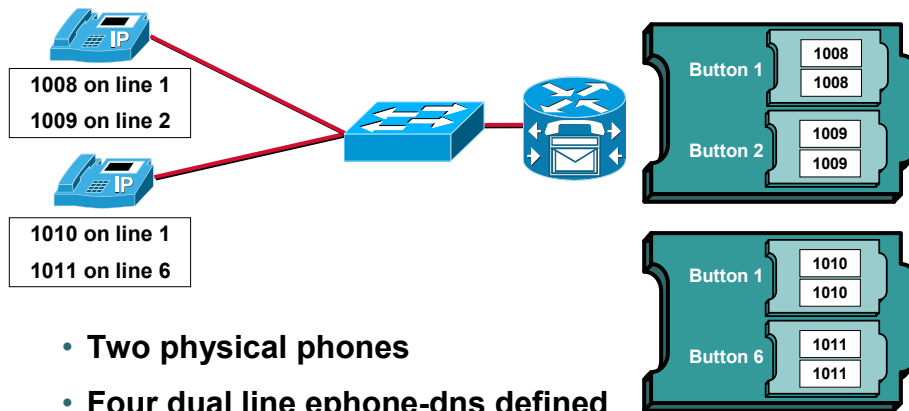
Example

Ephone (Cont.): Example Multiple Ephones Configuration

Configuration example

```
CMERouter(config)#ephone-dn 10 dual-line
CMERouter(config-ephone-dn)#number 1004
CMERouter(config)#ephone-dn 11 dual-line
CMERouter(config-ephone-dn)#number 1005
CMERouter(config)#ephone-dn 12 dual-line
CMERouter(config-ephone-dn)#number 1006
CMERouter(config)#ephone-dn 13 dual-line
CMERouter(config-ephone-dn)#number 1007
CMERouter(config)#ephone 1
CMERouter(config-ephone)#mac-address 000F.2470.F8F1
CMERouter(config-ephone)#button 1:10
CMERouter(config)#ephone 2
CMERouter(config-ephone)#mac-address 000F.2470.A302
CMERouter(config-ephone)#button 1:11
CMERouter(config)#ephone 3
CMERouter(config-ephone)#mac-address 000F.2470.66F6
CMERouter(config-ephone)#button 1:12
CMERouter(config)#ephone 4
CMERouter(config-ephone)#mac-address 000F.2470.7B54
CMERouter(config-ephone)#type ata
CMERouter(config-ephone)#button 1:13
```

Ephone (Cont.): Multiple Ephone-dns



- Two physical phones
- Four dual line ephone-dns defined
- Two ephones defined

In this example, there are multiple ephone-dn assigned to the ephone. The ephone-dn is assigned to different buttons on the ephone. The configuration for this example follows.

Example

Ephone (Cont.): Multiple Ephone-dns Configuration Example

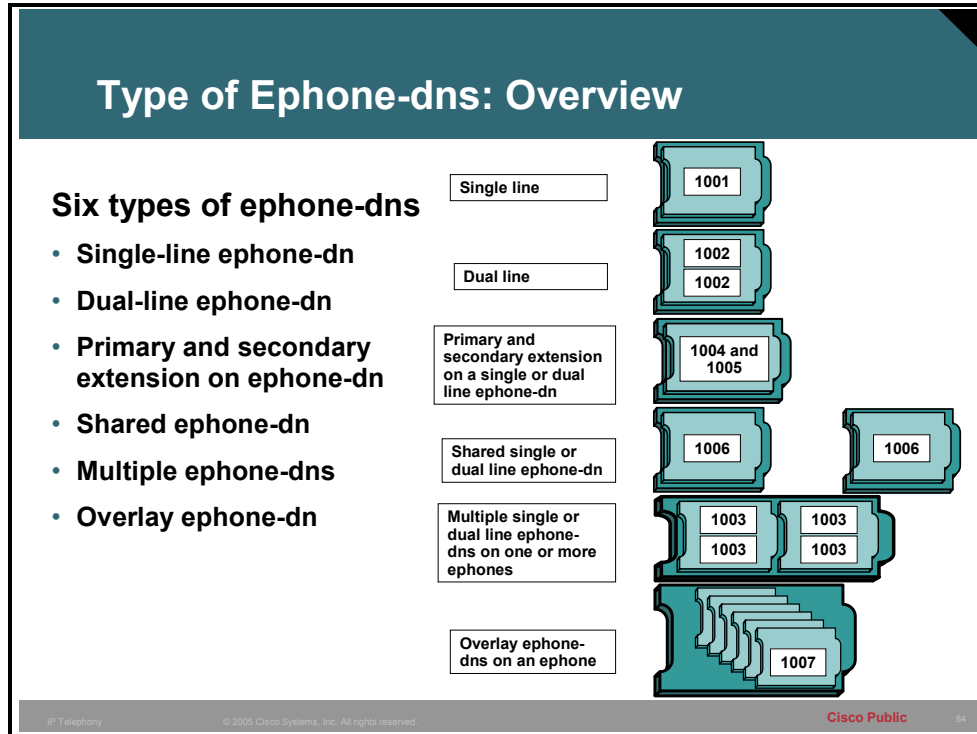
Multiple line ephone configuration example

```
CMERouter(config)#ephone-dn 14 dual-line
CMERouter(config-ephone-dn)#number 1008
CMERouter(config)#ephone-dn 15 dual-line
CMERouter(config-ephone-dn)#number 1009
CMERouter(config)#ephone-dn 16 dual-line
CMERouter(config-ephone-dn)#number 1010
CMERouter(config)#ephone-dn 17 dual-line
CMERouter(config-ephone-dn)#number 1011

CMERouter(config)#ephone 5
CMERouter(config-ephone)#mac-address 000F.2470.FAA1
CMERouter(config-ephone)#button 1:14 2:15
CMERouter(config)#ephone 6
CMERouter(config-ephone)#mac-address 000F.2470.A7E2
CMERouter(config-ephone)#button 1:16 6:17
```


Type of Ephone-dns

This topic describes the different types of ephone-dns.

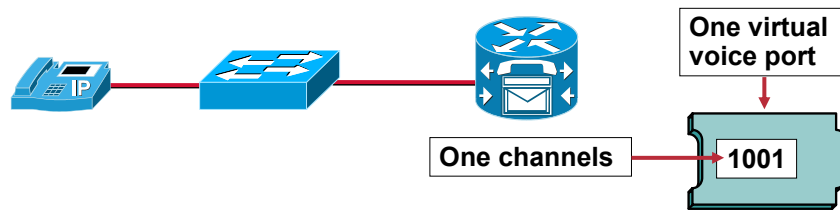


The ephone-dn is the basic building block of a Cisco CME system. Six different types of ephone-dn can be combined in different ways for different call coverage situations. Each type will help with a particular type of limitation or call coverage need. For example, if you want to keep the number of ephone-dns low and provide service to a large number of people, you might use shared ephone-dns. Or if you have a limited number of extension numbers that you can use but need to have a large number of simultaneous calls, you might create two or more ephone-dns with the same number. The key is knowing how each type of ephone-dn works and what its advantages are.

The following sections will help you understand the types of ephone-dn in a Cisco CME system:

- Single-line ephone-dn
- Dual-line ephone-dn
- Primary and secondary extension on one ephone-dn
- Shared ephone-dn
- Multiple ephone-dns on one ephone
- Overlay ephone-dn

Single Line Ephone-dn



```
CMERouter(Config)#ephone-dn 1  
CMERouter(Config-ephone-dn)#number 1001
```

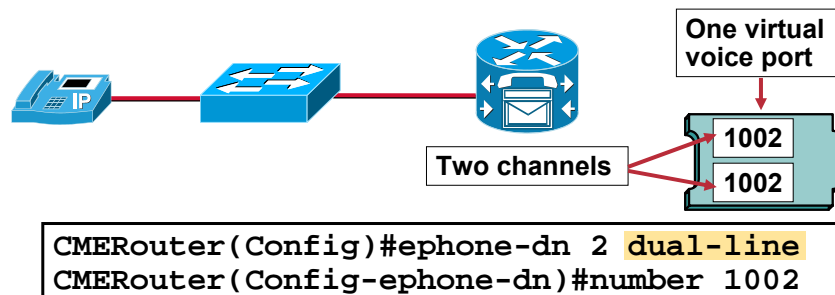
- The ephone-dn creates one virtual voice port
- One call to or from this ephone-dn at any one time

A single-line ephone-dn has the following characteristics:

- Makes one call connection at a time using one phone line button. A single-line ephone-dn has one telephone number associated with it.
- Should be used when phone buttons have a one-to-one correspondence to the PSTN lines that come into a Cisco CME system.
- Should be used for lines that are dedicated to intercom, paging, message-waiting indicator (MWI), loopback, and music-on-hold (MOH) feed sources.
- When used with multiple-line features like call waiting, call transfer, and conferencing, there must be more than one single-line ephone-dn on a phone.
- Can be combined with dual-line ephone-dns on the same phone.
- A multiple-line button phone must be used if call waiting, consultative transfer, or conferencing are needed

Note A choice is made to configure each ephone-dn in the system as either dual-line or single-line when ephone-dn is initially created. If the selection made needs to be changed from single-line to dual-line, or dual-line to single-line, the ephone-dn must be deleted and then recreated.

Dual Line Ephone-dn



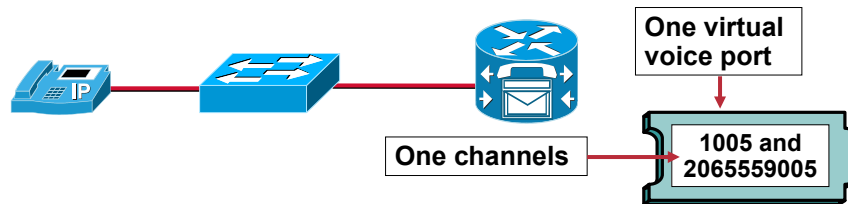
- The ephone-dn creates one virtual voice port
- The “dual-line” keyword indicates two voice channels for calls to terminate on an ephone-dn extension
- Use on ephone-dns that need call waiting, consultative transfer, or conferencing on one button
- Cannot be used on ephone-dns used for intercoms, paging, MWI or MoH feeds

A dual-line ephone-dn has the following characteristics:

- Can make two call connections at the same time using one phone line button. A dual-line ephone-dn has two channels for separate call connections.
- Can have one number or two numbers (primary and secondary) associated with it.
- Should be used for an ephone-dn that needs to use just a single button for features like call waiting, call transfer, or conferencing.
- Cannot be used for lines that are dedicated to intercom, paging, message-waiting indicator (MWI), loopback, and music-on-hold (MOH) feed sources.
- Can be combined with single-line ephone-dns on the same phone.

Note A choice is made to configure each ephone-dn in the system as either dual-line or single-line when ephone-dn is initially created. If the selection made needs to be changed from single-line to dual-line, or dual-line to single-line, the ephone-dn must be deleted and then created again.

Primary and Secondary Extension Number on Ephone-dn



```
CMERouter(Config)#ephone-dn 6  
CMERouter(Config-ephone-dn)#number 1005 secondary 2065559005 no-reg primary
```

- The ephone-dn creates one virtual voice port
- Two different directory numbers can be dialed to reach this ephone-dn
- One call connection allowed if configured as a single-line ephone-dn
- Two call connections allowed if configured as a dual-line ephone-dn
- Allows two numbers to be configured without using an extra ephone-dn
- The secondary number will be registered to the H.323 gatekeeper

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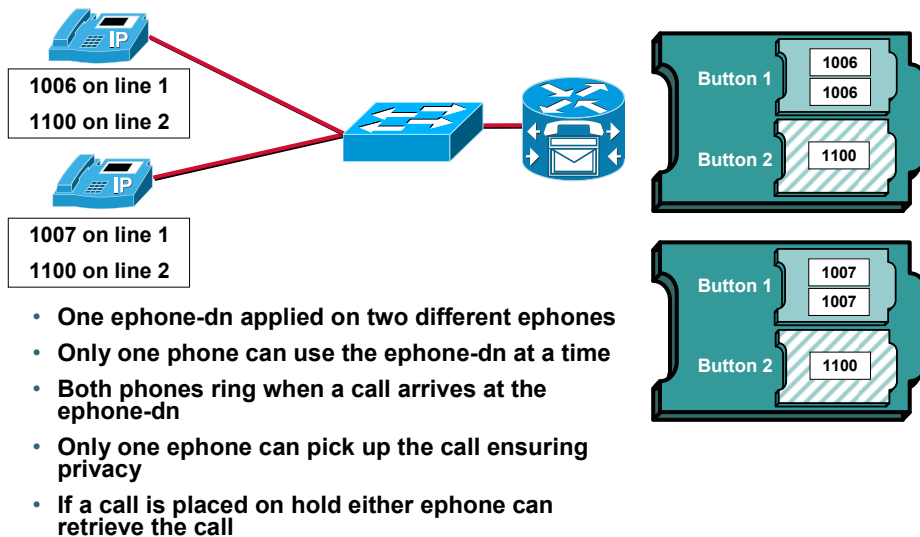
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A dual-number ephone-dn has the following characteristics:

- Has two telephone numbers: a primary number and a secondary number
- Can make one call connection if it is a single-line ephone-dn
- Can make two call connections at a time if it is a dual-line ephone-dn
- Should be used when you want to have two different numbers for the same button without using more than one ephone-dn
- The secondary number will register with the H.323 gatekeeper

Shared Ephone-dn



A shared ephone-dn has the following characteristics:

- Appears on two different phones but uses the same ephone-dn and number
- Can make one call at a time between the two phones, and that call appears on both phones
- Should be used when you want the capability to answer or pick up a call at more than one phone
- Only one ephone can pick up the call, ensuring privacy
- When the call is placed on hold, either ephone can retrieve the call

If the ephone-dn is connected to a call on one phone, that ephone-dn is unavailable for other calls on the second phone because these phones share the same ephone-dn. If a call is placed on hold on one phone, it can be retrieved on the second phone.

The configuration for this example follows.

Example

Shared Ephone-dn Configuration Example

Shared line appearance configuration example

```
CMERouter(config)#ephone-dn 7 dual-line
CMERouter(config-ephone-dn)#number 1006
CMERouter(config)#ephone-dn 8 dual-line
CMERouter(config-ephone-dn)#number 1007
CMERouter(config)#ephone-dn 9
CMERouter(config-ephone-dn)#number 1100
CMERouter(config)#ephone 7
CMERouter(config-ephone)#mac-address 000F.2470.FAA1
CMERouter(config-ephone)#button 1:7 2:9
CMERouter(config)#ephone 8
CMERouter(config-ephone)#mac-address 000F.2470.A7E2
CMERouter(config-ephone)#button 1:8 2:9
```

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This example shows the configuration for the previous page.

Two Ephone-dns with one extension number

Multiple ephone-dns

- On the same ephone

Used when more than two calls to the same extension are needed

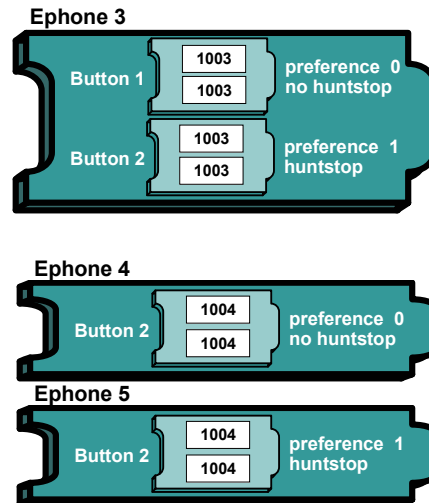
- On different ephones

Used when two different ephones need the same number

Not a shared line

Only one ephone will ring at a time

A call on hold can be retrieved only by the ephone that put the call on hold



There are two different ways for multiple ephone-dns with the same extension number to be utilized. One way is for multiple ephone-dns to be assigned to the same ephone but on separate line buttons. This type of configuration will be useful when more than two calls at a time may arrive at a destination and need to be handled. For example, if 6 calls at a time need to be handled, then 3 ephone-dns that are dual-line can all be configured with the same extension number.

The other way that multiple ephone-dns with the same extension number can be configured is on different ephones. This will be a different configuration than a shared line. This will be used when two or more ephones need to be able to answer the same number and this will also provide some very basic huntgroup functionality. The characteristics of this type of configuration will be:

- Two or more virtual ports with the same extension number
- Not a shared line
- Two call connections allowed per ephone-dn if configured as dual-line, one if not
- The preference and huntstop command are used to configure hunting behavior
- Only one ephone will ring at a time
- Call on hold can be retrieved by only the ephone that placed the call on hold initially

Preference and Huntstop Commands

```
router(config-ephone-dn)#
```

```
preference {0-10}
```

- Sets the dial-peer preference order

```
router(config-ephone-dn)#
```

```
huntstop [channel]
```

- Discontinues the call hunting behavior for an extension (ephone-dn) or an extension line (dual-line)

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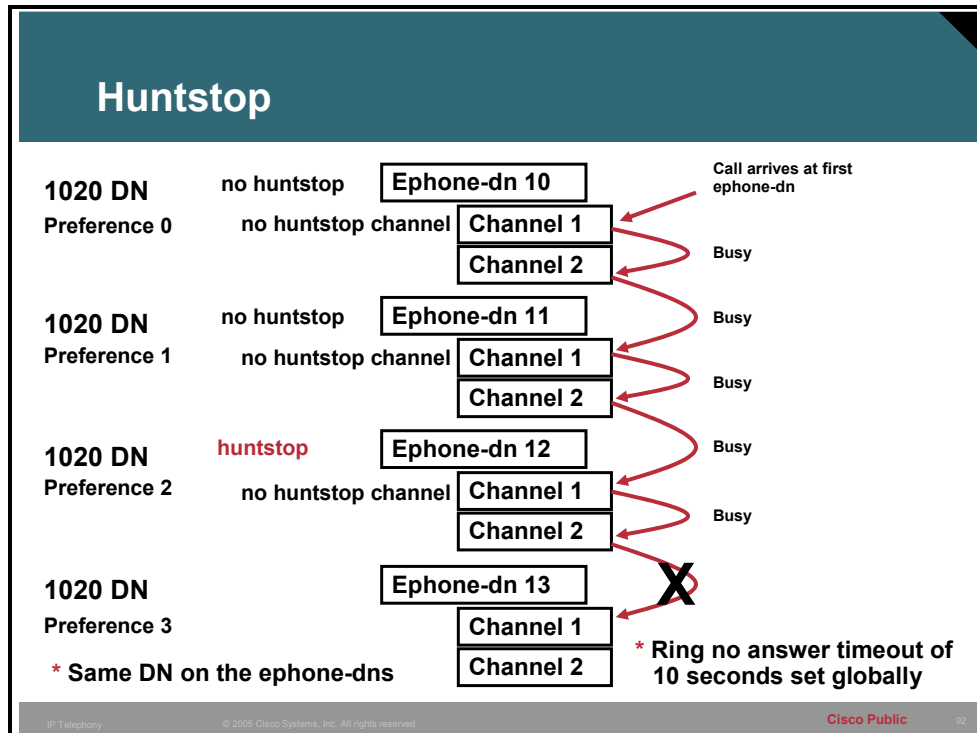
Values assigned in the **preference** command are passed to the dial peers created by the two ephone-dns. Both dial peers for the ephone-dns are matched when this extension number is dialed. The call is connected to the ephone-dn with the highest preference. The default preference value is 0 (the most preferred); the lowest preference value that can be set is 10 (the least preferred).

When using the **huntstop** (default setting on ephone-dns) command without the **channel** keyword, it effects call hunting behavior that relates to ephone-dns (lines or extensions). If the huntstop attribute is set, an incoming call does not roll over (hunt) to another ephone-dn when the called ephone-dn is busy or does not answer and a hunting strategy has been established that includes this ephone-dn. For example, this allows the prevention of hunt-on-busy from redirecting a call from a busy phone into a dial-peer setup with a catch-all default destination. Use the **no huntstop** command under the ephone-dn to disable huntstop and allow hunting for ephone-dns.

Channel huntstop works in a similar way but it effects call hunting behavior for the two channels of a single dual-line ephone-dn. If the **huntstop channel** command is used, incoming calls do not hunt to the second channel of an ephone-dn when the first channel is busy or does not answer. For example, an incoming call might search through the following ephone-dns and channels:

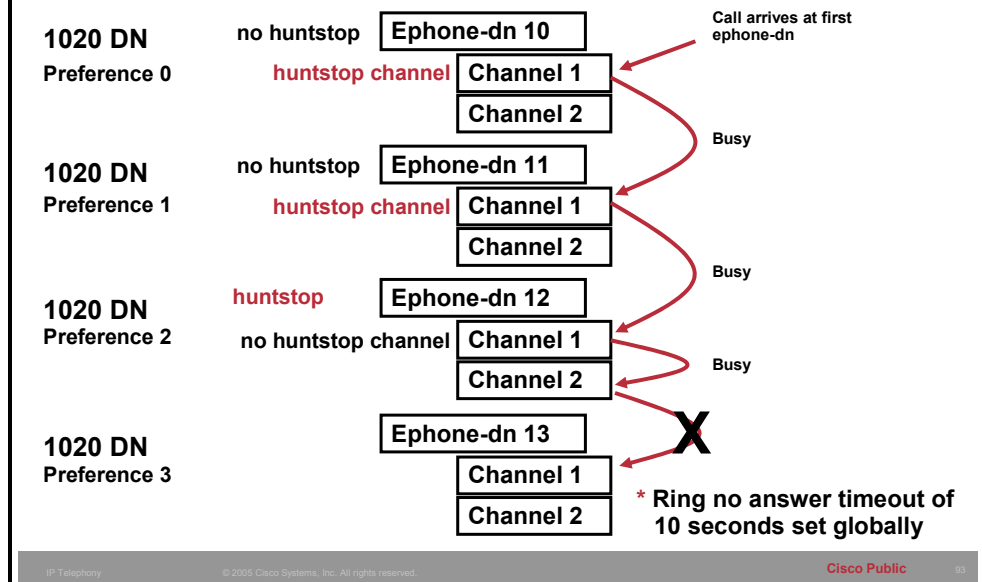
- ephone-dn 10 (channel 1)
- ephone-dn 10 (channel 2)
- ephone-dn 11 (channel 1)
- ephone-dn 11 (channel 2)
- ephone-dn 12 (channel 1)
- ephone-dn 12 (channel 2)

When the **no huntstop channel** command is used (the default), you might have a call ring for 30 seconds on ephone-dn 10 (channel 1) and then after 30 seconds move to ephone-dn 10 (channel 2). This is usually not the behavior that you desire. Also, it is often useful to reserve the second channel of a dual-line ephone-dn for call transfer, call waiting, or conferencing. The **huntstop channel** command tells the system that if the first channel is in use or does not answer, an incoming call should hunt forward to the next ephone-dn in the hunt sequence instead of to the next channel on the same ephone-dn.



When the **no huntstop** command is used on the ephone-dn, the call would ring on the first ephone-dn and go through any hunting defined on the two channels in a dual-line ephone-dn before being sent to the next most preferred ephone-dn that also has a matching destination pattern. This will continue until an ephone-dn with huntstop configured is reached or no more dial peers (ephone-dns) have matching destinations patterns.

Huntstop Channel

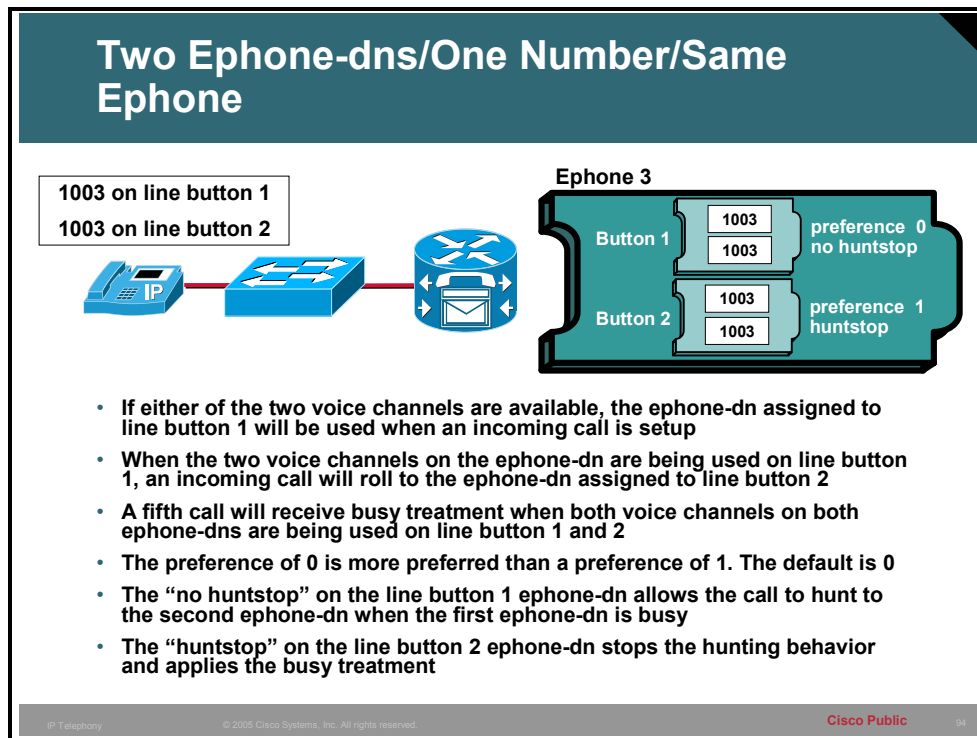


Channel huntstop works in a similar way, but it affects call hunting behavior for the two channels of a single dual-line ephone-dn. If the **huntstop channel** command is used, incoming calls do not hunt to the second channel of an ephone-dn when the first channel is busy or does not answer.

When the **no huntstop channel** command is used (the default), you might have a call ring for 10 seconds on ephone-dn 10 (channel 1) and then after 10 seconds move to ephone-dn 10 (channel 2). This is usually not the behavior that you desire in a dual line phone.

It is often useful to reserve the second channel of a dual-line ephone-dn for call transfer, call waiting, or conferencing. The **huntstop channel** command tells the system that if the first channel is in use or does not answer, an incoming call should hunt forward to the next ephone-dn in the hunt sequence instead of to the next channel on the same ephone-dn.

Example



When the two different ephone-dns that have the same number are assigned to different buttons of the same ephone and a call arrives, it will go to the ephone-dn that is most preferred based upon the preference setting. If the first ephone-dn is busy or not answered, the call will go to the second ephone-dn. Because the buttons have different ephone-dns, the calls that are connected on these buttons are independent of one another.

The configuration for this example follows.

Two Ephone-dns/One Number/Same Ephone

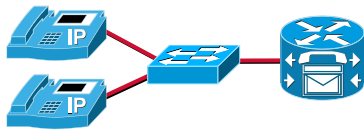
Two ephone-dns with one number on the same ephone configuration example

```
CMERouter(config)#ephone-dn 3
CMERouter(config-ephone-dn)#number 1003
CMERouter(config-ephone-dn)#preference 0
CMERouter(config-ephone-dn)#no huntstop
CMERouter(config)#ephone-dn 4
CMERouter(config-ephone-dn)#number 1003
CMERouter(config-ephone-dn)#preference 1
CMERouter(config-ephone-dn)#huntstop
CMERouter(config)#ephone 3
CMERouter(config-ephone)#mac-address 000F.2470.FAA1
CMERouter(config-ephone)#button 1:3 2:4
```

This example shows the configuration for the previous page

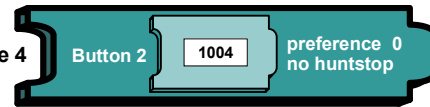
Two Ephone-dns/One Number/Diff Ephones

1004 on line button 2



1004 on line button 2

Ephone 4



Ephone 5



- Ephone 4 will be used first if available
- When the first ephone-dn is being used on ephone 4, an incoming call will use the ephone-dn assigned to ephone 5
- A third call will receive busy treatment when both ephone-dns are being used on line ephone 4 and 5
- The preference of 0 is more preferred than a preference of 1; the default is 0
- The “no huntstop” on the ephone-dn on ephone 4 allows the call to hunt to the second ephone-dn on ephone 5 when the first ephone-dn is busy
- The “huntstop” on the ephone-dn on ephone 5 stops the hunting behavior and applies the busy treatment for the third call
- Unlike a share line appearance, if a call is placed on hold, only the original phone will be able to retrieve the call

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A shared line that also has two ephones with a line on each with the same number but has only one shared ephone-dn for both of them is different than two ephones having separate ephone-dns with the same number.

A shared ephone-dn will have the same call connection at all the buttons on which the shared ephone-dn appears. If a call on a shared ephone-dn is answered on one ephone and then placed on hold, the call can be retrieved from the second ephone on which the shared ephone-dn appears. But when there are two separate ephone-dns with the same number, a call connection appears only on the phone and button at which the call is made or received. If the call is placed on hold on one ephone, it cannot be retrieved from the other ephone with an ephone-dn with the same number because this is a different virtual voice port.

The configuration for this example follows.

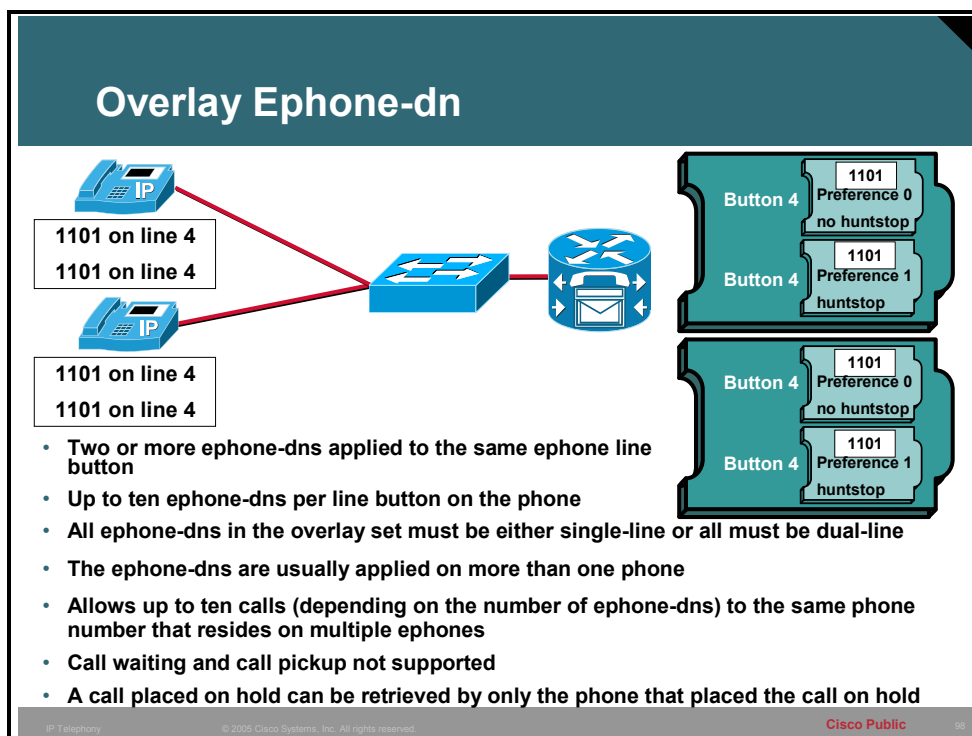
Example

Two Ephone-dns/One Number/Diff Ephones

Two ephone-dns with one number on different ephones configuration example

```
CMERouter(config)#ephone-dn 5 dual line
CMERouter(config-ephone-dn)#number 1004
CMERouter(config-ephone-dn)#preference 0
CMERouter(config-ephone-dn)#no huntstop
CMERouter(config)#ephone-dn 6 dual line
CMERouter(config-ephone-dn)#number 1004
CMERouter(config-ephone-dn)#preference 1
CMERouter(config-ephone-dn)#huntstop
CMERouter(config)#ephone 4
CMERouter(config-ephone)#mac-address 000F.2470.F131
CMERouter(config-ephone)#button 2:5
CMERouter(config)#ephone 5
CMERouter(config-ephone)#mac-address 000F.2470.FA5B
CMERouter(config-ephone)#button 2:6
```

This example shows the configuration for the previous page.



An overlay ephone-dn has the following characteristics:

- Is a member of an overlay set, which includes all the ephone-dns that have been assigned together to a particular phone button
- Can have the same telephone or extension number as other members of the overlay set or different numbers
- Can be single-line or dual-line, but cannot be mixed single-line and dual-line in the same overlay set
- Can be shared on more than one phone

Overlay ephone-dns provide call coverage similar to shared ephone-dns because the same number can appear on more than one phone. The advantage of using two ephone-dns in an overlay arrangement rather than as simple shared ephone-dns is that a call to the number on one phone does not block the use of the same number on the other phone as would happen if this was a shared ephone-dn.

You can overlay up to ten lines on a single button and create a “10x10” shared line with ten lines in an overlay set shared by ten phones, resulting in the possibility of ten simultaneous calls to the same number.

An overlay is configured by use of an overlay separator with the **button** command. The separator is “o” to create the overlay. For example, the command **button 1o20,21,23,24,25** would configure ephone-dn 21, 22, 23, 24, and 25 on button 1 of the ephone.

The configuration for this example follows.

Example

This topic describes the different types of ephone-dns.

Type of Ephone-dns (Cont.) Overlay Configuration Example

Overlay configuration example

```
CMERouter(config)#ephone-dn 10
CMERouter(config-ephone-dn)#number 1101
CMERouter(config-ephone-dn)#no huntstop
CMERouter(config)#ephone-dn 11
CMERouter(config-ephone-dn)#number 1101
CMERouter(config-ephone-dn)#preference 1
CMERouter(config)#ephone 9
CMERouter(config-ephone)#mac-address 000F.2470.FA31
CMERouter(config-ephone)#button 4o10,11
CMERouter(config)#ephone 10
CMERouter(config-ephone)#mac-address 000F.2470.A2E2
CMERouter(config-ephone)#button 4o10,11
```

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This example shows the configuration for the previous page.

Number of Ephone-dns

This topic explains the number of ephone-dn.

Number of Ephone-dns max-dn Command

```
router(config-telephone)#
```

```
max-dn max-dn
```

- Sets the maximum definable number of ephone-dns that may be configured in the system
- The maximum number of ephone-dns supported is a function of the license and hardware platform
- The default is zero

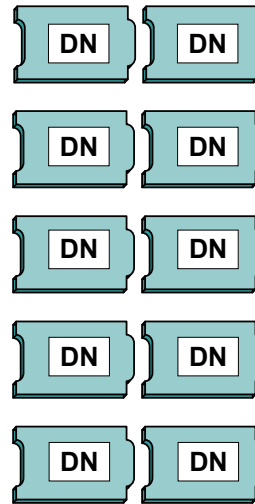
The maximum number of ephone-dns that can be configured is based upon the hardware platform that the Cisco CME software is installed on. The default of a newly installed Cisco CME system is that no ephone-dns can be configured. This is due to the command **max-dn** being set to zero. To allow the creation of ephone-dns set, use the command **max-dn ?** to determine the maximum allowable number of ephone-dns that the hardware supports. Set the value within that range to comply with the licensing.

Number of Ephone-dns (Cont.)



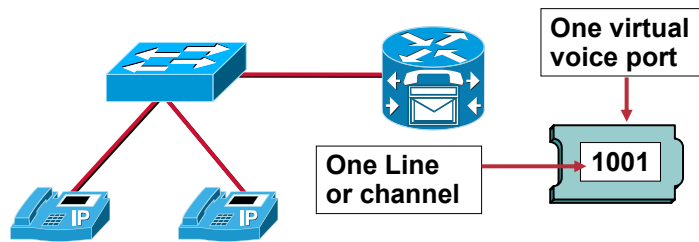
```
CMERouter(config-telephony)#max-dn 10
```

Attempting to create an 11th ephone-dn will fail



In this graphic, the command **max-dn 10** is used and then 10 ephone-dns are created. The 11th ephone-dn to be created will send an error message to the console of the Cisco CME router and the creation of the ephone-dn will fail until the number of ephone-dns allowed is raised.

Ephone-dn (Cont.): Basic Configuration



```
CMERouter(Config)#ephone-dn 7  
CMERouter(Config-ephone-dn)#number 1001
```

- Assigns a primary extension number to an ephone-dn

When an ephone-dn is configured with a single line, one virtual voice port is configured and, since only a single line exists, only one call to or from the ephone-dn can be active. The second call that arrives while a call is active will receive whatever is the defined busy treatment. Configuring an ephone-dn in this fashion mimics typical functionality of a keyswitch line. This ephone-dn will lack some of the advanced PBX features.