



Command Lists

Cisco Networking Academy Program

IP Telephone v1.0

Configuring Cisco CallManager Express (CME)

Lab Exercise Command List

The commands used in the lab exercises of this module are described in the following table:

Command	Description
enable	Enter privilege executive mode
configure terminal	Enters global configuration mode
hostname <i>name</i>	Assigns a host name to the router
no ip domain-lookup	Disables IP Domain Name System (DNS) host name translation
enable password <i>cisco</i>	Assigns a password to enter privilege exec mode
line vty <i>0 4</i>	Specifies the virtual terminal lines and enters line configuration mode
password <i>cisco</i>	Sets a password of cisco on the vtys
login	Enables logins on vty connections
logging synchronous	Enables synchronous logging of messages
line console <i>0</i>	Specifies the console line and enters line configuration mode
interface <i>fastethernet 0/0</i>	Enters FastEthernet 0/0 configuration mode
show running-config	Show the current configuration that is loaded and running in RAM on the router
show ip interface brief	Displays a summary of interface status and IP addresses. This command is executed in user mode.
encapsulation dot1q <i>vlan#</i>	Sets the trunking protocol to dot1q and specifies a vlan to associate the subinterface with.
ip address <i>10.X0.0.1</i> <i>255.255.255.0</i>	Sets the IP address on the FastEthernet 0/0 interface
no shutdown	Enables the interface
router eigrp <i>100</i>	Starts eigrp with an AS of 100
network <i>10.0.0.0</i>	Runs eigrp on all interfaces with a 10.0.0.0 network assigned to it
delete flash:vlan.dat	Erases VLAN information
erase startup-config	Erases the startup configuration in memory (Catalyst 2950)
reload	Reboots the switch or router
show startup-config	Displays the configuration file stored in the NVRAM
enable secret <i>password</i>	Sets password to control access to privilege level

Command	Description
interface <code>vlan1</code> ip address <code>ip-address</code> <code>mask</code>	Defines the IP address and subnet mask for the Catalyst switch
description <code>description</code>	Assigns a description to an interface
ip default-gateway <code>ip-address</code>	Assigns a router IP address as the default gateway
show interfaces <code>vlan 1</code>	Displays IP configuration on the Catalyst switch
interface <code>vlan 1</code>	Enters the interface configuration mode for VLAN 1 to set the switch management IP address
switchport trunk encapsulation <code>dot1q</code>	Specifies 802.1Q encapsulation on the trunk link
switchport mode <code>trunk</code>	Puts the interface into permanent trunking mode and negotiates to convert the link into a trunk link
switchport trunk native <code>vlan vlan-id</code>	Specify which VLAN is the native VLAN
show interface <code>interface-id</code> switchport	Displays the switchport configuration of the interface
show interface <code>trunk</code>	Displays the trunk configuration of the interface
ping (<code>ip-address</code> or <code>host name</code>)	Tests the reachability of a device. When in user mode, it sends five default ping packets to test reachability. When in privileged mode, type in only the command ping <enter> to enter extended ping mode. The user can customize ping parameters for testing.
vlan database	Enters VLAN configuration mode
vlan <code>vlan-id</code>	Creates a VLAN in either VLAN database or configuration mode
exit	Goes back one configuration level
switchport voice <code>vlan</code> <code>vlan-id</code>	Specifies the VLAN that contains voice traffic
copy running-config startup-config	Copies the switch running configuration file to another destination
show flash	Shows the contents of the flash
copy tftp flash	Copies an IOS images stored on a TFTP server into the flash memory
boot system flash <code>new_system_image_filename</code>	Boots the router from Flash memory using the system image file specified
show version	Displays the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images
telephony-service setup	Enters the setup utility
ip dhcp pool <code>CMEX</code>	Defines a DHCP pool and enters a DHCP pool mode
network <code>10.X0.0.0</code> <code>255.255.255.0</code>	Enters a network range and subnet mask to use to assign addresses and mask to the DHCP clients

Command	Description
default-router <i>10.X0.0.1</i>	Sets the default gateway that will be assigned to the DHCP clients
ip dhcp excluded-address <i>10.X0.0.1</i> <i>10.X0.0.10</i>	Sets a range of address to be excluded from the DHCP pool
option 150 ip <i>10.X0.0.1</i>	Set the TFTP server that will be assigned to the DHCP clients
archive tar /xtract <i>source destination</i>	Extracts the contents of a tar to the destination specified
tftp-server flash: <i>P00303020214.bin</i>	Configures the Flash memory device on the router as a TFTP server
telephony-service	Enters telephony server mode
max-ephones	Sets the maximum ephones that can be present
max-dn	Sets the maximum ephone-dn that can be present
load <i>model filename</i>	Loads the firmware and will use it for the 7960 and 7940 IP phones
ip source-address <i>10.X0.0.1 port 2000</i>	Sets the interface where Cisco CallManager Express will listen for skinny messages
create cnf-files	Creates XML files for configuring the IP Phones
keepalive 10	Sets the keep alive to 10 seconds
ephone-dn 1 dual-line	Enters and creates a ephone-dn
number <i>X000</i>	Assigns a directory number to the ephone-dn
type <i>7960</i>	Assign a model of IP phone to the ephone
name <i>Firstname</i> <i>Lastname</i>	Assigns a name to the ephone-dn
ephone 1	Enters and creates an ephone
mac-address <i>H.H.H</i>	Associates a physical device to an ephone
button <i>1:1</i>	Assigns an ephone-dn to a line on the ephone
debug ephone register	Displays Cisco IP phone registration activity
undebug all	Disables debugging
auto assign 2 to 2	Turns on auto registration and configuration of new ephone-dns

Voice Dial Plans, Configuring Voice Interfaces and Dial Peers

Command List

The commands used in this exercise are described in the following tables:

Command	Description
<code>enable</code>	Enters privilege exec mode
<code>configure terminal</code>	Enters global configuration mode
<code>voice-port mod/port</code>	Enters voice port mode
<code>cptone cptones</code>	Sets call progress tones
<code>ring cadence cadence</code>	Sets the ring on a voice port
<code>show voice port mod/port</code>	View the voice port configuration
<code>ring number 1-10</code>	Number of rings until the FXO port is answered
<code>dial-peer voice tag pots</code>	Defines a dial peer and enter dial peer mode
<code>destination-pattern pattern</code>	Defines a pattern of digits on a dial peer
<code>port mod/port</code>	Associates a port to a dial peer
<code>forward-digits all</code>	Sets the dial peer to forward all digits to the destination
<code>connection plar extension</code>	Sets the voice port to forward to an extension without any digits being dialed
<code>isdn switch-type primary-ni</code>	Sets the ISDN switch type
<code>network-clock-participate wic slot</code>	Sets the WIC to get the clock from the router
<code>controller T1 module/port</code>	Enters T1 interface
<code>framing esf</code>	Sets the framing on the T1
<code>linecoding b8zs</code>	Sets the line coding to b8zs
<code>clock source line</code>	Sets the clocking to be obtained from the line
<code>pri-group timeslots 1-24</code>	Sets a PRI group with timeslots 1 - 24
<code>show interface serial mod/port:23</code>	Shows the serial interface status

Command	Description
<code>show isdn status</code>	Shows the ISDN switch type and the status of layer 1, 2, and 3
<code>show run begin telephony-service</code>	Displays the configuration beginning at the telephony-service section
<code>incoming called-number 20X5559...</code>	Associates the dial peer based on the called number
<code>direct-inward-dial</code>	Enables DID on the dial peer
<code>show controller serial mod/port</code>	Views the controller
<code>interface serial mod/port</code>	Enters interface configuration mode
<code>clock rate rate</code>	Sets the clock speed on a DCE serial interface
<code>ip address 10.100.0.X 255.255.255.0</code>	Sets and IP address and subnet mask on an interface
<code>no shutdown</code>	Enables an interface
<code>session target IPv4:IP</code>	Sets a VoIP target on a dial peer
<code>codec codec</code>	Sets the codec for a dial peer
<code>copy running-config startup-config</code>	Saves changes to NVRAM
<code>dial-peer cor custom</code>	Enters cor mode where name can be defined
<code>name name</code>	Defines a COR name
<code>dial-peer cor list listname</code>	Sets a COR list name
<code>member member</code>	Assigns a member to a COR list
<code>corlist incoming listname</code>	Assigns and inbound COR list to the dial peer or ephone-dn
<code>corlist outgoing listname</code>	Assign and outbound COR list to the dial peer or ephone-dn

Dial Peer Commands

Command	Description
<code>debug vpm signal</code>	Displays real-time voice port module signaling. This command is executed in privileged mode.
<code>debug vtsp dsp</code>	Displays digits as they are received by the voice port. This command is executed in privileged mode.
<code>destination-pattern string</code>	Configures a telephone number for this dial peer. This command is executed in dial-peer configuration mode.
<code>dial-peer hunt 0-7</code>	Specifies a hunt selection order for dial peers. This command is executed in global configuration mode.
<code>dial-peer voice tag pots</code>	Enters dial-peer configuration mode. This command is executed in global configuration mode.
<code>forward-digits</code>	Specifies which digits to forward for voice calls. This command is executed in dial-peer configuration mode.
<code>port port-number</code>	Configures the port for this dial peer. This command is executed in dial-peer configuration mode.
<code>preference 0-9</code>	Specifies the preferred order of a dial peer within a hunt group. This command is executed in dial-peer configuration mode.
<code>show call active voice</code>	Displays information on active calls. This command is executed in user mode.
<code>show dial-peer voice (tag) (summary)</code>	Displays dial-peer configuration information. This command is executed in user mode. The summary option is available in privileged mode only.
<code>show dialplan number number</code>	Displays which dial peer is matched when a particular telephone number is dialed. This command is executed in privileged mode.
<code>show voice call summary</code>	Displays summary information on active calls. This command is executed in user mode.

Voice Port Commands

Command	Description
<code>clock source source</code>	Specifies the clock source. This command is executed in controller configuration mode.
<code>controller t1 n</code>	Enters T1 controller configuration mode for the specified controller. This command is executed in global configuration mode.
<code>cptone country-code</code>	Sets the regional analog voice interface-related tone, ring, and cadence setting. This command is executed in voice-port configuration mode.
<code>default parameter</code>	Resets the value of the parameter to its default value. This command is executed in various configuration modes.
<code>ds0-group tag timeslots timeslot-list type signaling-type</code>	Specifies the DS0 timeslots that make up a logical voice port on a T1 or E1 controller and the signaling type for the DS0 group. This command is executed in controller configuration mode.
<code>framing sf/esf</code>	Specifies the framing type. This command is executed in controller configuration mode.
<code>linecode ami/b8zs</code>	Specifies the line code setting. This command is executed in controller configuration mode.
<code>ring cadence define pulse interval</code>	Sets the ring cadence for the FXS port. This defines how the telephone will ring. This command is executed in voice-port configuration mode.
<code>show voice port (summary)</code>	Views the voice port status and settings. Displays all default settings for each port. Specify a particular voice port to view only its settings. Use the summary option to view a summary table of the voice ports. This command is executed in user mode.
<code>timeouts initial secs</code>	Sets the number of seconds that the system will wait for the caller to input the first digit. This command is executed in voice-port configuration mode.
<code>voice-port port-number</code>	Enters voice-port configuration mode. This command is executed in global configuration mode.

Configuring CME Additional Features

Command List

The commands used in this exercise are described in the following table:

Command	Description
<code>enable</code>	Enter privilege executive mode
<code>configure terminal</code>	Enters global configuration mode
<code>ip http server</code>	Enables the HTTP server
<code>ip http path flash:</code>	Sets the HTTP server to use flash: as the root directory
<code>ip http authentication</code>	Sets the HTTP authentication method
<code>telephony-service</code>	Enters telephony service mode
<code>web admin system name username password cisco</code>	Sets the credentials for the system administrator
<code>dn-webedit</code>	Enables configuration of directory numbers through the Web interface
<code>time-webedit</code>	Allows setting of the Cisco CallManager Express router from the Web interface
<code>web admin customer name username password cisco</code>	Sets a username and password for the customer administrator
<code>show flash</code>	Shows the contents of flash
<code>ftp 10.X0.0.2</code>	Starts an FTP session to an FTP server
<code>web customize load filename</code>	Load a customized XML file
<code>copy source destination</code>	Copies a file from source to destination
<code>show running- configuration</code>	Show the current configuration that is loaded and running in RAM on the router
<code>username username password password</code>	Sets a username and password on an IP phone which can then be used to login to the phone user Web page
<code>description characters</code>	Sets the IP phone header bar

Command	Description
<code>system message text</code>	Sets a system text message that appears on the phone screens in Cisco CallManager Express
<code>number number</code>	Assigns a DN to an ephone-dn
<code>paging group ephone-dn, ephone-dn</code>	Sets a paging group that contains one or more paging ephone-dns
<code>show call active</code>	Views the active calls
<code>show call history</code>	Views the previous calls

Improving and Maintaining Voice Quality

Lab Exercise Command List

The commands used in the lab exercises of this module are described in the following tables:

Configuring AutoQoS Lab Router Commands

Command	Description
<code>show running-config</code>	To display the contents of the currently running configuration file
<code>ip cef</code>	To enable Cisco Express Forwarding (CEF) on the router
<code>interface interface-id</code>	Enter interface configuration mode and the physical interface identification
<code>auto qos voip</code>	To configure the AutoQoS-VoIP feature on an interface
<code>show auto qos [interface [interface-type]]</code>	To display the configurations created by the AutoQoS-VoIP feature on a specific interface or all interfaces
<code>show ip interface [brief] [type] [number]</code>	To list a summary of an interface IP information and status
<code>show interfaces multilink [interface-id]</code>	Displays the administrative and operational status of all interfaces or a specified interface
<code>clear counters</code>	To clear the interface counters
<code>encapsulation encapsulation-type</code>	To set the encapsulation method used by the interface
<code>copy running-config startup-config</code>	Save your entries in the configuration file

Configuring AutoQoS Lab Switch Commands

Command	Description
<code>interface interface-id</code>	Enter interface configuration mode and the physical interface identification
<code>auto qos voip</code>	To configure automatic quality of service (AutoQoS) for voice over IP (VoIP) within a QoS domain
<code>show auto qos [interface [interface-id]]</code>	Displays the automatic quality of service (AutoQoS) configuration that is applied
<code>copy running-config startup-config</code>	Save your entries in the configuration file