Cisco Unified Communications Manager TCP and UDP Port Usage

This chapter provides a list of the TCP and UDP ports that Cisco Unified Communications Manager uses for intracluster connections and for communication with external applications or devices. You will also find important information for the configuration of firewalls, Access Control Lists (ACLs), and quality of service (QoS) on a network when an IP Communications solution is implemented.

- Cisco Unified Communications Manager TCP and UDP Port Usage Overview, on page 1
- Port Descriptions, on page 3
- Port References, on page 16

Cisco Unified Communications Manager TCP and UDP Port Usage Overview

Cisco Unified Communications Manager TCP and UDP ports are organized into the following categories:

- Intracluster Ports Between Cisco Unified Communications Manager Servers
- Common Service Ports
- Ports Between Cisco Unified Communications Manager and LDAP Directory
- Web Requests From CCMAdmin or CCMUser to Cisco Unified Communications Manager
- Web Requests From Cisco Unified Communications Manager to Phone
- Signaling, Media, and Other Communication Between Phones and Cisco Unified Communications Manager
- Signaling, Media, and Other Communication Between Gateways and Cisco Unified Communications Manager
- Communication Between Applications and Cisco Unified Communications Manager
- Communication Between CTL Client and Firewalls
- Special Ports on HP Servers

See “Port Descriptions” for port details in each of the above categories.

Note Cisco has not verified all possible configuration scenarios for these ports. If you are having configuration problems using this list, contact Cisco technical support for assistance.

Port references apply specifically to Cisco Unified Communications Manager. Some ports change from one release to another, and future releases may introduce new ports. Therefore, make sure that you are using the correct version of this document for the version of Cisco Unified Communications Manager that is installed.

While virtually all protocols are bidirectional, directionality from the session originator perspective is presumed. In some cases, the administrator can manually change the default port numbers, though Cisco does not recommend this as a best practice. Be aware that Cisco Unified Communications Manager opens several ports strictly for internal use.

Installing Cisco Unified Communications Manager software automatically installs the following network services for serviceability and activates them by default. Refer to "Intracluster Ports Between Cisco Unified Communications Manager Servers" for details:

- Cisco Log Partition Monitoring (To monitor and purge the common partition. This uses no custom common port.)
- Cisco Trace Collection Service (TCTS port usage)
- Cisco RIS Data Collector (RIS server port usage)
- Cisco AMC Service (AMC port usage)

Configuration of firewalls, ACLs, or QoS will vary depending on topology, placement of telephony devices and services relative to the placement of network security devices, and which applications and telephony extensions are in use. Also, bear in mind that ACLs vary in format with different devices and versions.

Note You can also configure Multicast Music on Hold (MOH) ports in Cisco Unified Communications Manager. Port values for multicast MOH are not provided because the administrator specifies the actual port values.

Note The ephemeral port range for the system is 32768 to 61000. For more information, see http://www.cisco.com/c/en/us/support/security/asa-5500-series-next-generation-firewalls/tsd-products-support-series-home.html.

Note Make sure that you configure your firewall so that connections to port 22 are open, and are not throttled. During the installation of IM and Presence subscriber nodes, multiple connections to the Cisco Unified Communications Manager publisher node are opened in quick succession. Throttling these connections could lead to a failed installation.

Port Descriptions

Intracluster Ports Between Cisco Unified Communications Manager Servers

Table 1: Intracluster Ports Between Cisco Unified Communications Manager Servers

From (Sender)	To (Listener)	Destination Port	Purpose
Endpoint	Unified Communications Manager	514 / UDP	System logging se
Unified Communications Manager	Unified Communications Manager	443 / TCP	This port is used f communication be subscriber and pul COP file installati subscriber node.
Unified Communications Manager	RTMT	1090, 1099 / TCP	Cisco AMC Servi performance mon collection, logging
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1500, 1501 / TCP	Database connect TCP is the second connection)
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1510 / TCP	CAR IDS DB. CA listens on waiting f requests from the
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1511 / TCP	CAR IDS DB. An used to bring up a instance of CAR I upgrade.
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1515 / TCP	Database replicati nodes during insta
Cisco Extended Functions (QRT)	Unified Communications Manager (DB)	2552 / TCP	Allows subscriber Cisco Unified Cor Manager database notification
Unified Communications Manager	Unified Communications Manager	2551 / TCP	Intracluster comm between Cisco Ex Services for Activ determination
Unified Communications Manager (RIS)	Unified Communications Manager (RIS)	2555 / TCP	Real-time Informa (RIS) database se

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager (RTMT/AMC/SOAP)	Unified Communications Manager (RIS)	2556 / TCP	Real-time Informatio (RIS) database client RIS
Unified Communications Manager (DRS)	Unified Communications Manager (DRS)	4040 / TCP	DRS Primary Agent
Unified Communications Manager (Tomcat)	Unified Communications Manager (SOAP)	5001/TCP	This port is used by S monitor for Real Tim Monitoring Service.
Unified Communications Manager (Tomcat)	Unified Communications Manager (SOAP)	5002/TCP	This port is used by S monitor for Performa Monitor Service.
Unified Communications Manager (Tomcat)	Unified Communications Manager (SOAP)	5003/TCP	This port is used by S monitor for Control C Service.
Unified Communications Manager (Tomcat)	Unified Communications Manager (SOAP)	5004/TCP	This port is used by S monitor for Log Coll Service.
Standard CCM Admin Users / Admin	Unified Communications Manager	5005 / TCP	This port is used by S CDROnDemand2 ser
Unified Communications Manager (Tomcat)	Unified Communications Manager (SOAP)	5007 / TCP	SOAP monitor
Unified Communications Manager (RTMT)	Unified Communications Manager (TCTS)	Ephemeral / TCP	Cisco Trace Collectio Service (TCTS) -- the service for RTMT Tra Log Central (TLC)
Unified Communications Manager (Tomcat)	Unified Communications Manager (TCTS)	7000, 7001, 7002 / TCP	This port is used for communication betw Trace Collection Too and Cisco Trace Coll servlet.
Unified Communications Manager (DB)	Unified Communications Manager (CDLM)	8001 / TCP	Client database chang notification
Unified Communications Manager (SDL)	Unified Communications Manager (SDL)	8002 / TCP	Intracluster communi service
Unified Communications Manager (SDL)	Unified Communications Manager (SDL)	8003 / TCP	Intracluster communi service (to CTI)

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager	CMI Manager	8004 / TCP	Intracluster comm between Cisco Ur Communications CMI Manager
Unified Communications Manager (Tomcat)	Unified Communications Manager (Tomcat)	8005 / TCP	Internal listening Tomcat shutdown
Unified Communications Manager (Tomcat)	Unified Communications Manager (Tomcat)	8080 / TCP	Communication be used for diagnosti
Gateway	Unified Communications Manager	8090	HTTP Port for co between CuCM a (Cayuga interfae) Recording feature
Unified Communications Manager	Gateway		
Unified Communications Manager (IPSec)	Unified Communications Manager (IPSec)	8500 / TCP and UDP	Intracluster replic system data by IP Manager
Unified Communications Manager (RIS)	Unified Communications Manager (RIS)	8888 - 8889 / TCP	RIS Service Mana request and reply
Location Bandwidth Manager (LBM)	Location Bandwidth Manager (LBM)	9004 / TCP	Intracluster comm between LBMs
Unified Communications Manager Publisher	Unified Communications Manager Subscriber	22 / TCP	Cisco SFTP servi open this port wh new subscriber.
Unified Communications Manager	Unified Communications Manager	8443 / TCP	Allows access to C - Feature and Net between nodes.

Common Service Ports

Table 2: Common Service Ports

From (Sender)	To (Listener)	Destination Port	Purpose
Endpoint	Unified Communications Manager	7	Internet Control Message Protocol (ICMP) This protocol number carries echo-related traffic. It does not constitute a port as indicated in the column heading.
Unified Communications Manager	Endpoint		

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager (DRS, Call Detail Record)	SFTP server	22 / TCP	Send the backup data to SFTP server. (DRS Local Agent) Send the Call Detail Record data to SFTP server.
Endpoint	Unified Communications Manager (DHCP Server)	67 / UDP	Cisco Unified Communications Manager acting as a DHCP server **Note** Cisco does not recommend running DHCP server on Cisco Unified Communications Manager.
Unified Communications Manager	DHCP Server	68 / UDP	Cisco Unified Communications Manager acting as a DHCP client **Note** Cisco does not recommend running DHCP client on Cisco Unified Communications Manager. Configure Cisco Unified Communications Manager with static IP addresses instead.)
Endpoint or Gateway	Unified Communications Manager	69, 6969, then Ephemeral / UDP	TFTP service to phones and gateways
Endpoint or Gateway	Unified Communications Manager	6970 / TCP	TFTP between primary and proxy servers. HTTP service from the TFTP server to phones and gateways.
Unified Communications Manager	NTP Server	123 / UDP	Network Time Protocol (NTP)
SNMP Server	Unified Communications Manager	161 / UDP	SNMP service response (requests from management applications)

From (Sender)	To (Listener)	Destination Port	Purpose
CUCM Server SNMP Primary Agent application	SNMP trap destination	162 / UDP	SNMP traps
SNMP Server	Unified Communications Manager	199 / TCP	built-in SNMP agent listening port for SMUX support
Unified Communications Manager	DHCP Server	546 / UDP	DHCPv6. DHCP port for IPv6.
Unified Communications Manager Serviceability	Location Bandwidth Manager (LBM)	5546 / TCP	Enhanced Location CAC Serviceability
Unified Communications Manager	Location Bandwidth Manager (LBM)	5547 / TCP	Call Admission requests and bandwidth deductions
Unified Communications Manager	Unified Communications Manager	6161 / UDP	Used for communication between Primary Agent and Native Agent to process Native agent MIB requests
Unified Communications Manager	Unified Communications Manager	6162 / UDP	Used for communication between Primary Agent and Native Agent to forward notifications generated from Native Agent
Centralized TFTP	Alternate TFTP	6970 / TCP	Centralized TFTP File Locator Service
Unified Communications Manager	Unified Communications Manager	7161 / TCP	Used for communication between SNMP Primary Agent and subagents
SNMP Server	Unified Communications Manager	7999 / TCP	Cisco Discovery Protocol (CDP) agent communicates with CDP executable
Endpoint	Unified Communications Manager	443, 8443 / TCP	Used for Cisco User Data Services (UDS) requests
Unified Communications Manager	Unified Communications Manager	9050 / TCP	Service CRS requests through the TAPS residing on Cisco Unified Communications Manager

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager	Unified Communications Manager	61441 / UDP	Cisco Unified Communications Manager applications send out alarms to this port through UDP. Cisco Unified Communications Manager MIB agent listens on this port and generates SNMP traps per Cisco Unified Communications Manager MIB definition.
Unified Communications Manager	Unified Communications Manager	5060, 5061 / TCP	Provide trunk-based SIP services
Unified Communications Manager	Unified Communications Manager	7501	Used by Intercluster Lookup Service (ILS) for certificate based authentication.
Unified Communications Manager	Unified Communications Manager	7502	Used by ILS for password-based authentication.
Unified Communications Manager	Unified Communications Manager	9966	Used by Cisco push notification service to communicate between the nodes in the cluster when firewall is enabled.
--	--	8000-48200	ASR and ISR G3 platforms default port range.
		16384-32766	ISR G2 platform default port range.

Ports Between Cisco Unified Communications Manager and LDAP Directory

Table 3: Ports Between Cisco Unified Communications Manager and LDAP Directory

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager	External Directory	389, 636, 3268, 3269 / TCP	Lightweight Directory Access Protocol (LDAP) query to external directory (Active Directory, Netscape Directory)
External Directory	Unified Communications Manager	Ephemeral	

Web Requests From CCMAdmin or CCMUser to Cisco Unified Communications Manager

Table 4: Web Requests From CCMAdmin or CCMUser to Cisco Unified Communications Manager

From (Sender)	To (Listener)	Destination Port	Purpose
Browser	Unified Communications Manager	80, 8080 / TCP	Hypertext Transp (HTTP)
Browser	Unified Communications Manager	443, 8443 / TCP	Hypertext Transp over SSL (HTTPS

Web Requests From Cisco Unified Communications Manager to Phone

Table 5: Web Requests From Cisco Unified Communications Manager to Phone

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager • QRT • RTMT • Find and List Phones page • Phone Configuration page	Phone	80 / TCP	Hypertext Transp (HTTP)

Signaling, Media, and Other Communication Between Phones and Cisco Unified Communications Manager

Table 6: Signaling, Media, and Other Communication Between Phones and Cisco Unified Communications Manager

From (Sender)	To (Listener)	Destination Port	Purpose
Phone	DNS server	53/ TCP	Session Initiation Protocol (SIP) phones resolve the Fully Qualified Domain Name (FQDN) using a Domain Name System (DNS) **Note** By default, some wireless access points block TCP 53 port, which prevents wireless SIP phones from registering when CUCM is configured using FQDN.
Phone	Unified Communications Manager (TFTP)	69, then Ephemeral / UDP	Trivial File Transfer Protocol (TFTP) used to download firmware and configuration files
Phone	Unified Communications Manager	2000 / TCP	Skinny Client Control Protocol (SCCP)
Phone	Unified Communications Manager	2443 / TCP	Secure Skinny Client Control Protocol (SCCPS)
Phone	Unified Communications Manager	2445 / TCP	Provide trust verification service to endpoints.
Phone	Unified Communications Manager (CAPF)	3804 / TCP	Certificate Authority Proxy Function (CAPF) listening port for issuing Locally Significant Certificates (LSCs) to IP phones
Phone	Unified Communications Manager	5060 / TCP and UDP	Session Initiation Protocol (SIP) phone
Unified Communications Manager	Phone		

From (Sender)	To (Listener)	Destination Port	Purpose
Phone	Unified Communications Manager	5061 TCP	Secure Session Initiation Protocol (SIPS) phone
Unified Communications Manager	Phone		
Phone	Unified Communications Manager (TFTP)	6970 TCP	HTTP-based download of firmware and configuration files
Phone	Unified Communications Manager (TFTP)	6971, 6972 / TCP	HTTPS interface to TFTP. Phones use this port to download a secure configuration file from TFTP.
Phone	Unified Communications Manager	8080 / TCP	Phone URLs for XML applications, authentication, directories, services, and so on. You can configure these ports on a per-service basis.
Phone	Unified Communications Manager	9443 / TCP	Phone use this port for authenticated contact search.
Phone	Unified Communications Manager	9444	Phones use this port number to use the Headset Management feature.
iPhone/iPad (Webex App)	Unified Communications Manager	9560/Secure WebSocket	Webex App uses this port number for the LPNS feature.
IP VMS	Phone	16384 - 32767 / UDP	Real-Time Protocol (RTP), Secure Real-Time Protocol (SRTP) **Note** Cisco Unified Communications Manager only uses 24576-32767 although other devices use the full range.
Phone	IP VMS		

Signaling, Media, and Other Communication Between Gateways and Cisco Unified Communications Manager

Table 7: Signaling, Media, and Other Communication Between Gateways and Cisco Unified Communications Manager

From (Sender)	To (Listener)	Destination Port	Purpose
Gateway	Unified Communications Manager	47, 50, 51	Generic Routing Enca (GRE), Encapsulating Payload (ESP), Authe Header (AH). These p numbers carry encryp traffic. They do not c port as indicated in th heading.
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	500 / UDP	Internet Key Exchang for IP Security protoc establishment
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager (TFTP)	69, then Ephemeral / UDP	Trivial File Transfer P (TFTP)
Unified Communications Manager with Cisco Intercompany Media Engine (CIME) trunk	CIME ASA	1024-65535 / TCP	Port mapping service. in the CIME off-path deployment model.
Gatekeeper	Unified Communications Manager	1719 / UDP	Gatekeeper (H.225) R
Gateway	Unified Communications Manager	1720 / TCP	H.225 signaling servi H.323 gateways and I Trunk (ICT)
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	Ephemeral / TCP	H.225 signaling servi gatekeeper-controlled
Unified Communications Manager	Gateway		

From (Sender)	To (Listener)	Destination Port	Purpose
Gateway	Unified Communications Manager	Ephemeral / TCP	H.245 signaling s establishing voice data **Note** The H used b syste the ty gatew For IC the H range 1100
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	2000 / TCP	Skinny Client Co (SCCP)
Gateway	Unified Communications Manager	2001 / TCP	Upgrade port for 6 with Cisco Unifie Communications deployments
Gateway	Unified Communications Manager	2002 / TCP	Upgrade port for 6 with Cisco Unifie Communications deployments
Gateway	Unified Communications Manager	2427 / UDP	Media Gateway C Protocol (MGCP) control
Gateway	Unified Communications Manager	2428 / TCP	Media Gateway C Protocol (MGCP)
--	--	4000 - 4005 / TCP	These ports are us Real-Time Transp (RTP) and Real-T Control Protocol (for audio, video a channel when Cis Communications not have ports for
Gateway	Unified Communications Manager	5060 / TCP and UDP	Session Initiation gateway and Inter (ICT)
Unified Communications Manager	Gateway		

From (Sender)	To (Listener)	Destination Port	Purpose
Gateway	Unified Communications Manager	5061 / TCP	Secure Session Initiat Protocol (SIPS) gatev Intercluster Trunk (IC
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	16384 - 32767 / UDP	Real-Time Protocol (Secure Real-Time Pro (SRTP) **Note** Cisco Ur Commur Manager 24576-32 although devices u full rang
Unified Communications Manager	Gateway		

Communication Between Applications and Cisco Unified Communications Manager

Table 8: Communication Between Applications and Cisco Unified Communications Manager

From (Sender)	To (Listener)	Destination Port	Purpose
CTL Client	Unified Communications Manager CTL Provider	2444 / TCP	Certificate Trust List provider listening ser Cisco Unified Commu Manager
Cisco Unified Communications App	Unified Communications Manager	2748 / TCP	CTI application serve
Cisco Unified Communications App	Unified Communications Manager	2749 / TCP	TLS connection betw applications (JTAPI/T CTIManager
Cisco Unified Communications App	Unified Communications Manager	2789 / TCP	JTAPI application ser
Unified Communications Manager Assistant Console	Unified Communications Manager	2912 / TCP	Cisco Unified Commu Manager Assistant se (formerly IPMA)
Unified Communications Manager Attendant Console	Unified Communications Manager	1103 -1129 / TCP	Cisco Unified Commu Manager Attendant C (AC) JAVA RMI Reg server

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager Attendant Console	Unified Communications Manager	1101 / TCP	RMI server sends messages to client ports.
Unified Communications Manager Attendant Console	Unified Communications Manager	1102 / TCP	Attendant Consol server bind port -- sends RMI messa ports.
Unified Communications Manager Attendant Console	Unified Communications Manager	3223 / UDP	Cisco Unified Co Manager Attendar (AC) server line s receives ping and message from, an states to, the atten server.
Unified Communications Manager Attendant Console	Unified Communications Manager	3224 / UDP	Cisco Unified Co Manager Attendar (AC) clients regis AC server for line state information.
Unified Communications ManagerAttendant Console	Unified Communications Manager	4321 / UDP	Cisco Unified Co Manager Attendar (AC) clients regis server for call co
Unified Communications Manager with SAF/CCD	IOS Router running SAF image	5050 / TCP	Multi-Service IOS running EIGRP/S
Unified Communications Manager	Cisco Intercompany Media Engine (IME) Server	5620 / TCP Cisco recommends a value of 5620 for this port, but you can change the value by executing the add ime vapserver or set ime vapserver port CLI command on the Cisco IME server.	VAP protocol use communicate to t Intercompany Me server.
Cisco Unified Communications App	Unified Communications Manager	8443 / TCP	AXL / SOAP API programmatic rea writes to the Cisc Communications database that third as billing or telepl management appl

Communication Between CTL Client and Firewalls

Table 9: Communication Between CTL Client and Firewalls

From (Sender)	To (Listener)	Destination Port	Purpose
CTL Client	TLS Proxy Server	2444 / TCP	Certificate Trust List provider listening ser ASA firewall

Communication Between Cisco Smart Licensing Service and Cisco Smart Software Manager

Cisco Smart Licensing Service in Unified Communications Manager sets up direct communication with Cisco Smart Software Manager through Call Home.

Table 10: Communication Between Cisco Smart Licensing Service and Cisco Smart Software Manager

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager (Cisco Smart Licensing Service)	Cisco Smart Software Manager (CSSM)	443 / HTTPS	Smart Licensing Service sends the license usage to CSSM to check whether Unified CM is a complaint or not.

Special Ports on HP Servers

Table 11: Special Ports on HP Servers

From (Sender)	To (Listener)	Destination Port	Purpose
Endpoint	HP SIM	2301 / TCP	HTTP port to HP age
Endpoint	HP SIM	2381 / TCP	HTTPS port to HP ag
Endpoint	Compaq Management Agent	25375, 25376, 25393 / UDP	COMPAQ Manageme extension (cmaX)
Endpoint	HP SIM	50000 - 50004 / TCP	HTTPS port to HP SI

Port References

Firewall Application Inspection Guides

ASA Series reference information

http://www.cisco.com/c/en/us/support/security/asa-5500-series-next-generation-firewalls/tsd-products-support-series-home.html

PIX Application Inspection Configuration Guides

http://www.cisco.com/c/en/us/support/security/pix-firewall-software/products-installation-and-configuration-guides-list.html

FWSM 3.1 Application Inspection Configuration Guide

http://www-author.cisco.com/c/en/us/td/docs/security/fwsm/fwsm31/configuration/guide/fwsm_cfg/inspct_f.html

IETF TCP/UDP Port Assignment List

Internet Assigned Numbers Authority (IANA) IETF assigned Port List

http://www.iana.org/assignments/port-numbers

IP Telephony Configuration and Port Utilization Guides

Cisco CRS 4.0 (IP IVR and IPCC Express) Port Utilization Guide

http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html

Port Utilization Guide for Cisco ICM/IPCC Enterprise and Hosted Editions

http://www.cisco.com/en/US/products/sw/custcosw/ps1001/products_installation_and_configuration_guides_list.html

Cisco Unified Communications Manager Express Security Guide to Best Practices

http://www.cisco.com/en/US/netsol/ns340/ns394/ns165/ns391/networking_solutions_design_guidance09186a00801f8e30.html

Cisco Unity Express Security Guide to Best Practices

http://www.cisco.com/en/US/netsol/ns340/ns394/ns165/ns391/networking_solutions_design_guidance09186a00801f8e31.html#wp41149

VMware Port Assignment List

TCP and UDP Ports for vCenter Server, ESX hosts, and Other Network Components Management Access