TCP and UDP Port Usage Guide for Cisco Unified Communications Manager, Release 9.1(1)

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Purpose

This document lists the TCP and UDP ports that Cisco Unified Communications Manager and the IM and Presence Service use for intracluster connections and communication with external applications or devices. Important information about the configuration of firewalls, Access Control Lists (ACLs), and quality of service (QoS) on a network when an IP Communications solution is implemented is also provided.

Organization

The following table shows the organization for this guide:

Table 1: Organization of TCP and Port Usage Guide for Cisco Unified Communications Manager

Part	Description
Part 1	"Cisco Unified Communications Manager TCP and UDP port usage" Provides information about TCP and port usage settings for Cisco Unified Communications Manager.
Part 2	"IM and Presence Service TCP and UDP port usage" Provides information about TCP and port usage settings for the IM and Presence Service.

Related documentation

Cisco strongly recommends that you review the following documents for more details about installing and maintaining Cisco Unified Communications Manager and the IM and Presence Service.

- For the latest Cisco Unified Communications Manager and IM and Presence Service requirements, see the *Release Notes for Cisco Unified Communications Manager*.
- *Installing Cisco Unified Communications Manager*

  This document describes procedures to follow when installing Cisco Unified Communications Manager and the IM and Presence Service.
- *Upgrade Guide for Cisco Unified Communications Manager*

  This document describes procedures to follow when upgrading Cisco Unified Communications Manager and the IM and Presence Service.
- *Cisco Unified Communications Operating System Administration Guide*

  This document provides information about using the Cisco Unified Communications Platform graphical user interface (GUI) to perform many common system- and network-related tasks.
- *Deployment Guide for IM and Presence Service on Cisco Unified Communications Manager*

  This document provides an overview of the configuration process for the IM and Presence Service.
- *Cisco Unified Serviceability Administration Guide*

  This document provides descriptions and procedures for configuring alarms, traces, SNMP, and so on, through Cisco Unified Serviceability. It also describes how to activate, start, and stop feature and network services.
- *Disaster Recovery System Administration Guide for Cisco Unified Communications Manager*

  This document provides an overview of the Disaster Recovery System and provides procedures for performing various backup-related tasks and restore-related tasks.

All related documentation can be found at the following URL: http://www.cisco.com/en/US/products/sw/voicesw/ps556/tsd_products_support_series_home.html

Obtain documentation and support

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

Cisco product security overview

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for

compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

Further information regarding U.S. export regulations may be found at

http://www.access.gpo.gov/bis/ear/ear_data.html

PART I

Cisco Unified Communications Manager TCP and UDP port usage

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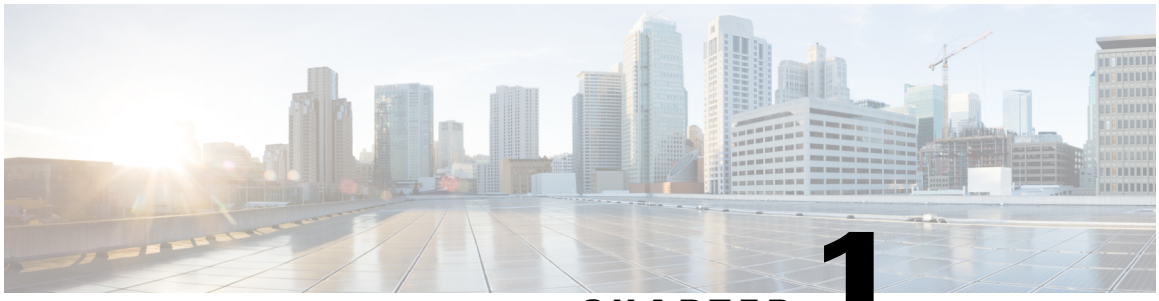

CHAPTER 1

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.

- Port usage, page 3
- Port descriptions, page 4
- References, page 17

Port usage

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, on page 4 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 Table 2: Intracluster Ports Between Cisco Unified Communications Manager Servers, on page 4 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 – 61000.

Port descriptions

Table 2: Intracluster Ports Between Cisco Unified Communications Manager Servers

From (Sender)	To (Listener)	Destination Port	Purpose
Endpoint	Unified Communications Manager	514 / UDP	System logging service

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager	RTMT	1090, 1099 / TCP	Cisco AMC Service for RTMT performance monitors, data collection, logging, and alerting
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1500, 1501 / TCP	Database connection (1501 / TCP is the secondary connection)
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1510 / TCP	CAR IDS DB. CAR IDS engine listens on waiting for connection requests from the clients.
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1511 / TCP	CAR IDS DB. An alternate port used to bring up a second instance of CAR IDS during upgrade.
Unified Communications Manager (DB)	Unified Communications Manager (DB)	1515 / TCP	Database replication between nodes during installation
Cisco Extended Functions (QRT)	Unified Communications Manager (DB)	2552 / TCP	Allows subscribers to receive Cisco Unified Communications Manager database change notification
Unified Communications Manager	Unified Communications Manager	2551 / TCP	Intracluster communication between Cisco Extended Services for Active/Backup determination
Unified Communications Manager (RIS)	Unified Communications Manager (RIS)	2555 / TCP	Real-time Information Services (RIS) database server
Unified Communications Manager (RTMT/AMC/SOAP)	Unified Communications Manager (RIS)	2556 / TCP	Real-time Information Services (RIS) database client for Cisco RIS
Unified Communications Manager (DRS)	Unified Communications ManagerDRS)	4040 / TCP	DRS Master Agent
Unified Communications Manager (Tomcat)	Unified Communications Manager (SOAP)	5007 / TCP	SOAP monitor

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager (RTMT)	Unified Communications Manager (TCTS)	Ephemeral / TCP	Cisco Trace Collection Tool Service (TCTS) -- the back end service for RTMT Trace and Log Central (TLC)
Unified Communications Manager (Tomcat)	Unified Communications Manager (TCTS)	7000, 7001, 7002 / TCP	This port is used for communication between Cisco Trace Collection Tool Service and Cisco Trace Collection servlet.
Unified Communications Manager	Certificate Manager	7070 / TCP	Certificate Manager service
Unified Communications Manager (DB)	Unified Communications Manager (CDLM)	8001 / TCP	Client database change notification
Unified Communications Manager (SDL)	Unified Communications Manager (SDL)	8002 / TCP	Intracluster communication service
Unified Communications Manager (SDL)	Unified Communications Manager (SDL)	8003 / TCP	Intracluster communication service (to CTI)
Unified Communications Manager	CMI Manager	8004 / TCP	Intracluster communication between Cisco Unified Communications Manager and CMI Manager
Unified Communications Manager (Tomcat)	Unified Communications Manager (Tomcat)	8005 / TCP	Internal listening port used by Tomcat shutdown scripts
Unified Communications Manager (Tomcat)	Unified Communications Manager (Tomcat)	8080 / TCP	Communication between servers used for diagnostic tests
Unified Communications Manager (IPSec)	Unified Communications Manager (IPSec)	8500 / TCP and UDP	Intracluster replication of system data by IPSec Cluster Manager
Unified Communications Manager (RIS)	Unified Communications Manager (RIS)	8888 - 8889 / TCP	RIS Service Manager status request and reply

From (Sender)	To (Listener)	Destination Port	Purpose
Location Bandwidth Manager (LBM)	Location Bandwidth Manager (LBM)	9004 / TCP	Intracluster communication between LBMs
Unified Communications Manager [Dialed Number Analyzer (DNA) initializing server]	JNIWrapper server	30000 / TCP	Dialed Number Analyzer (DNA) Port used by the server that handles DNA initialization. JNIWrapper functions respond to requests that the DNA Java service sends.

Table 3: 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		
Unified Communications Manager	Endpoint	22 / TCP	Secure FTP service, SSH access
Endpoint	Unified Communications ManagerDNS Server)	Ephemeral / UDP	Cisco Unified Communications Manager acting as a DNS server or DNS client **Note** Cisco recommends that Cisco Unified Communications Manager not act as a DNS server and that all IP telephony applications and endpoints use static IP addresses instead of hostnames.
Unified Communications Manager	DNS Server		

From (Sender)	To (Listener)	Destination Port	Purpose
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	Trivial File Transfer Protocol (TFTP) service to phones and gateways
Endpoint or Gateway	Unified Communications Manager	6970 / TCP	Trivial File Transfer Protocol (TFTP) between master 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 Master Agent application	SNMP trap destination	162 / UDP	SNMP traps
SNMP Server	Unified Communications Manager	199 / TCP	Native 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 Master Agent and Native Agent to process Native agent MIB requests
Unified Communications Manager	Unified Communications Manager	6162 / UDP	Used for communication between Master Agent and Native Agent to forward notifications generated from Native Agent
Unified Communications Manager	Unified Communications Manager	6666 / UDP	Netdump server
Centralized TFTP	Alternate TFTP	6970 / TCP	Centralized TFTP File Locator Service
Unified Communications Manager	Unified Communications Manager	7161 / TCP	Used for communication between SNMP Master Agent and subagents
SNMP Server	Unified Communications Manager	7999 / TCP	Cisco Discovery Protocol (CDP) agent communicates with CDP executable
Endpoint	Unified Communications Manager	8443 / TCP	Used for Cisco User Data Services (UDS) requests

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager	Unified Communications Manager	9050 / TCP	Service CRS requests through the TAPS residing on Cisco Unified Communications Manager
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	Ephemeral	Provide trunk-based SIP services

Table 4: Ports Between Cisco Unified Communications Manager and LDAP Directory

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

Table 5: 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 Transport Protocol (HTTP)
Browser	Unified Communications Manager	443, 8443 / TCP	Hypertext Transport Protocol over SSL (HTTPS)
Browser or CLI	Unified Communications Manager	2355, 2356 / TCP	Log audit events from the CLI and Web applications

Table 6: 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 Transport Protocol (HTTP)

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

From (Sender)	To (Listener)	Destination Port	Purpose
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	8080 / TCP	Phone URLs for XML applications, authentication, directories, services, etc. You can configure these ports on a per-service basis.
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.

From (Sender)	To (Listener)	Destination Port	Purpose
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		
Phone	Unified Communications Manager	5061 TCP and UDP	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
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		

Table 8: 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 Encapsulation (GRE), Encapsulating Security Payload (ESP), Authentication Header (AH). These protocols numbers carry encrypted IPSec traffic. They do not constitute a port as indicated in the column heading.
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	500 / UDP	Internet Key Exchange (IKE) for IP Security protocol (IPSec) establishment
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager (TFTP)	69, then Ephemeral / UDP	Trivial File Transfer Protocol (TFTP)
Unified Communications Manager with Cisco Intercompany Media Engine (CIME) trunk	CIME ASA	1024-65535 / TCP	Port mapping service. Only used in the CIME off-path deployment model.
Gatekeeper	Unified Communications Manager	1719 / UDP	Gatekeeper (H.225) RAS
Gateway	Unified Communications Manager	1720 / TCP	H.225 signaling services for H.323 gateways and Intercluster Trunk (ICT)
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	Ephemeral / TCP	H.225 signaling services on gatekeeper-controlled trunk
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	Ephemeral / TCP	H.245 signaling services for establishing voice, video, and data
Unified Communications Manager	Gateway		

From (Sender)	To (Listener)	Destination Port	Purpose
Gateway	Unified Communications Manager	2000 / TCP	Skinny Client Control Protocol (SCCP)
Gateway	Unified Communications Manager	2001 / TCP	Upgrade port for 6608 gateways with Cisco Unified Communications Manager deployments
Gateway	Unified Communications Manager	2002 / TCP	Upgrade port for 6624 gateways with Cisco Unified Communications Manager deployments
Gateway	Unified Communications Manager	2427 / UDP	Media Gateway Control Protocol (MGCP) gateway control
Gateway	Unified Communications Manager	2428 / TCP	Media Gateway Control Protocol (MGCP) backhaul
--	--	4000 - 4005 / TCP	These ports are used as phantom Real-Time Transport Protocol (RTP) and Real-Time Transport Control Protocol (RTCP) ports for audio, video and data channel when Cisco Unified Communications Manager does not have ports for these media.
Gateway	Unified Communications Manager	5060 / TCP and UDP	Session Initiation Protocol (SIP) gateway and Intercluster Trunk (ICT)
Unified Communications Manager	Gateway		
Gateway	Unified Communications Manager	5061 / TCP and UDP	Secure Session Initiation Protocol (SIPS) gateway and Intercluster Trunk (ICT)
Unified Communications Manager	Gateway		

From (Sender)	To (Listener)	Destination Port	Purpose
Gateway	Unified Communications Manager	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.
Unified Communications Manager	Gateway		

Table 9: 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 (CTL) provider listening service in Cisco Unified Communications Manager
Cisco Unified Communications App	Unified Communications Manager	2748 / TCP	CTI application server
Cisco Unified Communications App	Unified Communications Manager	2749 / TCP	TLS connection between CTI applications (JTAPI/TSP) and CTIManager
Cisco Unified Communications App	Unified Communications Manager	2789 / TCP	JTAPI application server
Unified Communications Manager Assistant Console	Unified Communications Manager	2912 / TCP	Cisco Unified Communications Manager Assistant server (formerly IPMA)
Unified Communications Manager Attendant Console	Unified Communications Manager	1103 -1129 / TCP	Cisco Unified Communications Manager Attendant Console (AC) JAVA RMI Registry server
Unified Communications Manager Attendant Console	Unified Communications Manager	1101 / TCP	RMI server sends RMI callback messages to clients on these ports.

From (Sender)	To (Listener)	Destination Port	Purpose
Unified Communications Manager Attendant Console	Unified Communications Manager	1102 / TCP	Attendant Console (AC) RMI server bind port -- RMI server sends RMI messages on these ports.
Unified Communications Manager Attendant Console	Unified Communications Manager	3223 / UDP	Cisco Unified Communications Manager Attendant Console (AC) server line state port receives ping and registration message from, and sends line states to, the attendant console server.
Unified Communications Manager Attendant Console	Unified Communications Manager	3224 / UDP	Cisco Unified Communications Manager Attendant Console (AC) clients register with the AC server for line and device state information.
Unified Communications ManagerAttendant Console	Unified Communications Manager	4321 / UDP	Cisco Unified Communications Manager Attendant Console (AC) clients register to the AC server for call control.
Unified Communications Manager with SAF/CCD	IOS Router running SAF image	5050 / TCP	Multi-Service IOS Router running EIGRP/SAF Protocol.
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 used to communicate to the Cisco Intercompany Media Engine server.

From (Sender)	To (Listener)	Destination Port	Purpose
Cisco Unified Communications App	Unified Communications Manager	8443 / TCP	AXL / SOAP API for programmatic reads from or writes to the Cisco Unified Communications Manager database that third parties such as billing or telephony management applications use.

Table 10: Communication Between CTL Client and Firewalls

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

Table 11: Special Ports on HP Servers

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

References

Firewall application inspection guides

ASA Series reference information

http://www.cisco.com/en/US/products/ps6120/tsd_products_support_series_home.html

PIX 6.3 Application Inspection Configuration Guide

http://www.cisco.com/en/US/docs/security/pix/pix63/configuration/guide/fixup.html

PIX 7.1 Application Inspection Configuration Guide

http://www.cisco.com/en/US/docs/security/asa/asa71/configuration/guide/inspect.html

FWSM 3.1 Application Inspection Configuration Guide

http://www.cisco.com/en/US/docs/security/fwsm/fwsm31/configuration/guide/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

PART II

IM and Presence Service TCP and UDP port usage

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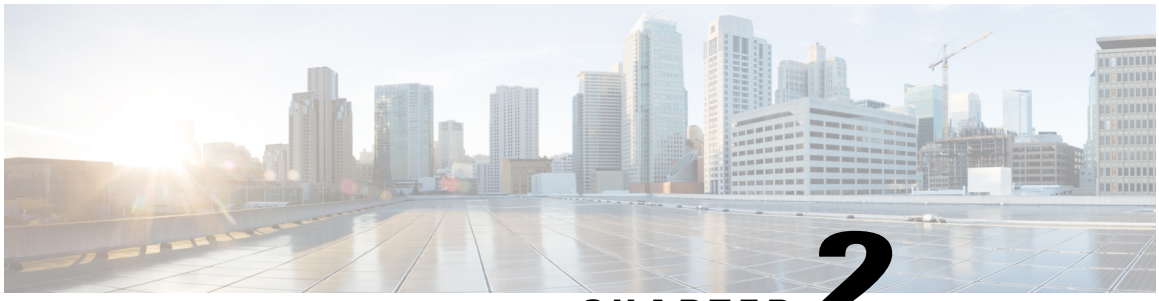

CHAPTER 2

Port Usage Information for the IM and Presence Service

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- Information collated in table, page 21
- IM and Presence service port list, page 22

Port usage overview

This document provides a list of the TCP and UDP ports that the IM and Presence Service uses for intracluster connections and for communications with external applications or devices. It provides 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.

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.

While virtually all protocols are bidirectional, this document gives directionality from the session originator perspective. 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 the IM and Presence Service opens several ports strictly for internal use.

Ports in this document apply specifically to the IM and Presence Service. 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 IM and Presence Service that is installed.

Configuration of firewalls, ACLs, or QoS will vary depending on topology, placement of 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.

Information collated in table

Table 1 defines the information collated in each of the tables in this document.

Table 12: Definition of Table Information

Table Heading	Description
From	The client sending requests to this port
To	The client receiving requests on this port
Role	A client or server application or process
Protocol	Either a Session-layer protocol used for establishing and ending communications, or an Application-layer protocol used for request and response transactions
Transport Protocol	A Transport-layer protocol that is connection-oriented (TCP) or connectionless (UDP)
Destination / Listener	The port used for receiving requests
Source / Sender	The port used for sending requests

IM and Presence service port list

The following tables show the ports that the IM and Presence Service uses for intracluster and intercluster traffic.

Table 13: IM and Presence Service Release 9.x Ports - SIP Proxy Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
SIP Gateway --- IM and Presence	IM and Presence --- SIP Gateway	SIP	TCP/UDP	5060	Ephemeral	Default SIP Proxy UDP and TCP Listener
SIP Gateway	IM and Presence	SIP	TLS	5061	Ephemeral	TLS Server Authentication listener port
IM and Presence	IM and Presence	SIP	TLS	5062	Ephemeral	TLS Mutual Authentication listener port
IM and Presence	IM and Presence	SIP	UDP / TCP	5049	Ephemeral	Internal port. Localhost traffic only.

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	IM and Presence	HTTP	TCP	8081	Ephemeral	Used for HTTP requests from the Config Agent to indicate a change in configuration.
Third-party Client	IM and Presence	HTTP	TCP	8082	Ephemeral	Default IM and Presence HTTP Listener. Used for Third-Party Clients to connect
Third-party Client	IM and Presence	HTTPS	TLS / TCP	8083	Ephemeral	Default IM and Presence HTTPS Listener. Used for Third-Party Clients to connect

Table 14: IM and Presence Service Release 9.x Ports - Presence Engine Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	IM and Presence (Presence Engine)	SIP	UDP / TCP	5070	Ephemeral	Default SIP UDP/TCP Listener port
IM and Presence (Presence Engine)	IM and Presence (Presence Engine)	Livebus	UDP	50000	Ephemeral	Internal port. Localhost traffic only. LiveBus messaging port. The IM and Presence Service uses this port for cluster communication.

Table 15: IM and Presence Service Release 9.x Ports - Cisco Tomcat WebRequests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
Browser	IM and Presence	HTTPS	TCP	8080	Ephemeral	Used for web access
Browser	IM and Presence	AXL / HTTPS	TLS / TCP	8443	Ephemeral	Provides database and serviceability access via SOAP

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
Browser	IM and Presence	HTTPS	TLS / TCP	8443	Ephemeral	Provides access to Web administration
Browser	IM and Presence	HTTPS	TLS / TCP	8443	Ephemeral	Provides access to User option pages
Browser	IM and Presence	SOAP	TLS / TCP	8443	Ephemeral	Provides access to Cisco Unified Personal Communicator, Cisco Unified Mobility Advantage, and third-party API clients via SOAP

Table 16: IM and Presence Service Release 9.x Ports - External Corporate Directory Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence ---------- External Corporate Directory	External Corporate Directory ---------- IM and Presence	LDAP	TCP	389	Ephemeral	Allows the Directory protocol to integrate with the external Corporate Directory. The LDAP port depends on the Corporate Directory (389 is the default). In case of Netscape Directory, customer can configure different port to accept LDAP traffic.
IM and Presence	External Corporate Directory	LDAPS	TCP	636	Ephemeral	Allows the Directory protocol to integrate with the external Corporate Directory. LDAP port depends on the Corporate Directory (636 is the default).

Table 17: IM and Presence Service Release 9.x Ports - Configuration Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (Config Agent)	IM and Presence (Config Agent)	TCP	TCP	8600	Ephemeral	Config Agent heartbeat port

Table 18: IM and Presence Service Release 9.x Ports - Certificate Manager Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	Certificate Manager	TCP	TCP	7070	Ephemeral	Internal port - Localhost traffic only

Table 19: IM and Presence Service Release 9.x Ports - IDS Database Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (Database)	IM and Presence (Database)	TCP	TCP	1500	Ephemeral	Internal IDS port for Database clients. Localhost traffic only.
IM and Presence (Database)	IM and Presence (Database)	TCP	TCP	1501	Ephemeral	Internal port - this is an alternate port to bring up a second instance of IDS during upgrade. Localhost traffic only.
IM and Presence (Database)	IM and Presence (Database)	XML	TCP	1515	Ephemeral	Internal port. Localhost traffic only. DB replication port

Table 20: IM and Presence Service Release 9.x Ports - IPSec Manager Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (IPSec)	IM and Presence (IPSec)	Proprietary	UDP/TCP	8500	8500	Internal port - cluster manager port used by the ipsec_mgr daemon for cluster replication of platform data (hosts) certs

Table 21: IM and Presence Service Release 9.x Ports - DRF Master Agent Server Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (DRF)	IM and Presence (DRF)	TCP	TCP	4040	Ephemeral	DRF Master Agent server port, which accepts connections from Local Agent, GUI, and CLI

Table 22: IM and Presence Service Release 9.x Ports - RISDC Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (RIS)	IM and Presence (RIS)	TCP	TCP	2555	Ephemeral	Real-time Information Services (RIS) database server. Connects to other RISDC services in the cluster to provide clusterwide real-time information
IM and Presence (RTMT/AMC/ SOAP)	IM and Presence (RIS)	TCP	TCP	2556	Ephemeral	Real-time Information Services (RIS) database client for Cisco RIS. Allows RIS client connection to retrieve real-time information

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (RIS)	IM and Presence (RIS)	TCP	TCP	8889	8888	Internal port. Localhost traffic only. Used by RISDC (System Access) to link to servM via TCP for service status request and reply

Table 23: IM and Presence Service Release 9.x Ports - SNMP Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
SNMP Server	IM and Presence	SNMP	UDP	161, 8161	Ephemeral	Provides services for SNMP-based management applications
IM and Presence	IM and Presence	SNMP	UDP	6162	Ephemeral	Native SNMP agent that listens for requests forwarded by SNMP master agents
IM and Presence	IM and Presence	SNMP	UDP	6161	Ephemeral	SNMP Master agent that listens for traps from the native SNMP agent, and forwards to management applications
SNMP Server	IM and Presence	TCP	TCP	7999	Ephemeral	Used as a socket for the cdp agent to communicate with the cdp binary
IM and Presence	IM and Presence	TCP	TCP	7161	Ephemeral	Used for communication between the SNMP master agent and subagents
IM and Presence	SNMP Trap Monitor	SNMP	UDP	162	Ephemeral	Sends SNMP traps to management applications
IM and Presence	IM and Presence	SNMP	UDP	Configurable	61441	Internal SNMP trap receiver

Table 24: IM and Presence Service Release 9.x Ports - Racoon Server Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
Gateway ---------- IM and Presence	IM and Presence ---------- Gateway	Ipsec	UDP	500	Ephemeral	Enables Internet Security Association and the Key Management Protocol

Table 25: IM and Presence Service Release 9.x Ports - System Service Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (RIS)	IM and Presence (RIS)	XML	TCP	8888 and 8889	Ephemeral	Internal port. Localhost traffic only. Used to listen to clients communicating with the RIS Service Manager (servM).

Table 26: IM and Presence Service Release 9.x Ports - DNS Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	DNS Server	DNS	UDP	53	Ephemeral	The port that DNS server listen on for IM and Presence DNS queries. To: DNS Server | From: IM and Presence

Table 27: IM and Presence Service Release 9.x Ports - SSH/SFTP Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	Endpoint	SSH / SFTP	TCP	22	Ephemeral	Used by many applications to get command line access to the server. Also used between nodes for certificate and other file exchanges (sftp)

Table 28: IM and Presence Service Release 9.x Ports - ICMP Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence --- Cisco Unified Communications Manager	Cisco Unified Communications Manager --- IM and Presence	ICMP	IP	Not Applicable	Ephemeral	Internet Control Message Protocol (ICMP). Used to communicate with the Cisco Unified Communications Manager server

Table 29: IM and Presence Service Release 9.x Ports - NTP Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	NTP Server	NTP	UDP	123	Ephemeral	Cisco Unified Communications Manager is the acting NTP server. Used by subscriber nodes to synchronize time with the publisher node.

Table 30: IM and Presence Service Release 9.x Ports - Microsoft Exchange Notify Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
Microsoft Exchange	IM and Presence	HTTP (HTTPu)	) WebDAV - HTTP /UDP/IP notifications 2) EWS - HTTP/TCP /IP SOAP notifications	IM and Presence server port (default 50020)	Ephemeral	Microsoft Exchange uses this port to send notifications (using NOTIFY message) to indicate a change to a particular subscription identifier for calendar events. Used to integrate with any Exchange server in the network configuration. Both ports are created. The kind of messages that are sent depend on the type of Calendar Presence Backend gateway(s) that are configured.

Table 31: IM and Presence Service Release 9.x Ports - SOAP Services Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (Tomcat)	IM and Presence (SOAP)	TCP	TCP	5007	Ephemeral	SOAP monitor port

Table 32: IM and Presence Service Release 9.x Ports - AMC RMI Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	RTMT	TCP	TCP	1090	Ephemeral	AMC RMI Object port. Cisco AMC Service for RTMT performance monitors, data collection, logging, and alerting.
IM and Presence	RTMT	TCP	TCP	1099	Ephemeral	AMC RMI Registry port. Cisco AMC Service for RTMT performance monitors, data collection, logging, and alerting.

Table 33: IM and Presence Service Release 9.x Ports - XCP Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
XMPP Client	IM and Presence	TCP	TCP	5222	Ephemeral	Client access port
IM and Presence	IM and Presence	TCP	TCP	5269	Ephemeral	Server to Server connection (S2S) port
Third-party BOSH client	IM and Presence	TCP	TCP	7335	Ephemeral	HTTP listening port used by the XCP Web Connection Manager for BOSH third-party API connections
IM and Presence (XCP Services)	IM and Presence (XCP Router	TCP	TCP	7400	Ephemeral	XCP Router Master Accept Port. XCP services that connect to the router from an Open Port Configuration (for example XCP Authentication Component Service) typically connect on this port.
IM and Presence (XCP Router	IM and Presence (XCP Router	UDP	UDP	5353	Ephemeral	MDNS port. XCP routers in a cluster use this port to discover each other.

Table 34: IM and Presence Service Release 9.x Ports - External Database (PostgreSQL) Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	PostgreSQL database	TCP	TCP	5432[1]	Ephemeral	PostgreSQL database listening port

1 This is the default port, however you can configure the PostgreSQL database to listen on any port.

Table 35: IM and Presence Service Release 9.x Ports - High Availability Requests

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence (Server Recovery Manager)	IM and Presence (Server Recovery Manager)	TCP	TCP	20075	Ephemeral	The port that Cisco Server Recovery Manager uses to provide admin rpc requests.
IM and Presence (Server Recovery Manager)	IM and Presence (Server Recovery Manager)	UDP	UDP	22001	Ephemeral	The port that Cisco Server Recovery Manager uses to communicate with its peer.

Table 36: IM and Presence Service Release 9.x Ports - In Memory Database Replication Messages

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	IM and Presence	Proprietary	TCP	9003	Ephemeral	Cisco Presence Datastore dual node subcluster replication.
IM and Presence	IM and Presence	Proprietary	TCP	9004	Ephemeral	Cisco Login Datastore dual node subcluster replication.
IM and Presence	IM and Presence	Proprietary	TCP	9005	Ephemeral	Cisco SIP Registration Datastore dual node subcluster replication.

Table 37: IM and Presence Service Release 9.x Ports - In Memory Database SQL Messages

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	IM and Presence	Proprietary	TCP	6603	Ephemeral	Cisco Presence Datastore SQL Queries.
IM and Presence	IM and Presence	Proprietary	TCP	6604	Ephemeral	Cisco Login Datastore SQL Queries.
IM and Presence	IM and Presence	Proprietary	TCP	6605	Ephemeral	Cisco SIP Registration Datastore SQL Queries.

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	IM and Presence	Proprietary	TCP	6606	Ephemeral	Cisco Route Datastore SQL Queries.

Table 38: IM and Presence Service Release 9.x Ports - In Memory Database Notification Messages

From (Sender)	To (Listener)	Protocol	Transport Protocol	Destination / Listener	Source / Sender	Remarks
IM and Presence	IM and Presence	Proprietary	TCP	6607	Ephemeral	Cisco Presence Datastore XML-based change notification.
IM and Presence	IM and Presence	Proprietary	TCP	6608	Ephemeral	Cisco Login Datastore XML-based change notification.
IM and Presence	IM and Presence	Proprietary	TCP	6609	Ephemeral	Cisco SIP Registration Datastore XML-based change notification.
IM and Presence	IM and Presence	Proprietary	TCP	6610	Ephemeral	Cisco Route Datastore XML-based change notification.

See the *Cisco Unified Serviceability Administration Guide* for information about SNMP.

Glossary

AXL / SOAP

Cisco Unified Communications XML Layer / Simple Object Access Protocol – API that applications use to read from or write to the Cisco Unified Communications Manager database.

CAPF

Certificate Authority Proxy Function – Used to load X.509 digital certificates into IP phones.

CDLM

Cisco Database Layer Monitor – Used to synchronize the database with what is running in active memory.

CTI

Computer Telephony Integration—Provides a link between telephone systems and computers to facilitate incoming and outgoing call handling and control; the physical link between a telephone and server.

CTL Client

Certificate Trust List Client—Application that creates the Certificate Trust List that gets loaded into IP phones. This plug-in comes with Cisco Unified Communications Manager and can be run on any computer that has IP connectivity to all Cisco Unified Communications Managers in the cluster and has a USB port.

DRF

Disaster Recovery Framework

Ephemeral Ports

In virtually all cases, source ports are ephemeral, meaning random within a specified range. When an outgoing request is made, the application solicits the host device for a port from its ephemeral pool. In a few cases, the destination port is also ephemeral, meaning that both the source and destination ports are random.

JTAPI

Java Telephony Application Program Interface—Sun Microsystems telephony programming interface for Java. It provides a set of classes and interfaces that provide access to call control and telephony device control as well as media and administrative services.

LDAP

Lightweight Directory Access Protocol—Used to validate user credentials against the designated directory service.

LDAPS

Lightweight Directory Access Protocol over TLS/SSL—Used to validate user credentials against the designated directory service.

IP VMS

Cisco IP Voice Media Streaming Application—Used for music on hold, annunciator, conference bridge, media termination point (MTP), and so on.

RIS

Real-Time Information Services database—Used by the Real-Time Monitoring Tool (RTMT) in the Serviceability application.

RTMT

Real-Time Monitoring Tool

SDL

Signal Distribution Layer Link—Used for intracluster communications.

SOAP

Simple Object Access Protocol

TCTS

Trace Collection Tool Service—The backend service for RTMT Trace and Log Central (TLC)

TFTP

Trivial File Transfer Protocol—Used to load firmware and configurations into phones, gateways, and so on.

Tomcat

Web server