



# IP Communications Required by Cisco Unity Connection

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### Service Ports

[Table 1: TCP and UDP Ports Used for Inbound Connections to Cisco Unity Connection](#) lists the TCP and UDP ports that are used for inbound connections to the Cisco Unity Connection server, and ports that are used internally by Unity Connection.

**Table 1: TCP and UDP Ports Used for Inbound Connections to Cisco Unity Connection**

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
TCP: 20500, 20501, 20502, 19003, 1935	Open only between servers in a Unity Connection cluster	CuCsMgr/Unity Connection Conversation Manager	cucsmgr	Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: 21000–21512	Open	CuCsMgr/Unity Connection Conversation Manager	cucsmgr	IP phones must be able to connect to this range of ports on the Unity Connection server for some phone client applications.

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
TCP: <b>5000</b>	Open	CuCsMgr/Unity Connection Conversation Manager	cucsmgr	Opened for port-status monitoring read-only connections. Monitoring must be configured in Connection Administration before any data can be seen on this port (Monitoring is off by default).  Administration workstations connect to this port.
TCP and UDP ports allocated by administrator for SIP traffic.  TCP ports 5001, 5002, 5003 and 5004 are open.  Possible ports are <b>5060–5199</b>	Open	CuCsMgr/Unity Connection Conversation Manager	cucsmgr	Unity Connection SIP Control Traffic handled by conversation manager.  SIP devices must be able to connect to these ports.
TCP: 20055	Open only between servers in a Unity Connection cluster	CuLicSvr/Unity Connection License Server	culic	Restricted to localhost only (no remote connections to this service are needed).
TCP: 1502, 1503 (“ciscounity_tcp” in /etc/services)	Open only between servers in a Unity Connection cluster	unityoninit/Unity Connection DB	root	Servers in a Unity Connection cluster must be able to connect to each other on these database ports.  For external access to the database, use CuDBProxy.
TCP: <b>143, 993, 7993, 8143, 8993</b>	Open	CuImapSvr/Unity Connection IMAP Server	cuimapsvr	Client workstations must be able to connect to ports 143 and 993 for IMAP inbox access, and IMAP over SSL inbox access.
TCP: <b>25, 8025</b>	Open	CuSmtprSvr/Unity Connection SMTP Server	cusmtprsvr	Servers delivering SMTP to Unity Connection port 25, such as other servers in a UC Digital Network.

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
TCP: 4904	Blocked; internal use only	SWIsvcMon (Nuance SpeechWorks Service Monitor)	openspeech	Restricted to localhost only (no remote connections to this service are needed).
TCP: 4900:4904	Blocked; internal use only	OSServer/Unity Connection Voice Recognizer	openspeech	Restricted to localhost only (no remote connections to this service are needed).
UDP: <b>16384–21511</b>	Open	CuMixer/Unity Connection Mixer	cumixer	VoIP devices (phones and gateways) must be able to send traffic to these UDP ports to deliver inbound audio streams.
UDP: 7774–7900	Blocked; internal use only	CuMixer/ Speech recognition RTP	cumixer	Restricted to localhost only (no remote connections to this service are needed).
TCP: 22000 UDP: 22000	Open only between servers in a Unity Connection cluster	CuSrm/ Unity Connection Server Role Manager	cusrm	Cluster SRM RPC. Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: 22001 UDP: 22001	Open only between servers in a Unity Connection cluster	CuSrm/ Unity Connection Server Role Manager	cusrm	Cluster SRM heartbeat. Heartbeat event traffic is not encrypted but is MAC secured. Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: <b>20532</b>	Open	CuDbProxy/ Unity Connection Database Proxy	cudbproxy	If this service is enabled it allows administrative read/write database connections for off-box clients. For example, some of the ciscounitytools.com tools use this port.  Administrative workstations would connect to this port.

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
TCP: 22	Open	Sshd	root	<p>Firewall must be open for TCP 22 connections for remote CLI access and serving SFTP in a Unity Connection cluster.</p> <p>Administrative workstations must be able to connect to a Unity Connection server on this port.</p> <p>Servers in a Unity Connection cluster must be able to connect to each other on this port.</p>
UDP: 161	Open	Snmpd Platform SNMP Service	root	—
UDP: 500	Open	Racoon ipsec isakmp (key management) service	root	<p>Using ipsec is optional, and off by default.</p> <p>If the service is enabled, servers in a Unity Connection cluster must be able to connect to each other on this port.</p>
TCP: 8500 UDP: 8500	Open	clm/cluster management service	root	<p>The cluster manager service is part of the Voice Operating System.</p> <p>Servers in a Unity Connection cluster must be able to connect to each other on these ports.</p>

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
UDP: 123	Open	Ntpd Network Time Service	ntp	<p>Network time service is enabled to keep time synchronized between servers in a Unity Connection cluster.</p> <p>The publisher server can use either the operating system time on the publisher server or the time on a separate NTP server for time synchronization. Subscriber servers always use the publisher server for time synchronization.</p> <p>Servers in a Unity Connection cluster must be able to connect to each other on this port.</p>
TCP: 5007	Open	Tomcat/Cisco Tomcat (SOAP Service)	tomcat	Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: 1500, 1501	Open only between servers in a Unity Connection cluster	cmonit/Cisco DB	informix	<p>These database instances contain information for LDAP integrated users, and serviceability data.</p> <p>Servers in a Unity Connection cluster must be able to connect to each other on these ports.</p>
TCP: 1515	Open only between servers in a Unity Connection cluster	dblrpm/Cisco DB Replication Service	root	Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: 8001	Open only between servers in a Unity Connection cluster	dbmon/Cisco DB Change Notification Port	database	Servers in a Unity Connection cluster must be able to connect to each other on these ports.

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
TCP: 2555, 2556	Open only between servers in a Unity Connection cluster	RisDC/Cisco RIS Data Collector	ccmservice	Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: 1090, 1099	Open only between servers in a Unity Connection cluster	Amc/Cisco AMC Service (Alert Manager Collector)	ccmservice	Performs back-end serviceability data exchanges 1090: AMC RMI Object Port 1099: AMC RMI Registry Port  Servers in a Unity Connection cluster must be able to connect to each other on these ports.
TCP: <b>80, 443, 8080, 8443</b>	Open	tomcat/Cisco Tomcat	tomcat	Both client and administrative workstations need to connect to these ports.  Servers in a Unity Connection cluster must be able to connect to each other on these ports for communications that use HTTP-based interactions like REST.  <b>Note</b> These ports support both the IPv4 and IPv6 addresses. However, the IPv6 address works only when Connection platform is configured in Dual (IPv4/IPv6) mode. Cisco Unity Connection Survivable Remote Site Voicemail SRSV supports these ports for IP communication.

Ports and Protocols <sup>1</sup>	Operating System Firewall Setting	Executable/Service or Application	Service Account	Comments
TCP: 8081, 8444	Open only between servers in HTTPS Networking	tomcat/Cisco Tomcat	tomcat	Servers in HTTPS Networking must be able to connect to each other on these ports for communications. Unity Connection HTTPS Directory Feeder service uses these ports for directory synchronization.  <b>Note</b> Unity Connection HTTPS Directory Feeder service supports only IPv4 mode.
TCP: 5001, 8005	Blocked; internal use only	tomcat/Cisco Tomcat	tomcat	Internal tomcat service control and axis ports.
TCP: <b>32768–61000</b>  UDP: <b>32768–61000</b>	Open	—	—	Ephemeral port ranges, used by anything with a dynamically allocated client port.
TCP: 7443	Open	jetty/Unity Connection Jetty	jetty	Exchange 2010 and above, single inbox: Jabber and Web Inbox notifications  <b>Note</b> You can open the port using CLI command.
TCP: 7080	Open	jetty/Unity Connection Jetty	jetty	<i>Exchange 2010 only, single inbox only:</i> EWS notifications of changes to Unity Connection voice messages.
UDP: 9291	Open	CuMbxSync/ Unity Connection Mailbox Sync Service	cumbxsync	<i>Single inbox only:</i> WebDAV notifications of changes to Unity Connection voice messages.
TCP: 6080	Open	CuCsMgr/Unity Connection Conversation Manager	cucsmgr	Video server must be able to connect to Unity Connection on this port for communications.

<sup>1</sup> Bold port numbers are open for direct connections from off-box clients.

## Outbound Connections Made by Unity Connection

[Table 2: TCP and UDP Ports Unity Connection Uses to Connect With Other Servers in the Network](#) lists the TCP and UDP ports that Cisco Unity Connection uses to connect with other servers in the network.

**Table 2: TCP and UDP Ports Unity Connection Uses to Connect With Other Servers in the Network**

Ports and Protocols	Executable	Service Account	Comments
TCP: 2000* (Default SCCP port) Optionally TCP port 2443* if you use SCCP over TLS. * Many devices and applications allow configurable RTP port allocations.	CuCsMgr	cucsMgr	Unity Connection SCCP client connection to Cisco Unified CM when they are integrated using SCCP.
UDP: 16384–32767* (RTP) * Many devices and applications allow configurable RTP port allocations.	CuMixer	cumixer	Unity Connection outbound audio-stream traffic.
UDP: 69	CuCsMgr	cucsMgr	When you are configuring encrypted SCCP, encrypted SIP, or encrypted media streams, Unity Connection makes a TFTP client connection to Cisco Unified CM to download security certificates.
TCP: 6972	CuCsMgr	cucsMgr	When you are configuring encrypted SIP or encrypted media streams, Unity Connection makes the HTTPS client connection with Cisco Unified CM to download ITL security certificates.
TCP: 53 UDP: 53	any	any	Used by any process that needs to perform DNS name resolution.



Ports and Protocols	Executable	Service Account	Comments
TCP: 53, and either 389 or 636	CuMbxSync CuCsMgr tomcat	cumbxsync cucsmgr tomcat	<p>Used when Unity Connection is configured for unified messaging with Exchange and one or more unified messaging services are configured to search for Exchange servers.</p> <p>Unity Connection uses port 389 when you select LDAP for the protocol used to communicate with domain controllers.</p> <p>Unity Connection uses port 636 when you select LDAPS for the protocol used to communicate with domain controllers.</p>
TCP: 80, 443 (HTTP and HTTPS)	CuMbxSync CuCsMgr tomcat	cumbxsync cucsmgr tomcat	<p><b>Note</b> These ports support both the IPv4 and IPv6 addresses.</p>
TCP: 80, 443, 8080, and 8443 (HTTP and HTTPS)	CuCsMgr tomcat	cucsmgr tomcat	<p>Unity Connection makes HTTP and HTTPS client connections to:</p> <ul style="list-style-type: none"> <li>• Other Unity Connection servers for Digital Networking automatic joins.</li> <li>• Cisco Unified CM for AXL user synchronization.</li> </ul> <p><b>Note</b> These ports support both the IPv4 and IPv6 addresses.</p> <p><b>Note</b> Cisco Unity Connection Survivable Remote Site Voicemail SRSV supports these ports for IP communication.</p>
TCP: 143, 993 (IMAP and IMAP over SSL)	CuCsMgr	cucsmgr	<p>Unity Connection makes IMAP connections to Microsoft Exchange servers to perform text-to-speech conversions of email messages in a Unity Connection user's Exchange mailbox.</p>

Ports and Protocols	Executable	Service Account	Comments
TCP: 25 (SMTP)	CuSmtprSvr	cusmtprsvr	Unity Connection makes client connections to SMTP servers and smart hosts, or to other Unity Connection servers for features such as VPIM networking or Unity Connection Digital Networking.
TCP: 21 (FTP)	ftp	root	The installation framework performs FTP connections to download upgrade media when an FTP server is specified.
TCP: 22 (SSH/SFTP)	CiscoDRFMaster sftp	drf root	The Disaster Recovery Framework performs SFTP connections to network backup servers to perform backups and retrieve backups for restoration.  The installation framework performs SFTP connections to download upgrade media when an SFTP server is specified.
UDP: 67 (DHCP/BootP)	dhclient	root	Client connections made for obtaining DHCP addressing.  Although DHCP is supported, Cisco highly recommends that you assign static IP addresses to Unity Connection servers.
TCP: 123 UDP: 123 (NTP)	Ntpd	root	Client connections made for NTP clock synchronization.
UDP: 514 TCP: 601	Syslog/Cisco Syslog Server	syslog	Unity Connection server must be able to send audit logs to remote syslog server through these ports

## Securing Transport Layer

Unity Connection uses Transport Layer Security(TLS) protocol and Secure Sockets Layer(SSL) protocol for signaling and client server communication. Unity Connection supports TLS 1.0, TLS 1.1 and TLS 1.2 for secure communication across various interfaces of Cisco Unity Connection. TLS 1.2 is the most secure and authenticated protocol for communication.

Depending upon the organization security policies and deployment capabilities, Unity Connection 12.0(1) and later allows you to configure the minimum TLS version. After configuring the minimum version of TLS,

Unity Connection supports the minimum configured version and higher versions of TLS. For example, if you configure TLS 1.1 as a minimum version of TLS, Unity Connection uses TLS 1.1 and higher versions for communication and rejects the request for a TLS version that is lower than the configured value. By default, TLS 1.0 is configured.

Before configuring minimum TLS version, ensure that all the interfaces of Unity Connection must be secured and use configured minimum TLS version or higher version for communication. However, you can configure the minimum TLS version for inbound interfaces of Unity Connection.

Table 3 lists the supported interfaces for which you can configure the minimum TLS version on Unity Connection.

**Table 3: Supported Interfaces for secure Communication**

Ports	Service or Application	Service Account	Comments
8443, 443, 8444	tomcat/Cisco Tomcat	tomcat	Both client and administrative workstations must connect to these ports. Servers in a Unity Connection cluster must be able to connect to each other on these ports for communications that use HTTP-based interactions like REST.
7443	jetty/Unity Connection Jetty	jetty	Exchange 2010 and above, single inbox: Jabber and Web Inbox notifications
993	CuImapSvr/Unity Connection IMAP Server	cuiimpsvr	Client workstations must be able to connect to port 993 for IMAP over SSL inbox access.
25	CuSmtpSvr/Unity Connection SMTP Server	cusmtpsvr	Servers delivering SMTP to Unity Connection port 25, such as other servers in a UC Digital Network.
5061-5199	CuCsMgr/Unity Connection Conversation Manager	cucsmgr	Unity Connection SIP Control Traffic handled by conversation manager. SIP devices must be able to connect to these ports.
LDAP (outbound interface)	CuMbxSync CuCsMgr tomcat	cumbxsync cucsmgr tomcat	Unity Connection uses port 636 when you select LDAPS for the protocol used to communicate with domain controllers.

For more information on supported inbound interfaces of Cisco Unity Connection, see "[Service Ports](#)" section.

## Configuring Minimum TLS Version

To configure the minimum TLS version in Cisco Unity Connection, execute the following CLI command:

- set tls min-version <tls minVersion>

In cluster, you must execute the CLI command on both publisher and subscriber.

In addition to this, you can execute the following CLI command to check the configured value of minimum TLS version on Unity Connection:

- show tls min-version

For detailed information on the CLI, see *Command Line Interface Reference Guide for Cisco Unified Communications Solutions* available at <http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html>.

**Caution**

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After configuring minimum TLS version, the Cisco Unity Connection server restart automatically.

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