Port Utilization in Unified CCX

Port Utilization Table Columns

The columns in the port utilization tables in this document describe the following:

Listener (Process or Application Protocol)

A value representing the server or application and where applicable, the open or proprietary application protocol.

Listener Protocol and Port

An identifier for the TCP or UDP port that the server or application is listening on, along with the IP address for incoming connection requests when acting as a server.

Remote Device (Process or Application Protocol)

The remote application or device making a connection to the server or service specified by the protocol; or listening on the remote protocol and port.

Remote Protocol and Port

The identifier for the TCP or UDP port that the remote service or application is listening on, along with the IP address for incoming connection requests when acting as the server.

Traffic Direction

The direction that traffic flows through the port: Inbound, Bidirectional, Outbound.

Note

- The operating system dynamically assigns the source port that the local application or service uses to connect to the destination port of a remote device. In most cases, this port is assigned randomly above TCP/UDP 1024.
- For security reasons, keep open only the ports mentioned in this guide and those required by your application. Keep the rest of the ports blocked.

System Services Port Utilization

Table 1: System Services Port Utilization

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
System Service	TCP 7	Editor	—	Bidirectional	- Echo for Editor - ICM Controller
System Service	TCP 22	—	—	Bidirectional	SFTP and SSH access
Tomcat (HTTP)	TCP 80	—	—	Bidirectional	- Web access
System Service	UDP 123	—	—	Bidirectional	NTP, network time sync
SNMP Agent	UDP 161	—	—	Inbound	Provide services for SNMP-based management applications
Tomcat	TCP 443	Client Browser	—	Bidirectional	Web access
AON Management Console (AMC) Service	TCP 1090	Intracluster communication	—	Bidirectional	Provide RTMT data collecting, logging and alerting functionalities (AMC RMI Object Port)
AON Management Console (AMC) Service	TCP 1099	Intracluster communication	—	Bidirectional	Provide RTMT data collecting, logging and alerting functionalities (AMC RMI Registry Port)
DBMON	TCP 1500	—	—	Bidirectional	This is the port where the IDS engine listens for DB clients

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
DBMON	TCP 1501	—	—	Bidirectional	- This is an alternate port to bring up a second instance of IDS during upgrade. - Localhost traffic only
DBL RPC	TCP 1515	Intracluster communication	—	Bidirectional	DBL RPC, this is used during installation to set up IDS replication between nodes
Real-Time Information Server (RIS) Data Collector service (RISDC)	TCP 2555	Intracluster communication	—	Bidirectional	Used by the RISDC platform service. The Real-time Information Server (RIS) maintains real-time Cisco Unified CM information such as device registration status, performance counter statistics, critical alarms generated, and so on. The Cisco RISDC service provides an interface for applications, such as RTMT, SOAP applications, Cisco Unified CM Administration and AMC to retrieve the information that is stored in all RIS nodes in the cluster.
RISDC	TCP 2556	Intracluster communication	—	Bidirectional	Allowed RIS client connection to retrieve real-time information
Disaster Recovery System (DRS)	TCP 4040	—	—	Bidirectional	Real-time service
Real-time service	TCP 5001	—	—	Bidirectional	SOAP Monitor Used by SOAP to monitor the Real Time Monitoring Service and fetch the Server information for selection of specific CM devices and other such activities.

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
Perfmon service	TCP 5002	—	—	Bidirectional	SOAP Monitor Used by SOAP to monitor the Performance Monitor Service for opening and closing sessions, collecting session data and fetching various other data.
Control center service	TCP 5003	—	—	Bidirectional	SOAP Monitor Used by SOAP to monitor the Control Center Service for activities like getting the Service Status and performing service deployment.
Log Collection Service	TCP 5004	—	—	Bidirectional	SOAP Monitor
System Service	TCP 5007	—	—	Bidirectional	SOAP Monitor - a troubleshooting tool for SOAP infrastructure
DBMON (CN)	TCP 8001	Intracluster communication	—	Bidirectional	DB change notification port.
Tomcat (HTTP)	TCP 8080	Client Browser	—	Bidirectional	- Client browser trying to access any of the Administration interfaces or User Options interface. - Web services client using RTMT, configuration APIs, and mobile supervisor applications.
Tomcat (HTTPS)	TCP 8443	Client Browser	—	Bidirectional	- Client browser trying to access any of the Administration interfaces or User Options interface - Web services client using RTMT, configuration APIs, and mobile supervisor applications - DB access via SOAP; Tomcat forwards the SOAP request to AXL
IPSec Manager daemon	TCP 8500	—	—	Bidirectional	Connectivity testing. Uses a proprietary protocol.

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
IPSec Manager daemon	UDP 8500	—	—	Bidirectional	Cluster replication of platform data (hosts) certificates etc. Uses a proprietary protocol.
Cisco Identity Service (Cisco IdS)	TCP 8553	—	—	—	HTTPS for Cisco IdS

Unified CCX and IP IVR Port Utilization

Table 2: Unified CCX Port Utilization

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
FIPPA Server	TCP 80	Intracluster communication (see table note)	—	Bidirectional	Used for page push to phone from the FIPPA Service
Cisco Unified CCX Socket.IO Service	TCP 12014	—	—	Bidirectional	This is the port where live-data reporting clients can connect to socket.IO server.
Cisco Unified CCX Socket.IO Service	TCP 12015	—	—	Bidirectional	This is the secure port where live-data reporting clients can connect to socket.IO server.
Informix Dynamic Server (IDS)	TCP 1504	External process like CUIC, WallBoard Client, External DB clients (like Squirrel or others for custom reporting) can connect	—	Bidirectional	Unified CCX database port
JTAPI Client (QBE)	TCP 2789	Unified CM	2748	Bidirectional	Provide services to CTI applications
Engine	UDP 5065	SIP gateway	—	Bidirectional	Communicate with SIP gateway
Notification Service	TCP 5222	Openfire/SMAC	BOSH	Bidirectional	OpenFire socket based client connection

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
Notification Service	TCP 5223	Finesse Server of other node in cluster	XMPP	Bidirectional	Socket based client connection between Finesse and Notification Service to pull presence information.
Cisco Identity Service Data Grid	TCP 5701	Intracluster communication	—	Bidirectional	Data or Service grid to manage Cisco IdS cluster nodes.
CVD	TCP 5900	CVD of other node in cluster	—	Bidirectional	Heartbeats between CVDs in the cluster
CVD ActiveMQ	TCP 6161	Internal	6161	Bidirectional	Publish JMS events across JMS network connectors in the cluster
CVD	TCP 6999	Engine, Tomcat, CVD, and Editor	—	Bidirectional	RMI Port
Notification Service	TCP 7071	Web Browser	—	Bidirectional	HTTP bind
Notification Service	TCP 7443	Web Browser	—	Bidirectional	Secure HTTP bind
Cisco Unified Intelligence Center Tomcat (HTTP)	TCP 8081	Client Browsers	—	Bidirectional	Client browser trying to access the Cisco Unified Intelligence Center web interface
Cisco Finesse Tomcat (HTTP)	TCP 8082	Cisco Finesse Agent/Supervisor Desktop, Cisco Finesse Administration Console, and REST APIs	—	Bidirectional	HTTP port to access Cisco Finesse Tomcat web applications. **Note** Cisco Finesse Agent/Supervisor Desktop and Cisco Finesse Administration Console accessed using port 8082 is automatically redirected to port 8445.
Cisco Unified Intelligence Center Tomcat (HTTPs)	TCP 8444	Client Browsers	—	Bidirectional	Client browser trying to access the Cisco Unified Intelligence Center web interface

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
Cisco Finesse Tomcat (HTTPs)	TCP 8445	Cisco Finesse Agent/Supervisor Desktop, Cisco Finesse Administration Console, and REST APIs	—	Bidirectional	Secured HTTP port to access Cisco Finesse Tomcat web applications.
Cisco Identity Service Tomcat (HTTPs)	TCP 8553	—	—	Bidirectional	Client browser trying to access the Cisco Identity Service Management web interface. Single Sign-On (SSO) components access this interface to know the operating status of Cisco IdS.
Engine	TCP 9080	—	—	Bidirectional	- Tomcat instance used by Unified CCX engine - Clients trying to access HTTP triggers or documents / prompts / grammars / live data
Engine	TCP 9443	—	—	Bidirectional	Secure port used by the Unified CCX engine to: - Respond to clients trying to access HTTPS triggers - Authenticate the live data clients
Unified CCX Engine, Cisco Mobile Supervisor	TCP 12028	—	—	Bidirectional	CTI Server
Cisco IP Voice Media Streaming application (RTP RTCP)	UDP 24576 ~ 32767	—	—	Bidirectional	- Audio media streaming - Kernel streaming device driver
	TCP 32768 ~ 61000	—	—	Bidirectional	Generic ephemeral TCP ports (see table note)
	UDP 32768 ~ 61000	—	—	Bidirectional	Generic ephemeral UDP ports (see table note)
Notification Service ActiveMQ	TCP 61616	Chat applications	—	Bidirectional	Notification Service — ActiveMQ OpenWire transport connector
Unified CCX	TCP 1994	—	—	Bidirectional	—

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic direction	Purpose
Unified IP IVR Cluster View Daemon (CVD)	TCP 1994	—	—	Bidirectional	—
Unified IP IVR Engine	TCP 5000	Unified ICM	—	Bidirectional	Using this port Unified ICM Subsystem listens to GED-125Clients. This port is modifiable

Table Notes

1. Intracluster communication in the table represents communication between Unified CCX servers in a cluster.
2. TCP Ephemeral ports are used to accept connections during Java RMI communication. Java RMI clients know which port it need to connect, because RMI first connects to RMI Registry (well-known port - 6999) and get the information which ephemeral port client need to connect to Unified

   CCX Administration page, Engine and CVD use RMI communication in CCX/IP-IVR, so TCP ephemeral port range is opened up for intracluster communication between these processes.
3. UDP Ephemeral ports are used to receive audio/video RTP streams; so UDP Ephemeral port range is opened for incoming connections for streaming RTP media from CTI ports.
4. Port 38983 is open only on Unified CCX systems that were upgraded from versions earlier than 9.0(1).
5. Intracluster communication in the table represents communication between Unified IP IVR servers in a cluster.
6. TCP Ephemeral ports are used to accept connections during Java RMI communication. Java RMI clients know which port it need to connect, because RMI first connects to RMI Registry (well-known port - 6999) and get the information which ephemeral port client need to connect to. AppAdmin, Engine and CVD use RMI communication in CCX/IP-IVR, so TCP ephemeral port range is opened up for intracluster communication between these processes.
7. UDP Ephemeral ports are used to receive audio/video RTP streams; so UDP Ephemeral port range is opened for incoming connections for streaming RTP media from CTI ports.

Finesse Port Utilization

Table 3: Cisco Finesse Tomcat

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic Direction	Notes
HTTP	TCP 80, 8082	Browser	—	Bidirectional	Unsecure port used for Finesse administration console, Finesse agent and supervisor desktop, Finesse Web Services, and Finesse Desktop Modules (gadgets) with the Finesse desktop.
HTTPS	TCP 443, 8445	Browser	—	Bidirectional	Secure port used for Finesse administration console, Finesse agent and supervisor desktop, Finesse Web Services, and Finesse Desktop Modules (gadgets) with the Finesse desktop.

Table 4: Cisco Finesse Notification Service

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic Direction	Notes
XMPP	TCP 5223	Browser, agent desktop	—	Bidirectional	Secure XMPP connection between the Finesse server and custom third party applications.
BOSH (HTTP)	TCP 7071	Browser, agent desktop	—	Bidirectional	Unsecure BOSH connection between the Finesse server and agent and supervisor desktops for communication over HTTP.
BOSH (HTTPS)	TCP 7443	Browser, agent desktop	—	Bidirectional	Secure BOSH connection between the Finesse server and agent and supervisor desktops for communication over HTTPS.

Table 5: Primary and Secondary Node Communication

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic Direction	Notes
XMPP	TCP 5222	—	—	Bidirectional	The primary and secondary Finesse servers use this XMPP connection to communicate with each other to monitor connectivity.

Third-Party (External) Web Server

Note Gadgets hosted on a third-party (external) web server are fetched through the Finesse server on the port exposed by said web server.

Unified Intelligence Center Port Utilization

Table 6: Web Requests to Cisco Unified Intelligence Center and Operation Administration Maintenance and Provisioning (OAMP)

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic Direction	Notes
Unified Intelligence Center	TCP 8081	Browser	—	—	HTTP - Unified Intelligence Center
	TCP 8444	Browser	—	—	HTTPS - Unified Intelligence Center

Table 7: Intracluster Ports Between Cisco Unified Intelligence Center

Listener (Process or Application Protocol)	Listener Protocol and Port	Remote Device (Process or Application Protocol)	Remote Protocol and Port	Traffic Direction	Notes
CUIC Reporting Process	UDP 54327 (Multicast)	Unified Intelligence Center node	—	—	Hazelcast Discovery
CUIC Reporting Process	TCP 57011	Unified Intelligence Center Node	—	—	Hazelcast

For more information on other port usages, see: http://www.cisco.com/c/en/us/support/unified-communications/unified-communications-manager-callmanager/products-maintenance-guides-list.html