

# Appendix D - Port Usage

This appendix contains port usage information.

- [Port Usage Tables](#)

## Port Usage Tables

The following sections provide port usage information for the Connect system. For easier printing and viewing, the information is divided into three parts, as shown in the table below.

**Table 80: Devices Included in Parts 1, 2, and 3**

Originating Device	Destination Device
SG-Generation Switch	Destination Devices Shown in Part 1 ( <a href="#">Table 81: Port Usage — Part 1</a> on page 243)
V-Switch & ST-Generation Switch	
Service Appliance (Conferencing and IM)	
IP Phone	
MGCP Phone	
Connect Client and Softphone	Destination Devices Shown in Part 2 ( <a href="#">Table 82: Port Usage — Part 2</a> on page 252)
Connect Client for Web and Softphone	
ECC Supervisor Client	
Linux DVS	
Windows DVS	
Headquarters Server	Destination Devices Shown in Part 3 ( <a href="#">Table 83: Port Usage — Part 3</a> on page 256)
Mobility Client (SMC)	
Mobility Router (SMR)	
D&M Server (Standalone)	
Edge Gateway	
Other (such as SIP endpoints)	

### Port Usage Part 1

The following table contains the first part of the port usage information for the Connect system.

Table 81: Port Usage — Part 1

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Service Appliance (Conferencing and IM)	IP Phone	
<b>Switch</b>	<b>Call Control</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Call Control</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Call Control</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 10000-10128 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Call Control</b> UDP 2427 MGCP <b>Media Stream</b> UDP 10000-10128 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>V-Switch</b>	<b>Call Control</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Call Control</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255 Transport: TCP 5432 – Xprt SMTP TCP 25 – SMTP	<b>Call Control</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 10000-10128 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Call Control</b> UDP 2427 MGCP <b>Media Stream</b> UDP 10000-10128 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255
<b>V-Switch</b>		<b>Transport:</b> TCP 5432 – Xprt <b>SMTP</b> TCP 25 – SMTP			

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Service Appliance (Conferencing and IM)	IP Phone	
<b>Service Appliance (Conferencing and IM)</b>	<b>Call Control</b>	<b>Call Control</b>	<b>Call Control</b>	<b>Media Stream</b>	<b>Media Stream</b>
	UDP 5440 – Location Service	UDP 5440 – Location Service	UDP 5440 – Location Service	UDP 10000-10128 RTP (configurable)	UDP 10000-10128 RTP (configurable)
	UDP 5441 – Call Control	UDP 5441 – Call Control	UDP 5441 – Call Control	<b>IP Path Trace</b>	<b>IP Path Trace</b>
	UDP 5443 – Bandwidth Manager	UDP 5443 – Bandwidth Manager	UDP 5443 – Bandwidth Manager	UDP 33434+255	ICMP 33434+255
	UDP 5445 – Admission Control	UDP 5445 – Admission Control	UDP 5445 – Admission Control		
	<b>Media Stream</b>	<b>Media Stream</b>	<b>Media Stream</b>		
UDP 10000-20000 RTP (configurable)	UDP 10000-20000 RTP (configurable)	UDP 10000-20000 RTP (configurable)			
<b>IP Path Trace</b>	<b>IP Path Trace</b>				
UDP 33434+255	UDP 33434+255				
<b>Service Appliance (Conferencing and IM)</b>			<b>CMCA (Web Share):</b> TCP/UDP 5450 Ping Sync TCP 80 HTTP Web share TCP 443 HTTPS Web share <b>Transport</b> TCP 5432 – Xprt <b>SMTP</b> TCP 25 – SMTP		

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>IP Phone</b>	<b>Call Control</b> TCP 5061 SIPS  <b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Call Control</b> TCP 5061 SIPS  <b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Peer SW Update</b> TCP 80 HTTP  <b>Media Stream</b> UDP 10000-10128 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 10000-10550 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute
<b>MGCP Phone</b>	<b>Call Control</b> UDP 2727 MGCP  <b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Call Control</b> UDP 2727 MGCP  <b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 10000-10128 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 10000-10550 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute
<b>Connect Client and Softphone</b>	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP 33434+500	<b>Media Stream</b> UDP 10000-10550 SRTP	<b>Media Stream</b> UDP 10000-10550 RTP
<b>Linux DVS</b>	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper  <b>Call Control</b> TMS RPC:  UDP 5458 SUNRPC Broadcast	<b>Call Control</b> TMS RPC:  UDP 5458 SUNRPC Broadcast	<b>Media Stream</b> UDP 10000-10128 RTP (configurable)  <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 10000-10550 RTP (configurable)  <b>IP Path Trace</b> UDP 33434+255

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>Linux DVS</b>	<b>Call Control</b> UDP 2427 MGCP – Media proxy UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control TCP 5452 RPC NCC commands UDP 5453 – Broadcasts	<b>SoftSwitch</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control TCP 5452 RPC/ NCC commands UDP 5453 - Broadcasts <b>Transport</b> TCP 5432 – CDS	<b>SoftSwitch</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control TCP 5452 RPC/ NCC commands UDP 5453 – Broadcasts <b>Transport</b> TCP 5432 – CDS		
<b>Linux DVS</b>	<b>Configuration Control (for VxWorks switches Only)</b> TCP 1024-65535 – Firmware download (Burn flash) <b>WSS call control (MGCP)</b> TCP 2727 – WSS to switch <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>WSS call control (MGCP)</b> TCP 2727 – WSS to switch <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>IP Path Trace</b> UDP 33434+255 <b>CAS-XMPP</b> TCP 5222 – XMPP/TLS		

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>Windows DVS</b>	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper  <b>Call Control</b> TMS RPC:  UDP 5458 SUNRPC Broadcast	<b>Call Control</b> TMS RPC:  UDP 5458 SUNRPC Broadcast	<b>Media Stream</b> UDP 10000-10128 RTP (configurable)  <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 10000-10550 RTP (configurable)  <b>IP Path Trace</b> UDP 33434+255
<b>Windows DVS</b>	<b>Call Control</b> UDP 2427 MGCP – Media proxy  UDP 5440 – Location Service  UDP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  TCP 5452 RPC NCC commands  UDP 5453 – Broadcasts	<b>SoftSwitch</b> UDP 5440 – Location Service  UDP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  TCP 5452 RPC/ NCC Commands  UDP 5453 – Broadcasts  <b>Transport</b> TCP 5432 – CDS	<b>SoftSwitch</b> UDP 5440 – Location Service  UDP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  TCP 5452 RPC/ NCC Commands  UDP 5453 – Broadcasts  <b>Transport</b> TCP 5432 – CDS		

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>Windows DVS</b>	<b>Configuration Control (for VxWorks switches only)</b>  TCP 1024-65535 – Firmware download (Burnflash)  <b>WSS call control (MGCP)</b>  TCP 2727 – WSS to switch  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b>  UDP 33434+255	<b>WSS call control (MGCP)</b>  TCP 2727 – WSS to switch  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b>  UDP 33434+255	<b>Transport</b>  TCP 5432 – CDS  <b>IP Path Trace</b>  UDP 33434+255		
<b>Headquarters Server</b>	<b>Port Mapper</b>  TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper	<b>Port Mapper</b>  TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper  <b>Call Control</b>  TMS RPC:  UDP 5458 SUNRPC Broadcast	<b>Call Control</b>  TMS RPC  UDP 5458 SUNRPC Broadcast	<b>Media Stream</b>  UDP 10000-10128 RTP (configurable)  <b>SoftSwitch</b>  <b>IP Path Trace</b>  UDP 33434+255	<b>Media Stream</b>  UDP 10000-10550 RTP (configurable)  <b>IP Path Trace</b>  UDP 33434+255



Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>Headquarters Server</b>	<b>Call Control</b> UDP 2427 MGCP – Media proxy UDP 5440 - Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control TCP 5452 RPC NCC commands UDP 5453 – Broadcasts	<b>Soft Switch</b> UDP 2427 MGCP – Media proxy UDP 5440 - Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control TCP 5452 RPC NCC commands UDP 5453 – Broadcasts	<b>Soft Switch</b> UDP 2427 MGCP – Media proxy UDP 5440 - Location Service UDP 5441 – Call Control UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control TCP 5452 RPC NCC commands UDP 5453 – Broadcasts		
<b>Headquarters Server</b>	<b>Configuration Control</b> TCP 1024-65535 – Firmware download. (Burnflash) <b>WSS call control (MGCP)</b> TCP 2727 – WSS to switch <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Transport</b> TCP 5432 - CDS <b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>WSS call control (MGCP)</b> TCP 2727 – WSS to switch <b>IP Path Trace</b> UDP 33434+255	<b>Transport</b> TCP 5432 – CDS <b>IP Path Trace</b> UDP 33434+255		
<b>Mobility Client (SMC)</b>	NA	NA	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)	<b>Media Stream</b> UDP 10000-10128 RTP (configurable)	<b>Media Stream</b> UDP 10000-10128 RTP (configurable)

Originating Device	Destination Device				MGCP Phone
	SG Switch	V-Switch ST Switch	Appliance (Conferencing and IM)	IP Phone	
<b>Mobility Router (SMR)</b>	TCP 5061 - SIPS  TCP/UDP 5060 - SIP  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)	TCP 5061 - SIPS  TCP/UDP 5060 - SIP  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)	<b>Media Stream</b>  UDP 10000-20000 RTP (configurable)  <b>Instant Messaging</b>  TCP 5222 - XMPP/TLS	<b>Media Stream</b>  UDP 10000-10128 RTP (configurable)	<b>Media Stream</b>  UDP 10000-10550 RTP (configurable)
<b>DM Server (Standalone)</b>	TCP 22 - SSH (RpCap Maintenance)	TCP 22 - SSH (RpCap Maintenance)	NA	TCP 22 - SSH (RpCap Maintenance)	NA
<b>Edge Gateway</b>	<b>TURN:</b>  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)	<b>TURN:</b>  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)	<b>TURN:</b>  <b>Media Stream</b>  UDP 10000-20000 RTP (configurable)	<b>TURN:</b>  <b>Media Stream</b>  UDP 10000-10128 RTP (configurable)	TBD
<b>Other (such as SIP endpoints)</b>	<b>SSH</b>  TCP 22	<b>SSH</b>  TCP 22	<b>SSH</b>  TCP 22	<b>SH</b>  TCP 22  <b>PAPI</b>  TCP 8086	<b>Telnet</b>  TCP 23

## Port Usage Part 2

The following table contains the second part of the port usage information for the Connect system.

Table 82: Port Usage — Part 2

Originating Device	Destination Device				
	ECC Supervisor Client	Mobility Client (SMC)	Mobility Router (SMR)	D&M Server (Standalone)	Edge Gateway
Switch	NA	<b>Media Stream</b> UDP 42000-42100 RTP <b>P Path Trace</b> UDP 33434+255	<b>SIP Lines and Trunk</b> UDP/TCP 5060- SIP TCP 5061 - SIPS UDP - 50000 - 60000 – SIP Lines <b>Media Stream</b> UDP 15000-32000 <b>IP Path Trace</b> UDP 33434+255	UDP 5060 - SIP	<b>TURN</b> <b>Media Stream</b> UDP 10000-15000 SRTP (configurable) <b>IP Path Trace</b> UDP 33434+255
V-Switch	NA	<b>Media Stream</b> UDP 42000-42100 RTP <b>IP Path Trace</b> UDP 33434+255	NA	NA	<b>TURN</b> <b>Media Stream</b> UDP 10000-15000 SRTP (configurable) <b>IP Path Trace</b> UDP 33434+255
Service Appliance (Conferencing and IM)	NA	<b>Media Stream</b> UDP 42000-42100 RTP <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 15000-32000 (RTP) <b>IP Path Trace</b> UDP 33434+255	UDP 5060 - SIP	<b>TURN</b> <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255
IP Phone	NA	<b>Media Stream</b> UDP 42000-42100 RTP <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 15000-32000 (SRTP) <b>IP Path Trace</b> ICMP Traceroute	NA	<b>RAST (for OFF-NET phones)</b> TCP/UDP 443 – RAST (on external interface)

Originating Device	Destination Device				
	ECC Supervisor Client	Mobility Client (SMC)	Mobility Router (SMR)	D&M Server (Standalone)	Edge Gateway
<b>MGCP Phone</b>	NA	<b>Media Stream</b> UDP 42000-42100 RTP <b>IP Path Trace</b> ICMP Traceroute	<b>Media Stream</b> UDP 15000-32000 (SRTP) <b>IP Path Trace</b> ICMP Traceroute	NA	<b>TURN</b> <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>IP Path Trace</b> ICMP Traceroute
<b>Connect Client and Softphone</b>	NA	<b>Media Stream</b> UDP 42000-42100 RTP (configurable)	<b>Media Stream</b> UDP 15000-32000 (SRTP)	NA	<b>TURN</b> <b>Signaling</b> TCP/UDP 443 – STUN and Media <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>Reverse Proxy</b> TCP 443 – HTTPS (Auth, Bootstrapper, CAS, Conferencing)
<b>Connect Client for Web and Softphone</b>	NA	NA	NA	NA	<b>TURN</b> <b>Signaling</b> TCP/UDP 443 – STUN & Media <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>Reverse Proxy</b> TCP 443 - HTTPS (Auth, Bootstrapper, CAS, Conferencing)

Originating Device	Destination Device				
	ECC Supervisor Client	Mobility Client (SMC)	Mobility Router (SMR)	D&M Server (Standalone)	Edge Gateway
<b>ECC Supervisor Client</b>	NA	NA	NA	NA	<b>HAProxy (not available yet)</b> <b>ECC Supervisor</b> TCP 31451-31452
<b>Mobility Client (SMC)</b>	NA	Video CMCP (Server) – TCP 5464 CMCP (Client) – TCP 5465 Media Stream UDP 42000-42100 RTP (configurable)	Call Control TCP 5061 - SIPS TCP/UDP 5060 – SIP Management TCP: 80 - http TCP: 443 – https RAST TCP/UDP 443 – RAST (on external interface) Media Stream UDP 15000-32000 RTP (configurable)	NA	NA
<b>Linux DVS</b>	NA	<b>Media Stream</b> UDP 42000-42100 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 15000-32000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	NA	<b>TURN:</b> <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>WSS Media Control</b> UDP 2223 – NG Allocator <b>IP Path Trace</b> UDP 33434+255

Originating Device	Destination Device				
	ECC Supervisor Client	Mobility Client (SMC)	Mobility Router (SMR)	D&M Server (Standalone)	Edge Gateway
Windows DVS	NA	<b>Media Stream</b> UDP 42000-42100 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 15000-32000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	NA	<b>TURN:</b> <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>WSS Media Control</b> UDP 2223 – NG Allocator <b>IP Path Trace</b> UDP 33434+255
Headquarters Server	NA	<b>Media Stream</b> UDP 42000-42100 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 15000-32000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	NA	<b>TURN:</b> <b>Media Stream</b> UDP 10000-15000 RTP (configurable) <b>WSS Media Control</b> UDP 2223 - NG Allocator <b>IP Path Trace</b> UDP 33434+255
Mobility Router (SMR)	NA	<b>Call Control</b> TCP 5061 - SIPS TCP/UDP 5060 – SIP <b>Media Stream</b> UDP 42000-42100 RTP (configurable)	NA	NA	<b>TURN:</b> <b>Media stream</b> UDP 10000-20000 RTP (configurable)
D&M Server (Standalone)	NA	NA	NA	<b>D&amp;M Offline Upgrade - TRANSIENT</b> TCP 4312 - Old MySQL D&M	NA

Originating Device	Destination Device				
	ECC Supervisor Client	Mobility Client (SMC)	Mobility Router (SMR)	D&M Server (Standalone)	Edge Gateway
Edge Gateway	NA	NA	Media stream UDP 10000-32000 RTP (configurable)	NA	TURN: Media Stream UDP 10000-20000 RTP (configurable)
Other (such as SIP) endpoints	NA	NA	SSH TCP 22	NA	NA

### Port Usage Part 3

The following table contains the third part of the port usage information for the Connect system.

Table 83: Port Usage — Part 3

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Switch	Media Stream UDP10000-10550 RTP IP Path Trace UDP 33434+255	NA	Port Mapper TCP 111 RPC Port Mapper UDP 111 RPC Port Mapper Call Control TMS RPC: TCP 5457 NCC Event port UDP 5458 SUNRPC Broadcast	Port Mapper TCP 111 RPC Port Mapper UDP 111 RPC Port Mapper Call Control TMS RPC: TCP 5457 NCC Event port	Port Mapper TCP 111 RPC Port Mapper UDP 111 RPC Port Mapper Call Control TMS RPC: TCP 5457 NCC Event port UDP 5458 SUNRPC Broadcast TCP/UDP 5500-5600	Configuration Control UDP 162 SNMP TRAP Call Control UDP 5060 SIP Media Stream UDP 1024-65535 RTP – for SIP IP Path Trace ICMP 33434+255

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Switch			<b>SoftSwitch</b> UDP 5442 – DRS UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control UDP 5446 – DRS keepalive <b>Configuration Control</b> TCP 21 FTP CTL – Boot files TCP 20 FTP DATA – Boot files	<b>SoftSwitch</b> UDP 5442 – DRS UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control UDP 5446 – DRS keepalive <b>Configuration Control</b> TCP 21 FTP CTL – Boot files TCP 20 FTP DATA – Boot files	<b>SoftSwitch</b> UDP 5442 – DRS UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control UDP 5446 – DRS keepalive <b>Configuration Control</b> TCP 21 FTP CTL – Boot files TCP 20 FTP DATA – Boot files	
Switch			<b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	<b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255	



Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
<b>V-Switch</b>	<b>Media Stream</b> UDP10000-10550 RTP  <b>IP Path Trace</b> UDP 33434+255	NA	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper  <b>Call Control</b> TMS RPC: TCP 5457 NCC Event port  UDP 5458 SUNRPC Broadcast	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper  <b>Call Control</b> TMS RPC: TCP 5457 NCC Event port  UDP 5458 SUNRPC Broadcast	<b>Port Mapper</b> TCP 111 RPC Port Mapper  UDP 111 RPC Port Mapper  <b>Call Control</b> TMS RPC: TCP 5457 NCC Event port  UDP 5458 SUNRPC Broadcast  TCP/UDP 5500-5600	<b>Configuration Control</b> UDP 67 DHCP Server Maintenance  UDP 162 SNMP TRAP  <b>Call Control</b> UDP 5060 SIP Media Stream  UDP 1024-65535 RTP – for SIP
<b>V-Switch</b>			<b>SoftSwitch</b> UDP 5440 – Location Service  UDP 5441 – Call Control  UDP 5442 – DRS  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b> UDP 5440 – Location Service  UDP 5441 – Call Control  UDP 5442 – DRS  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b> UDP 5440 – Location Service  UDP 5441 – Call Control  UDP 5442 – DRS  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>IP Path Trace</b> ICMP 33434+255 SMTP  TCP 25 – SMTP (third party for Virtual Machine notification)

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
V-Switch			<b>Database</b> TCP 4306 - MYSQLCC TCP 4308 - MYSQL config <b>Transport</b> TCP 5432 - Xprt <b>Configuration Control</b> TCP 21 FTP CTL - Boot files TCP 20 FTP DATA - Boot files	<b>Database</b> TCP 4306 - MYSQLCC TCP 4308 - MYSQL config <b>Transport</b> TCP 5432 - Xprt <b>Configuration Control</b> TCP 21 FTP CTL - Boot files TCP 20 FTP DATA - Boot files	<b>Database</b> TCP 4306 - MYSQLCC TCP 4308 - MYSQL config <b>Transport</b> TCP 5432 - Xprt <b>Configuration Control</b> TCP 21 FTP CTL - Boot files TCP 20 FTP DATA - Boot files	
V-Switch			<b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255 SMTP TCP 25 - SMTP	<b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255 SMTP TCP 25 - SMTP	<b>Media Stream</b> UDP 10000-20000 RTP (configurable) <b>IP Path Trace</b> UDP 33434+255 SMTP TCP 25 - SMTP	

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Service Appliance (Conferencing and IM)	<b>Media Stream</b> UDP10000-10550 RTP  <b>IP Path Trace</b> UDP 33434+255	Browser determined dynamic port (WebRTC)	<b>Call Control</b> TMS RPC: TCP 5457 NCC Event port UDP 5458 SUNRPC Broadcast  <b>SoftSwitch</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5442 – DRS UDP 5443 – Bandwidth Manager	<b>Call Control</b> TMS RPC: TCP 5457 NCC Event port UDP 5458 SUNRPC Broadcast  <b>SoftSwitch</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5442 – DRS UDP 5443 – Bandwidth Manager	<b>Call Control</b> TMS RPC: TCP 5457 NCC Event port UDP 5458 SUNRPC Broadcast  TCP/UDP 5500-5600 <b>SoftSwitch</b> UDP 5440 – Location Service UDP 5441 – Call Control UDP 5442 – DRS	<b>Configuration Control</b> UDP 162 SNMP TRAP  <b>Call Control</b> UDP 5060 SIP  <b>Media Stream</b> UDP 1024-65535 RTP – for SIP
Service Appliance (Conferencing and IM)			<b>SoftSwitch</b> UDP 5445 – Admission Control UDP 5446 – DRS keepalive  <b>Database</b> TCP 4306 MYSQLCC TCP 4308 – MYSQL config  <b>Transport</b> TCP 5432 – CDS	<b>SoftSwitch</b> UDP 5445 – Admission Control UDP 5446 – DRS keepalive  <b>Database</b> TCP 4306 MYSQLCC TCP 4308 – MYSQL config  <b>Transport</b> TCP 5432 – CDS	<b>SoftSwitch</b> UDP 5443 – Bandwidth Manager UDP 5445 – Admission Control UDP 5446 – DRS keepalive  <b>Database</b> UDP 5446 – DRS keepalive <b>Database</b> TCP 4306 MYSQLCC TCP 4308 – MYSQL config	<b>IP Path Trace</b> ICMP 33434+255 SMTP TCP 25 – SMTP (third party for email notification)

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Service Appliance (Conferencing and IM)			<b>ABC</b> TCP 80, 443 – ABC (for Exo-IM) <b>CAS</b> TCP 5447/5448– CAS (for Exo-IM) <b>Configuration Control</b> TCP 21 FTP CTL – Boot files TCP 20 FTP DATA – Boot files <b>IP Path TraceUDP</b> 33434+255	<b>ABC</b> TCP 80, 443 – ABC (for Exo-IM) <b>CAS</b> TCP 5447/5448– CAS (for Exo-IM) <b>Configuration Control</b> TCP 21 FTP CTL – Boot files TCP 20 FTP DATA – Boot files <b>IP Path TraceUDP</b> 33434+255	<b>Transport</b> TCP 5432 – CDS <b>Conferencing License</b> TCP 80 – HTTP <b>Voice Prompts</b> TCP 21 – FTP of phr files <b>ABC</b> TCP 80, 443 – ABC (for Exo-IM)	
Service Appliance (Conferencing and IM)					<b>CAS</b> TCP 5447/5448– CAS (for Exo-IM) <b>Configuration Control</b> TCP 21 FTP CTL – Boot files TCP 20 FTP DATA – Boot files <b>IP Path TraceUDP</b> 33434+255	

Originating Device	Destination Device						
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other	
IP Phone	<b>Media Stream</b> UDP10000-10550 RTP  <b>IP Path Trace</b> ICMP Traceroute	NA	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute File Download/ Linux DVS Update  TCP 80 HTTP  TCP 443 HTTPS  <b>ABC</b> TCP 80, 443 HTTPS	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute File Download/ WinDVS Update  TCP 80, 443 HTTPS  <b>ABC</b> TCP 80, 443 HTTPS	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute File Download/ WinHQ Update  TCP 80, 443 HTTPS  <b>ABC</b> TCP 80, 443 HTTPS	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute File Download/ WinHQ Update  TCP 80, 443 HTTPS	<b>Syslog Server</b> UDP 514 NTP Server  UDP 123 – This is the default port. Can be configurable.  UDP 61373 – RpCap end of capture
IP Phone			CAS  TCP 5447/5448 HTTPS	CAS  TCP 5447/5448 HTTPS	CAS  TCP 5447/5448 HTTPS		
MGCP Phone	<b>Media Stream</b> UDP10000-10550 RTP  <b>IP Path Trace</b> ICMP Traceroute	NA	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute  <b>FTP</b> TCP 21 – FTP	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute  <b>FTP</b> TCP 21 – FTP	<b>Media Stream</b> UDP 10000-20000 RTP (configurable)  <b>IP Path Trace</b> ICMP Traceroute  <b>FTP</b> TCP 21 – FTP	NA	

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Connect Client Softphone	<b>Media Stream</b> (if both clients are on same network) – Both audio & video  UDP 10000-10550 RTP (configurable)	NA	<b>Configuration Control</b>  TCP 5449, 5469 – TBD: webproxy, Mgmt API– TCP 80 HTTP – Online help  <b>WSS call (MGCP)</b>  TCP 4431 - WSS nginx  TCP 7777 - WSS internal only  TCP 9090, 8181 - Mgmt  TCP 2427 - Switch to WSS	<b>Configuration Control</b>  TCP 5449, 5469 – TBD: webproxy, Mgmt API– TCP 80 HTTP – Online help  <b>WSS call (MGCP)</b>  TCP 4431 - WSS nginx  TCP 7777 - WSS internal only  TCP 9090, 8181 - Mgmt  TCP 2427 - Switch to WSS	<b>Configuration Control</b>  TCP 5449, 5469 – TBD: webproxy, Mgmt API– TCP 80 HTTP – Online help  <b>WSS call (MGCP)</b>  TCP 4431 - WSS nginx  TCP 7777 - WSS internal only  TCP 9090, 8181 - Mgmt  TCP 2427 - Switch to WSS	NA
Connect Client Softphone			<b>Media Stream</b>  UDP 10000-20000 RTP (configurable)  <b>ABC</b>  TCP 80, 443 HTTPS  <b>CAS</b>  TCP 5447/5448 HTTPS  <b>Image Download</b>  TCP 80, 443	<b>Media Stream</b>  UDP 10000-20000 RTP (configurable)  <b>ABC</b>  TCP 80, 443 HTTPS  <b>CAS</b>  TCP 5447/5448 HTTPS  <b>Image Download</b>  TCP 80, 443	<b>Media Stream</b>  UDP 10000-20000 RTP (configurable)  <b>ABC</b>  TCP 80, 443 HTTPS  <b>CAS</b>  TCP 5447/5448 HTTPS  <b>Image Download</b>  TCP 80, 443	

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Linux DVS Media	<b>Stream UDP</b> 10000-10550 RTP (configurable)  <b>IP Path Trace</b>  UDP 33434+255	NA	<b>SoftSwitch</b>  UDP 5440 – Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b>  UDP 5440 – Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b>  UDP 5440 – Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>Voice Mail Notification</b>  TCP 25 SMTP
Linux DVS Media			<b>TMS</b>  UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery  TCP 5430 – TMS/DTAS interserver communication  <b>Distributed Voice Mail</b>  TCP 25 SMTP - Voice Mail transport  <b>Transport</b>  TCP 5432 – Xprt	<b>TMS</b>  UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery  TCP 5430 – TMS/DTAS interserver communication  <b>Distributed Voice Mail</b>  TCP 25 SMTP - Voice Mail transport  <b>Transport</b>  TCP 5432 – Xprt	<b>TMS</b>  UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery  TCP 5430 – TMS/DTAS interserver communication  <b>Distributed Voice Mail</b>  TCP 25 SMTP - Voice Mail transport  <b>Transport</b>  TCP 5432 – Xprt	

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
<b>Windows DVS</b>	<b>Stream UDP</b> 10000-10550 RTP (configurable)  <b>IP Path Trace</b>  UDP 33434+255	NA	<b>SoftSwitch</b>  UDP 5440 – Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b>  UDP 5440 – Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b>  UDP 5440 – Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>Voice Mail Notification</b>  TCP 25 SMTP
<b>Windows DVS</b>			<b>TMS</b>  UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery  TCP 5430 – TMS/DTAS interserver communication  <b>Distributed Voice Mail</b>  TCP 25 SMTP - Voice Mail transport  <b>Transport</b>  TCP 5432 – Xprt	<b>TMS</b>  UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery  TCP 5430 – TMS/DTAS interserver communication  <b>Distributed Voice Mail</b>  TCP 25 SMTP - Voice Mail transport  <b>Transport</b>  TCP 5432 – Xprt	<b>TMS</b>  UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery  TCP 5430 – TMS/DTAS interserver communication  <b>Distributed Voice Mail</b>  TCP 25 SMTP - Voice Mail transport	



Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
Windows DVS					<b>Database</b> TCP 4308 – config DB (RO via ODBC for DDB) (R11.x)  <b>CAS Session Manager (R11.x)</b> TCP 5449 – TMS to Data API to fulfill CSR  <b>Transport</b> TCP 5432 – Xprt	
HQ Server	<b>Stream UDP</b> 10000-10550 RTP (configurable)  <b>IP Path Trace</b> UDP 33434+255	NA	<b>SoftSwitch</b> UDP 5440 - Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>SoftSwitch</b> UDP 5440 - Location Service  TCP 5441 – Call Control  UDP 5443 – Bandwidth Manager  UDP 5445 – Admission Control  UDP 5446 – DRS keepalive	<b>CDR Offline Upgrade - TRANSIENT</b> TCP 4311 – Old MySQL CDR DB  <b>D&amp;M Offline Upgrade TRANSIENT</b> TCP 4312 – Old MySQL D&M DB	<b>Voice Mail Notification</b> TCP 25 SMTP  CDR TCP 3306 - CDR archive on remote server

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
HQ Server			<b>TMS</b> UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery TCP 5430 – TMS/ DTAS interserver communication  <b>WSS-SoftPhone (Int Prod)</b> TCP 4431 – WSS nginx (Keypush from HQ Key Notifier)	<b>TMS</b> UDP dynamic [1024-65535] – broadcast. TMSTMS disaster recovery TCP 5430 – TMS/ DTAS interserver communication  <b>WSS-SoftPhone (Int Prod)</b> TCP 4431 – WSS nginx (Keypush from HQ Key Notifier)	<b>ThirdParty Double-Take (If Configured)</b> TCP 8000 Heartbeat Transmit TCP 8005 Status Transmit TCP 8006 Stats Report	
HQ Server			<b>Distributed Voice Mail</b> TCP 25 SMTP – Voice Mail transport  <b>Transport</b> TCP 5432 – Xprt	<b>Distributed Voice Mail</b> TCP 25 SMTP – Voice Mail transport  <b>Transport</b> TCP 5432 – Xprt		
ECC Supervisor Client	NA	NA	NA	<b>ECC Supervisor</b> TCP 31451 - 31452	NA	NA
Mobility Client (SMC)	<b>Media Stream</b> UDP 10000-10550 RTP (configurable)	NA	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>ABC</b> TCP 80, 443  <b>CAS</b> TCP 5447/5448	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>ABC</b> TCP 80, 443  <b>CAS</b> TCP 5447/5448	<b>Media</b> UDP 10000-20000 RTP (configurable)  <b>ABC</b> TCP 80, 443  <b>CAS</b> TCP 5447/5448	NA

Originating Device	Destination Device					
	Connect Client and Softphone	Connect Client for Web and Softphone	Linux DVS	Windows DVS	HQ Server	Other
<b>Mobility Router (SMR)</b>	<b>Media Stream</b> UDP 10000-10550 RTP (configurable)	NA	<b>Media</b> UDP 10000-20000 RTP (configurable) <b>ABC</b> TCP 443 HTTPS <b>CAS</b> TCP 5447/5448 HTTP(S)	<b>Media</b> UDP 10000-20000 RTP (configurable) <b>ABC</b> TCP 443 HTTPS <b>CAS</b> TCP 5447/5448 HTTP(S)	<b>Media</b> UDP 10000-20000 RTP (configurable) <b>ABC</b> TCP 443 HTTPS <b>CAS</b> TCP 5447/5448 HTTP(S) <b>Data API</b> TCP 5449/4430 HTTP(S)	NA
<b>Edge Gateway</b>	<b>TURN: Media Stream</b> UDP 10000-10550 RTP (configurable)	<b>TURN:</b> Browser determined dynamic port (WebRTC)	<b>TURN: Media Stream</b> UDP 10000-10550 RTP (configurable)	<b>TURN: Media Stream</b> UDP 10000-10550 RTP (configurable)	<b>TURN: Media Stream</b> UDP 10000-10550 RTP (configurable)	NA
<b>Other</b>	NA	NA	<b>SSH</b> TCP 22	NA	<b>D2, D&amp;M</b> TCP 5478	NA