

NETWORK COMMUNICATION

This page provides a complete list of the ports and protocols that must be enabled on firewalls in order to ensure YSoft SafeQ 6 system functionality.

NETWORK COMMUNICATION OVERVIEW

Workstation to server communication (server inbound rules)

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Mandatory	TCP	80/443	HTTP/HTTPS	For access to the YSoft SafeQ administration/reporting web interface
Mandatory	TCP	9090/9443	HTTP/HTTPS	For access to the End User UI web interface
Optional (if using a workstation client)	TCP	9100	proprietary compressed 10 kB–1 GB per print job	Job reception from client workstations (TCP/raw communication)
Optional (If spooling on a server)	TCP	515	LPR 10 kB–1 GB per print job	Job reception from client workstations (LPR)
Optional/Recommended from Localhost (monitoring only)	TCP	19898	JMX	Management Service system health monitoring via JConsole Configurable by the <i>cmlJmxServerPort</i> property in YSoft SafeQ system settings.
Optional/Recommended from Localhost (monitoring only)	TCP	9696/9002	JMX	Management Service LDAP replicator system health monitoring via JConsole
Optional/Recommended from Localhost (monitoring only)	TCP	9898	JMX	SpoolerController system health monitoring via JConsole

Required?	Type	Port	Communication type data volume	Description (communication from the user)
				SpoolerController only: Configurable by the <i>orsJmxServerPort</i> property in YSoft SafeQ system settings
Optional/Recommended from Localhost (monitoring only)	TCP	9999	JMX	SpoolerController group system health monitoring via JConsole
Optional/Recommended from Localhost	TCP	9000	JMX	Management Service auxiliary internal port used by JMX server Management service only: Configurable by the <i>jmxRmiServerPort</i> property in YSoft SafeQ system settings
Optional/Recommended from Localhost	TCP	19044	JMX	The SpoolerController group service auxiliary internal port used by JMX server
Optional/Recommended from Localhost	TCP	4000	HTTP/HTTPS	Communication between Terminal Server and Workflow Processing System
Optional (If spooling on a server)	TCP	5559	YMQ	Communication between Non–spooling FlexiSpooler and Spooling FlexiSpooler
Mandatory on Site Server	TCP	5555	YMQ	Communication between FlexiSpooler (and its Desktop Interface) to Spooler Controller
Mandatory for a FlexiSpooler shared folder	TCP UDP	137/139/445 137/138	SMB	Shared folder for uploading jobs

Server to Printer Communication (Server Outbound Rules)

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Optional (required with server spooling)	TCP	631/80	IPP	Jobdata delivery to printer (IPP)
Optional (required with server spooling)	TCP	9100	RAW 10 kB–1 GB per print job	Job data delivery to printer (Raw TCP)
Optional (if using print data encryption)	TCP	80/443	IPP/SSL 10 kB–1 GB per print job	Job data delivery to printer (IPP over SSL)
Optional (if using LPR backend)	TCP	515	LPR 10 kB–1 GB per print job	Job data delivery to printer (LPR)
Optional (if using print data encryption)	TCP	9100	proprietary SSL 10 kB–1 GB per print job	Job data delivery to printer (compressed via YSoft SafeQ Terminal Professional)
Optional	UDP	64099	proprietary broadcast (only within one subnet)	YSoft SafeQ Terminal Professional / UltraLight discovery
Optional	TCP	4095	proprietary	YSoft SafeQ Terminal Professional / UltraLight remote configuration
Mandatory for embedded terminals	TCP	50001/50003	proprietary WS SSL	Embedded (KM, Xerox, Sharp) remote configuration
Mandatory with YSoft SafeQ Embedded	TCP	80, 443, 8080, 51443 64098	proprietary	YSoft SafeQ Embedded Terminal for Ricoh installation and automatic configuration used by RXOP libraries

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Terminal for Ricoh				YSoft SafeQ Embedded Terminal for Ricoh configuration
Mandatory for online print/copy tracking	UDP	161	SNMP	Online accounting of network printer MFD
Mandatory with YSoft SafeQ Embedded Terminal for Toshiba	TCP	49629, 49630	HTTP/HTTPS	YSoft SafeQ Embedded Terminal for Toshiba installation
Mandatory with YSoft SafeQ Embedded Terminal for Xerox/Fuji-Xerox	TCP	80, 443	HTTP/HTTPS	YSoft SafeQ Embedded Terminal for Xerox/Fuji-Xerox installation
Mandatory with YSoft SafeQ Embedded Terminal for Konica Minolta	TCP	80, 50003	HTTP, proprietary WS SSL	YSoft SafeQ Embedded Terminal for Konica Minolta installation
Mandatory with YSoft SafeQ Embedded Terminal for Sharp	TCP	80/443	HTTP/HTTPS	YSoft SafeQ Embedded Terminal for Sharp installation and during authentication on terminal
Mandatory with YSoft SafeQ	TCP	80	HTTP	YSoft SafeQ Embedded Terminal for Samsung installation

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Embedded Terminal for Samsung				
Mandatory for YSoft SafeQ Embedded Terminal installation	UDP	161	SNMP	YSoft SafeQ Embedded Terminal installation MFD check
Mandatory with YSoft SafeQ Embedded Terminal for Lexmark	TCP	80, 21	HTTP, FTP	YSoft SafeQ Embedded Terminal for Lexmark installation
Mandatory with YSoft SafeQ Embedded Terminal for HP	TCP	7627	HTTPS	YSoft SafeQ Embedded Terminal for HP installation
Mandatory with YSoft SafeQ Embedded Terminal for Epson	TCP	80, 443	HTTP/HTTPS	YSoft SafeQ Embedded Terminal for Epson installation
Optional - Active FTP transfers (for embedded terminal scanning)	TCP	>1023	FTP	Range of ports for active FTP transfers (choice of passive/active FTP made by MFD, range of port on MFD side controlled by MFD, range of ports on server side defined by operating system - e.g. https://support.microsoft.com/cs-cz/help/929851/the-default-

Required?	Type	Port	Communication type data volume	Description (communication from the user)
				dynamic-port-range-for-tcp-ip-has-changed-in-windows-vista)
Mandatory with Terminal Pro 4	TCP	22	SSH	Manages configuration of Terminal Pro 4/eDEE/SafeQube/FlexiSpooler during terminal installation (communication Site Server to HW appliance)

Printer to server communication (server inbound rules)

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Mandatory with Terminal Professional / Ultralight	TCP	4096	Proprietary SSL low volume, low latency	Terminal Professional/UltraLight authentication and session control
Optional (if using time synchronization with a Terminal Professional)	UDP	37	Time protocol	Time synchronization between a Terminal Professional and the server. When the system parameter <i>timeServerEnable</i> is enabled, the server is listening on UDP port 37. The terminal connects to this port upon restart.
Mandatory with all embedded terminals, Terminal Pro 4 and Mobile Terminal except YSoft SafeQ Embedded Terminal for KM native and YSoft SafeQ Embedded Terminal for Samsung	TCP	5021, 5022	HTTP/HTTPS	YSoft SafeQ Terminal Application communication, YSoft SafeQ Mobile Terminal.

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Mandatory with YSoft SafeQ Embedded Terminal for Sharp, Toshiba, Xerox and Fuji-Xerox	TCP	5011, 5012	HTTP/HTTPS	Vendor-specific web services
Mandatory with YSoft SafeQ Embedded Terminal for Ricoh	TCP	5012	HTTP/HTTPS	Accounting and charging
Mandatory with YSoft SafeQ Embedded Terminal for KM	TCP	5014–5019	WS SSL low volume, low latency	YSoft SafeQ Embedded Terminal (KM) authentication and session control
Mandatory with YSoft SafeQ Embedded Terminal for HP	TCP	5025	HTTP/HTTPS	Webservices for YSoft SafeQ Embedded Terminal (HP)
Mandatory with YSoft SafeQ Embedded Terminal for Epson	TCP	5023, 5024	HTTP/HTTPS	Webservices for YSoft SafeQ Embedded Terminal (Epson)
Mandatory with YSoft SafeQ Embedded Terminal for Toshiba	TCP	389	LDAP	Internal LDAP for YSoft SafeQ Embedded Terminal for Toshiba When 389 is blocked (by an already running AD on a domain controller), YSoft SafeQ 6 installer will display a warning and use 390 port instead
Optional (if using scan via SMTP)	TCP	25	SMTP	Scanning from MFDs via email (optional, depending on MFD capabilities)

Required?	Type	Port	Communication type data volume	Description (communication from the user)
Mandatory for WebDAV scanning	TCP	5610	Secured WebDAV/HTTPS	Scanning from MFDs via scan workflow (optional, depending on MFD capabilities, configurable by <i>webdavPort</i>)
Optional (if using scan via SMB)	TCP	139	SMB	Scanning from MFDs via scan to folder (optional, depending on MFD capabilities)
Mandatory for embedded terminal scanning	TCP	21	FTP	Scanning from MFDs via scan to folder (optional, depending on MFD capabilities, configurable by <i>ftp-port</i>)
Optional— Passive FTP transfers (for embedded terminal scanning)	TCP	>1023	FTP	Range of ports for passive FTP transfers (choice of passive/active FTP made by MFD, range of ports on MFD side controlled by MFD, range of ports on server side inherited by YSoft SafeQ from the operating system - see https://support.microsoft.com/cs-cz/help/929851/the-default-dynamic-port-range-for-tcp-ip-has-changed-in-windows-vista)
Mandatory	TCP	5555	proprietary 1 kB—per request	Communication between Spooler Controller, Terminal Server and Payment System
SafeQ infrastructure service	TCP	7348	HTTP/HTTPS	Updates, heartbeat and other communication of Terminal Pro 4/eDEE/SafeQube/FlexiSpooler (communication from HW appliances to Site Servers)

Inter-server communication (inbound and outbound rules)

Required?	Type	Port	Communication type data path	Description (communication from the user)
Mandatory for Management	TCP	4099	Management Service > Management Service	Application-level cluster synchronization

Required?	Type	Port	Communication type data path	Description (communication from the user)
Service cluster			proprietary ~1kB per print job	
Mandatory for SpoolerController	TCP	6010	SpoolerController > Management Service proprietary ~40–60 kB per print job	Spooler Controller to Management Service communication and synchronization
Mandatory	TCP	5556	TerminalServer > SpoolerController proprietary	Terminal Server (TS) component (required for YSoft SafeQ Embedded Terminal support), communication with server application
Mandatory for load balancing	TCP	6020	Management Service > Management Service	Internal communication between Management Service instances
Mandatory for near job roaming	UDP Multicast	configurable	SpoolerController > SpoolerController	Near Roaming Group synchronization. Mandatory for roaming groups with 10+ SpoolerController servers.
Mandatory for near job roaming	TCP	7800	SpoolerController > SpoolerController	Near Roaming Group synchronization. Required for roaming groups up to 10 SpoolerController servers.
Mandatory for Mobile Integration Gateway	TCP	5556	Mobile Integration Gateway > SpoolerController	Mobile Integration Gateway component, communication with server application
Optional for etcd	TCP	2377	TerminalServer > etcd	Default value of port used by the Terminal

Required?	Type	Port	Communication type data path	Description (communication from the user)
				Server to communicate with the local etcd
Optional for etcd	TCP	2378	etcd > etcd	Default value of port for communication between etcd nodes
Mandatory for job roaming	TCP	81	SpoolerController > SpoolerController	Job roaming via distributed layer
Mandatory for FlexiSpooler shared folder or Mobile print web uploads	TCP UDP	137/139/445 137/138	SMB	Shared folder for uploading jobs
Mandatory for Mobile Integration Gateway, Mobile Print and job transfers	TCP	5559	HTTP/HTTPS	Exchanging job data between spoolers, sending jobs from Mobile Print
Mandatory on Site Server	TCP	5555	YMQ	Communication between FlexiSpooler (and its Desktop Interface), Mobile Print to Spooler Controller
Mandatory for Mobile print	TCP	110/143/995/993	POP3/IMAP/POP3S/IMAPS	Mobile Print downloads emails from mail server
SafeQ infrastructure service	TCP	7348	HTTPS	Management of Terminal Pro 4/eDEE/SafeQube/FlexiSpooler (communication from IMS Proxy on Site Servers to IMS on Management servers)
Mandatory when WPS is installed on	TCP	5600	HTTP	Endpoint for communication with

Required?	Type	Port	Communication type data path	Description (communication from the user)
different machine than TS				between WPS and Terminal Server

Other communication

Required?	Type	Port	Communication type data path	Description (communication from the user)
Mandatory for LDAP synchronization	TCP	636	Management Service > LDAP	LDAP integration (server > LDAP controller) secured over SSL
Optional	TCP	389	Management Service > LDAP	LDAP integration (server > LDAP controller)
Optional	TCP	3268	Management Service > LDAP	LDAP integration (server > LDAP controller) (global catalogue)
Optional (if using Payment system)	TCP	4196	YSoft SafeQ Payment Machine > YSoft Payment System	Management connection
Optional (if using Payment system)	TCP	4197	YSoft SafeQ Payment Machine > YSoft Payment System	Management connection over SSL (e.g. time synchronization) —this port is needed to be set up in Payment Machine service menu during the configuring of the Payment System server address
Optional (if using Payment system)	TCP	4198	YSoft SafeQ Payment Machine > YSoft Payment System	Main connection
Optional (if using	TCP	4199	YSoft SafeQ Payment Machine > YSoft	Main connection over SSL

Required?	Type	Port	Communication type data path	Description (communication from the user)
Payment system)			Payment System	
Optional (if using Payment system)	TCP	8080	Terminal Server > YSoft Payment System	Web, rest services (APIs)
Optional (if using Payment system)	TCP	8443	Terminal Server > YSoft Payment System	Web, rest services (APIs)
Optional	TCP	25	SMTP (as per scan size)	SMTP (Scan job delivery, notifications to administrator and users)
Mandatory (if using external MS SQL server with named instance)	UDP	1434	Management Service / Payment System > MSSQL DB	This communication is used to query the SQL server browser service. The SQL browser service will respond with the TCP port number that will be used for the rest of communication.
Mandatory (if using external MS SQL server with a named instance)	TCP	see description	Management Service / Payment System > MSSQL DB	The port number is dynamically assigned by the SQL browser service, see http://technet.microsoft.com/en-us/library/cc646023.aspx for more information.
Mandatory for Mobile Integration Gateway	UDP	5353	Mobile Integration Gateway > subnet	Mobile Integration Gateway component multicast to subnet using Bonjour
Mandatory for Mobile Integration Gateway	TCP	8050	client > Mobile Integration Gateway	Job delivery from iOS or MAC client to Mobile Integration Gateway over IPPS. 8050 is the default but configurable port.
Mandatory for TerminalServer	TCP	5557	SpoolerController > TerminalServer	Requests from SpoolerController to TerminalServer. Always localhost.

Cluster installation

Required	Type	Port	Communication type data path	Description (communication from the user)
Mandatory	TCP	4001	Management Service	Internode communication
Mandatory for Management Service	TCP	2379	Management installer > etcd	Used by Management installer to store/obtain database server configuration
Mandatory for Management Service	TCP	2380	etcd > etcd	Communication between etcd nodes

Workstation (outbound connection)

Required	Type	Port	Communication type data path	Description (communication from the user)
Mandatory	TCP	5555	Management Service	YMQ—Communication between FlexiSpooler (and its Desktop Interface) to Spooler Controller
Optional when not spooling on server	HTTP(s)	5559	FlexiSpooler > FlexiSpooler	File transfer between spoolers
Mandatory	YMQ	5558	(localhost only) Desktop interface > FlexiSpooler	Internal communication between FlexiSpooler service and Desktop Interface
Optional when printing via RAW	TCP raw	9100	FlexiSpooler > MFD	Print
Optional when printing via IPP(s)	IPP(s)	80/443/631	FlexiSpooler > MFD	Print
Optional when printing via LPR	TCP	515	FlexiSpooler > MFD	Print

Required	Type	Port	Communication type data path	Description (communication from the user)
Optional when authenticating on Azure AD	HTTPS	443/(80)	FlexiSpooler > Azure AD	Authentication on Azure AD
Optional for connection to Terminal Pro 4	SSH	22	Administrator > Terminal Pro 4	Administrator communication with Terminal Pro 4.

Workstation (inbound)

Workstation inbound communication is always within localhost. There is no YSoft SafeQ component that will try to connect directly to the workstation.

Required	Type	Port	Communication type data path	Description (communication from the user)
Mandatory	YMQ	5558	Desktop interface > FlexiSpooler	Internode communication
Mandatory	LPR	515	Windows Spooler > FlexiSpooler	Receiving jobs

Inter-server communication (inbound and outbound rules)