Configuring Firewalls for FactoryTalk AssetCentre

Version 16.00.00

Rockwell Automation

Reference Manual

Original Instructions

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT: Identifies information that is critical for successful application and understanding of the product.

These labels may also be on or inside the equipment to provide specific precautions.

SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.

BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.

Identifies information that is useful and can help to make a process easier to do or easier to understand.

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

Preface

Summary of changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Update software version information.	throughout
Add the airgap lifecycle option that is available in FactoryTalk AssetCentre version 16.00 or later.	17
Update the publication number.	throughout

About this publication

This document is intended to show the following information:

- Data flow for specific scenarios and transactions common to FactoryTalk® AssetCentre, including:
  - Interfacing with a FactoryTalk® Network Directory
  - Communication using FactoryTalk® Linx or RSLinx® Classic
  - Working with a controller in an OT environment using Studio 5000 Logix Designer® editing software
- Services used in FactoryTalk AssetCentre and additional services needed for FactoryTalk AssetCentre to function properly
- Brief explanation of Socket.IO and DCOM communications
- Ports, services, and firewall rules necessary for the following FactoryTalk AssetCentre components:
  - FactoryTalk AssetCentre Server
  - FactoryTalk AssetCentre Agent
  - FactoryTalk AssetCentre Client

Rockwell Automation® understands that customers desire to know the ports used by our architecture, as it is something necessary to perform Risk Analysis/Threat Models on their architecture and minimize the number of ports must be opened across a firewall in a more secure environment. This document is meant to show the ports, services, and firewall rules necessary for FactoryTalk AssetCentre components to function properly. Keep in mind that additional ports must stay open because DCOM and dynamic ports are a requirement between the machines running various FactoryTalk® software applications (such as Studio 5000 Logix Designer).

Rockwell Automation recommends turning off IPV6 for FactoryTalk network applications. Rockwell Automation products only support IPV4.

For the latest information, see Configuring Firewalls for FactoryTalk AssetCentre (publication FTAC-RM001).

Network firewalls general recommendations

Any firewalls (both physical and virtual) must allow the ports and protocols listed in the document to be open. Additionally, be sure that typical LAN speeds can be maintained, and no connectivity or latency issues were created.

Any specific questions about any FactoryTalk AssetCentre product should be addressed through the product-specific documentation.

For a detailed summary of changes in each software version of FactoryTalk AssetCentre, see Appendix A on page 34.

Legal Notices

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Software and Cloud Services Agreement

Review and accept the Rockwell Automation Software and Cloud Services Agreement here.

Third-Party Software Licenses

View a full list of all third-party software used in this product in C:\Program Files (x86)\Common Files\Rockwell\Third Party Attributions, including:

- Open-source software
- Commercial software
- Other third-party free software

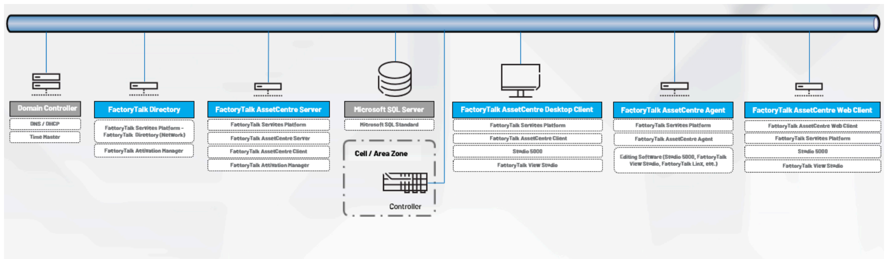
You may obtain Corresponding Source code for open source packages included in this product from their respective project web site(s). Alternatively, you may obtain complete Corresponding Source code by contacting Rockwell Automation via the **Contact** form on the Rockwell Automation website: http://www.rockwellautomation.com/global/about-us/contact/contact.page. Please include "Open Source" as part of the comments for your General Inquiry request.

Test architecture, hardware, and software used to generate this document

Test architecture used to identify TCP or UDP ports used by FactoryTalk AssetCentre

Diagram showing where FactoryTalk® Services Platform, FactoryTalk AssetCentre Server, FactoryTalk AssetCentre Agent, FactoryTalk AssetCentre Client, and FactoryTalk AssetCentre Browser-based (Web) Client are concerning the firewall in the environment used for the creation of this document.

Figure 1. Test architecture used



Architecture components used to identify TCP or UDP ports used by FactoryTalk AssetCentre

- FactoryTalk Services Platform 6.60.00 (CPR 9 SR 16)
- FactoryTalk AssetCentre Server 16.00.00 (CPR 9 SR 16)
- FactoryTalk AssetCentre Agent 16.00.00 (CPR 9 SR 16)
- FactoryTalk AssetCentre Client 16.00.00 (CPR 9 SR 16)
- FactoryTalk® Alarms and Events 6.60.00 (CPR 9 SR 16)
- FactoryTalk® Activation Manager 5.02.00
- FactoryTalk® Diagnostics 6.60.00 (CPR 9 SR 16)
- FactoryTalk Linx 6.60.00 (CPR 9 SR 16)
- Microsoft® SQL Server 2022 Express
- RSLinx Classic 4.60.00 (CPR 9 SR 16)
- Studio 5000 Logix Designer 38.00.00 (CPR 9 SR 16)

All software was installed to default settings. Some products, such as FactoryTalk Activation Manager, allow ports to be changed independently.

Detailed Data Flows

The diagrams below show data flow, ports, and services used in different scenarios and situations.

Authenticating to the domain and performing permissions checks when logging on to the FactoryTalk Directory client computer

The following sequence occurs when a domain user signs into a FactoryTalk Directory client computer.

Figure 2. Data flow, ports, and services used

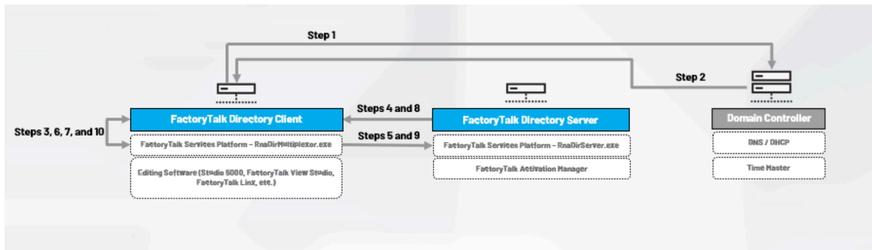


Table 1. Data flow, ports, and services used

Step	Description	Service name	Ports and protocols used
1	FactoryTalk® Directory client computer sends an authentication request to the Active Directory Domain Controller.		Internal to computer
2	If the sign-in is valid, the Active Directory Domain Controller authenticates the user on the FactoryTalk Directory client computer.		Internal to computer
3	The FactoryTalk Directory Multiplexor detects a Windows® sign-in event.	RnaDirMultiplexor.exe	Internal to computer
4	The FactoryTalk Directory Multiplexor sends a request to the FactoryTalk Directory Server for Directory Attributes.	RnaDirMultiplexor.exe RnaDirServer.exe	TCP 443 (HTTPS) TCP 80 (HTTP) Dynamic TCP (Socket.IO)
			Dynamic TCP (DCOM)
5	The FactoryTalk Directory Server sends the Directory Attributes to the client computer.	RnaDirMultiplexor.exe RnaDirServer.exe	TCP 443 (HTTPS) TCP 80 (HTTP) Dynamic TCP (Socket.IO)
			Dynamic TCP (DCOM)
6	The client computer then uses a FactoryTalk Directory Multiplexor to compare the FactoryTalk	RnaDirMultiplexor.exe	Internal to computer

Table 1. Data flow, ports, and services used (continued)

Step	Description	Service name	Ports and protocols used
	Directory Attributes received by the server to the attributes stored in a local cache.		
7	If there are no differences, the local FactoryTalk Directory cache is valid.	RnaDirMultiplexor.exe	Internal to computer
8	If there are differences detected, FactoryTalk Directory Multiplexor requests FactoryTalk Directory data from the FactoryTalk Directory Server.	RnaDirMultiplexor.exe RnaDirServer.exe	TCP 443 (HTTPS) TCP 80 (HTTP) Dynamic TCP (Socket.IO)
			Dynamic TCP (DCOM)
9	The FactoryTalk Directory Server sends current FactoryTalk Directory Data to the client computer for FactoryTalk Directory Multiplexor to receive.	RnaDirMultiplexor.exe RnaDirServer.exe	TCP 443 (HTTPS) TCP 80 (HTTP) Dynamic TCP (Socket.IO)
			Dynamic TCP (DCOM)
10	FactoryTalk Directory Multiplexor then updates the local FactoryTalk Directory cache with the updated information received from the FactoryTalk Directory Server.	RnaDirMultiplexor.exe	Internal to computer

FactoryTalk Directory performs permissions checks when opening Rockwell Automation editing software

After the domain user and FactoryTalk Directory client computer are authenticated in the Active Directory Domain and in the FactoryTalk Directory, the following sequence occurs between the FactoryTalk Directory server and FactoryTalk Directory client when the domain user opens Rockwell Automation editing software.

Figure 3. Data flow, ports, and services used

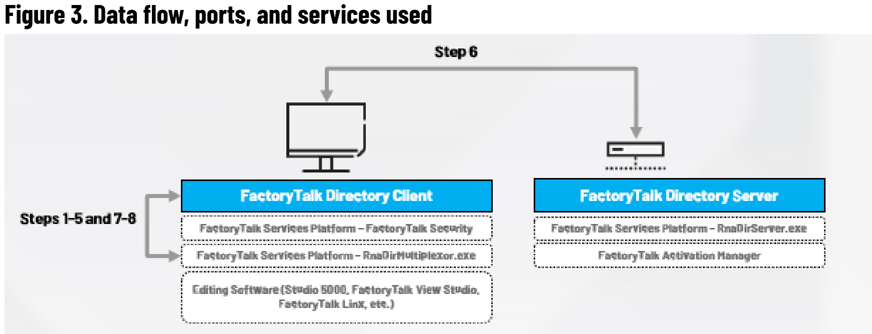


Table 2. Data flow, ports, and services used

Step	Description	Service name	Ports and protocols used
1	A Rockwell Automation software application (such as FactoryTalk AssetCentre Client or Studio 5000 Logix		Internal to computer

Table 2. Data flow, ports, and services used (continued)

Step	Description	Service name	Ports and protocols used
	Designer) is opened on the FactoryTalk Directory client computer.		
2	With single sign-on enabled, the application attempts to sign in to FactoryTalk Directory (using FactoryTalk® Security).		Internal to computer
3	FactoryTalk Security requests an authentication to the Windows Active Directory Domain Controller.		Internal to computer
4	FactoryTalk Security sends a request to the Windows Active Directory Domain Controller to get Windows user and group information once authenticated.		Internal to computer
5	FactoryTalk Security sends a request to FactoryTalk Directory Multiplexor to get stored users and group information.		Internal to computer
6	FactoryTalk Directory Multiplexor checks to see if the local cache needs updated.	RnaDirMultiplexor.exe	TCP 443 (HTTPS) TCP 80 (HTTP) Dynamic TCP (Socket.IO)
			Dynamic TCP (DCOM)
7	If the cache is valid, FactoryTalk Directory Multiplexor sends the users and group information to FactoryTalk Security.	RnaDirMultiplexor.exe	Internal to computer
8	FactoryTalk Security validates the user and group information from Windows Active Directory Domain Controller with FactoryTalk Directory stored users and group information. If the user is a valid member, FactoryTalk Security will generate a FactoryTalk Services Platform token and send to the Rockwell Automation software application, authenticating the user.		Internal to computer

FactoryTalk AssetCentre client connecting to FactoryTalk AssetCentre server and Microsoft SQL Server

The following sequence occurs between the FactoryTalk AssetCentre desktop client computer, FactoryTalk AssetCentre server computer, and the Microsoft SQL Server when opening the FactoryTalk AssetCentre client application on the desktop of the FactoryTalk AssetCentre desktop client computer.

Figure 4. Data flow, ports, and services used

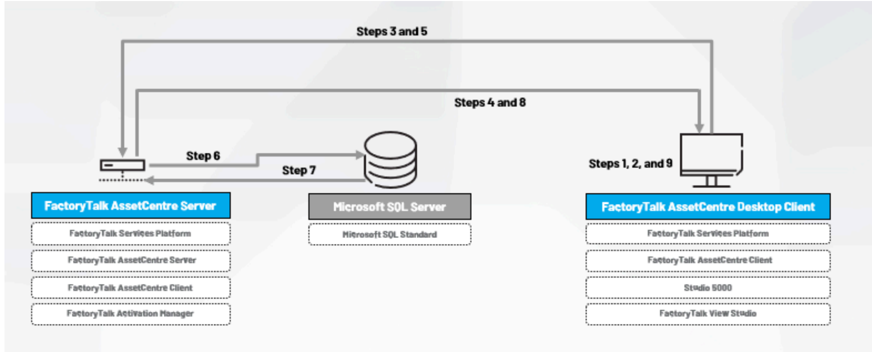


Table 3. Data flow, ports, and services used

Step	Description	Service name	Ports and protocols used
1	FactoryTalk AssetCentre Client is opened on the FactoryTalk AssetCentre desktop client computer.	RA.FTAC.Client.exe	Internal to computer
2	FactoryTalk AssetCentre Client performs the steps shown in section FactoryTalk Directory performs permissions checks when opening Rockwell Automation editing software on page 8.	RnaDirMultiplexor.exe RA.FTAC.Client.exe	Internal to computer
3	FactoryTalk AssetCentre Client requests the license information from FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
4	FactoryTalk AssetCentre Server sends license information to FactoryTalk AssetCentre Client.	RA.FTAC.Client.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
5	FactoryTalk AssetCentre Client requests configuration information from FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
6	FactoryTalk AssetCentre Server contacts FactoryTalk AssetCentre Database for configuration information.	MSSQLServer	TCP 1433 and 1434
7	Microsoft SQL Server sends asset configuration information to the FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	Dynamic TCP
8	FactoryTalk AssetCentre Server sends information to the FactoryTalk AssetCentre Client for asset configuration.	RA.FTAC.Client.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
9	FactoryTalk AssetCentre Client writes to the Audit Log.	RA.FTAC.Client.exe	Internal to computer

FactoryTalk AssetCentre agent communicating to FactoryTalk AssetCentre server and client and to the OT environment

The following sequence occurs between the FactoryTalk AssetCentre desktop client computer, FactoryTalk AssetCentre agent computer, FactoryTalk AssetCentre server computer, Microsoft SQL Server, and a Logix controller when creating and executing a Disaster Recovery - Backup schedule for a Logix controller.

Figure 5. Data flow, ports, and services used

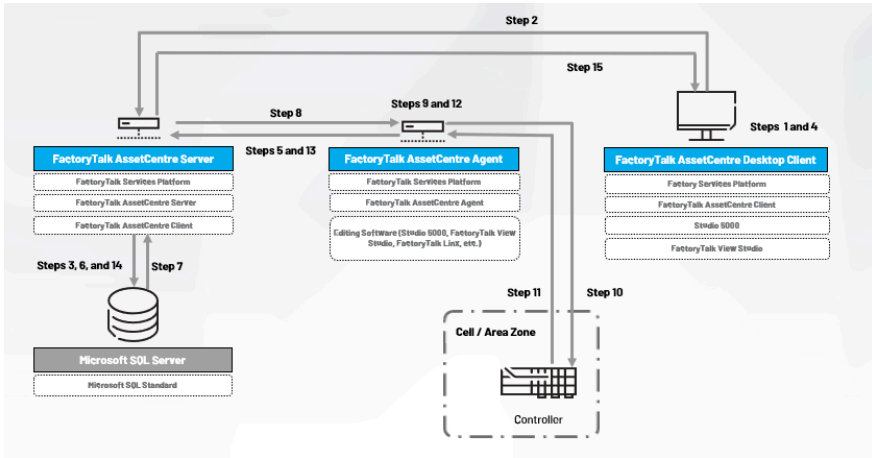


Table 4. Data flow, ports, and services used

Step	Description	Service name	Ports and protocols used
1	FactoryTalk AssetCentre Client creates Backup schedule in User Interface.	RA.FTAC.Client.exe	Internal to computer
2	FactoryTalk AssetCentre Client communicates Backup schedule to FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 443 (HTTPS)
			TCP 80 (HTTP)
3	FactoryTalk AssetCentre Server communicates Backup schedule to an SQL database.	MSSQLServer	TCP 1433 and 1434
4	FactoryTalk AssetCentre Client writes to the local Audit Log that a schedule was created.	RA.FTAC.Client.exe	Internal to computer
5	FactoryTalk AssetCentre Agent requests the specified Archive version of the ACD file from the FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 7002
6	FactoryTalk AssetCentre Server requests the specified Archive version of the ACD file from the FactoryTalk AssetCentre SQL database.	MSSQLServer	TCP 1433 and 1434
7	Microsoft SQL Server sends the ACD file to the FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	Dynamic TCP
8	FactoryTalk AssetCentre Server sends the ACD file to the FactoryTalk AssetCentre Agent.	RA.FTAC.Agent ControllerService.exe	TCP 7004

Table 4. Data flow, ports, and services used (continued)

Step	Description	Service name	Ports and protocols used
9	FactoryTalk AssetCentre Agent opens correlating Studio 5000 version w/ACD file.	LogixDesigner.exe	Internal to computer
10	FactoryTalk AssetCentre Agent uses FactoryTalk Linx or RSLinx to go online with the controller.	RSLinxNG02.exe (FactoryTalk)	TCP 4245
		RSLinx.exe	Dynamic TCP
		RSLinxNG.exe (Rockwell Software)	TCP 4241
11	FactoryTalk AssetCentre Agent uses Studio 5000 to upload the latest information from the controller to an ACD file.	LogixDesigner.exe	Dynamic TCP
12	FactoryTalk AssetCentre Agent writes the information to the Audit Log.	RA.FTAC.Agent ControllerService.exe	Internal to computer
13	FactoryTalk AssetCentre Agent sends uploaded ACD file to FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 7002
14	FactoryTalk AssetCentre Server sends ACD file to FactoryTalk AssetCentre Database to store as the latest Archive revision.	MSSQLServer	TCP 1433 and 1434
15	FactoryTalk AssetCentre Server notifies Clients that the schedule was completed successfully.	RA.FTAC.Client.exe	Dynamic TCP

FactoryTalk AssetCentre Browser-based (web) client communicating to FactoryTalk AssetCentre server and Microsoft SQL Server

The following sequence occurs between the FactoryTalk AssetCentre web client computer, FactoryTalk AssetCentre server computer, and Microsoft SQL Server when opening and using the FactoryTalk AssetCentre web client.

Supported browsers include Google® Chrome™ browser, Microsoft® Edge™, and Mozilla® Firefox®.

Figure 6. Data flow, ports, and services used

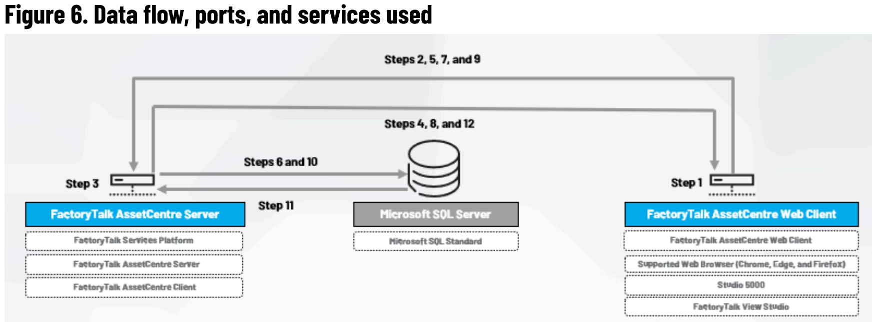


Table 5. Data flow, ports, and services used

Step	Description	Service name	Ports and protocols used
1	FactoryTalk AssetCentre Web Client URL is opened in the web browser. User types in username and password.	*<supported web browser>*.exe	Internal to computer
2	FactoryTalk AssetCentre Web Client sign-in information is sent to the FactoryTalk AssetCentre Server to verify.	RA.FTAC.Server.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
3	FactoryTalk Server verifies sign in information against the FactoryTalk Directory local cache.	RnaDirMultiplexor.exe	Internal to computer
4	FactoryTalk AssetCentre Server sends sign in success to FactoryTalk AssetCentre Web Client.	*<supported web browser>*.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
5	FactoryTalk AssetCentre Web Client sends the Audit Log to FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
6	FactoryTalk AssetCentre Server sends the Audit Log to the FactoryTalk AssetCentre Database.	MSSQLServer	TCP 1433 and 1434
7	FactoryTalk AssetCentre Web Client requests the license information from FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
8	FactoryTalk AssetCentre Server sends license information to FactoryTalk AssetCentre Web Client.	*<supported web browser>*.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
9	FactoryTalk AssetCentre Web Client requests configuration information from FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	TCP 443 (HTTPS) TCP 80 (HTTP)
10	FactoryTalk AssetCentre Server contacts FactoryTalk AssetCentre Database for configuration information.	MSSQLServer	TCP 1433 and 1434
11	Microsoft SQL Server sends asset configuration information to the FactoryTalk AssetCentre Server.	RA.FTAC.Server.exe	Dynamic TCP
12	FactoryTalk AssetCentre Server sends information to the FactoryTalk AssetCentre Web Client for asset configuration.	*<supported web browser>*.exe	TCP 443 (HTTPS) TCP 80 (HTTP)

FactoryTalk AssetCentre Services overview

The following table provides a list of services that are specific to FactoryTalk AssetCentre. In addition, a description of the service and TCP/UDP ports used are shown.

Table 6. Services specific to FactoryTalk AssetCentre

Service name	Display name and description	TCP/UDP ports used
FTACInventoryCrawler Server	FactoryTalk AssetCentre Inventory Crawler Server – Scans connected devices/computers on the network. Collects unique identification information about hardware, firmware, and software.	N/A
FTACAgentController Service	FactoryTalk AssetCentre Agent Controller – Scheduler subsystem of Disaster Recovery, Device Monitor, and Search.	TCP: port 7004 (Server to Agent) UDP: port 21061
FTACServer	FactoryTalk AssetCentre Server – Primary responsibility is background FactoryTalk AssetCentre scheduling behavior.	TCP: port 7002
VerificationAgent	VerificationAgent – Scheduler subsystem of some legacy Disaster Recovery items.	N/A
LLuminWorkflowSvc	FactoryTalk AssetCentre LLumin MOC Engine – LLumin workflow engine added w/v11.0.	N/A

The following table provides a list of services that are *NOT specific* to FactoryTalk AssetCentre. However, these services are necessary for FactoryTalk AssetCentre to function properly. In addition, a description of the service and TCP/UDP ports used are shown.

Table 7. Services not specific to FactoryTalk AssetCentre

Service name	Display name and description	TCP/UDP ports used
RSLinx	RSLinx Classic – Communication software used to connect to legacy and modern automation devices using multiple communication methods.	TCP: ports 2222 and 44818 UDP: ports 2221 and 44818
RSLinxNG	FactoryTalk Linx – Communication software used to connect to modern automation devices using multiple communication methods.	TCP: ports 2221, 4241, 7153, and 44818 UDP: port 44818
RSLinxNG02	FactoryTalk Linx – Communication software used to connect to modern automation devices using multiple communication methods.	TCP: port 4245
Activation Service	FactoryTalk Activation Service – Verifies licensing of FactoryTalk software products.	TCP: ports 27000 - 27009

Table 7. Services not specific to FactoryTalk AssetCentre (continued)

Service name	Display name and description	TCP/UDP ports used
EventClientMultiplexer	Rockwell Automation Event Multiplexer – Provides server to access FactoryTalk events system on directory server and client computers.	TCP: Dynamic
EventServer	Rockwell Automation Event Server – Manages FactoryTalk events. Receives events from EventClientMultiplexer and sends to client computers.	TCP: Dynamic
MSSQLSERVER	Microsoft SQL Server – Where FactoryTalk AssetCentre and LLumin databases are located.	TCP: port 1433 UDP: port 1434
RsvcHost	Rockwell Automation Application Services – Rockwell Automation Application Server, FactoryTalk Diagnostic, Session status, badge supports to RNA Trace. Provides write functionality to FactoryTalk Diagnostics.	TCP: ports 4255, 5241, and 60093 UDP: port 6904
RNADirectory	Rockwell Automation Directory Server – Only on FactoryTalk Directory Server computer – Directory access, Interface for RNADirMultiplexor and FactoryTalk Directory operations. TCP port 3060 is used for synchronizing FactoryTalk Directory files to client computers.	TCP: port 3060 and Dynamic
RNADirMultiplexor	Rockwell Automation Directory Multiplexer – Each directory operation sent to RNADirectory service by this service; synchronizes with Dirserver.exe and cache FactoryTalk Directory files in memory.	TCP: Dynamic
FT.TraceDiagnostics	Rockwell Automation Trace Diagnostics Server – Captures all strings sent to an OutputDebugString Windows API and forwards them to the FactoryTalk Trace Diagnostics engine.	UDP: ports 21060 and 21061

Communication protocols – Socket.IO and DCOM

Several FactoryTalk applications (such as Eventing and Directory Server in FactoryTalk Services Platform) use either Socket.IO or DCOM to communicate between computers and systems. Below are the communication methodologies and the FactoryTalk services that rely on these communication methods.

Socket.IO

Socket.IO is built on top of the WebSocket protocol, which provides a low-latency, full-duplex communication channel over one TCP connection. Socket.IO enables real-time, bidirectional communication between a client (usually a web browser) and a server over one persistent connection. It is commonly used in web applications to build features such as chat applications, real-time notifications, and interactive dashboards.

The ports used with Socket.IO depend on the protocol being used and the specific transport methods that are employed based on the capabilities of the client and server. Commonly, Socket.IO would use the same ports as regular HTTP (port 80) or HTTPS (port 443) traffic. Here's a basic breakdown:

- Long Polling (default with FactoryTalk Services Platform): Port 80 (HTTP) or 443 (HTTPS)
- WebSocket (can be turned on in the UI): Port 80 (HTTP) or 443 (HTTPS)
- Other fallback mechanisms: Same ports as the underlying HTTP/HTTPS protocol

Keep in mind that these are general guidelines and the actual ports used can be configured based on your specific server setup. Always refer to the official Socket.IO documentation and your server configuration for the most accurate and up-to-date information.

Services using Socket.IO

- EventClientMultiplexer.exe
- EventServer.exe
- FTWebEventServer.exe
- RnaDirMultiplexor.exe
- RnaDirServer.exe

These services are used on the FactoryTalk Directory Server and on each computer that is a part of the same FactoryTalk Directory. Each of these services also keeps one DCOM port open to ensure that it is available quickly in case of Socket.IO communication issues. In addition, all FactoryTalk Directory clients will use Dynamic TCP ports to respond to the server regardless of communication protocol.

DCOM

Distributed Component Object Model (DCOM) is a Microsoft technology that enables communication between software components on different computers in a network. DCOM uses various ports for communication, and the specific ports used can vary depending on the configuration and the components involved.

Here are some key points about DCOM port usage:

- Dynamic Port Allocation: DCOM primarily uses dynamic port allocation, which means that the ports used for communication are not fixed and can change each time a DCOM communication occurs. When a DCOM server is started, it registers itself with the DCOM Endpoint Mapper service, which assigns a dynamically allocated port for that server.
- Endpoint Mapper Port: The DCOM Endpoint Mapper service itself typically uses port 135 (both TCP and UDP) for its initial communication. This port allows clients to query the Endpoint Mapper to discover which dynamic port a particular DCOM server is using.
- Dynamic Port Range: DCOM dynamically selects a port from a predefined range for communication. In Windows, the default dynamic port range used by DCOM is 1024 to 65535.
- Firewall Considerations: DCOM communications might require configuration of firewalls and network security settings. This includes confirming that the dynamic port range is open for communication if your network security policies require it.
- Port Exhaustion: In cases where many DCOM communications are occurring simultaneously, there is a possibility of running out of available ports within the dynamic range. This can lead to errors or performance issues.
- Customization: While DCOM primarily uses dynamic port allocation, you can configure DCOM to use specific ports for certain components or applications if needed. This might involve modifying the Windows Registry settings.

The dynamic ports used by Rockwell Automation are 49152 - 65535, and the user-defined ports are 1024 - 49151.

The FactoryTalk Directory Server uses Auto (both Socket.IO and DCOM eventing) as the default method. The system will attempt to use Socket.IO communication as the primary eventing method. However, if Socket.IO is not responding or is unavailable, the system will switch to DCOM and not retry Socket.IO until the application is restarted.

The system is configurable to accept only Socket.IO or only DCOM. However, when set to only accept Socket.IO connections, older FactoryTalk Directory Clients will be unable to connect to the FactoryTalk Directory.

Rules to configure ports to run a FactoryTalk AssetCentre application

The following sections detail the services and ports that are required to communicate across a firewall. Every detail is listed out to ensure that users understand pertinent information about each service, what it does, and the ports and protocols used, beginning with the FactoryTalk AssetCentre server.

FactoryTalk AssetCentre server local ports required to be opened

General ports and protocols

- Port 25 SMTP (if using outbound email)
- Port 135 TCP – DCOM endpoint mapper
- Port 1433 TCP – Default port for FactoryTalk AssetCentre Server communication to Microsoft SQL Server
- Port 1434 UDP – Recommended static destination port for Microsoft SQL Server to minimize the number of ports open on a firewall. For more information, see Microsoft KB287932 – Configure the Windows Firewall to allow SQL Server access.

FactoryTalk AssetCentre server additional functionality ports

- Port 44818 CIP port to receive Unsolicited Message and browsing request FactoryTalk Linx.
- Port 443 used if the HTTPS protocol is enabled for the Browser-based (Web) client and for Asset Lifecycle communication with the Product Compatibility and Download Center (PCDC).

FactoryTalk AssetCentre server communication to the Product Compatibility and Download Center (PCDC) secure recommendations

For communicating to the PCDC for asset lifecycle information, there are some recommendations to increase secure usage. The methods vary based on whether the FactoryTalk AssetCentre server has internet access or not.

- If the FactoryTalk AssetCentre server can access the internet, use one of the following methods:
  - In FactoryTalk AssetCentre version 12.00 or later, a forward proxy server can be set up to mask the FactoryTalk AssetCentre server's information when communicating with the PCDC for lifecycle information. The information needed for the forward proxy server and the FactoryTalk AssetCentre server settings are in the Knowledgebase Document ID: QA65165 - Using a forward proxy server between FactoryTalk AssetCentre and the Product Compatibility and Download Center (PCDC) and in the FactoryTalk AssetCentre YouTube playlist as Forward Proxy Server Support for FactoryTalk AssetCentre.
  - Create a URL filtering policy that allows TCP port 443 to access the PCDC URL of *https://api.rockwellautomation.com* and allows for bidirectional communication. This method ensures that any time in the future, if PCDC IP addresses change, no

configuration changes would be required from you because you're solely focused on the URL.

- The PCDC utilized a wide range of IP addresses for bi-directional communication with the FactoryTalk AssetCentre server for Asset Lifecycle information retrieval. Users would need to allow IP addresses 34.***.***.*** and 54.***.***.***, where *** is every value from 0 to 255. Due to the wide amount of IP addresses to open and these addresses are subject to change without a clear and secure method of notifying customers that the addresses have changed, it is strongly recommended to use the methods mentioned prior to this solution.

- In FactoryTalk AssetCentre version 16.00 or later, if the FactoryTalk AssetCentre server cannot access the internet, use the **Airgap Lifecycle Transfer** tool included in the FactoryTalk AssetCentre web client, together with the standalone **FactoryTalk AssetCentre Lifecycle Information Transfer Utility**, to retrieve asset lifecycle information. For more information, see Airgap Lifecycle Transfer in the *FactoryTalk AssetCentre Web Client Help*.

Ports required to be open per service on the FactoryTalk AssetCentre Server (not using the Dynamic range):

Table 8. Ports required

Application	Port number	Type	Comments
CmWebAdmin.exe	22352	TCP	
CodeMeter.exe	22350*	TCP/UDP	
EventServer.exe	7700	TCP	
FTActivationBoost.exe	54967**	TCP	
FTAE_HistServ.exe	403	TCP	
FTAE.Web.DataProvider.Service.exe	21027	TCP	
FTAE.Webservice.exe	7150	TCP	
FTLDTagBrowser.exe	7159	TCP	
FTLinxServices.exe	5698	TCP	
FTLShortcutEditorUISvc.exe	5798 and 5799	TCP	
ftsp-web-server.exe	7110	TCP	
FTWebEventServer.exe	7113	TCP	
FTWebSupportService.exe	7111	TCP	
lmgrd.exe	27000 - 27009	TCP	FactoryTalk Activation
LocalOPCServer.exe	4244	TCP	
RA.FTAC.Server.exe	7002*	TCP	

Table 8. Ports required (continued)

Application	Port number	Type	Comments
RA.FTAC.Agent Controller Service.exe	7004*	TCP	
	21061	UDP	
RdcyHost.exe	1332	TCP	
RnaAeServer.exe	6543 and 9111	TCP	
RNADiagnosticsSrv.exe	7147	TCP	
RnaDirServer.exe	3060 and 7710	TCP	
RSLINX.EXE	2222	TCP	
	44818	TCP/UDP	
RSLinxNG.exe	4241 and 7153	TCP	
RSLinxNG02.exe	4245	TCP	
RsvcHost.exe	4255	TCP	
	5241	TCP	Knowledgebase Document ID: QA55096 - TCP port conflict with FactoryTalk Services CPR9 - SR3 in RSVChost.exe
	6904	UDP	
Forward Proxy Server / HTTPS Enabled. Port 443 is still used to interface with Browser-based (Web) Client.	80 (HTTP) 443 || <custom port> (HTTPS)	TCP	If 443 enabled, Custom is not used

* Can be user modified.

** If port 54967 is unavailable, it tries 54977, 54987, 55967, 55977, 55987, 61967, 61977, and 61987.

Dynamic port usage

The dynamic TCP ports used by Rockwell Automation are 49152 - 65535. In our test reference architecture, 51 dynamic ports have been observed as allocated and in use. If the range is restricted too much, it may result in performance issues or timeouts, in which case the range would have to be widened. Additional software Rockwell Automation or others may increase the number of dynamic ports required.

Protocols in use

Protocols in use per service by dynamic TCP ports (51 ports dynamically opened in testing):

- ActivationNotifier.exe
- CodeMeterCC.exe
- EventClientMultiplexer.exe
- EventServer.exe
- flexsvr.exe
- FTActivationBoost.exe
- FTCounterMonitor.exe
- FTLinxServices.exe
- FTLShortcutEditorDP.exe
- FTLShortcutEditorUISvc.exe
- ftsp-web-server.exe
- RA.FTAC.AgentController Service.exe
- RA.FTAC.Server.exe
- RdcyHost.exe
- RnaDirMultiplexor.exe
- RnaDirServer.exe
- RSLINX.EXE
- RSLinxNG.exe
- RSLinxNG02.exe
- RsvcHost.exe

Services to be configured to pass via Firewall, Server. From firewall configuration files:

Table 9. Services to be configured

Service name	Executable name	Display name
CodeMeterFWExP22350UDP	CodeMeter.exe	CodeMeter Runtime Server
FactoryTalk Activation Server	flexsvr.exe	FactoryTalk Activation Daemon Note: This is a process started by the FactoryTalk Activation Service.
FactoryTalk Activation Service	lmgrd.exe	FactoryTalk Activation Service
FactoryTalk Application Services	RsvcHost.exe	FactoryTalk Application Services
FactoryTalk AgentControllerService	RA.FTAC.AgentController Service.exe	FactoryTalk AssetCentre AgentController

Table 9. Services to be configured (continued)

Service name	Executable name	Display name
FactoryTalk AssetCentre Agent Controller Application	RA.FTAC.AgentControllerApplication.exe	FactoryTalk AssetCentre Agent Controller Application
FTACServer	RA.FTAC.Server.exe	FactoryTalk AssetCentre Server
FactoryTalkDiagnosticsReceiver	RnaDiagReceiver.exe	FactoryTalk Diagnostics CE Receiver
FactoryTalkDiagnosticsServer	RnaDiagnosticsSrv.exe	FactoryTalk Diagnostics Message Server
FactoryTalkDirectoryServer TCP 7710	RnaDirServer.exe	FactoryTalk Directory Server
FactoryTalkEventMultiplexer TCP 7600	EventClientMultiplexer.exe	FactoryTalk Event Multiplexer
FactoryTalkEventServer TCP 7700	EventServer.exe	FactoryTalk Event Server
FactoryTalk Linx	RSLinxNG02.exe	FactoryTalk Linx
FactoryTalkLiveDataClient	DaClient.exe	FactoryTalk Live Data Test Client
FactoryTalkNamespaceServices	NmspHost.exe	FactoryTalk Namespace Services
FactoryTalkRedundancyServices	RdcyHost.exe	FactoryTalk Redundancy Services
FTActivationBoost	FTActivationBoost.exe	FactoryTalk Activation Helper
FTCounterMonitor	FTCounterMonitor.exe	The FactoryTalk Counter Monitor allows users to monitor diagnostic values
FTSPVstudio	FTSPVStudio.exe	FTSPVStudio
FT.TraceDiagnostics	RA.FT.TraceDiagnostics.TraceService.exe	Rockwell Automation Trace Diagnostics Service
Harmony	RSOBSERV.exe	Harmony Object Server
LocalOPCServer	LocalOPCServer.exe	LocalOPCServer
OPC Test Client	opctest.exe	OPC Test Application
OPCEnum	OPCEnum.exe	OPC Foundation Server Enumerator
Rockwell Automation Trace Diagnostic Message Viewer	RA.FT.TraceDiagnostics.RTDiagnosticViewer.exe	Rockwell Automation Trace Diagnostic Message Viewer

Table 9. Services to be configured (continued)

Service name	Executable name	Display name
RnaAeServer	RnaAeServer.exe	FactoryTalk Alarms and Events Server
RnaAlarmDetector	RnaAlarmDetector.exe	No display name
RnaAlarmMux	RnaAlarmMux.exe	FactoryTalk Alarms and Events Multiplexer
RNADiagnosticsService	RNADiagnosticsService.exe	FactoryTalk Diagnostics Local Reader
RnaDirMultiplexor	RnaDirMultiplexor.exe	Rockwell Automation Directory Multiplexer
RSAlarmFileReader	RSAlarmFileReader.exe	No display name
RSLinx Classic	RSLINX.exe	RSLinx Classic Communications Server
RSLinx Classic Backup Restore Utility	BACKUP.exe	RSLinx Classic Backup/Restore Utility
RSLinx Classic Backup Restore Utility	BACKUPCMD.exe	RSLinx Classic Backup/Restore Utility
RSLinx Classic Launch Control Panel	RSLINXCP.exe	RSLinx Classic Service Control Panel
FactoryTalk Linx	RSLinxNG.exe	FactoryTalk Linx OPC Runtime Service
RSLinxEnterpriseLogService	LogReceiver.exe	FactoryTalk Linx Network Event Log Service
RSLinxEnterpriseLogViewer	LogViewer.exe	FactoryTalk Linx Event Log Viewer
RSLinxShortcutAOA	RSLinxShortcutAOA.exe	Shortcut Editor
VerificationAgent	VerificationAgent.exe	VerificationAgent
Vstudio	VStudio.exe	VStudio

FactoryTalk AssetCentre agent local ports required to be opened (on all agents)

General ports and protocols

- Port 25 SMTP (if using outbound email)
- Port 135 TCP – DCOM endpoint mapper
- Activation 27000 – 27009. Activation also uses some dynamic ports.

FactoryTalk AssetCentre agent additional functionality ports

- Port 44818 CIP port to receive Unsolicited Message and browsing request FactoryTalk Linx.

Ports required to be open per service on the FactoryTalk AssetCentre Agent, not using the Dynamic range:

Table 10. Ports required

Application	Port number	Type	Comments
CmWebAdmin.exe	22352	TCP	
CodeMeter.exe	22350*	TCP/UDP	
EventServer.exe	7700	TCP	
FTActivationBoost.exe	54967**	TCP	
FTAE_HistServ.exe	403	TCP	
FTAE.Web.DataProvider.Service.exe	21027	TCP	
FTAE.Webservice.exe	7150	TCP	
FTLDTagBrowser.exe	7159	TCP	
FTLinxServices.exe	5698	TCP	
FTLShortcutEditorUISvc.exe	5798 and 5799	TCP	
ftsp-web-server.exe	7110	TCP	
FTWebEventServer.exe	7113	TCP	
FTWebSupportService.exe	7111	TCP	
lmgrd.exe	27000 - 27009	TCP	FactoryTalk Activation
LocalOPCServer.exe	4244	TCP	
ramkMsgKernelSvc.exe	27027***	TCP	
RA.FTAC.Server.exe	7002*	TCP	

Table 10. Ports required (continued)

Application	Port number	Type	Comments
RA.FTAC.Agent Controller Service.exe	7004*	TCP	
	21061	UDP	
raOSGI.exe	27050 – 27056, and 27100***	TCP	
RdcyHost.exe	1332	TCP	
RnaAeServer.exe	6543 and 9111	TCP	
RNADiagnosticsSrv.exe	7147	TCP	
RnaDirServer.exe	3060 and 7710	TCP	
RSLINX.EXE	2222	TCP	
	44818	TCP/UDP	
RSLinxNG.exe	4241 and 7153	TCP	
RSLinxNG02.exe	4245	TCP	
RsvcHost.exe	4255	TCP	
	5241	TCP	Knowledgebase Document ID: QA55096 - TCP port conflict with FactoryTalk Services CPR9 - SR3 in RSVChost.exe
	6904	UDP	

* Can be user modified.

** If port 54967 is unavailable, it tries 54977, 54987, 55967, 55977, 55987, 61967, 61977, and 61987.

*** Necessary for Studio 5000 Logix Designer.

Socket.IO

The ports used with Socket.IO commonly use the same ports as regular HTTP (port 80) or HTTPS (port 443) traffic. Here's a basic breakdown:

- Long Polling (default with FactoryTalk Services Platform): Port 80 (HTTP) or 443 (HTTPS)
- WebSocket (can be turned on in the UI): Port 80 (HTTP) or 443 (HTTPS)
- Other fallback mechanisms: Same ports as the underlying HTTP/HTTPS protocol

Services using Socket.IO

- EventClientMultiplexer.exe
- EventServer.exe
- FTWebEventServer.exe
- RnaDirMultiplexor.exe
- RnaDirServer.exe

Each of these services also keeps one DCOM port open to ensure that it is available quickly in case of Socket.IO communication issues.

Dynamic port usage

The dynamic TCP ports used by Rockwell Automation are 49152 - 65535. In our test reference architecture, 68 dynamic ports have been observed as allocated and in use. If the range is restricted too much, it may result in performance issues or timeouts, in which case the range would have to be widened. Additional software Rockwell Automation or others may increase the number of dynamic ports required.

Protocols in use

Protocols in use per service by dynamic TCP ports (68 ports dynamically opened in testing):

- ActivationNotifier.exe
- CodeMeterCC.exe
- EventClientMultiplexer.exe
- EventServer.exe
- flexsvr.exe
- FTActivationBoost.exe
- FTCounterMonitor.exe
- FTLinxServices.exe
- FTLShortcutEditorDP.exe
- FTLShortcutEditorUISvc.exe
- ftsp-web-server.exe
- LogixDesigner.exe
- LdSdkServer.exe
- RA.FTAC.AgentController Service.exe
- RA.FTAC.Server.exe
- RdcyHost.exe
- RnaDirMultiplexor.exe
- RnaDirServer.exe
- RSLINX.EXE

- RSLinxNG.exe
- RSLinxNG02.exe
- RsvcHost.exe

Services to be configured to pass via Firewall, Agent. From firewall configuration files:

Table 11. Services to be configured

Service name	Executable name	Display name
CodeMeterFWExP22350UDP	CodeMeter.exe	CodeMeter Runtime Server
FactoryTalk Activation Server	flexsvr.exe	FactoryTalk Activation Daemon Note: This is a process started by the FactoryTalk Activation Service.
FactoryTalk Activation Service	lmgrd.exe	FactoryTalk Activation Service
FactoryTalk Application Services	RsvcHost.exe	FactoryTalk Application Services
FactoryTalk AssetCentre AgentControllerService	RA.FTAC.AgentController Service.exe	FactoryTalk AssetCentre AgentController
FactoryTalk AssetCentre Agent Controller Application	RA.FTAC.AgentControllerApplication.exe	FactoryTalk AssetCentre Agent Controller Application
FactoryTalk AssetCentre Server	RA.FTAC.Server.exe	FactoryTalk AssetCentre Server
FactoryTalkDiagnosticsReceiver	RnaDiagReceiver.exe	FactoryTalk Diagnostics CE Receiver
FactoryTalkDiagnosticsServer	RnaDiagnosticsSrv.exe	FactoryTalk Diagnostics Message Server
FactoryTalkDirectoryServer TCP 7710	RnaDirServer.exe	FactoryTalk Directory Server
FactoryTalkEventMultiplexer TCP 7600	EventClientMultiplexer.exe	FactoryTalk Event Multiplexer
FactoryTalkEventServer TCP 7700	EventServer.exe	FactoryTalk Event Server
FactoryTalk Linx	RSLinxNG02.exe	FactoryTalk Linx
FactoryTalkLiveDataClient	DaClient.exe	FactoryTalk Live Data Test Client
FactoryTalkNamespaceServices	NmspHost.exe	FactoryTalk Namespace Services
FactoryTalkRedundancyServices	RdcyHost.exe	FactoryTalk Redundancy Services
FTActivationBoost	FTActivationBoost.exe	FactoryTalk Activation Helper

Table 11. Services to be configured (continued)

Service name	Executable name	Display name
FTCounterMonitor	FTCounterMonitor.exe	The FactoryTalk Counter Monitor allows users to monitor diagnostic values.
FTSysDiagSvcHost	FTSysDiagSvcHost.exe	FTSysDiagSvcHost enables third-party data acquisition.
FT.TraceDiagnostics	RA.FT.TraceDiagnostics.TraceService.exe	Rockwell Automation Trace Diagnostics Service
Harmony	RSOBSERV.exe	Harmony Object Server
LocalOPCServer	LocalOPCServer.exe	LocalOPCServer
OPC Test Client	opctest.exe	OPC Test Application
OPCEnum	OPCEnum.exe	OPC Foundation Server Enumerator
Rockwell Automation Trace Diagnostic Message Viewer	RA.FT.TraceDiagnostics.RTDiagnosticViewer.exe	Rockwell Automation Trace Diagnostic Message Viewer
RnaAeServer	RnaAeServer.exe	FactoryTalk Alarms and Events Server
RnaAlarmDetector	RnaAlarmDetector.exe	No display name
RnaAlarmMux	RnaAlarmMux.exe	FactoryTalk Alarms and Events Multiplexer
RNADiagnosticsService	RNADiagnosticsService.exe	FactoryTalk Diagnostics Local Reader
RnaDirMultiplexor	RnaDirMultiplexor.exe	Rockwell Automation Directory Multiplexer
RSAlarmFileReader	RSAlarmFileReader.exe	No display name
RSLinx Classic	RSLINX.exe	RSLinx Classic Communications Server
RSLinx Classic Backup Restore Utility	BACKUP.exe	RSLinx Classic Backup/Restore Utility
RSLinx Classic Backup Restore Utility	BACKUPCMD.exe	RSLinx Classic Backup/Restore Utility
RSLinx Classic Launch Control Panel	RSLINXCP.exe	RSLinx Classic Service Control Panel

Table 11. Services to be configured (continued)

Service name	Executable name	Display name
FactoryTalk Linx	RSLinxNG.exe	RSLinx Enterprise/FT Linx OPC Runtime Service
RSLinxEnterpriseLogService	LogReceiver.exe	FactoryTalk Linx Network Event Log Service
RSLinxEnterpriseLogViewer	LogViewer.exe	FactoryTalk Linx Event Log Viewer
RSLinxShortcutAOA	RSLinxShortcutAOA.exe	Shortcut Editor
VerificationAgent	VerificationAgent.exe	VerificationAgent

FactoryTalk AssetCentre client local ports required to be opened (on all clients)

General ports and protocols

- Port 80 HTTP – Browser-based (Web) client interface to server (if not using TLS/SSL)
- Port 135 TCP – DCOM endpoint mapper
- Port 443 HTTPS – Browser-based (Web) client interface to server (if using TLS/SSL)
- Activation 27000 – 27010. Activation also uses some dynamic ports.

FactoryTalk AssetCentre client additional functionality ports

- Port 44818 CIP port to receive Unsolicited Message and browsing request FactoryTalk Linx.

Ports required open per service on the FactoryTalk AssetCentre Client, not using the Dynamic range:

Table 12. Ports required

Application	Port number	Type	Comments
CodeMeter.exe	22350*	TCP/UDP	
EventServer.exe	7700	TCP	
FTActivationBoost.exe	54967**	TCP	
lmgrd.exe	27000 - 27009	TCP	FactoryTalk Activation
ramkMsgKernelSvc.exe	27027***	TCP	
RA.FTAC.Client.exe	21061	TCP	
raOSGI.exe	27050 – 27056, and 27100***	TCP	

Table 12. Ports required (continued)

Application	Port number	Type	Comments
RNADiagnosticsSrv.exe	7147	TCP	
RnaDirServer.exe	3060 and 7710	TCP	
RSLINX.EXE	2222	TCP	
	44818	TCP/UDP	
RSLinxNG.exe	4241 and 7153	TCP	
RSLinxNG02.exe	4245	TCP	
RsvcHost.exe	4255	TCP	
	5241	TCP	Knowledgebase Document ID: QA55096 - TCP port conflict with FactoryTalk Services CPR9 - SR3 in RSVChost.exe
	6904	UDP	

* Can be user modified.

** If port 54967 is unavailable, it tries 54977, 54987, 55967, 55977, 55987, 61967, 61977, and 61987.

*** Necessary for Studio 5000 Logix Designer.

Socket.IO

The ports used with Socket.IO commonly use the same ports as regular HTTP (port 80) or HTTPS (port 443) traffic. Here's a basic breakdown:

- Long Polling (default with FactoryTalk Services Platform): Port 80 (HTTP) or 443 (HTTPS)
- WebSocket (can be turned on in UI): Port 80 (HTTP) or 443 (HTTPS)
- Other fallback mechanisms: Same ports as the underlying HTTP/HTTPS protocol

Services using Socket.IO

- EventClientMultiplexer.exe
- EventServer.exe
- FTWebEventServer.exe
- RnaDirMultiplexor.exe
- RnaDirServer.exe

Each of these services also keep one DCOM port open to ensure that it is available quickly in case of Socket.IO communication issues.

Dynamic port usage

The dynamic TCP ports used by Rockwell Automation are 49152 - 65535. In our test reference architecture, 68 dynamic ports have been observed as allocated and in use. If the range is restricted too much, it may result in performance issues or timeouts, in which case the range would have to be widened. Additional software Rockwell Automation or others may increase the number of dynamic ports required.

Protocols in use

Protocols in use per service by dynamic TCP ports (68 ports dynamically opened in testing):

- ActivationNotifier.exe
- CodeMeterCC.exe
- EventClientMultiplexer.exe
- EventServer.exe
- flexsvr.exe
- FTActivationBoost.exe
- FTCounterMonitor.exe
- FTLinxServices.exe
- FTLShortcutEditorDP.exe
- FTLShortcutEditorUISvc.exe
- ftsp-web-server.exe
- LogixDesigner.exe
- LdSdkServer.exe
- RA.FTAC.AgentController Service.exe
- RA.FTAC.Client.exe
- RdcyHost.exe
- RnaDirMultiplexor.exe
- RnaDirServer.exe
- RSLINX.EXE
- RSLinxNG.exe
- RSLinxNG02.exe
- RsvcHost.exe

Services to be configured to pass via Firewall, Client. From firewall configuration files.

Table 13. Services to be configured

Service name	Executable name	Display name
CodeMeter.exe	CodeMeter.exe	CodeMeter Runtime Server

Table 13. Services to be configured (continued)

Service name	Executable name	Display name
FactoryTalk Activation Server	flexsvr.exe	FactoryTalk Activation Daemon Note: This is a process started by the FactoryTalk Activation Service.
FactoryTalk Activation Service	lmgrd.exe	FactoryTalk Activation Service
FactoryTalkApplicationServices	RsvcHost.exe	FactoryTalk Application Services
FactoryTalk Linx	RSLinxNG02.exe	FactoryTalk Linx
FactoryTalk AssetCentre Agent Controller Application	RA.FTAC.AgentControllerApplication.exe	FactoryTalk AssetCentre Agent Controller Application
FactoryTalkDiagnosticsReceiver	RnaDiagReceiver.exe	FactoryTalk Diagnostics CE Receiver
FactoryTalkDiagnosticsServer	RnaDiagnosticsSrv.exe	FactoryTalk Diagnostics Message Server
FactoryTalkDirectoryServer TCP 7710	RnaDirServer.exe	FactoryTalk Directory Server
FactoryTalkEventMultiplexer TCP 7600	EventClientMultiplexer.exe	FactoryTalk Event Multiplexer
FactoryTalkEventServer TCP 7700	EventServer.exe	FactoryTalk Event Server
FactoryTalkLiveDataClient	DaClient.exe	FactoryTalk Live Data Test Client
FactoryTalkNamespaceServices	NmspHost.exe	FactoryTalk Namespace Services
FactoryTalkRedundancyServices	RdcyHost.exe	FactoryTalk Redundancy Services
FTActivationBoost	FTActivationBoost.exe	FactoryTalk Activation Helper
FTCounterMonitor	FTCounterMonitor.exe	The FactoryTalk Counter Monitor allows users to monitor diagnostic values.
FTSysDiagSvcHost	FTSysDiagSvcHost.exe	FTSysDiagSvcHost enables third-party data acquisition.
FT.TraceDiagnostics	RA.FT.TraceDiagnostics.TraceService.exe	Rockwell Automation Trace Diagnostics Service
Harmony	RSOBSERV.exe	Harmony Object Server
LocalOPCServer	LocalOPCServer.exe	LocalOPCServer

Table 13. Services to be configured (continued)

Service name	Executable name	Display name
OPC Test Client	opctest.exe	OPC Test Application
OPCEnum	OPCEnum.exe	OPC Foundation Server Enumerator
Rockwell Automation Trace Diagnostic Message Viewer	RA.FT.TraceDiagnostics.RTDiagnostic Viewer.exe	Rockwell Automation Trace Diagnostic Message Viewer
RNADiagnosticsService	RNADiagnosticsService.exe	FactoryTalk Diagnostics Local Reader
RnaDirMultiplexor	RnaDirMultiplexor.exe	Rockwell Automation Directory Multiplexer
RSAlarmFileReader	RSAlarmFileReader.exe	No display name
RSLinx Classic	RSLINX.exe	RSLinx Classic Communications Server
RSLinx Classic Backup Restore Utility	BACKUP.exe	RSLinx Classic Backup/Restore Utility
RSLinx Classic Backup Restore Utility	BACKUPCMD.exe	RSLinx Classic Backup/Restore Utility
RSLinx Classic Launch Control Panel	RSLINXCP.exe	RSLinx Classic Service Control Panel
FactoryTalk Linx	RSLinxNG.exe	FactoryTalk Linx OPC Runtime Service
RSLinxEnterpriseLogService	LogReceiver.exe	FactoryTalk Linx Network Event Log Service
RSLinxEnterpriseLogViewer	LogViewer.exe	FactoryTalk Linx Event Log Viewer
RSLinxShortcutAOA	RSLinxShortcutAOA.exe	Shortcut Editor
VerificationAgent	VerificationAgent.exe	VerificationAgent

Firewall configuration changes in different versions of FactoryTalk AssetCentre

This appendix provides a detailed summary of changes made in earlier versions of FactoryTalk AssetCentre. Use these reference tables to locate changed information.

Grammatical and editorial style changes are not included in this appendix.

Changes made in version 15.00

This table contains a list of topics changed in this version.

Table 14. Summary of changes

Topic name	Changes made
Architecture components used to identify TCP or UDP ports used by FactoryTalk AssetCentre on page 6	Update product version number.
Socket.IO on page 16	Add the description about Dynamic TCP ports usage.

Changes made in version 13.00

This table contains a list of topics changed in this version.

Table 15. Summary of changes

Topic name	Changes made
Architecture components used to identify TCP or UDP ports used by FactoryTalk AssetCentre on page 6	Update product version number.
Authenticating to the domain and performing permissions checks when logging on to the FactoryTalk Directory client computer on page 7	Update ports and protocols used for Step 4, 5, 8, and 9.
FactoryTalk Directory performs permissions checks when opening Rockwell Automation editing software on page 8	Update ports and protocols used for Step 6.
FactoryTalk AssetCentre Services overview on page 14	• Remove FactoryTalk Services Platform version number supported for Socket.IO usage for RNADirectory and RNADirMultiplexor. • Remove the DCOM/Socket.IO used column in this chapter because DCOM/Socket.IO usage depends on the policy.
Socket.IO on page 16	Remove FactoryTalk Services Platform version number supported for Socket.IO usage for EventClientMultiplexer.exe, EventServer.exe, FTWebEventServer.exe, RNADirMultiplexor.exe, and RnaDirServer.exe.

Table 15. Summary of changes (continued)

Topic name	Changes made
DCOM on page 16	Add the description about the port chosen.
FactoryTalk AssetCentre agent local ports required to be opened (on all agents) on page 24	• Remove FactoryTalk Services Platform version number supported for Socket.IO usage for EventClientMultiplexer.exe, EventServer.exe, FTWebEventServer.exe, RNADirMultiplexor.exe, and RnaDirServer.exe. • Remove service Daq.exe.
FactoryTalk AssetCentre client local ports required to be opened (on all clients) on page 29	• Remove FactoryTalk Services Platform version number supported for Socket.IO usage for EventClientMultiplexer.exe, EventServer.exe, FTWebEventServer.exe, RNADirMultiplexor.exe, and RnaDirServer.exe. • Remove service Daq.exe.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

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Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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