

## How to set up an OPC UA Tunnel Connection

# (High Security Tunnel Communication)

#### Outline the network.



Before you get started with the configurations, take a moment to consider the data flow: who is sending the data and who needs it?

It's a smart move to create a basic sketch of how things will work before you jump into the actual setup.

As you can see in the sketch, the dataFEED OPC Suite on PC1 provides the data and is therefore the UA Tunnel Server. On the other hand, the dataFEED OPC Suite on the PC2 queries data and represents the UA Tunnel Client.

**OPC UA Tunneling provides a highly secure method for Tunnel communication.** It utilizes the OPC UA protocol to achieve the highest level of security and security policy. To establish secure communication between the Tunnel OPC UA Server and Tunnel OPC UA Client, 'uats' (UA Tunnel Server) and 'uatc' (UA Tunnel Client) files **must be exchanged**.

'uats' is a file contains all the necessary information about the **Tunnel Server**, such as the IP address, port number, and certificate.

**'uatc'** is a file also contains all the required information about the **Tunnel Client**, including the IP address, port number, and certificate.

This exchange ensures that the client possesses all the necessary information about the Server to establish communication, and vice versa, ensuring that the Server has all the required information to establish secure communication.

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### Step 1: Configure the OPC UA Tunnel Server

- From the data destination list, select "OPC UA Tunnel " and activate the OPC UA Tunnel Server endpoint.

- Configure the port where the Tunnel Server will run and manage client connections.

> Note: Ensure the selected port is available, not used by other software, and unblocked by the firewall.

data FEED®	Data Destination - OPC UA				SPC UA	
	OPC UA Server Configure the endpoints exposed by the OPC UA Server. Standard OPC UA Endpoint					
Data Source	OPC UA Store & Forward Endpoint					
🕑 Data Processing	OPC UA Tunnel Endpoint					
Data Destination	Activate OPC UA Tunnel Server Endpoint     OPC UA Tunnel Clents can connect to the local application	by using the following identities.				
OPC UA Client OPC UA Tunnel	Server Endpoint: opc.tzp://RUSKITOP-LILP944/7989 Softmg_dataFED_OPC_Suitz_TunneblaTest_UATunnebServer Application Certificates: Own: Softing_dataFED_OPC_Suitz_UA_Server_TunneblaTest_UATunnebServer   Valid until: 14/08/2028 16:56				Configure	
OPC Client	Endpoint Security: Security mode: Sign And Encrypt Security policy: Aex256_SNa256_SNa256_RsiPss Turnel Clent Connections					
	Connection Name	Connection Type	Client Certificate Validity	User Certificate Validity	Status	
OPC Classic Tunnel Client						
MQTT Broker						

## Step 2: Add Connections to the Tunnel Server

Choose the name and connection type between the Server and Client.

PC UA Tunnel Connect	ion Settings					>
444	Connection Sett	ings				
0 0 0	On this wizard page the C	onnection Settings of the cu	rent data destination co	nnection to an OPC UA Tu	nnel client are coi	nfigured.
		name. This must be unique th	roughout the whole cont	figuration.		
// //	Connection name:	Tunnel_Client1				
	Connection State Specify if the connection Connection Active:	n should be active.				
	Connection Type					
	Construction of the state of th	ype. This settings is specifyir	ng the communication init	tialization type.		
	Connection Type:	Forward	Ý			
Connection Settings						
Settings Exchange						
-						
Summary Settings						
				Next >	Cancel	Help
Summary Settings				Next >	Cancel	Help

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### Step 3: Exchange UA Tunnel Settings between Server and Client

To fully configure the connection, both the UA Tunnel Server and UA Tunnel Client connections settings (uats and uatc) need to be exchanged.

🍰 OPC UA Tunnel Connection Settings 🕺 🗙	DPC UA Server Wisard	×
OPC UA Tunnel Settings Exchange  Description  OPC UA Tunnel Settings Exchange  Description  Des		OPC UA Tunnel Settings Exchange  Constant OPC UA Tunnel Settings af the const data ware constants to an external OPC UA Tunnel over any generated are strong. Constant OPC UA Tunnel OPC UA Tunnel OPC UA  Depart Hand Settings Exchange  Depart Settings Exchange  Setting of OPC UA Tunnel over Settings  Setting of OPC UA Tunnel over Setting  Setting of OPC UA Tunnel over Set
Settings factoring Settings Se	Connection Settings Tunnel Endpoint Settings Summary Settings	
<5x3 Next> Fresh Canal Heb		citad horts Canol Help

- Export the UA Tunnel connection file (uats) to be used in Step 5 (p.4). This export provides the client with all necessary information about the Tunnel Server.

- Import the UA Tunnel connection file (uatc) that was exported in Step 5 (p.4). This file contains information about the UA Tunnel Client.

PC UA Tunnel Connec	ction Settings
111	OPC UA Tunnel Settings Exchange
0 0 0	On this wizard page the Connection Settings of the current data destination connection to an OPC UA Tunnel dient are generated and exchanged.
	OPC UA Tunnel Settings Exchange
	The security settings are synchronized between data destination and data source of the OPC UA Tunnel via the export and import options.
///	User Authentication Certificate: own: dataFEEDOPCSuite_TunnelUATest_OPC_UA_Tunnel_1   valid until: 15/08/2028 11:32
	🥫 Regenerate Certificate
	Export the OPC UA Tunnel connection settings via the export option and import them into your OPC UA Tunnel dient application.  Export UA Tunnel Endpoint Settings Import the OPC UA Tunnel connection settings which were generated at the OPC UA Tunnel dient application via import option.
	Import UA Tunnel Connection Settings
	Status of OPC UA Tunnel Connection: Fully Configured
Connection Settings	
Settings Exchange	
Summary Settings	
	A
	< Back Next > Finish Cancel Help

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## Step 4: Configure the OPC UA Tunnel Client

- Select "OPC UA Tunnel " from the data source list.

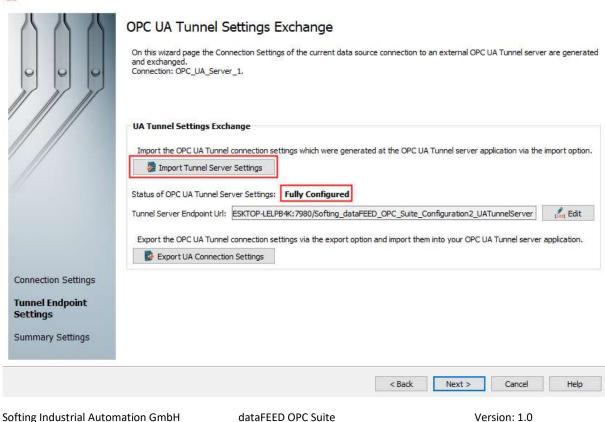
- Choose a connection name and then select the connection type as OPC UA Tunnel connection.

data FEED®	Data Source - OPC UA	SPC UA
	External OPC UA Servers Grate and configure (data sources) to external OPC UA servers.	
Data Source	Connection Name Connection Type Status User Cetificate Validity Server Endpoint URL	1
Siemens	R OPC UA Server Wigard X	
P Rockwell	Connection Settings On the stard page the Connection Settings of the current data source connection to an external OPC UA servicer or OPC UA Turnel service are compand. Connection OPL, UA, Servic, 1.	
9 Modbus		34
🕎 Bår	Connection Name Seedy for ensure of the current connection. This name is also drively the name of the root node of the name gases and must beneficient and inclusion the variable current parts and the second secon	8
🕎 Mitsubishi	Connection Name: Turnel, Clent Connection State	
OPC UA Server OPC UA Tunnel	See if here if the connection shall be active. Connection Active:  Connection Network:	
OPC Server	Select the CPC Luk connection type (Standard or Turne). Connection Settings Connection Type: CPCLURTurnelConnection Y	
OPC Classic Tunnel Server	Turnel Exidorit Settings Summery Settings	
Patabase Read	Net> Cand Hep	S

#### Step 5: Import and Export UA Tunnel Connections

- Import the UA Tunnel connection file (uats) that was exported in Step 3 (p.3). This file includes all the required information about the Tunnel Server.

- Export the UA Tunnel connection file (uatc) needed for the import in Step 3 (p.3). This export ensures that the Server has all the necessary information about the Tunnel Client.



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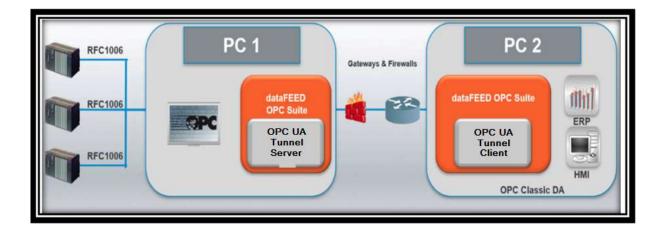
A OPC UA Server Wizard

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#### Required licenses.

The utilization of OPC UA Tunneling requires either **dataFEED OPC UATunnel (LRL-DY-135101)** or **dataFEED OPC Suite Extended (LRL-DY-135001)** on each system (PC1 and PC2).



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