

Process Automation

# Freelance 2016 Engineering Manual OPC Tunnel - Configuration

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**Freelance 2016**  
**Engineering Manual**  
**OPC Tunnel - Configuration**

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Release: July 2015  
Document number: 2PAA106899R0201

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# Section 1 Introduction

The setup program for Freelance contains the component “ABB OPC Tunnel”. This component must be installed on all PCs with an OPC Server or Trend Server to be connected to the Freelance system. The OPC Tunnel replaces the Windows DCOM configuration and makes its complicated settings unnecessary.

If only one OPC server is used on a PC, the names of the OPC server DataAccess interface and Alarm/Event interface and a port number must be configured in the OPC Tunnel tool “Configurator”. For using more than one OPC server on one PC, the configuration is done with the help of the “Advanced Configurator Tool”.

These configuration tools can be reached via the start menu:



**Start > Programs > ABB Industrial IT > Freelance > OPC Tunnel > Configurator**  
or  
**Advanced Configurator**

After a change of the OPC Tunnel configuration, the tunnel must be restarted:



**Start > Program > ABB Industrial IT > Freelance > OPC Tunnel > System Tray**

Select tunnel icon from the task bar, call context menu with a right mouse click and select  
**Restart Server**

Icon of the OPC Tunnel in the task bar:



Tunnel icon.bmp

Context menu of the OPC Tunnel:



Tunnel context menu.bmp



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## Section 2 Installation Examples

### Using a Freelance Trend Server in a Freelance system

#### Overview

The Freelance Trend Server allows you to configure trend displays that are based on variables of the Freelance system without using a trend acquisition function block. The configuration of these trend displays can be done generally in the Freelance Engineering, or user-specific on a Freelance Operations station.

Additionally, via the Trend Server the optional Control Aspect can be used to display online values and locks.

#### Installing the Trend Server

Start the Freelance setup program on the Trend Server PC and select the installation mode “Custom” and then in the install tree

##### **Server & Gateways / Trend server**

Additionally, the component “OPC Tunnel” is selected automatically.

Complete the installation and create an instance of the Trend Server by entering a resource ID, e.g. number 99.

Finish the Freelance setup.

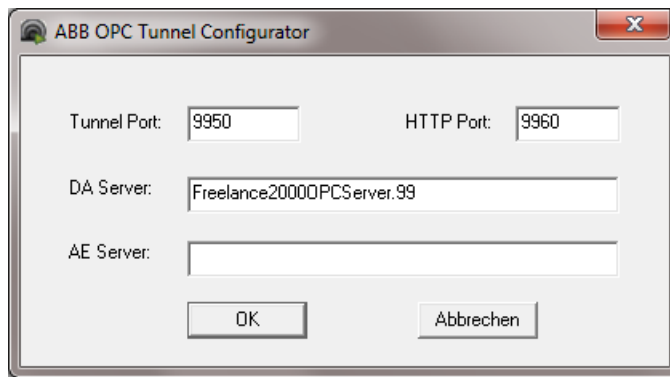
## Configuring the OPC Tunnel

Call the "Configurator" of the OPC Tunnel from the start menu:



**Start > Programs > ABB Industrial IT > Freelance > OPC Tunnel > Configurator**

Enter the name of the Trend Server in the DA Server field (Data Access). For Freelance Trend Server this is the name of the Freelance OPC Server follow by dot and the resource ID. In this example "Freelance2000OPCServer.99". Delete the entry in the AE Server field (Alarms&Events). Close the dialog with the "OK" button.



OPCTunnelConf1\_us.png

## Restarting the OPC Tunnel

As the configuration of the OPC Tunnel has changed, the tunnel must be restarted:



**Start > Program > ABB Industrial IT > Freelance > OPC Tunnel > System Tray**

Select tunnel icon from the task bar notification area, call context menu with right mouse click and select **Restart Server**

## Connecting a 3rd-party OPC Server to a Freelance system

### Overview

If values from any 3rd-party system are to be used in a Freelance system, the 3rd-party OPC server must be known and connected within the Freelance system.

The connection of an AC500 OPC server is described here as an example. For your specific usage perform the described steps according to your application.

### Installing the OPC Server and the OPC Tunnel

First install the 3rd-party OPC Server, e.g. AC500 OPC server, on a PC following the vendor description.

Then start the Freelance setup program on this PC to install the OPC Tunnel software. For this, select installation mode “Custom” and then in the install tree

#### **Server & Gateways / ABB OPC Tunnel**

Finish the Freelance setup.

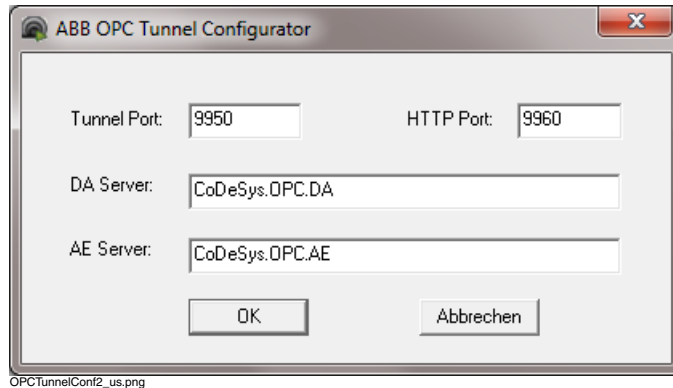
### Configuring the OPC Tunnel

Call the “Configurator” of the OPC Tunnel from the start menu:



**Start > Programs > ABB Industrial IT > Freelance > OPC Tunnel > Configurator**

Enter the names of the Data Access and Alarms&Events servers of the installed OPC server in the dialog, e.g. for an AC500 OPC server enter “CoDeSys.OPC.DA” for the DataAccess server (DA server) and “CoDeSys.OPC.AE” for the Alarms&Events server (AE server). If you do not know the program names of the OPC server, contact the vendor of the OPC software.



## Restarting the OPC Tunnel

As the configuration of the OPC Tunnel has changed, the tunnel must be restarted:



**Start > Program > ABB Industrial IT > Freelance > OPC Tunnel  
> System Tray**

Select tunnel icon from task bar notification area, call context menu with right mouse click and select

**Restart Server**

## Special use case: One Freelance OPC Server and one Trend Server on same PC

### Installing the OPC Server and the Trend Server

Start the Freelance setup program to install the OPC Server and the Trend Server software on the PC. Together with the Trend Server the OPC Tunnel software package will also be installed.

Use the Freelance “Settings” tool to create one instance of the OPC Server and the Trend Server, each. In this example, the Freelance OPC Server is created with resource ID 123 and the Trend Server with resource ID 99.

Finish the Freelance setup.

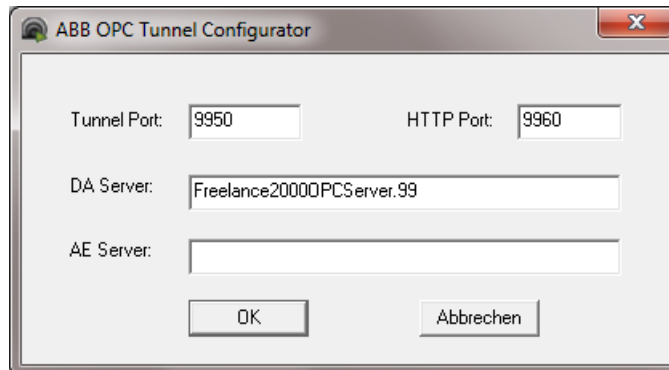
### Configuring the OPC Tunnel

Call the “Configurator” of the OPC Tunnel from the start menu:



**Start > Programs > ABB Industrial IT > Freelance > OPC Tunnel > Configurator**

Enter the name of the Trend Server in the DA Server field (Data Access), in this example “Freelance2000OPCServer.99”. Delete the entry in the AE Server field (Alarms&Events). Close the dialog with the “OK” button.



OPCTunnelConf1\_us.png

Start the “Advanced Configurator” of the OPC Tunnel from the start menu.:



**Start > Programs > ABB Industrial IT > Freelance > OPC Tunnel > Advanced Configurator**

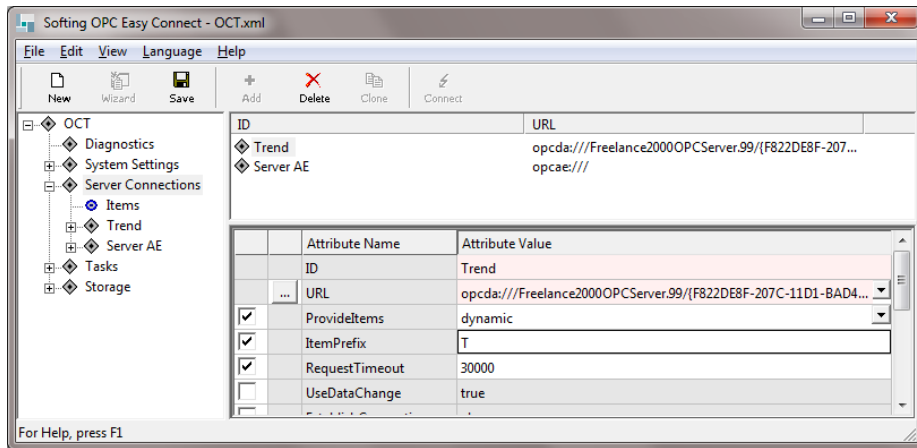
Close the first dialog with the “Cancel” button.

In the “Softing OPC Easy Connect” dialog, select “Server Connections” in the tree. In the upper right part of the dialog select “Server DA”. Then you can configure attributes in the lower right part of the dialog. Enter a meaningful name like “Trend” for the **ID** attribute. Then specify a value for the **ItemPrefix** attribute, e.g. “T”.



The ItemPrefix configuration is needed, if more than one OPC server is used on the same PC. All OPC servers on a PC use the same tunnel. The ItemPrefix allows for unique assignment of the data and alarms to a single OPC server in order to avoid any confusion when using identical names.

Do not change the values of the other attributes of this server connection.

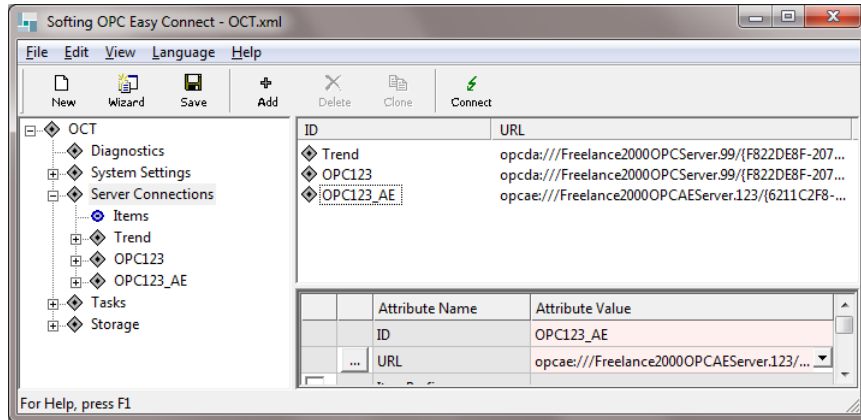


In the upper right part of the dialog, delete the entry “Server AE”.

For configuring the OPC server, again select in the left part of the dialog “Server Connections” and then “Add” from the context menu. In the right part of the dialog, click the “...” button in front of the “URL” entry. In the next dialog, all available OPC servers for DataAccess and Alarms&Events can be selected via “Local” and “Remote”.

For this example, select “Local”, “Data Access” and then the entry “Freelance 2000 OPCServer 123”. For configuring the Alarms&Events interface of this OPC server, add a new connection to the tree structure and select “Freelance 2000 OPCAEServer 123” for the URL.

The figure shows the “Easy Connect” dialog after configuration of Trend Server 99 and Freelance OPC Server 123 on a local PC:



OPCTunnelConf4\_us.png

## Restarting the OPC Tunnel

As the configuration of the OPC Tunnel has changed, the tunnel must be restarted:



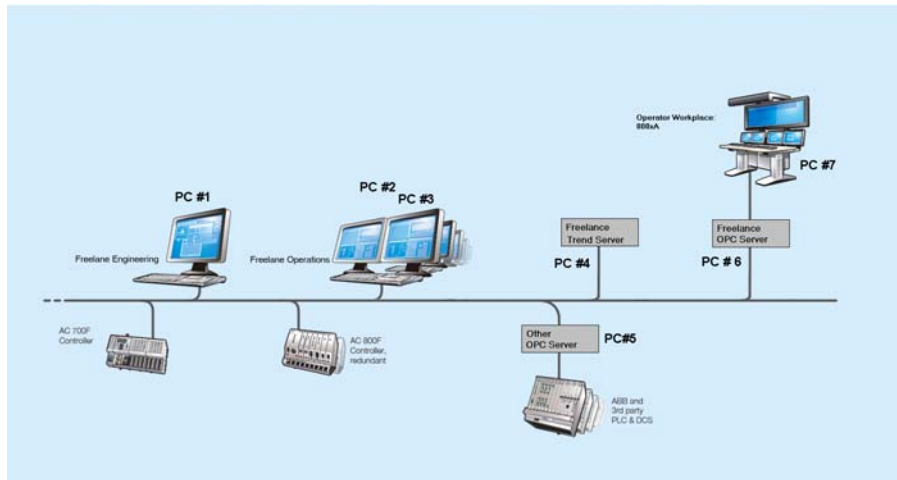
**Start > Program > ABB Industrial IT > Freelance > OPC Tunnel  
> System Tray**

Select tunnel icon from task bar, call context menu with right mouse click and select  
**Restart Server**

# Freelance System

## System structure

The following Freelance system is to be installed and configured:



Tunnel - Freelance System Structure.bmp

The system consists of the following components:

- One Freelance Engineering station (for configuration of one AC 700F and one AC 800F controller) - **PC #1**
- Two Freelance Operations stations - **PC #2, PC #3**
- One Freelance Trend Server (for user-defined trends in Freelance Operations) - **PC #4**
- One 3rd-party controller with 3rd-party OPC Server (to be connected to Freelance Operations for DataAccess and Alarm/Event) - **PC #5**
- One Freelance OPC Server (for connection of an 800xA system) - **PC #6**
- One 800xA System (as OPC client via Freelance Connect) - **PC #7**



## Installing the components

### PC #1: Freelance Engineering Station

Start the Freelance setup program and install the *Freelance Engineering* software.

### PC #2: Freelance Operations Station 1

Start the Freelance setup program and install the *Freelance Operations* software.

### PC #3: Freelance Operations Station 2

Start the Freelance setup program and install the *Freelance Operations* software.

### PC #4: Freelance Trend Server

Start the Freelance setup program and install the *Freelance Trend Server* software. Together with the Trend Server the *ABB OPC Tunnel software* will be installed.

Create an instance of the Trend Server by entering a resource ID via the Settings tool.

Configure the OPC Tunnel as described in the example “Freelance Trend Server” (see above): Start the Configurator, enter for the DA Server (DataAccess) *FreelanceOPCServer.<ResID>* and delete the entry in the field for the AE Server (Alarms&Events). Restart the OPC Tunnel software.

### PC #5: 3rd-party OPC Server station

Start the setup program of the 3rd-party OPC Server. Install the software and create an instance by following the instructions of the vendor.

Start the Freelance setup program and install the *ABB OPC Tunnel* software.

For configuring the tunnel, start the “Configurator” from the start menu:



**Start > Programs > ABB Industrial IT > Freelance > OPC Tunnel > Configurator**

For the DataAccess Server (DA Server) and the Alarms&Events Server (AE Server), enter the names of the OPC servers (see example “3rd-party OPC Server

station”). If you do not know the program names of the OPC server, contact the vendor of the OPC software.

#### **PC #6: Freelance OPC Server**

Start the Freelance setup program and install the *Freelance OPC Server* software.

Create an instance of the OPC server by entering a resource ID via the Settings tool.

This OPC Server is used to provide values from the Freelance system to the 800xA System. The Freelance Operations stations do not need values from this OPC Server. Thus, the OPC Tunnel software is **not** needed on this PC.

#### **PC #7: 800xA System**

Start the setup program of the 800xA System and install the required software packages. Follow the instructions in the 800xA installation manual and configure the connection with the Freelance OPC Server which is installed on PC #6.



# Contact us

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