ReadyToProcess WAVE 25 OPC
UaGateway

Installation Guide

Table of Contents

1 Introduction

Scope of this Installation Guide

This Installation Guide provides you with the information needed to install, download, configure the license, and operate the OPC UaGateway™ software from Unified Automation.

This document also provides instructions on how to install and configure UaGateway for the connection between the client PC and Wave™ 25 EPC.

About OPC UaGateway

The OPC UaGateway software provides a secure communication between Wave 25 EPC and DeltaV™ network computers, avoiding, the problems associated with the DCOM configuration.

Note: *A qualified service person, who is in full compliance with all applicable codes, should perform all the required configuration.*

Typographical conventions

Software items are identified in the text by ***bold italic*** text.

Example: ***Configure UaGateway***

A colon separates menu levels, thus ***File:Open*** refers to the ***Open*** command in the ***File*** menu.

Example: ***UNICORN_DAServer20.System1.1***:***Instruction***:***Rocker***:***Start rocking***

Prerequisites

To install OPC UaGateway:

- You must have Wave 25 EPC with installed UaGateway software. If not, contact Cytiva service personnel for installing UaGateway.
- You must have Wave 25 system defined in UNICORN™.
- Wave 25 must be connected to UNICORN database.

Abbreviations

Acronym	Definition	Translation
OPC	OLE for Process Control	OLE for Process Control
DA	Data Access	Data Access
UA	Unified Automation	Unified Automation

Acronym	Definition	Translation
EPC	Embedded PC, in the Wave 25 system	Embedded PC, in the Wave 25 system
DCOM	Distributed Component Object Model	Distributed Component Object Model

2   Associated documentation

Introduction

This chapter describes the user documentation, links and manuals that are associated with the Wave 25 system.

List of the documents

Documentation	Product info or Links
ReadyToProcess Wave™ 25 Operating Instructions	*cytiva.com/shop/cell-culture-and-fermentation/rocking-bioreactors/systems/readytoprocess-wave-25-rocker-p-05542*
ReadyToProcess Wave 25 Datafile	*cytiva.com*
ReadyToProcess Wave 25 Weblink page	*cytiva.com/shop/cell-culture-and-fermentation/rocking-bioreactors/systems/readytoprocess-wave-25-rocker-p-05542*
UNICORN OPC Manual	*cytiva.com/unicorn*
UNICORN Weblink page	*cytiva.com/unicorn*

Note: *For the latest page, see UNICORN weblink.*

3   OPC UA Tunneller overview

About this chapter

This chapter provides an overview of Wave 25 communication software components, and a brief description of the components function.

Description of the system

Wave 25 rocker is controlled via two communication systems:

- EPC and
- External client PC with any Microsoft® Windows® operating system

The EPC communicates with an external client PC to control the Wave 25 rocker.

A UNICORN OPC DA server is already pre-installed on the EPC.

If the client PC has DeltaV automation client, then the communication goes through OPC. You can use another relevant third party automation software like OPC Mirror or Matrikon Data Manager, to convey the communication between the client and the server.

In addition to the UNICORN OPC classic DA server, an UaGateway server can be installed and configured on the EPC. The configuration is required for converting the classic DA server to the UaGateway server.

If the client PC has an UNICORN automation, then the communication goes via UNICORN.

Note: *The communication via UNICORN is out of scope for this manual.*

Illustration of the connection setup

The illustration below describes the Wave 25 connection setup via OPC communication and UNICORN connection.
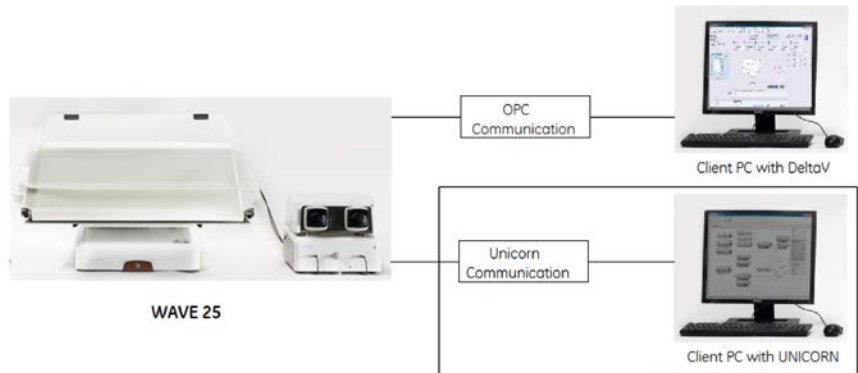
- OPC Communication:

This is the UaGateway channel used to connect to Matrikon Data Manager, DeltaV and/or other OPC clients.

- UNICORN Communication:

This communication channel is used for initial configuration and to define the system. For the communication, at least one UNICORN client license is required.

The software license is also valid for multiple WAVE Rockers. In some cases, one can use UNICORN for controlling the WAVE rocker as well.

The table below describes the components of the Wave 25 connection setup.

Component	Function
Wave 25 bioreactor system	A device for working volumes in the 0.3 to 25 L range. It is designed to meet the demands of a regulated environment.
EPC	Rocker embedded PC which is pre-installed with Windows embedded standard 7 Operating System.
UNICORN OPC DA	Data Access Server from UNICORN which is the OPC server that is used for accepting incoming instructions from the client and executing these instructions on the WAVE rocker.
UaGateway	UaGateway is designed for the connection of legacy OPC Clients (e.g. HMI/SCADA systems) that is needed to connect to the OPC UA Servers. The UaGateway acts as a so called classic, OPC DataAccess 2/3 Server, that is installed locally on a client PC where the HMI/SCADA Client resides. The UaGateway's internal UA Client connects to one or more UA Servers using the high performance binary protocol. The connection can pass through firewalls, can run over the Internet and uses the OPC. UA security mechanisms provides authentication and encryption. ***Note:*** *The DCOM settings are not required on EPC, if UA is installed and configured.*

4 OPC UA Tunneller on Wave 25 EPC

Installation and configuration

OPC UA Tunneller must be installed by Cytiva Service Personnel. If the Wave 25 system is pre-installed without OPC UA Tunneller, contact your local Cytiva representative service engineer to make sure that the UaGateway is installed and configured according to the guidelines.

5 OPC UA Tunneller on external computer

Introduction

The external computer refers to the DeltaV Client App Station where the third party software like OPC Mirror, Matrikon Database Manager/explorer, or other Tunneller have been installed.

In this chapter, the installation and configuration of ***OPC UA Tunneller*** on the Client computer is described.

In this chapter

5.1   OPC UA Tunneller on the Client computer

Installation of OPC UA Tunneller

The Tunneller is another OPA UA software installer, that is required to be installed on the Client PC to tunnel into the EPC. Follow the instructions below to setup the UaGateway.

Step	Action
1	Download the UaGateway Tunneller gateway installer from the *cytiva.com/ eDelivery*.
	Result:
	a zip file appears after the download is finished.
2	Follow the ***UaGateway*** setup instructions on the screen as follows:
	Note:
	All the presented setup parameters are default settings.
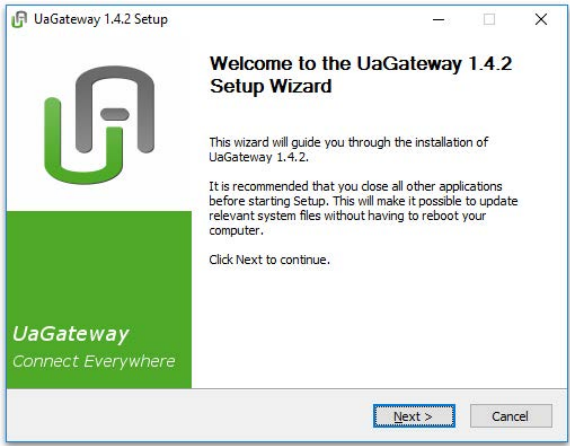
Step	Action
3	Click ***Next***.
4	Select ***I accept the terms of the License Agreement*** checkbox and click ***Next***.

Step	Action

| 5 | Select **UA Gateway** checkbox and click **Next**. |

| 6 | Browse to a destination folder (**C:\Utils\OPC UA\UaGateway**) and click **Install**. |
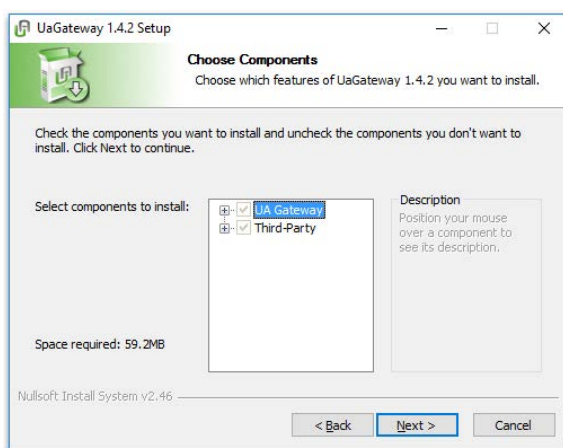
Step	Action

Result:

The installation starts.
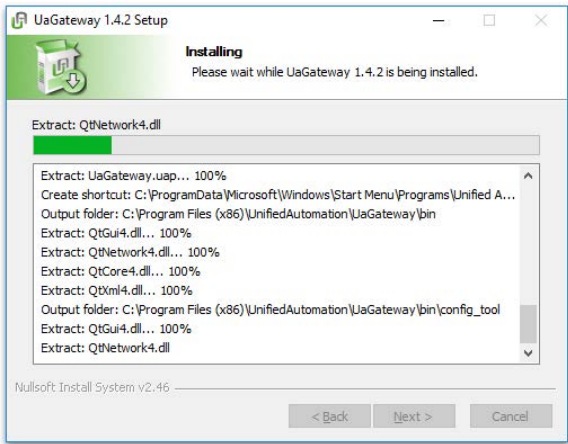
| 7 | Click **Next**. |

Step	Action
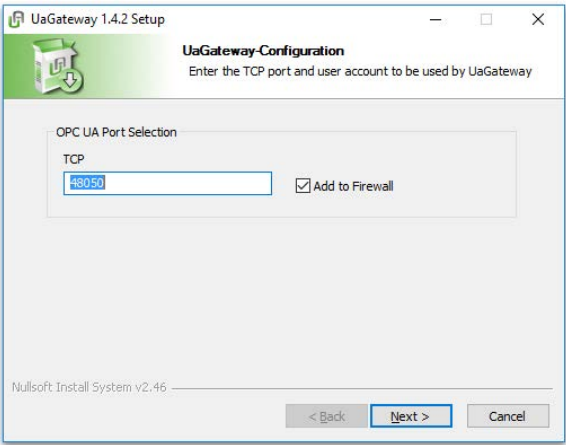
8	Clear the **Show Readme** checkbox and click **Finish**.
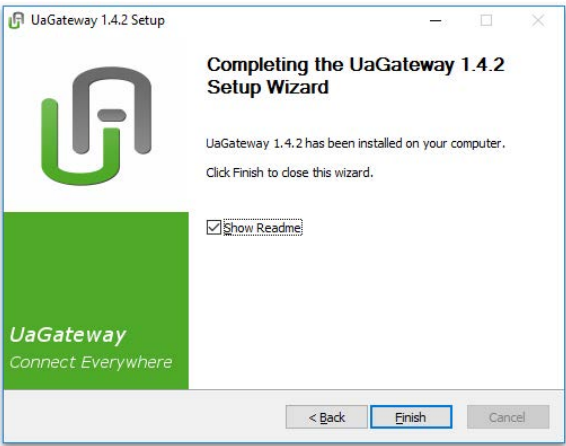
5.2 Configuration of the OPC UA Tunneller

Configuration on the Client computer

When the installation is completed, the software can be configured on the Client computer.

Step	Action
1	Click **OK** to initial **UaGateway** setup.
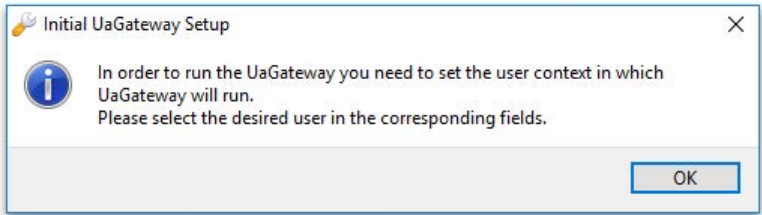
Step	Action
2	Enter the **Domain** and **User** name or use the drop-down menu.

Note:

*The data seen in the screen shot are examples of **Domain** and **User** name. The default names under **Launching User** pane are:*

*Domain: **Computer name***

*User: **CRISPO***

Note:

The Installer provides the credentials for the appropriate Domain and User name from the actual client system where the software is installed.

Step	Action
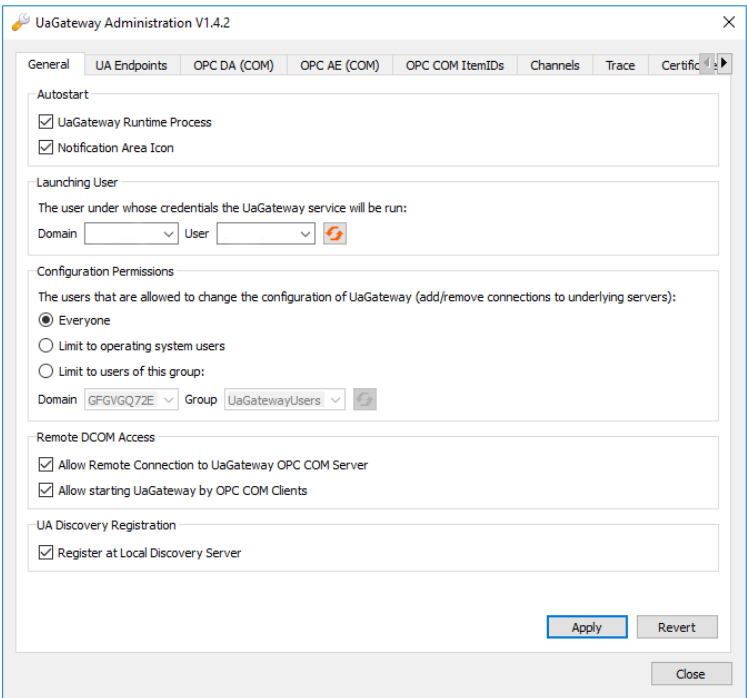
3	Click **Apply** and then **Close**.
4	Enter the password and click **OK**.
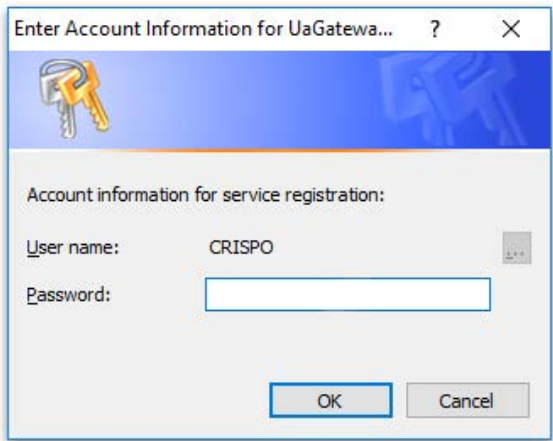
5	Click **OK** when the following window appears.

Step	Action
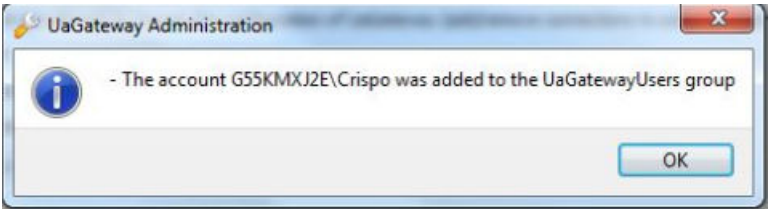
Result:

Installer returns to the **UaGateway Administration** window (step 2).

6   Click **Apply** and then **Close**.
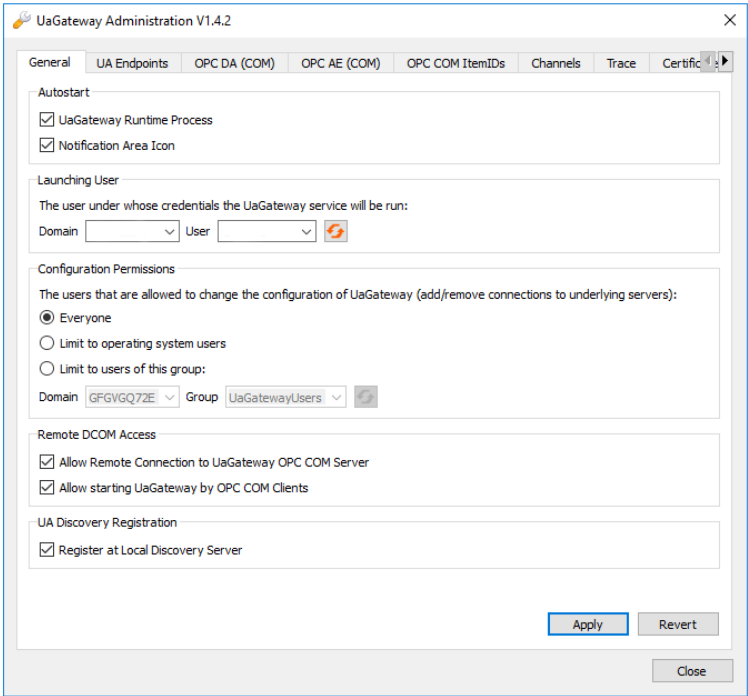
Result:

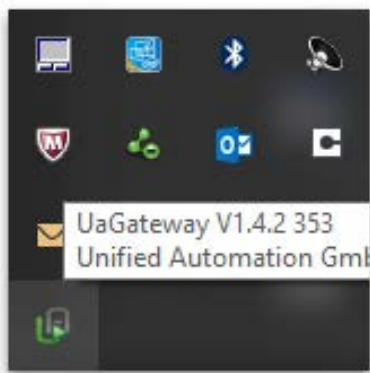The system tray displays the **UaGateway** icon.

7   Right-click on the **UaGateway** icon in the system tray and click **Start**.

Step	Action
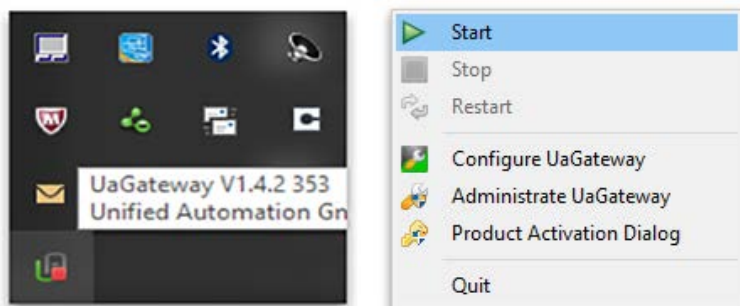
Result:

The color of the **UaGateway** icon changes to green.

8	Right-click again on the **UaGateway** icon and click **Configure UaGateway**.
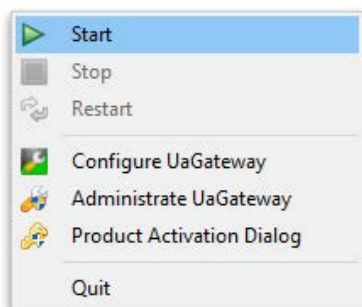
9	Select **UaGateway@localhost** and click **Connect** or select **Connect** from the **UaGateway** menu bar.

Step	Action
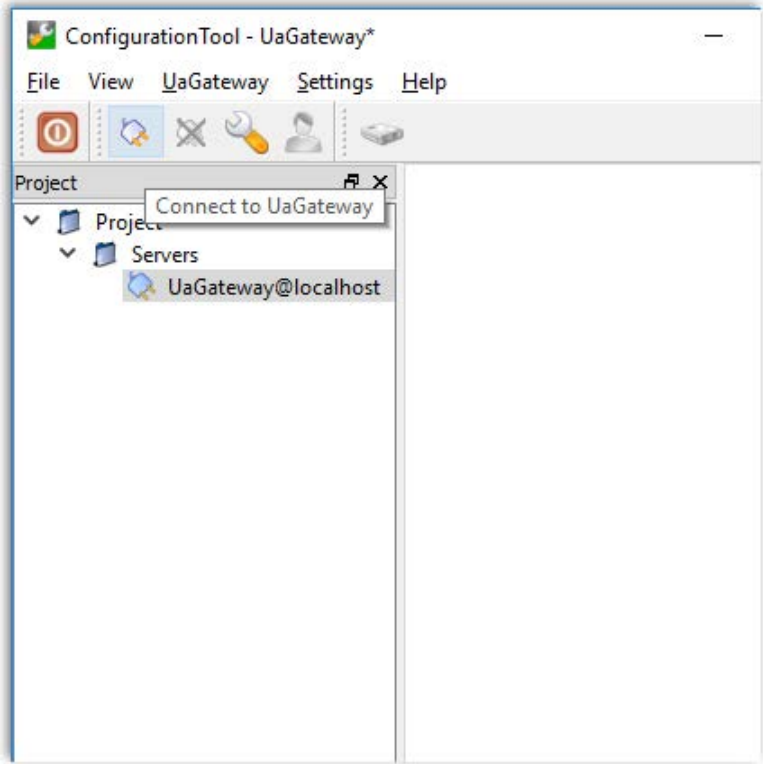
Result:

Device Address Space appears.

Note:

*If **Device Address Space** does not appear, click **UaGateway** in the menu bar, select **UaGateway@localhost** and right-click **Connect**.*

10	In the **Device Address Space** pane, select **OPC UA Servers** and click **Add server**.

Step	Action
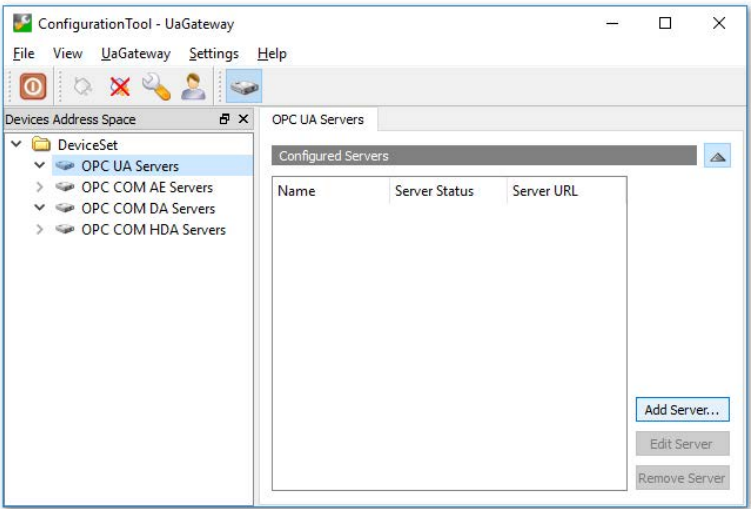
Result:

Add UA Server window opens.

| 11 | Double-click on ***Double click to Add Server*** under ***Custom Discovery***, enter ***URL opc.tcp://ipaddressofepc:48050***, and click ***OK***. |

Note:

- *The URL of the EPC needs to be obtained from a Cytiva Service Engineer.*
- *The URL ip_address for each Wave 25 system is unique.*

Step	Action
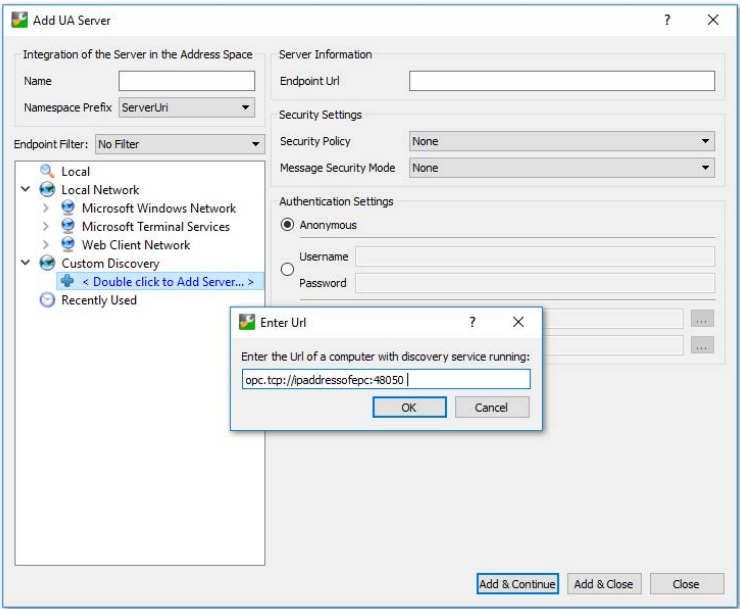
Result:

The URL is listed under **Custom Discovery**.

| 12 | Expand the URL and **UaGateway** under that. |

Step	Action
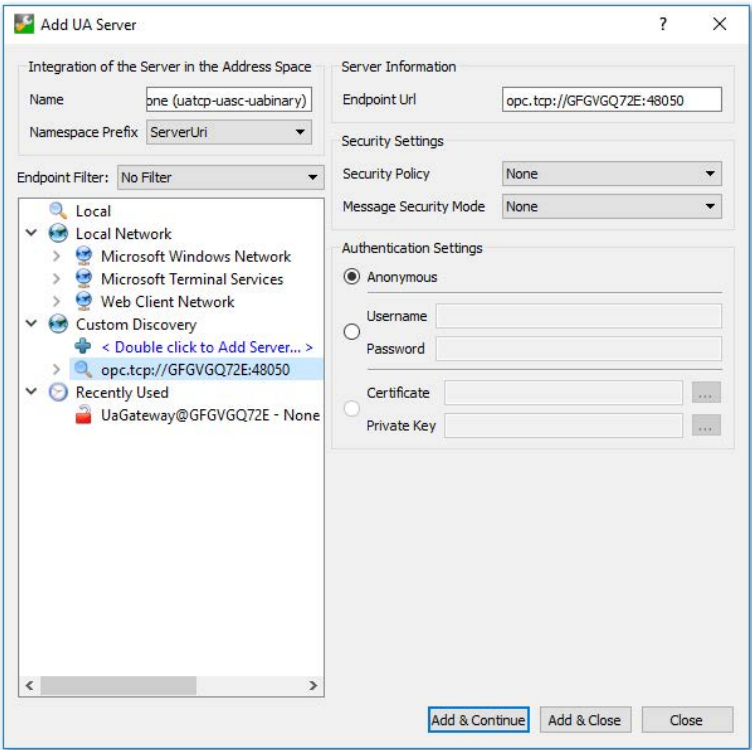
Step	Action
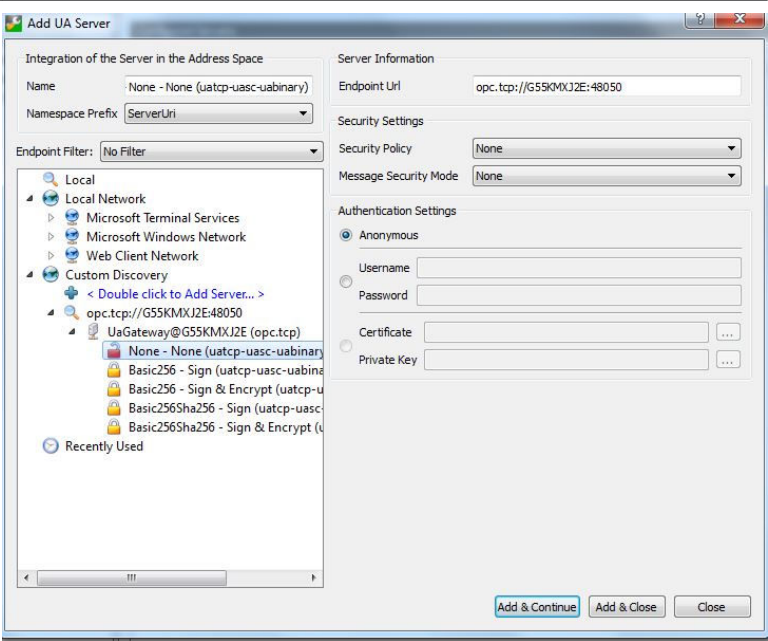
Result:

Replaced Hostname window opens.

13   Click **Yes**.
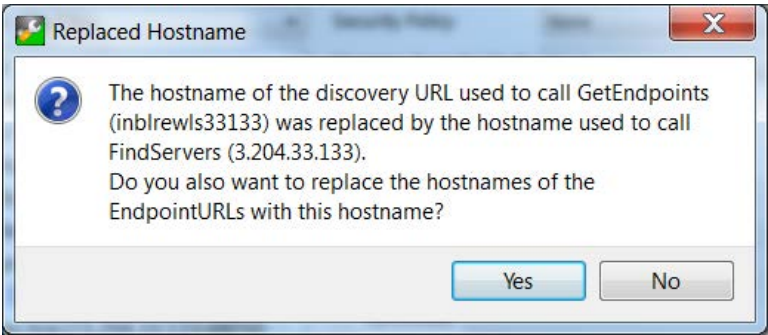
Result:

Add UA Server window opens, and displays the expanded **UaGateway** menu.
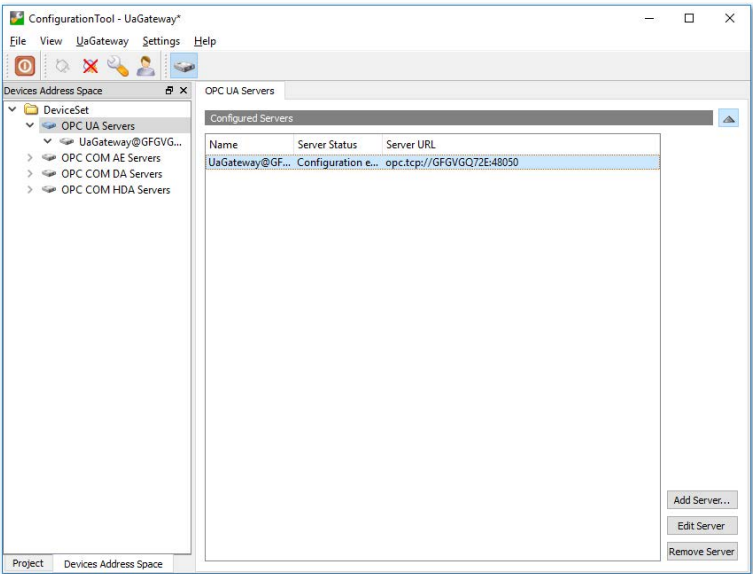
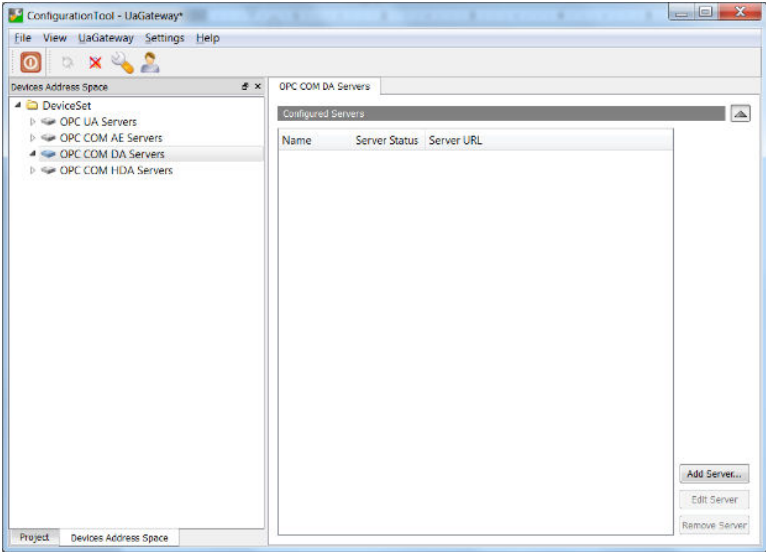14   Select **None** and click **Add & Close**.

Step	Action

.
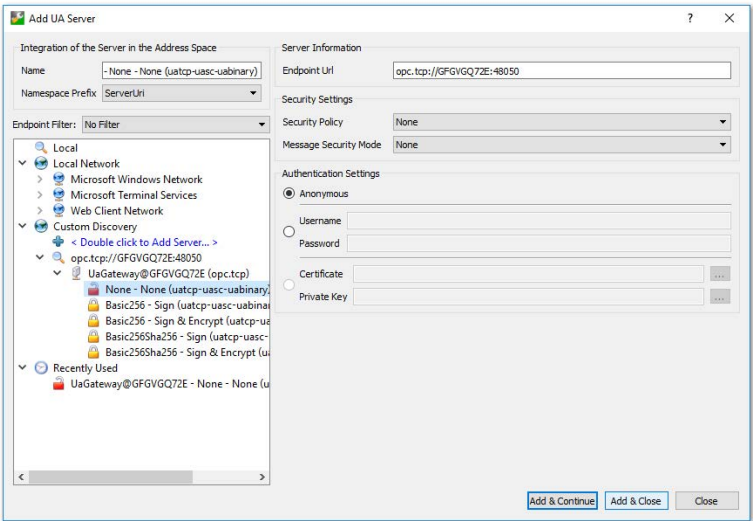
Result:

ConfigurationTool - UaGateway window opens and displays the selected **OPC UA Servers** listed in the **Configured Servers** pane.

15	Extend **Server Status** column and verify that **Server Status** is **Connected**.

Step	Action

16   In *Devices Address Space* select *OPC COM DA Servers* and click *Add Server*.

17   Select *OPC.DeltaV.1* under *Local* and enter the name of the system in *Server Information* as *Host Name*. Click *Add & Close*.
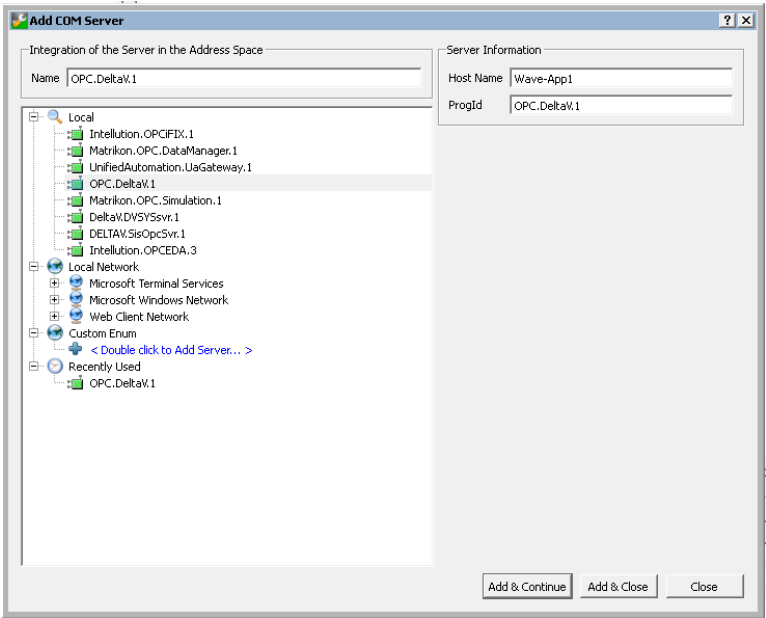
Step	Action

Result:

The **Server Status** displays **Connected**.
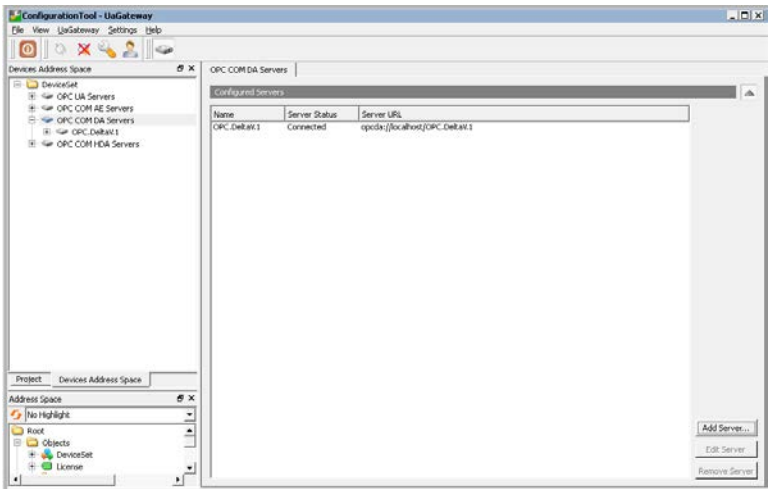
6   Connecting OPC Client

OPC UA Tunneller in Client PC

The DeltaV shall connect to OPC UA Tunneller in Client computer. The connection between DeltaV and OPC server is typically managed using a third party software like Data Manager / OPC Mirror or other similar software.

Refer to respective third party software documentation for their setup. The connectivity of UaGateway can be tested using the third party OPC software for example DeltaV or MatrikonOPC Explorer etc.

7   Uninstallation of OPC UA

Uninstallation from the Client computer

Follow the instructions below to uninstall the OPC UA from the Client computer:

Step	Action
1	Right-click on the *UaGateway* icon in the system tray and click *Quit*.
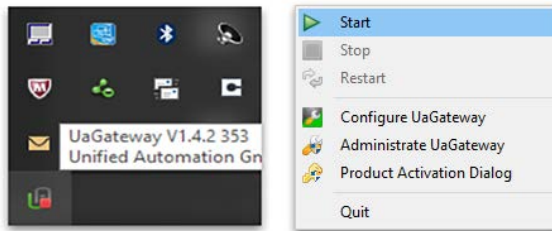
2	Select *Control Panel* and click *Programs and Features*.
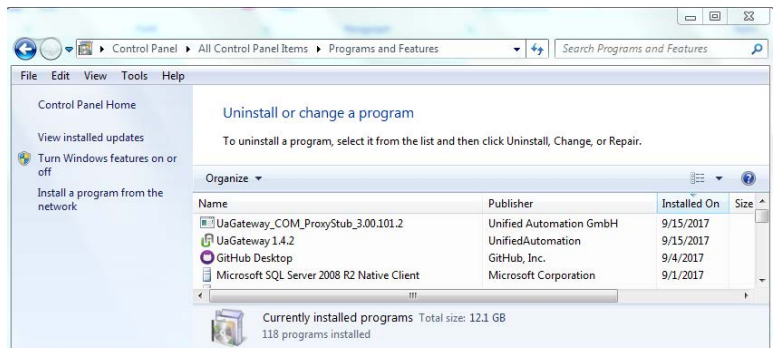
3	Select and uninstall *UaGateway_COM_ProxyStub_3.x.x.x*.

Note:

The displayed numbers in the screen shot are examples.

4	Select and uninstall *UaGateway 1.x.x*.

Note:

The displayed numbers in the screen shot are examples.

5	Click *OK*.
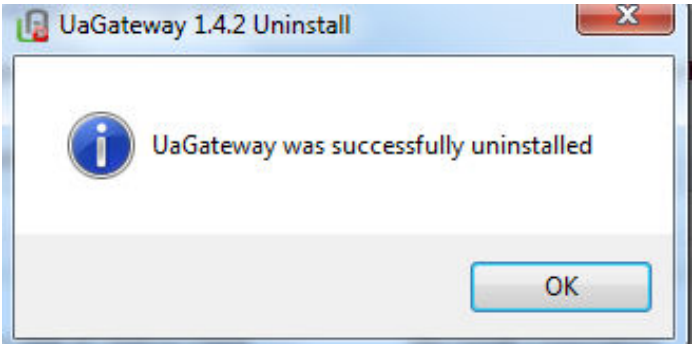
Step	Action
	Result:
	The uninstallation is completed.

8   Troubleshooting

Problem	Possible causes	Corrective action
Lost connection in the Client computer.	Cable loose or Wave 25 is switched off.	Start the OPC UaGateway in the system tray of client PC.
OPC UA is not getting installed.	Corrupt OPC UA Installer in Client computer.	Contact the Local Cytiva Support office.
Wave 25 connection issues.	UNICORN Database connectivity.	• Install, configure and connect the UNICORN Database prior to UaGateway installation. • Restart Wave 25 after the installation and configuration.

cytiva

cytiva.com/Wave