OPC UA Client

The OPC UA Client implements communication with local and remote OPC servers. The communications blocks are dynamically created according to the pooling cycle defined on the Access Type for each Device Point.

Summary Information

Communication Driver Name: OPC UA Client

Implementation DLL: T.ProtocolDriver.OPCUA.dll

Protocol: OPC proprietary

Interface: OPC proprietary

OPC servers supported: Any OPC server compatible with OPC UA specifications

Protocol Options: None

Max number of nodes: User defined

PC Hardware requirements: None

PC Software requirements: OPC Core components

> ⚠️ **Note**
>
> You can find the OPC Core components on the OPC Foundation website.

OPC UA Certificate Configuration

UA security is based on X509 Certificates.

Each UA server and client application requires a certificate with the ApplicationUri of the application. UA servers can be configured so that certificate validation is disabled. In this mode, any proper certificate is accepted. The certificate does not have to match the application.

Self-signed certificates can be created with the uaPLUS **UaClientConfigHelper** utility. OPC UA maintains certificates in the Windows Certificates Store. The certificates are by default in the stores LocalMachine\UA Applications and LocalMachine\Trusted UA Applications. The stores are defined in the application UA configuration and can be changed if necessary.

The **UaClientConfigHelper** utility creates and imports certificates for the stores that are defined in the configuration.

Below are the steps that create certificates where "Manager" and "Device module" work with the OPC UA:

- In Windows Explorer, open the installation folder
- Run the "UaClientConfigHelperNet4.exe" utility (Right-click, and choose the "Run as Administrator" command)
- Inside "UA Client Configuration Helper", click the "Browse" button, and select the TManager.exe file in the product installation folder
    - Click the "Create UA Configuration" button
    - Click the "Edit UA Configuration" button
    - Click the "Certificates" button
    - Click the "Create" button. Then, the "OK" button
    - Click the "Save and Close" button
    - Click the "Done" button

> ⚠️ **Note**
>
> Repeat the same steps for the "TRunModule.exe" application.

If the Server and Client are on the same machine, the certificates are in the correct place when they are created or imported to the **UaClientConfigHelper** utility.

If the Server and Client are on different machines, the following steps are required:

- On the Client machine, create a certificate for the client application with the **UaClientConfigHelper** utility. The created certificate is automatically exported into a .DER file in the utility's directory.
- Copy the Client .DER certificate file to the Server machine, and import it according to the UA server documentation.
- Copy the Server .DER certificate file to the Client machine, and import it with the **UaClientConfigHelper** utility.

⚠️

> ⚠ **Note**
>
> Windows Certificates Manager can be used to check and maintain the certificates beyond the capabilities of the UaClientConfigHelper utility.

Channel Configuration

There is no channel configuration for OPC UA Client channels

Node Configuration

Station Configuration

Service URL: Defines the location of the OPC Server. Example: ua:opc.tcp://127.0.0.1:62841/Advosol/uaPLUS

Refresh Rate: The Server update rate

AllItemsSameGroup: Flag indicating if the driver should add all items to the same OPC group. Only one connection is created with the OPC Server

EnableReadPolling: Flag indicating if reading is by polling

WindowsAuthentication: Flag indicating if it should use Windows Authentication security

DisableSecurity: Flag indicating if security is disabled

UserName: String containing a user name as security credentials

Password: String containing a user password as security credentials

Domain: String containing a domain as security credentials

ReadFromDevice: Forces all reads made from a device

UseTimestampFromComputer: Use a timestamp from a computer instead of a device

Point Configuration

Choose the OPCServer item that will communicate with the tag

You can type the OPC Server item's name into the textbox, or you can use the cell editor to browse the OPC Server items

OPC Arrays: You should configure the Array field in the Modifiers column

Troubleshoot

The status of the driver's execution can be observed through the diagnostic tools, which are:

- Trace window
- Property Watch
- Module Information

The above tools indicate if the operations have succeeded or have failed. A status of 0 (zero) means communication is successful. Negative values indicate internal driver errors, and positive values indicate protocol error codes.

Consult your OPC Server documentation for the specific protocol error codes