Create a DeltaV OPC UA client

Before you begin

- To create a working client, you need to know the endpoint URL of the associated OPC UA server. Record the server's opc.tcp protocol URL before creating a client. To obtain the url of a DeltaV server:

    - For DeltaV workstation servers, click the OPC UA Server subsystem in the left pane of DeltaV Explorer. The right pane displays the opc.tcp endpoint url. Right click the endpoint and click **Properties**. Copy the url from the dialog.

    - For DeltaV PK controller servers, click the OPC UA Server subsystem in the left pane of DeltaV Explorer and right-click **Properties**. Click the **Advanced** tab and copy the endpoint url.

    Note:
    The endpoint URL is not contained in the OPC UA server's FHX file. To reconstruct the URL, you can use the node's information in this format: *protocol://machine:port/path*. For example, *opc.tcp://192.168.1.2:4880/DVOpcUaServer* (where *192.168.1.2* is the node's IP address. For workstation-based OPC UA servers, the hostname (the node's computer name) is valid in place of the IP address).

- For EIOC clients, the port protocol must be **OPC UA**. To set the protocol, open the EIOC port properties in DeltaV Explorer, click the **Advanced** tab and select **OPC UA** under the **Protocol** drop-down list.

About this task

Note: This task describes how to create a DeltaV OPC UA client without security features. Refer to the related information for information on OPC UA security.

Procedure

1. Navigate to the **OPC UA Client** subsystem in the DeltaV Explorer hierarchy. The client is under ProfessionalPlus workstations, Application workstations and EIOCs. This procedure is for a client on the ProfessionalPlus. The procedure for other client types is similar.

    Note: Make sure the node name does not contain a **$** character. This is not a legal character in OPC UA applications with digital certificates.
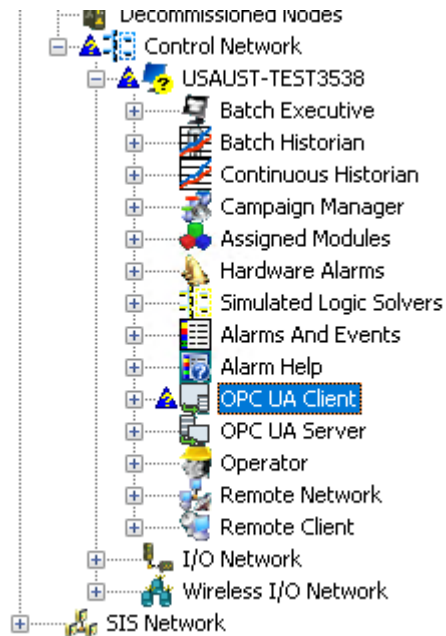
2. Select the OPC UA Client and right-click **Properties**. The system displays the **OPC UA Client** dialog.

3. Click **Enable OPC UA Client**.

4. Click the **Certificate** tab.

5. Click **OK**.

6. Select the OPC UA Client and right-click, **New OPC UA Physical Device**. The system displays the physical device (PDT) properties dialog.

7. On the **General** tab, enter a description for the physical device. Physical devices correspond to OPC UA servers. You may want to include information in the description that identifies the server.

8. On the **Primary** tab, enter the opc.tpc protocol URL for the server in the **Endpoint Url** field.

    Note:
    If the URL contains a hostname and not an IP address, you must have a DNS server configured that will resolve that hostname to a static IP address with a lease time set to infinite (so that the IP address will remain in the DNS table). If a dynamic IP address is used for your endpoint (such as one assigned by DHCP), you will have to update the DNS table with the new IP address every time it is reassigned.

9. For redundant servers, enter the secondary opc.tcp protocol URL on the **Secondary** tab. This step is not required for simplex servers.

10. Click **OK**.

11. Select the physical device in the DeltaV Explorer hierarchy and right-click, **New OPC UA Logical Device**. The system names physical devices PDT1, PDT2, and so on.

12. Select the logical device and right-click **Properties**. The software displays the **OPC UA Logical Device** dialog. The system names logical devices LDT1, LDT2, and so on.

13. On the **General** tab, enter a description to differentiate this from other logical devices.

14. On the **Subscription Settings** tab, enter the **Publishing Interval**. The publishing interval is the interval at which the client pulls data from the server.

15. Click **OK**.

16. Click the **OPC UA Client**, then right-click **Download**.

    The system displays the **Confirm Partial Download** dialog.

17. Click **Yes**.

18. If you receive any warnings (for example, the primary connection for PDT1 does not have a server application certificate configured), click **Download Anyway**.

19. Before creating signals in the client to read server data, test to make sure that the client can communication with the server.