Technical Document

Gallagher Command Centre OPC interface

Introduction

This document describes OPC and the interfaces supported by Gallagher Command Centre. It provides an introduction to using OPC Client tools to understand the interfaces.

OPC is the interoperability standard for the secure and reliable exchange of data in the industrial automation space, and in other industries. It is platform independent and ensures the seamless flow of information among devices from multiple vendors. The OPC Foundation (https://opcfoundation.org) is responsible for the development and maintenance of this standard.

The OPC standard is a series of specifications developed by industry vendors, end-users and software developers. These specifications define the interface between Clients and Servers, as well as Servers and Servers, including access to real-time data, monitoring of alarms and events, access to historical data and other applications.

Gallagher Command Centre supports OPC Alarms & Events and Data Access and operates as an OPC Server. OPC Clients connect to Command Centre.

Alarms and Events (OPC AE 1.0)

Allows an external system to monitor the alarms and events from Command Centre. The external system can also acknowledge alarms.

Example:

A Building Management System can turn lights and air conditioning on and off based on Command Centre cardholder activity.

A Command and Control system can display Command Centre alarms and events along with events from other systems.

OPC AE is a standard interface within Command Centre and is enabled by default.

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Data Access (OPC DA v2.5a and v3.0)

Allows an external system directly interface with Command Centre. An OPC DA Client can query the status of Command Centre items such as doors, relays etc and display them within its own interface. The OPC DA Client can also issue commands to Command Centre such as overriding doors, relays etc.

Example:

A Command and Control system can display the status of Command Centre items such as doors, inputs etc within its interface and override items as required.

Command Centre DA requires the following entry in the licence file; `OPCDataServer=1`. Contact Gallagher Technical Support.

OPC DA v2.05a is supported from Command Centre version vEL7.30. A separate installation file is required. Contact Gallagher Technical Support.

OPC DA is a licensed interface within Command Centre.

Configuration

There are a number of OPC Clients and Client tools available. The OPC Foundation web site has a list of development and testing tools. The examples in this document use the OPC Client from Softing; http://industrial.softing.com/en/request-download.html?type=1334497447&tx_softingdownloads_request%5Bdownload%5D=435&tx_softingdownloads_request%5Bproduct%5D=2600&tx_softingdownloads_request%5Baction%5D=request&tx_softingdownloads_request%5Bcontroller%5D=Download&cHash=4582f169b77ac888111753164364906b

Note: Gallagher does not provide support for OPC Client tools or development kits.

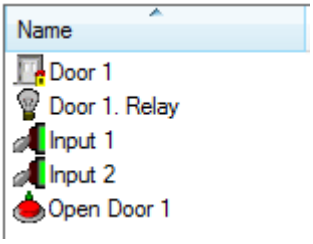
The examples below are a demonstration of how the Command Centre AE and DA OPC Servers interact with OPC Clients. The OPC Client shown is not a solution in itself.

Configuring Command Centre

It is assumed the reader has an understanding of Command Centre configuration.

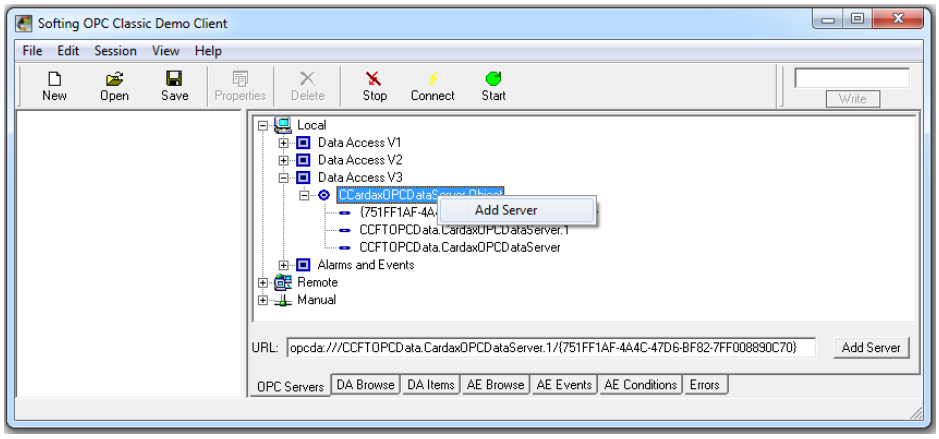
1. Create an Operator Group called 'OPC Operator' with the following privileges.
    - Edit Alarms
    - Maintenance Override
    - Override
    - Override - Open Door
    - Run Macros
    - View Events and Alarms
2. Create an operator called 'opc' (lowercase) with no password and add them to the 'OPC Operator' Operator Group. By default, the OPC Client logs on to Command Centre with the username of 'opc'.

The examples in this document refer to the following items configured in Command Centre;

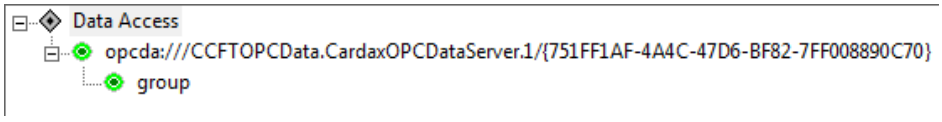


Configuring the OPC Client

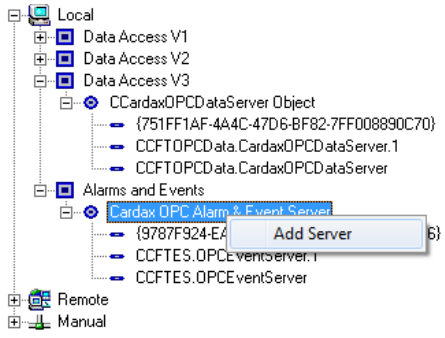
Install the Softing OPC Client and launch it.



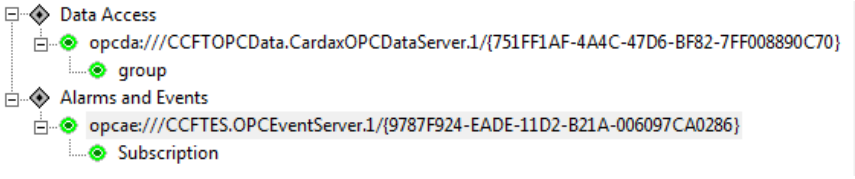
Right-click as shown in the diagram and select 'Add Server'. The OPC Client will connect to Command Centre;



Now add the OPC Alarms and Events server;



Connections to the OPC AE and DA servers will be established;



The connection strings are;

OPC AE:

opcae:///ServerName/{9787F924-EADE-11D2-B21A-006097CA0286}

e.g. opcae:///CCFTES.OPCEventServer.1/{9787F924-EADE-11D2-B21A-006097CA0286}

OPC DA:

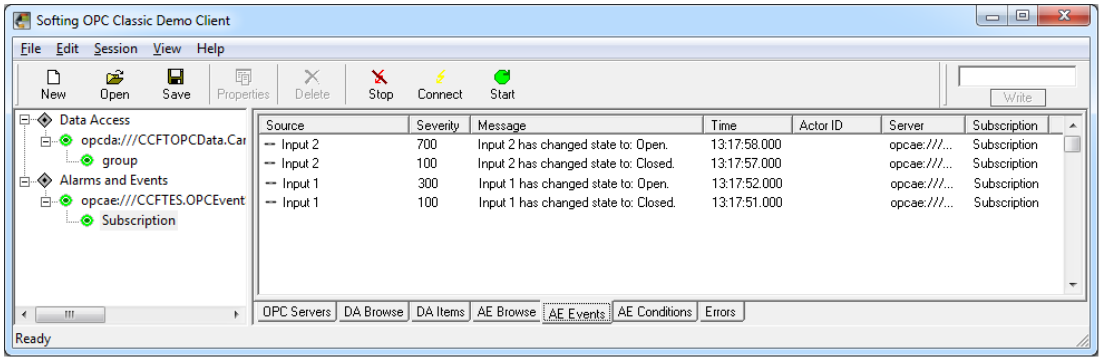
opcda:/// ServerName /{751FF1AF-4A4C-47D6-BF82-7FF008890C70}

e.g. opcda:///CCFTOPCData.CardaxOPCDataServer.1/{751FF1AF-4A4C-47D6-BF82-7FF008890C70}

Where ServerName can be the Hostname, IPAddress, or if running the OPC client on the same PC as the FT Server can be 'localhost' (see below screenshot).
The connection string with the registry key is used if you are running the OPC client on a remote PC.

Testing the OPC AE Client

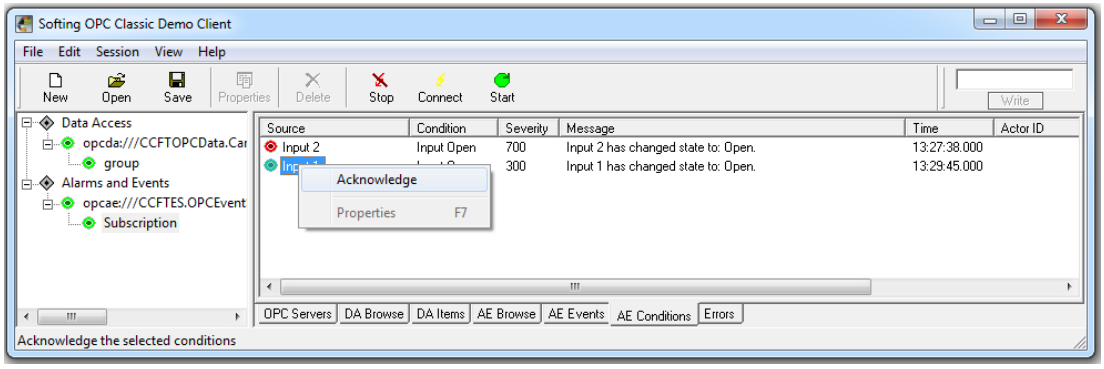
Click on the 'AE Events' tab to view the events from Command Centre;



The ‘Severity’ represents the priority in Command Centre;

Severity	**Command Centre Priority**
100	Message only
200	Very low
300	Low
400	Medium Low
500	Medium
600	Medium High
700	High
800	Very High
900	Critical

Click on the ‘AE Conditions’ the view the status of the item;

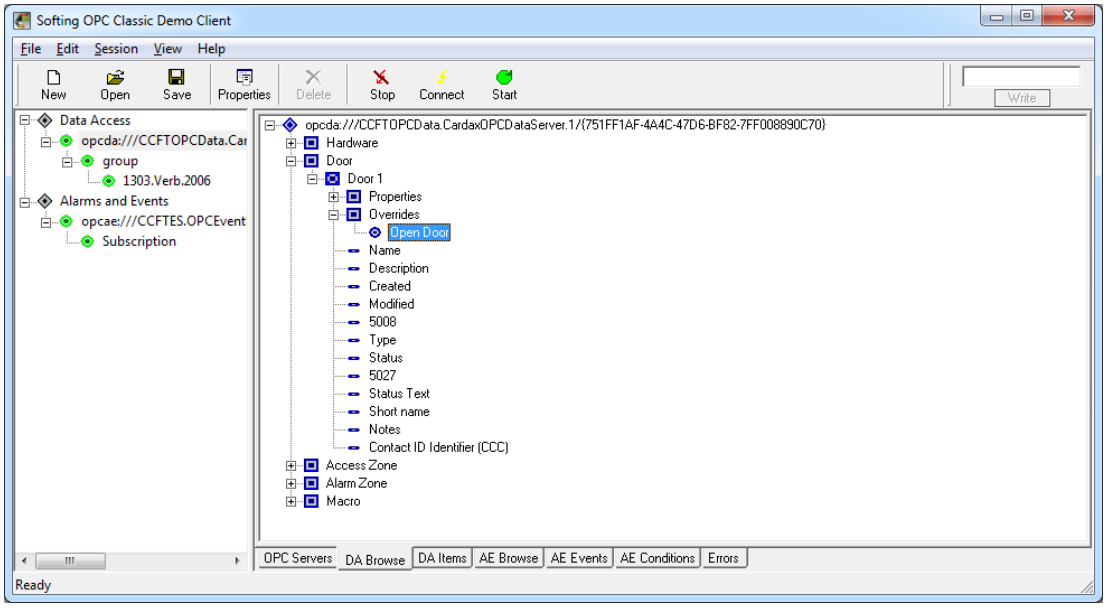


Alarms with the green icon are inactive and can be processed by right-clicking and selecting ‘Acknowledge’. The alarms with the red icons are Active and can be processed if the Operator Group has the ‘Force Processed’ privilege.

Testing the OPC DA Client

The `\Utilities\OPC Data Server Gallagher Command Centre OPC Data Server Interface Spec - v1.6 July2011.pdf` document supplied with the Command Centre installation files has detailed information on the functionality of the OPC DA Server.

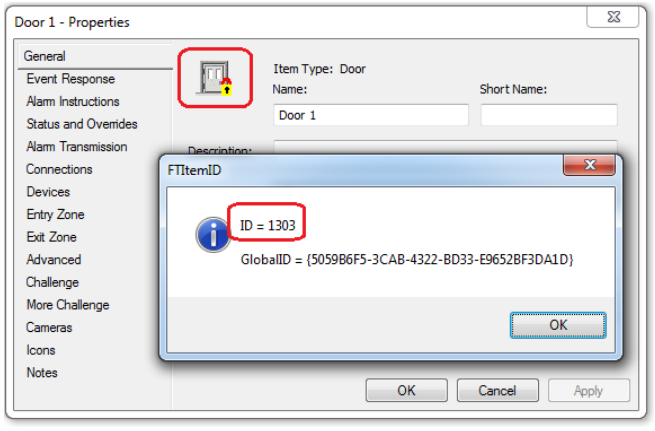
Click on the 'DA Browse' tab to view the available items in Command Centre.



Double-Click the 'Open Door' item.
The '1303.Verb.2006. item appears on the left hand pane.

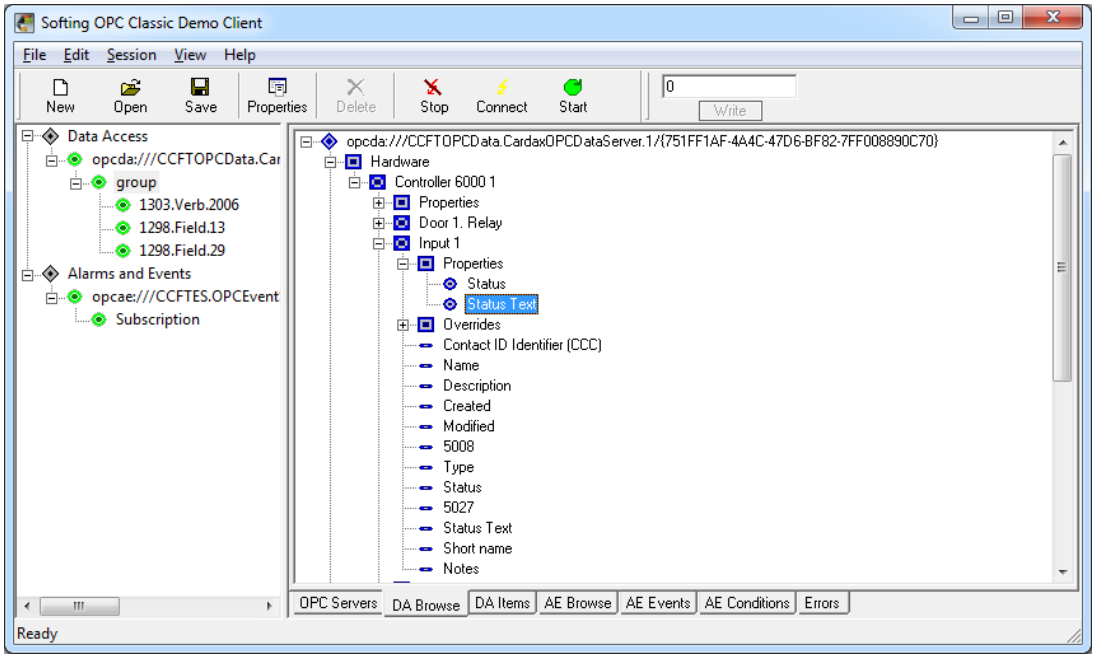
The format is: `FT_Item_ID.Field.Function`

The FT Item ID is a unique Command Centre identifier assigned to every item within Command Centre. To find out the FT Item ID of any item within Command Centre hold down the 'Ctrl' button and double-click on the icon. In this example it is '1308'.



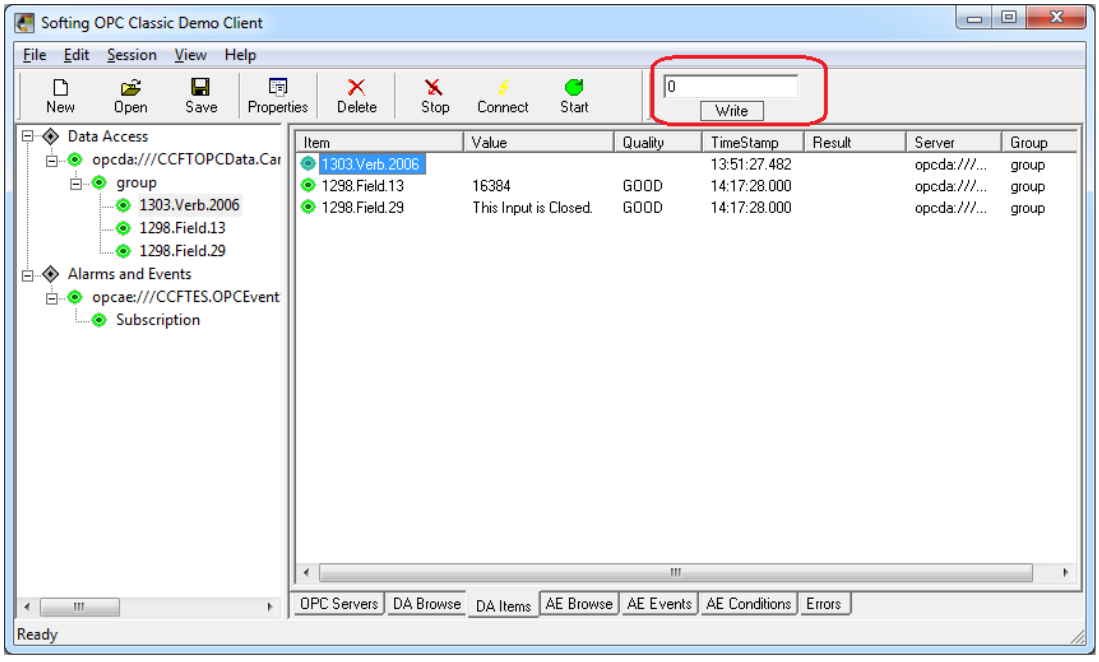
The 'Verb' indicates that an override can be performed on this item. The 'Function' is the activity which can be performed. In this example, '2006' is 'Open Door'. The appendix at the end of this document has a complete list.

Expand the ‘Input 1’ tree and double-click on ‘Status‘ and ‘Status Text’.



Two new items will appear on the left. The FT Item ID of Inout 1 is 1298.

Click on ‘DA Items’ to view the status of items and override them.



Click on the Door 1 item (1303.Verb.2006) and enter any number in the field highlighted in red. Now click ‘Write’. A door override will be sent to Command Centre and will appear in the event log.

Toggle Input 1 to see the changing status.

The above steps can be repeated for other Command Centre items.

Appendix

Properties Status	Value (Integer)
{ID}.Field.13 = Status	
{ID}.Field.29 = Status Text	
Overrides	
{ID}.Verb.2041 = Cancel Override	
Input	
{ID}.Verb.2004 = Shunt	Ignored. Override persists until manually reversed.
{ID}.Verb.2005 = Unshunt	Ignored. Override persists until manually reversed.
Door	
{ID}.Verb.2006 = Open Door	Ignored. Write any value to open the door
Relay	
{ID}.Verb.2008 = On	Duration (in minutes) of override. 0 = override until next schedule update.
{ID}.Verb.2009 = Off	Duration (in minutes) of override. 0 = override until next schedule update.
{ID}.Verb.2041 = Cancel Override	Ignored. Writing to the value invokes the cancel.
Access Zone	
{ID}.Verb.2013 = Free - Card No PIN	
{ID}.Verb.2014 = Free - Card 4 PIN	
{ID}.Verb.2015 = Free - Card 6 PIN	
{ID}.Verb.2016 = SECURE - Card No PIN	
{ID}.Verb.2017 = SECURE - Card 4 PIN	
{ID}.Verb.2018 = SECURE - Card 6 PIN	
{ID}.Verb.2019 = CODE Only - Card No PIN	
{ID}.Verb.2020 = CODE Only - Card 4 PIN	
{ID}.Verb.2021 = CODE Only - Card 6 PIN	
{ID}.Verb.2022 = DUAL AUTH - Card No PIN	
{ID}.Verb.2023 = DUAL AUTH - Card 4 PIN	
{ID}.Verb.2024 = DUAL AUTH - Card 6 PIN	
{ID}.Verb.2041 = Cancel Override	Ignored. Writing to the value invokes the cancel.
Alarm Zone	
{ID}.Verb.2025 = Armed	
{ID}.Verb.2026 = Disarmed	
{ID}.Verb.2027 = User1	
{ID}.Verb.2028 = User2	
Macro	
{ID}.Verb.2047 = Run Macro	
Interlock Group	
{ID}.Verb.2061 = Disable Group	
{ID}.Verb.2062 = Enable Group	

Logic Block
On (Same as Relay)
Off (Same as Relay)
Cancel Override (Same as All)
{ID}.Verb.2065 = Reset Logic