Gallagher Command Centre

OPC Data Server Interface Specification

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Document history

Edition	Date	Author	Comment
1.0	O5/10/2006	DWH	Initial revision.
1.1	27/11/2006	DWH	Detailed reliance on Gallagher Command Centre service. Access rights changes. Detail DCOM security. Fixed status values. Added override cancel verbs.
1.2	23/01/2007	DWH	Status and overrides for Vel5.10 FENCE ITEMS.
1.3	07/02/2007	DWH	Status and overrides for Interlock Groups, Services and Workstations, Logic Blocks, External Systems, DVRs, Intercoms. Note on status quality through OPC interfaces.
1.4	10/05/2007	DWH	Status and overrides value and description fixes.
1.5	19/08/2008	DWH	Added four new available fields to the Gallagher Command Centre Properties section.
1.6	14/07/2011	MD	OPC Data Service has been merged into the Command Centre Service.
1.7	27/02/2015	MD	Updated status for fence zones.
2.0	26/03/2015	DWH	Server now supports OPC DA 2.0.
2.1	20/08/2015	DWH	Various status and override updates for vEL7.40 including Z10 and Z20.
2.2	30/09/2016	DWH	Class 5 ELM status & override. Status for F22, F3x, F4x fence controllers. HV/LF overrides for Fence Zone. Configuring an OPC Operator Group and OPC Operator added.
2.3	21/02/2018	TJR	Default password of OPC operator cannot be blank due to password policy changes in v7.90.
2.4	25/09/2018	TJR	FT DCOM Utility needed for OPC Data Server to work.
2.5	26/09/2019	TJR	Removed a note about the default password of OPC operator being blank, which was missed in v2.3

Contents

1 Overview 4
1.1 Architecture 4
1.2 Component 4
1.3 Licensing 5
1.4 Security 5
1.5 Localisation 7
2 Application 8
2.1 Gallagher Command Centre Address Spacing 8
2.2 Gallagher Command Centre Properties 10
2.3 Gallagher Command Centre Status 11
2.4 Gallagher Command Centre Overrides 15
2.5 Inclusions and Exclusions 17

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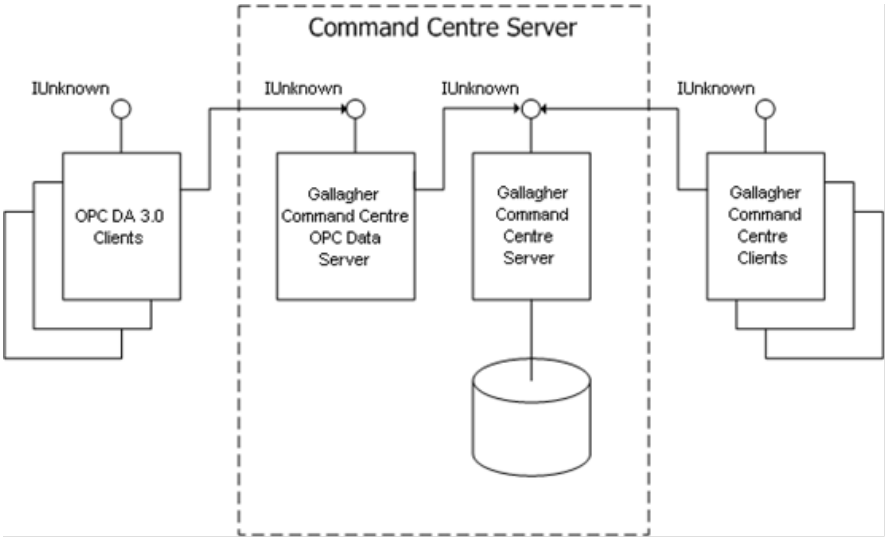
1 Overview

1.1 Architecture

The Gallagher Command Centre OPC Data Server is designed as an out-of-process COM executable implementing the OPC DA 3.0 and OPC DA 2.0 specifications. It *does not* contain legacy support for the OPC DA 1.0 specification.

The Gallagher Command Centre OPC Data Server integrates with the Gallagher Command Centre Server in order to provide OPC DA 3.0 and 2.0 compliant clients with access to the address space of a Gallagher Command Centre install.

Note: DCOM has been disabled from v8.00, therefore you need to run the FT DCOM Utility for OPC DA to work. Refer to the "DCOM Setup Utility" topic in the *Command Centre Configuration Client help file* for instructions.



1.2 Component

The Gallagher Command Centre OPC Data Server has the following identity:

Version-independent ProgID: `CCFTOPCData.CardaxOPCDataServer`
CLSID: `751FF1AF-4A4C-47D6-BF82-7FF008890C70`

An example connection string, such as can be used in the OPC Foundation's sample data client, is as follows:

```
opcda://localhost/CCFTOPCData.CardaxOPCDataServer
```

The following points should be noted when dealing with the server component:

- The OPC server is installed as part of a Gallagher Command Centre setup. The Command Centre setup will install a Windows service called "FT Command Centre Server" (CCNTSAD.exe) with a default start-up type of "automatic". The Gallagher OPC Data Server runs within the context of this Windows service. The complete Command Centre setup must succeed and then the service must be running on the target machine in order for OPC connection attempts to succeed.
- The OPC server must reside on the Gallagher Command Centre central server machine. OPC clients may be distributed and may access the server remotely via DCOM, assuming DCOM and firewall permissions have been setup appropriately.

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- The OPC server implements the OPC DA 3.0 and 2.0 *custom interfaces.* It does not contain built-in support for the **IDispatch** automation interface.

1.3 Licensing

The Gallagher Command Centre OPC Data Server is a licensable feature for Gallagher Command Centre installations. Every Gallagher Command Centre installation requires a Gallagher Command Centre license file, which is keyed to specific Controller hardware running on the site. The OPC Data feature must be listed as a licensed feature within the Gallagher Command Centre license file in order for the OPC Data Server to operate.

1.4 Security

1.4.1 Logon

As with Gallagher Command Centre clients, OPC clients are required to logon to the server before access is granted to the server's address space or to read or write data in that space. The logon establishes the OPC client's identity and permissions within the Gallagher Command Centre system. See ***1.4.1.1 Configuring an OPC Operator Group and OPC Operator*** next for further detail. **The OPC-visible address space and the OPC read/write permissions within the address space will all be adjusted according to the Gallagher Command Centre configured "operator privileges" associated with the logon.**

The Gallagher Command Centre OPC Data Server supports two logon techniques: manual logon and automatic logon. Manual logon is achieved via **IOPCSecurityPrivate**, which the server implements. Pass the same operator username and password credentials to **IOPCSecurityPrivate::Logon** as would be used to logon to a Gallagher Command Centre client workstation. The client and its associated OPC server component will then operate with the same operator privilege level as would be obtained by the operator at the Gallagher Command Centre workstation (subject, of course, to the more limited feature set available through the OPC interface).

The Gallagher Command Centre OPC Data Server does not support **IOPCSecurityNT.**

To enable use by OPC clients that do not support the OPC security specification, the Gallagher Command Centre server also supports a second logon technique: automatic logon. Whenever the Gallagher Command Centre OPC server processes a method call on the **IOPCServer** interface, it checks the logon status of the client. If it finds the client has not explicitly logged on via **IOPCSecurityPrivate** it will attempt to perform an automatic internal logon. The credentials it uses are determined in the following order:

Registry – The server looks up the following values within the host machine's registry:

Key name (32 bit OS):	`HKEY_LOCAL_MACHINE\SOFTWARE\Cardax\Command Centre FT`
Key name (64 bit OS):	`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Cardax\Command Centre FT`
Username Value:	`OPCUserName (REG_SZ)`
Password Value:	`OPCPassword (REG_SZ)`

Note: For the logon scenario listed, it is essential that the corresponding operator (with matching username/password) has first been created and configured and enabled as an operator on the Gallagher Command Centre system.

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1.4.1.1 Configuring an OPC Operator Group and OPC Operator

OPC clients require an OPC operator. The OPC operator must be configured using the Command Centre Configuration Client, as follows:

1. In Gallagher Command Centre, create a cardholder with first and last names as required, (e.g. "OPC Operator").
2. Create an Operator Group called 'OPC Operators'.
3. On the **Operator Privileges** tab of this group, select the appropriate privileges from the following list depending on what functionality the OPC client requires:
   Note: At a minimum the OPC operator requires "View Site" privilege in order for site browse and item status to function, and "Launch Configuration Client" privilege to access the Command Centre Configuration Client.
   - View Site
   - Launch Configuration Client
   - View Events and Alarms
   - Run Macros
   - Override - Open Door
   - Maintenance Override
   - Override
   - Edit Alarms
4. Once you have configured the Operator Group, drag the cardholder into that group.
5. Apply the changes to the cardholder and then close and reopen the cardholder.
6. On the **Operator Configuration** tab of the cardholder, enter the logon name as "opc" (lower case), check the **Force password change at next logon** checkbox and click **OK**.
7. Log out and log in as the 'opc' operator.
   The Password has expired dialog displays.
8. Create a secure password and click **OK**.
   Note: This is the password that will be used by OPC clients when logging in via IOPCSecurityPrivate, or when the server logs on using the registry-sourced password as detailed in section 1.4.1 earlier.
9. Ensure everything is configured correctly in the Command Centre Configuration Client.

1.4.2 Access Rights

Section 6.7.6 of the OPC DA 3.0 specification contains the following paragraph about data item access rights:

> *The OPC_READABLE and OPC_WRITABLE bits are intended to indicate whether the Item is inherently readable or writable. For example, a value representing a physical input would generally be readable but not writable. A value representing a physical output or an adjustable parameter such as a setpoint or alarm limit would generally be readable and writable. It is possible that a value representing a physical output with no readback capability might be marked writable but not readable. It is recommended that Client applications use this information only as something to be viewed by the user. Attempts by the user to read or write a value should always be passed by the client program to the server regardless of the access rights that were returned when the item was added. The Server can return E_BADRIGHTS if needed.*

Gallagher Command Centre **overrides** exposed through OPC will have an inherent access of OPC_WRITABLE *without* OPC_READABLE (i.e. they will be write-only). Therefore, OPC clients connecting to the Gallagher Command Centre server must support write-only data items.

Gallagher Command Centre **status** values available through OPC will have an inherent access of OPC_READABLE *without* OPC_WRITABLE (i.e. they will be read-only).

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The Gallagher Command Centre OPC Data Server does not currently expose any read/write fields through the interface. Also, any fields that are denied to the logged-on operator due to Gallagher Command Centre configured privilege restrictions will not be included in the returned set of OPC items **via IOPCServer::Browse** – i.e. they will simply not be exposed through the OPC interface.

1.4.3 DCOM and Firewall

The Gallagher Command Centre OPC Data Server installer performs the following DCOM and firewall security configurations at install time:

- Automatically adds the server component (CCNTSad.exe) to the standard Windows XP SP2 firewall, if present.
- Sets the server component to run under the Local System account.
- Gives DCOM activation and access permissions (both local and remote) for the server component to the "Cardax Users" group. This group was created at Gallagher Command Centre install time and by default includes "Everyone".

The Gallagher Command Centre OPC Data Server does *not* do any of the following:

- Install the OPCEnum service or any of the other OPC core components other than what is required to run OPC DA 3.0. This may mean that a remote client needs to use a CLSID to access the server. If the client wants to use a ProgID or server browsing then the OPC core components should be installed separately.
- Add the server component to any other firewall (non-XP standard) that may be running on the server machine.
- Make configuration changes on client machines. A clean client machine, in order to access the remote server will need to:
    1. Add the client application to the firewall on the client machine.
    2. Open port 135 in the client firewall to enable DCOM.
    3. Enable machine-wide DCOM remote *access* permissions for "Anonymous" in order to allow the server to perform DCOM callbacks to the client application.

It is the responsibility of the system installer to adjust DCOM config permissions for the server component and client machines as well as manage any relevant firewall restrictions to allow clients to access the server from across a network, according to the security policies of the installing site. A useful resource of note here is:

OPC & DCOM Troubleshooting: Quick Start Guide – available from the OPC Training Institute, download here:
http://www.opcti.com/ResourceDetails.aspx?id=2&AspxAutoDetectCookieSupport=1

1.5 Localisation

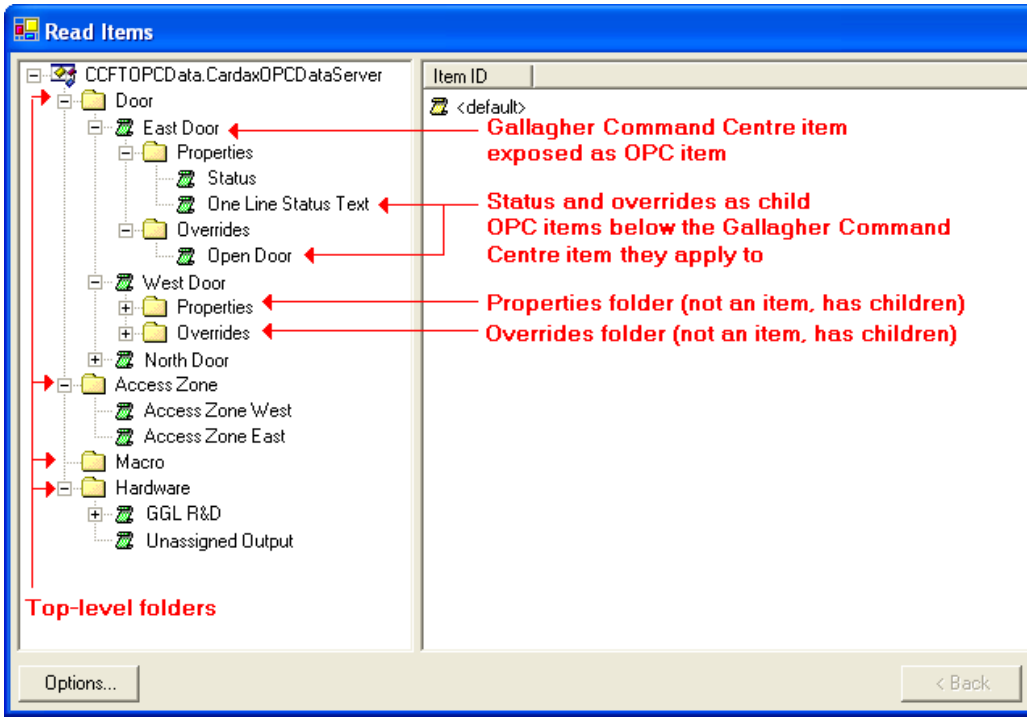
The Gallagher Command Centre OPC Data Server supports localisation of strings, including translations of error codes, via the standard methods of the **IOPCCommon** interface. Gallagher-specific HRESULTS may be submitted to **IOPCCommon::GetErrorString** to retrieve a locale-specific description of the code. Note, however, that locales are limited to those supported in the Gallagher Command Centre installation.

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2 Application

2.1 Gallagher Command Centre Address Spacing

The client may use either the OPC DA 3.0 **IOPCBrowse** interface or the DA 2.0 **IOPCBrowseServerAddressSpace** to browse the address space of the Gallagher server. The Gallagher **IOPCBrowse::Browse** implementation supports *continuation points* and exposes an address space structured in the following way:



Note: The above is an example only and does not represent the final collection of properties and overrides exposed through the Gallagher Command Centre OPC interface. Also, the specific address space returned via **IOPCBrowse** is dependent on the access privileges of the operator currently logged on to the OPC server.

The features of the address space are as follows:

2.1.1 Top-level Folders

These folders act as storage containers for logically grouped items within the Gallagher Command Centre address space. **They are equivalent, having the same names and contents, to the Gallagher Command Centre configuration windows (also known as "master list windows") within the Gallagher Command Centre workstation client.** For example, the "Door" top-level folder within the OPC address space is equivalent to the "Door" configuration window within the Gallagher Command Centre workstation client – It will contain the same Gallagher Command Centre items in the same relationship to each other as would be found in the Gallagher Command Centre client under the same logon.

Note that the top-level folders are not OPC items – they cannot be added to OPC groups – but instead are marked as "containing children" while being "not an item". (Refer to the discussion of `OPC_BROWSE_HASCHILDREN` and `OPC_BROWSE_ISITEM` in section 4.3.6.1 of the OPC DA 3.0 specification).

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2.1.2 Gallagher Command Centre Items

Gallagher Command Centre items – such as Doors, Controllers, Access Zones, Macros – are presented in the OPC Browse hierarchy beneath their related top-level folder. Gallagher Command Centre items may exist in a hierarchical relationship to each other, such as IO boards below the Controller they are connected to. Gallagher Command Centre items are marked as OPC items and therefore support the list of basic properties defined by the OPC specification, as well as a small set of standard Gallagher Command Centre properties, such as item type, and modification date etc.

2.1.3 Properties

Some Gallagher Command Centre properties, especially item status, are exposed as OPC items in their own right; sitting as child items below the Gallagher Command Centre item they apply to. This allows them to be added to OPC groups and allows the client to be notified of changes in those properties. This is intended to facilitate the addition of status properties to site plans or other dynamically updated UI feature.

Properties that are OPC items are grouped together under a container folder called "Properties", as shown above. The container folder is not an OPC item.

2.1.4 Overrides

Gallagher Command Centre overrides are exposed as OPC items in their own right; sitting as child items below the Gallagher Command Centre item they apply to. This allows them to be easily identified and also allows their value to be written by the OPC client. Note that Gallagher Command Centre overrides are exposed as OPC items having inherent *write only* access.

Overrides are grouped together under a container folder called "Overrides", as shown above. The container folder is not an OPC item.

The following points should be noted when dealing with the OPC browse functionality provided by the Gallagher Command Centre OPC Data Server:

- There is no support in the OPC DA 3.0 specification for server notifications to connected clients regarding changes in the server's address space structure. The OPC specification assumes an address space that is static (in population, not in item values) over the execution lifetime of the server.

  However, Gallagher Command Centre workstation clients running at the same time as the OPC clients may update the Gallagher Command Centre address space. This implies that OPC items determined via **IOPCBrowse** are not guaranteed to remain present over the lifetime of the OPC client's connection to the server. (For example, a Gallagher Command Centre operator may delete a Door after an OPC client has browsed it). OPC clients should be designed to cope with these scenarios.

- Currently the "vendor filter" feature of the browse function is unsupported. It merely reproduces the behaviour of the OPC standard "name filter" when browsing for items.

- The Gallagher Command Centre scheme for generating OPC ITEMIDs has been designed to be as static as possible, allowing clients to store item Ids or OPC group definitions without fear of the Ids becoming disconnected from the items due to changes in the server configuration. To this end, Gallagher Command Centre generated OPC item Ids *do not* make use of concatenated item names such as is demonstrated in the OPC specification. (Item names may easily be changed via the Gallagher Command Centre client and would then expire any client-stored Ids for those items).

  While it is highly unlikely that Gallagher Command Centre generated item Ids will ever "unlink" from their items, there is a slight possibility that this could happen *over an upgrade from one version of Gallagher Command Centre to an upgraded version*. This is the only

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vulnerable scenario, and it would happen if the upgraded version changed field identifiers internally. Thus, an upgrade of Command Centre needs to be accompanied with a test of OPC data clients to make sure any client-stored item or group definitions are still valid.

2.2 Gallagher Command Centre Properties

The following Gallagher Command Centre specific properties are available through **IOPCBrowse::Browse** and **IOPCBrowse::GetProperties** for Gallagher Command Centre items in the address space:

Name	Property ID	Type	OPC item	Description
Name	5000	VT_BSTR	No	The item name, as displayed in the Gallagher command Centre client property pages for the item.
Description	5001	VT_BSTR	No	The item description
Notes	5035	VT_BSTR	No	The short notes for the item, as found on the item's Gallagher Command Centre property page.
Short name	5031	VT_BSTR	No	The item's short name.
Created	5002	VT_DATE	No	The date and time at which the item was created.
Modified	5004	VT_DATE	No	The date and time at which the item was last modified.
Database ID	5008	VT_14	No	An integer identifier that uniquely identifies each Gallagher Command Centre item.
Class ID	5027	VT_BSTR	No	A globally unique identifier (GUID) that identifies the item's type.
Type name	5012	VT_BSTR	No	A description of the item's type, in the Language of the Gallagher Command Centre server's locale.
Status	5013	VT_14	Yes	An integer representation of the item's status.
Status text	5029	VT_BSTR	Yes	A string representation of the item's status.
IP Address	6012	VT_BSTR	No	The Gallagher's Controller's IP address. **This field is only available on Gallagher Controller item types.**
Alarm Dialling "CCC" setting	8900	VT_BSTR	No	The Contact ID alarm dialling "CCC" setting for the item. This field is only available on item types that support the CCC setting.

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2.3 Gallagher Command Centre Status

As well as status text delivered as an OPC property on Gallagher Command Centre items, a raw 32-bit integer representation of status is also available. This is vendor-specific property 5013 in the table above. For each item type it is formed as the "ORing" of flags according to the following table:

Item Type	Status	Flag
All Items		
	Normal	0x0
	Unsaved	0x1
	Unconfigured	0x2
	Deleted	0x4
	Unknown	0x8
	Process Offline	0x10
	Controller Offline	0x20
	Awaiting status from Controller	0x10000000
All Hardware		
	Unit Offline	0x100
	Not Polled	0x200
	Bad Power	0x400
	Front Tamper	0x800
	Back Tamper	0x1000
	Tamper	0x2000
Input		
	Shunt	0x200
	Closed. (Open = flag not set)	0x4000
	Parent alert (Which means: "Also note the status of the device that this item is attached to")	0x8000
	Isolated	0x20000
Output		
	On. (Off = flag not set)	0x4000
	Overridden	0x100000
	Pulsed	0x40000000
Door		
	Closed (Open = flag not set)	0x4000
	Secure (Free = flag not set)	0x40000
	Locked (Unlocked = flag not set)	0x2000000
	Forced	0x4000000
	Open Too Long	0x8000000
Access Zone		
	Secure (Free = flag not set)	0x40000
	Code only	0x10000
	Dual authorisation	0x20000
	Overridden	0x100000
	Zone count too high	0x200000
	Zone count too low	0x400000

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Item Type	Status	Flag
	PIN	0x800000
	Locked down	0x2000000
	The zone count part of status integer is valid	0x40000000
	The access part of the status integer is valid	0x80000000
Alarm Zone		
	Armed (Disarmed = flag not set)	0x10000
	User 1 state	0x20000
	User 2 state	0x40000
	Exit Delay	0x80000
Fence Zone		
	Shunt	0x200
	On. (Off = flag not set)	0x4000
	Parent alert (Which means: "Also note the status of the device that this item is attached to")	0x8000
	Fence Zone overridden	0x10000
	Pre-arm	0x20000
	Deterrent unknown	0x40000
	In alarm	0x80000
	In warning	0x100000
	Low feel	0x200000
	On HBUS fence controller	0x400000
	Low voltage warning	0x800000
	High voltage warning	0x1000000
	Locked out	0x2000000
	Zone's controller in service mode	0x4000000
	HV plus mode	0x8000000
	Temperature outside HV plus range	0x20000000
Fence Controller		
	Go slow	0x10000
	Stop	0x20000
	Low battery	0x40000
	Earth unknown	0x80000
	Earth alarm	0x100000
	No battery	0x200000
	Competing sync	0x800000
	Sync lost	0x400000
	Very high temperature	0x1000000
	Critical temperature	0x2000000
	Service mode	0x8000000
	HV Plus mode	0x20000000
	Temperature outside HV Plus range	0x40000000

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Item Type	Status	Flag
Interlock Group		
	All doors secure	0x40000
	Interlocking disabled by override	0x100000
	Interlocking rules breached. (Interlocking rules active = flag not set).	0x4000000
Logic Block		
	On. (Off = flag not set)	0x4000
	Overridden	0x100000
	Logic block input in unknown state	0x200000
Services and Workstations		
	Process Offline. (Online = flag not set).	0x10
External System		
	External System Offline. (Online = flag not set).	0x100
External System Item		
	Closed. (Open = flag not set)	0x4000
	Tamper	0x2000
	External System Item offline. (Online = flag not set).	0x10000
	Parent alert (Which means: "Also note the status of the device that this item is attached to")	0x8000
DVR System		
	DVR System Offline. (Online = flag not set).	0x100
DVR Camera		
	Closed. (Open = flag not set)	0x4000
	Tamper	0x2000
	DVR Camera offline. (Online = flag not set).	0x10000
	Parent alert (Which means: "Also note the status of the device that this item is attached to")	0x8000
Intercom System		
	Intercom System offline	0x200
Intercom		
	Intercom System offline	0x200
	Intercom offline	0x400
	Intercom isolated	0x800
	Intercom remoted	0x1000
	Intercom call active	0x00800000
	Intercom call ringing	0x01000000
	Intercom call ended	0x02000000
	Intercom call on hold	0x04000000
Z20 Disturbance Sensor		
	Tilt alarm	0x0800
	Dynamic alarm	0x1000
	Disturbance alarm	0x2000
	Hardware fault	0x04000000

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Item Type	Status	Flag
Z10 Tension Sensor Group		
	Maintenance mode	0x00010000
	Walk test mode	0x00020000
	Low tension	0x00040000
	High tension	0x00080000
	Voltage error	0x00100000
	Sensor offline	0x00200000
Class 5 End-of-Line Module		
	Closed (Open = flag not set)	0x00004000
	Isolated	0x00002000
	Masked	0x00040000

Note on Gallagher Command Centre Status Updates Through OPC

In Gallagher Command Centre an item's status is maintained at the server only when that item is being "watched" in a Gallagher Command Centre workstation. This is an efficiency feature that prevents massive amounts of unneeded item status being delivered to the Gallagher Command Centre server.

This feature has the following implications for reading status through the OPC server:

1. Adding a Gallagher Command Centre item to an OPC group, where the item and the group is set to *active*, has the effect of putting a "watch" on the item in exactly the same way as watching it through the Gallagher Command Centre workstation. Thus the item's status will be maintained at the Gallagher Command Centre server and available through the OPC interface.
2. Therefore, reading status through one of the OPC group-based IO interfaces (e.g. **IOPCSyncIO, IOPCAsyncIO** etc.) is guaranteed to return up-to-date status for the items, providing the OPC group and item are set as active.
3. However, reading status through one of the OPC synchronous, non-group, read interfaces (i.e. **IOPCItemIO or IOPCBrowse**) is *not* guaranteed to return up-to-date status data. This is because there is no guarantee the item is part of an active OPC group or on display in a Gallagher Command Centre workstation and so there is no guarantee that Gallagher Command Centre has a "watch" on the item and is collecting up-to-date status data.
4. In order for OPC clients to determine the validity of status data *when reading it through a synchronous, non-group, IO interface*, the following OPC VQT scheme is implemented:
   - The timestamp (T) of the status value will indicate the time of collection of that status value (V) from the item hardware.
   - The quality (Q) of the status value will be marked as BAD if Gallagher Command Centre has never received status data from the item hardware – i.e. the item has never been "watched" via an OPC group or via Gallagher Command Centre workstation.
   - The quality (Q) of the status value will be marked as UNCERTAIN if the status value is a real, timestamped status value from Gallagher Command Centre, but where the item's lack of inclusion in a group (i.e. the lack of a "watch" on the item's status) means the OPC server can't be certain if the value it holds is the *latest* status for the device.
   - For all active items that are included in an active group, the status value (V) will be marked as GOOD quality (Q) because there is a current "watch" associated with the item.

Note that the scheme detailed here only applies when reading through the OPC non-group interfaces. When reading status through an IO interface on an active OPC group, the quality (Q) will always be GOOD and the data up-to-date.

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2.4 Gallagher Command Centre Overrides

As described earlier, Gallagher Command Centre overrides are exposed through OPC as OPC items existing as child items below the Gallagher Command Centre item they apply to. For example, the "Open Door" override is an OPC item existing as a child of the "East Door" item. **Where a Gallagher Command Centre item has several override options, each option is exposed as separate child OPC item of the Gallagher Command Centre item.**

All overrides have a data type of VT_I4. The override is engaged by writing an integer value into the appropriate OPC item. The value has different meanings depending on the override. For most overrides it is the length of time (in minutes, with a maximum of 1440) that the override is to be active for. In the case of the "Open Door" override, for example, the value is meaningless – just the act of writing to the item value will cause the door to be unlocked. Refer to the following table for details:

Item Type	Override	Value
Input		
	Shunt	Ignored. Override persists until manually reversed.
	Unshunt	Ignored. Override persists until manually reversed.
Output		
	On	Specifies the duration (in minutes) of the override. Value of 0 specifies override until next schedule update.
	Off	Specifies the duration (in minutes) of the override. Value of 0 specifies override until next schedule update.
	Cancel Override	Ignored. Writing to the value invokes the cancel.
Door		
	Open Door	Ignored. Write any value to open the door.
Access Zone		
	Free – No PIN	Specifies the duration (in minutes) of the override. Value of 0 specifies override until next schedule update.
	Free – PIN	As above
	Secure – No PIN	As above
	Secure – PIN	As above
	Code only – Card and No PIN	As above
	Dual auth – No PIN	As above
	Dual auth – PIN	As above
	Cancel Override	Ignored. Writing to the value invokes the cancel.
Alarm Zone		
	Armed	Specifies the duration (in minutes) of the override. Value of 0 specifies override until next schedule update.
	Disarmed	As above
	User 1 State	As above
	User 2 State	As above
	Cancel Override	Ignored. Writing to the value invokes the cancel.

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Item Type	Override	Value
Macro		
	Run	Ignored. Writing to the value invokes the override.
Fence Zone		
	On	Ignored. Override persists until manually reversed.
	Off	Ignored. Override persists until manually reversed.
	Shunt	Ignored. Override persists until manually reversed.
	Unshunt	Ignored. Override persists until manually reversed.
	High Voltage	Ignored. Override persists until manually reversed.
	Low Feel	Ignored. Override persists until manually reversed.
	Cancel Override	Ignored. Writing to the value invokes the cancel.
Fence Controller		
	Shunt	Ignored. Override persists until manually reversed.
	Unshunt	Ignored. Override persists until manually reversed.
Interlock Group		
	Enable	Ignored. Override persists until manually reversed.
	Disable	Ignored. Override persists until manually reversed.
Logic Block		
	On	Ignored. Override persists until manually reversed.
	Off	Ignored. Override persists until manually reversed.
	Reset Logic	Ignored. Writing to the value invokes the reset.
	Cancel Override	Ignored. Writing to the value invokes the cancel.
Z10 Tension Sensor Group		
	Shunt	Ignored. Override persists until manually reversed.
	Unshunt	As above
	Maintenance Mode	As above
	Cancel Maintenance Mode	As above
	Walk Test Mode	As above
	Cancel Walk Test Mode	As above
Z20 Disturbance Sensor		
	Shunt	Ignored. Override persists until manually reversed.
	Unshunt	As above
Class 5 End-of-Line Module		
	Reset	Writing to the value invokes the reset.
	Isolate	Ignored. Override persists until manually reversed.
	Deisolate	Ignored. Override persists until manually reversed.
	Shunt	Ignored. Override persists until manually reversed.
	Unshunt	Ignored. Override persists until manually reversed.

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2.5 Inclusions and Exclusions

The following points should be noted about Gallagher Command Centre support for optional OPC features:

2.5.1 Legacy OPC Data Interfaces

The Gallagher implementation supports OPC DA 3.0 and DA 2.05a specifications, without legacy support for OPC DA 1.0 interfaces or techniques.

2.5.2 Limited VQT Support

The Gallagher Command Centre implementation supports appropriate setting of item values by the client (V) but does not support *client setting* of quality (Q) or timestamp (T) information. On an item read, the server will set the timestamp parameter to the time of reading.

2.5.3 CACHE/DEVICE Support

Because of the architecture of Gallagher Command Centre and the close positioning of the OPC Data Server component with respect to the Gallagher Command Centre data store, the Gallagher Command Centre OPC Data implementation includes no differentiation between the OPC CACHE and DEVICE contexts. Thus, the Gallagher Command Centre OPC Data Server does not implement its own data cache and so CACHE = DEVICE and writing to one is the same as writing to the other.

A synchronous write to DEVICE is equated to a committed write to a Gallagher Command Centre item in memory and database. Note, however, that transmission of changes to Gallagher hardware occurs according to the standard Gallagher Command Centre schemes, which is not guaranteed to be complete before the return from the OPC synchronous DEVICE write call.

Thus, the scheme described here equates the OPC abstract concept of DEVICE with the Gallagher Command Centre server, and not with Gallagher hardware.

2.5.4 Deadband Support

The Gallagher Command Centre implementation does not support the OPC DA *deadband* features. Deadbands are an OPC feature designed to suppress noisy signallers by only triggering OPC callbacks when an item's value transitions more than a specified percentage from the previous callback value.

2.5.5 Access Paths

Specification of *access paths* are optional within OPC. The Gallagher Command Centre implementation does not support them; items are referenced by their fully-qualified ITEMID only.

2.5.6 Blob Support

OPC DA 3.0 contains provision for server-specified and client-stored *blobs* used for aiding server address resolution. The Gallagher Command Centre server does not make use of the blobs.

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2.5.7 Optional Interfaces

The Gallagher server supports all required interfaces for the OPC DA 3.0 specification. The Gallagher server supports none of the interfaces marked optional for OPC DA 3.0.

The Gallagher server supports all required interfaces for the OPC DA 2.0 specification. The Gallagher server supports one interface marked as optional for OPC DA 2.0 -- **IOPCBrowseServerAddressSpace.**

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