Interface Tools

Interface mechanisms extend the functionality and flexibility of the Gallagher system. Integration with other infrastructure and technologies deliver cost and time efficiencies, improve data integrity and can help you meet your occupational health and safety obligations.

This document provides an overview of the integration tools available to external developers, both those that connect directly to the Command Centre server and those that communicate with the Controller 6000.

Gallagher Server Interfaces

Gallagher server interfaces provide a bridge between external sources of data and the information in Gallagher Command Centre. Typical data sources include human resources databases (from a system such as SAP®), payroll, student enrollment, time and attendance, health & safety databases, or facility resource booking systems.

The Gallagher Command Centre REST API defines a set of HTTP functions which developers can use to query the Command Centre database. It is easy to use, easy to test, and provides superior integration performance.

Gallagher server interfaces are:

- Cardholder REST API
- Events and Alarms REST API
- Status REST API
- Overrides REST API
- Active Directory Cardholder Sync
- Enterprise Data Interface
- Booking Interface
- Visitor Management Web Service
- Cardholder Change Tracking API
- BACnet Protocol Interface
- OPC Events and Alarms
- OPC Data Access
- Gallagher Database Access

Cardholder REST API

This API allows third party systems to synchronize their user database with the Command Centre Cardholder database. It supports the majority of Cardholder fields.

Customers can use this API to:

- Synchronize employee data between the HR system and Command Centre
- Send Cardholder data to a meeting room hire app, when a credential is presented at the meeting room door
- Synchronize authorised Cardholders with a key safe system
- Synchronize Command Centre with an incident management application

Events and Alarms REST API

This API allows third party systems to monitor Command Centre for both live and historical events and alarms. Retrieve only the events that are relevant via filters. These filters are Event Group, Event Type, Event Source, Cardholder, Date and Time, and Division.

Customers can use this API to:

- Interface with big data analytic engines where Command Centre is one of the data sources contributing to the analytics
- Interface with billing systems for students travelling on buses
- Interface with networked print queue management software, to log cardholders on to a specific printer and retrieve print jobs using a Gallagher card or mobile credential
- Send specific alarms from Command Centre to IP phones
- Send critical alarms to a police dispatch system

Status REST API

This API allows third party systems to obtain the current status of items in Command Centre, allowing integration between multiple systems with Command Centre.

Customers can use this API to:

- Overlay door status into a camera view on a video system
- Display live fence voltages on a security dashboard
- Providing floor zone counts to a BMS application to efficiently monitor power

Overrides REST API

This API allows third party systems to override specific items in Command Centre, allowing integration between multiple systems with Command Centre.

Customers can use this API to:

- Provide ability to open a door from a video management platform
- Trigger an open door override from an intercom or phone system
- Escalate a high voltage override of an alarm zone based on triggers from a separate system
- Trigger a macro to perform any number of overrides within Command Centre
- Perform a lockdown from a third party emergency system

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Active Directory Cardholder Sync

Active Directory Cardholder Sync is a bidirectional interface between the Command Centre cardholder database and Microsoft Active Directory (AD). It allows AD user records to be replicated through to Command Centre cardholder records. This includes creation, modification and deletion of both user details and access permissions. Additionally, changes to cardholder details and images within Command Centre can be replicated out to AD or a file share location. Fully configurable to suit the AD structure of your organization, this integration simplifies the user experience by:

- Seamlessly linking physical access permissions to existing logical access permissions

- Eliminating duplication of data entry, minimizing the possibility of data errors and ensuring fast and efficient management of staff

- Ensuring a swift response to security risks by disabling both logical and physical access permissions at the click of a button

Enterprise Data Interface

Enterprise Data Interface (EDI) allows configuration and synchronization of cardholder data with external systems, it:

- Replicates data maintained in a primary database, (e.g. human resources database) in the Gallagher database

- Allows import via .CSV file or direct from database tables / views (both MSSQL and Oracle are supported)

- Enables mapping of existing employee fields, (e.g. personal details, group memberships, licenses, etc.) to their Command Centre equivalent, (e.g. Personal Data Fields, Access Groups, Competencies, etc)

- Allows mapping between systems of 1-1 or 1-many

- Allows third party data used in the external system to be translated to more meaningful descriptions on import to the Gallagher system

- Provides manual one-off migrations of cardholder data to the Gallagher database and/or automatically updates when triggered by changes made in a primary employee database

Booking Interface

Using Gallagher's 'Bookable Resource' module with Gallagher's Enterprise Data Interface makes it possible to manage room accessibility and environmental automation:

- Resources can be tied to access schedules so that the doors unlock in response to a scheduled booking, and lock when the booking expires

- Room services such as lighting and air conditioning can activate in response to scheduled bookings ensuring efficient energy management

Visitor Management Web Service

The Visitor Management Web Service allows an external system to create and modify visits and visitors in Command Centre. The web service is SOAP based and enables a third party system to dynamically update Command Centre with visit and visitor details. A custom SOAP application must be written for the external system to interact with the web service.

Advantages of using a web services are:

- Reduce manual data entry with automatic processes

- Access criteria based on the source record data

- Minimize the possibility of data entry errors

Cardholder Change Tracking API

Gallagher's Change Tracking API enables a third party application to retrieve cardholder related properties from the Command Centre database. The query polls the database, searching for changes to cardholder records and publishes them to the external system to ensure parity between systems.

This API is particularly useful where third party systems, (e.g. HR or IT) are the source of truth for the business.

BACnet Protocol Interface

Gallagher's BACnet Protocol Interface supports bidirectional communication with BACnet-compatible building management devices. This makes it possible for:

- Command Centre operators to monitor the status of building services. Examples of events that can be monitored are: Generator faults, High and low temperature zone alarms, Chiller failures, filtration pressure alarms, fuel control system overflow / underfill / failure alarms, and general mechanical fault alarms

- Command Centre operators to proactively manage and report on these alarms within Command Centre

- Command Centre to write to BACnet objects enabling building services (such as lighting or air conditioning) to be activated in response to building occupancy

OPC Events and Alarms

This API is now superseded by the REST API, as the functionality offered is similar but less extensive. This is still available for situations where an OPC client is running and could make use of it.

OPC Data Access

OPC Data Access allows the status of Command Centre items to be shared with a third party system, and also allows the status to be overwritten.

For instance, a third party OPC client system could monitor the status of Gallagher Perimeter sensors, and be alerted when an alarm is raised.

OPC Data Access is a group of standards that provides specifications for communicating real-time data from data acquisition devices. The specifications focus on the continuous communication of data, and deals with real-time data only, not historical data.

XML Import/Export Interface

Gallagher Cardholder Import/Export and the Gallagher Schedule Import provide a means of transferring the data between existing systems and Gallagher Command Centre.

The advantages of using XML Interface are:

- The process can be set up to run automatically, reducing manual data entry

- Predetermined access criteria based on the source record data can be set up

- For cardholder records, a single source of records is used, minimizing the possibility of data entry errors

For import, the Gallagher utility will pick up the data from a specified file location and import the records into the specified Gallagher cardholder records or schedules. This process is mirrored for exporting cardholder information. An exception report listing any records that failed the import/export process is produced for later resolution. Software database and XML programming knowledge is required to successfully implement the cardholder import/export feature.

Gallagher controller interfaces

The following interfaces communicate with the controller (the IP based microprocessor installed on site).

Controller API

The Controller API is a bidirectional interface that supports:

- Third party system events can be used to trigger Gallagher events such as arming or disarming an alarm zone, triggering an emergency release, or as an input to a Controller logic block

- Information in string format can be sent through to third party systems triggered by a Gallagher event. This information can include cardholder details, event sources or event types. Potential uses of this include exporting Gallagher event information to paging systems, alarm displays or text insertion into video

- Card information can be sent or received for access events

ASCII text

Many systems are capable of receiving ASCII text commands to trigger actions, or notify them of external events. Common systems using this type of interface are matrix switches, DVR systems, and paging systems etc. Gallagher provides several options for an ASCII Text interface.
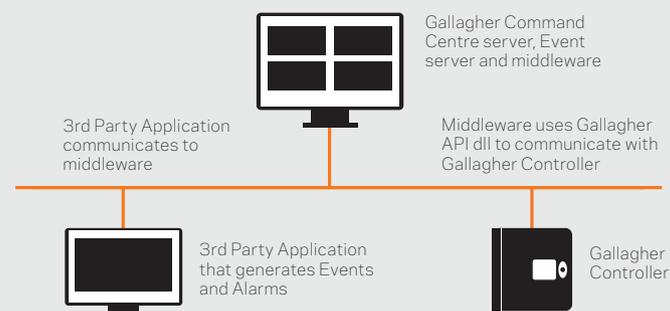
The Gallagher Controller interface mechanism allows the Gallagher Controller to send and receive ASCII text strings in response to events generated within a third party system or Command Centre. A separate middleware PC is required to host the plugin.

The following two options are hosted on the Controller, so a separate middleware PC is not required:

1. **Controller - Resident RS232 ASCII Text Plugin**
   Enables Command Centre to communicate (both send and receive) ASCII strings with a 3rd party system from the Gallagher Controller 6000 RS232 Port.

2. **Controller - Resident TCP ASCII Text Plugin**
   Enables Command Centre to communicate (both send and receive) ASCII strings with a 3rd party system from the Gallagher Controller 6000 TCP Port.

   Note: The TCP Plugin can manage a connection to another device, and can both send and receive ASCII data on this connection. However, it cannot accept an incoming TCP connection initiated by another device.

Connectivity diagram

Gallagher Command Centre server, Event server and middleware

3rd Party Application communicates to middleware

Middleware uses Gallagher API dll to communicate with Gallagher Controller

3rd Party Application that generates Events and Alarms

Gallagher Controller

SNMP interfaces

Simple Network Management Protocol (SNMP) is a protocol used in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

The Gallagher Controller SNMP interface mechanism allows Gallagher Command Centre to listen for SNMP traps from any SNMP Agent (for example, alerts from the Gallagher Command Centre server hardware, or UPS devices).

These SNMP messages are converted into events/alarms at the Gallagher Controller for alarms management and audit purposes. SNMP Supported Version - SNMP Version 1.

Gallagher Video Viewer SDK

Gallagher's Video Viewer SDK provides third party integrators with a complete set of tools to easily and effectively integrate video feeds from third party Video Management Systems, enabling the retrieval of both live and stored footage for display within Command Centre.

The SDK is built upon the same code framework that is used by Gallagher-built Video Integrations, providing a consistent 'Gallagher' look and feel.

This API should be used in conjunction with the Controller API which separately integrates alarms and events, e.g. motion detection, camera inputs, etc.

Gallagher Mobile Connect SDK

The Gallagher Mobile Connect SDK is a developer package that provides the functionality of Gallagher Mobile Connect to third party mobile applications. It allows a third party app to request access at a Gallagher controlled door.

Gallagher Database Access

A 'read only' view of the Gallagher database is available, enabling retrieval of Cardholder information and /or events and alarms. This is useful at sites with advanced DBA resource where there is a requirement to create a data export (at the SQL query level) for consumption by a third party system.

Technical Specifications

	Data Type that can be transferred									Communication Level	Direction of Transfer
	Cardholder Records	Visitor Records	Schedules	Resource Bookings	Events	Alarms	Status	Video	Overrides	Server or Controller	Incoming / Outgoing
Active Directory Sync	✓									Server	In + Out
VM Web Service		✓								Server	In
Enterprise Data Interface	✓									Server	In
BACnet Protocol Interface					✓	✓				Controller	In + Out
Events and Alarms REST API					✓	✓				Server	Out
Cardholder REST API	✓									Server	In + Out
Status REST API							✓				
Overrides REST API									✓		
Booking Interface				✓						Server	In
Cardholder Change Tracking API	✓									Server	Out
RESTful Web Service					✓	✓				Server	Out
OPC Alarms and Events					✓	✓				Server	Out
OPC Data Access							✓		✓	Server	In + Out
XML Import/Export	✓		✓							Server	In + Out
Gallagher Database Access	✓	✓	✓		✓	✓	✓			Server	Out
Controller API					✓	✓				Controller	In + Out
ASCII Text					✓	✓				Controller	In + Out
SNMP					✓	✓				Controller	In
Video Viewer SDK								✓		Server	in

Gallagher Application Programming Interface

Supported Versions	OPC Alarms and Events	Version 1.0
	OPC Data Access	Version 2.05a, 3.0

For more information on any of these tools (including installation documentation and developer guides) please contact your Gallagher representative.
All of the features in this document are licenced features.

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