

## PC/Operating System Requirements:

- **System Galaxy (SG), database and services are supported on Win 8.1 Pro, Win-10 Pro (64-Bit).**
- **SG database and services can run on Windows Server® 2012/2016/2019 (64 bit).**
- **SG is supported on MS-Server OS for *diagnostics use***, but not as a *standalone server* or a *workstation* for specific uses such as monitoring, badging, biometric enrollment, etc. This is because 3<sup>rd</sup> party technologies may not be supported on a Server OS.
- System Galaxy & GCS Services are compatible with VMware® vSphere vCenter or Hyper-V.
- **Minimum PC Requirements SG 11:** Pentium dual core 3.2 GHz. Pentium-4 equivalent (or higher); 2 GB RAM (Server & client); 40GB Hard Drive, 4GB Free Space dedicated to System Galaxy; Std. 24bit color graphics card.

## Installation Requirements:

- **SG 11 Installer now comes on a single USB drive** or as a downloadable install package (ISO file).
- **Installing System Galaxy software requires full administrator rights.**
- **Using/Operating Galaxy software requires Power User rights at the PC including the ability to read/write to the registry.** (DB Engines & Badging software also requires this level of privileges).
- **Core Documentation** (PDF) is found on USB **SG Installation Help Startup Splash-screen**. All Documentation is also available [Galaxy Online Documentation Directory](#).


**NOTE:** The SG Install Suite splash-screen provides links for **Step-1 & Step-2 Readme's** (html format) for installation information; and **Step-2 SG System Specifications Guide** (PDF) for a full list of system specifications and install requirements.

## Database Management Requirements:

- **System Galaxy installs SQL Server Express (64-bit) during Step-2 of Galaxy Installation.** An instance named 'GCSSQLEXPRESS' is created during the install process. Default database logins are also created during the install process.
- **Note:** *Native SQL ODBC Component* is automatically installed on the Database Server when you install the databases. Additionally, the *Native SQL ODBC* must also be installed on every Galaxy client not hosting the databases by running Step-2 Client Components.
- The ODBC connection uses **SQL Server Authentication** with a strong password. Users should define their own database password during the installation process (Step-2 Database Installation).
- Two databases (SysGal & SysGalArc) attach to the SQL database engine during a normal installation process.
- **SG Database Backups** can be created using SQL Management Studio or with GCS Service Manager utility.
- SG Databases cannot be re-indexed or compressed while software and services are running. All SG clients, SG software, and GCS Services must be shut down before performing database maintenance.
- **SG is compatible with Express & Enterprise versions of SQL 2012/2014/2016/2019.**
- MS Database Management Studio Express is included and may install as a separate process from the database engine during Step-2.

## Network Requirements:

- **Network Security Scanning Software:** System Galaxy, and/or its components, must be properly bypassed.
- **Virus Scanning Software:** System Galaxy databases should be bypassed.
- **All access control panels should be placed on a V-LAN (Virtual LAN).**
- 635-series controllers are 10/100 MB, Full Duplex, AUTO SENSING.
- 508i/600-series controllers require 10MB/Full Duplex at the port/switch/router for TCP/IP connection.
- A unique IP address & Subnet Mask is required for all 635/600 CPUs and all 508i 'Primary' CPUs.
- A Static IP Address is required for the 508i "Primary Panel" on each 422 Loop (DHCP not supported in 508i)
- **A Static IP Address is recommended for 600/635 controllers.** If static IP Address is not available, use non-routable addressing with permanent lease.

 **MANDATORY: a Static IP Address is REQUIRED for any PC running the GCS Event Service.** (GCS Event Service handles the connections from the 600/635 panels.) **Do not use DHCP addressing for the Event Server.**

## TCP/IP Port Requirements:

The following ports must be open/unblocked on the PC and on network to allow System Galaxy to function on the network.

- **Windows® users:** must configure the PC firewall to accept the required port numbers.
- **Note - for 3<sup>rd</sup> Party applications/devices:** may need to open firewall ports manually.

### TABLE OF DEFAULT EXCEPTIONS - for Galaxy and related applications & interfaces.

Port	Service/Device	Location and Details
3001	Control Panels	All 508i/600/635 panels use TCP Port 3001 (must be open on the controller side).
5010 4002	Client Gateway Svc *	PC/Server hosting the Client Gateway Service uses port 5010 obtain/verify registration information. Installs on "Main Communication Server" PC/Server - <b>only one instance of the Gateway Service can be running.</b> Receives events from the main Comm. Service.
4000	Communication * ** Service	Installs on "Main Communication Server" PC/Server - i.e. Comm. Server (or ancillary comm svr). Receives events from 508i loops or from the GCS Event Service for 600/635 panels.
4001	DBWriter Service *	Installs on "Main Communication Server" PC/Server - <b>only one instance of DBWriter Service can be running.</b> Writes events from panels, Comm. Service & Event Service to the database.
4003 4005 3001	GCS Event * ** Service	Installs on "Main Communication Server" PC/Server - i.e. Comm. Server (or ancillary event svr). Receives events from the 600/635-series hardware. Handles events between the 600/635 panels, the GCS Comm Service, as well as global events between panels on the same cluster.
8000 / 8443	Web API Service (8443/https) changing default port may be recommended.	<b>Installs on "Main Communication Server".</b> Default Port# can be set during SG Install Step-3 Option-A; OR it can be defined later in the XML config file, if needed. <b>Do not use port 80/443 in live production.</b> An SSL certificate is required (with private key intact) for Galaxy Mobile Apps if using on public WiFi. Note: the Web API Service also supports certain interfaces - i.e. LaunchPoint, ASSA-DSR app, KONE app, Video-API Plugins.
4004	Alarm Panel Service	Installs on <i>Main Communication Server</i> . <b>Only one instance of the AP service can be running.</b> Sends events to the Comm. Service from an alarm panel.
*	System Galaxy Step-3 of the software install installs core services to start "automatic" and attempts to open the PC port.	
**	For Ancillary servers only: Additional instance of the service can be installed on an ancillary server to support remote panels. On an ancillary server, you must disable the additional instances of Client Gateway and DBWriter; and close their related ports.	

#### Microsoft SQL Database - Firewall exceptions

sqlservr.exe	Required services to support client connections to the MS SQL-Server.
sqlbrowser.exe	
file & printer sharing	


#### Integrated Software - Firewall exceptions for 3<sup>rd</sup> Party software that integrates with System Galaxy (SG)

4747, 4748, 4749	Card Exchange 7; open ports on client workstations that supports badge enrollment & printing.
81 or 443 (default)	idProducer Badging Solution (port changes may be recommended to avoid conflicts)
9108	Invizium IXM-WEB Biometric Enrollment
1433, 42100*, 11011*, 11010, 11001	IDEMIA Client and Reader Ports (MorphoManager/BioBridge). <b>* Ports 42100 &amp; 11011 use TCP/TLS.</b> Notice: Install the version of MorphoManager that is distributed with your version of SG (USB/ISO).

#### Time & Attendance Firewall exceptions must match on both linked servers.

Also note: MSDT Config must match on both servers with linked SQL Connections. A ".reg" file exists that sets these values (refer to the SG Time & Attendance manual for details); view in NOTEPAD; Review with IT Dept.

135	MSDTC	TCP 135 on both Time & Attendance servers with linked SQL Connections
6000 - 6050	MSDTC	6000 thru 6050 on both Time & Attendance servers with linked SQL Connections

PORT	DVR + NVR + VMS	PORT	DVR + NVR + VMS
6808	Discovery	81	ONSSI / OCULARIS (default)
9871	Discovery 2	80	Salient
2000	Discovery 3	80	Milestone
2000	OpenEye	18772	Integral
2000	Toshiba Surveillix	1024	Kalatel
4000	Honeywell Fusion (4000 may be reserved for SG)	9002	Pelco / Endura
		8085	LENSEC Web-based VMS Solution <sup>(1)</sup>
	Changing the default port on your DVR/VMS may be recommended for security reasons and avoiding conflicts.		
(1)	Relies on the GCS WebAPI Service and Video-API Plugins.		