System Galaxy

System Specifications

GALAXY
CONTROL SYSTEMS

2024 | SG 11.8.6

System Galaxy Quick Guide

System Specifications

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System specifications, OS Recommendations, Client and PC recommendations may vary depending on your framework and individual application needs.

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System Galaxy System Requirements

This document provides minimum requirements for installing and operating System Galaxy (SG) Client Software, Database, and GCS Services.

GENERAL NOTICES:

NOTICE: These requirements are subject to change without notice. Consult your Galaxy Dealer / Galaxy Technical Support before making time-sensitive and cost-sensitive decisions.

IMPORTANT: System Specifications, requirements and compatibilities may vary depending on your individual system or application needs. *This document covers System Galaxy recommendations, which **may or may not** supersede the specifications & requirements of 3rd Party technologies. Consult 3rd Party specification documents in addition to this manual.*

NOTICE: System Galaxy software (SG) is supported on a Server OS for administration and diagnostic purposes. Galaxy does not recommend using a Server OS for a *standalone system (all on one PC),* or for a *client workstation* for monitoring, badging, card or biometric enrollment, etc). Some 3rd Party components may not be supported on a Server OS or on a certain version of Server OS according to their manufacturer's stipulations.

IMPORTANT: Contact your authorized Galaxy Control Systems technical support at the earliest possibility with any questions and for the following situations:

- You are planning a large-scale system install or upgrade

- You are migrating to a different operating system

- You are upgrading or expanding a system using 3rd Party applications

- You are upgrading from a version that is more that 2 or 3 versions behind

- You are installing an integrated 3rd Party application

SYSTEM UPGRADE AND BACKUP WARNING: Remember to properly plan all upgrades and properly back up the database, archive database, and all system assets (reports, photos, badge templates, signature files, icons, etc.).

Badging Solution Upgrade: Card Exchange and EPI-Builder (GA Imaging) are no longer supported. Contact your authorized Galaxy technical support for information on converting to idProducer Badge Designer.

System Galaxy Upgrade Planning Guide ONLINE or PDF

OPERATING SYSTEM REQUIREMENTS:

Windows OS compatibility for System Galaxy software & GCS Services
- Windows 11 Pro (64-bit) *with latest service pack*
- Windows 10 Pro (64-bit) *with latest service pack*

Server OS compatibility for SG Database Server & Communication Server (GCS Services)
- Windows Server® 2022 (64-bit) *with latest service pack*
- Windows Server® 2019 (64-bit) *with latest service pack*
- Windows Server® 2016 (64-bit) *with latest service pack*

> **IMPORTANT:** Some 3rd party applications/technologies may not be supported on a Server OS (e.g. biometric enrollment, credential enrollment devices).

> **IMPORTANT:** System Galaxy client software is supported on Server OS *for diagnostic purposes only*. SG Operator may need user privileges to the license files or other files in the System Galaxy directory.

System Galaxy Database Requirements:

System Galaxy is compatible with MS-SQL 2016/2019/2022 (64-BIT) Express & Enterprise.

System Galaxy is designed to use SQL Native Client (ODBC driver) for database connections.

Microsoft® Native Client components are included in the GalSuite Install Step 2. The SQL Client components must be installed on every computer running System Galaxy Software or Services.

System Galaxy is packaged with MS SQL Server® 2022 Express (64b) as the default database, which is installed during Step 2 of the Galaxy Installer Program.

System Galaxy database size: is the inherent size of the database engine you choose (imposed by Microsoft).
> » Microsoft SQL Express 2022 has a 10GB max. limit.
> » Microsoft SQL Server® Enterprise has an unlimited size.

Upgrading SG and SG Databases: may be required or recommended depending on which version of System Galaxy you are starting from.

> » **System Galaxy Upgrade Planning Guide** ONLINE or PDF

> » When upgrading to the latest version of System Galaxy, you must be running 2012 or higher.

System Galaxy Installation & Registration Requirements:

System Galaxy Installation Disk: System Galaxy installs from a USB Drive.

Step-1) Prerequisite Components (Microsoft .NET Framework (**Required***))

Step-2) Database, DBMS, and Client Components (MS SQL Express 2022 64-Bit default)

Step-3) System Galaxy Application (SG software, GCS Services)

IMPORTANT: System Galaxy requires administrative rights on the computer to properly install the system.

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1. **Step-1 Installation/Framework:** System Galaxy Client software & services, SG Web Module are **Microsoft .NET Framework-based**. The appropriate .NET versions are installed by Step-1 Prerequisites. **This must be installed on every Galaxy computer.**

    Notes …
    - Per Microsoft, the v3.5 .Net Framework may require a public internet connection to install.
    - **IMPORTANT! The v3.5 .Net Framework must be installed before SQL Engine is installed**.
        a) **For Windows 10 Users:** user must manually install v3.5 .NET Framework (internet connection required - see ***Step-1 Prereqs Readme*** on the Galaxy DVD-1 Installer splash screen for steps (found in the Installers folder)
    - **For Microsoft Server OS, the user must add a 'Server Role' and manually install the .NET Framework v3.5 if prompted to do so by the SG Install Program.** *See the* <u>*Server Role Setup Guide*</u> *in the Installers folder on the Install Disk-1; or in the Manuals Folder on Install Disk-2; or listed on the* <u>Galaxy Online Documentation</u> *page.*

2. **Step-2 Installation - Database & ODBC Client Components:**
    - For the computer hosting the Galaxy database, the Database install includes the SQL Client Components.
    - For all other computers, you must choose to install the Client ODBC Components.

3. **Step-3 Installation and System/Workstation Registration:**
    - Steps 1 & 2 must already be completed on your computer. The Database must running and online.
    - There is a **14-day grace period** for completing the System and Workstation registrations. This allows ample time to get the hardware installed, configured and programmed into the software, and get an initial personnel batch imported for a cardholder population.
    - The product-level and features selected must match the purchase order. *Registration must be completed by the certified Galaxy Dealer (done in tandem with Galaxy Customer Service or the Dealer Online Registration Website).* Core function/features are available on every product-level. Advanced features and certain 3rd Party integrations are based on product-levels and purchased options.

4. **System Galaxy operators need power-user rights** to operate the system.

5. **SG uses *Product Levels* in System Registration.** Customer product level is labeled on the Software Install CD and available through Galaxy Customer Service department.

NOTE: Customers upgrading from SG v6 may need to consider hardware upgrades. 500 non-i-series controllers must be replaced with newer compatible Hardware – consult technical support.

General PC Hardware Requirements:

These are the minimum requirements for a typical standalone system or a workstation PC.

- **Microsoft® Windows Compatible PC with Intel i5 equivalent processor (or higher)**
  - » **8 GB of RAM**
  - » **100 GB of free Hard Drive space for System Galaxy**
  - » **256 GB SSD Storage**
  - » **Standard graphics card**
  - » **1 NIC card**
- **Monitor:** (min. recommended 1280 x 1024 wide-resolution)
- **Devices:** Keyboard, Mouse
- **Serial Communication Ports for system operation:**
  - » **1 Network RJ-45 Ethernet Port**
  - » **1 USB-A 2.0** (dedicated – if camera is used for photo capture)
  - » **1 USB-A 2.0** (dedicated – if a local badge printer is used for enrolling)
  - » **1 USB-A 2.0** (dedicated – if local line printer is used for printing system reports)
  - » **1 USB-A 2.0 (or COM)** (dedicated – if an **enrollment reader** used for access card enrollment)
- **Uninterruptable Power Supply - UPS** (recommended)
- **Windows® compatible printer**

See other sections for Operating System and Service Pack Requirements.

Base Requirements for a Server Platform

These are additional requirements for a Server computer.

- **Processor:** XEON Bronze 3204 (6 cores)
- **Memory:** 16 GB ECC Memory at 2666 MT/s
- **Hard Drives:** minimum of two HDs, 1 TB each, using Raid 1 Configuration

IMPORTANT: Contact Galaxy to discuss your Server Requirements if your system has more than 256 doors.

Requirements for VM (Virtual Machines)

Processor: 16 Cores
RAM: 24 GB
Database: MS-SQL 2016 | 2019 | 2022 (with latest service packs)
Operating System:
- Microsoft® Windows-10 | Windows-11 (64bit with latest Windows updates)
- Microsoft® Windows Server® 2016 | 2019 | 2022 (with latest service packs)

    NOTE: System Galaxy Software is supported as a *diagnostic application* on a Server® OS.

IMPORTANT: No claims are made on behalf of 3rd party applications, drivers and devices concerning operating system requirements and VM compatibility. Refer to manufacturer's documentation for information.

NOTICE: Galaxy Control Systems does not provide technical support for VMware® or Microsoft® Hyper-V.
Contact the appropriate manufacturer for information concerning your virtual environment.

System Galaxy Hardware S28 Flash and Boards

A new install should verify the flash version on the boards matches the software version being installed.

An upgrade or repair situation requires the boards to be flashed to the correct version of flash.

▸ **The controller panels should be running the correct/correlating version of S28 Flash that corresponds with version of System Galaxy Software that is installed at the site:**

▸

635-series Controller (SG Software)	508i-series Controller
S28 Flash file v 11.0.10 (SG v11.8.6)	**S28 Flash file v8.20c**
Notice: 600-series panels run v10.5.6 with SG 11 software. All panels in a cluster must run v10.5.6 if a 600-series panel present. All controller CPUs have an embedded web page for troubleshooting; Port 80 must be open.	*Subordinate boards and peripheral modules do not contain flash code.* **Output Relay Module & 635 Input Module:** no on-board flash for the Input Module, or a Relay board used for Elevator or Output Relay control;

See the ***635-series Hardware Installation Manual, 508i-series Installation Addendum,*** and ***500-series Hardware Manual*** for additional specifications and information about installing and operating System Galaxy hardware. (**Galaxy Online Documents**)

System Galaxy Network Requirements

This section covers the IT and Security information concerning System Galaxy.

System Galaxy Security Notes

The following ports/applications must be unblocked for System Galaxy:

» The System Galaxy Install program will automatically "open" Windows® Firewall Exceptions, depending on which installation choices are selected. **IF you are doing a standalone install and no other clients will connect remotely to the SG Database/Comm. Server,** then you should manually edit the firewall to use only those exceptions you truly need.

REMEMBER: you must manually open the required ports for any 3rd party firewall applications or port blocking applications**.**

REMEMBER: port 3001 is used for communication to Galaxy hardware controllers.

◆ **Also, network switches or routers must also meet port requirements.**

◆ **If using idProducer Badging Solution**, you need to make sure both SpecsID Server service and Connection service can automatically start/run on PC reboot. They will not start if machine is slow to start the GCS Services. You may need to configure a Delayed Start for idProducer services.

PC Firewall Exceptions Table

The table below lists default ports and program exceptions that System Galaxy requires to support operation.

Open/Allow * † ‡	Who uses it	Where to open it …
sqlservr.exe	SQL Express Server	On the computer running SQL Server - only if clients need to make ODBC connections
sqlbrowser.exe	SQL Server Browser	On the computer running SQL Server - only if clients need to make ODBC connections
3001	GCS Event Service	On any computer running the GCS Event Service. SG panel connections required.
3001	GCS Comm Service	On any computer running GCS Comm Service. SG panel connections required.
4000	GCS Comm Service	On any computer running GCS Comm Service. GCS service connection required.
4001	GCS DBWriter Service	On the computer running the GCS DBWriter Service. GCS service connection required.
4002	GCS Gateway Service	On the computer running the GCS Gateway Service. GCS service connection required.
4003	GCS Event Service	On any computer running the GCS Event Service. GCS service connection required.
4004	GCS Alarm Panel Service	On the computer running the GCS Alarm Panel Service. GCS connection required.
4005 (only used for comm betwn redundant event svrs)	GCS Event Service	On the computer running the GCS Event Service. Listening port for *Event Service-to-Event Service communications*; only used in case of running redundant event servers.
5010	GCS Gateway Service	On the computer running the GCS Gateway Service; GCS service connection required.
8000/8443 **HTTP / HTTPS (Default)**	GCS Web API Service	On any computer running the GCS API Service; GCS connection required to support API-based applications (e.g. idProducer, Mobile Apps, Video API plugins, etc.). If you are not running any API-based apps, then this service can be disabled and closed.
Integrated Software - Firewall exceptions for 3rd 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		Invixium IXM-WEB Biometric Enrollment
1433, 42100*, 11011*, 11010, 11001		IDEMIA Client and Reader Ports (MorphoManager/BioBridge). *** Ports 42100 & 11011 use TCP/TLS.** Notice: Install the version of MorphoManager that is distributed with your version of SG (USB/ISO).

* **Managing Ports & Services:** During *Step-3*, the installer automatically opens default ports and configures essential services to start "automatic". Verify these ports are successfully opened and the services are running. Ensure these ports are open on the appropriate switches/routers.

† **C**lose any ports that are unnecessarily exposed and stop any duplicate services. Only one copy of DBWriter, Client Gateway, Web API can be running system wide. Typically, only one copy of the GCS Comm Service and GCS Event Service is deployed on the main communication/event server. The only exception is if you are installing multiple GCS Event or Auxiliary Comm Severs to support globally distributed panels on an Auxiliary Comm Server, Aux. Event Server, or Redundant Event Servers.

‡ The idProducer and GCS Web API Services can be configured to use different port number than the default(s). If you change the IP Port Numbers, you must also update the appSettings file to match and restart all the services to pick up the changes.

DVR/NVR Known Firewall Exceptions Table

The table below provides the port numbers known to be default ports for the listed products at time of initial integration development.

PORT	Service/Device	PORT	
6808	**Discovery**	81	**ONSSI / OCULARIS** (default)
9871	**Discovery 2**	80	**Salient**
2000	**Discovery 3 and .NET, G3 Embed. H264 & Lenux, and E-series**	80	**Milestone**
2000	**OpenEye E-series, X-series**	38880	**Avigilon**
2000	**Toshiba Surveillix**	22609	**ExacqVision**
4000	**Honeywell Fusion (4000 may be reserved for SG)**	9002	**Pelco / Endrua**
		8085	LENSEC Web-based VMS Solution [1]

Integrated Applications & 3rd Party Technologies

This section covers the high-level requirements for integrated applications and interfacing technologies.

CAUTION: you must compare the Galaxy system recommendations along with the manufacturer's requirements for any 3rd party applications, services, hardware, drivers, and technologies that you are installing. Additionally, you should reference the Galaxy integration guide that is written for that 3rd Party integration.

NOTICE: Galaxy recommendations in this guide may or may not supersede the 3rd party manufacturer's requirements or limitations for their products and technologies. Contact authorized Technical Support concerning any conflicts.

NOTICE: Technical support of your system integration may be based on meeting these recommendations.

GALAXY INTEGRATED APPLICATIONS

Galaxy LaunchPoint Mobile App for Smartphones

The Galaxy **LaunchPoint Mobile App** is currently supported on Android or Apple iOS.

Scan the QR Code below to download the app.

General Requirements:

- Server-side GCS Web API Service is automatically installed on the System Galaxy server, and is configured to start automatically. This service must be running to use the apps.
- The API service will use the default port 8443 unless you configure it to use a different port. This must also be manually changed in the appSettings.
- **A Network Certificate must be obtained with privacy key**. You may not self-certify.
- The app works via a private wireless connection or a public internet service provider.
- The port is configurable and must be open on the appropriate server and router/switches(s)

See *LaunchPoint Mobile App (On Premises)*, and *Galaxy Web API for Mobile Apps Guide* for full requirements.

Galaxy DoorPoint and PersonPoint Mobile Apps are no longer supported in System Galaxy 11.

System Galaxy LaunchPoint Web Client Application

NOTE: For information about Galaxy *LaunchPoint Cloud Concierge*, contact Galaxy Customer Service.

Galaxy's *LaunchPoint Web App* (on premises, thin client) supports cardholder enrollment, cardholder lookup, badge/dossier assignment, assignment of access privileges, as well as limited hardware/door control (such as Door Lock, Unlock, and Pulse (momentary unlock), assigning door schedules. Limited reporting capability is available such as Cardholder Activity, Reader Activity, etc.

REQUIREMENTS FOR LAUNCHPOINT WEB CLIENT ON PREMISES

1. You must have Administrative Rights to install System Galaxy software, LaunchPoint app, and the Badging solution.

2. Windows IIS must be installed.

3. System Galaxy database and software (v11.3.0 or higher) must be installed before you install the LaunchPoint or Badging Solution.

4. The core GCS Services are installed with the SG Software. These services must be running for proper operation of the LaunchPoint web app: including the GCS Client Gateway service, GCS DBwriter Service, GCS Communication Service, GCS Event Service, and the GCS Web API Service.

5. If using a badging solution, the Badging Application must be installed and properly licensed.

    a. The Badging Application must be properly registered the in System Galaxy system registration.

    b. You must determine how the badging templates will be stored and maintained, based on which solution you chose. Be aware that all Badge Templates must be created or designed within the Badging App.

6. The SG LaunchPoint App must be installed from the Galaxy Installation USB and must be properly registered in the System Galaxy system registration screen as Web Client support. Your registration settings must match the customer purchase agreement.

7. DO YOU WANT TO SAY ANYTHING ABOUT CUSTOMERS AND BADGE TEMPLATES -

8. The LaunchPoint User must have a valid System Galaxy Operator Login that is programmed through the Operator Programming screen System Galaxy software in the.

3rd PARTY INTEGRATED APPLICATIONS

idProducer Badging Solution

System Galaxy offers two on-premises license schemes. Requirements vary based on which License is installed.

1. **BASIC LICENSE:** License is for a single badging station.
   - Galaxy generates the idProducer license key when System Galaxy is registered.
   - Supports 1 Root Subscription for all badge templates.
   - Supports 1 Badge Printer for all badges.
   - Customers are supported in the Basic License Model from current SG; but the system will not filter the badges by operator login or customer assignment since all badges are under one Root Subscription. Managing unique customer-based badges becomes a matter of policy. *Filtered badges are supported in the Advance License model*.

2. **ADVANCE LICENSE:** License for multiple badging stations. <u>Contact Galaxy for obtaining a license</u>.
   - License must be obtained before Registering System Galaxy.
   - License can be installed before or after registering SG.
   - Supports customers with multiple Customer-Subscriptions
   - Supports multiple badging stations/printers.

General Requirements:

1. SG 11.1.0.2 minimum is required for Basic License.
2. IIS must be installed from the Galaxy IIS installer option from the Galaxy Install USB/ISO to support idProducer Web Client/Badge Designer. Installing IIS from an independent method or from idProducer installer option will not provide the correct settings.
3. IIS Site must be created for idProducer and the IIS_IUSR permissions must have "full control".
4. System Galaxy (all 3 parts) must be installed before idProducer is installed. You must create your Web API Credentials and configure the HTTP/HTTPS port number during part-3.
5. idProducer database must be published on the GCSSQLEXPRESS instance of SQL Server.
6. GCS Web API Service and both SpecsID services (server & connections services) must be running.
7. idProducer uses port 81 as the default. IF you change any port numbers from the default, you must update the appSettings file to match. Restart all services.
8. If you change any API reserved login credentials after the installation and registration are finished, you must update the appSettings file to match. Restart all services.
9. You cannot setup the idProducer Print Dispatcher(s) until idProducer is licensed.
10. You must manually add your badge printer to the idProducer Print Dispatcher(s).
11. You cannot live-print badges until the idProducer Print Dispatcher(s) is running. Offline print requests are saved in the Print Request table and will print as soon as the Print Dispatcher is online again.
12. You cannot delete a badge from SG if there is a pending print request. Launch the Print Dispatcher and Close or Print any Queued print requests. Print off any pending print requests.
13. You cannot create badge templates until the SG Cardholder fields have been pushed to idProducer. This happens when SG is registered for the Root subscription, and when the SG Customer-subscription is created and Synchronized for Customer-Subscriptions.
14. You cannot assign badges to cardholders until the badges are imported. Any changes after the fact must be Synchronized in Badge Designs screen (or the Customer screen if you are making customer badges).

See ***SG idProducer Badging for Basic – OR - Advanced*** for full requirements.

Important PassagePoint™

PassagePoint Global is compatible with System Galaxy.

- **There are no special registration requirements in System Galaxy**. The integration is done through linked SQL Server connections and stored procedures. SG 10 includes the StopWare stored procedure for the SysGal database.

- **At least one access profile must be created in System Galaxy to be used for visitor access privileges**. *The access profile name must be added to PassagePoint and is case sensitive.*

- **PassagePoint must be registered for Directory Linking if host names are imported from SysGal.** Importing of names is administrative only. There is no linking of access rules through the host name.

- **PassagePoint requires set up of the SysGal database connection, Access Profile name, and sign-in/sign-out scripts.**

See ***Galaxy Quick Guide for PassagePoint v10*** for full requirements and configuration / use.

IDEMIA Morpho Readers with MorphoManager/BioBridge

System Galaxy supports IDEMIA Morpho Readers using MorphoManager/BioBridge software. Specifications below are based on current software.

NOTICE: Other Morpho Models are supported in 'Biometric' Multifactor Mode.

NOTICE: All Morpho Readers must be assigned a valid Multifactor Mode that is compatible and works with the intended credentials.

NOTICE: Also, each credential must be enrolled with the *Authentication Type* that matches the Multifactor Mode at the reader.

SYSTEM GALAXY SUPPORTS INTEGRATION WITH MORPHO READERS AS FOLLOWS:

1) System Galaxy database must be installed before you install MorphoManager Server/Database and Client.

2) **Galaxy** requires you use the correct version of MorphoManager/BioBridge that Galaxy provides on the installation media for your release of SG software. (Registered for Biometric Support; the assigned Biometric System must be set for MorphoManager/BioBridge).

3) Morpho Reader must be running the appropriate firmware version that is compatible with MorphoManager installed.

4) **Finger Enrollment Station** must be running the appropriate firmware supported by MorphoManager/BioBridge system.

5) Requires the compatible version of **MorphoManager** client-server software;

6) MorphoManager Client must be installed at every Galaxy workstation that will perform enrollment.

SYSTEM GALAXY SUPPORTS ENROLLMENT AS FOLLOWS:

1) Supports enrolling credentials from within System Galaxy Cardholder screen.

2) Supports all/any combination of Access Groups, Access Profiles, and Personal Doors are supported – access is decisioned/determined by the panel (not by the reader).

3) Supports two unique fingers per credentials

4) Supports two Authentication Types (Biometric only, Card + Biometric*, Multi-factor with PIN based on reader model).

Enroll Authentication Type		SIGMA Multifactor Mode	SIGMA Reader Model
Assigned in the User Group & chosen at time of enrollment		*Configured in Device Profile, which is assigned to Reader*	*Running in MA5G Operating Mode*
Card + Biometric*	=>	Proximity Card	SIGMA-Prox
Biometric Only	=>	Biometric	SIGMA-Bio; SIGMA-Prox; IDEMIA *or other model set to Biometric mode*

* Proximity, HID iClass, DesFire, MiFare cards based on the reader model.

See *SG Guide for MorphoManager* for full requirements, configuration, and use.

Important Schlage Interface Notes

This section covers various Schlage models from Legacy to AD, LE, NDE series readers.

SCHLAGE AD400 WIRELESS & AD300 HARDWIRED

- System Galaxy supports Schlage AD-400 wireless readers/PIMs as of SG 10.1
- System Galaxy supports Schlage AD-300 hardwired readers (no PIM) as of SG 10.2/Flash 5.0
- All AD-Series hardware requires installer to obtain the new _HHD Hand Held Device_ and download the _Schlage Utility Software_ in order to "couple" and "configure" PIM address, set RF channels, as well as address and link the wireless Readers. Schlage offers technical training and certification for field installation. Hand-held wireless range testers are available to validate your reader-to-PIM channel frequency. Using an alternating configuration pattern helps to prevent range conflicts with the floors above and below the readers being installed.

HARDWARE UPGRADES AND EXPANSIONS:

When adding AD300 hardwired readers to a DSI board that already supports wireless readers, you have two options.

a) Separate Networks*****: you can keep the readers separate (wired/wireless) by reserving one section of the DSI board for wireless (i.e. AD400 only) and the other section of the DSI for hardwired readers (i.e. AD300 only).

b) Mixed Networks*****: you can add AD300 hardwired readers to the same bus that supports AD400 wireless readers (or legacy ODT Wireless PIMs if you have older equipment).

* **NOTE:** You must configure the Serial Channel programming in the SG Software for the correct Network Type (i.e. wireless-only, hardwired-only, or mixed-network) to match what you installed on the 485-network)**.**

See the **_Galaxy Guide for Schlage AD400/AD300_** for full list requirements and instructions to integrate with System Galaxy. **Also see Schlage documentation for product information.**

SCHLAGE LE & NDE HARDWIRED

- System Galaxy supports Schlage LE & NDE wireless readers/PIMs as of SG 10.5.6
- All LE & NDE locks require using the ENGAGE Mobile App to configure the readers.

See the **_Galaxy Guide for Schlage LE/NDE Locks_** for instructions to integrate with System Galaxy. **Also see Schlage documentation for product information, which may be found on Allegion website.**

SG Server & Workstation Recommendations

System Galaxy supports a wide variety of configurations that range from small professional to corporate or enterprise. System Galaxy is also designed to meet the future needs for system expansion.

System Galaxy is designed to support a networked architecture. The 600-series and 500i-series hardware uses TCP/IP connectivity. The System Galaxy software and databases can be installed on a single computer (standalone) for very small systems, or in a *distributed solution* (multiple computers) using TCP/IP connectivity.

As computers and hardware have advanced in capabilities and cost-effectiveness, many sites will benefit from installing a *distributed solution*.

System Architectures Supported by Galaxy

Both system architectures are networked solutions

- ◆ A *standalone solution* uses one computer and the hardware using TCP/IP connectivity
- ◆ A *distributed solution* uses multiple computers and hardware using TCP/IP connectivity.

*Dedicated Computer***:** In the context of this document, the term "*dedicated computer*" means that the computer (client or server) is solely devoted to running the System Galaxy applications and services for the purposes of monitoring, controlling access, and other System Galaxy features such as card enrollment/badging.

*Minimum Recommendations***:** In the context of this document, the term "*minimum recommendations*" means that the computer (client or server) running System Galaxy should, at a minimum, meet stated specifications. However, there may be reasons to increase certain specifications. Because systems vary, minimum recommendations may need adjusting. The specifications in this document do not cover applications/uses that are not related to Galaxy (e.g. email, editors, and other software).

*Distributed Solution***:** In the context of this document, a "*distributed solution*" means that the System Galaxy components *(i.e. System Galaxy software, GCS Services, and SG database)* are installed on two or more computers. The hardware connects to the SG Communication/Event Server via TCP/IP LAN/WAN. A networked or distributed system is the most commonly installed solution.

*Single-Server Solution***:** In the context of this document, a "*standalone solution*" means that the System Galaxy components *(i.e. SG software, GCS Services, & SG databases)* are installed on one computer. The hardware connects to this SG Communication/Event Server via TCP/IP LAN/WAN. This solution is not recommended for large systems or enterprise environments due to IT security policies and constraints. A stand-alone solution is not supported on a server operating system.

> **IMPORTANT:** IF you are specifying requirements for a system that will *expand (grow)* or must *share resources with other applications* (email, web browsers, programs, etc), you must take these goals into consideration. Multi-use environments can cause resource conflicts, undesirable performance and could require you to increase your system specifications.

Minimum Recommendations for a Single-Server Solution

A *Standalone Solution* is described as having all the software components (databases, database engine, services, and SG software application) running on a single computer which is also responsible for connecting to the hardware loop/controllers.

IMPORTANT: The following assumptions are made for all system recommendations:

> » **Assumption:** that all connected loops will utilize TCP/IP connections to the networked Communication Server PC (or Standalone PC).

> » **Assumption:** that no other software is running on any workstation where System Galaxy is installed/operating. Be aware that any additional programs must be taken into account when configuring a multi-use computer system.

It is important to remember that these are minimum recommendations with examples given. If you are specifying requirements for a system that will need to expand (grow), you should take those goals into consideration.

SG-CommServer
SG Software Appl.
GCS Services
Database Engine
Databases

↓

Loops/Controllers
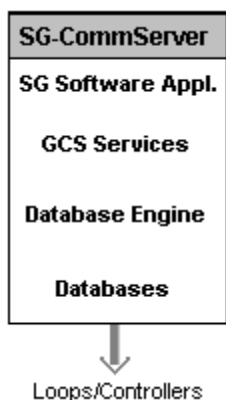
<< This diagram depicts a Single-server (or Standalone) PC. All system components reside on the same/one computer.

* **A SERVER OPERATING SYSTEM IS <u>NOT RECOMMENDED</u> FOR A STANDALONE INSTALLATION**

Worksheet for a Single-Server (Standalone) System

Computer Description	OS Compatibility	Minimum Hardware Recommendations
All System Galaxy components running on the same computer with no additional SG client workstations connected.	Supported Windows Pro (64-bit)	3.2 GHz Pentium Dual Core
	Server OS not recommended.	4.0 GB RAM or greater 40 GB HD or greater for SG

IMPORTANT: Some 3rd Party applications or technologies may not be supported on Server OS. SG Operators may need privileges set to license files or other files in the System Galaxy directory. System Galaxy software is supported on Server OS only for diagnostic purposes.

Minimum Recommendations for Distributed Solutions
## Database Server Minimum Recommendations - Distributed Solution

A *Database Server* is described as housing the main SysGal and Archive databases and hosting the Database Engine in a Networked System. In a networked system, the software components are distributed among more than one PC.

IMPORTANT: The following assumptions are made for all system recommendations:

» **Assumption:** that all connected loops will utilize TCP/IP connections to the networked Communication Server PC (or Standalone PC).

» **Assumption:** that no other software is running on any workstation where System Galaxy is installed/operating. Be aware that any additional programs must be taken into account when configuring a multi-use computer system.

It is important to remember that these are minimum recommendations with examples given. If you are specifying requirements for a system that will need to expand (grow), you should take those goals into consideration.
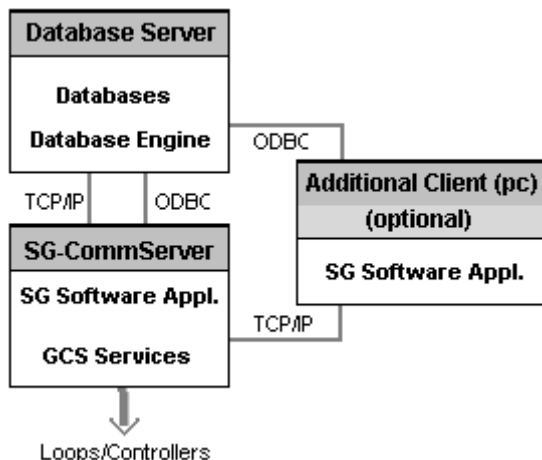
<< This diagram depicts a Database Server connecting to a Communication Server and Client Workstation in a typical Distributed Solution.

Contact Galaxy Technical support for assistance for more complex scenarios.

Worksheet for a Database Server in a Distributed System

| Computer Description	Database Server OS Min. Recommendations	Minimum Hardware Recommendations
Computer running DB engine, System Galaxy Client software and GCS Services (with up to **2** additional System Galaxy client workstations connected)	Supported Windows Pro (64-bit)	3.2 GHz Pentium Dual Core 4.0 GB RAM or greater 40 GB HD or greater for SG
Computer only running DB engine, and GCS services (not SG Client Software). (with **3 or more** additional System Galaxy client workstations connected)	Supported Windows Server OS (64-bit)	
IMPORTANT: System Galaxy software is supported on a Server OS for diagnostic purposes. Galaxy does not support using a Server OS for a *standalone system,* or for a *client workstation* (i.e. monitoring, badging, enrollment, or biometric enrollment, etc). Some 3rd Party components may not be supported on a server OS or on a certain version of server OS according to the manufacturer's stipulations. SG Operators may need privileges set to license files or other files in the System Galaxy directory.		

Communication Server Minimum Recommendations - Distributed Solution

A *Communication Server* (or Loop Communication Server, LCS) is the PC/Server that handles the communication to the Loops/controllers in a Networked System. In a networked system, the software components can be distributed among more than one PC. Thus, the database may or may not reside on the Communication Server.

IMPORTANT: The following assumptions are made for all system recommendations:

» **Assumption:** that all connected loops will utilize TCP/IP connections to the networked Communication Server PC (or Standalone PC).

» **Assumption:** that no other software is running on any workstation where System Galaxy is installed/operating. Be aware that any additional programs must be taken into account when configuring a multi-use computer system.

It is important to remember that these are minimum recommendations with examples given. If you are specifying requirements for a system that will need to expand (grow), you should take those goals into consideration.
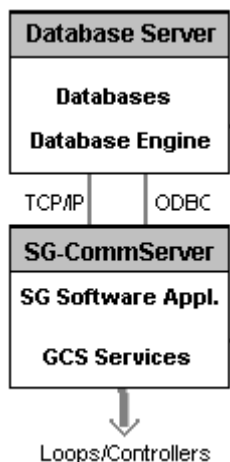
<< This diagram depicts a Communication Server connecting to a separate Database Server in a Distributed Solution.

Contact Galaxy Technical support for assistance for more complex scenarios.

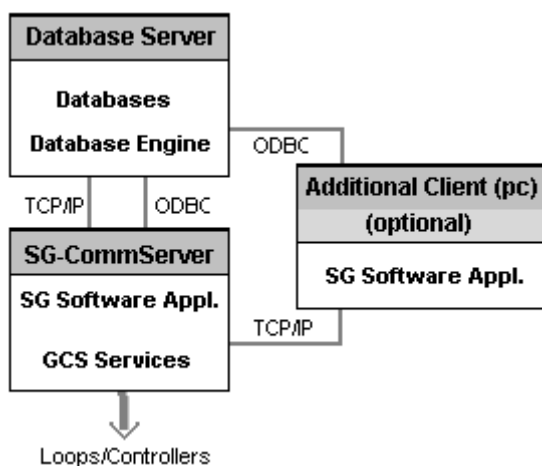## Worksheet for a Communication Server in a Distributed System

Computer Description	Communication Server OS Min. Recommendations	Minimum Hardware Recommendations
Computer running System Galaxy Client software and GCS Services (with the DB engine on separate computer and up to **3** additional SG Workstations connected)	Supported Windows Pro (64-bit)	3.2 GHz Pentium Dual Core 4.0 GB RAM or greater 40 GB HD or greater for SG
Computer running System Galaxy Client software and GCS Services (with the DB engine on separate computer & **4 or more** additional SG Workstations connected)	Supported Windows Server OS (64-bit)	
IMPORTANT: System Galaxy software is supported on a Server OS for diagnostic purposes. Galaxy does not support using a Server OS for a *standalone system,* or for a *client workstation* (i.e. monitoring, badging, enrollment, or biometric enrollment, etc). Some 3rd Party components may not be supported on a server OS or on a certain version of server OS according to the manufacturer's stipulations. SG Operators may need privileges set to license files or other files in the System Galaxy directory.		

Client Workstation Minimum Recommendations - Distributed Solution

A *Client Workstation* is described the additional workstation that runs the System Galaxy software for monitoring or badging purposes. This additional client will operate in a Networked environment and make TCP/IP connections to both the Database Server and the SG CommServer.

IMPORTANT: The following assumptions are made for all system recommendations:

» **Assumption:** that no other software is running on any workstation where System Galaxy is installed and operating. Any additional programs must be considered when planning a multi-use computer system.

» **Assumption:** these are minimum recommendations for examples given. If you are specifying requirements for a system that will need to expand (grow), you should take those goals into consideration.

<< This diagram depicts a Client Workstation connected to the Communication Server and the Database Server in a Distributed Solution.

Contact System Galaxy Technical support for assistance for more complex needs.

Worksheet for a Client Workstation in a Distributed System

Computer Description	Additional Client Workstation Minimum Recommendations	Minimum Hardware Recommendations
Workstation Running System Galaxy Client software for monitoring or badging, but not running the GCS Services.	Supported Windows Pro (64-bit)	3.2 GHz Pentium Dual Core 4.0 GB RAM or greater 40 GB HD or greater for SG
IMPORTANT: System Galaxy software is supported on a Server OS for diagnostic purposes. Galaxy does not support using a Server OS for a *standalone system,* or for a *client workstation* (i.e. monitoring, badging, enrollment, or biometric enrollment, etc). Some 3rd Party components may not be supported on a server OS or on a certain version of server OS according to the manufacturer's stipulations. SG Operators may need privileges set to license files or other files in the System Galaxy directory.		