

System Galaxy Addendum

System Upgrade Planning Guide

- ❖ Planning & Preparation for Software & Hardware Upgrades
- ❖ Including Upgrading System Databases
- ❖ Upgrading Firmware for 600 & 635 Panels

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System Galaxy Upgrade Planning

This guide provides basic information about planning and implementing a system upgrade of System Galaxy components.

Some information in this guide may not apply to every system. If you have a scenario that is not covered in this guide, please contact your authorized technical support for assistance.

IMPORTANT: Always create backups of your databases and all system assets. Failure to perform proper backups can lead to catastrophic data loss. Be sure to back-up all databases including SysGal, SysGalArc, and any 3rd Party Databases that belong to integrated solutions such as biometrics or badging; as well as Database Backups. Also back-up all log files, config files, custom scripts, system and custom reports, tables, audio files, graphic files, floorplans, fingerprint templates, badge templates, photograph files, alternate photos, signature files, company or customer logos or graphic files that you use on badge, photo capture drivers, twain drivers, enrollment device drivers, printer drivers, config files, Database backups etc.

IMPORTANT: Consult any 3rd Party documentation covering backing up databases, data, templates, log files, config. Files, drivers, tables, reports, etc.

Planning for a System Upgrade

Considerations for Upgrading Software

1. Verify that the Software Maintenance is paid for and that the purchased maintenance has been updated in the existing installation. If the current software has not been updated with a current maintenance date and registration code, the database upgrade will be prevented.
2. Verify that all PC specs (server and client) meet minimum requirements for the new software version.

IMPORTANT: Some of your equipment could be rendered obsolete or nonoperational by upgrading the server/PC hardware or the server/PC operating system. Equipment such as Photo Capture Cards, Badge Printers, Badge Printer drivers, Card readers, encoders, finger sensors, optical enrollment devices, etc. In some cases, a firmware update, driver update, or replacement device is possible.

3. Identify any 3rd Party software that is provided by Galaxy.
 - a. **idProducer Badging Solution is offered in two Licensing levels:**
 - » If your existing system uses or needs SG Customers you must obtain an Advanced License.
 - » If your existing system uses/needs multiple printers, you must obtain an Advanced License.
 - » **Basic License is generated by System Galaxy** during System Registration. This license level does not support customers at all and supports only one badge printer on a standalone installation. If your upgraded system will need customers, or multiple printers, or multiple workstations, you must obtain the Advanced License. See the idProducer Standalone Guide for related recommendations.
 - » **Advanced License is obtained separately.** This license level supports customers and multiple badge printers. See the idProducer Advanced License Guide for recommendations.
 - » **If you plan to convert from Card Exchange Badging or G&A /GuardDraw:** you must recreate all your badge templates. The new idProducer badge templates can utilize the existing discrete assets/graphic files (photos, logos, graphic files).
 - » Back up all discrete assets such as photos, logos, graphic files, etc. before you begin your upgrade.
 - b. **Card Exchange Badging Solution:** Recent installations of System Galaxy used CEX Badging.
 - » If you plan on keeping your existing Card Exchange system, you must back up your badge templates and all discrete assets (photos, logos, etc.).
 - » Back up all discrete assets such as photos, logos, graphic files, etc. before you begin your upgrade.
 - c. **G&A Imaging/Imageware/GuardDraw:**
 - » you may continue using the existing GuardDraw software as long as it is compatible with the operating system you will upgrade to.

NOTICE: Galaxy's version of GuardDraw is no longer supported by the original manufacturer and eventually there will be a point the future when GuardDraw is no longer compatible with a current

operating system. If you are upgrading your operating system you will want to verify that the product is functional on the operating system you plan to use.

- » Changing badging systems will require a redesign of all badge templates when changing to Card Exchange or to idProducer.

d. Invixium Biometric Solution:

- » You may continue using your existing Invixium Solution. Contact Galaxy technical support for assistance with planning your biometric upgrade.

e. MorphoManager/BioBridge Biometric Solution:

- » You may continue using your existing MorphoManager. Contact Galaxy technical support for assistance with planning your biometric upgrade.

f. Sagem biometrics: or other custom applications. Contact Galaxy technical support for assistance with planning your biometric upgrade.

g. StopWare PassagePoint Visitor Management: Contact Galaxy technical support for assistance with planning your upgrade.

4. Identify any 3rd party applications interfacing with the System Galaxy database **that were NOT provided by Galaxy Control Systems.**
 - a. Contact the appropriate vendors to ensure continued functionality after the upgrade. This includes importing and/or exporting data that may be impacted by database schema changes. Even if using the SG_Import program, the import profile(s) may need to be reconfigured to operate with the new database design.
5. Determine the location of all appropriate system assets and files. (e.g. Audio, Graphics, Badge designs, Photographs, Biometric templates, Databases, and Database backup files, Reports, Fingerprint Templates, etc.) Note that these may be located on a shared location on the customer's network, or on a specific server or workstation.
6. Perform and verify backups of databases and appropriate sub-system files as noted above.
7. Obtain the necessary access to the existing SG computers.
 - a. This includes access to the physical server and client PCs, Computer Log In permissions with Administrative privileges, customer permission to reboot the PC when required during the upgrade.
 - b. Determine if the database is being supported by the end user's IT or the default installation was used. If the Galaxy defaults are not used, you will need the database server name, instance and database name, and login information.
 - c. If remote assistance is desired, all PCs must be able to access Galaxy Control's Remote Assistance website.
8. Obtain the names and IP addresses of the new database server and event server.
9. Review the [Database Upgrade section](#) of this guide for important information about pre-scheduling database upgrades with Galaxy Control Systems.

Considerations for Upgrading Hardware

1. Determine the existing System Galaxy version, and existing 500/600 hardware for upgrade compatibility. If hardware is being added to an existing site, be sure it is compatible with the existing hardware. When upgrading from:
 - a. Version 5x and earlier – Replace all 500 Series CPU boards with 500i CPU boards
 - b. Version 6x – Replace all 500 Series CPU boards with 500i CPU boards

See the 635/600 Hardware Installation Manual for board compatibility.
2. SG Version 10.1 or higher is required to use 635 CPU boards.
3. Upgrading Hardware: 500i and 600 architectures.
 - a. 500i and 600 architectures are not inter-compatible. That is, you cannot replace a 500i architecture system with 600 hardware without major database reprogramming. If desired, the 500i architecture can be converted to 600 architecture using a built-in utility once the software has been upgraded to the latest version.
 - b. Both 500i loops and 600 clusters can co-exist on a common System Galaxy server, sharing the same database, and be monitored from the same Galaxy interface.
 - c. The two types of hardware must be on their own distinct architectures. They cannot communicate directly with each other, having I/O, door group, or anti-pass back interoperate between Loop and Cluster.
4. In 500i architecture systems, evaluate the health of the RS422 loop running from controller to controller. 500i CPUs will not need to be reflashed if they are already running 8.20 flash, but they will need to be reloaded once the software upgrade is completed. If the loop is experiencing communication problems prior to the upgrade, they should be addressed before attempting the upgrade.
5. Obtain a Factory Test Station Ribbon Cable (part # 81-0680-00) and familiarize yourself with its use with the 635 CPU. See 635-FTS Factory Programming Guide (SG 10.4.9).pdf for complete instructions for how to utilize a 635 CPU as a Factory Test Station. These can be used to restore a board that fails to come back after a flash update.
6. Review the [Firmware Upgrade section](#) for important information on upgrading hardware.
7. If you are upgrading a large system and has a lot of controllers/doors, or a large number of Cardholders, or has a lot of integrated systems, or has Biometric equipment, you should contact System Galaxy during your earliest planning stages to ensure that the appropriate technical support and advice is provided.

Day of the Upgrade

1. Schedule time to allow for complete system upgrade to include function testing after the upgrade is complete.
2. Keep in mind large scale sites where clients are scattered across the country may require deploying dealer techs to multiple locations.
3. Begin the upgrade fully prepared for “down time”. This means mission critical doors will need to be propped, or otherwise made accessible, during any system down time.
4. Organize the upgrade in such a fashion that the hardware can function offline while the software is upgraded, and then systematically upgrade one panel at a time if possible, to minimize end user inconvenience. Remember that upgrading a 508i/600 loop will require flashing the CPU, which if the CPU is a 600/635 will require updating its daughter boards. Depending on the starting version of firmware, this may require more than one step (see below). Always remember to cold start a CPU after flashing. This will clear any residual memory and eliminate possible Loading issues after an upgrade.
5. Always work the upgrade in a logical order. It would be recommended to follow this process.
 - a. Database upgrade
 - b. Comm Server upgrade
 - c. Register Comm Server
 - d. Hardware flash upgrade (in steps if required).
 - e. Cold start CPU's
 - f. Load and function test
 - g. Upgrade any other client workstations and register as needed.

About Upgrading the Database

1. **Upgrading from SG v 8.1 or higher/newer:** The database upgrade can be performed in one step using “Part 2- Database” on the *GalSuite Installation Disk-1*, unless there is a change in database engine. Upgrading the Database does not upgrade the database engine. Migrating your database to a newer SQL Engine may require Technical Support or a DBA technician with the knowledge. The *Galaxy Learning Center* has a video on how to move databases from one location to another: <http://www.galaxysys.com/page-LearningCenter> .
2. **Upgrading from SG v 8.04 or below/older:** Contact Galaxy Tech Support. The database must be sent to Galaxy for conversion and upgrade. This process takes five (5) business days from the time we are notified of receipt.
3. **If faster turn-around time** is needed because of customer requirement, any work done by Galaxy Technical must be pre-scheduled. If it is an on the spot decision to upgrade and they need the database upgraded “now” a fee will be charged.
4. A Galaxy service technician may not be available to walk an on-site technician through a complete upgrade over the phone or through Remote Assistance. If such service is required, contact Galaxy technical to schedule an appointment.
5. **If non-standard database names are being used** (this means anything other than SysGal and SysGalArc), consult Galaxy Technical Support department IN ADVANCE regarding upgrade script modifications.

About Upgrading Firmware

1. **Firmware on the CPU must be synchronized to the version of System Galaxy installed at the site.** Determine the required version of flash by looking in Help>About>System Galaxy. Determine the version of flash for the new system by contacting technical support or obtaining a new Hardware Install Guide.
2. **Do not interrupt flashing:** Do not interrupt power, do not disconnect the I2C data bus (the gray ribbon cable) or reset any of the boards connected to the ribbon cable during the update process. Interrupting the flash process will damage the board memory and require using the factory flash cable or factory repair to recover the board.
3. When your controllers are running flash versions prior to 4.51, Galaxy ***strongly recommends*** disconnecting attached boards (DRM, DSI, etc) from the field devices they are controlling.
4. **When using Dual CPU configurations, disconnect the CPU boards from the I2C data bus** (the gray ribbon cable) until both boards have been brought up to the desired version of flash. This is to prevent them from pushing competing versions of firmware to the attached boards.
5. **Disconnect 635 DSI boards** from the ribbon cable before and while the rest of the boards in the controller can are being updated from firmware version 5.04 to 10.4x. Then update one 635 DSI at a time, while leaving the rest disconnected until they have been completed.
6. **Updating attached boards.** Galaxy has made changes to the protocol on the data bus to improve communications. Boards running flash using the old protocol must be updated to one of the versions of flash running both protocols before being updated to the latest version that runs only the new protocol. This is because a CPU running the latest flash will not be able to recognize (talk to) a daughter board running the old protocol.
 - Prior to Flash 5.04 – only the old protocol
 - Flash 5.04 to 10.4.15 – has both protocols
 - Flash 10.4.17 and higher -- has the new protocol
7. When upgrading from certain versions, it is necessary to update to interim versions before continuing. See the following charts:

600 FLASH UPGRADES

STARTING VERSION	UPGRADE TO: (BEFORE CONTINUING)
1.15 to 1.74	2.30e
2.30e to 5.00	5.04
5.04	10.4.15 – update attached boards
10.4.15	Latest Flash Version

635 FLASH UPGRADES

STARTING VERSION	UPGRADE TO: (BEFORE CONTINUING)
4.77 to 5.00	5.04
5.04	10.4.15 – update attached boards
10.4.15	Latest version of Flash