System Galaxy Addendum

500i Hardware Loop Conversion Utility

Convert 500i Loops to 635 Clusters in System Galaxy programming

System Galaxy 11.2.0 to Current | JUN 2020

System Galaxy

500i Hardware

Loop Conversion Utility

Information in this document is subject to change without notice. Therefore, no claims are made as to accuracy or completeness of this document.

This document describes how to convert 500i-series Loops to 635/600-series Clusters using the Loop Conversion Utility in System Galaxy.

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INTRODUCTION TO THE LOOP CONVERSION UTILITY

The SG Loop Conversion Utility is designed to convert the 500/500i series hardware to 600 series hardware in the System Galaxy database.

CONVERSION EQUIVALENTS

The table below provides basic information on the conversion equivalencies...

500i Series	600/635 Series
Loop (Loop ID)	Cluster (Cluster ID)
Controller (Unit No)	Controller (Unit No)
422 Loop	TCP/IP CLUSTER
GCS Communication Service • connects to "primary" panel • all secondary panels report events thru the primary.	**GCS Event Service** • the 600 CPUs initiate their connection to the Event server • there is no "primary" panel. all panels individually connect to the event server and transmit their own events.
UNIT "0" is Primary Converts from 0, 1, 2, 3 → to 1, 2, 3, 4, … respectively	**Unit "1"** is the conversion (zero not valid in a 600 cluster)
CPU Board	CPU Board (1)
DPI Board From the top down is 1, 2, 3, 4	**DRM Board** converts to the same board number 1, 2, 3, 4
GPIO (port-1) **4 inputs / 4 outputs**	**DIO Board(s) (typically)** the system converts the GPIO one-for-one. **DIO Board** (board no. is auto-assigned in sequence to prior board no.) **The inputs should be wired to inputs 1 thru 4** (5 - 8 will be unused)
GPIO (port-2) **4 inputs / 4 outputs**	**DIO Board(s) (typically)** the system converts the GPIO one-for-one. **Board No** the wizard assigned the next sequential board no. in 600 panel. **Inputs should be wired to inputs 1 thru 4** (5 - 8 will be unused) **Outputs should be wired to outputs 1 thru 4**
GPIO (port)	**Inputs & Output Modules** *the conversion depends on whether the technician chooses to 'combine' or convert one-for-one. Also depends on how many GIO slots there are. (it behooves you to do a trial conversion)* **DSI BOARD** the wizard assigned the next sequential board no. in 600 panel. **INPUT MODULE(s) – 16 inputs per module -** the wizard assigns sequential board nos. the quantity of modules needed will depend on
AMM Panel 16 inputs 4 Outputs	**DSI Board + Input Module** an Input Module supports 16 Inputs; the outputs will convert to an Output Module
ORM Panel 16 outputs Tamper/Lo Power inputs are not converted	**DSI Board + Output Module(s)** An Output Module supports 8 Outputs (2 boards are needed)

CONVERTING ONE 8-DOOR PANEL

This example chart shows how an 8-door 508i panel converts to a 600 panel.

1. The system will convert the 500 Loop to a 6xx Cluster and auto-assigns the next unused ID for the Cluster ID
    - The Wizard will attempt to assign an unused ID number.
    - It will not use any skipped or deleted IDs in the middle of the range.
    - You can still manually configure the number to something you already configured in your 600 CPUs when you installed them. If you planned ahead and chose to configure a known-good Loop/Cluster ID that is different than the one the system auto-assigns, you can change the Cluster ID in the Conversion Wizard.

2. The **controller unit number** may need to be manually configured in the Conversion Wizard.
    - The Wizard will attempt to assign an unused ID number.
    - Keep in mind that 500i primary panels are always Unit-0, but the 6xx controllers do not support unit-0. Therefore, you should convert Unit-0 to Unit-1.
    - You must be careful to convert each subsequent panel unit number by incrementing it by 1.

(3 panels)	500i-series Loop	6xx series Cluster
Primary	Unit 0	Unit 1
Secondary	Unit 1	Unit 2
Secondary	Unit 2	Unit 3

500/500i Series Controller Unit #0		600/635 Series Controller Unit #1	
DPI BOARD (1)		**DRM** BOARD (1)	
PORT-1	PORT-2	PORT-1	PORT-2
Lobby	Side Entry	Lobby	Side Entry
DPI BOARD (2)		**DRM** BOARD (2)	
PORT-1	PORT-2	Section-1	Section-2
Server Rm	Phone Rm	Server Rm	Phone Rm
DPI BOARD (3)		**DRM** BOARD (3)	
PORT-1	PORT-2	Section-1	Section-2
Room 101	Room 102	Room 101	Room 102
DPI BOARD (4)		**DRM** BOARD (4)	
PORT-1	PORT-2	Section-1	Section-2
Back Door	unused	Back Door	unused

How does the Conversion Utility Work?

The Conversion Utility is designed to Convert the 500/500i hardware, one loop at a time.

You launch the Conversion Utility (Wizard) from the 500-Loop Properties screen. The wizard provides options and droplists that let you choose how your boards and inputs/outputs are converted.

The original (source) Loop will not be deleted by the Conversion Utility. A new (target) Cluster will be created with valid and unique IDs. It is very important to understand how the Loop, Unit, and Board IDs are converted. This will help you properly configure your 600-series hardware.

HOW IS THE LOOP ID GENERATED?

System Galaxy requires all Loop/Cluster IDs to be unique. The system does not delete the original 500 Loop when the new 600 Cluster is created. You will convert one loop at a time.

- This means the system will keep original 500/500i Loop ID.
- The system will assign the *next available* ID to the new 600 Cluster(loop).

> NOTE: "next available" means the next number after the highest number used in the system. If your highest loop ID is 10 then the new 600 Cluster will be 11. If you have ever deleted or skipped a loop number, that number will not be used.

HOW IS THE CONTROLLER/UNIT ID GENERATED?

System Galaxy requires all Controller/Unit IDs to be unique within the Cluster/Loop. The system does not delete the original 500 Controllers when the new 600 Panels are created.

- This means the system will keep original 500/500i Unit ID intact, because it will keep the panels.
- The system will assign the new 600 Unit IDs *in sequence* for the new 600 CPUs (one CPU per panel).

> NOTE: "in sequence" means the first panel (0) in the 500 loop will be the first panel (1) in the 600 Cluster. Each panel will get the next number in sequence … 500-panel (1) becomes 600-panel (2) and so on. Be aware that there is no such thing as a primary panel in the 600 Cluster. All panels connect and communicate independently to the Event Server (GCS Event Service).

HOW ARE THE BOARDS & BOARD IDs GENERATED?

System Galaxy requires all Board IDs to be unique within the Controller/Panel. The system does not delete the original 500 Boards (Ports/Doors/Readers) when the new 600 Panels are created. All the programming for the Readers/Doors will be copied over to the new 600 Boards exactly as they appear in the 500 Panel.

- This means the system will keep original ports/doors/readers intact and their programming.
- The system will assign the new 600 Board IDs *in sequence* within each panel.

> NOTE: "in sequence" means the first DPI (1) in the 500 Panel will be the first DRM Board (1) in the 600 Panel. Each DPI will get the next number in sequence … 500-DPI (2) becomes 600-DRM (2) and so on. Be aware that a port is called a section in the 600 DRM. Therefore, Port-1 on a DPI Board will become Section-1 on its respective 600 DRM Board. Likewise, Port-2 on a DPI will become Section-2 on its respective 600 DRM.

HOW ARE THE GPIOs CONVERTED?

System Galaxy will convert the GPIO as follows. The system does not delete the original 500 programming. All the programming for the Inputs and Outputs will be copied over to the new 600 Controller DIO exactly as they appear in the 500 Panel. The system will automatically generate the appropriate number of DIO boards needed to accommodate the GPIO programming.

- This means the system will keep original inputs/outputs intact and their programming.
- The system will assign the new 600 DIO Board IDs *in sequence* within each panel.

ORM/AMM panels will be converted to 600-series Controllers and daughter boards. Since the 600 hardware does not have AMM and ORM panels per se, the inputs and outputs will be converted to DSI board with the appropriate number of Input Modules or Output Modules attached.

When you have installed all the appropriate 600 hardware and connected all the peripheral devices (readers, inputs, outputs) to the new 635 Controllers, you will be able to convert the

Prepare for Converting a 500-series Loop

1. **PLANNING AND UNDERSTANDING YOUR CONVERSION**:

   You can convert everything in the 500i-series panels, Reader ports, General Purpose Inputs or Outputs (GPIOs), AMMs, ORMs, … NOTE You must be running the current version of SG 10.4.8 or higher.

   The key is to understand how the loop, controllers and hardware will convert in the system. You can do a dummy conversion if you want to make sure you will get it correct. You don't have to keep the dummy 600 loop. You can practice without losing your 500 Loop.

   Once you are ready to really convert to the 600 loop, you can set the 500 Loop to "no connection" and preserve it until you are sure you have all the information needed. When you delete the old 500 loop you will also delete all the history with that loop. Be sure you have backed up and Archived your system.

   If you convert ahead it might help you to be sure you understand the exact hardware you will need. But for cost planning sake you will need to have a plan on paper to show the expected hardware needs. Perhaps doing a dummy conversion will be a good way to solidify in your mind that you are on target with your plan.

   How they will convert and what 600-series hardware you will need (i.e. 600-8-door panels, DRM boards, DIO Boards, DSI board with Input Module or Output Modules).

   This section gives you some conversion charts to point you in the right direction.

   If you have a large system or a specifically difficult system, you can consult your Galaxy Sales support for assistance.

2. **PREPARATION AND PROTECTION**: Perform backups, **database archives**, and run reports.

   Protecting your system from Catastrophic Failure and preserving your History is the first step to converting.

   Back up your SysGal and SysGalArc databases.

   Before you back up you will also want to run any and all History Reports that you normally or periodically do. Consider running any additional History Reports that would be useful. Your reports can be printed and/or saved to file.

3. **SYSTEM REGISTRATION**: Bumping up your System Registration:

   Converting readers may require an increase in your system registration if you don't have enough padding to cover the reader conversions.

   You can permanently or temporarily bump up your **Maximum Number of Readers** to give you room to convert.

   EXAMPLE:

   > If you are converting an 8-door system that is registered for 8 doors and has used all 8 doors, you need to bump up the registration to 16 readers in order to perform the conversion. You can return the registration to 8 doors after you are cut-over. If the system was already registered for a 16 or higher and haven't used the extra readers, then you will not need to increase the reader number in the system registration.

   After you have deleted the 500 loops, you can return your registration to the original value.

   - **You will need the assistance of tech support to temporarily upgrade the reader limits.**

   - **BE AWARE that deleting the 500-loops will delete the reader history. You will only be able to get to the History reports you saved.**
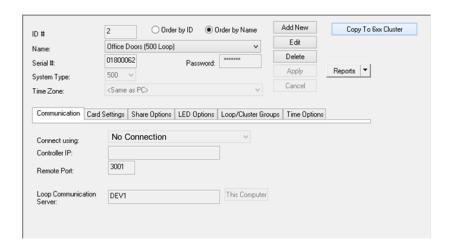
STEPS TO PERFORM THE CONVERSION:

    a.   **Hardware Installation -** the appropriate hardware should already have been calculated and purchased during the planning phase. The hardware should be installed and properly configured before the actual conversion happens. See the 600/635 series Hardware manual for instructions about installing all Galaxy hardware.

    b.   **System Registration** – bump up your max readers enough to perform the conversion. Add the number of readers you will be converting to the existing readers used and increase the registration appropriately. Contact Galaxy Technical Support for assistance with registration upgrades.

    c.   **System Settings** – (optional) **configure your Loops to open in a separate screen during the conversion and cutover**. Note if your site has a lot of loops this may be very helpful. The benefit is that you can see only the events from the loop you are converting and walk-testing without interference from other loops. Although you will want to do this at a low-volume time anyway, having activity from other loops mixed in with your walk-tests can pollute or confuse test results.

    d.   **System Settings** – (optional) **DISABLING THE POP ON ALARM will allow you to perform the conversion and cutover without being constantly interrupted by the connection alarms from the old loop.**

    e.   **You must restart System Galaxy to initialize the settings.**

f. SELECT THE LOOP PROPERTIES AND START THE CONVERSION

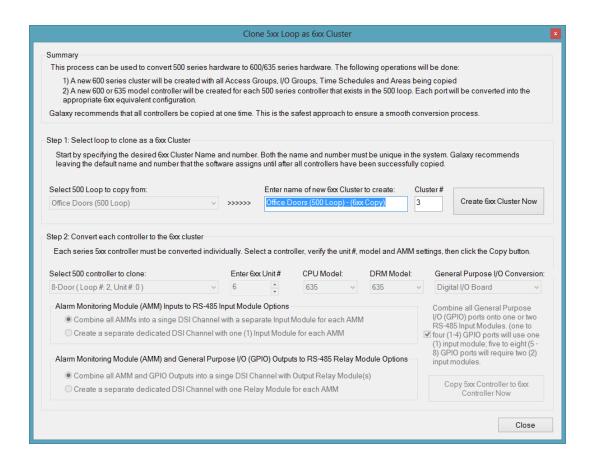Open the Loop Properties screen for the 500-series loop you want to convert.

1. Click EDIT and configure it to "**NO Connection**". Instead of the TCP/IP Address

2. Click APPLY to save.

3. Click EDIT again

4. and click on the [Copy to 6xx Cluster] button – to open the Conversion Wizard.
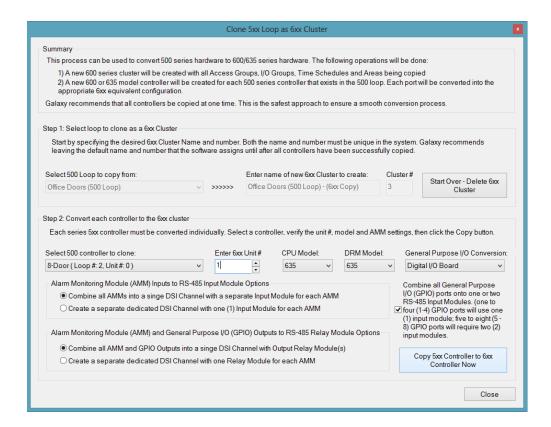
g. CONFIGURE THE LOOP NUMBER

1. Enter a **name** for the new 6xx Cluster …
   IMPORTANT: Galaxy recommends you **use the system-generated name**. You can change it later - the appended "600 copy" at the end of the auto-generated name will identify which one is the new copy.

2. Cluster Number
   IMPORTANT: Galaxy recommends you **use the system-generated number**. You should change the cluster number in the CPU to match the system number – ***this is the safest way*** because the system will auto-assign the next highest unused number. This protects you from unintentionally overriding current clusters as well as any history. For example: if you have 8 clusters already programmed, the conversion utility will auto-assign '9' for the new Cluster number as long as 9 has never been used or removed. The utility will not pick any number that has been skipped or deleted cluster numbers in the system. This eliminates the risk of having duplicate cluster numbers.

3. Click on [**Create 6xx Cluster Now**] button to create the new Cluster in the system. The button will change to say "Start Over" and clicking it again will start the process over.

h. CONFIGURE THE CONTROLLER NUMBER

1. Select the first controller (Unit 0) which is the primary to be converted first.

2. Enter the Unit ID of 1 (a 600 Cluster cannot have a controller 0)

3. Select the CPU Model (635 vs 600)

4. Select the DRM Model (635 vs 600)

5. Click [Copy 5XX Controller to 6xx Controller Now] button if this controller only had DPIs

6. Or PROCEDE TO NEXT SECTION TO CONFIGURE THE INPUTS AND OUTPUTS

i.   CONFIGURE THE GPIO CONVERSION

1. You will typically convert this to the DIO board which has 8 INPUTS and 4 OUTPUTS

2. The GPIO boards will convert one for one unless you select "combine".

500i Series	600/635 Series
GPIO (port-1) **4 inputs / 4 outputs**	**DIO Board(s) (typically)** the system converts the GPIO one-for-one. **DIO Board** (board no. is auto-assigned in sequence to prior board no.) **The inputs should be wired to inputs 1 thru 4** (5 - 8 will be unused)
GPIO (port-2) **4 inputs / 4 outputs**	**DIO Board(s) (typically)** the system converts the GPIO one-for-one. **Board No** the wizard assigned the next sequential board no. in 600 panel. **Inputs should be wired to inputs 1 thru 4** (5 - 8 will be unused) **Outputs should be wired to outputs 1 thru 4**
GPIO (port)	**Inputs & Output Modules** *the conversion depends on whether the technician chooses to 'combine' or convert one-for-one. Also depends on how many GIO slots there are. (it behooves you to do a trial conversion)* **DSI BOARD** the wizard assigned the next sequential board no. in 600 panel. **INPUT MODULE(s) – 16 inputs per module -** the wizard assigns sequential board nos. the quantity of modules needed will depend on

j.   in the Conversion Wizard, configure the fields as follows …

1. Click on the convert inputs and outputs button – this will convert the loop to 600-hardware and close the wizard.

2. (!) notice that the system will assign the next available Loop Number because it will not delete the old 500 Loop. For example if the 500 Loop is Loop ID "1" and you have 5 total loops already assigned in the system, the conversion wizard will automatically assign Loop ID "6" to the new 600 Loop. See the Loop Properties screen in following section.

3. (!) Also in 600-series controller programming, a controller ID cannot be "0", so Galaxy will convert 0 to 1, and 1 to 2, and 2 to 3, and so on… You need to be sure you have correctly configured the 600 Hardware to have the matching Unit IDs. See the Controller Properties screen in following section.

k. Close and reopen System Galaxy or refresh the Hardware Tree.

l. MATCHING THE CORRECT CLUSTER ID …

1. In the Hardware Tree or SG Toolbar, open the new 6635/600-Loop Properties screen

2. Click Edit and make sure the Loop ID in SG is the correct ID that matches what you configured in the physical 600 CPU Boards when you installed the hardware. If it doesn't match, you must either change it here or change it in EVERY CPU that is affected. You cannot use the original 500-Loop ID. You must use a unique ID that is not already being used in the SG programming for other loops.

3. Set the connection type to "TCP/IP"

4. Click the Event Server button or provide the IP Address of the Event Server. This Event Address must be configured into every CPU.

5. Click Apply to save the configuration changes.

m. Open the each new 600-series Controller Properties

1. inspect each controller for correctness

    1. Correct types of boards (DPI/DRM, DIO, DSI …)

    2. correct Board numbers (The software will assign boards 1, 2, 3, 4 in sequence. These must match the actual reader mapping in the software.

    3. Correct use of sections – i.e. if a section/port was not used on the 500 panel, it should say "not in use" on the 600 panel).

2. NOTICE YOU CAN USE THE **Get Board Info** to pull back the boards from the hardware for comparison. WARNING DO NOT OVERWRITE YOUR CONVERSION!!! Go to the hardware and change the board numbers to match what they should be in the software if they are different. You must map out the door and reader programming to determine that you hooked up your readers in the correct way to your panel. If you have a reader from port 1 of the 500 panel wired to section 2 on the 600 panel, you will want to change the hardware wiring connector because it will be too hard to change over all the reader settings and schedules that are in the software programming at System Galaxy.

n. Now you can configure the 635/600 CPUs in each physical panel to have the appropriate cluster number, IP address, and Event Server if needed.

o. Walk test all the hardware components on the panels that were converted while monitoring the loop in an individual screen and review system reports for correct reporting of events