

# System Galaxy Quick Guide

CONFIGURATION AND OPERATION



## GENESIS Time & Attendance

**Compatible with GenSQL Database Only**

JAN 2024 | SG 11.8.5

*Compatible with SG 8.1 OR LATER*

# ***GENESIS SQL***

## **Time & Attendance**

### **Software Guide**

***first edition***

Information in this document is subject to change without notice.  
No claims are made as to the accuracy or completeness of this document.

**Copyright © 2006 ♦ Galaxy Control Systems ♦ All rights reserved**

No part of this document may be reproduced, copied, adapted, or transmitted, in any form or by any means, electronic or mechanical, for any purpose, without the express written consent of Galaxy Control Systems. Copyright protection claims include all forms and matters of copyrighted material and information, including but not limited to, material generated from the software programs, which are displayed on the screen such as icons, look and feel, etc.

Microsoft<sup>®</sup>, Windows<sup>®</sup>, MS-DOS<sup>®</sup>, Windows Server<sup>®</sup>, and Windows Server System<sup>®</sup>, are registered trademarks of the Microsoft Corporation in the U.S. and other countries.

Adobe<sup>®</sup> and Acrobat<sup>®</sup> are registered trademarks of Adobe Systems Inc.

Cover graphics and design are creations of the technical author.

### **Galaxy Control Systems**

3 North Main Street  
Walkersville MD 21793  
301-845-6600

**[www.galaxysys.com](http://www.galaxysys.com)**

## Table of Contents

<b>1</b>	<b>System Galaxy Interface with Genesis SQL</b> .....	<b>5</b>
1.1	Overview of the System Galaxy Interface to GENESIS SQL .....	6
1.2	How this manual is organized .....	6
1.3	System Diagrams .....	7
1.4	System Interface Requirements .....	9
<b>2</b>	<b>Configuring the Time &amp; Attendance Interface</b> .....	<b>10</b>
2.1	Quick Steps – Configuring the Interface .....	10
2.2	(Step 1) About Installing/Connecting the databases .....	11
2.3	(Step-2) Setting up the Company in Genesis Software .....	12
2.4	(Step 3) Setting up clock code “1” in Genesis software.....	13
2.5	(Step 4) Register Time & Attendance in System Galaxy.....	14
2.6	(Step 5a) Enable Time & Attendance for Shared Server .....	15
2.7	(Step 5) Enable Time & Attendance for Linked Server .....	16
<b>3</b>	<b>Using the Time &amp; Attendance Interface</b> .....	<b>Error! Bookmark not defined.</b>
3.1	Overview of the Time & Attendance Interface .....	17
3.2	Adding Cardholders in SG to use Time & Attendance .....	18
3.2.1	Adding Cardholders in System Galaxy Cardholder screen .....	19
3.3	Set up a Reader in SG to use Time & Attendance .....	20
3.4	Create a SQL Job to update Reader Transactions .....	21
<b>4</b>	<b>Troubleshooting Tips</b> .....	<b>23</b>
4.1	GENESIS SQL Database will not install.....	23
4.2	The Time & Attendance tab is not in Workstation Options .....	23
4.3	SG Cardholders (employees) do not show up in Genesis .....	24
4.4	Transactions (card reads) do not show up in Genesis .....	25
<b>5</b>	<b>Appendix xxx: Keywords and Terms</b> .....	<b>26</b>

## List of Tables and Figures

Table 1 Quick Steps for configuring System Galaxy for Time & Attendance Interface .....	10
Table 2 Document Keywords .....	26
Figure 1 - System Diagram of System Galaxy Time & Attendance Interface using a linked server.....	7
Figure 2 - System Diagram of System Galaxy Time & Attendance Interface using same server .....	8
Figure 3 – Genesis Configure Main Company screen .....	12
Figure 4 – Genesis Clock code configuration .....	13
Figure 5 - System Registration Screen (bottom part) – showing Time & Attendance option .....	14
Figure 6 – Workstation Options Screen – Time & Attendance tab .....	15
Figure 7 – Adding Cardholder/Employee data in System Galaxy Cardholder screen.....	19
Figure 8 - The Reader Programming Screen.....	20
Figure 9 – insert picture.....	<b>Error! Bookmark not defined.</b>

## List of Supporting Manuals

### Manuals & Guides: Description

<b>Genesis Product Manuals</b> for installation and requirements	See manufacturer's resources (Time America)
<b>System Galaxy 8.1 Installation Guide:</b>	Installation of System Galaxy Software from the CD
<b>Genesis SQL Interface Manual:</b>	Requirements, Registering and Configuring System Galaxy for the Time & Attendance interface to Genesis SQL database/system.
<b>600-Series (HEC) Interface Manual:</b>	Descriptions of components, hardware installation instructions and related software configuration for the 600-series controllers.
<b>508i-Series Hardware Manual</b>	Descriptions of hardware components and the hardware installation instructions for the 508i series controllers
<b>Main System Galaxy Hardware Guide</b>	Descriptions of the hardware installation for the 500-series panels, AMMs, ORMs and other common peripheral devices.
<b>Main System Galaxy Software Manual</b>	Descriptions of the System Galaxy software, services and database, registration, programming/setup, operation.

#### System Galaxy Manuals & Guides are found in the following places:

- ♦ Customer Support/Technical Support
- ♦ System Galaxy Installation CD
- ♦ System Galaxy Dealer website (login required)

[http://www.galaxysys.com/tech\\_support/technotes/manuals.php](http://www.galaxysys.com/tech_support/technotes/manuals.php)

# 1 System Galaxy Interface with Genesis SQL

This manual covers **System Galaxy interface to GENESIS SQL Time & Attendance system**. IMPORTANT requirements are included in the Requirements Section.

In **System Galaxy 8.1** (and higher), the Time & Attendance feature interfaces to **Genesis SQL**.

*Earlier versions of System Galaxy used the Time & Attendance interface to HourTrack 2000. See the System Galaxy 7 software manual for those details.*

## 1.1 Benefits of the System Galaxy Interface to GENESIS SQL

---

**The Time & Attendance interface provides the following benefits to System Galaxy users:**

- Full-featured Time & Attendance software includes scheduling, accruals, and other valuable time and attendance features. *See your Time and Attendance product manuals for details.*
- An employee can use the same card for building access and time & attendance.
- Also a single reader in System Galaxy can be used for employee access and attendance
- Employee data in System Galaxy transfers to the time & attendance database automatically.
- Changes to employee data transfer to the time & attendance database automatically.
- Employee card swipes transfer to the time & attendance database by an automated process.
- The System Galaxy database can share a common SQL Server with the Genesis database (i.e. a shared server environment).
- The System Galaxy database can use a linked SQL Server connection to the Genesis database (i.e. a linked server environment).

## 1.2 Overview of the System Galaxy Interface to GENESIS SQL

---

The **System Galaxy** sends ‘employee data’ and ‘time punches’ to the Genesis database using a *SQL Server connection*, once the system is properly registered and set up.

**System Galaxy executes event-triggered stored procedures** to update Genesis import tables. Then the Genesis system updates its working database from the import tables when the Genesis client software is started. Customer can also automate sending time punches to the Genesis import tables by setting up a SQL job – described in later sections of this manual.

If a transaction (time punch) is sent for a cardholder that does not have a record in the Genesis system, Genesis will indicate that the transaction was received for an unknown employee.

**The SysGal and Genesis databases can reside on the same SQL Server or utilize Linked Server connections.** Genesis SQL may not be able to install the Genesis database if an instance of MSDE is present on the designated database server. System Galaxy 8.1 should not use MSDE if interfacing with Genesis. If upgrading from SG 7.1, the customer should migrate to SQL Server 2005 Express (royalty-free) on the Installation CD or use the appropriate SQL Server.

**System Galaxy sends two types of data to the Genesis system:**

1. **Employee data:** Certain employee data is sent to the Genesis system when a cardholder is added or updated in the SysGal database, provided the ‘Forward to Time & Attendance’ is checked/ON. Chapter 3 covers these details.

**This happens one of the following ways:**

- a cardholder is added/updated in the Galaxy Cardholder screen (or the SG-Web client)
  - an operator performs an export to Genesis from the Galaxy menu-driven utility
  - cardholders import into SysGal database using the Galaxy Cardholder Import utility or by other 3<sup>rd</sup> party Database connection to import records into SysGal database
2. **Transaction (card read/time punch) data:** Certain data from a ‘time & attendance reader’ is sent to the Genesis system when a *valid access* occurs, provided the reader is configured to be a time & attendance reader. Time punches are called “transactions” in Genesis. Chapter 3 covers these details.

## 1.3 How this manual is organized ...

---

**Chapter 1:** Overview of the interface, System Requirements, and System Diagrams

**Chapter 2:** Important notes about the database installation, Registering & Enabling the Time & Attendance Interface in System Galaxy, setting up cardholders and readers in System Galaxy use Time & Attendance.

**Chapter 3:** Knowledge Base: troubleshooting tips for Time & Attendance Interface.

## 1.4 System Diagrams

The following diagrams show a *Galaxy Access Control System* using MS-SQL Server connection to a *GENESIS SQL Time and Attendance System*.

Figure 1 - System Diagram of System Galaxy Time & Attendance Interface using a linked server

### System Galaxy Time & Attendance Interface Linked Server Environment

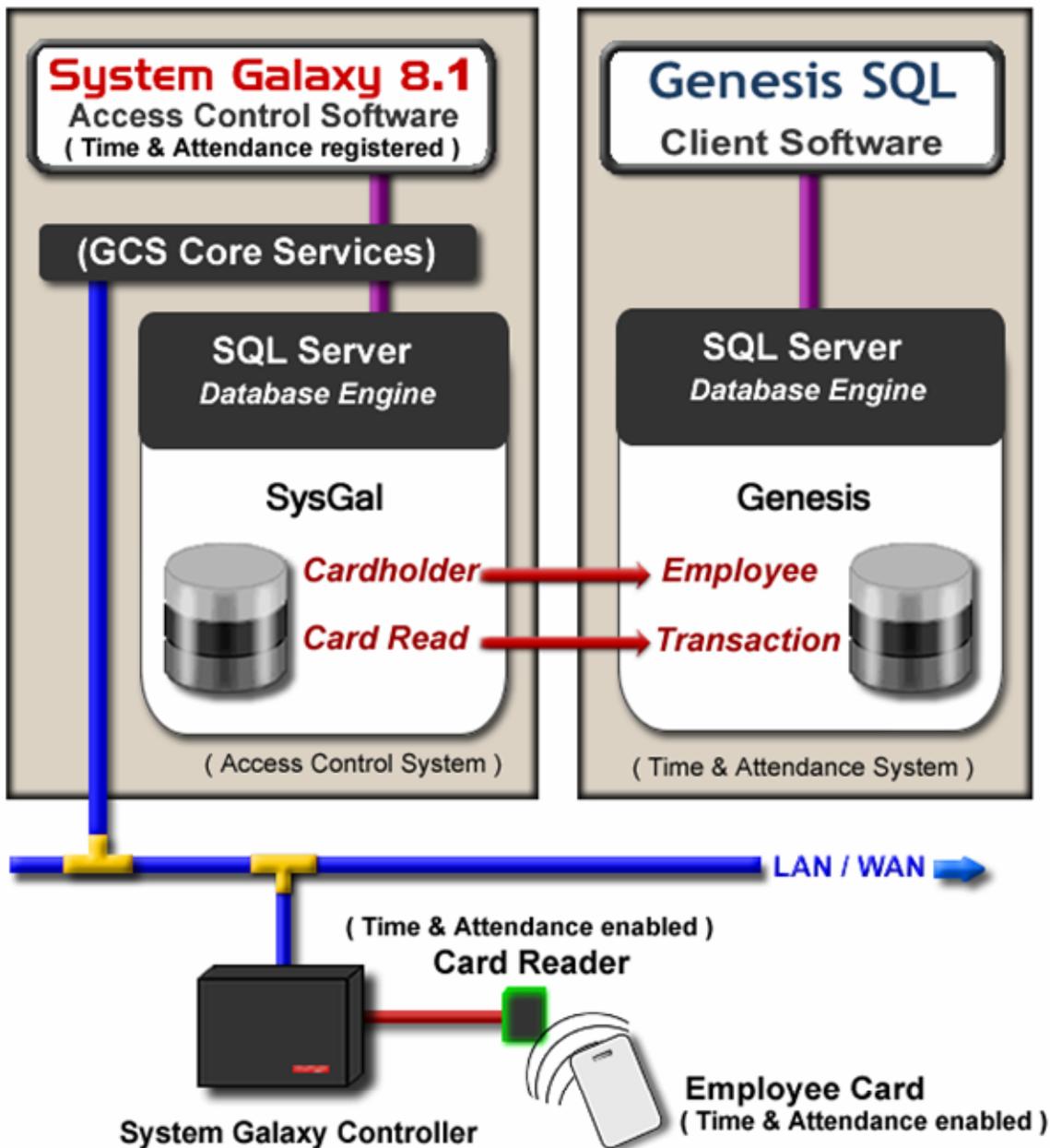
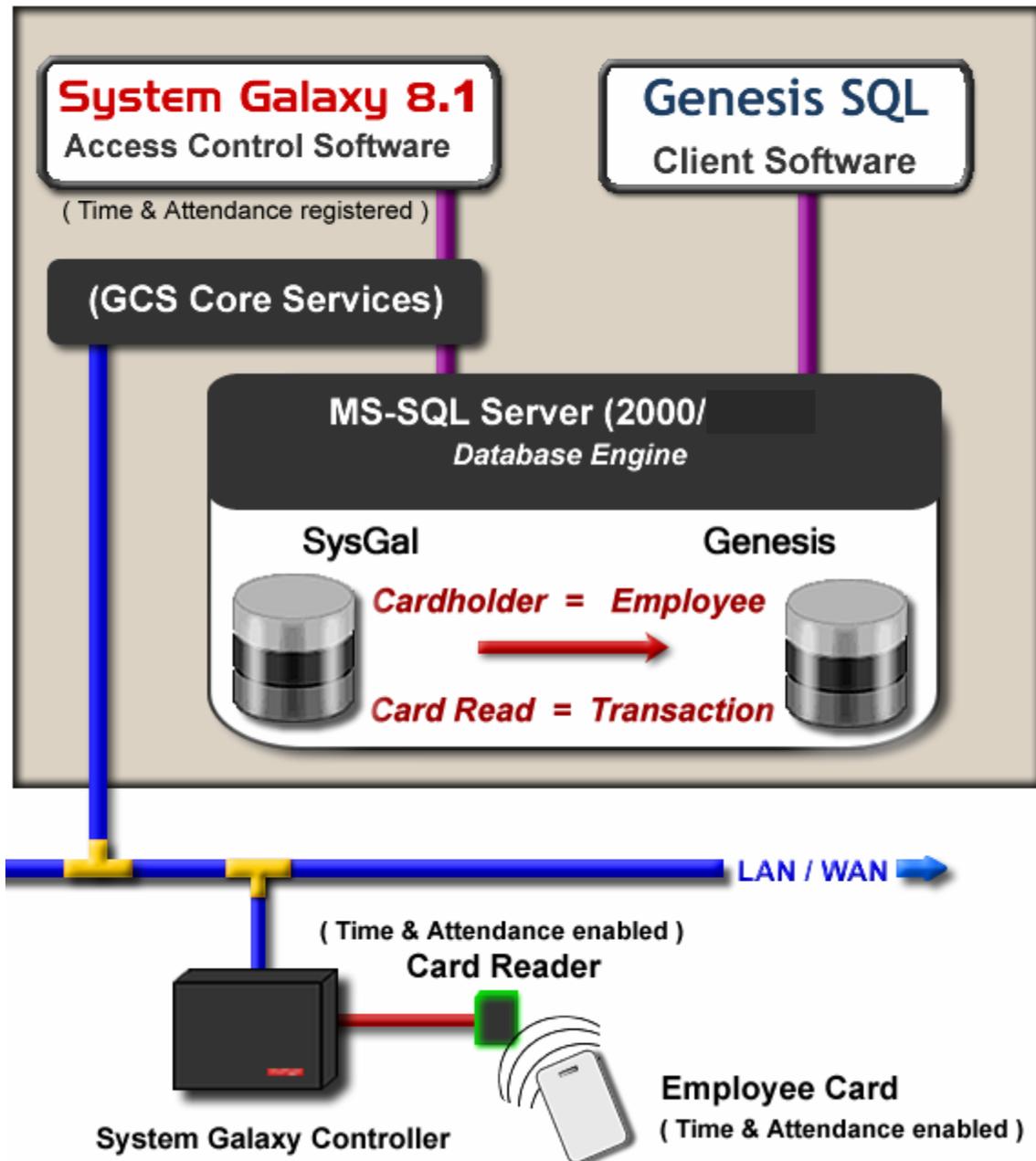


Figure 2 - System Diagram of System Galaxy Time & Attendance Interface using same server

## System Galaxy Time & Attendance Interface Shared Server Environment



## 1.5 System Interface Requirements

---

At the time of this manual's creation, System Galaxy v8.1 is compatible w/ GENESIS SQL Sept 2006.

**Genesis SQL is compatible with MS SQL Server 2000, but not MSDE.**

- ♦ **If using a shared server connection**, System Galaxy 8.1 is compatible with SQL Server 2000. However, you must manually copy and attach the SG 8.1 databases and manually create the SG database logins.
- ♦ **If using a linked server connection**, System Galaxy 8.1 can use SQL Server 2005 Express. *No claims are made or implied that Genesis is compatible with SQL Server 2005 Express.*
- ♦ **Install/use standard (default) database names (i.e. Genesis, SysGal).** Stored Procedures rely on standard database names. *If you have used a non-standard database name (e.g. by manually attaching), you can either rename your database to the standard name or call Tech Support to assist you with modifying stored procedures.*
- ♦ **The System Galaxy database must have functioning SQL connection** to the Genesis database for employee/card swipe updates to occur. Card Swipe transactions require an additional scheduled task to periodically run a stored procedure to send the swipes to Genesis.

**If using Time and Attendance with *linked* database servers:**

- ♦ **TCP Port 135 and ports 6000 through 6050 are used for MSDTC service on both servers.**
- ♦ **Set both PC Firewall exceptions to allow 'sqlservr.exe, sqlbrowser.exe', and msdtc.exe.**
- ♦ **Note that the DTC authentication settings must match on both servers.** *If you are running 2000 Operating System, then both servers will have to use "NONE" as the authentication setting.*

**TIP:** A ".reg" file is included on the GalSuite 8.1 CD that opens the T&A ports configures the DTC security settings. **Be aware that you may need the IT personnel to approve running this** or allow them to manually incorporate the needed DTC configuration. Use Notepad to view the .reg file.

- ♦ **In Genesis and System Galaxy, the employee ID must be numeric (10 digits max length).**
- ♦ **In Genesis, the Main Company *Auto-assign Badge option* must be "same as employee number"**
- ♦ **In the Genesis Software, a clock code of "1" must be assigned to the System Galaxy reader.**
- ♦ **System Galaxy software must register for *SG Time & Attendance Support* (Corporate, Enterprise).**
- ♦ **System Galaxy/Workstation Options must have the 'GENESIS SQL' option ON/checked.**
- ♦ **System Galaxy/Workstation Options must have the correct Server path configured**
- ♦ **Galaxy Cardholder(s) must have the 'Forward to Time and Attendance' option ON/checked.**
- ♦ **A System Galaxy time & attendance reader must have 'Time & Attendance' option ON/checked.**

**If using Time & Attendance with 508i/502i Hardware (controllers):**

- ♦ A 508i loop that has a time/attendance reader must have at least two controllers if a Cypress Clock display is used.
- ♦ An RS-232 converter and the Cypress clock display units must be wired to the secondary panel.

**Hardware notes:** The connection between the PC and Primary controller can be established by cable (RS-232) or TCP/IP. The RS-232 converter for the time display connects to the serial port of the secondary controller.

## 2 Configuring the Time & Attendance Interface

### 2.1 Quick Steps – Configuring the Interface

**Table 1 Quick Steps for configuring System Galaxy for Time & Attendance Interface**

#	Configuration Steps	Section References
1	<p><b>a) Install the GENESIS SQL software &amp; database</b> on desired server. (a three part install process on the Galsuite/Components)</p> <p><b>b) Install the System Galaxy software and database</b> on the desired server using either the same SQL Server as used with Genesis or a linked server environment if SG database will run on a different server.</p> <p><b>d) Run Genesis_GCSProcs.sql script</b> on the Genesis database.</p> <p><b>c) If using linked server:</b></p> <ol style="list-style-type: none"> <li>1) Run <b>AddLinkedServerDynamic sql</b> script on SysGal database.</li> <li>2) Start <b>MSDTC Service</b> on both PCs (must set to run automatically)</li> <li>3) Run the <b>“.reg” file</b> on both servers – this opens TCP 135, 6000 thru 6050 and changes the DTS Settings to support linked server interface.</li> <li>4) <b>Set both PC Firewalls</b> to allow ‘sqlservr.exe and sqlbrowser.exe’. Make sure both servers have compatible security modes (i.e. mixed mode, etc)</li> </ol>	<p>See Genesis product manuals for their software installation requirements and instructions.</p> <p>See Section 1.3 for system diagrams depicting linked or shared server environments.</p> <p>See Section 2.2 for instructions on this step.</p> <p>Also see SG 8.1 Install Guide for installing and setting up System Galaxy database and software.</p>
2	<p><b>In the Genesis software, configure the Main Company defaults</b> to have <i>System Field Employee Number</i> of “10” maximum numeric digits and set the <i>Automatic Badge Assignment</i> feature be the ‘same as employee number’.</p>	See Section 2.3 for tips.
3	<p><b>In the Genesis software, assign the Genesis Clock “1” to be used by System Galaxy.</b></p>	See Section 2.4 for tips.
4	<p><b>In System Galaxy, register the ‘Time &amp; Attendance Support’ option</b> under ‘Corporate’ or ‘Enterprise’ product level in System Registration.</p>	Section 2.5 of this manual.
5	<p><b>In System Galaxy, set Workstation Options for Time &amp; Attendance</b> and restart System Galaxy software.</p>	Section 2.6 of this manual.
6	<p><b>In System Galaxy, set up (add) cardholder(s) to be forwarded to Time &amp; Attendance</b> in the Cardholder screen/Personal tab</p>	Section 2.8 of this manual.
7	<p><b>In System Galaxy, configure the reader for time &amp; attendance</b> in the Reader Properties/General tab. And set up the Cypress clock display</p>	Section 2.9 of this manual.
8	<p><b>In the Windows Task Scheduler, create the task to update the time and attendance card reads</b> to the Genesis Transaction import table.</p>	Section 2.10 of this manual.

## 2.2 (Step 1) About Installing/Connecting the databases

---

### 1. About Installing Genesis: GENESIS SQL database runs on SQL Server 2000.

**IMPORTANT:** The *Genesis Install Software* may not be able to install a Genesis database (or find the MSSQL Server) if a copy of MSDE is running on the computer.

*Refer to Genesis documentation for details on installation conflicts where MSDE is present.*

*Refer to Genesis documentation for installation procedures on SQL Server 2000.*

### 2. About Installing System Galaxy: the SG 8.1 Install Guide can assist you with specific information on installing System Galaxy. *The Install Guide is found in the manuals folder in the System Galaxy folder in PDF format. It is also on the Install CD and can be run as an HTML in Windows Internet browser.*

**System Galaxy can use a common (shared) Database Server or a separate (linked) Database Server depending on your needs.**

a) **Shared Database Server: SysGal database can run on SQL Server 2000** and uses an *MSSQL Server connection* to update the Genesis import tables (see Figure 2 in Section 1.3).

b) **Linked Database Server: SysGal database can run on SQL Server 2005 Express** and uses a *Linked SQL Server connection* to update the Genesis (see Figure 2 in Section 1.3).

### 3. Once the Genesis/System Galaxy installs are complete, the following must be done.

#### a) If the SysGal and Genesis databases are on the same server, do the following:

- ♦ **Run the Genesis\_GCSProcs.sql script against the Genesis database.** This creates stored procedures that will be used to insert the employee and card swipe data into the Genesis import tables (i.e. IMP\_EMPL and IMP\_TRAN tables).

#### b) If the SysGal and Genesis databases are on linked servers, do the following:

- ♦ **On the SysGal database:** run the **AddLinkedServerDynamic sql** script against the SysGal database. This script is located on SG 8.1 Install CD in the following directory: "Components\Genesis TA\Linked Server Files\Run on SysGal DB Server\ ".

**IMPORTANT:** you must edit the **server (or serverinstance) name** on line 6 of the script before running (put server name inside single-quotes).

- ♦ **On the Genesis database:** Run the **Genesis\_GCSProcs.sql** script against the Genesis database. This script is located on SG 8.1 Install CD in the following directory: "Components\Genesis TA\Galaxy SQL Scripts\Run on Genesis DB Server\ ".

### 4. After the Database Scripts are finished, the following tasks must be done:

a) **On both servers:** the MSDTC Service must be set to run automatically and started. This is done through the Services Manager in the Control Panel. .

b) **On both servers:** Run the **LinkedSQLServerMSDTCModifications.reg** file to configure DTC. (found on the SG 8.1 Install CD in "Components\Genesis TA\Linked Server Files")

- ♦ This sets the DTC Settings to use options that support linked server interface.
- ♦ It sets the Firewall to allow TCP port 135 and ports 6000 through 6050 for the MSDTC to use.
- ♦ **IMPORTANT: the DTC Security mode must match on both servers.** If you are running on a 2000 Operating System you must use the Security mode = "none".

c) **On both servers:** Manually set the firewall to allow 'sqlservr.exe and sqlbrowser.exe'. This is done through the Windows Control Panel. After opening the Firewall, select the Exceptions tab and add the two program files.

## 2.3 (Step-2) Setting up the Company in Genesis Software

After the databases have been properly installed and the Genesis\_gcsProcs script has been run, the Genesis software must be set up to use the Employee number for the Badge Assignment and with a maximum 10 digit numeric length.

1. Start up and logon the Genesis software (default login “SYSOP” and “password”)
2. From the main menu, select **Configure > Company > Main Company**.
3. In the *Defaults tab*, set **Employee Length to 10** and **Type to ‘numeric’**.
4. In the *Defaults tab*, set Automatic Badge Assignment to **use’ same as employee number’**.
5. Click **[OK]** to save.

Refer to manufacturer’s manuals for details about additional programming in Genesis software.

**Figure 3 – Genesis Configure Main Company screen**

The screenshot shows the 'Configure Main Company' dialog box with the 'Defaults' tab active. The 'System Fields' section contains a table with the following data:

Field Name	Field Label	Length	Type
Employee	Employee	10	Numeric
Department	Department	10	Numeric
Job	Job	15	Numeric
Step	Step	15	Numeric
Operation	Operation	15	Numeric
Task	Task	15	Numeric

The 'Badges' section shows 'Length' set to 5, 'Offset' set to 0, and 'Maximum' set to 5. The 'Automatic Badge Assignment' section has three radio buttons: 'No Automatic Assignment', 'Next Numeric Available', and 'Same as Employee Number', with the last one selected. The 'External Report Writer' field is empty. At the bottom, there are 'Print', 'OK', and 'Cancel' buttons.

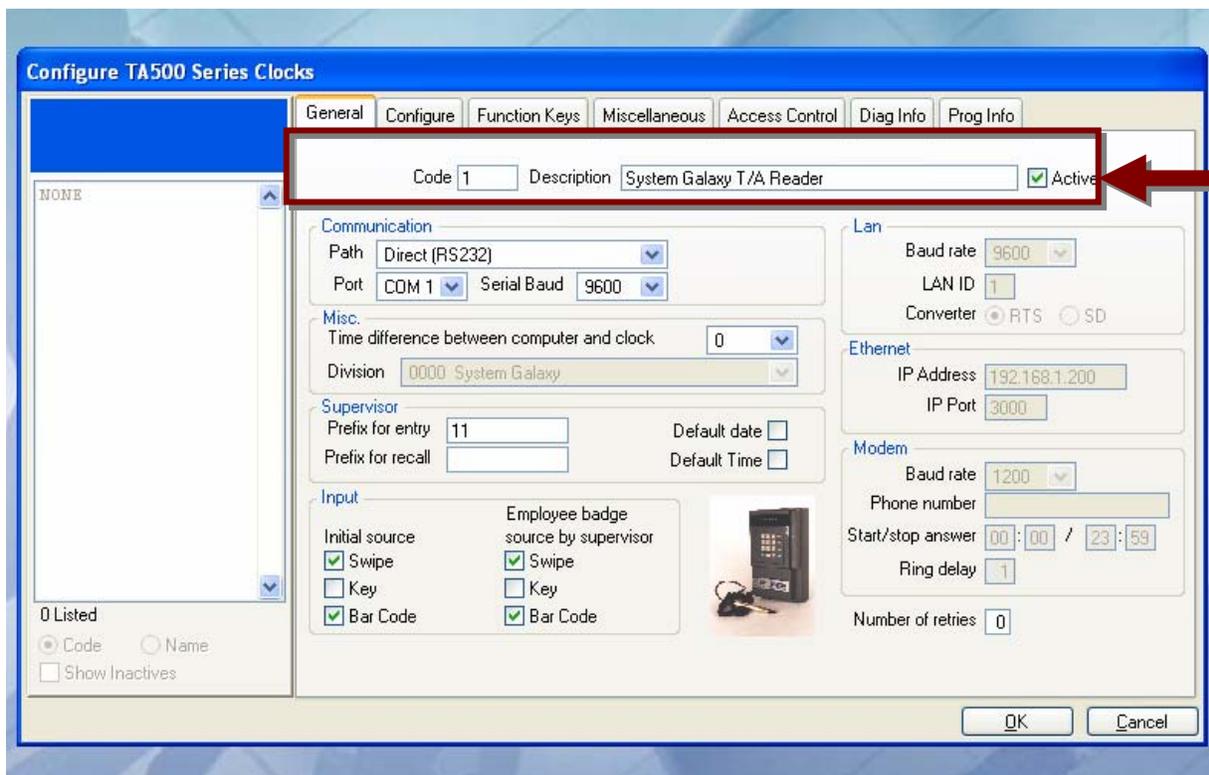
## 2.4 (Step 3) Setting up clock code “1” in Genesis software

**IMPORTANT: System Galaxy uses clock “1” by default when it sends data to GENESIS.**

1. Log into the Genesis software
2. From the main menu select the **Clocks > Configure** and choose the desired clock type.
3. On the *General tab*, set the **Code** field to “1” for use with System Galaxy. Refer to manufacturer’s manuals for programming in Genesis software.

**IMPORTANT: System Galaxy must use Clock 1 in the system to successfully transfer the transaction data (card read info) from the Time & Attendance reader in System Galaxy.**

**Figure 4 – Genesis Clock code configuration**

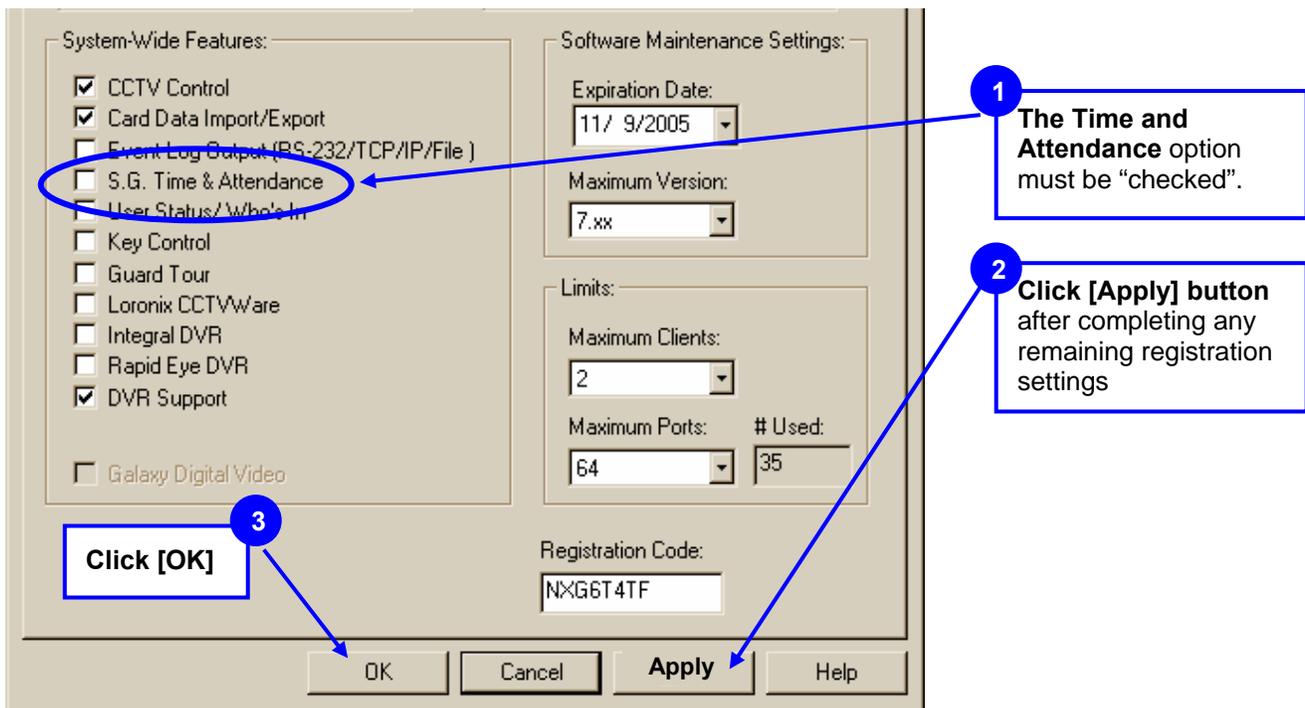


## 2.5 (Step 4) Register Time & Attendance in System Galaxy

Time & Attendance is available for registration in *Corporate* or *Enterprise* product levels.

- 1) **Open System Registration screen** - from menu options **Configure>Options>Registration>System**.
  - Fill out the necessary fields at the top of the screen
  - Pick the appropriate Product Level (*corporate* or *enterprise* supports time & attendance).
  - Check the “Time and Attendance” check-box** (at the bottom of the list)
  - Complete normal registration process as needed.** See the main SG Software Manual for remaining registration requirements. This includes getting a valid code.
  - Click [Apply] button**
  - Click [OK] button**
- 2) **Perform the Workstation registration for as needed.**
- 3) **Restart System Galaxy** software application after registration is complete.

**Figure 5 - System Registration Screen (bottom part) – showing Time & Attendance option**



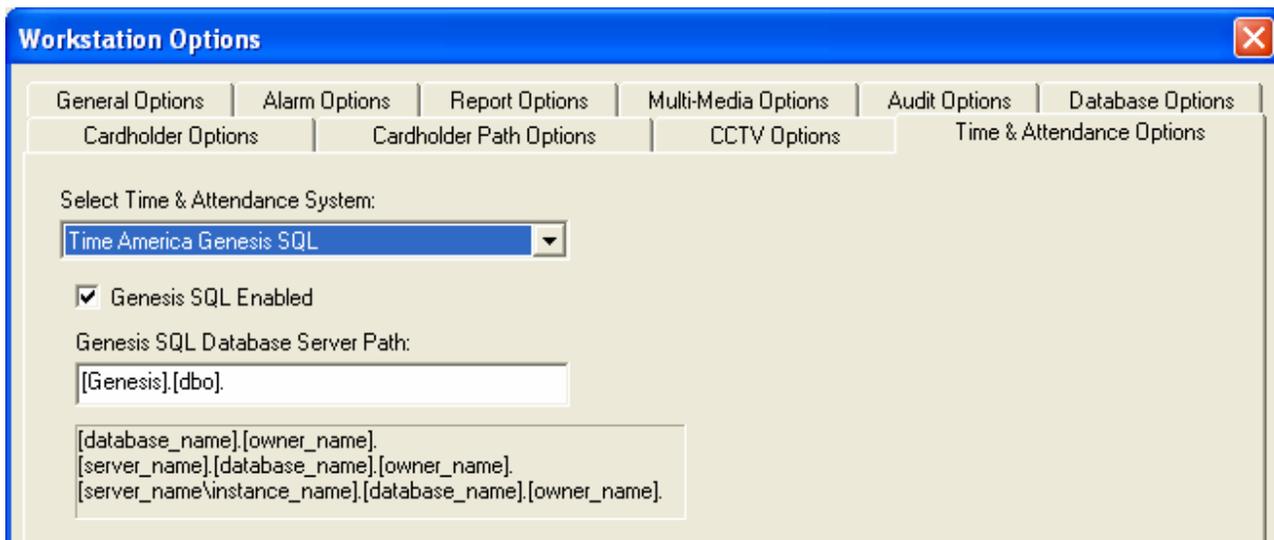
## 2.6 (Step 5a) Enable Time & Attendance for Shared Server

The Time & Attendance System must be defined and enabled in the Workstation Options Screen.  
See Next Section for enabling time and attendance on a linked server

### **Enabling T/A where SysGal and Genesis use the same database engine/server:**

- 1) Open System Galaxy by double clicking the SG Desktop icon and log in as a Master Operator.
- 2) Open *Workstation Options* screen from the main menu: **Configure>Options>Workstation Options**.
- 3) Select the **Time and Attendance** tab (if the time and attendance tab is not displayed, make sure you properly completed the product registration and restarted the software.)
  - a) Choose “Time America Genesis SQL” option in the **Time & Attendance System** droplist.
  - b) Set the **Genesis SQL Enabled** checkbox to “checked”. Employee data will not forward to Genesis database if this option is unchecked. **Note that this option provides the customer with the ability to temporarily stop the updates to the Genesis import tables as needed.**
  - c) Provide the database parameters to the Genesis database in the **Genesis SQL Database Server Path** field. The parameters entered here must match the actual database name and location. Galaxy stored procedures use this parameter to establish the connection to Genesis.  
**[Genesis].[dbo]** is the default value. This should work if SysGal and Genesis databases are on the same server, **and** the Genesis database was installed with the default name of “Genesis” **and** “dbo” as the owner. If a different server, database name or owner is used, you must supply that value in this field. Syntax and spelling must be correct.  
**Syntax:** [server].[database].[owner] or [server\instance].[database].[owner]  
**If System Galaxy is using a Linked Server connection, you can manually enter the parameters here** or run the *AddLinkedSQLServerDynamic* script against the SysGal database (see next section for instructions on the script).
  - d) Click **[APPLY]** and **[OK]** button to save changes
- 4) Restart System Galaxy to make changes effective.

**Figure 6 – Workstation Options Screen – Time & Attendance tab**



## 2.6.1 (Step 5b) Enable Time & Attendance for Linked Server

- 1) If you know the server name, instance name, Genesis database name and database owner, you can follow the examples provided to manually add the server path. You must use proper syntax (i.e. use square brackets and dots if you are doing this in the Workstation Options screen).

**Syntax:** [server].[database].[owner] or [server\instance].[database].[owner]

**Example:** [GenDBserver].[Genesis].[dbo] or [GenDBserver\SQL2X].[Genesis].[dbo]

### - OR -

You can run the *AddLinkedSQLServerDynamic* script file against the SysGal database server. This process is outlined in Section 2.2 of this manual.

- 2) **Edit the server\instance parameter on line 6 of the script**, once the file is open in the SQL Manager tool. To find the Genesis server\instance name you can go to the ODBC Manager in the Control panel on the Genesis server and look up the properties of the DSN for GenSQL. If the datasource property indicates a “.” for the server name then you can expand the list to find the local server name.

**Line 6 declares the server\instance parameter:**

```
set @SERVER_NAME = '[SERVER_NAME\INSTANCE_NAME]'
```

- a) If there is not an *instance name*, **supply the correct server name only** between ‘ ’ single-quotes
  - b) If there is an instance name, **supply the correct server\instance name** between ‘ ’ single-quotes
  - c) **Edit the SysGal database name (only if needed)** wherever referenced in the script. “SysGal” is the default name for the Galaxy database. You can look in the Server Mgt Tool to confirm this.
  - d) **Edit the Genesis database name (only if needed)** wherever referenced in the script. “Genesis” is the default database name. You can look in the Server Management tool to confirm this.
- 3) **Execute the linking script in the management tool:** The results should indicate sp\_addlinkedserver '[servername]', SQL server (1 row affected). If you get errors you have not edited the script properly, have the wrong database name, have the wrong server \instance name, or have a connectivity issues.
  - 4) **Open Workstation Options screen** from the main menu: **Configure>Options>Workstation Options**.
  - 5) **Click on the Time & Attendance tab** and **set the system field to “Time America Genesis SQL”**. The Genesis Database Server field should contain the server\instance name you provided in the script.
  - 6) **The Genesis SQL Enabled option must be checked.**
  - 7) **Click [Apply] and [OK] to save. System Galaxy should be restarted to ensure proper operation.**

## 2.7 Overview of the Time & Attendance Interface

---

### How does System Galaxy (SysGal) Database connect to the Genesis Database?

System Galaxy Time & Attendance interface is designed to send data to the Genesis database using an *MSSQL Server connection* (if both databases are on the same server) or a *Linked SQL Server connection* (if the databases are not on the same server). See Ch. 2

### When does System Galaxy send employee data to the Genesis imp\_empl table?

**Employee Data:** System Galaxy sends cardholder (employee) data to Genesis when the Cardholder record is added or updated, if the 'Forward to Time & Attendance' option is "checked" in the Cardholder screen/Personal tab. See Section 3.2 for details about configuring a cardholder for Time & Attendance.

**NOTE:** The Galaxy cardholder data can be used to jump start the data entry process in Genesis if the System Galaxy Cardholders are programmed first.

### When does System Galaxy send transaction data to the Genesis imp\_tran table?

**Card Swipe/Transaction:** System Galaxy stores card transaction data to the SysGal TA\_Punches table. This happens when a card gets a 'valid access' at the Reader that is configured to be a Time & Attendance reader. See Section 3.3 for details about configuring a reader for Time & Attendance.

Periodically, a SQL Script/Job sends the transactions from the SysGal.TA\_Punches table to the Genesis.imp\_tran import table. This script can be run manually or scheduled as a SQL Job in the database management tool (i.e. Enterprise Manager, MMC, etc.). The frequency of the update is determined by the scheduler. See Section 3.4 for details.

### How/When does the Genesis software pick up data from the import tables?

The import tables reside in the Genesis database. The Genesis software updates its working database with the data in the import when an operator logs into the Genesis software. Once the Genesis software picks up the data, the import tables are emptied.

The *Employee Details tab* in Genesis displays the cardholder data it gets from System Galaxy.

The *Employee Transaction screens* display the card swipe data it gets from System Galaxy.

## 2.8 Set up Cardholders to use Time & Attendance in SG

---

If the 'Forward to Time and Attendance' checkbox is "checked" / enabled in the System Galaxy Cardholder screen, the employee data is sent to the Genesis import table when the record is saved.

**There are several ways to add/update a cardholder in the SysGal database:** Each of the following methods will automatically trigger the stored procedure to send.

- c) Cardholder screen in System Galaxy - 'Forward to Time & Attendance' must be "checked"
- d) Personnel page in SG-Web - 'Forward to Time & Attendance' must be "checked"
- e) Card Import Utility (external SG Utility program) - must set HT2000 to "1"
- f) 3<sup>rd</sup> party database connection - must set HT2000 to "1"

**IMPORTANT:** System Galaxy must use a numeric employee number. The number cannot exceed 10 digits. This is mandated by the Genesis database. Genesis Company should be configured to use max 10 digit employee number. See *Chapter 2 about Setting up the Company in Genesis software.*

**Note:** Genesis imposes field length restrictions that are shorter than System Galaxy's fields. The System Galaxy stored procedures are designed to truncate data that exceeds Genesis field lengths.

### The following fields are forwarded to Genesis:

- Employee Number (numeric only – max 10 digits – must be configured in Genesis software)
- First Name : 20 character length in Genesis
- Last Name : 20 character length in Genesis
- Middle Initial : 1 character length in Genesis (truncated to the first character)
- Address Line1 : 30 character length in Genesis (Personal tab in System Galaxy)
- Address Line2 : 30 character length in Genesis (Personal tab in System Galaxy)
- City : 25 character length in Genesis (Personal tab in System Galaxy)
- State : 3 character length in Genesis (truncated to the 3rd character) (Personal tab in SG)
- ZIP : 7 to 11 digits(Personal tab in System Galaxy)
- Also the Date\_Added for the cardholder will be used as the Hire Date in Genesis.

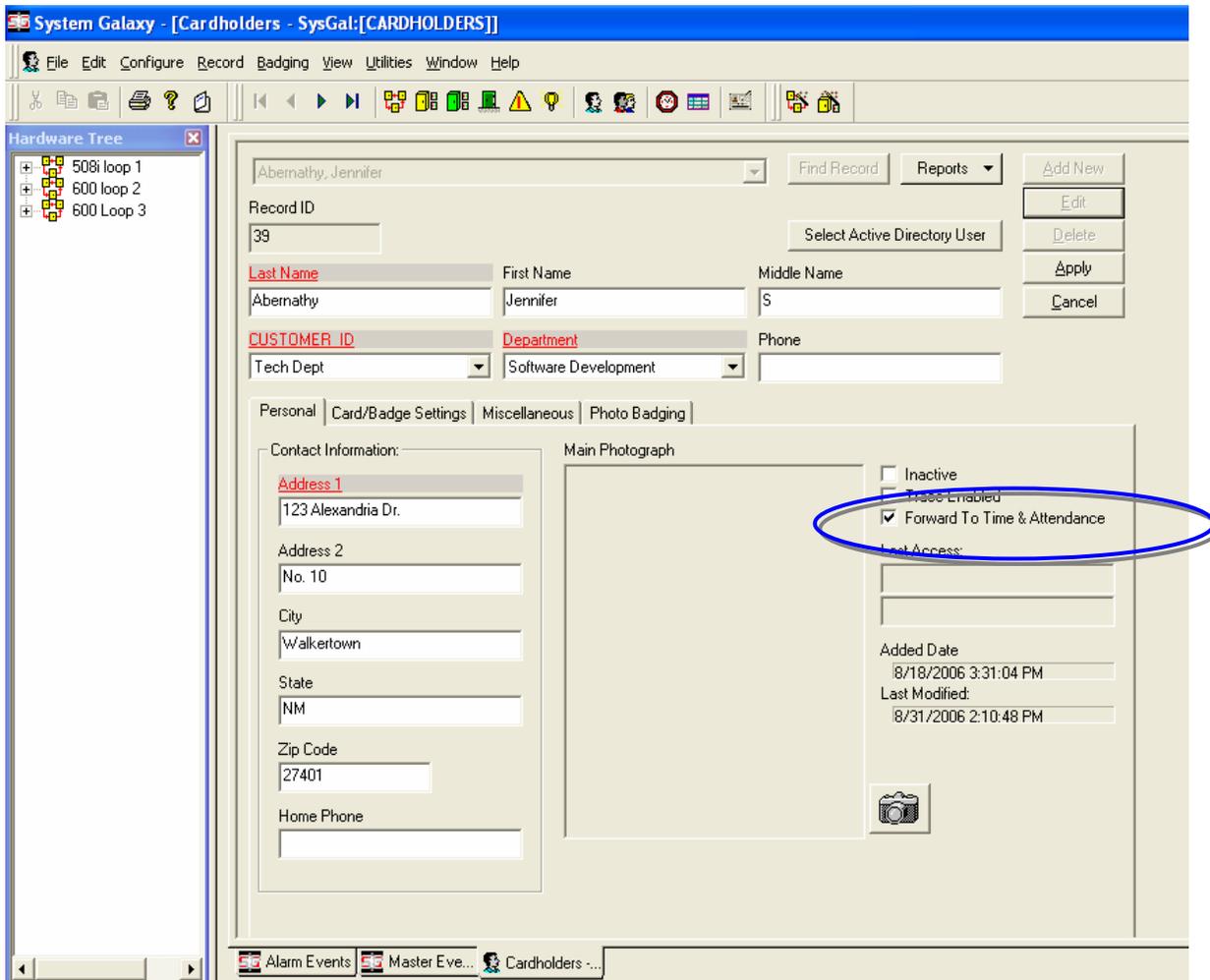
*REMEMBER: The user must check the 'Forward to Time and Attendance' option in the Personal tab for the data to be forwarded to the Genesis database. This sets the HT2000 field in SysGal to "1".*

## 2.8.1 Adding Cardholders in System Galaxy Cardholder screen

When a cardholder is saved in System Galaxy and the 'Forward to Time & Attendance' is checked, the the appropriate data is sent to the Genesis system. A save occurs when the user clicks the [Apply] button.

1. From the System Galaxy main menu, click **Configure>Cards>Cardholders**
2. **Type in the cardholder name and personal data** (as appropriate) in the *Personal tab*
3. **Check the 'Forward to Time & Attendance' option** – this identifies this person to be forwarded to the Time and Attendance database.
4. Select the *Card/Badge Settings tab* and **add the employee's card** that will be used at the Time & Attendance (T/A) Reader.
5. Select the Loop Privileges tab and **add the Loop that has the T/A Reader**.
6. **Set the correct access group** so the person can use the reader as needed
7. **Click [APPLY] to save/update the databases**

Figure 7 – Adding Cardholder/Employee data in System Galaxy Cardholder screen

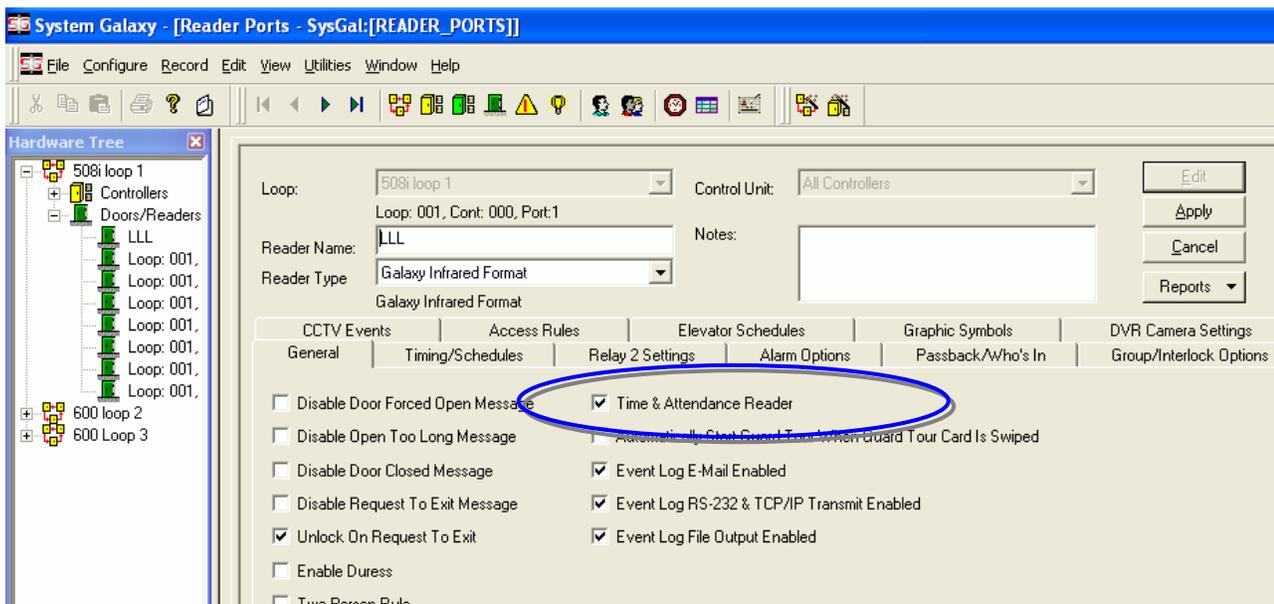


## 2.9 Set up a Reader in SG to use Time & Attendance

The following steps describe configuring the Time & Attendance Reader options in System Galaxy.

1. **Open the Reader Properties Screen** from the SG Main Menu, by selecting *Configure/Hardware* and choose the 'Doors/Readers' option. << The Reader Programming Screen displays.>>
2. **Select the desired LOOP** from the Loop droplist
3. **Select the desired Controller** from the Controller droplist for the Time & Attendance Reader.
4. **Select the Reader** from the Reader Name droplist.
5. **Click the [Edit] button and Select the *General tab*.**
6. **Enable (check) the 'Time & Attendance Reader' option**
7. **Click the [Apply] button** to save changes. This information is updated to the panel/controller when the changes are saved. In case a delay occurs, the operator can send data to the selected controller using the GCS Load Screen.

Figure 8 - The Reader Programming Screen



### 2.9.1 Enabling Cypress Clock interface for 508i Controllers

If the Time and Attendance Reader is required to display a time clock synchronized with the reader system, the following must be done. The LCD clock displays used by Galaxy Control Systems connect to an RS-232 converter, which then connects to any secondary controller in the loop. The converter is connected to the J15 connector of the secondary controller – the connector that is used for the PC connection in a Primary controller.

In the Galaxy software, the controller to which the interface is connected must have the Auxiliary COM Port option set to "Cypress Clock". To do so, open the **Controller Properties** window and select the controller. At the bottom of the **Port Types** tab is an area labeled "**Auxiliary Communication Port Options**". Use the "**Mode**" drop-down list to select "**Cypress CVT-1230 Clock Display**". Make sure the "**Broadcast Enabled**" checkbox is **NOT** checked.

## 2.10 Create a SQL Job to update Reader Transactions

---

Once the configuration is completed and the necessary employees/cardholders have been set to forward information to Genesis, an SQL job can be set up to periodically update the transactions from the time and attendance reader. When the job runs the card reads and related data are sent to the Genesis import table (imp\_tran) and a stored procedure in the Genesis database is triggered to update its transactions.

**IMPORTANT:** The Genesis software updates its screens with the new transactions when the Genesis user interface application is started up and logged on.

- 1. On the Galaxy Database server:** Copy the following files to the System Galaxy database server. Place them in c:\Program Files\System Galaxy\DBscripts folder and edit them as appropriate.

This file logs into the SysGal database and runs a SQL script to transfer card swipes to the Genesis database. The batch file will put the results txt file in the same directory it is run from.

**a) If you are on a shared server with Genesis and/or running on SQL Server 2000:**

- ◆ Use TransferTimePunchesToGenesis\_**osql**.bat and TransferTimePunchesToGenesis.sql. This batch file uses the osql.exe to connect to the database. The batch file also needs to be edited to use the correct parameters:

Example: -S **Server-Name** -U **userAcct** -P **password** (where bold replace parameters)

Example: -S **Server-Name** -E (note that E indicates to use Windows Integrated login)

**b) If you are on a linked server and running SQL Server 2005 Express:**

- ◆ use TransferTimePunchesToGenesis.bat and TransferTimePunchesToGenesis.sql

This batch file uses the sqlcmd.exe to connect to the database. The batch file also needs to be edited to use the correct parameters:

Example: -S **Server-Name** -U **userAcct** -P **password** (where bold replace parameters)

Example: -S **Server-Name** -E (note that E indicates to use Windows Integrated login)

2. **Set up the Windows Task Scheduler to run the TransferTimePunchesToGenesis.bat.**
  - a) **Navigate to the Windows Task Scheduler on the computer that runs the Galaxy (SysGal) database.** From Windows Start button, select Settings >> Control Panel and open the folder named Scheduled Tasks.
  - b) **Click on the “Add Scheduled Task” option** (a Wizard opens), **click [NEXT].**
  - c) **Click [Browse...] navigate to the c:\Program Files\System Galaxy\DBscripts\ folder.**
  - d) **Select the TransferTimePunchesToGenesis\*.bat file** ( use the osql bat file if on SQL 2000)
  - e) **Select the ‘Daily’ option (recommended) and click [NEXT].**
  - f) **Set the Start Time as desired click [NEXT].**
  - g) **Supply a valid PC user account login and password (blank is not acceptable)**
  - h) **click [NEXT].**
  - i) **Check the Open Advanced Properties checkbox and click [Finish]**
  - j) **Acknowledge the dialog information, and the task’s Schedule window will open.**
  - k) **Select the ‘Schedule’ tab and click [Advanced] button.**
  - l) **Check the Repeat Task checkbox and set the task interval as desired (e.g. 1 minute)**
  - m) **Click [OK] to accept settings and [OK] to save the task.**
  - n) **The task will be added to the Scheduled Tasks window.** Note that you can force the task to run by right-clicking on the task name and selecting ‘Run’ from the menu.

It is a good idea to run some test transactions and swipes when you have finished all the setup to ensure the card reads are going to the Genesis database.

The ability to update Genesis database depends on proper programming/configuration and a functioning IP and SQL Connections to the Genesis database.

If you are running on separate (linked) servers, you should be able to ping the IP Address of the Genesis Server from the System Galaxy server.

## 3 Troubleshooting Tips

### 3.1 GENESIS SQL Database will not install

---

1. Check that the appropriate version of MSSQL Server software is installed on the designated computer. See *manufacturer's documentation for the Genesis software*.
2. Check that a copy (or instance) of MSDE is not installed on the computer designated to run the Genesis database, per Time America requirements. See *manufacturer's documentation*.
3. If upgrading to System Galaxy 8.1: you can run SysGal database on the same computer with Genesis as long as you make sure you are using a compatible database.
  - **Shared Server – upgrading SG 7.x to SG 8.1:** you can migrate SysGal database to the server that is compatible with Genesis, OR you can use a Linked Server Connection and install SysGal on a separate server using the royalty-free SQL2005Express on the SG-8.1 CD.
  - **Shared Server – new install SG 8.1:** you can install SysGal on the database server that is compatible with Genesis, OR you can use a Linked Server Connection and install SysGal on a separate server using the royalty-free SQL2005Express on the SG-8.1 CD.
  - **Linked Server – upgrading SG 7.x to SG 8.1:** you can use Linked Server Connection, migrate /upgrade SysGal on separate server using the royalty-free SQL2005Express on the SG-8.1 CD.
  - **Linked Server – new install SG 8.1:** you can use a Linked Server Connection and install SysGal on a separate server using the royalty-free SQL2005Express on the SG-8.1 CD.

**NOTE: Use the *System Galaxy Installation Guide* to help you with the install/upgrade as needed.**
4. Refer to manufacturer's documentation for installation of the GENESIS SQL database.

### 3.2 The Time & Attendance tab is not in Workstation Options

---

1. Register the System Galaxy software for Time & Attendance in the System Registration screen. See *the section in Chapter 2 of this manual about Registering the SG Time & Attendance*.
2. **Make sure you restarted the System Galaxy software after the registration is complete.**

## 3.3 SG Cardholders (employees) do not show up in Genesis

---

### Verify the following things in the Genesis Software/Database:

1. Restart the Genesis Employee screen or Genesis software – employees are processed on startup.
2. Verify that the Genesis software is set up to use 10 digit employee number. *See the section in Chapter 2 of this manual about Setting up the Company in Genesis software.*
3. Verify that the Genesis software is set up to assign Badge Number to be 'same as employee'. *See the section in Chapter 2 of this manual about Setting up the Company in Genesis software.*
4. You can query the Genesis IMP\_EMPL table to see if the employee has been added to the table. Note that if the employee 10 digit id number is not set up properly, it can cause the employee to not be processed by Genesis. If you had to correct this setting you can invoke a new transfer by editing something pertinent in the Galaxy Cardholder screen and saving it.
5. Verify the Genesis database server is online and not blocked by firewalls and port blocking filters.

### Verify the following things for the System Galaxy software:

6. **Verify that the employee is programmed as a cardholder in System Galaxy**
7. **Verify that the cardholder is set up to be forwarded to Time & Attendance** in System Galaxy. *See Chapter 3 - Adding Cardholders for SG Time & Attendance.*
8. **Verify that the employee ID is numeric.**
9. **The SG Time & Attendance feature must be registered.** *See Chapter 2 - Registering Time & Attendance.*
10. **The 'Time America' option is the chosen T/A System** in Workstation Options screen. *See Chapter 2- Enabling Time & Attendance.*
11. **Verify that the Time & Attendance feature is 'enabled'** in Workstation Options. *See Chapter 2 - Enabling Time & Attendance. If this option has been unchecked, employee data will not be transferred.*
12. **Verify that the server/database path is correct** in Workstation Options. *See Chapter 2 about enabling Time & Attendance for Shared server or Linked server (whichever is appropriate).*
13. **Verify that the Genesis database is named "Genesis"** in the SQL Server Management tool.  
If the installer did not use the standard database name for Genesis, do the following:
  - a. The database path could be incorrect and should be rechecked (previous step)
  - b. The Stored Procedures may be unable to operate against a unique database name and thus may need to be edited to use the correct database name. Also if you are not using the standard database name for Genesis, call Technical Support.
14. **Verify that the SysGal database is named "SysGal"** in the SQL Server Management tool.  
If the installer did not use the standard database name for SysGal, do the following:
  - a. The Stored Procedures may be unable to operate with a unique database name and thus may need to be edited to use the non-standard database name chosen. Also if you are not using the standard database name for SysGal, call Technical Support.
15. **Verify that the appropriate logins are created in the Genesis database.** *See the section in Chapter 2 of this manual about Installing and connecting the databases.*
16. **Verify whether the transactions are inserted in the imp\_tran table in the Genesis database.**
17. **Verify whether the transactions are inserted in the TA\_Punches table in the SysGal database.**

## 3.4 Transactions (card reads) do not show up in Genesis

---

1. Restart the Genesis software – transactions are processed on application startup.
2. Verify that the reader in question is programmed to be a Time & Attendance reader. *See the section in Chapter 3 of this manual about Setting up a Reader to use SG Time & Attendance.*
3. Verify that the Genesis software is set up to allow System Galaxy to use the clock code “1”. *See the section in Chapter 2 of this manual about Setting up the clock code “1” in Genesis software.*
4. Verify that the Time & Attendance feature is registered in System Galaxy. *See the section in Chapter 2 of this manual about Registering the SG Time & Attendance.*
5. Verify that ‘Time America’ is the chosen T/A System in Workstation Options in System Galaxy. *See the section in Chapter 2 of this manual about enabling Time & Attendance at the Workstation.*
6. Verify that the Time & Attendance feature is ‘enabled’ in Workstation Options in System Galaxy. *See the section in Chapter 2 of this manual about enabling Time & Attendance at the Workstation.*
7. Verify that the *server/database path* is correct in Workstation Options in System Galaxy. *See the section in Chapter 2 of this manual about enabling Time & Attendance at the Workstation.*
18. Verify that the Genesis database is named “Genesis” in the SQL Server Management tool (i.e. Enterprise). If this is not the case the database path could be incorrect and should be rechecked (previous step) or the Stored Procedures may be unable to operate against a unique database name and thus may need to be edited to use the correct database name. *See the section in Chapter 2 of this manual about Installing and connecting the databases.*
8. Verify that the SysGal database is named “SysGal” in the SQL Server Management tool (i.e. Enterprise). If this is not the case the database path could be incorrect and should be rechecked (previous step) or the Stored Procedures may be unable to operate against a unique database name and thus may need to be edited to use the correct database name. *See the section in Chapter 2 of this manual about Installing and connecting the databases.*
9. Verify that the appropriate logins are created in the Genesis database. *See the section in Chapter 2 of this manual about Installing and connecting the databases.*
10. Verify whether the transactions are inserted in the imp\_tran table in the Genesis database.
11. Verify whether the transactions are inserted in the TA\_Punches table in the SysGal database.

## 4 Appendix: Keywords and Terms

**Table 2 Document Keywords**

Keyword/Term	Description
<i>Communication Server</i>	The Communication Server is the PC that hosts the System Galaxy software and GCS Services. It connects/communicates with the Hardware Loops/Clusters (controllers and readers) and the System Galaxy Database (SysGal).
Database Server	<p>The computer where the Database Management System (i.e. MSSQL Server or MSDE) is installed and running along with the actual database(s).</p> <p><b>NOTE:</b> At the time of this manual's release the Genesis SQL software interfaces with MSSQL Server. Although <i>System Galaxy</i> can interface with either MSSQL Server or MSDE, <i>Genesis SQL</i> may have conflicts installing and running its database if MSDE is present on the server. System Galaxy database can run on the <i>Communication Server</i> under a "full" install with MSDE and use a <i>Linked SQL Server connection</i> to the MSSQL Server that runs the Genesis database. Or the System Galaxy software can run on the Communication Server and the SysGal database can be installed on the <i>MSSQL Database Server</i> (i.e. networked database server install).</p>
GCS	Galaxy Control Systems (acronym).
GCS Services	The Galaxy background services that run on the Galaxy Communication Server (i.e. GCS Client Gateway service, GCS Communication service, GCS DBWriter service, GCS Event service, etc.) . <i>Chapter 11 of the Main Software Manual describes Services in detail.</i>
GCS Client Gateway service	A Galaxy service that supports messaging to and from the System Galaxy client software to the hardware and/or SysGal database. Only one instance of this service can be running within a system and this service must be running for the software to interact with the hardware and database. The GCS Client Gateway should be running on the main Communication Server. <i>Chapter 11 of the Main Software Manual describes Services in detail.</i>
GCS Communication service (Comm Service)	A Galaxy service that supports messaging to and from the System Galaxy client software and hardware and/or SysGal database. Only one instance of this service can be running on a single computer and must be running on the main communication server. If multiple communication servers will be used, an instance of the GCS Comm Service can run on that computer also and will only be responsible for the hardware that is assigned to it. <i>Chapter 11 of the Main Software Manual describes Services in detail.</i>
GCS DBWriter service	A Galaxy service that writes data/events to the SysGal database. Only one instance of this service can be running within a system and this service must be running for the software and hardware to interact with the database. The DBWriter should be running on the main Communication Server regardless of where the database resides. <i>Chapter 11 of the Main Software Manual describes Services in detail.</i>

• System Galaxy Interface to Genesis Time & Attendance

Keyword/Term	Description
GCS Event service	A Galaxy service that handles messaging between the 600 controllers within a cluster and supports the messaging to the SG client software and database . This service should be running to support global event messages between 600 controllers on the same cluster. NOTE: 600 panels will function locally and buffer events until reconnected. The Event Service should be running on the computer that is designated to be the Event Server (this could be the Communication Server or a different computer). <i>Chapter 11 of the Main Software Manual describes Services in detail.</i>
MSDE	Microsoft Server Desktop Engine
MSSQL Enterprise	Microsoft SQL Database Management System
SG	System Galaxy (acronym); Refers to the SG System (its hardware and/or software).
SG WorkStation	The PC that runs to System Galaxy software, but is not the main Communication Server.