

System Manager Server SMS

User Manual

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1 Overview

The CMI System Manager is a web based application designed for use with the Control Module *Genus* series of programmable data collection terminals. It is an open framework system used to support enterprise data collection solutions. It provides the data terminal communication and management functionality necessary to control the configuration and operation of an automated data collection system that uses any CMI *Genus* terminal as the data entry device. It is designed to function as the core engine for standard and custom solution specific add-on modules.

The System Manager software also implements basic employee information management that can be used as the foundation for employee timekeeping. It includes support for badge, PIN, or biometric based data terminals.

The System Manager is capable of single site or multi-site management of terminals and employees. Additionally, sites can be subdivided into multiple locations, allowing more control over access restrictions. Sites represent a physical address or location of a facility. Locations represent areas or regions within a facility such as a work center or entrance-way. Devices are assigned to locations for ease of management.

It includes role based security to limit user access to only the features assigned to each user by the designated system Administrator.

1.1 Features

- Browser access to administrative interface via Intranet/Internet
- Support for modularized Add-ons
- Web services interface for data collection functions
- Scalable across web server farm
- Data collection terminal management
 - Terminals organized by site/location
 - Individual terminal configuration
 - Application profiles to identify application, firmware and versions
 - Remote loading to terminals
 - Firmware updates
 - Application updates
- Automated data collection 24/7
- Employee management:
 - Role-based Administration
 - Biometric enrollment
 - Biometric template distribution to terminals for local verification

1.2 Recommended Hardware

- Minimum recommended hardware requirements:
 - Intel® Dual Core Xeon 1.6GHz
 - Memory 4GB – 8GB RAM
 - 2 Internal hard disks RAID 1, (73GB capacity)
 - Dual Ethernet Network Adapter 1Gb

1.3 Software Prerequisites

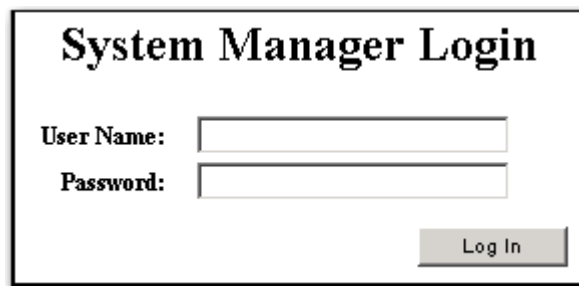
- Prerequisite Software
 - Windows Server® 2003 R2, Standard x32 Edition, with SP2
 - IIS 5.0 (minimum) or newer
 - ASP.NET 2.0
 - Microsoft® SQL Server™ 2005 Standard (1 Socket)

2 Navigation

2.1 Login

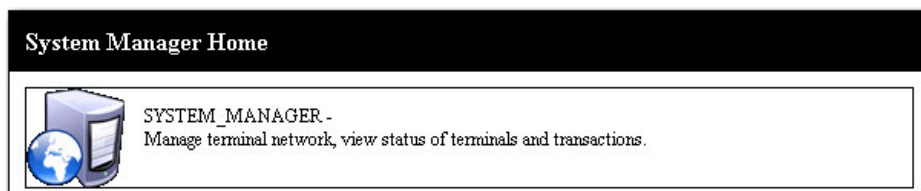
Access to the System Manager is granted via a login screen. This screen requires a user to enter his or her username and password to gain access to the site. Once logged in to the system, the user is restricted to functions based on his or her assigned roles or privileges. If the password is entered incorrectly, the system will prompt the user to re-enter.

Once the software installation is complete, you can log on using the default username '**sysadmin**' and the password: '**CHANGEME**' (case-sensitive, without quotes).



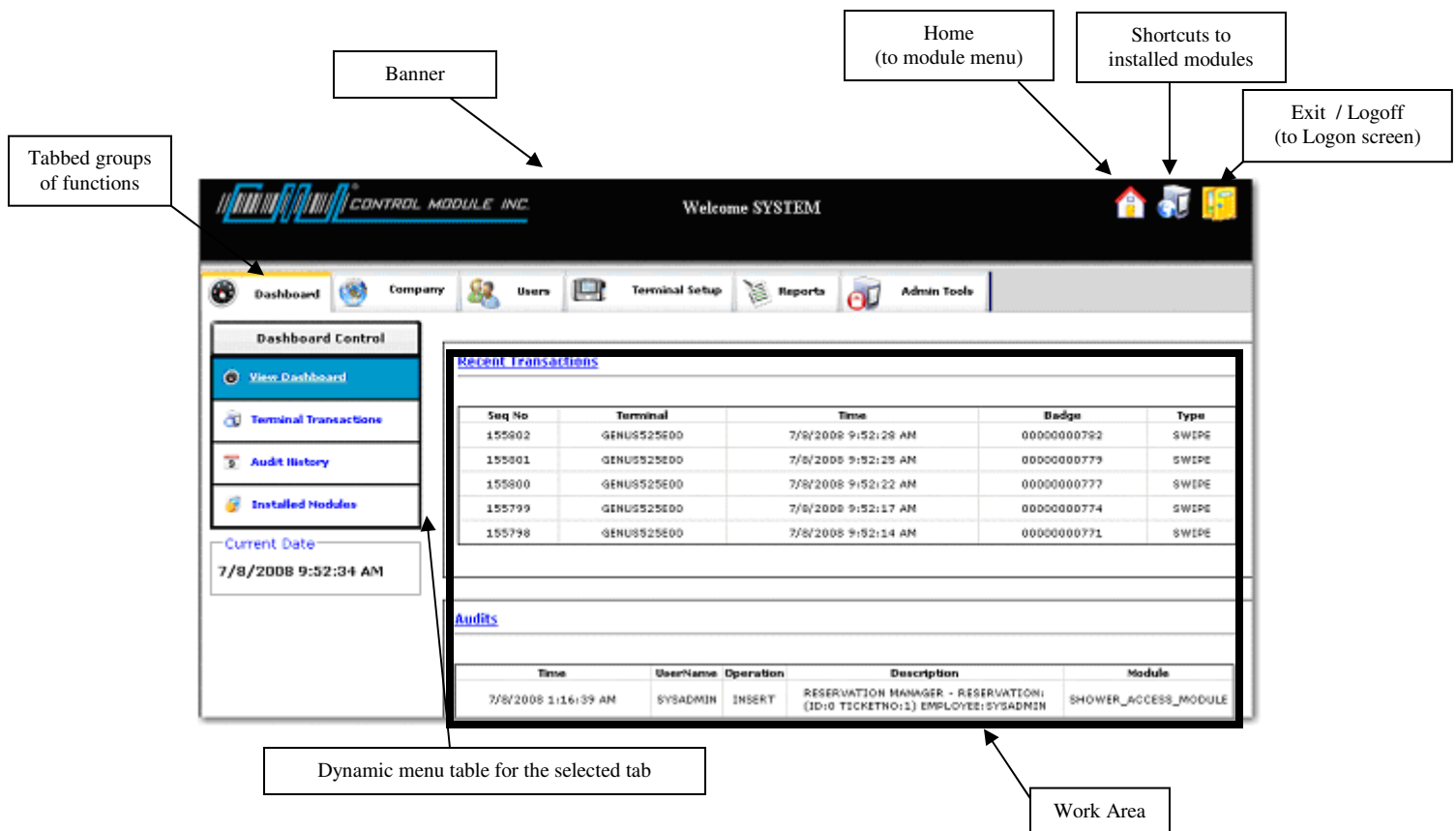
The login screen is titled "System Manager Login". It contains two input fields: "User Name:" and "Password:". Below the password field is a "Log In" button.

After a valid login is provided, the module selection screen is shown. Depending on the modules installed, other items in this module selection menu may be available. Click on the System Manager item to access the main System Manager view, and the system management functions.



2.2 Main View



To navigate around the System Manager view, simply click on the appropriate buttons and tabs. Each section of the system is represented by an easy to recognize icon, followed by its name. The System Manager features are organized into groups represented by the different tabs just below the banner. On each tab page, there is a menu of available operations on the left, and a work area to the right of the menu area that changes depending on the selected function. See the following figure for further detail:



2.3 Common Navigation Items

There are many navigational items that are common among screens in the System Manager pages. Most screens that display listings of data records use a list with integrated paging. Depending on the list, some rows may contain an icon used as a link to drill into a detail screen for viewing or editing. Some rows may contain a delete icon that may be used to delete the row from the table in the host database.

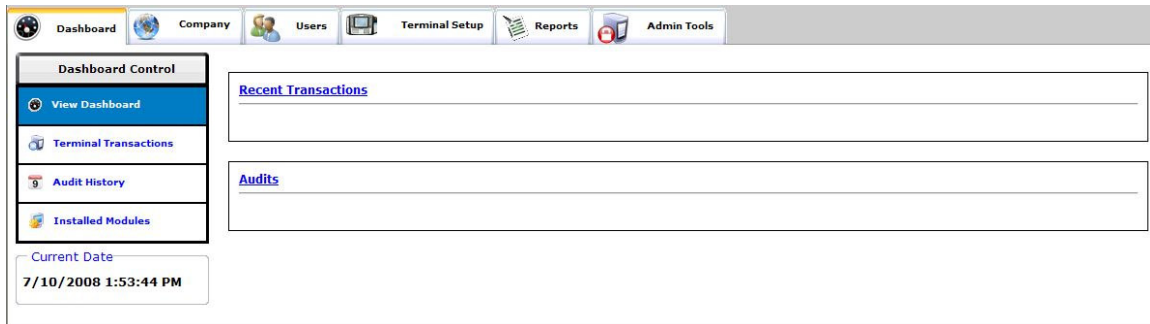
Common list icons are:

-  Edit
-  Delete

3 Screens

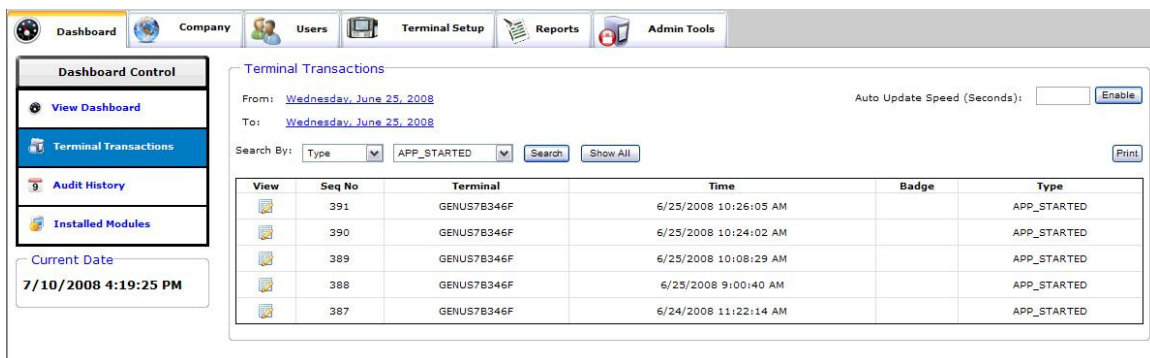
The System Manager software is designed to be clean, organized, and easy to browse. A main component of its ease of use is its tabbed organization of menus and screens. The various screens and their functions will be described in depth in this section.

3.1 Dashboard Screen



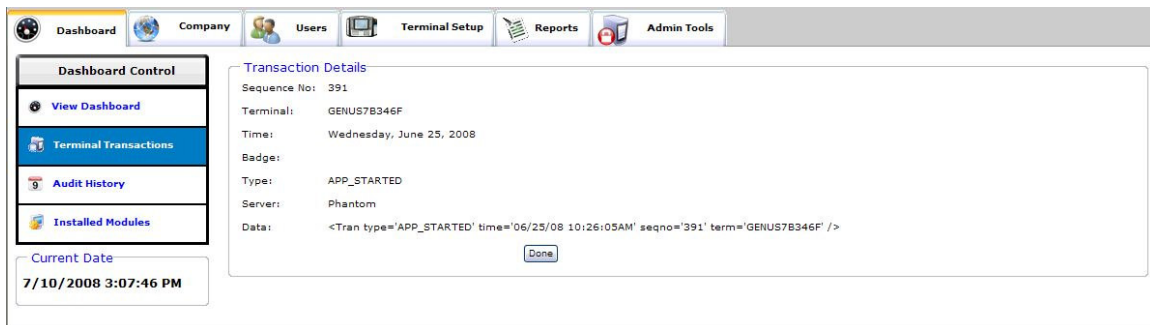
The **Dashboard** screen (shown above) is the default System Manager Dashboard view. Clicking the **View Dashboard** button will show the visual summary of the system status. Clicking the 'Recent transactions' link is the same as selecting 'Terminal Transactions' from the left menu. It will show a searchable view of terminal activity. Selecting 'Audits' (or 'Audit History') will show a searchable view of audit activity that took place within the system. Clicking the 'Installed Modules' selection will show a list of all installed modules or plugins, their version, and the date installed.

3.1.1 Terminal Transactions View



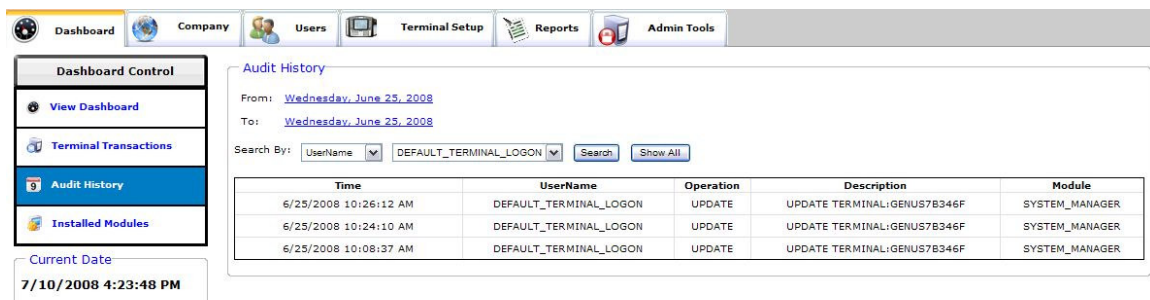
The Terminal Transactions view provides a searchable list of all terminal transactions currently in the host database. The terminal transactions are the raw data records received from data collection terminals and except for the

application startup message, are specific to the application loaded in the data collection terminal. Clicking on the 'View' icon for any of the listed rows will bring up a detailed view of the record.



3.1.2 Audit History View

The Audit History view provides a searchable list of all audit history records currently in the host database. Audit history records are historical records of actual database table modification events- inserts, deletes, and updates.



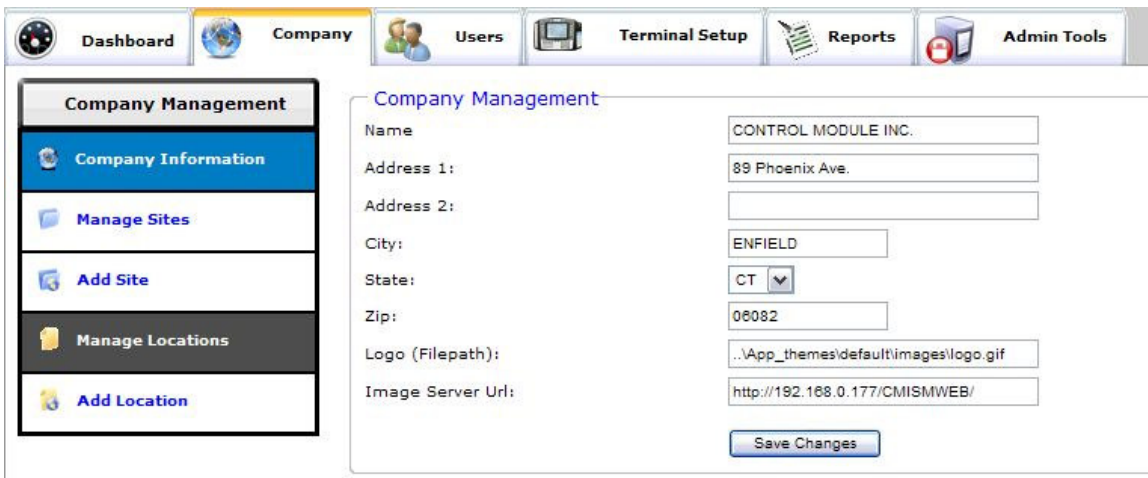
Time	UserName	Operation	Description	Module
6/25/2008 10:26:12 AM	DEFAULT_TERMINAL_LOGON	UPDATE	UPDATE TERMINAL:GENUS7B346F	SYSTEM_MANAGER
6/25/2008 10:24:10 AM	DEFAULT_TERMINAL_LOGON	UPDATE	UPDATE TERMINAL:GENUS7B346F	SYSTEM_MANAGER
6/25/2008 10:08:37 AM	DEFAULT_TERMINAL_LOGON	UPDATE	UPDATE TERMINAL:GENUS7B346F	SYSTEM_MANAGER

Both views offer the ability to view all records by using the 'Show All' button, or to search records based on the field. When a field is selected from the drop-down list next to 'Search By:', the list in the next drop-down is dynamically updated with all the values that can be found in the selected field of the database records.

3.2 Company

The 'Company' view contains the menu, list, and detail screens for entering company, sites, and locations.

Click the **Company Tab** to show the Company Management screen (shown below). Once on the screen, enter the name of the company, the address(es), city, state and zip code in the edit boxes, and then click the **Save Changes** button. Once you click the Save Changes button, the new company information will be stored. This information can be changed at any time by returning to the Company Management screen. Remember to click the Save Changes button after modifying company information, or the changes will not be saved.



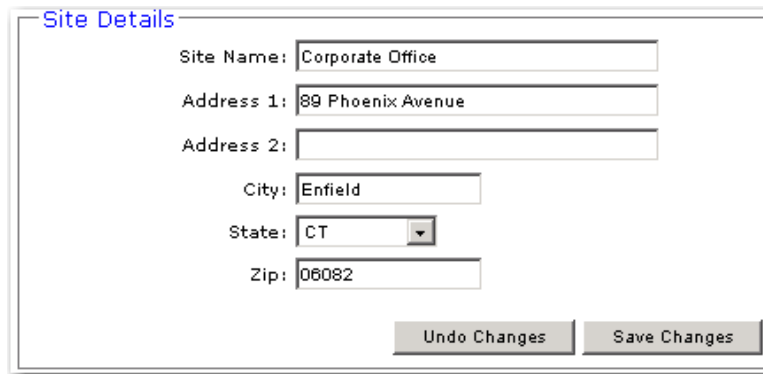
Company Management	
Name	CONTROL MODULE INC.
Address 1:	89 Phoenix Ave.
Address 2:	
City:	ENFIELD
State:	CT
Zip:	06082
Logo (Filepath):	..\App_themes\default\images\logo.gif
Image Server Url:	http://192.168.0.177/CMISMWEB/
<input type="button" value="Save Changes"/>	

If a company logo is available, the path to the logo may be entered. The image will then be displayed on the left side of the banner at the top of the page. The recommended logo size is 330 pixels wide and 50 pixels high.

The 'Image Server Url' is used as a path to the storage area of employee images or to solution specific image processing systems.

3.2.1 Adding Sites (Site Details Screen)

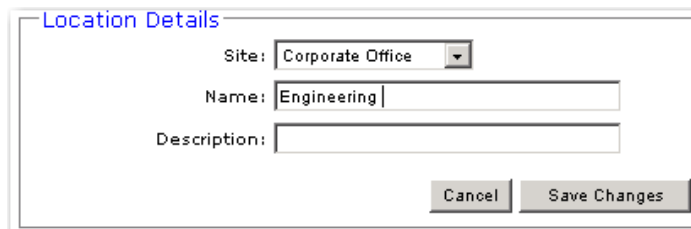
Now that the company is in the system, company **Sites** need to be added. Sites are the physical locations of a company, and must be set up before **Locations** or **Terminals** can be added. To add a site to the system, still under the **Company** tab, click the **Add Site** button. This will bring up the “Site Details” screen (pictured below). Give the site a name, then type in the address, city, state, and zip code. To add the site to the system, click the **Save Changes** button at the bottom of the screen. Just like company information, site information can be viewed/edited at any time by returning to this screen.



The Site Details form contains the following fields and buttons:

- Site Name: Corporate Office
- Address 1: 89 Phoenix Avenue
- Address 2: (empty)
- City: Enfield
- State: CT (dropdown menu)
- Zip: 06082
- Buttons: Undo Changes, Save Changes

After at least one site has been added to the system, you must then add a location within the site. Locations are individual areas within a site to which you can add terminals. To add a location, still under the **Company** tab, click the **Add Locations** button. This will show the Location Details screen (pictured below). On this screen, select the site that you wish to add a location to from the drop-down menu. Next, give the location a name. If you wish, you can type a brief description of the site in the description field. After you are finished, click the **Save Changes** button to add the location to the indicated site.



The Location Details form contains the following fields and buttons:

- Site: Corporate Office (dropdown menu)
- Name: Engineering
- Description: (empty)
- Buttons: Cancel, Save Changes

3.2.2 Managing Sites and Locations





After adding Locations and Sites, you may wish to view or change their information. When in the Company tab, both Sites and Locations can be viewed or edited at any time by clicking either the **Manage Sites** or **Manage Locations** button in the left-hand menu.

Clicking on the **Manage Sites** button will show all the sites in the system, and allow you to make changes. You can search for sites by city, state, or zip code by selecting one of the search criteria from the drop down menu, and then clicking the **Search** button. If you wish to see all of the sites in all locations, click the **Show All** button. To edit the information about the sites, click the **Edit** icon (left side) next to the site you wish to modify. This will bring up an identical screen to the one used to set the site information in previously. You can also remove sites from the system by clicking the **Delete** icon (right side) next to the site you wish to remove. This process cannot be undone.



Sites









Search By:

Edit	Site Name	Address1	Address2	City	State	ZIP	Delete
	Corporate Office	89 Phoenix Avenue		Enfield	CT	06082	
	Sattelite Location 1	227 Brainard Road		Enfield	CT	06082	

The same process is used to modify locations. Clicking the **Manage Locations** button will show all the locations in the system, and allow you to make changes. You can search for locations by site by selecting one from the drop down menu, and then clicking the **Search** button. If you wish to see all of the locations, click the **Show All** button. To edit the information about the locations, click the **Edit** icon (left side) next to the location you wish to modify. This will bring up an identical screen to the one used to set the location information in previously. You can also remove locations from the system by clicking the **Delete** icon (right side) next to the location you wish to remove. This process cannot be undone.

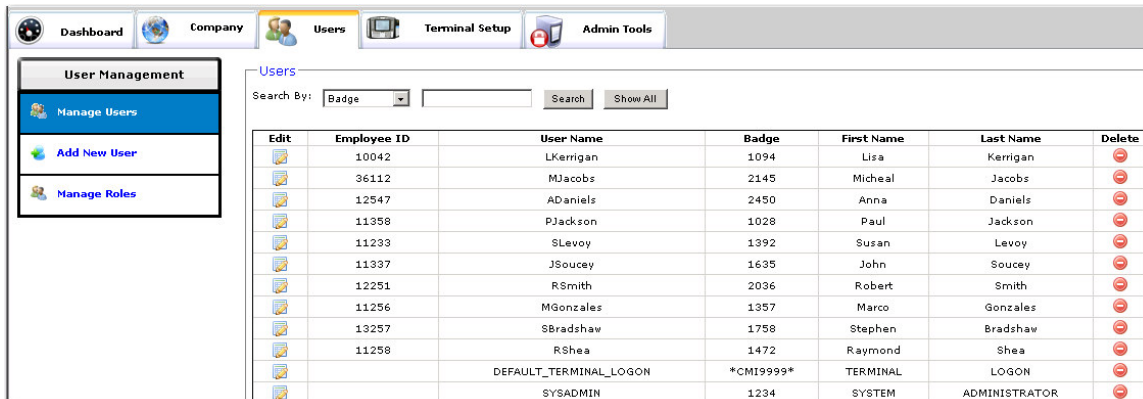
Locations

Select by site:

Edit	Location Name	Description	Site	Delete
	Engineering		Corporate Office	
	Marketing		Corporate Office	
	Tech Support		Corporate Office	
	Shipping & Recieving		Corporate Office	

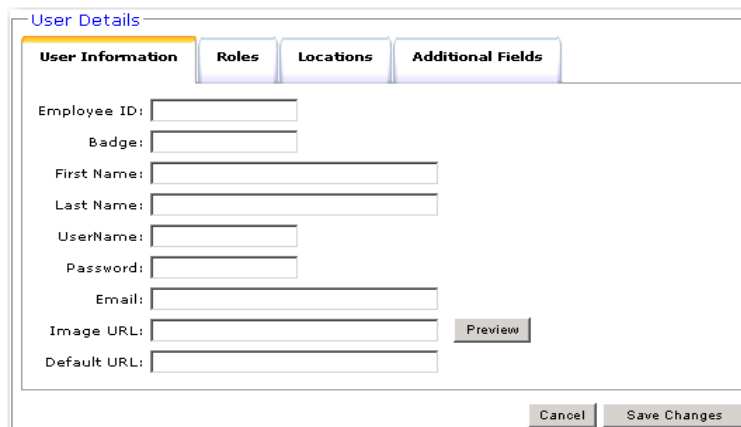
3.3 Users

As previously mentioned, the System Manager software allows privileges to users of the software based on their set role. This section will cover how to add employees, as well as assign them roles. After a company, sites, and locations have been established, you can start adding user accounts (employees) to the system. Click the Users tab to start.



Edit	Employee ID	User Name	Badge	First Name	Last Name	Delete
	10042	LKerrigan	1094	Lisa	Kerrigan	
	36112	MJacobs	2145	Micheal	Jacobs	
	12547	ADaniels	2450	Anna	Daniels	
	11358	PJackson	1028	Paul	Jackson	
	11233	SLevoy	1392	Susan	Levoy	
	11337	JSoucey	1635	John	Soucey	
	12251	RSmith	2036	Robert	Smith	
	11256	MGonzales	1357	Marco	Gonzales	
	13257	SBradshaw	1758	Stephen	Bradshaw	
	11258	RShea	1472	Raymond	Shea	
		DEFAULT_TERMINAL_LOGON	*CMI9999*	TERMINAL	LOGON	
		SYSADMIN	1234	SYSTEM	ADMINISTRATOR	

This will show the Users screen. From this screen, administrators can add, remove, and modify employee information. To add a new employee, click the **Add New User**. This will show the User Details screen (shown below). In the **User Information tab** (default) within this screen (not to be confused with the Users Tab), new employee information may be entered, and a photo may be added. Enter the employee's ID number, badge, first and last name, a username and password for the employee to use when logging on to the system, and email address. Click the **Save Changes** button to input the new employee into the system.



User Details

User Information
Roles
Locations
Additional Fields

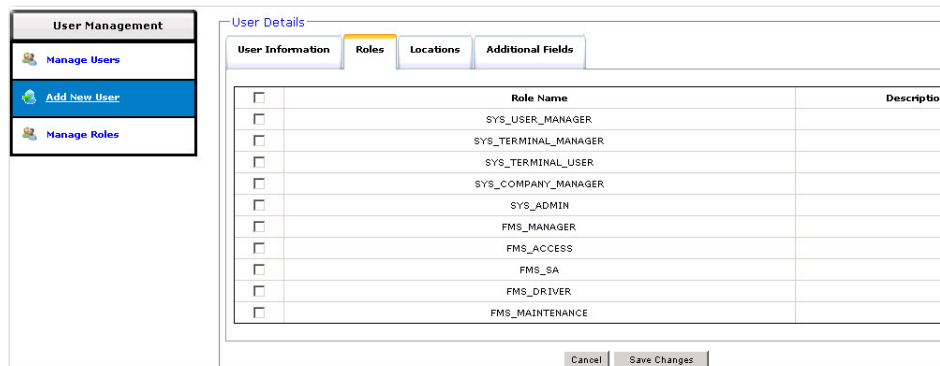
Employee ID:
Badge:
First Name:
Last Name:
UserName:
Password:
Email:
Image URL:
Default URL:

3.3.1 Setting Employee Roles for New Employees

The User Details screen is also where roles are delegated. Roles are combinations of privileges that can be assigned to employees or users. When a module is installed, it comes with a set of available privileges and a default set of roles:

Role Name	Description
System Administrator	User can modify/change any system setting
Web User	User can login to application – modify/view their profile only
Company Admin	Can edit company, users, terminals
Supervisor	Can preview/edit employee info
User manager	Administer users
Terminal manager	Add, delete, modify terminal configurations

Start by adding roles to the employees you've just added. While on the Add New User screen, click the Roles tab. This will list all roles in the system, as well as their descriptions. This is a very important step, as these roles will determine what the employee can and cannot do.



<input type="checkbox"/>	Role Name	Description
<input type="checkbox"/>	SYS_USER_MANAGER	
<input type="checkbox"/>	SYS_TERMINAL_MANAGER	
<input type="checkbox"/>	SYS_TERMINAL_USER	
<input type="checkbox"/>	SYS_COMPANY_MANAGER	
<input type="checkbox"/>	SYS_ADMIN	
<input type="checkbox"/>	FMS_MANAGER	
<input type="checkbox"/>	FMS_ACCESS	
<input type="checkbox"/>	FMS_SA	
<input type="checkbox"/>	FMS_DRIVER	
<input type="checkbox"/>	FMS_MAINTENANCE	

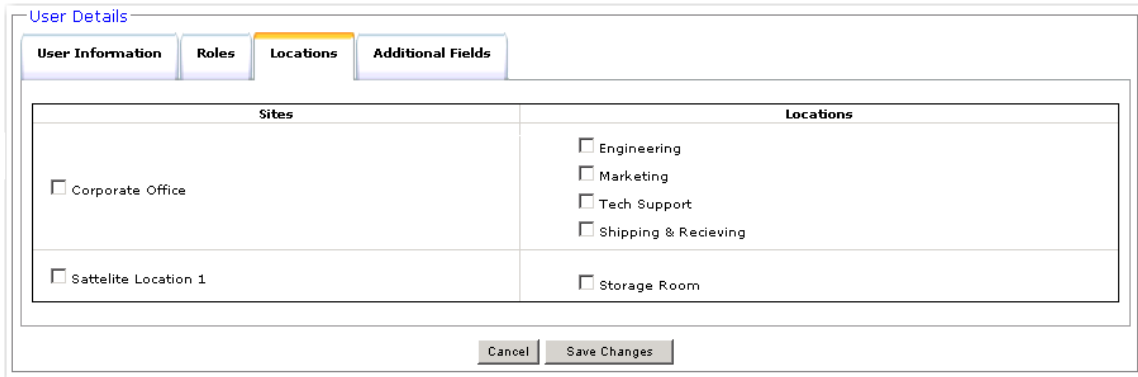
Click the checkboxes next to the role(s) you wish to assign to the employee. and click the **Save Changes** button. Now that user will have the functionality and accessibility of the chosen role(s).

3.3.2 Setting Employee Roles for Existing Employees

Roles can also be added to existing employees, and roles you have previously applied can be viewed and modified at any time by clicking the **Manage Users Button**. This will show the Users screen, which lists all the current employees in the system. Click the **Edit** button on the line of the employee whose location you wish to add or modify. Then, click the roles tab, which will show all roles in the system. Here, the changes can be made by checking the boxes, identical to the process for giving roles to new employees.

3.3.3 Setting Employee Locations/Sites for New Employees

Once the users have roles and the company has available locations, you can now assign employees to specific areas. Just as employee roles can be manipulated through the system, administrators can also assign employees to a particular location with a similar process. While still on the User Details screen, click the **Locations** tab. This will list all locations and sites in the system.



The screenshot shows the 'User Details' window with the 'Locations' tab selected. The window contains two columns: 'Sites' and 'Locations'. The 'Sites' column has two entries: 'Corporate Office' and 'Satellite Location 1', each with an unchecked checkbox. The 'Locations' column has four entries: 'Engineering', 'Marketing', 'Tech Support', and 'Shipping & Receiving' in the top section, and 'Storage Room' in the bottom section, all with unchecked checkboxes. At the bottom of the window are 'Cancel' and 'Save Changes' buttons.

Sites	Locations
<input type="checkbox"/> Corporate Office	<input type="checkbox"/> Engineering
	<input type="checkbox"/> Marketing
	<input type="checkbox"/> Tech Support
	<input type="checkbox"/> Shipping & Receiving
<input type="checkbox"/> Satellite Location 1	<input type="checkbox"/> Storage Room

Cancel Save Changes

To assign an employee/user to the desired site or location, check its corresponding box. Locations can be selected one by one, or can all be delegated to an employee by selecting the site in which they are located.

3.4 Terminals

The 'Terminal' screen provides the ability to identify the data collection terminals used by the system, create and manage the software configuration of each terminal, download updates, and check terminal communications.

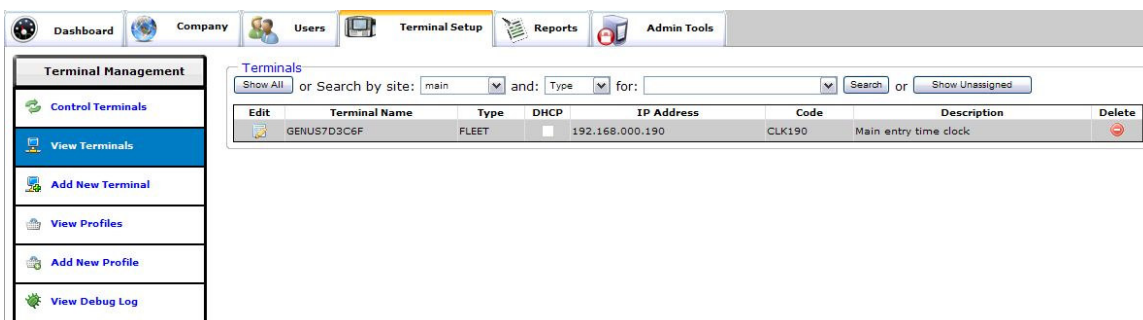
3.4.1 Terminal List

The terminal view shows the list of terminals used in the data collection system. The list can show all terminals, or a list of any type of terminals in any site. The edit button on the left side of a row in the list is used to bring up an editable detail view of the terminal configuration.

3.4.1.1 Terminal Types

Control Module *Genus* series terminals are classified with a 'Type' name. A 'Type' indicates a specific terminal base model (size, display, keyboard), but does not necessarily indicate all the possible options the unit can be configured with (swipe reader, magnetic readers, biometric readers, input/output modules, etc.). The 'Type' classification is used to properly identify the necessary system and class library firmware files used by the terminal. For example, all '*Genus1*' (or 'G1') type terminals will use the same system file, and class library file, regardless of the hardware options that the terminal was delivered, installed, or upgraded with. When adding terminals it is necessary to know the *Genus* terminal type in order to make the proper selection in the terminal edit screen, and also to select an appropriate software profile.

After installation, there are no terminals in the terminal list. Before adding the first terminal, it is necessary to first create a terminal profile.



3.4.2 Terminal Profiles

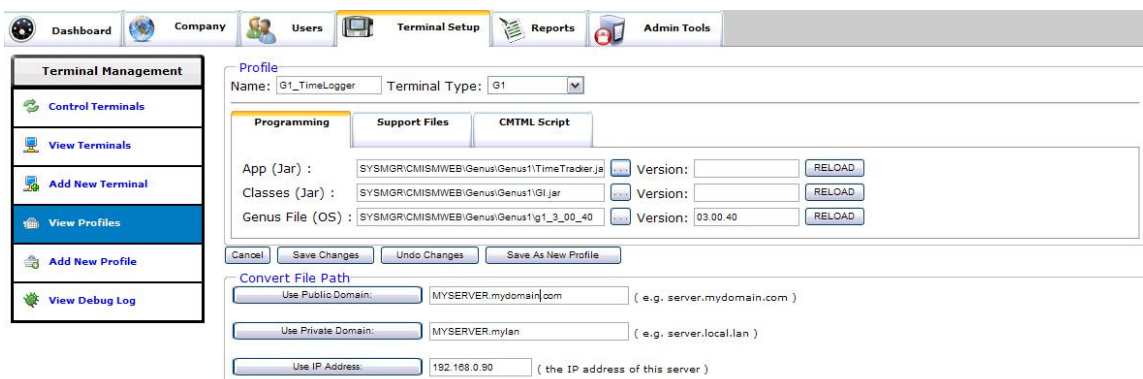
Terminal profiles provide the ability to group the system firmware, system libraries, application, and script files into a named profile that can be assigned to one or more terminals. This assures that every terminal assigned to the same profile will be downloaded with the same files when the download commands are executed. Each profile is designated for a specific terminal type, but there can be

more than one profile for any terminal type depending on the number of different terminal applications used in the data collection system implementation.

3.4.3 Profile Editing

To set up a new terminal profile, click the **Add New Profile** button in the Terminal Management menu. On the profile screen, start by giving the profile an appropriate name, and then select the type of *Genus* terminal that the profile will apply to. The selection of the terminal type will define which terminal System files and which library files should be downloaded to the terminals assigned to this profile.

The Control Module *Genus* series of data collection terminals are all 'Java' programmable devices. 'Java' application and library files commonly use the '.jar' file extension to identify the file format used for java files. In the profile edit screen, the 'App.jar' file is the java application file that will be downloaded to the terminal. The 'Classes.jar' file is the java class library file that contains functions that will be used by the application file in the terminal. The *Genus* file is the operating system (OS) firmware file that is downloaded to the *Genus* terminal to provide basic terminal operation.



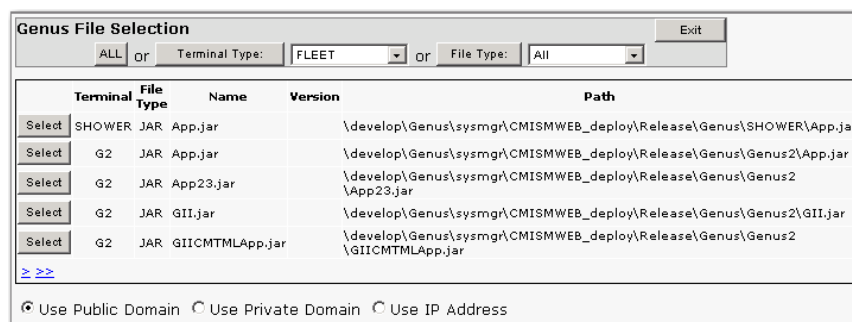
To select the application file that represents the terminal functionality described by the profile name, click the browse button to the right of the edit box on the 'App.jar' row. This will open the file browser, and display all available files. Files can be filtered by either terminal type or file type. To filter by terminal type, select the desired type from the drop-down menu and then click the Terminal Type button. To filter by file type, select the desired file type from the drop-down menu and click the File Type button. To accept a file, click the Select button next to the appropriate file. Follow this process to locate and select the System File and the System library.

The 'Support Files' tab is for additionally library files that can get downloaded to *Genus* terminals. Some examples are java ODBC driver libraries, java encryption libraries, etc. The 'CMITML Script' tab is used to enter the path to a CMITML (CMI Terminal Markup Language) script file if needed for the terminal application. It is not necessary to make any entries on the 'Support Files'

or 'CMITML Script' pages unless those items are needed by the 'App.jar' file identified on the 'Programming' page.

3.4.3.1 File Browsing

The file browse buttons in the Profiles Edit view are used to locate files to enter in each of the file edit boxes. Hitting the button will bring up a custom file selection window that displays files that can be selected for the associated edit box of the profile window. The file list is limited to the files found in the dedicated *Genus* folder located in the System Manager web site path. The *Genus* folder will have subfolders for each of the *Genus* terminal types (*Genus1*, *Genus2*, etc.).



The 'ALL' button will list all files in all the *Genus* subfolders. The list of files can be filtered by selecting either a terminal type from the drop down list and then hitting the 'Terminal Type' button, or by selecting a file type, and hitting the 'File Type' button. The terminal type drop down list is actually the list of the subfolder names found in the *Genus* file folder.

3.4.3.2 File URL

Files displayed for selection in the file selection window show the local path on the file server relative to the root path of the System Manager web site root folder. For the data collection terminals to access the file for download, the path to the file must be a URL that the data collection terminal can locate remotely. The URL path is a combination of the http prefix, plus a network address to the server, plus the file path. This URL path can be constructed in one of three ways:

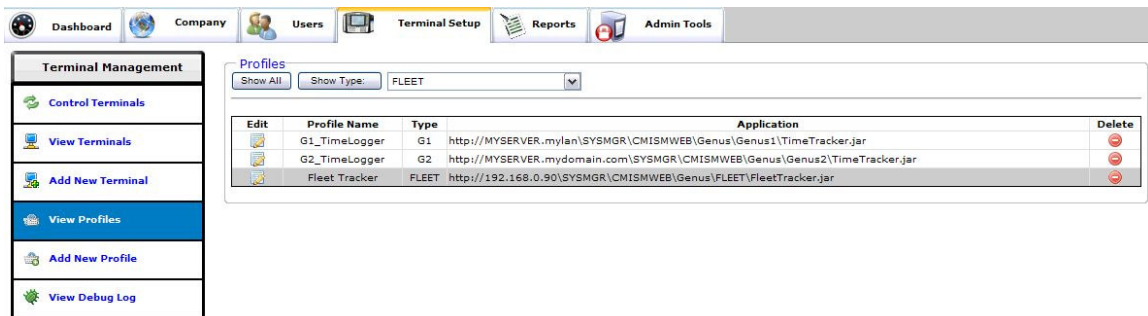
- 'http:// (server public domain name) (file path)'
- 'http:// (server private domain name) (file path)'
- 'http:// (server IP address) (file path)'

In the edit profile window, the user may select to use any one of the three file URL options, and fill in the information necessary to identify the server. By hitting any of the three URL path option buttons, the full URL path to the file will

be created and shown in the file edit box. The settings are not saved until the 'Save Changes' or 'Save as New Profile' button is clicked.

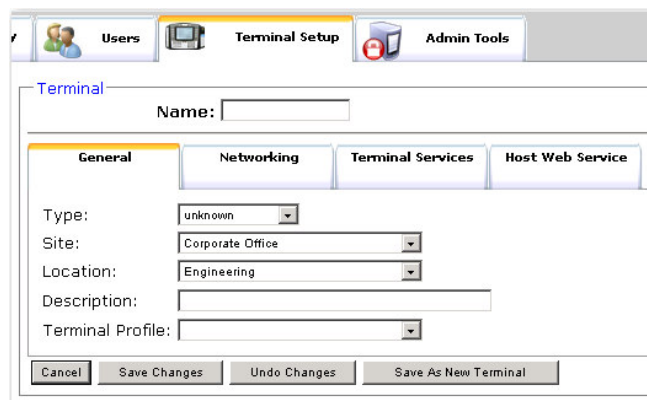
3.4.4 Profile List

The profile list will show the list of all available profiles. Any profile in this list may be edited by hitting the edit icon in the left column of the row containing the profile to edit.



3.4.5 Adding New Terminals

Now that a profile has been created, you can start adding terminals. Under the **Terminal Setup** tab, click the **Add New Terminal** button. This will bring up the Terminal screen. On this screen, click the **General** tab (default). Enter a descriptive terminal name that will identify the new terminal.

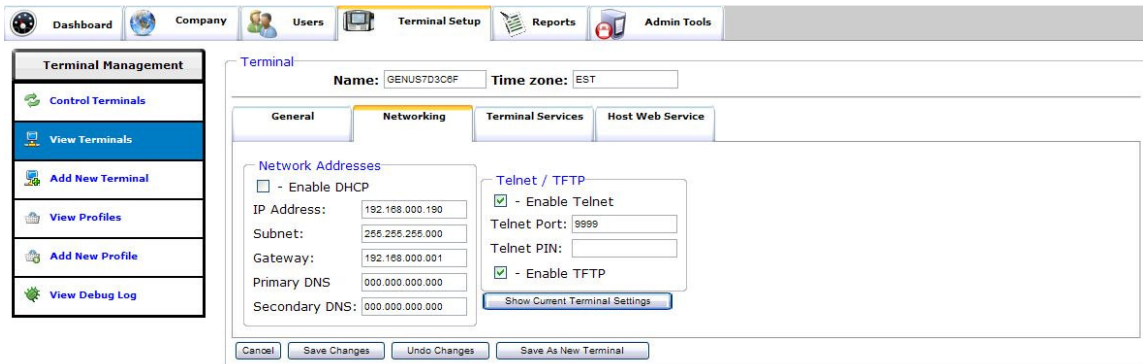


3.4.5.1 General

From this tab, select the Type, Site, Location, and if desired, add a brief description of the terminal. Lastly, select a terminal profile from the drop-down list. To add the terminal to the system, verify that the information is correct, and click the **Save Changes** button. Terminal settings can be copied to a new device by editing an existing terminal, changing the necessary settings, and using the **Save as New Terminal** button to save the new terminal item.

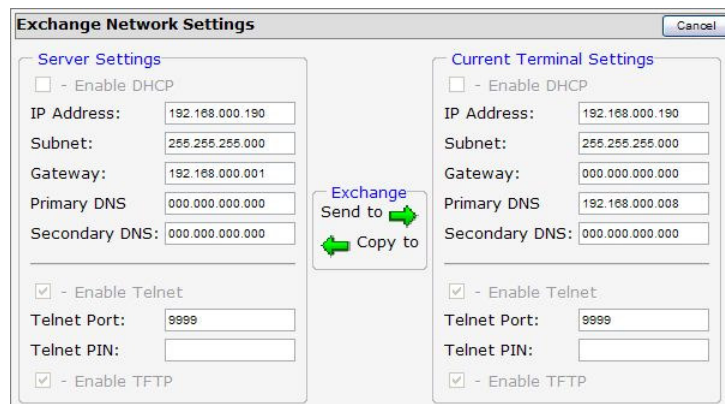
3.4.5.2 Networking

The information on the networking tab can be used in several different ways. The most basic usage is to simply enter the same IP Address, Subnet, and Gateway settings as they were entered into the terminal through the terminal's local setup menu, or the terminal's web setup interface. Once the proper network address information is entered, it is possible to test communications to any active terminals using the functions available on the **Control Terminals** tab.



The screenshot shows the 'Terminal Setup' window with the 'Networking' tab selected. The 'Name' field is 'GENUS703C6F' and 'Time zone' is 'EST'. The 'Network Addresses' section has 'Enable DHCP' unchecked. The 'IP Address' is '192.168.0.190', 'Subnet' is '255.255.255.0', 'Gateway' is '192.168.0.1', 'Primary DNS' is '0.0.0.0', and 'Secondary DNS' is '0.0.0.0'. The 'Telnet / TFTP' section has 'Enable Telnet' and 'Enable TFTP' both checked. The 'Telnet Port' is '9999' and 'Telnet PIN' is empty. A 'Show Current Terminal Settings' button is at the bottom right of the settings area. At the very bottom are 'Cancel', 'Save Changes', 'Undo Changes', and 'Save As New Terminal' buttons.

Optionally, terminal settings can be acquired directly from the terminal, or downloaded to the terminal, but only if the IP Address and Subnet are entered here so that communications between the server and the terminal can be established. The **Show Current Terminal Settings** button will establish a connection to the terminal and read the terminal network settings. The terminal settings and the current terminal network settings recorded at the host will be shown in the same window for comparison.

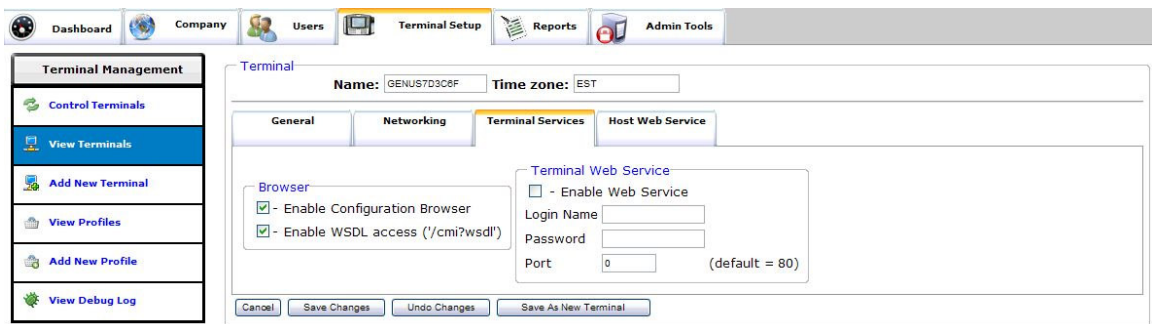


The screenshot shows the 'Exchange Network Settings' window. It has two main sections: 'Server Settings' on the left and 'Current Terminal Settings' on the right. Both sections have identical fields: 'Enable DHCP' (unchecked), 'IP Address' (192.168.0.190), 'Subnet' (255.255.255.0), 'Gateway' (192.168.0.1), 'Primary DNS' (0.0.0.0), 'Secondary DNS' (0.0.0.0), 'Enable Telnet' (checked), 'Telnet Port' (9999), 'Telnet PIN' (empty), and 'Enable TFTP' (checked). Between the two sections are two buttons: 'Exchange Send to' with a right-pointing arrow and 'Copy to' with a left-pointing arrow.

3.4.5.3 Terminal Services

The terminals are equipped with a light-weight web server, providing both web page hosting and web service capabilities. The web service interface allows a remote host to execute commands available through the terminal's web services. Likewise, the *Genus* terminals can connect to a host web service to transfer data and status. Terminals authenticate through the web service interface's logon function. Terminals connecting to the web service interface will be forced to pass their credentials to the logon function each time a session is established.

The **Terminal Services** tab is used to enable the ability to access the terminal configuration via a browser by selecting the **Enable Configuration Browser**. The web service functions hosted by the terminal's web server can be enabled or disabled using the **Enable Web Service** checkbox. Note that changing the settings on this page does not change the terminal's operation until these settings are transferred to the terminal using the **Terminal Services** command available on the **Control Terminals** page.



The screenshot shows the 'Terminal Setup' tab in the CMI SMS interface. On the left is a 'Terminal Management' sidebar with links: Control Terminals, View Terminals, Add New Terminal, View Profiles, Add New Profile, and View Debug Log. The main area is titled 'Terminal' and shows configuration for terminal 'GENUS7D3C6F' in the 'EST' time zone. It has four tabs: General, Networking, Terminal Services (selected), and Host Web Service. Under the 'Terminal Services' tab, there are two sections: 'Browser' and 'Terminal Web Service'. The 'Browser' section has two checked checkboxes: 'Enable Configuration Browser' and 'Enable WSDL access (/cmi?wsdl)'. The 'Terminal Web Service' section has an unchecked checkbox 'Enable Web Service', and fields for 'Login Name', 'Password', and 'Port' (set to 0, with a default of 80). At the bottom are buttons for 'Cancel', 'Save Changes', 'Undo Changes', and 'Save As New Terminal'.

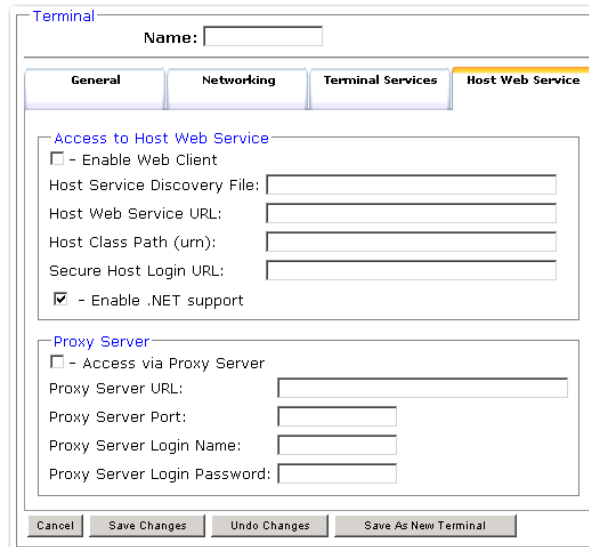
The same **Login Name** and **Password** used to access the terminal setup via browser are used to create the credentials necessary to access and execute terminal web service functions. The defaults are:

- Login Name : 'admin'
- Password : 'pass'

The port that the terminal hosts the web service on can also be changed through the **Port** edit box.

3.4.5.4 Host Web Service

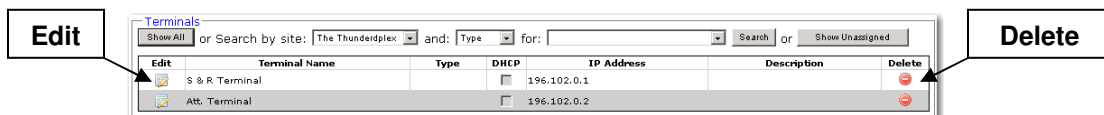
The final terminal configuration tab is for setting up access from the terminal to the **Host Web Service**. For the terminal to transfer data to System Manager and other host data services, it is necessary to check the **Enable Web Client** checkbox. The terminal can then be configured to either retrieve the settings necessary to connect to the host web services by accessing the **Host Service Discovery File**, or it can use the **Host Web Service URL** and **Host Class Path** to connect directly to the host web services.



The **Enable .NET Support** checkbox must be checked for use with System Manager which was built for use with the ASP.NET web server. **Proxy Server** settings are only necessary if the terminal needs to access the System Manager Server via a proxy server.

3.4.6 View Terminals

You can view all the terminals that have been added at any time by clicking the **View Terminals** button. This will list all the terminals in the system, showing the name, type, IP, and description of each terminal.



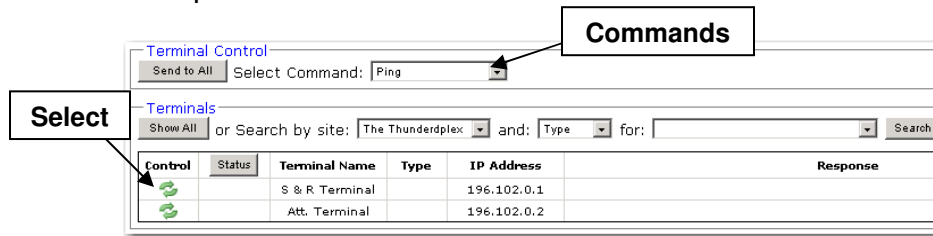
Edit	Terminal Name	Type	DHCP	IP Address	Description	Delete
	S & R Terminal		<input type="checkbox"/>	196.102.0.1		
	Att. Terminal		<input type="checkbox"/>	196.102.0.2		

From this screen, terminals can be removed from the system by clicking the **Delete** icon. Clicking the **Edit** icon will show the terminal edit screen, on which terminal information is displayed and can be modified.

3.4.7 Control Terminals

Once terminals and terminal profiles are in place, commands can be issued to terminals through the System Manager software. They can be issued to individual terminals or to all terminals in the system. They can also be manually pinged to test connectivity.

To send commands to one or more terminals, select the **Control Terminals** menu item. This will bring up the Terminal Control screen. Commands can be sent to all terminals in the system by selecting them from the drop-down menu and clicking the **Send to All** button. Commands can also be issued to individual terminals by selecting the desired command from the drop-down menu, and clicking the **Select** icon to the left of the terminal to be controlled. Clicking the **Status** button will ping all terminals to check communication status. The **Status** column will display 'online' if a ping to the IP Address is successful, or 'offline' if the response timed out.



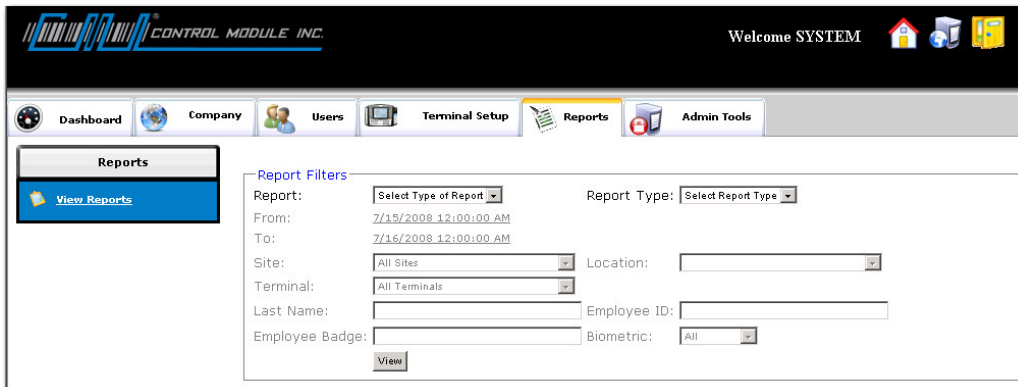
3.4.7.1 Terminal Commands

The following commands are available through the **Select Command** pull down list. All command responses are displayed in the **Response** column. When the **Send To All** button is used, all commands except the Ping command require that the terminal status is online. The commands (except Ping) will not be sent to terminals showing a status of offline.

- Ping
 - The standard ping utility.
- System Version
 - The version of the Genus (OS) file currently in the terminal.
- System Library Version
 - The version of the Classes library file currently in the terminal.
- Application Version
 - The application version currently in the terminal.
- Network Settings
 - Loads the host copy of the terminal network settings to the terminal.
- Host Web Service
 - Loads the host copy of the terminal Host Web Service settings to the terminal.
- Load System Library
 - Sends the path of the System Library file in the terminal's profile to the terminal for downloading.
- Load Application
 - Sends the path of the application file in the terminal's profile to the terminal for downloading.
- Send Current Time
 - Sends current system time to the terminal.
- Set Time Manually
 - Opens a date/time selection box, then sends the selected date/time to the terminal.
- Set Time Zone
 - Sends the three character time zone code to the terminal.
- Reset
 - Issues a reset (reboot) command to the terminal.

3.5 Reports

Another function of the System Manager is the capability to view and print dynamically generated reports. Using the View Reports function, users can select custom parameters to create Employee, Terminal, Transaction, and Audit reports. Reports allow for a comprehensive view of employee information, terminals in the system, transactions completed, and audits to the system.



3.5.1 Employee Reports

To create a report of employees/employee data, select **Employees** from the “Report” drop-down list. Next, select **Employees Report** from the “Report Type” drop-down list. Select the site of the employees you wish to generate a report of, or simply leave it set to **All Sites** to broaden the filter to all sites. Similarly, you can select individual locations within the sites from the **Location** drop-down list.

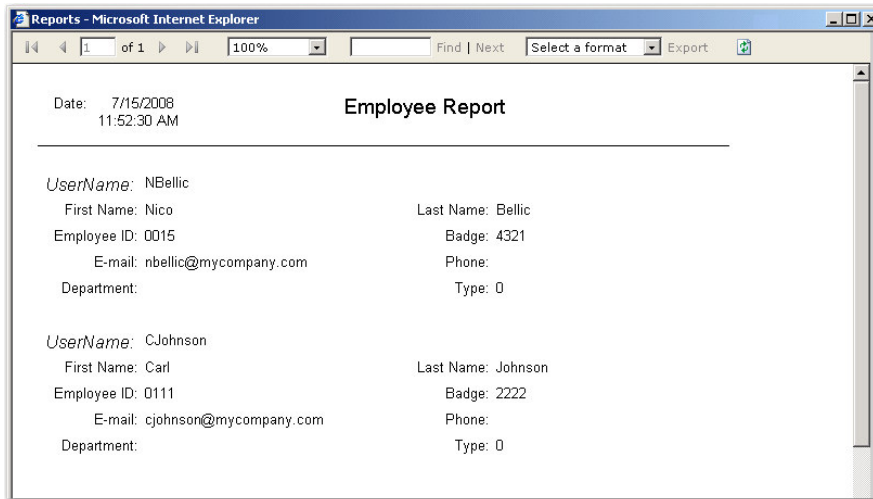
Next, you can either refine your results by entering a few letters of the last name of a certain employee in the **Last Name** field, or leave the field blank to search for all names. Entering an “A” for example, would show all the employees whose last name begins with an “A.”

This is also the case for the **Employee** and **Badge** fields; leaving the fields blank will include all of the entries, while entering the first number or first few numbers will show the employees whose ID or badge numbers match the entered numbers.

The remaining search criteria is for biometric enrollment. By clicking the “Biometric” drop-down list, you can include employees in the report who are either **Enrolled** or **Un-enrolled** with biometric data. To include all employees regardless of biometric enrollment, select **Both**.

After all the desired filter parameters have been set, click the **View** button. This will bring up a new window with the report, featuring the employee

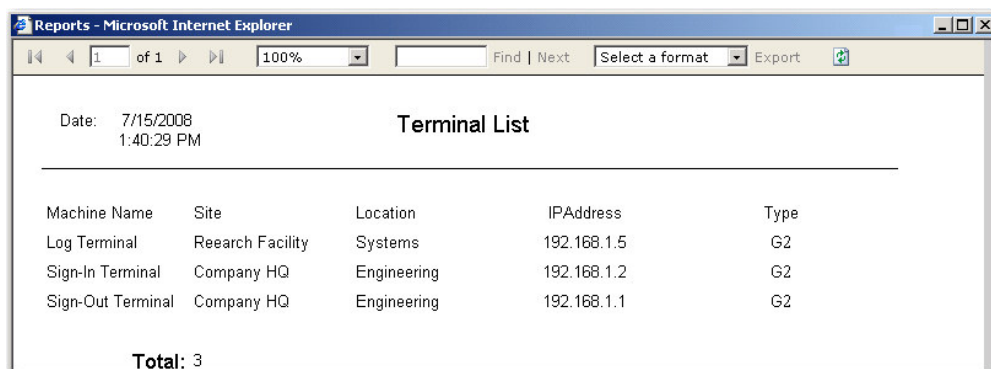
information, such as their username, ID, and email address. See example report below:



3.5.2 Terminal Reports

Another type of reports that can be generated are that of terminals. Select **Terminal** from the “Report” drop down list. Select **Terminal List** from the “Report Type” drop-down list. Select the site where the desired terminals are located, or simply leave it set to **All Sites** to broaden the filter to all sites. Similarly, you can select individual locations within the sites from the **Location** drop-down list.

After all the desired filter parameters have been set, click the **View** button. This will bring up a new window with the report, displaying the terminal’s name, the site and location, the IP, and the terminal type. See example report below:



Terminal List

Date: 7/15/2008 1:40:29 PM

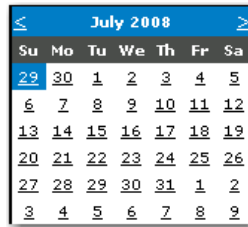
Machine Name	Site	Location	IPAddress	Type
Log Terminal	Research Facility	Systems	192.168.1.5	G2
Sign-In Terminal	Company HQ	Engineering	192.168.1.2	G2
Sign-Out Terminal	Company HQ	Engineering	192.168.1.1	G2

Total: 3

3.5.3 Transaction Reports

Transaction reports Select **Transaction** from the “Report” drop down list. Select **Transaction List** from the “Report Type” drop-down list. Next, select the date range you wish to pull transactions from by clicking the **From** and **To** date

hyperlinks, which will pull up a small popup calendar. Click to select the desired dates.

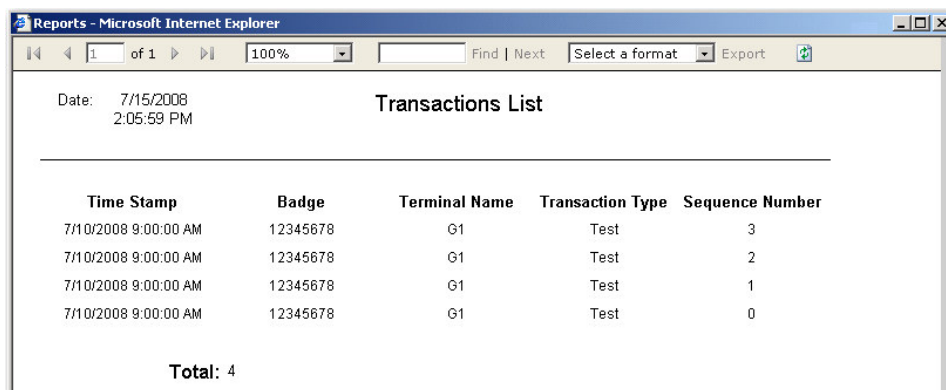


After selecting the range of dates to include in the report, you can select specific sites where the terminals are located, or simply leave it set to **All Sites** to broaden the filter to all sites. Similarly, you can select individual locations within the sites from the **Location** drop-down list.

Next, you can choose to pull reports on an individual terminal by clicking the "Terminal" drop-down list and selecting one, or you can select **All Terminals**.

Additionally, transaction reports can be filtered by the employee who completed the transaction. To do this, you can enter in the first letter or first few letters of the employee's name, or the first number or first few numbers of the employee's badge in the appropriate blanks.

After all the desired filter parameters have been set, click the **View** button. This will bring up a new window with the report, displaying transactions, the time at which they were completed, whom they were completed by, the terminal, type of transaction, and their corresponding sequence numbers. See example report below:

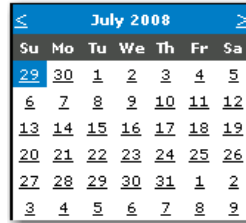


Time Stamp	Badge	Terminal Name	Transaction Type	Sequence Number
7/10/2008 9:00:00 AM	12345678	G1	Test	3
7/10/2008 9:00:00 AM	12345678	G1	Test	2
7/10/2008 9:00:00 AM	12345678	G1	Test	1
7/10/2008 9:00:00 AM	12345678	G1	Test	0
Total: 4				

3.5.4 Audit Reports

Audit reports show all the activity within the system, such as the addition of employees, terminals, or locations. Select **Audit** from the "Report" drop down list. Select **Audit Transactions** from the "Report Type" drop-down list. Next, select

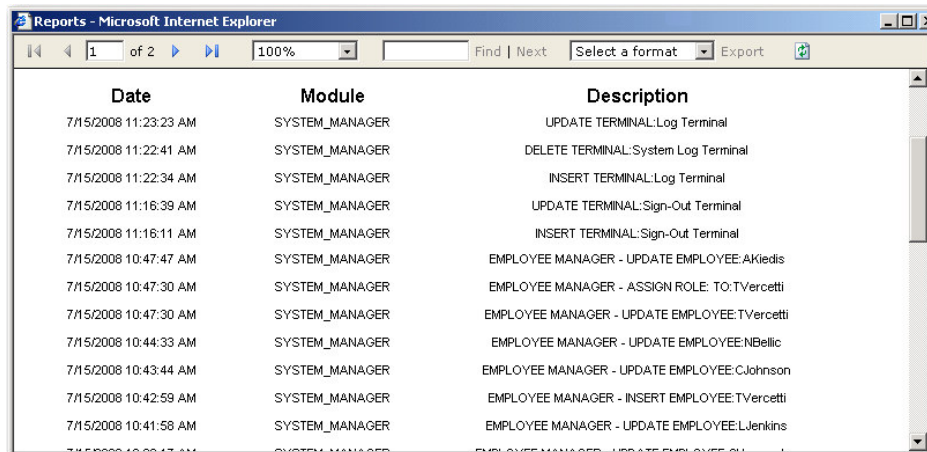
the date range you wish to retrieve audits for by clicking the **From** and **To** date hyperlinks, which will pull up a small popup calendar. Click to select the dates.



After selecting the range of dates, you can narrow the search to retrieve audits from specific sites/locations where the terminals are located. To do this, select a site from the “Site” drop-down list, or simply leave it set to **All Sites** to broaden the filter to all sites. Similarly, you can select individual locations within the sites from the **Location** drop-down list.

Similar to the Transaction reports, Audit reports can be filtered by employee. To do this, you can enter in the first letter or first few letters of the employee’s name, or the first number or first few numbers of the employee’s badge in the appropriate blanks.

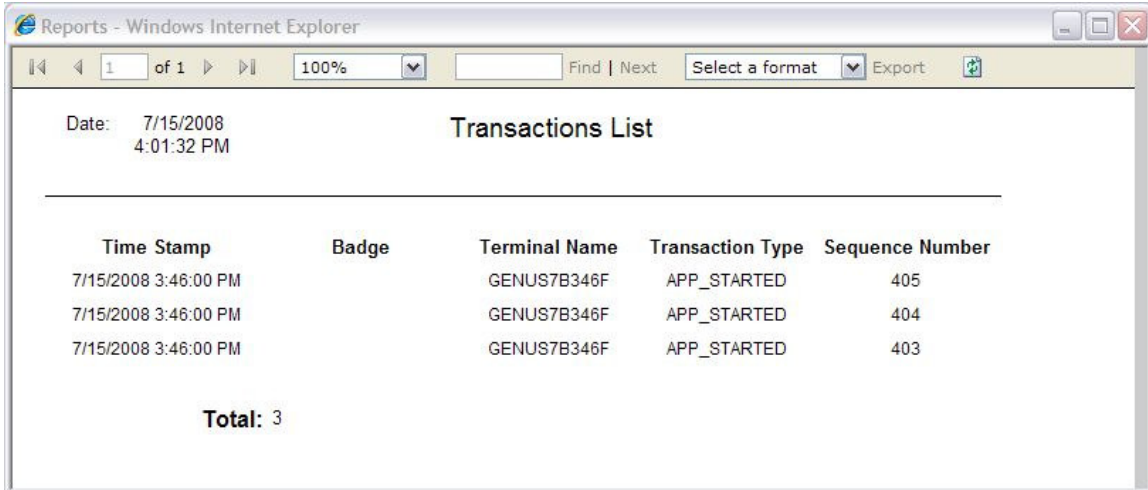
After all the desired filter parameters have been set, click the **View** button. This will bring up a new window with the report, displaying the date of the audit, what module it was completed in, and a description of the action itself.



Date	Module	Description
7/15/2008 11:23:23 AM	SYSTEM_MANAGER	UPDATE TERMINAL: Log Terminal
7/15/2008 11:22:41 AM	SYSTEM_MANAGER	DELETE TERMINAL: System Log Terminal
7/15/2008 11:22:34 AM	SYSTEM_MANAGER	INSERT TERMINAL: Log Terminal
7/15/2008 11:16:39 AM	SYSTEM_MANAGER	UPDATE TERMINAL: Sign-Out Terminal
7/15/2008 11:16:11 AM	SYSTEM_MANAGER	INSERT TERMINAL: Sign-Out Terminal
7/15/2008 10:47:47 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - UPDATE EMPLOYEE: AKiedis
7/15/2008 10:47:30 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - ASSIGN ROLE: TO:TVercetti
7/15/2008 10:47:30 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - UPDATE EMPLOYEE: TVercetti
7/15/2008 10:44:33 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - UPDATE EMPLOYEE: NBellc
7/15/2008 10:43:44 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - UPDATE EMPLOYEE: CJohnson
7/15/2008 10:42:59 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - INSERT EMPLOYEE: TVercetti
7/15/2008 10:41:58 AM	SYSTEM_MANAGER	EMPLOYEE MANAGER - UPDATE EMPLOYEE: LJenkins

3.5.5 Report Output

Reports are written to a new browser window. The report window contains a tool bar that provides paging, zoom, search, and export capabilities. The content of the report is all the area below the toolbar. Right clicking on the content area will bring up the browser right click menu. To print the report, select 'Print' from the browser popup menu. The report may be exported in either Microsoft Excel or Adobe Acrobat (.pdf) file formats.



The screenshot shows a web browser window titled 'Reports - Windows Internet Explorer'. The address bar shows '1 of 1' and '100%'. The report content includes a date '7/15/2008 4:01:32 PM' and a title 'Transactions List'. Below the title is a table with five columns: 'Time Stamp', 'Badge', 'Terminal Name', 'Transaction Type', and 'Sequence Number'. The table contains three rows of data, all with 'APP_STARTED' as the transaction type. At the bottom of the table, it says 'Total: 3'.

Time Stamp	Badge	Terminal Name	Transaction Type	Sequence Number
7/15/2008 3:46:00 PM		GENUS7B346F	APP_STARTED	405
7/15/2008 3:46:00 PM		GENUS7B346F	APP_STARTED	404
7/15/2008 3:46:00 PM		GENUS7B346F	APP_STARTED	403

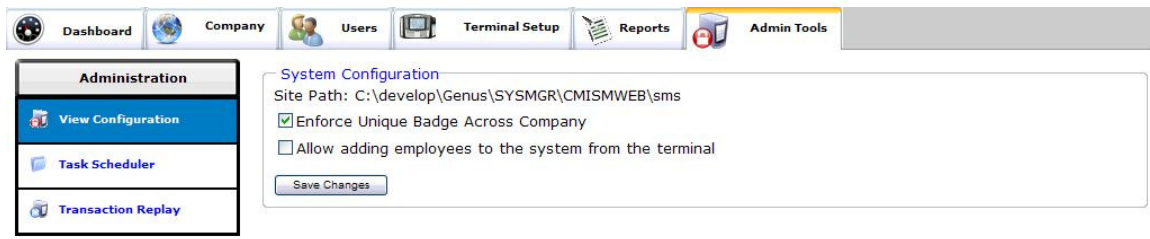
Total: 3

3.6 Admin Tools

The Admin Tools tab provides support for system-wide configuration settings, scheduled functions, and transaction recovery from data collection terminals. Access to the admin tools is restricted to members of the SYS_ADMIN role.

3.6.1 View Configuration

The View Configuration screen shows the root path of the System Manager solution on the server. It also provides a checkbox for enabling unique badge numbers throughout all company sites. If this box is not checked, employee badges only need to be unique by site. The checkbox for allowing employees to be added to the system from the terminal should only be checked when the data terminal application supports employee enrollment, and enrollment of employees from data terminals (usually biometric enrollment) is permitted.

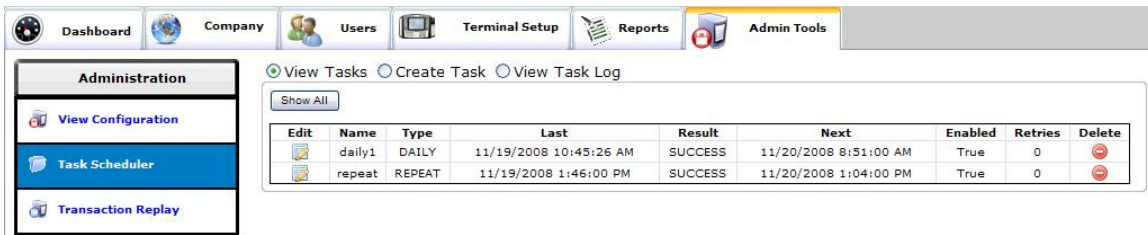


3.6.2 Task Scheduler

The System Manager server has a built-in task scheduler utility. This utility runs as a service and executes user defined tasks according to the individual task schedules. The Task Scheduler screen in System Manager provides the ability to setup tasks for execution. The radio buttons at the top of the screen allow the user to switch between viewing the list of all defined tasks, to create a task, and to view the log entries made by the scheduler utility when it determines that it is time to execute a task. There are four different options or schedule types for tasks: Daily, Weekly, Single, Repeat.

3.6.2.1 Task List

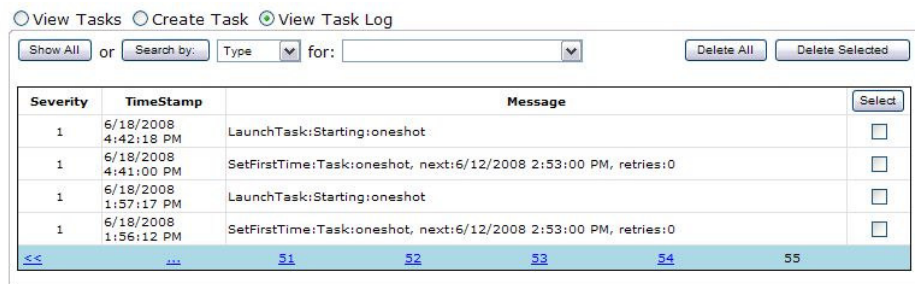
The task list shows the currently defined tasks by name, the type of task, the last and next execution times, the result of the last execution, 'SUCCESS' or 'FAILED', whether the task is currently enabled or suspended, and the number of retries attempted during the last execution. The standard edit and delete icons are available in the first and last columns for maintaining the list. The task execution status is determined by the exit code of the task. An exit code of '0' will result in a result status of 'SUCCESS' and a non-zero exit code will show as 'FAILED'.



Edit	Name	Type	Last	Result	Next	Enabled	Retries	Delete
	daily1	DAILY	11/19/2008 10:45:26 AM	SUCCESS	11/20/2008 8:51:00 AM	True	0	
	repeat	REPEAT	11/19/2008 1:46:00 PM	SUCCESS	11/20/2008 1:04:00 PM	True	0	

3.6.2.2 Task Log

The task log is used to review the historical activity of task execution. The log is shown in date/time order starting with the most recent activity. It also allows searching for events of specific tasks and task types. All task log records can be deleted by using the **Delete All** button, or selecting individual records with the checkboxes in the **Select** column.



Severity	TimeStamp	Message	Select
1	6/18/2008 4:42:18 PM	LaunchTask:Starting:oneshot	<input type="checkbox"/>
1	6/18/2008 4:41:00 PM	SetFirstTime:Task:oneshot, next:6/12/2008 2:53:00 PM, retries:0	<input type="checkbox"/>
1	6/18/2008 1:57:17 PM	LaunchTask:Starting:oneshot	<input type="checkbox"/>
1	6/18/2008 1:56:12 PM	SetFirstTime:Task:oneshot, next:6/12/2008 2:53:00 PM, retries:0	<input type="checkbox"/>

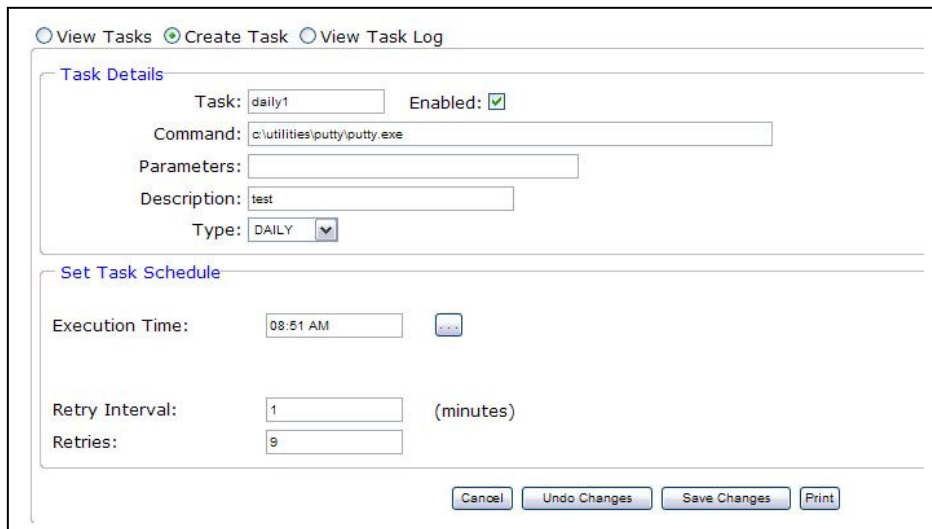
3.6.2.3 Task Creation/Editing

When creating or editing a task, the **Task Details** section of the edit screen provides boxes for naming the task, enabling or suspending the execution of the task, the actual command task, optional command parameters, a description, and a type from the pull down list of task types. The Command must either contain the full path to the executable to run, or reference a command whose location is in a known system path. To verify accessibility for the task scheduler executable, test the command execution from the Windows Start/Run dialog.

The **Set Task Schedule** section will provide the appropriate schedule options to select based on the type of task selected.

3.6.2.4 Daily Task

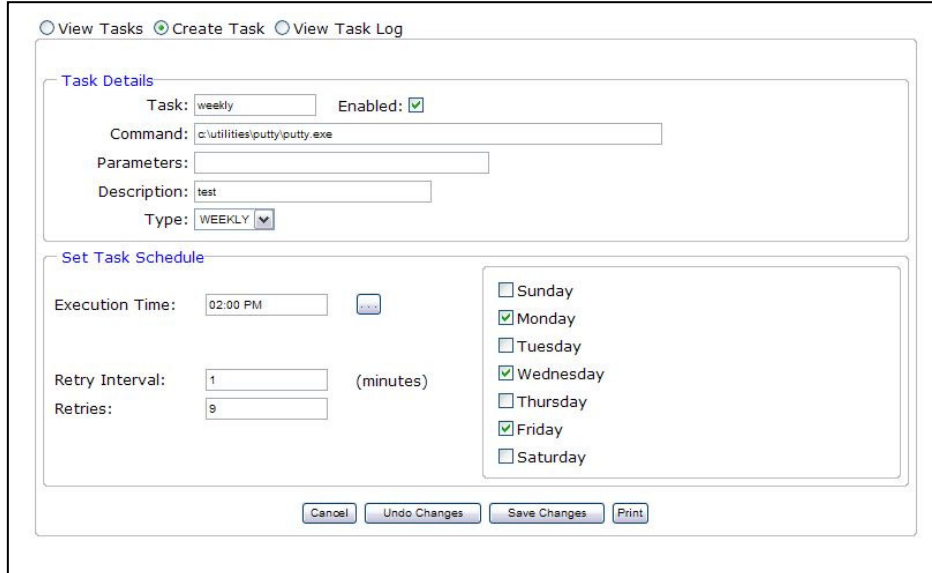
The **Daily** task type allows for creating a schedule to execute a task at the same time every day. The only schedule options to define are the time of day for the item to execute, the number of retries to attempt to achieve a successful result, and the amount of minutes to wait between retries.



The screenshot shows a dialog box with three tabs: "View Tasks", "Create Task" (selected), and "View Task Log". The "Task Details" section contains the following fields: "Task" (daily1), "Enabled" (checked), "Command" (c:\utilities\putty\putty.exe), "Parameters" (empty), "Description" (test), and "Type" (DAILY). The "Set Task Schedule" section contains the following fields: "Execution Time" (08:51 AM), "Retry Interval" (1 minutes), and "Retries" (9). At the bottom are buttons for "Cancel", "Undo Changes", "Save Changes", and "Print".

3.6.2.5 Weekly Task

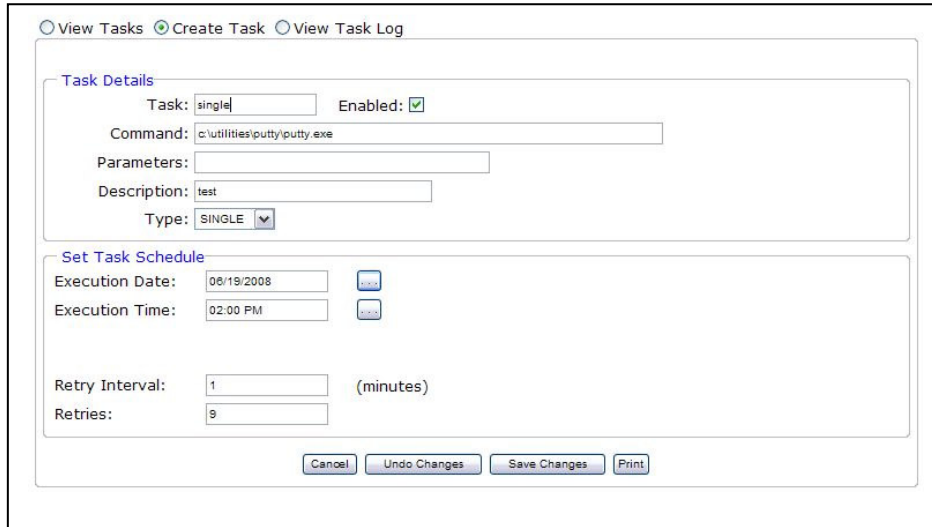
The **Weekly** task type allows for restricting the execution of a task to specific days of the week.



The screenshot shows the 'Create Task' dialog box with the 'Task Details' and 'Set Task Schedule' sections. The 'Task' is named 'weekly', 'Enabled' is checked, 'Command' is 'c:\utilities\putty\putty.exe', 'Parameters' is empty, 'Description' is 'test', and 'Type' is 'WEEKLY'. The 'Set Task Schedule' section shows 'Execution Time' as '02:00 PM', 'Retry Interval' as '1' minute, and 'Retries' as '9'. The days of the week are listed with checkboxes: Sunday (unchecked), Monday (checked), Tuesday (unchecked), Wednesday (checked), Thursday (unchecked), Friday (checked), and Saturday (unchecked). Buttons at the bottom include 'Cancel', 'Undo Changes', 'Save Changes', and 'Print'.

3.6.2.6 Single Task

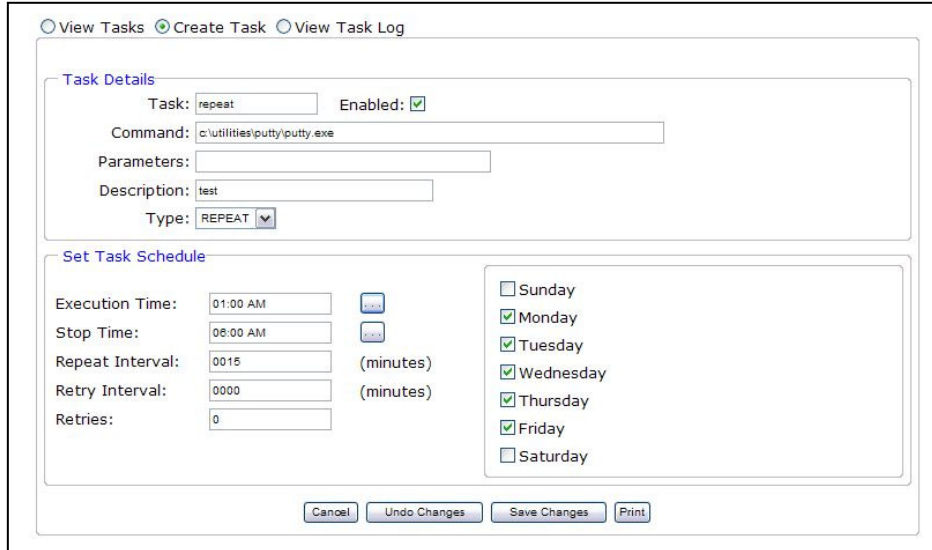
The **Single** task type is used to set a task to run one time only on the current day at the specified time.



The screenshot shows the 'Create Task' dialog box with the 'Task Details' and 'Set Task Schedule' sections. The 'Task' is named 'single', 'Enabled' is checked, 'Command' is 'c:\utilities\putty\putty.exe', 'Parameters' is empty, 'Description' is 'test', and 'Type' is 'SINGLE'. The 'Set Task Schedule' section shows 'Execution Date' as '08/19/2008', 'Execution Time' as '02:00 PM', 'Retry Interval' as '1' minute, and 'Retries' as '9'. Buttons at the bottom include 'Cancel', 'Undo Changes', 'Save Changes', and 'Print'.

3.6.2.7 Repeat Task

The **Repeat** task type allows executing the same task a number of times throughout the day, on specific days of the week. A task can be scheduled to run all day long by setting the Execution Time to 12:00 AM and the Stop Time to 11:59 PM.



View Tasks Create Task View Task Log

Task Details

Task: repeat Enabled: ☒

Command: c:\utilities\putty\putty.exe

Parameters:

Description: test

Type: REPEAT

Set Task Schedule

Execution Time: 01:00 AM

Stop Time: 08:00 AM

Repeat Interval: 0015 (minutes)

Retry Interval: 0000 (minutes)

Retries: 0

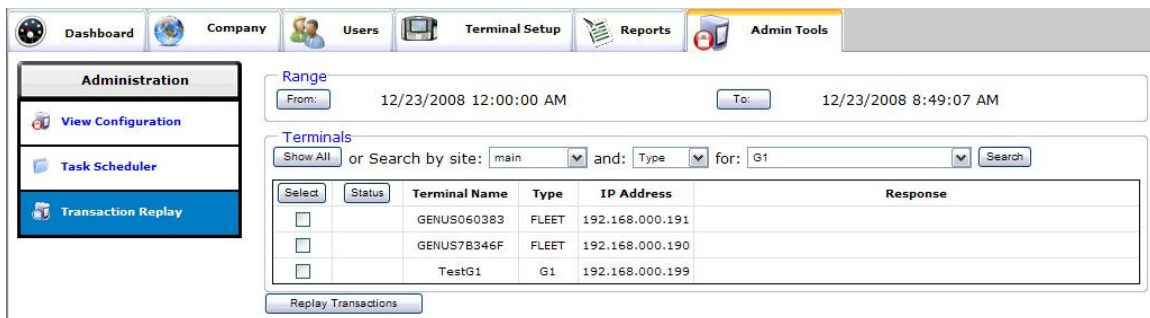
☐ Sunday
☒ Monday
☒ Tuesday
☒ Wednesday
☒ Thursday
☒ Friday
☐ Saturday

Cancel Undo Changes Save Changes Print

3.6.3 Transaction Replay

Some systems interact with data collection terminal applications that store all transaction activity in a local transaction queue prior to delivery to the server. In these systems, it is possible to replay transaction data from any or all of the terminals managed by the System Manager.

To replay transactions, display all, or a selected group of terminals in the terminal grid, select the date and time range of the transactions to be replayed, and then hit the 'Replay Transactions' button. Each selected terminal will receive a command to replay all transactions for the desired time period. These transactions will be processed at the server the same as live transactions with the exception that a replay flag will indicate to the server that the transaction is not a live transaction. This flag is used to prevent unnecessary responses to the terminal that are intended for live transactions only.



Range

From: 12/23/2008 12:00:00 AM To: 12/23/2008 8:49:07 AM

Terminals

Show All or Search by site: main and: Type for: G1 Search

Select	Status	Terminal Name	Type	IP Address	Response
<input type="checkbox"/>		GENUS060383	FLEET	192.168.000.191	
<input type="checkbox"/>		GENUS7B346F	FLEET	192.168.000.190	
<input type="checkbox"/>		TestG1	G1	192.168.000.199	

Replay Transactions

4 Support

4.1 Updates

CMI provides free updates of the software for one year from the date of the original purchase. The updates are not automatically distributed. The customer must contact CMI with the serial number and version of their original product to receive the update. Version and update information concerning the product can be obtained by contacting 'support@controlmod.com' and providing the name, version, build code, and serial number from the installation CD label. Extended maintenance and update agreements beyond the first year can be purchased by contacting our Sales Department at (800) 722-6654 or (860) 253-6222.

4.2 Direct Sales

(Software product was purchased directly from Control Module Inc.)

4.2.1 Technical Support

Control Module provides 90 day free technical support for the installation and operation of the software starting on the date of installation. The free technical support expires 3 months after date of delivery if the 90-day support period has not been initiated. To initiate the 90-day free support period, email technical support with the serial number from the installation CD.

Technical Support
Email: support@controlmod.com
Toll free : 888-753-8222

For support options beyond the initial 90-day support period, contact the Control Module Sales Department at (800) 722-6654 or (860) 253-6222.

4.3 CMI Valued Resellers

(Software product was purchased from qualified reseller)

CMI Valued Resellers are knowledgeable and equipped to provide the initial support of the software installation and use. Customers who purchased the product from a CMI Valued Reseller should contact their representative for support. Extended support can be contracted through the Valued Reseller, or, upon agreement, directly from Control Module Inc.