McKESSON
Empowering Healthcare

STAR 2000™

WEM USER'S GUIDE

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Any comments or suggestions regarding this publication are welcomed and should be forwarded to the attention of

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Preface

The *WEM User's Guide* provides the MIS department and end users with information needed to install, use, and support McKesson's Windows Terminal Emulation software (WEM).

WEM connects and manages data transmission between the user's workstation and the host computer. The terminal emulation software causes the workstation PC to imitate another standard terminal display so that data is displayed properly on the PC screen.

The primary audience for this book is end users in the hospital setting or at remote locations such as physicians' offices or homes.

Documentation Conventions

Documentation for McKesson's STAR 2000™ line of products follows these conventions:

Revisions
Text revisions are indicated by a change bar in the left margin. Paragraphs that contain grammatical changes that do not affect content are not marked.

Canadian Documentation
This volume may include documentation for Canadian users of this product. Complete sections of Canadian text are identified by "CN" and "CN Only."

Key Names
Named keys, such as SHIFT, CTRL, ALT, and ENTER, are displayed in this document in uppercase (capital) letters. A symbol key is written as text in this document followed by the symbol in parentheses, such as hyphen (-) and asterisk (*).

Key Chords
Key chords are key entries that require you to hold down one or more keys (typically, CTRL, ALT, or SHIFT) before pressing another key. In this document, key chords are displayed as the names of each key in the chord separated by a hyphen (-) (for example, CTRL-ALT-DEL).

Enter
ENTER is a key on a computer keyboard used to complete an entry on a STAR system. (This key may also be referred to as NEW LINE or NL in the STAR system.)

Data Entries
Letters or words you enter in response to the system are displayed in **bold** letters in this document. For example: Enter **Y** for Yes or **N** for No.

Selecting an Entry
This document often instructs you to "select an entry." The method you use to select an entry depends on whether you are using STAR from a terminal or IBM-compatible personal computer. Entry methods include:

- Entering the option number
- Using your arrow keys to highlight the option and pressing ENTER
- Clicking on the option using a mouse or other pointing device (PC only)

For more information about these options, see the *General Information Volume*.

Prompts
System prompts are displayed at the bottom of many STAR screens when the system requests an entry or displays a message. In this document, these prompts are indented and the text italicized, as shown in the following example:

Enter patient name--

Field Characteristics
STAR product documentation provides field explanation codes, in addition to a narrative description for each field on a screen. These codes display the maximum length of your entry in the field, the type of entry you make in the field, and whether the field is required. This information displays in the following format:

- DISPLAY ONLY for a field you cannot edit.
- For X-YY-Z field types, where:
  - X is the maximum number of characters permitted in the field:
    - P for a field length determined by a Parameter
    - T for a field length determined by a Table
    - U for a field having an Undefined length
  - YY is the type of entry technique permitted in the field:
    - A for Letters only
    - AC for Letters and Punctuation only (no numbers)
    - AN for Numerals and Letters only (no punctuation)
    - C for Characters (including punctuation)
    - N for Numerals only
    - NC for Numerals and Punctuation only (no letters)
  - Z is the requirement indicator of the field:
    - C if an entry is Conditionally required or optional
    - O if an entry is Optional to complete the function
    - R if an entry is required to complete the function

      NOTE: Facilities can designate that certain fields be Required. STAR product documentation does not display R for fields designated as Required by a facility.
  - For YY-Z field types, where YY is:
    - DATE for a field subject to the date entry conventions described in the *General Information Volume*.
    - SPECIAL FORMAT for a field having data entry requirements not conforming to standard format. The field definition contains the specific data entry requirements for the field.
    - TABLE LOOKUP for a field that enables you to select from a displayed table. See the *General Information Volume* for more information regarding this entry technique.
    - TIME for a field subject to the time entry conventions described in the *General Information Volume*.

    NOTE: For use of the Z position in this format, refer to the explanations for Z under X-YY-Z.

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Chapter 1: Getting Started

This chapter contains information on installing WEM, getting help, using WEM menus, using Session Manager, signing on to the host, using Properties, and printing from WEM.

Chapter 2: Managing WEM Sessions

This chapter contains information on creating a new session definition, mapping WEM keys, setting VT220 emulation settings, defining and using SSH sessions, and editing and deleting a session.

Chapter 3: Using Edit and View Menus

This chapter contains information on using the Edit and View menu options.

Chapter 4: Using WEM Tools

This chapter explains how to capture data to file, graphing, Information Windows and Function Branching.

Appendix A: HGL Graphics

This appendix contains technical information about the HGL Graphics Language.

Chapter 1 - GETTING STARTED

INTRODUCTION

WEM is McKesson's terminal emulation software that enables you to use STAR applications in a Windows-like environment on a local workstation (PC) with both STAR and non-STAR hosts.

WEM connects and manages data transmission between the user's workstation and the host computer. The terminal emulation software causes the workstation PC to imitate another standard terminal display so that data is displayed properly on the PC screen.

WEM's main functions include the following:

- Create up to 100 different terminal emulation sessions
  - Customize the WEM keyboard
  - Customize the WEM display color, text, and font settings
- View status of the currently active session
- Connects STAR GUI Applications to the STAR host
- Perform continuous data capture to file to troubleshoot communications
- Optionally, use Information Windows
- Optionally, use Function Branching

INSTALLING WEM

This part provides information on how to set up a user workstation for WEM. This material is intended for the hospital's MIS department. End users can install WEM on their PCs at the discretion of the MIS department.

System Requirements

Following is a list of software and hardware requirements for WEM for both the workstation (PC) and the host computer.

HARDWARE REQUIREMENTS

Implementation of WEM may require new hardware and software configurations for users to access the STAR system, both from equipment within the hospital as well as from a remote area. These are the current minimum recommendations, but faster PCs and modems are certainly acceptable.

Minimum Hardware Requirements

- **If STAR GUI Applications are used with WEM**
  See specifications for STAR Navigator.

- **If STAR GUI Applications are NOT used with WEM**
  The PC must meet requirements for an operating system of Microsoft® Windows® 2000 or higher.

  For a LAN Connection:

  - NDIS or ODI compatible LAN Card

SOFTWARE REQUIREMENTS

For User Workstation (PC):

- Microsoft Windows XP or higher

NOTE: Before using McKWEM.exe Secure Shell (SSH) connections on a workstation running a client firewall, it is important that you configure your firewall software to allow network communication by the STAR SSH component named WemTnSsh.exe.

For STAR Host:

- Release 17.0 of STAR product applications is recommended, but is not required.

- MultiSTAR (Enterprise Release 17.0 and above)

SETTING UP INFORMATION WINDOWS ON STAR

WEM's Tools menu Information Windows function provides the option to view information on a patient or account from another function within the STAR system in a special Information Window without exiting the current STAR function you are working in. Window options are selected from the Tools menu Information Windows list.

Information Windows can be set up as follows:

- Enabled system-wide for use on all workstations using WEM
- Disabled system-wide so it is not available to any WEM users.
- User-specified so each WEM user has the option to enable or disable the function.

Enabling Information Windows on STAR

The WEM Information Windows option on the Tools menu can be enabled or disabled system-wide for all WEM users or the option can be set up as a user-enabled option. Hospital Information Department staff must first set up the option.

Use the following table to access these preferences from the applicable STAR product:

STAR Product	How to access Information Windows Preference
Financials	• Select Financial System Management from the Financials System Coordinator menu. • Select User Preferences Functions. • Select Information Windows Preference.
Laboratory	• Select Maintenance Functions. • Select Maintenance - User Preferences Functions. • Select Information Windows Preference.
Patient Care	• From the System Administration menu, select System Management. • Select User Preferences Functions. • Select Information Windows Preference.
Pharmacy	• Select System Management from the System Coordinator menu. • Select System Management - Pharmacy • Select User Preferences Functions. • Select Information Windows Preference.
Radiology	• Select Maintenance Functions. • Select User Preferences. • Select Information Windows Preference

The User Preferences Functions (system administrator version) menu contains the Information Windows Administration function. This menu is available to system administration personnel with a security level of 80 or higher.

```
            General Hospital User Preferences Processor
                                                  Tue Jul 05, 2005 10:49 am
User Preferences Input Options

            Option No.  Option
            ---------------------------------------
                1       Menu and Mnemonic Functions

                2       Function Key Definition
                3       Menu Type Selection
                4       CRT Color Selection

                5       Windows Word Processing User Preferences
                6       Download Windows Word Processor Macros

                7       Information Windows Administration
                8       Information Windows Preference

                9       Select Alternate STAR Environment
               10       STAR ONLINE Support Access Administration

               11       STAR Navigator Automatic Update Settings
Enter option number--
```

Select the Information Windows Administration option. The Information Windows Administration Processor screen is displayed:

```
             General Hospital Information Windows Administration Processor
                                                  Mon Jun 29, 1998 10:53 am

(1) Information Windows   :  User-specified
(2) Last Edit By          :  Unknown
(3) Last Edit Date        :  Unknown









Enter field number or '/' starting field number--
```

Enter **1** to select Information Windows. The following prompt is displayed:

Information Windows (E)nabled, (D)isabled, or (U)ser-specified? (E/D/U) [U}--

To. . .	Enter. . .	Result
Enable Information Windows	**E**	Information Windows is enabled system-wide.

To. . .	Enter. . .	Result
Disable Information Windows	**D**	Information Windows is disabled system-wide.
Enable users to specify use of this option.	**U**	Information Windows is enabled as a user-specified option for users using WEM.

Enabling Information Windows on a Workstation

Depending on how your Information Systems department has set up WEM, you may have the user option to specify turning on use of Information Windows, an optional WEM function. WEM Information Windows Preference is located under Employee Table Maintenance for each product. The following menu screen available to all users displays when you select the User Preferences Functions option:

```
            General Hospital User Preferences Processor
                                                Tue Jul 05, 2005 10:49 am
User Preferences Input Options

            Option No.  Option
            ----------------------------------------
                1       Menu and Mnemonic Functions

                2       Function Key Definition
                3       Menu Type Selection
                4       CRT Color Selection

                5       Windows Word Processing User Preferences
                6       Download Windows Word Processor Macros

                7       Information Windows Administration
                8       Information Windows Preference

                9       Select Alternate STAR Environment
               10       STAR ONLINE Support Access Administration

               11       STAR Navigator Automatic Update Settings
Enter option number--
```

Select the Information Windows Preference option. The Information Preference Processor screen is displayed with the following prompt:

Information Windows is disabled. (E)nabled or (D)isabled (E/D) [E] --

To. . .	Enter. . .	Result
Enable Information Windows	**E**	Information Windows is enabled for this user.
Disable Information Windows	**D**	Information Windows is disabled for this user.

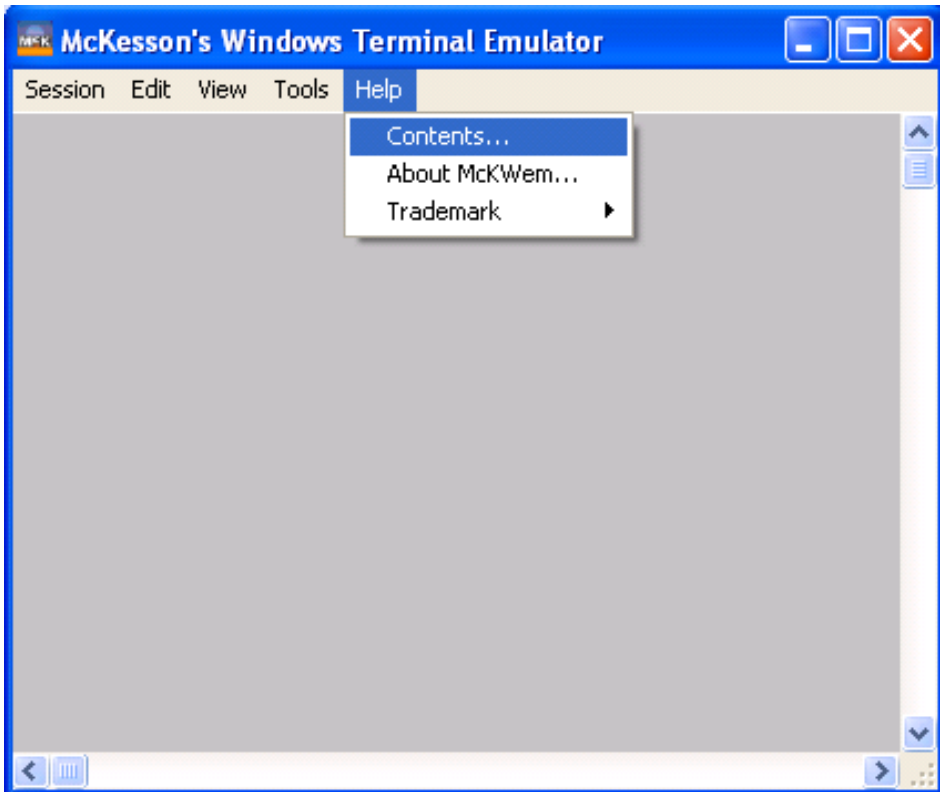
Installing WEM Software

The WEM software is loaded when STAR Navigator is installed. For more information, see the *STAR Navigator User's Guide*.

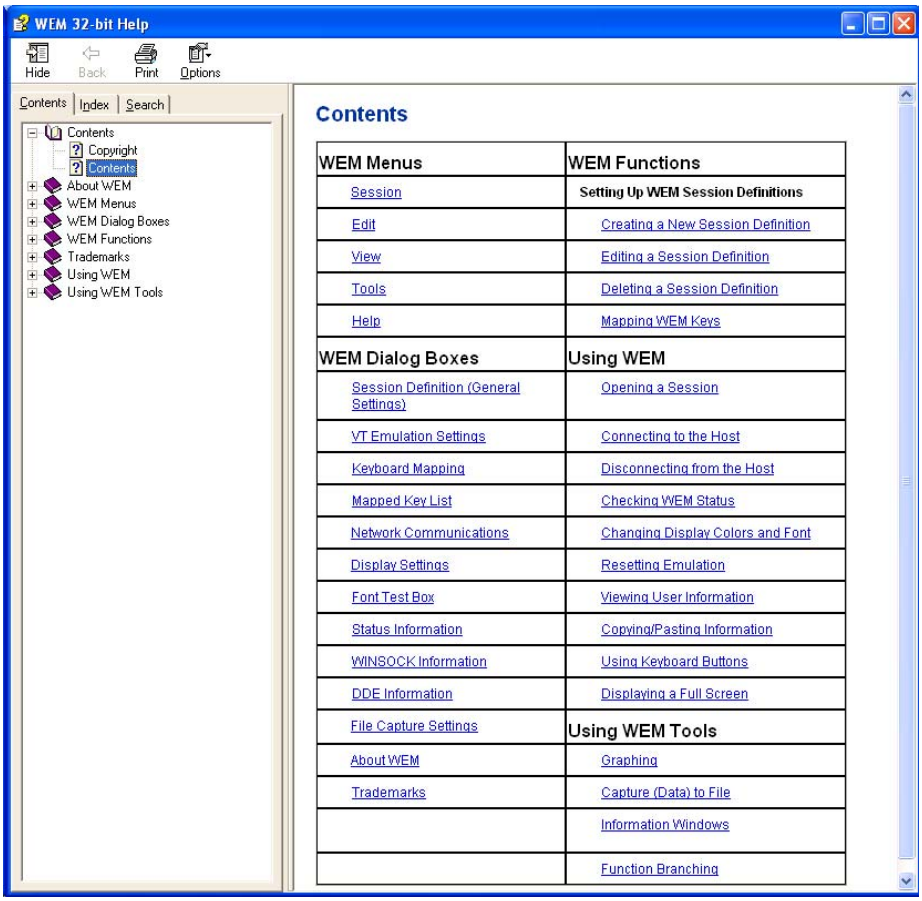
GETTING HELP

WEM comes with an online help system that provides help in the following ways:

- From the WEM **Help** menu, select **Contents**.

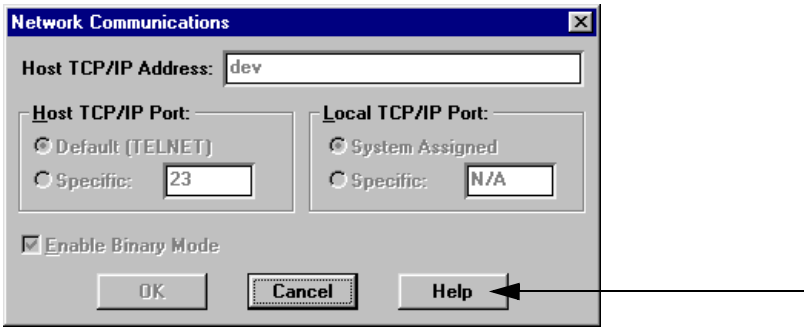


The WEM Help system is opened and an overview of the Help system topics is displayed.

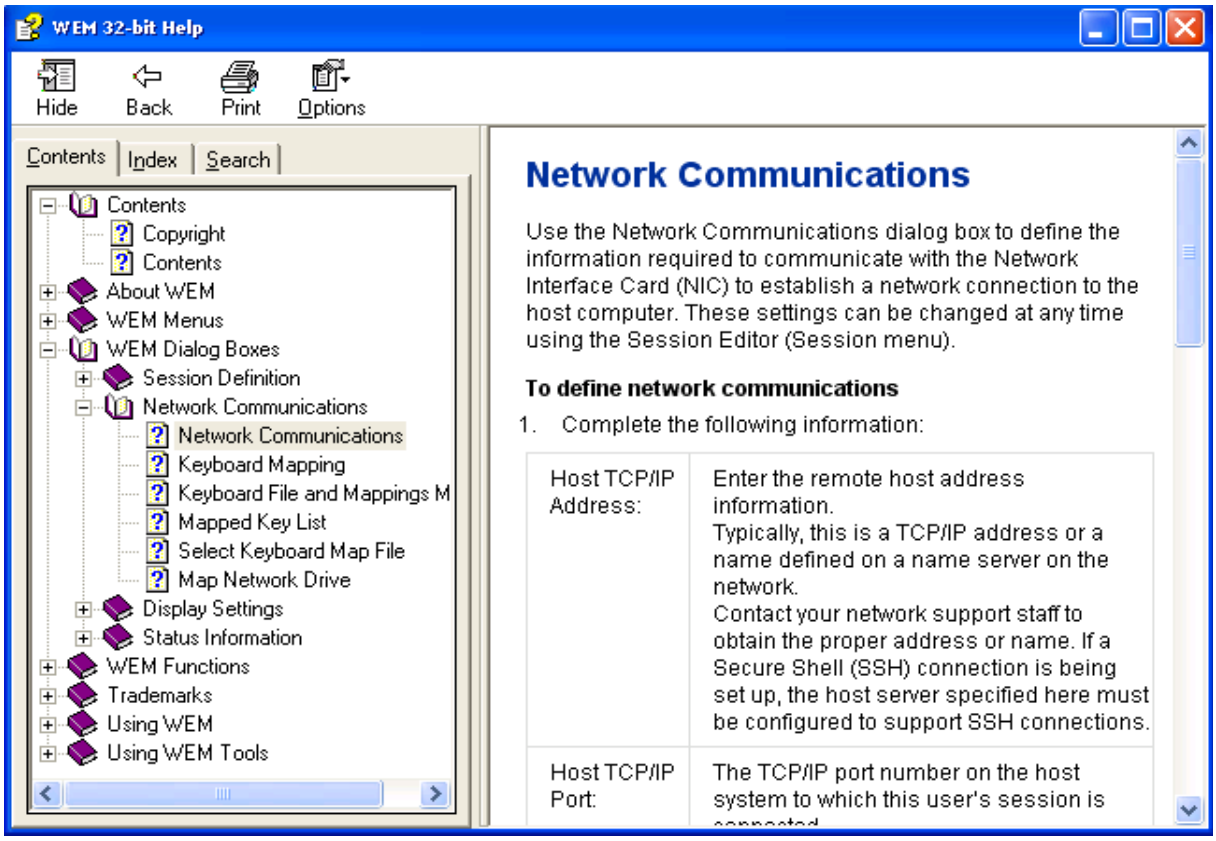


From this window, you can displayany of the topics or use the Help system Search button to conduct an online keyword search.

- From any WEM dialog box, click the **Help** button.



The Help system opens and a topic with information specific to that dialog box's use is displayed.



Use the Help menu Contents button for an overview of the Help system topics or the Search button to perform an online search for information similar to searching a book's index.

- From any Windows dialog box, click the question mark button.

NOTE: From several WEM dialog boxes and menus, you can access standard Windows dialog boxes for locating files, printing, or selecting display colors among others.

USING WEM MENUS

The WEM menu bar contains menus that provide access to WEM's session management options, STAR-enabled options, and online help.

Session Menu

The Session menu provides you with the tools needed to create and manage WEM Session definitions. A session definition contains the general, communication, and display settings that WEM requires to connect to the host and initiate a terminal emulation session with a STAR or non-STAR host.

Use . . .	**to . . .**
New	create and save a new session definition.
Open	open a terminal emulation session using an existing session definition from the displayed list.
Session Manager	open, change, or delete an existing session definition; create a new session.
Connect/ Disconnect	connect to an open session/disconnect from an open session.
Properties	change properties for the active session as follows: • General Settings - changes the Session Definition information for the active session. • Communications - changes the Communications information for the active session. • Display - changes the Emulation Attributes colors and display font for the active session.
Print	print the current contents of the window or an area you select to your local PC printer. A standard windows Print dialog box displays.
Print Setup	set or change the printer and print options specific to the selected printer. A standard Windows Printer Setup dialog box displays.
Exit WEM	disconnect the currently active session and any open sessions and close the WEM Windows emulation application.

Edit Menu

The Edit menu provides options for moving text from WEM to other locations and resetting terminal emulation settings to their default values.

Use . . .	**to . . .**
Copy	copy your selection to the Windows clipboard.
Paste	send text from the Windows clipboard to the host as keystrokes.
Reset Emulation	reset terminal emulation settings to their default values.

View Menu

The View menu provides options for viewing user information, checking the status of the currently active session, using WEM's keyboard buttons, and displaying WEM in full screen mode.

Use this option. . .	to . . .
User Information	view information about the currently signed on user such as name, ID, etc.
Status Information	check/view the status of the currently active WEM session.
Keyboard Buttons	display a keyboard on the bottom of the screen for entering data, one letter at a time, using a mouse or a pen.
Full Screen	expand the active window to fill the entire screen. When enabled, this option is checked.

Tools Menu

The Tool menu provides access to a graphing application, a data capture tool for troubleshooting communication problems and two STAR application enabled functions.

Use this option. . .	to . . .
Graphing	access a graph application (WEMGS32) window to view, edit and/or print graph information.
Capture to File	control (start/stop) the continuous capture of data inbound and/or outbound data to a file on the PC (or a file server) for troubleshooting communications problems.
Information Windows	view information on a patient or account from another function within the STAR system in an Information Window without exiting the current function, if enabled for the user. You select the desired window from the pull-down menu. Window options are application-specific and are downloaded from within the STAR application.
Function Branching	quickly access STAR application functions you frequently use from the pull-down menu, if enabled. The list of functions is downloaded from within the STAR application.

Help Menu

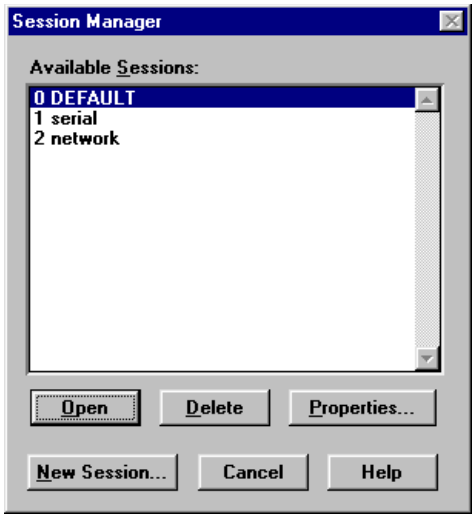
The Help menu provides the following options:

Use this option . . .	to . . .
Help on WEM	open the online WEM Help system and display the Contents page.
About WEM	display the current version of WEM.
Trademark	DSM® is a registered trademark of the American Psychiatric Association.

USING SESSION MANAGER

Before you can use WEM, you must create at least one Session Definition. A Session Definition defines the general, communication, and display settings for the WEM terminal emulation session with the host.

The Session Manager option on the Session menu provides you with the tools to create new sessions and manage existing sessions. When you select Session Manager, the following dialog box displays.



Use the Session Manager dialog box to view the list of the available sessions and access the following session options:

Use . . .	to . . .
Open	open a selected available session.
Delete	delete the selected session.
Properties	view/edit information about the selected available session as follows: • General Settings - displays the Session Definition dialog box. • Display - changes the terminal Emulation Attributes colors and the display font.
New Session . . .	open a new session definition.

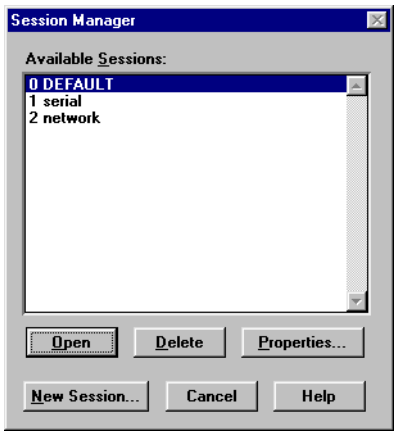
NOTE: “Chapter 2 - MANAGING WEM SESSIONS” provides complete step-by-step instructions for creating, editing, and deleting sessions.

SIGNING ON TO THE HOST

To sign on to the host computer and use WEM, you need to have at least one Session Definition defined and displayed on the list of available sessions (Session Manager dialog box or Session menu/Open dropdown list). Use the following instructions to connect to the host, sign on, and disconnect.

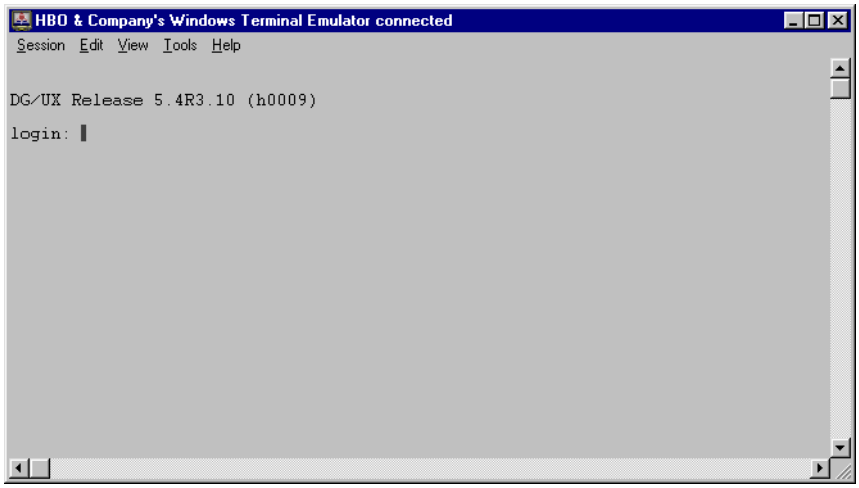
Opening a Session

1. Do one of following to open a session:
   - From the **Session** menu, select **Open** and then select the session from the list.
   - From the **Session** menu, select **Session Manager**. The Session Manager dialog box displays with the list of currently available sessions.



   Select the session and click the **Open** button.

WEM initiates a connection to the host. If the connection is successful, the host system logon procedure is displayed. Note that when opening a Secure Shell (SSH) session, you are first presented with a secure login information input dialog box. See “Chapter 2 - MANAGING WEM SESSIONS” for full details about SSH session setup and use.



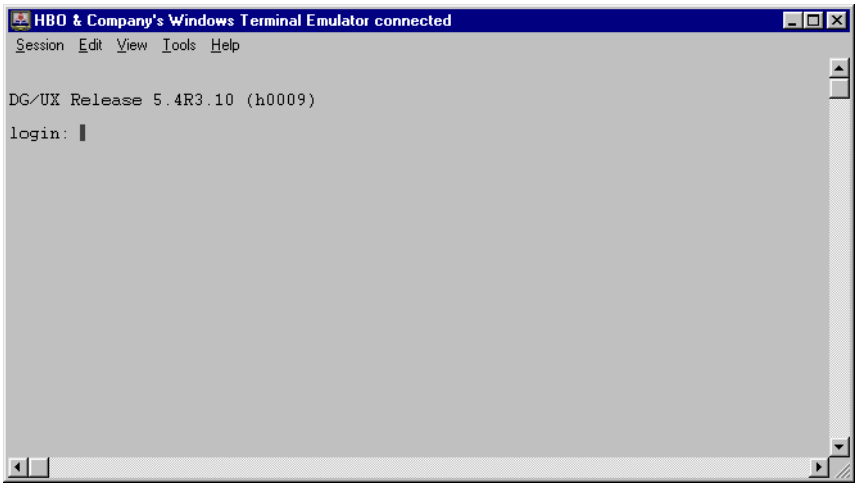
2. Sign on to the host using your facility's login procedure.

Connecting to the Host

To connect to the host using the default configuration, do the following:

1. From the **Session** menu, select **Connect** or press Alt+O.

   WEM automatically initiates a connection to the host using the default Session Definition. If the connection is successful, the host system logon procedure displays.



2. Sign on to the host using your facility's login procedure.

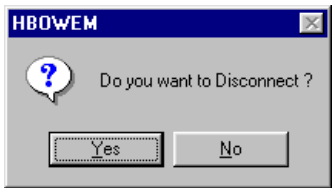
   NOTE: The Connect option on the Session menu switches to Disconnect.

Disconnecting from the Host

When WEM successfully connects to the host, the Connect option on the Session menu switches to Disconnect.

1. From the **Session** menu, select **Disconnect** or press Alt+O.

   WEM displays the following message:



2. Do one of the following:

   - Click **Yes** to disconnect from the host and end the currently active session.
   - Click **No** to continue the session.

USING PROPERTIES

The Properties submenu provides direct access to any open or active session's general, communication, and display setup. You can view the setup or make changes. Clicking the OK button on the dialog box saves the changes and updates the session.

- For the currently active session, use the Session menu Properties option to quickly view/change the following information.

Select. . .	**or type. . .**	**to view/change. . .**
General Settings	Alt+G	Session Definition information such as emulation type, keyboard mapping, name, connectivity type and bell setup.
Communications	Alt+C	Communications (network) information.
Display	Alt+D	Emulation attribute colors or the display font for the active session.

- For any session, use the Properties button on the Session Manager dialog box to edit information for the selected session.

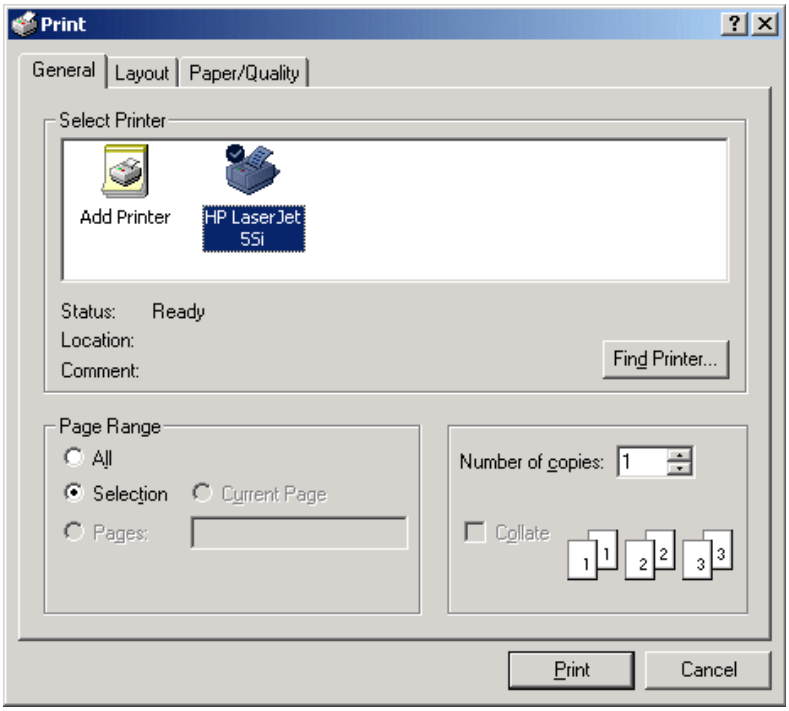
PRINTING FROM WEM

From the Session menu, you can access standard Window dialog boxes to setup your local workstation printer and print currently displayed information in the WEM terminal emulation window.

NOTE: Default font selections for printing are based on the settings you entered in the Font Options field of the Display Settings option. For more information, see "Defining Display Settings" on page 2-12.

Print Dialog Box

Use this standard Windows Print dialog box to print the currently displayed or selected information.

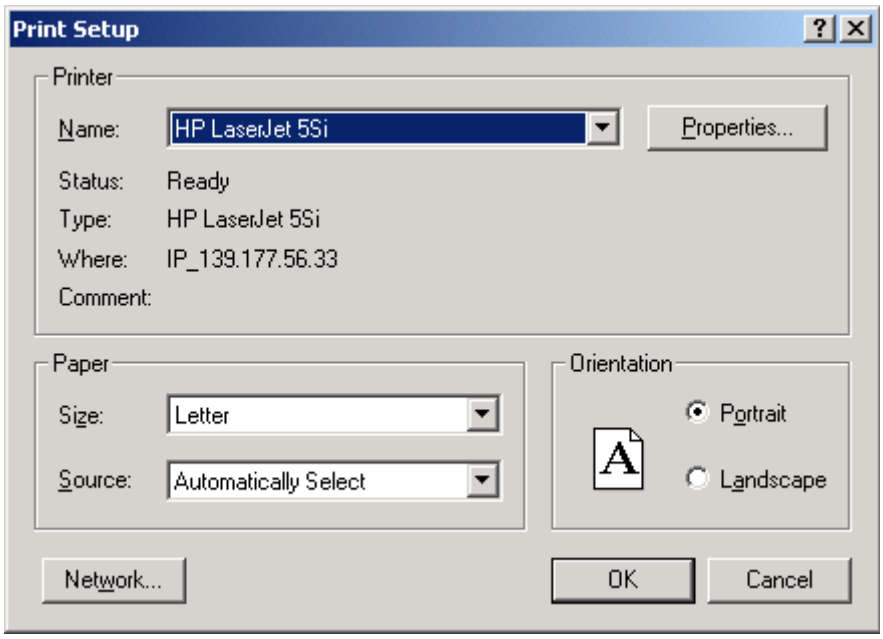


Use . . .	to . . .
Print range	select the information to print as follows: • All - the contents of the current window. • Selection - the area you selected in the window. • Pages - the option is dimmed and is not available.
Print quality:	click the Paper/Quality tab to select the print quality in dots per inch from the available list (depends on printer).
Copies:	select the number of copies. The default is one (1).
Collate copies	print multiple pages in sequence (page 1, 2, 3 vs. page 1, 1, 1, and then 2, 2, 2).

Use . . .	to . . .
Find Printer	find a different printer.

Print Setup

This is a standard Windows Print Setup dialog box. In this example, a typical Windows Print Setup dialog box is shown. For Help, click the question mark icon on the title bar and position the cursor over the area you need help. Click the right mouse button to display help information.



Use . . .	to . . .
Name	select a printer from the available list of printers.
Properties	define the printer selected.
Paper	define the size and source of the paper.
• Size	select the paper size (printer dependent) such as letter, legal, A4, etc.
• Source	select the paper tray from which the paper is pulled when printing (printer dependent).
Orientation	select the paper orientation.
• Portrait	print so the short side of the paper is across the top.
• Landscape	print so the long side of the paper is across the top.
Network . . .	connect to a network drive. The Capture Printer Port dialog box displays.

Defining Print Font Options

Default font selections for printing are based on the settings you entered in the Font Options field of the Display Settings option. For more information, see “Defining Display Settings” on page 2-12.

Chapter 2 - MANAGING WEM SESSIONS

INTRODUCTION

This section provides instructions for creating and maintaining WEM Session Definitions. Topics covered include:

- Creating a new session for Telnet or Secure Shell (SSH) connections
- Editing a session
- Deleting a session
- Defining VT220 Emulation Settings
- Mapping WEM keys

Instructions for performing these tasks are also available in WEM's online help. The Help provides step-by-step procedures for performing tasks in WEM. Help topics deal with a specific function or task and provide links to related information.

You can access online help for a STAR Navigator window using one of the following options:

- From the WEM window Help Menu, select **Help**

  The Help system is opened and the main Contents topic displays. From the Contents topic you can move through the Help system or search for specific topics.

- From an WEM dialog box, click the **Help** button

  Help for that dialog box displays.

CREATING A NEW SESSION DEFINITION

A session definition contains the general settings, communication, and display settings information that WEM uses to open and initiate a Windows terminal emulation session with a STAR or non-STAR host.

To use WEM, you need to create at least one session definition. This session definition can contain all the WEM default settings or you can modify settings as needed. However, you must define these settings before you can use WEM.

Creating a new session definition contains the following information:

- An overview of how to define a new session
- Instructions for defining specific session information
  - General Settings
  - Communication Information
  - Display Settings

Overview

The following is an overview of how you create or define a new WEM Session Definition.

1. From the **Session** menu, do one of the following:
   - Select **New** or press ALT+N.
   - Select **Session Manager** or press ALT+M to display the Session Manager dialog box. Click the New button.

     The Session Definition dialog box displays.
2. Complete the necessary information on the Session Definitions dialog box.
   - If you select DEC VT220 terminal emulation, click the VT220 Setup button to define the VT220 keyboard, display, and print emulation settings. The VT220 Emulation Settings dialog box displays. DEC (Digital Equipment Corporation) was acquired by Compaq Computer Corporation®.
   - If you need to use WEM on a non-STAR host, if desired, assign a map file to the Session Definition. Enter the map file name and click the Change button to map the keyboard. To locate the file, use the Browse button.

3. Click **OK** to save the Session Definition. The appropriate Communications dialog box displays.

   - For network (WINSOCK) connectivity, the Network Communications dialog displays.

4. Complete the Communications information.

5. Click **OK** to save the Communications information.

   The Display Settings dialog box displays.

6. Complete the Display Settings information.

7. Click **OK** to save the Display Settings information.

   The WEM emulation window or the Session Manager dialog box displays depending on the option selected in Step 1. The new session is now displayed on the list of available sessions.

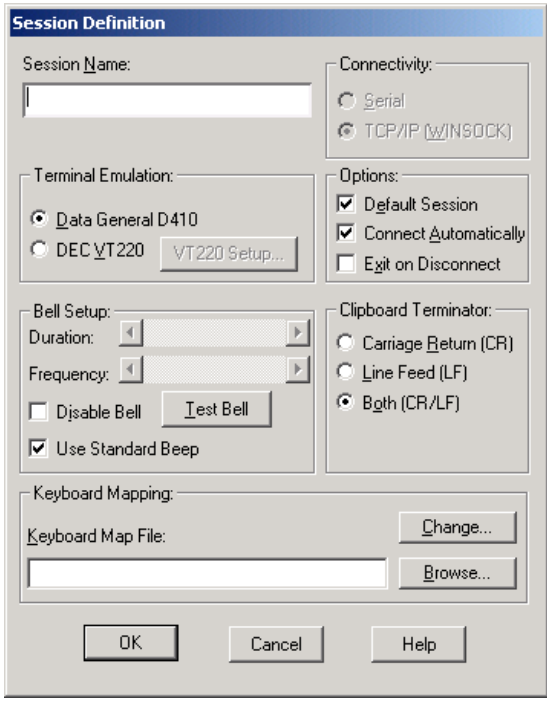
8. To use the newly created session, from the **Session** menu, click **Open** and select the session from the displayed list or select it from the Session Manager list and click the Open button. WEM tries to connect to the host. If successful, your facility's log in procedure is initiated.

Defining General Settings

1. From the Session menu, do one of the following:

   - Select **New** or press ALT+N.
   - Select **Session Manager** or press ALT+M to display the Session Manager dialog box. Click the New button.

     The Session Definition dialog box displays.



2. Define the new session General Settings as follows:

Use . . .	to . . .
Session Name:	Enter up to an 30 character alphanumeric name (no spaces) to identify this session. The name is required. Once defined, a session name is assigned a unique number and displayed on the Session/Open list. Up to 100 session names can be defined.
Connectivity:	Define the type of connection between the workstation and the host computer.
• TCP/IP (WINSOCK)	A local area network (LAN) connection using a Network Interface Card with WINSOCK TCP/IP connectivity.
Terminal Emulation:	Select the type of terminal emulation to use on the host computer. Selecting DEC VT220 emulation enables the VT220 Setup. . .button. Click this button to modify VT220 emulation settings.

Use . . .	to . . .
Options:	Check any combination.
• Default Session	If checked, this session is the default session. When you run WEM from Windows without a session name, WEM automatically opens the default session.
• Connect Automatically	If checked, when you open this session, WEM automatically connects to the host computer
• Exit on Disconnect	If checked, when you disconnect from the host, you automatically exit from WEM.
Bell Setup:	Define how the PC's bell sounds.
• Duration:	Set the length of time your PC bell sounds. To turn the bell off, move the scroll box to the far left of the scroll bar.
• Frequency:	Set the pitch at which your PC bell sounds. Move the scroll box to the right to make the pitch higher. Move the scroll box to the left to make the pitch lower.
• Test Bell button	Click this button to hear how your PC's bell sounds using your bell duration and frequency settings.
• Disable Bell	Check this box to disable (switch off) the PC's bell.
• Use Standard Beep	If this box is checked, an alternate mode of sound production is used. If the box is not checked, pressing the Test Bell button may not produce a sound. Check the box and retest the bell to produce a sound.
Clipboard Terminator:	Specify how each of the lines that you copy into the clipboard are to end. Select one.
• Carriage Return (CR)	End each line with a carriage return.
• Line Feed (LF)	End each line with a line feed.
• Both (CR/LF)	End each line with a carriage return and a line feed.
Keyboard Mapping:	Map the WEM key values for communications with non-STAR hosts.
• Keyboard Map File:	Enter the name of the file.
• Browse. . . button	Locate an existing map file.
• Change. . . button	Display the Keyboard Mapping window and map the keys to be used when communicating with the host computer. A file does not have to be selected to use Change.

3. Click **OK** to save the General Settings information. The appropriate Communications Information dialog box displays.

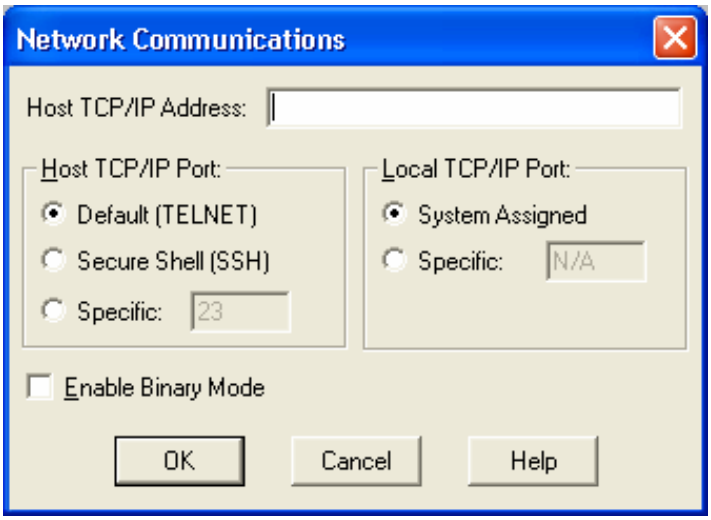
Defining Communications Information

When creating a new session definition, WEM automatically displays the correct communications dialog box based on the settings from the Session Definition dialog box. Two types of connectivity are supported:

- Network defines the information required to communicate with the Network Interface Card (NIC) to establish a network connection to the host computer.

NETWORK COMMUNICATIONS

For a new Session Definition using network communications, the following Network Communications dialog box is displayed:



Use the Network Communications dialog box to define the information required to communicate with the Network Interface Card to establish a network connection to the host computer. These settings can be changed at any time using the Session Manager (Session menu).

1. Complete the following information:

Use. . .	to. . .
Host TCP/IP Address:	Enter the remote host address information. Typically, this is a TCP/IP address or a name defined on a name server on the network. Contact your network support staff to obtain the proper address or name. If you are configuring a Secure Shell (SSH) session, make sure the host you specify supports SSH connections.

Use. . .	to. . .
Host TCP/IP Port:	The TCP/IP port number on the host system to which this user's session is connected. Typically the only other values used in this field are port numbers between 8000-8999, which are used by the MultiSTAR Software Environment (MSE) to allow multiple connections from a PC and still have defined CRT values in STAR products. Obtain the port number from the MIS department.
• Default (TELNET)	This is the default for Telnet connections.
• Secure Shell (SSH)	Specify an SSH session to a host server which supports SSH 1.1 or 2.0 connections. The port may not be changed in this case. See additional details under "Configuring and Using Secure Shell Sessions" on page 2-10.
• Specific:	The default port number for Telnet connections is 23. Before you set the port number to any other value, verify the port number with your MIS department.
Local TCP/IP Port:	The TCP/IP port number used by the workstation when connecting to the host.
• System Assigned	Uses the random local TCP/IP port value assigned by the workstation.
• Specific:	This field defines a specific local TCP/IP port for the workstation to use when connecting to the host. Valid values are 5001 - 65535. Use this field when multiple connections to a STAR host are desired from the same physical device such as a WinFrame server. Note: When defining a MultiSTAR Software Environment (MSE) port for this session, the WinFrame server's TCP/IP address and the value assigned to this field needs to be used in the TCP/IP address and port fields, respectively, in the Port Modification utility in STAR. This allows this session to always receive the same MSE port number and have defined CRT values in STAR products. This setting has no effect when a Secure Shell (SSH) connection is used.
Enable Binary Mode	This setting specifies whether Telnet Binary mode is used when communicating with the host. Binary mode needs to be used when communicating with a STAR host. Note: If the emulation type is Data General D410, this setting is forced on. Data General was acquired by EMC Corporation 2000®.

2. Click **OK** to save the information. The Display Settings dialog box displays.

Configuring and Using Secure Shell Sessions

WEM and STAR Navigator support Secure Shell (SSH) client sessions for connection to a STAR host on a server configured with a compatible SSH version 1 or 2 implementation. The Navigator and WEM installations include SSH client software consisting of a SSH-aware version of WEM (McKWem.exe) and other required STAR SSH workstation components. (Server-side SSH software is not part of STAR or MSE but must be installed as part of an operating system implementation on host servers, as appropriate for a particular version of UNIX® or Linux®.)

SSH Session Setup

The only required configuration change from previous versions of Navigator is the designation of an SSH session type, though other configuration options are available if needed.

As shown previously, the Network Communications dialog has a selection to designate SSH sessions for connections to STAR. If you attempt to make an SSH connection to a host server that does not support SSH sessions with STAR, you will get a connection error. Make sure only known SSH-enabled hosts are used in WEM Secure Shell session definitions.

SSH Session Login Procedures

When you open a session configured for SSH connection in WEM, whether directly or by a selection from the GUI Navigator Login list, you are prompted for your login and password in a GUI dialog box window, which appears before the character-based terminal session window is given control.

You can use either the ENTER or Tab keys to navigate from the login to the password field in the dialog. If the Cancel button is selected instead of logging in with OK, WEM should return to a neutral, idle state.

Enable auto-login at terminal prompt is now always checked. The user name and password entered in the pop-up window will be provided to the host, bypassing the terminal window prompt for that information.

NOTE: Unlike logging in at the terminal command prompt, if an incorrect login or password is entered in the GUI login dialog, the SSH connection will fail without offering a retry, and you will have to just start the connection attempt again.

INFORMATION ABOUT STAR SSH CONNECTIONS AND FIREWALLS

If a Windows XP, Windows Vista, or other third-party workstation firewall program is active, when WEM tries to establish the remote network connection for an SSH session, the firewall will very likely intercept the connect attempt as a possible malicious action, and then present some sort of warning and user options, depending on the firewall in use. You must add the appropriate allow application entry in the firewall's table of approved applications so that the following component, installed with WEM and STAR Navigator's SSH implementation, is allowed to communicate over the network as needed: **WemTnSsh.exe**

The exact method of making this firewall exception entry depends on the particular firewall program running. In some cases, if the user has administrator rights on the workstation, he or she may be able to allow the continued use of WemTnSsh.exe at the point of the first security interception by checking an offered option. In other cases, an administrator will have to make other configuration alterations to allow the use of WemTnSsh.exe on workstations with active firewalls.

SECURE SHELL TECHNICAL INFORMATION

WEM/STAR Navigator SSH client connections use a secure "tunnel" network connection over the standard SSH port 22. (WEM, itself, reports the Telnet Port 23.)

When selecting an SSH implementation for your hosts, McKesson strongly recommends using SSH 2.0. STAR does work with SSH 1.1 connections, but these offer limited security.

NOTE: At this time, STAR Navigator's SSH implementation does not support "Private Key" features for automatic SSH logins, and given the potential for compromising security with private key implementations, there are no current plans to support this feature.

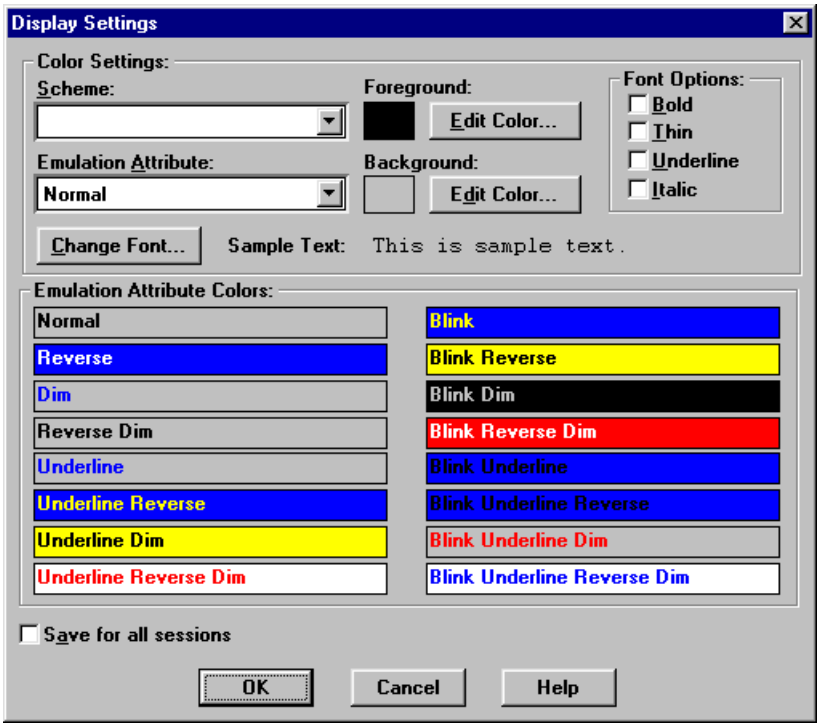
Generally accepted industry figures advise that SSH encrypted connections can impact overall performance as much as 25%--similar to other standard encryption technologies, such as browser-based SSL Web sessions. In practice, actual average performance impacts are usually lower, often with little effect on the user experience. Nonetheless, planning for SSH implementations and resources should always factor in the inherent overhead of end-to-end encryption technologies within the context of expected network load conditions.

SOFTWARE LICENSE NOTICE

The component wodSSH.dll is distributed under license to McKesson from weOnlyDo! COM. The wodSSH.dll must not under any circumstances be copied or redistributed independent of a valid, authorized Navigator installation.

Defining Display Settings

Once you complete the Network Communications information for the new session and click OK to save the information, the Display Settings dialog box displays.



Use Display Settings to change how information is displayed on your Windows terminal emulation screen as follows:

Use . . .	to . . .
Color Settings:	define the WEM terminal emulation window display attributes.
• Scheme:	assign a predefined scheme (a set of background and foreground colors and font options) to the session being edited. You can assign one scheme to a session. A list of supported schemes displays.
Emulation Attribute:	customize or change one, some, or all display emulation attributes
• Foreground:	change the foreground (text) color for the selected emulation attribute.
• Background:	change the background for the selected emulation attribute.

Use . . .	to . . .
• Font Options:	apply italic, underline, and bold or thin character formatting to the attribute's text. Text is displayed and printed based on the settings in this field. If you want different font options for printing, see "Defining Print Font Options" on page 1-22.
• Sample Text:	view the look of the highlighting method, text, and color options you selected.
• Change Font . . .	change the WEM terminal emulation display font assigned to this session. Note: You can assign one font to a session. That font is assigned to all emulation attributes in a predefined scheme or a customized scheme.
Emulation Attribute Colors:	view the appearance of the emulation attributes from one of the predefined schemes or from the result of your customizing one or more attributes in a predefined scheme.
Save for all sessions	save these display settings for all defined sessions.

SELECTING A SCHEME

To select a scheme for the current session, do the following:

1. From the **Color Settings** frame, display the list of available emulation schemes.
2. Select the appropriate scheme.

   The emulation color scheme displays below in the Emulation Attribute Colors frame.
3. If needed, click the **Change Font. . .** button to change the font assigned to this session.
4. Click **OK** to save your selection.

CUSTOMIZING EMULATION ATTRIBUTE COLORS

To customize a session's emulation attribute colors, do the following:

1. Select the **Emulation Attribute** you want to change.
2. Click the **Edit Color** button to display the Windows Color window and change the background and/or foreground colors for the selected attribute.
3. Check the results in the Emulation Attribute Colors frame.

4. Check the appropriate combination of font options.

   NOTE: Use of italic is not recommended. Italic text is difficult to read.

5. Check the Sample line to make sure you have the defined an appropriate look for the text.

   NOTE: To change the font for all the emulation attributes in the terminal display, use the Change Font. . . button.

6. Repeat steps 1 - 5 for each Emulation Attribute to be changed.

7. Click **OK** to exit and save your changes.

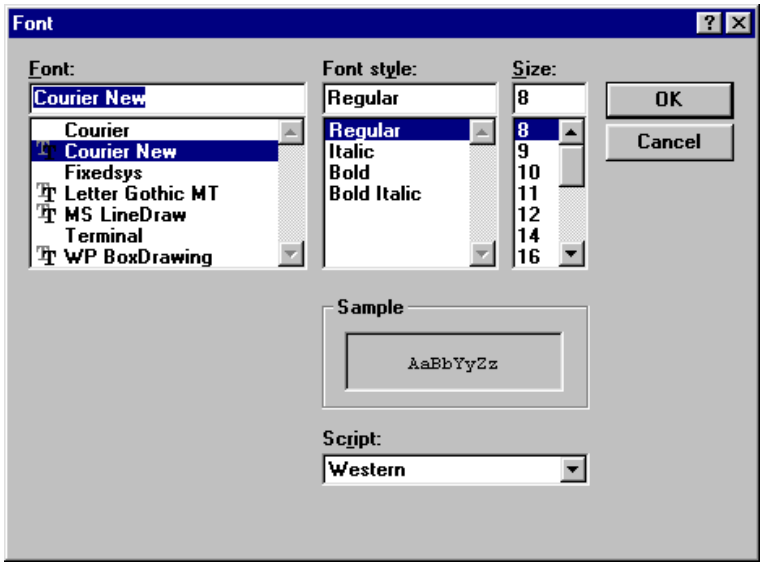
CHANGING THE DISPLAY FONT

To change the display font for the active session, do the following:

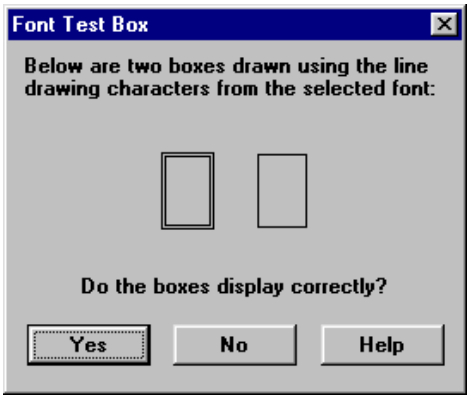
1. Click the **Change Font. . .** button to change the WEM terminal emulation display font assigned to this session.

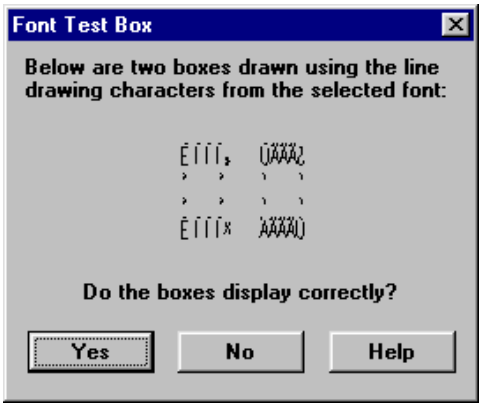
   NOTE: You can assign one font to a session. That font is assigned to all emulation attributes in a predefined scheme or a customized scheme.

   The standard Windows Font dialog box displays.



2. Make the necessary changes. Click **OK**. The Font Test Box dialog box displays.





   In this example, the Font Test box on the left shows a correct display and the example on the right shows boxes displaying incorrectly.

3. Use the Font Test Box to test whether the line drawing characters from the selected font display boxes correctly.

   - Click **Yes** if the boxes display correctly.
   - Click **No** if the boxes are not displayed correctly.

4. To correct the box display, select and test another font until you find a font that meets the requirements. Only certain fonts and sizes of any given font support the line drawing character set. This is determined by the font definition itself, not by WEM. Some experimentation may be necessary to find a suitable font and font size.

MAPPING WEM KEYS

Keyboard mapping allows you to use WEM on non-STAR hosts and use just one emulator package with systems from various vendors.

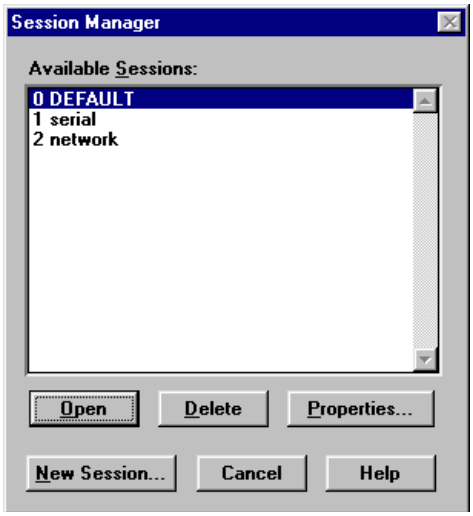
The keyboard map file contains the mapped keys and their new values. You can assign the keyboard map file to one or many session definition(s).

When an WEM session is started, the specified keyboard map file is opened and the values are stored in memory in WEM. The mapped value is sent to the host when the key is pressed. These mapped key values are used throughout the WEM session, even when you change terminal emulation modes.

Keyboard Mapping Dialog Box

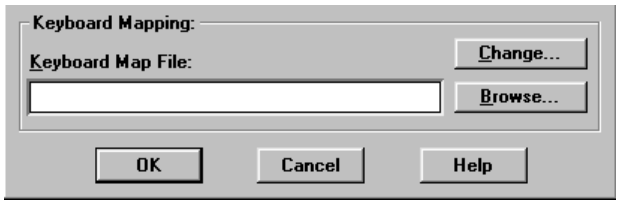
The Keyboard Mapping dialog box is used to program WEM to send non-standard values to the host when a key is pressed. Access is through the Keyboard Mapping frame's Change. . . button on the Session Definition dialog box.

1. From the **Session** menu, select **Session Manager** or press Alt+M. The Session Manager dialog box displays.



2. Select the session to which you want to assign a keyboard map file or make changes. Click the **Properties** button and then select **General Settings. . .** from the submenu.

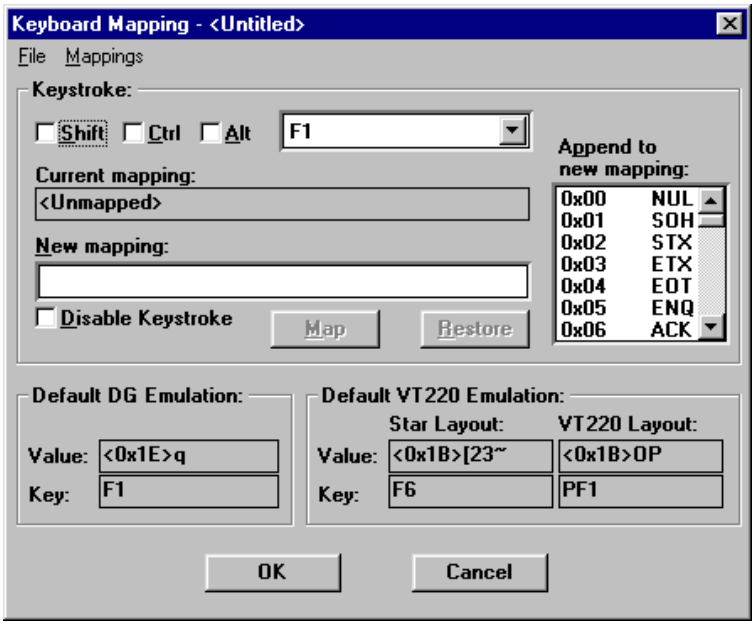
The Session Definition dialog box displays with the Keyboard Mapping frame at the bottom of the box.



3. At the **Keyboard Mapping** frame, do one of the following:

   - If you know the map file name, enter the name in the Keyboard Map File text box.
   - If you do not know the name, click the Browse button to locate the map file. The Select Keyboard Map File dialog box displays. Locate the file and click **O**K. You are returned to the Session Definition dialog box.
   - To create a new file, leave the filename field blank.

4. Click the **Change. . .** button. The Keyboard Mapping dialog box displays.



To . . .	do this . . .
Open an existing map file	From the File menu select Open. Locate the map file and click OK. The map file is opened. To view any mappings, use the Mappings menu List. . . option to display the Mapped Key list.
Open a new map file	From the File menu select New. A new map file is opened for this session.

To . . .	do this . . .
Keystroke:	
• Map a keystroke	1 In the Keystroke frame, select the key to be mapped. The WEM value(s) for that keystroke (if active) are displayed in the Default Emulation frames at the bottom of the box. 2 Check the desired keystroke combination, such as Shift+F1, Shift+Alt+F1. 3 Enter the new mapping in the New Mapping text box. 4 Click the Map button to save the mapped keystroke and add it to the Mapped Key list. The Map button switches to Unmap. Note: If you entered a map value for a keystroke and have not hit the map button before selecting a different keystroke combination, you are prompted to save the mapping.
• Unmap a keystroke	1 In the Keystroke frame, select the keystroke to be unmapped. The WEM value(s) for that keystroke (if active) are displayed in the Default Emulation frames at the bottom of the box. Note: If you don't remember the keystrokes that are mapped, select List. . . from the Mappings menu. The Mapped Key List displays. 2 Click the Unmap button. The WEM default value for that keystroke is restored.
• Append to new mapping	Insert hex values into the new mapping value.
• Disable a keystroke	Check the Disable Keystroke box. The keystroke is no longer functional.
• Restore the current mapping	Click the Restore button to cancel the current mapping for the selected keystroke combination before you click the Map button.
• Reset all mappings	From the Mappings menu, select the Reset All option. All keystroke mappings in the file are restored to their default values.
• List mappings	From the Mappings menu, select the List . . . option. The Mapped Key List dialog displays. View the listing or select a mapping to edit.
• Edit a listed mapping	1 From the Mappings menu, select the List . . . option. The Mapped Key List dialog displays. 2 Select the mapping to be edited. Click the Edit button. The mapped keystroke displays in the Keystroke frame. 3 Click the Unmap button. The WEM default value for that keystroke is restored. 4 Remap the keystroke and click the Map button. The edited mapping is added to the Mapped Key list.

5. Click **OK** to save the changes to the map file. The Session Definition dialog box displays.

   NOTE: If a map file does not exist for this session, WEM prompts you to save the mapping to a new or existing map file.

6. Click **OK** to assign the map file to this Session Definition. The Session Manager dialog box displays.

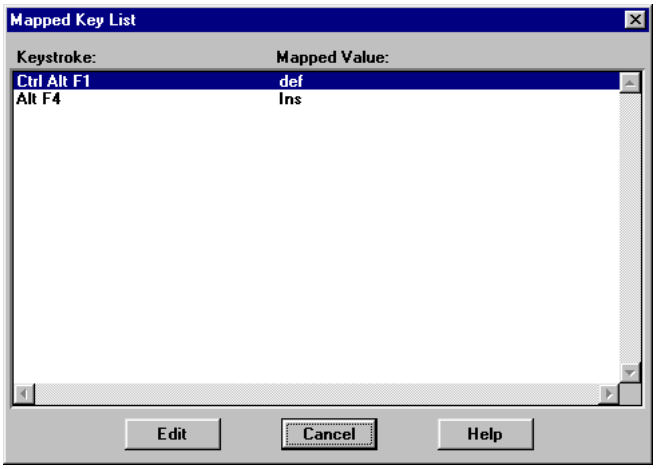
Keyboard File and Mappings Menu

The Keyboard Mapping dialog box provides the following menu options:

Use . . .	to . . .
File Menu	manage the keyboard map files.
New	open a new keyboard map file.
Open	open an existing keyboard map file.
Save	save changes to the currently open and active keyboard map file.
Save As. . .	save this file to a new file with a different name.
Exit	exit Keyboard Mapping and return to the Session Definition dialog box.
Mappings Menu	manage the keystroke mappings
Reset All	reset all keystrokes to their default DG or VT220 emulation mode values.
List . . .	list the mapped keystrokes. The Mapped Key List dialog box displays with the list of keystrokes and their remapped values.

Mapped Key List Dialog Box

Use the Mapped Key List dialog box to view the mapped keystrokes and, if needed, select a keystroke you need to edit.



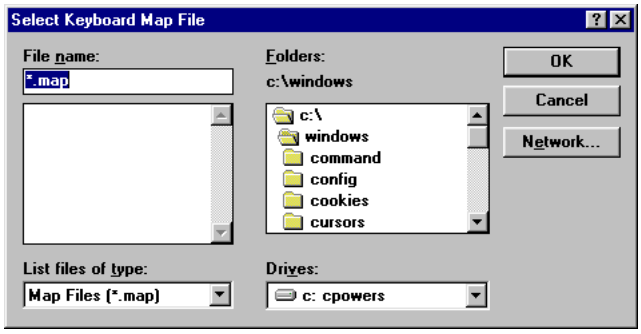
To select a keystroke for editing, do the following:

1. Select the keystroke that you need to change.
2. Click the **Edit** button or double-click the keystroke.

   The Keyboard Mapping dialog box displays with the UnMap button turned on.

Select Keyboard Map File Dialog Box

The Select Keyboard Map File dialog box is displayed when you click the Browse button on the Keyboard Mapping frame. This standard Windows dialog box is used to locate an existing map file.

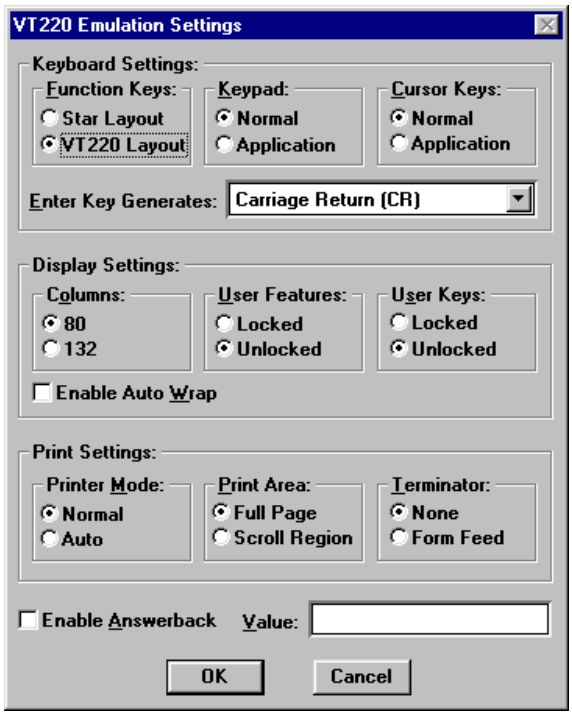


Use . . .	to . . .
File name:	enter the map file name if you know it.
List files of type:	select the appropriate file type(s).
Folders:	select the correct folder.
Drives:	select the correct drive.
Network . . . button	If you are connected to a network, the Map Network Drive is a standard Windows dialog box that displays when you click the Network . . . button on the Select Keyboard Map File dialog box. Use these options to map your PC to a new network drive and define the required path. Click the question mark to obtain Windows help.
OK button	to save your file selection and return to the Session Definition box.

DEFINING VT 220 EMULATION SETTINGS

Use the VT220 Emulation Settings dialog box to set up emulation for a DEC VT220 terminal. You can define these settings as you are creating a new session definition or for any open session definition.

1. Open an existing or a new session and display the Session Definition dialog box for that session.
2. Click the **VT220 Setup** button on the **Session Definition's Terminal Emulation** frame. The VT220 Emulation Settings dialog box displays.



3. Make the necessary selections. Click **OK** to save the settings.

Keyboard Settings:	
• Function Keys:	Choose one: • STAR Layout - Standard STAR application function keys. • VT220 Layout - Standard VT220 function keys (default).
• Keypad:	Choose one: • Normal - The keyboard's numeric keypad acts as a numeric keypad (default). • Application - The keyboard's numeric keypad acts as function keys as defined by the application (App Seq).

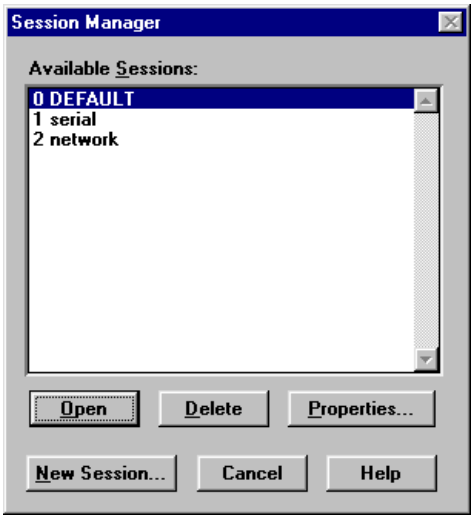
• Cursor Keys:	Choose one: • Normal - The keyboard's cursor keys act as cursor keys (default). • Application - The keyboard's cursor keys act as function keys as defined by the application (App Seq).
• Enter Key Generates:	Select the characters sent when you press the Enter key. Options are Carriage Return (CR) (default), Line Feed (LF) and Carriage Return/Line Feed (CR LF).
Display Settings:	
• Columns:	Choose one: • 80 - displays 80 columns per line (default). • 132 - displays 132 columns per line.
• User Features:	Choose one. • Locked - The host computer cannot send commands to change these features. • Unlocked - The host computer can send commands to change these features (default).
• User Keys:	Choose one: • Locked - The host computer cannot send commands to change the function of user-defined keys. • Unlocked - The host computer can send commands to change these key functions (default).
• Enable Auto Wrap:	Check this box to turn on automatic text wrapping at the right margin. Off by default.
Print Settings:	
• Printer Mode:	Controls the printing functions of the VT220. • Normal - Data is sent to the display screen and printed on-demand (default). • Auto - Data is sent directly to the printer as received from the host.
• Print Area:	Controls what prints when you print a screen. • Full Page - Print only what is displayed on the screen (default). • Scroll Region - Print the contents of the entire scroll area. (Use when printing items such as 132-column wide reports.)
• Terminator:	Controls whether a form feed (FF) character is sent following printed data. • None - No form feed character is sent. The printer does not eject the last page. • Form Feed - A form feed character is sent. The printer ejects the last page of a print job.
Enable Answerback:	Controls if an auto answerback is sent. If checked, auto answerback is on. The default is off.
Value:	If checked, enter the appropriate answerback string.

EDITING A SESSION DEFINITION

Use the Session Manager option on the Session menu to edit an existing Session Definition.

1. From the **Session** menu, select **Session Manager** or press ALT+M.

   The Session Manager dialog box displays.



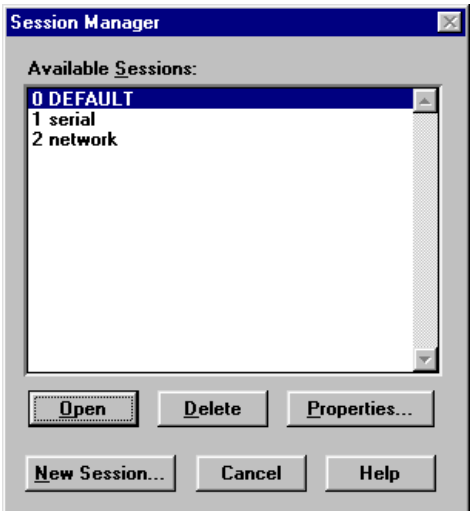
2. From the list of available sessions, select the one to be edited.
3. Click the **Properties** button. A submenu displays.
4. Select the information type to be edited.
   - General Settings (Session Definition dialog box)
     - Keyboard Mapping
     - VT220 Emulation Settings
   - Communications (Network Communications dialog box)
   - Display (Display Settings dialog box)
5. Make the necessary changes to the Session Definition.
6. Click **OK** to save your changes. The Session Manager dialog box displays.
7. Click **OK**. The WEM Windows terminal emulation window displays. The updated Session Definition is available.

DELETING A SESSION DEFINITION

Use the Session Manager option on the Session menu to delete an existing Session Definition.

1. From the **Session** menu, select **Session Manager** or press ALT+M.

   The Session Manager dialog box displays.



2. From the list of available session definitions, select the one to be deleted.
3. Click the **Delete** button.

   The message, Delete session - [Session Name]?, displays.

4. Click **Yes** to confirm the deletion. The selected session is removed from the list.

   If you do not want to delete the session, click No.

5. Click **OK**. The Session Manager dialog box displays.

Chapter 3 - USING EDIT AND VIEW MENUS

USING EDIT MENU OPTIONS

The WEM Edit menu provides options to copy and paste information displayed within the emulation window, and to reset the emulation display settings to their default values.

Copying Information

Use the Copy option on the Edit menu to copy information from the WEM emulation window

- to another Windows application
- back into the WEM window as a response to a prompt to save retyping.

To copy information to the Clipboard from WEM:

1. Using the mouse, select the text you want to copy.
2. From the **Edit** menu, select **Copy** or press Ctrl+Del.

   The information is copied onto the Windows Clipboard where it remains until you replace it with a new selection or until you quit Windows.
3. Use the **Paste** option or press Ctrl+Ins to move the contents of the Clipboard into another Windows application or back into WEM.

Pasting Information

Use the Paste option on the Edit menu to paste information from the Windows Clipboard into the WEM emulation window. The information on the Clipboardcan come from another Windows application or from WEM.

To paste the Clipboard contents into WEM:

1. Place the cursor where you want to paste the contents of the Clipboard.
2. From the **Edit** menu, select **Paste** or press Ctrl+Ins.

   The information is moved into WEM.

Resetting Emulation

Use the Edit menu Reset Emulation option to restore emulation settings of the currently connected session to the default values for the particular terminal emulation type.

USING THE VIEW MENU OPTIONS

The WEM View menu provides options to view user host and UNIX® sign-on information, status information for the active session, use keyboard buttons, and display in full screen mode.

Viewing User Information

Use the View menu User Information option or press Alt+U to check pertinent information about the currently signed on user. The User Information window displays with the user name in the title bar.

Use . . .	**to check . . .**
User ID:	network user identification string.
User Name:	network user name.
Job #:	current host job number.
Port #:	currently assigned network port number.
Application Information:	
• Sign-on Group:	
• CRT:	
• Initial Menu:	
• Nav. View:	
• Current data ID:	
• Default printer:	
• Other printer:	
• MSP printer:	
UNIX Information:	
Logon ID:	
PID:	
Pseudo Drive:	
Base:	
DB Name:	
Block Size:	

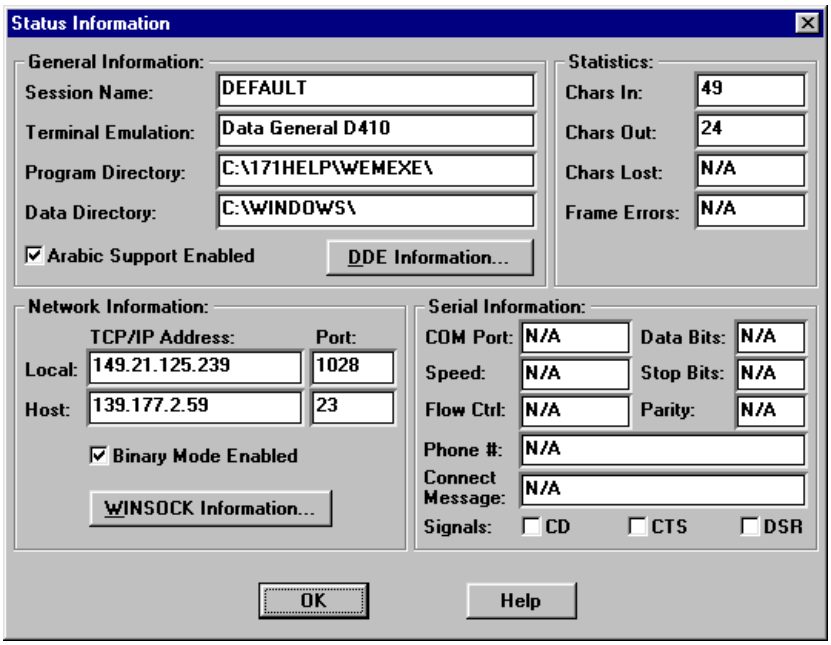
Checking WEM Status

Use Status Information to check the status of the currently active WEM session. The information is view-only and differs depending on the type of connectivity used, network (WINSOCK TCP/IP) or serial.

To check WEM status, follow these steps:

1. With a session active, from the **View** menu, select **Status Information** or press Alt+I.

   The Status Information dialog box displays.

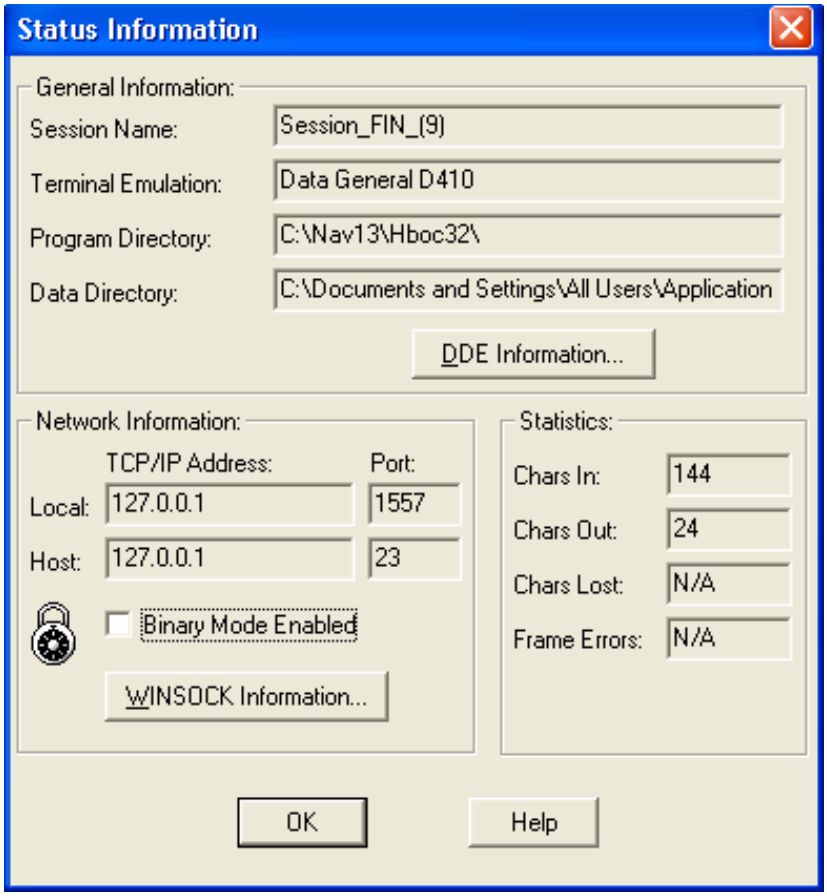


NOTE: Depending on connection used network information is displayed.

View . . .	to check . . .
General Information:	
• Session Name:	the name of the session that is currently open.
• Terminal Emulation:	the current emulation type (DG D410 or VT220).
• Data Directory:	the default directory in which all data is downloaded or stored.
• Program Directory:	the directory from where WEM was launched. This is the location of all support executables and help files.
• Arabic Support Enabled	whether Arabic Windows Support is enabled. This functionality is only available under Arabic Windows 3.1.

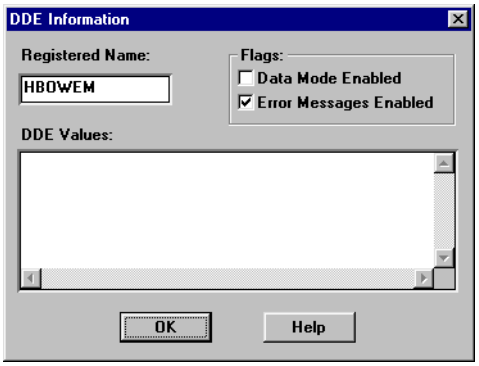
View . . .	to check . . .
• DDE Information. . .	display the DDE Information dialog box to view the internal DDE (Dynamic Data Exchange) values used by WEM. This information is used for troubleshooting problems.
Statistics:	
• Chars In:	the total number of characters received by WEM.
• Chars Out:	the total number of characters sent by WEM.
• Chars Lost:	the total number of characters lost in transmission (serial only).
Network Information:	(Only available when a network connection is established.)
• Local TCP/IP Address:	the local (PC) IP address.
• Local TCP/IPPort:	the local (PC) port number. The port is typically a randomly assigned value that enables each Windows process to be treated differently by the network card unless a specific value was assigned in Network Communications.
• Remote TCP/IP Address:	the IP address of the host system.
• Remote TCP/IPPort:	the port number of the host system.
• Binary Mode Enabled:	if binary mode is turned on/off (checked/unchecked).
• WINSOCK Information. . .	information specific to the Windows Sockets implementation of the current network stack.

If you are connected to a Secure Shell (SSH) session, the**Status Information** window also shows a pad-lock icon and always indicates the host as 127.0.0.1 (same as local), instead of the remote host IP. The SSH tunnel within which WEM is running actually uses port 22 across the network (it uses port 23 locally as a proxy for the host).



2. Click the **DDE Information** and/or **WINSOCK Information** buttons (if available) to obtain more information about the Dynamic Data Exchange or network connectivity.

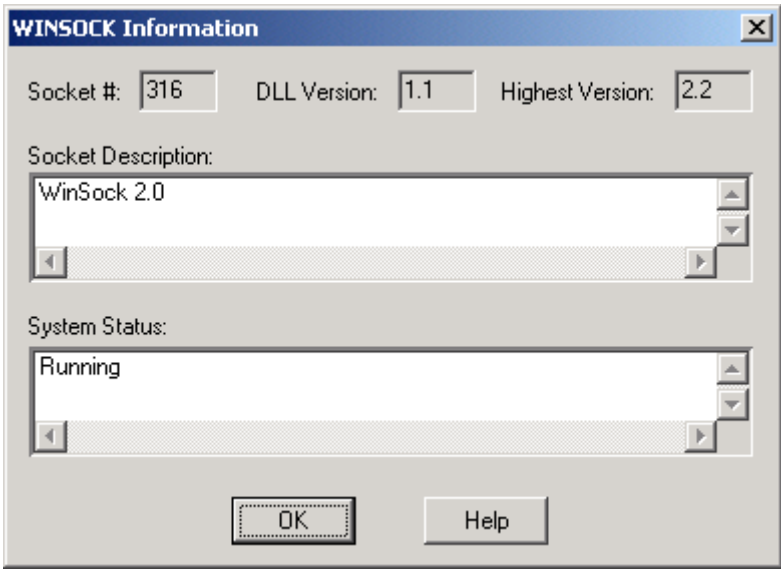
DDE INFORMATION



The DDE Information dialog box provides information about certain connection settings and is primarily used for debugging transmission problems.

View . . .	to check . . .
Registered Name:	registered name of the terminal emulation program.
Flags:	
• Data Mode Enabled	data mode is turned on/off (checked/unchecked).
• Error Messages Enabled	display of error messages is turned on/off (checked/ unchecked).
DDE Values:	Dynamic Data Exchange values

WINSOCK INFORMATION



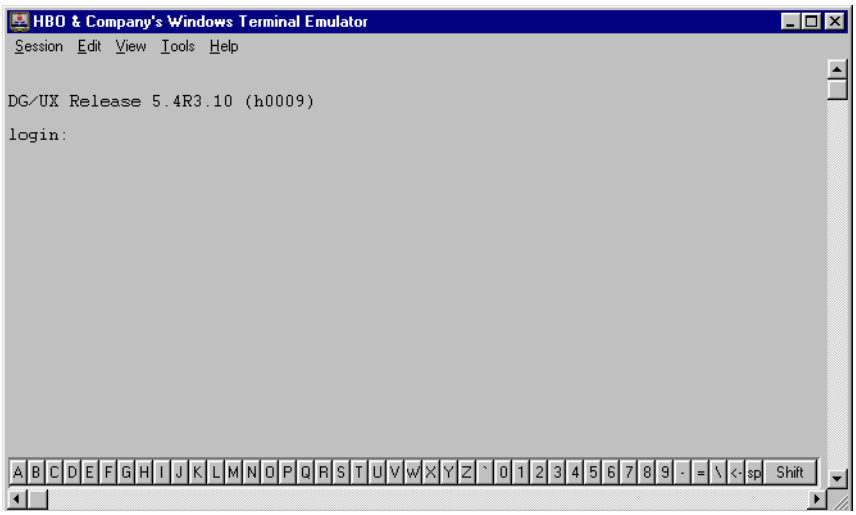
The Status Information dialog box for a network connection provides the following WINSOCK information:

View . . .	to check . . .
Socket #:	the internal socket number assigned to the connection.
DLL Version:	the version number of the dynamically linked library element.
Highest Version:	the highest version supported by this network stack implementation of WINSOCK.
Socket Description:	description information specific to the current network stack.
System Status:	status information specific to the current network stack.

Using Keyboard Buttons

Use the View menu Keyboard Buttons option to display a keyboard on the bottom of the bottom of the WEM window active session for data entry. Using the mouse or a pen, you can use the keyboard buttons to enter information.

1. From the **View** menu, select **Keyboard Buttons**. A set of keys displays across the bottom of the WEM window.



2. Use your mouse or pen to enter data.

3. To disable Keyboard Buttons, select the option again from the menu.

Displaying In Full Screen Mode

Use the Full Screen option on the View menu to expand the WEM window to fill the entire screen. In Full Screen mode, you can resize the window using the standard Window controls.

To display the full screen

- From the View menu, select Full Screen.

  The WEM window expands to fill the screen.

To return to normal screen mode

- From the View menu, select Full Screen.

  The WEM window is returned to previous size.

NOTE: Alternatively, you can use the standard Window controls to resize the window with the mouse.

Chapter 4 - USING WEM TOOLS

INTRODUCTION

The WEM Tools menu provides access to the following functions:

Use . . .	to . . .
Graphing	access a graph application (WEMGS32) window to view, edit and/or print graph information.
Capture to File	control (start/stop) the continuous capture of inbound and/or outbound data to a file on the PC (or a file server) for troubleshooting communications problems.
Information Windows	view information on a patient or account from another function within the STAR system in an Information Window without exiting the current function, if enabled. You select the desired window from the pull-down menu. The windows are application-specific and are downloaded from within the STAR application.
Function Branching	quickly access STAR application functions you frequently use from the pulldown menu, if enabled. The list of functions is downloaded from within the STAR application.

This section provides instructions on how to use each of these functions.

GRAPHING

Select this option to open a graph application (WEMGS32) window.

You may use this option to:

- Open, display, edit and print a graph from a file that was previously downloaded from STAR. The file extension is .HGL.
- Create a new graph based on data you enter. You may save your new graph in a file with a .GSP extension.
- Load, display, edit and print a graph that was previously created and saved with a .GSP extension.

When you request a graph from the STAR system, a graph file having an extension of .HGL is downloaded to your PC and the graph application is opened automatically. At this point, the terminal emulation window (MckWEM) is hidden, and the graph application window is displayed. When you close or exit from the graph application window, the terminal emulation is redisplayed.

The graph application window also provides online help, that explains the functionality of the application. To access the help file for the graph application, open the application by selecting the Graphing option in WEM, and then select the Help menu item from the graph window.

Product-specific Graphs

Each of the STAR products has predefined graphs for selected applications. When you request a graph from a STAR application, the system automatically compiles the graph and displays the graph on the screen. Each of these graphs has defaults for such features as graph type, colors, and text already defined. However, you can use the edit functions in WEM's Graphical Interface to change the graph to suit your needs.

NOTE: Refer to the reference guide for each product for more information about selecting graphs within an application.

To open an existing file, select Open from the WEMGS32 File menu. At this point, you can edit, print, or translate your graph file into a different format to be exported. To use any of the edit functions, open the Edit menu and select the property of the graph to be edited. When you are finished editing your graph, use the options on the System Properties tab to save the file.

The predefined graphs available for each of the STAR products are discussed under separate headings on the following pages.

STAR Financials General Accounting

The following graphs are available through STAR Financial General Accounting:

Graph	Description
Accounts Payable	
Employee Productivity	• Shows the number of voucher lines entered by each Accounts Payable employee. • Shown in a bar graph, the information is extracted from the Employee Productivity Report that is produced daily.
General Ledger	
Actual and Budgeted General Ledger Accounts	Displays individual or group General Ledger Accounts according to actual and budgeted dollars. The data displays in a bar graph that shows the relationship of actual to budgeted dollars for any specified time period.
Payroll	
Employee Job Class Population Analysis	A pie chart showing the breakdown of the population according to job class description. Showing only active positions, the graph displays the top eight job classes, and summarizes the rest as Other.
Termination Analysis by Month	This graph analyzes terminations for a specified time period in a month. The graph displays terminations of full-time employees, part-time employees and the total terminations using overlapped lines.

Graph	Description
Department Position Statistics	Using the Job Class Position Number, this graph shows position statistics in hours or dollars for any department: Budgeted, Assigned, Productive, Non-Productive. The display shows the top six Job Class Positions for budget data, with the remaining noted as Other. The graph can gather data for: Calendar year, Fiscal year, Year-to-date, Specified time period.
Materials Management	
Item/Vendor Statistics	This graph displays statistics in the following areas for item vendors for a monthly period: Ordered, Received, or Returned Quantities, by the vendor number and name, and the item number and name.
Vendor Statistics	This graph displays statistics in the following areas for vendors (number and name) for a monthly period: Ordered, Received, Returned, Missed, or Back-ordered.
Entity Statistics	This graph shows purchasing trends and tracks dollars received versus dollars issued per month.

STAR FINANCIALS PATIENT ACCOUNTING

The following graphs are available through the Patient Accounting system:

Graph	Description
Unbilled Account Analysis	Failed Billing Requirements -- Controlled By: This graph shows the areas that are responsible for failed bill edits due to missing or invalid information. The graph also provides the dollars associated with each area.
Department Revenue	Percent of Total Revenue by Department: This graph show the percentage of total revenue by department.
Payor Analysis	Inpatient Liability by Payor: This graph provides a breakdown of inpatient accounts receivables by payor. Revenue Breakdown by Payor: This graph depicts revenue by inpatient, outpatient and emergency room revenue.

STAR LABORATORY

The following graphs are available through the STAR Laboratory system:

Graph	Description
Check Five	Patient data for the last five accessions is presented in a line graph. One to four results from a test can be selected to display on the graph. If more than one result is selected, the results are normalized. When one result is presented, the low and high normal ranges are indicated by straight lines labeled as such. Each of the results is indicated by a different color line and the actual value is indicated by a symbol.
Physician Utilization	The number of ASAP, Stat and Routine orders placed by a physician are represented in a bar chart for a given month. Percentages are shown in a pie chart.
Turnaround Time Report	The number of tests per a range of minutes is represented in a column graph based upon the selected criteria for the report.
Workload Summary by Section	For a given laboratory section, the number of tests performed and/or the weighted values for each category are presented in a column graph. Up to four workload categories are selected for the report and graph.
Peak Workload Analysis	The raw count and/or the weighted values for the tests performed within a section are presented in a cluster column graph for each half hour increment during the requested time period.
Workload Summary by Section/Shift for Procedure Groups	The total raw counts or weighted counts per ordering category are displayed in a pie chart for a laboratory section per shift and procedure group selected for the report. This graph can include a user specified number of days worth of data.

STAR PATIENT CARE

Graphs are available with STAR Patient Care for the following functions:

Graph	Description
Vital Signs	This line graph can depict up to three sets of clinical observations that were entered through Nursing or the Horizon Clinical Documentation™ (or Horizon Expert Documentation™, if applicable) interface.
Patient Care Statistics	A wide variety of graphs are available for charge, order and patient processing data in the system. Up to seven variables of departments or patient types can be graphed at once.
Clinical Management Workload	This graph shows total workload by period of time, using the unit values associated with each type of department activity and is broken down by patient type.

Graph	Description
Scheduling Clerk Productivity Analysis	This three-dimensional, stacked column graph depicts the number of appointments processed by a clerk, with cancellations and walk-ins broken out separately.

STAR PHARMACY

Graphs are available with STAR Pharmacy for the following functions:

Graph	Description
Workload	
Revenue	There are multiple ways that revenue or cost data can be graphed for the Workload function: • By Medication (schedule/PRN), Solution types or both • For Facility, Nursing stations, Inpatients or Outpatients • Over Years, Months and Days
Dispensing	There are multiple ways that doses, orders or package data can be graphed for the Dispensing function: • By Medication (schedule/PRN), Solution types or both • For Facility, Nursing stations, Inpatients or Outpatients • Over Years, Months and Days.
Clinical	Graphs for Clinical information can include several factors that can be illustrated separately or together, for Facility stations, Inpatients or Outpatients for a specified period: • Orders for non-formulary items, restricted-use items, and formulary alternatives. • Patient Documentation, Order Documentation, Target Drug Worksheet postings, and Adverse Drug Reactions (ADR) and Drug Interaction overrides. • User-defined statistic postings.
Floorstock Usage	You can graph the floorstock usage for individual or multiple stock locations over the past year.

STAR RADIOLOGY

Graphs are available with STAR Radiology for the following functions:

Graph	Description
Exam Count Information	This graph includes the number of exams for shift(s), section(s), or patient type group(s), for any specified date range.

Graph	Description
Physician Utilization Information	Information for physician utilization can be for one, multiple, or all physicians. These graphs can be displayed according to admitting, ordering, consulting, referring or attending physician. The number of exams ordered per section can be displayed denoting the exams per inpatient, outpatient, and emergency room patients. Also, the number of patients referred by each physician can be graphed.
Workload Productivity	There are several ways workload information can be graphed. The relative workload units can be sorted by section, date, technologist, shift, exam code, or patient type group.
Film Utilization/ Repeat Film Analysis	Repeat rates can be graphed by technologist or by section. The percentage of repeat films to total films can be displayed for a selected date range. The user can elect to view information in summary form or in detail for all or selected technologists and sections. When viewing detailed information, the repeat reasons are included in the graph.

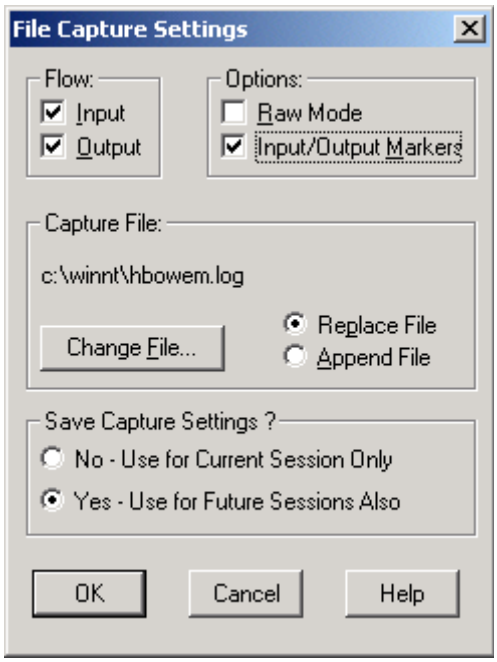
CAPTURE TO FILE

Use the Capture to File tool to control the continuous capture of all information that WEM sends and receives from the host computer. This tool is mainly used by hospital support staff to troubleshoot communication issues and McKesson staff to capture global listings from remote sites.

Use . . .	to . . .
Start Capture . . :	start the continuous file capture process. The File Capture Settings dialog box displays. Specify the data to be captured and the file to receive the data.
Stop Capture	stop the continuous file capture process. Once stopped, the capture file is automatically closed.

To capture data to a file, do the following:

1. Select **Capture to File** from the **Tools** menu. Then select **Start Capture** from the submenu. The File Capture Settings dialog box displays.



2. Use this dialog box to specify what data to capture and where to store the data.

Use . . .	to . . .
Flow:	capture input and/or output data. Check one or both. Note: If both input and output data are captured, you can specify whether or not to imbed markers in the file to indicate the switch between the data flow.
Options:	choose what data is captured.

Use . . .	to . . .
• Raw Mode	capture all the binary data transferred (vs. Text mode that captures only the ASCII text displayed.).
• Input/OutputMarkers	specify whether or not to imbed markers in the file to indicate the switch between the data flow, if both input and output data are being captured.
Capture File:	specify the PC file to receive the data being captured.
• File path	current directory path.
• Create File	create a new file for file capture
• Append File	append a file to the currently existing file. Note: This setting is NOT saved if Save Capture Settings - Yes is selected.
• Change File...	locate and specify another file for file capture.
Save Capture Settings?	save settings so the capture file is automatically started when the application is opened.
• No - Use for Current Session Only	use the capture file settings that are selected for this session only. When the window is closed, the capture is stopped, and is not automatically started when the application is restarted.
• Yes - Use for Future Sessions Also	use and store the capture file settings until a user selects the menu item "Capture Stop". Each time the Terminal Emulation program is started, a new capture file is created using the stored capture file settings. Note: The Append File setting is NOT saved.

3. Click **OK** to initiate the process.

4. To stop the process, from the Tools menu, select **Capture to File** then **Stop Capture**. Once stopped, the capture file is automatically closed and any saved capture file settings are cleared.

INFORMATION WINDOWS

Use Information Windows to view information on a patient or account from another function within the STAR system in an Information Window without exiting the current function. The system can download these information windows to the PC from which you are using WEM, making this information easily accessible for immediate recall. Window options are STAR application-specific and are downloaded from within the STAR application. An application can have up to ten Information Windows available at one time.

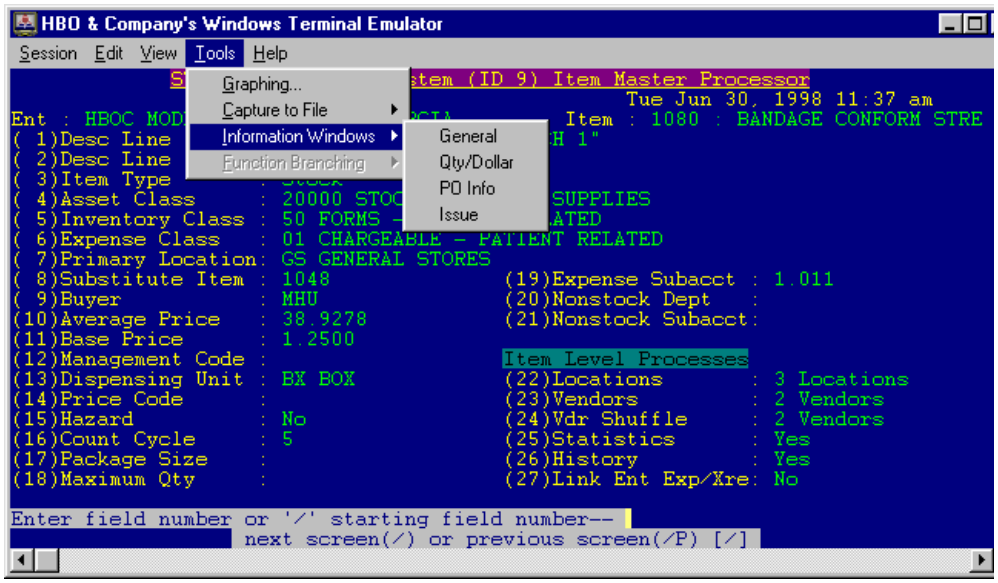
For example, while in the Cash Posting function, you can use theavailable Information Windows to display correspondence information about patient activity. By displaying this Correspondence Information Window, you do not need to exit Cash Posting to access the Account Inquiry function to view the correspondence information and then exit Account Inquiry and re-enter Cash Posting.

Information Windows must first be set up on STAR by the hospital Information Systems staff. Information Windows can be enabled/disabled for the entire STAR system or the option can be set up to be user-enabled. If this option is dimmed, it is not available. Check with your IS department to find out how the option has been set up at your facility. Instructions for setting up the option are provided in “Chapter 1 - GETTING STARTED”.

To use Information Windows (if available), do the following:

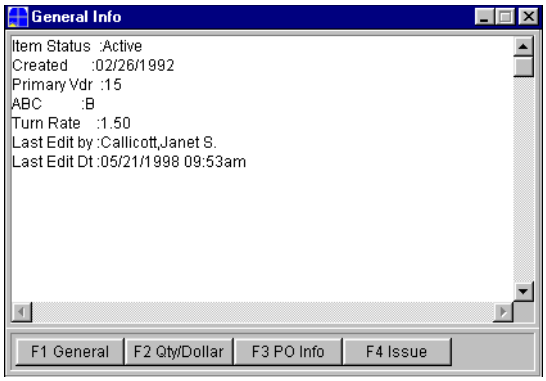
1. From the **Tools** menu, select **Information Windows**.

   A pulldown menu of available STAR application Information Windows displays, if available.



2. Select the desired window.

   An Information Window displays with the function.



3. Use the buttons on the bottom of the Information Window to access the other Information Windows and view application-specific information without exiting from your current location.

4. To exit, close the window.

   NOTE: You can have only one window open at a time.

FUNCTION BRANCHING

Use Function Branching to access quickly STAR application functions you frequently use. The list of functions is downloaded from within the STAR application and displayed in a pulldown menu.

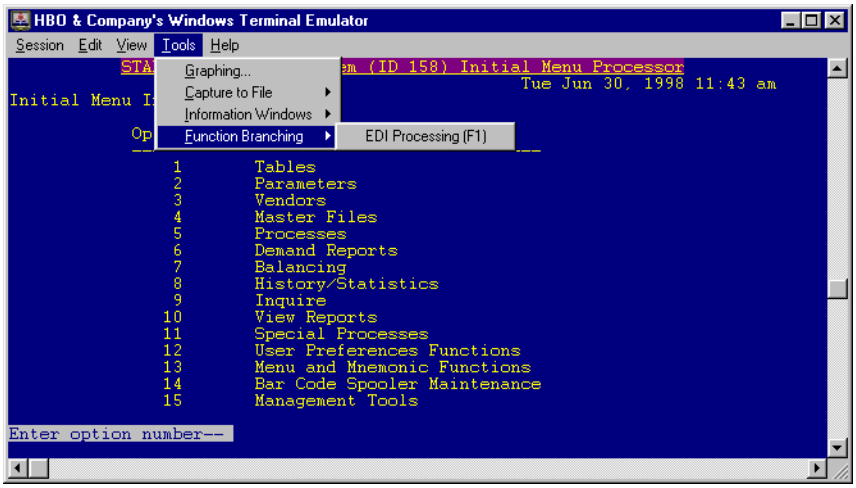
For example, admitting clerks can use Function Branching to access the Admit Patient function in the STAR Patient Care system.

Function Branching is a STAR application option. Your application must be set up to use Function Branching, before you can use WEM's Function Branching option. When you are signed on to your STAR application, if this option is dimmed on the WEM Tools menu, Function Branching is not available. Check with your system administrator if you have questions about use of Function Branching with your application.

To use Function Branching, do the following:

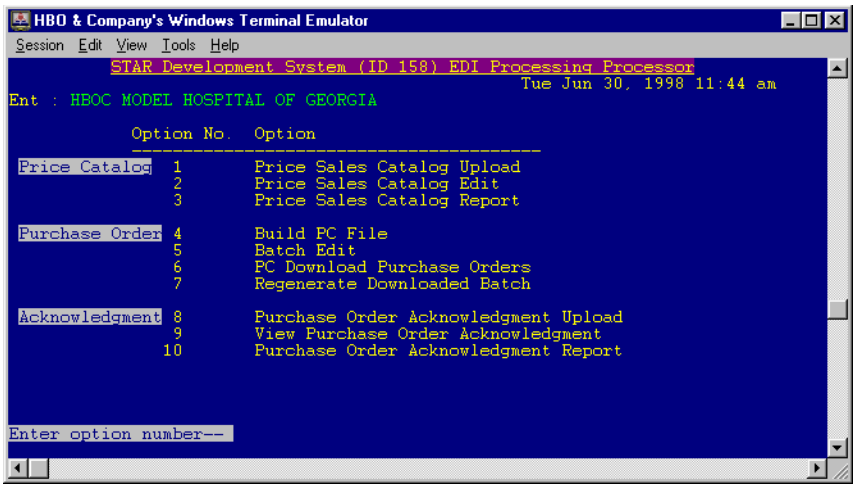
1. From the **Tools** menu, select **Function Branching**.

   A pulldown menu of available STAR application functions displays, if available.



2. Select the desired function.

The WEM window displays the selected function.



NOTE: Generally, the selected function is displayed. However, with some STAR product functions, you may be prompted for additional information prior to the display of the function's screen. The need for information is application-specific. In this Materials Management example, the Entity Code had to be entered to display the function's screen.

3. Perform the necessary task(s) without exiting from your current location.

4. To return, exit the current function.

   The WEM emulation window displays, returning you to the point in the system where you originally selected the function.

Appendix A - HGL GRAPHICS

HGL GRAPHICS LANGUAGE

NOTE: The HGL Graphics Language section is provided as a programmer's reference and is used primarily by HIS personnel in integrating WEMGS32 with other products. For other users of WEMGS32, the Menu options meet all needs for creating, modifying, and saving graphs.

HGL is the language used by WEMGS32 to create graphs. HGL commands define what data is plotted and other overall characteristics of the graph such as titles, legends, colors and typefaces. You can use the HGL graphics language to create a graph without downloading data from the STAR system. For example, you could create an HGL source file to graph data collected through a different program (such as dBASE).

HGL Source Files

The HGL source file is an ordinary ASCII text file. You can create your HGL source file using any standard text editor or word processor that can save the file in ASCII format. Each line is assumed to be terminated with a Carriage Return followed by a Line Feed (Hexadecimal 0D0A). Source lines may be up to 512 characters in length.

An HGL source file consists of keywords that divide the HGL file into sections related to each component of the graph. There are 16 keywords, each of which may be included in the HGL source file to tailor some aspect of the final graph. If a keyword is omitted, WEMGS32 uses predefined defaults as the parameter values for the keyword.

All keywords must be prefixed by a backwards slash (\). This slash must appear in column 1 or the keyword is not recognized. All source lines not following this convention are treated as comments.

Keywords are followed by one or more lines of parameters. WEMGS32 knows the maximum number of parameters that follow a given keyword, therefore, additional parameters or blank lines are ignored in the input. For instance, the \Background keyword is followed by one line of parameters.

Parameters are checked for validity as they are processed by the parser. If a parameter is out of range or missing, the default value for that parameter is used as the input.

Delimiters

Parameters are separated by commas. If a parameter, such as a title, contains a comma, enclose the text within quotation marks.

Keyword Summary

\BACKGROUND	Defines color of the perimeter background and border.
\DATA	Defines an array of data points to be graphed.
\EOF	Optional keyword indicating end of HGL source. (Not activated at this time.)
\FRAME	Defines graph frame characteristics.
\HEADER	Defines text characteristics for graph headings.
\LAYOUT	Specifies the type of graph to be produced.
\LEGEND	Defines legend style, color, and placement.
\OBSERVATIONS	Defines text for labeling rows of data.
\PLOT	Specifies plot lines to be drawn on the frame and associated text.
\SHADE	Specifies areas to be outlined in the frame.
\VARIABLES	Defines characteristics of variables.
\XAXIS	Defines characteristics of X-Axis.
\XTEXT	Defines text for the X-Axis.
\YAXIS	Defines characteristics of Y-Axis.
\YSCALE	Allows fine tuning of Y-Axis values and increment.
\YTEXT	Defines text for the Y-Axis.

HGL Keyword Reference

This section provides detailed instruction for each of the HGL commands.

Each keyword section contains a list of parameters (in **bold** below the keyword name), a description of the keyword, descriptions of the parameters, parameter defaults, and an example showing how the keyword is used.

You can enter the keywords in mixed case (upper and lower case, all caps, or all lower case). The system changes the keywords to all upper case automatically. You must enter the backslash at the beginning of the keyword, and the keyword must be spelled correctly.

NOTE: Parameters must be entered in the order shown for each keyword description.

For each of these commands, please refer to HGL Graphics Codes at the end of this section for any reference to Typeface, Color, or Point Size.

\BACKGROUND

Parameter	Keyword Parameter Explanation
\BACKGROUND	BackgroundColor
Description	The \BACKGROUND keyword sets the color used to fill the graph background. Color backgrounds are ignored on two-color devices.
Parameters	• **BackgroundColor** Indicates the desired background color.
Default	The default BackgroundColor is Grey (7).
Example	Set a blue background. \BACKGROUND 1

\DATA

Parameter	Keyword Parameter Explanation
\DATA	**Data[1],...Data[20]**
Description	The DATA keyword is used to specify the actual input data. Data may be a matrix of up to 40 rows (Observations) with up to 20 columns (Variables). Variables on each row are separated by commas.
Parameters	Data values may have a range of values from -9999999999.999999 to +9999999999.999999. (Do not put commas in the numbers.) Scientific notation is allowed. Negative values are to be prefixed with a minus sign with no intervening spaces. Values with no signs are assumed to be positive, although a plus sign (+) is allowed. To indicate a missing value, enter a period (.) instead of a valid digit. Note:A \DATA keyword with no parameters causes the graph not to be drawn.
Default	N/A
Example	To input a group of data containing 3 rows and 2 columns: \DATA +124.2409,-1900 .009,4+e4 975,320

\EOF

Parameter	Keyword Parameter Explanation
\EOF	N/A
Description	The EOF (end of file) keyword is an optional parameter that signifies the end of the HGL source. This keyword is primarily used for documentation purposes.
Parameters	N/A
Default	N/A
Example	To signify the end of the HGL source file: \EOF

\FRAME

Parameter	Keyword Parameter Explanation
\FRAME	FrameColor, FrameBackgoundColor, TickStyle, TickCount
Description	The FRAME keyword controls characteristics of the frame that contains the actual graph. This frame exists to visually set the graph apart from the text, scales, and legends that exist outside the graph.
Parameters	
FrameColor	The color of the line segments used to construct the frame. Note:This parameter is not activated for this release.
FrameBackground Color	The color used to fill the frame background.
TickStyle	An integer value that controls the placement of tick marks used along the X and Y axis. Values for this parameter are as follows: 0 = none 1 = inside of frame 2 = outside of frame 3 = inside and outside of frame Note:Only options 0 and 3 are activated in this release. Options 1 and 2 are automatically set to 3 when saving the graph.
TickCount	An integer value that specifies the number of tick marks to display along the Y axis. These marks are evenly distributed. Note: This parameter only has an effect if \YSCALE defines a range for the Y-axis.
Default	• FrameColor defaults to white (15). • FrameBackgroundColor defaults to blue. • TickStyle defaults to outside (2). • TickCount defaults to zero (0), which allows the system to determine the TickCount automatically.
Example	To specify a grey frame background and an inside/outside tick style with the number of tick marks determined by the system: \FRAME ,4,3,0

\HEADER

Parameter	Keyword Parameter Explanation
\HEADER	Text, Color, Typeface, Size, Justification
Description	Defines up to three lines of text to be used as the title of the current graph. This text is centered on the entire width of the output device. Text is displayed in the order in which it appears in the source file.
Parameters	
Text	The text to display. Maximum 70 alphanumeric characters. If the text contains a comma, enclose the text within quotation marks.
Color	An integer value that specifies the color in which the text displays. See HGL Graphics Codes on Colors for a list of all valid colors.
Typeface	An integer value that specifies the typeface used to display the text. See HGL Graphics Codes on Typefaces for a list of all valid typefaces.
Size	An integer value that specifies the point size at which the text appears. See HGL Graphics Codes on Point Sizes for a list of all valid point sizes.
Justification	An integer value that specifies how the text is aligned. Left justified text is aligned by the first character, centered text is aligned by the middle character, and right justified text is aligned by the last character in the text. Valid values for this field are: 0 = Center 1 = Left 2 = Right Note: This parameter does not apply to the first line, which is always centered.
Default	
Color	Defaults to white.
Typeface	HeadingText1 defaults to Arial. HeadingText2 defaults to Arial Italic. HeadingText3 defaults to Arial Bold. HeadingText4 defaults to Arial Bold.
Size	HeadingText1 defaults to 16 points. HeadingText2 defaults to 10 points. HeadingText3 defaults to 10 points. HeadingText4 defaults to 10 points.

Parameter	Keyword Parameter Explanation
Example	To define three lines of heading text; all Helvetica Italic; point sizes of 14, 8, and 8; colors red, white, and blue; and text left-justified: \HEADER "Graph Header Test",4,12,14,0 "Testing Styles, Colors, and Justification",7,12,8,1 "Of Header Keyword",1,12,8,1

\LAYOUT

Parameter	Keyword Parameter Explanation
\LAYOUT	GraphType
Description	The LAYOUT keyword specifies the type of graph to be produced.
Parameters	**GraphType**. An integer value that specifies the graph type to be produced. See HGL Graphics Codes on GraphTypes for a list of all valid types.
Default	GraphType defaults to 2D Clustered Column.
Example	To create a 3D Stacked Column graph. \LAYOUT 3

\LEGEND

Parameter	Keyword Parameter Explanation
\LEGEND	Style, TextColor, Typeface
Description	The LEGEND keyword controls the position and appearance of the graph legend.
Parameters	
Style	An integer value that specifies the placement of the graph legend. 0 = No Legend. 1 = Simple style, positioned on right side of graph. 2 = Simple style, positioned at bottom of graph. 3 = Simple style, positioned at top of graph. 4 = 3D style, positioned at bottom of graph. 5 = 3D style, positioned at top of graph. 6 = 3D style, positioned on the right side of the graph.
TextColor	An integer value that specifies the color in which the text displays.
Typeface	An integer value that specifies the typeface used to display the text.
Default	• Style defaults to simple, positioned at top of graph. • TextColor defaults to white. • Typeface defaults to Arial Bold.
Example	To implement 3D legend at bottom of graph with light cyan, Helvetica Italic text: \LEGEND 4,11,12

\OBSERVATIONS

Parameter	Keyword Parameter Explanation
\OBSERVATION	ObservationText
Description	The OBSERVATION keyword allows assignment of a text label for each Observation or row of data.
Parameters	**ObservationText** - The text to display. Maximum 15 alphanumeric characters. If the text contains a comma, enclose the text within quotation marks.
Default	N/A
Example	To define ObservationText for three lines of monthly data: \OBSERVATIONS January February March

\PLOT

Parameter	Keyword Parameter Explanation
\PLOT	PlotValue, Text, Color, Typeface, Size
Description	The \Plot keyword is used to divide the background of the graph into sections with labels for each section. The labels appear outside the frame next to the plot line.
Parameters	• **PlotValue** - The value at which the plot line and label display. • **Text** - The descriptive text for the plot label. • **Color** - Indicates the color of the plot line and text. Refer to HGL Graphics Codes for a list of valid colors. • **Typeface** - Indicates the typeface of the label text. Refer to HGL Graphics Codes for a list of valid typefaces. • **Size** - Indicates the point size of the text. Refer to HGL Graphics Codes for a list of valid point sizes.
Default	• PlotValue has no default. • Text has no default. • Color defaults to white (15) • Typeface defaults to Helvetica Bold (11) • Size defaults to 16 point.
Example	To create a plot line used to indicate a patient's normal body temperature on a graph, enter the following: \PLOT 98.6,Normal,2,8,16

\SHADE

Parameter	Keyword Parameter Explanation
\SHADE	StartValue, EndValue, Color
Description	The \SHADE keyword is used to divide the graph background using different colored sections. (Shade is often used in conjunction with the Plot option to divide the graph into meaningful segments.)
Parameters	• **StartValue** - Indicates the value along the Y-axis at which the block begins. • **EndValue** - Indicates the value along the Y-axis at which the block ends. • **Color** - Indicates the color of the section outline.
Default	• StartValue has no default. • EndValue has no default. • Color defaults to white.
Example	To divide the graph with a green section from value 100 to value 300, enter the following: \SHADE 100,300,2

\VARIABLES

Parameter	Keyword Parameter Explanation
\VARIABLES	Text1...Text20 Color1...Color20 Explode1...Explode20 Pattern1...Pattern20 Figures1...Figures20 SymbolsOnly1...SymbolsOnly20 Note:When a 2D line graph is specified, the Pattern parameter is actually the Symbol.
Description	The VARIABLES keyword is used for labeling and formatting of data columns. Attributes allow you to control: the text label for each variable; color of the object (bar, pie slice, etc.) associated with the variable; whether or not the variable's object is to be exploded (for pie graph); and, finally, what fill pattern is to be used for the variable's object.
Parameters	
Text	Text consists of standard alphanumeric characters. If the text contains commas, enclose the text within quotation marks (since commas separate each of the text entries). If commas are not needed in the text, quotes may be omitted.
Color	See list of valid colors in HGL Graphics Codes.
Explode	0 = Explode Off, 1 = Explode On for pie graphs.
Pattern	See the list of valid fill patterns in HGL Graphics Codes. Notes: • When a 2D line graph is specified, the Pattern parameter is actually the Symbol. • Patterns are not available on 2D or 3D Line graphs.
Figures	0 = Do not display the actual value for this variable in the graph. 1 = Display the actual value for this variable in the graph. Notes: • For compatibility reasons only, if figures are turned on for one variable, they are on for the entire graph. • Figures is only valid on 2D graphs (not supported in 3D).
SymbolsOnly	0 = For line graphs, if symbols are used in the graph, connect them with line segments (default). 1 = Do not connect symbols with line segments. Notes: • For compatibility reasons only, if all variables are set to not connect (1), no variables are connected; otherwise all variable are connected. • SymbolsOnly is supported only with 2D line graphs.

Parameter	Keyword Parameter Explanation
Default	• Text has no default. • Color starts at color 0 (black) for first variable and increments by 1 for each successive variable. • Explode defaults to Explode Off. • Pattern starts at pattern 1 for the first variable and increments by 1 for each successive variable. • Figures and SymbolsOnly have defaults of zero (0).
Example	To format a graph with two data variables so that: each has a text label; colors are yellow and bright red; the second is exploded; and both objects are solid-filled: \VARIABLES "Dept. 27, Area B","Dept. 27, Area C" 14,12 0,1 2,2

\XAXIS

Parameter	Keyword Parameter Explanation
\XAXIS	LabelColor,Typeface,GridStyle,GridColor
Description	The XAXIS keyword permits control of appearance and style of text associated with the X-Axis. This keyword controls color and typeface of text specified in the VARIABLES keyword and style and color of grids for the X-Axis.
Parameters	Note: LabelColor, GridColor, and Typeface are used in \XAXIS and \YAXIS for compatibility. Only one value is used for both X and Y axes. The \XAXIS section, if specified, takes precedence if the values are different between the two sections.
LabelColor	List of valid colors.
TypeFace	List of valid typefaces.
GridStyle	0 = None 1 = Solid 2 = Dashed 3 = Dotted Note: In 3D graphs, grid lines are either on or off.
GridColor	List of valid colors.
Default	• LabelColor & GridColor default to white. • Typeface defaults to Gothic Bold. • GridStyle defaults to None.
Example	To specify green labels with Helvetica Italic typeface and a dotted, brown grid: \XAXIS 2,12,3,6

\XTEXT

Parameter	Keyword Parameter Explanation
\XTEXT	Text, Color, Typeface, Size, Justification
Description	Defines up to four lines of text to be used as the text below the X-Axis of the current graph. This text is centered on the entire width of the output device. Text is displayed in the order in which it appears in the source file.
Parameters	
Text	The text to display. Maximum 70 alphanumeric characters. If the text contains a comma, enclose the text with quotation marks.
Color	An integer value that specifies the color in which the text displays. See HGL Graphics Codes for a list of all valid colors.
Typeface	An integer value that specifies the typeface used to display the text. See HGL Graphics Codes for a list of all valid typefaces.
Size	An integer value that specifies the point size at which the text appears. See HGL Graphics Codes on Point Sizes for a list of all valid point sizes.
Justification	An integer value that specifies how the text is aligned. Left justified text appears to be aligned by the first character, centered text is aligned by the middle character, and right justified text is aligned by the last character in the text. Valid values for this field are: 0 = Center 1 = Left 2 = Right
Default	
Color	Color defaults to white.
Typeface	XText1 defaults to Arial Bold. XText2 defaults to Arial Italic. XText3 defaults to Arial Bold.
Size	XText1 defaults to 12 points. XText2 defaults to 10 points. XText3 defaults to 10 points.
Example	To define three lines of X text; all Helvetica Italic; point sizes of 12, 8, and 8; colors red, white, and blue; and text left-justified: \XTEXT This is XTEXT,4,12,12,1 "Testing Styles, Colors, and Justification",7,12,8,1 "Of Header Keyword",1,12,8,1

\YAXIS

Parameter	Keyword Parameter Explanation
\YAXIS	LabelColor,Typeface,GridStyle,GridColor
Description	The YAXIS keyword controls the appearance and style of text associated with the Y-axis.
Parameters	Note: LabelColor, GridColor, and Typeface are used in \XAXIS and \YAXIS for compatibility. Only one value is used for both X and Y axes. The \XAXIS section, if specified, takes precedence if the values are different between the two sections.
LabelColor	An integer value that specifies the color in which the axis label text displays. See HGL Graphics Codes on Colors for a list of all valid colors.
Typeface	See HGL Graphics Codes for a list of valid typefaces.
GridStyle	0 = None, 1 = Solid, 2 = Dashed, 3 = Dotted.
GridColor	See HGL Graphics Codes for a list of valid colors. Note: In 3D graphs, grid lines are either on or off.
Default	LabelColor and GridColor default to white. Typeface defaults to Script Bold. GridStyle defaults to Solid.
Example	To specify green labels with Helvetica Italic typeface, and a dotted, brown grid: \YAXIS 2,12,3,6

\YSCALE

Parameter	Keyword Parameter Explanation
\YSCALE	Scaling, Max, Step, Min
Description	The YSCALE keyword permits manual control of scaling factors for the y-axis. Note: Take care when using manual scaling; failure to supply accurate or reasonable scaling values (such as minimum greater than maximum) can produce unpredictable results.
Parameters	**Scaling**: 0 = Automatic 1 = Manual **Max** **Step** **Min** -9999999999.9999 to +9999999999.9999, with Max always greater than Min and Step always less than the difference of Max and Min.
Default	Scaling defaults to Automatic. Max, Step, and Min have no defaults; if manual scaling is chosen, all of these attributes must be given reasonable, valid values.
Example	To manually scale a graph (where scaling data is max=100, min=0, and step=10): \YSCALE 1,100,10,0

\YTEXT

Parameter	Keyword Parameter Explanation
\YTEXT	Text, Color, Typeface, Size, Justification
Description	Defines up to 2 lines of text to be used as the text beside the Y-Axis of the current graph. This text is centered on the entire height of the graph. Text is displayed in the order in which it appears in the source file.
Parameters	
Text	The text to display. Maximum 70 alphanumeric characters. If the text contains a comma, enclose the text with double quotes.
Color	An integer value that specifies the color in which the text displays. See HGL Graphics Codes on Colors for a list of all valid colors.
Typeface	An integer value that specifies the typeface used to display the text. See HGL Graphics Codes on Typefaces for a list of all valid typefaces.
Size	An integer value that specified the point size at which the text appears. See HGL Graphics Codes on Point Sizes for a list of all valid point sizes.
Justification	An integer value that specifies how the text is aligned. Valid values for this field are: 0 = Center 1 = Bottom 2 = Top Note: This parameter is not supported in this release.
Default	
Color	Defaults to white.
Typeface	YText1 defaults to Gothic Bold. YText2 defaults to Gothic Italic.
Size	YText1 defaults to 12 points. YText2 defaults to 12 points.
Example	To define two lines of Y-Axis text; all Gothic Italic; point size of 10; color red; and centered: \YTEXT "Region 27, Department 3",4,12,10,0 January Sales Figures,4,12,10,0

HGL Syntax

This section provides a quick reference to the HGL keywords and their parameters. For an explanation of each of these keywords, see the HGL Keyboard Reference section.

Keyword	Parameters
\BACKGROUND	BackgroundColor
\DATA	Data[1]. . .Data[20] (Up to 40 rows of data may be used.)
\EOF	N/A
\FRAME	FrameColor, FrameBackgroundColor, TickStyle, TickCount
\HEADER	Text, Color, Typeface, Size, Justification
\LAYOUT	GraphType
\LEGEND	Style, TextColor, Typeface
\OBSERVATIONS	ObservationText (Up to 40 rows of observation text may be used.)
\PLOT	PlotValue, Text, Color, Typeface, Size
\SHADE	StartValue, EndValue, Color
\VARIABLES	Text[1]. . .Text[20] Color[1]. . .Color[20] Explode[1]. . .Explode[20] Pattern[1]. . .Pattern[20] Figures[1]. . .Figures[20] SymbolsOnly[1]. . .SymbolsOnly[20]
\XAXIS	LabelColor, Typeface, GridStyle, GridColor
\XTEXT	XText, Color, Typeface, Size, Justification
\YAXIS	LabelColor, Typeface, GridStyle, GridColor
\YSCALE	Scaling, Max, Step, Min
\YTEXT	YText, Color, Typeface, Size, Justification

HGL GRAPHICS CODES

This section lists the numbers corresponding to the selections for color, typeface, point size, patterns, symbols, and graph types for the HGL Graphics Language.

Colors

Number	Color
0	Black
1	Blue
2	Green
3	Cyan
4	Red
5	Magenta
6	Brown
7	Lt.Grey
8	Dk.Grey
9	Lt.Blue
10	Lt.Green
11	Lt.Cyan
12	Lt.Red
13	Lt.Magenta
14	Yellow
15	White

Typefaces

Number	Typeface
0	New Times Roman Bold
1	New Times Roman
2	New Times Roman Italic
3	Courier New Bold
4	Courier New
5	Courier New Italic
6	Gothic
7	Arial
8	Arial
9	Gothic Bold
10	Gothic Italic
11	Arial Bold
12	Arial Italic

Font Point Sizes

48	36	24	18	16	14	12	10	8

Patterns

Number	Pattern
0	Solid Fill
1	Solid Fill (Same as 0)
2	Horizontal Lines
3	Diagonal Lines Down
4	Diagonal Lines Down (Same as 3)
5	Diagonal Lines Up
6	Diagonal Lines Up (Same as 5)
7	Grid
8	Diamonds
9	Diamonds (Same as 8)
10	Horizontal Lines (Same as 2)
11	Vertical Lines
12	Grid (Same as 7)
13	Empty (Transparent)
14	Diagonal Lines Down (Same as 3)
15	Vertical Lines (Same as 11)

Symbols

Number	Symbol
0	Square with X
1	Square
2	Circle
3	Diamond
4	Solid Circle
5	Solid Square
6	Plus
7	X
8	Diamond with Plus
9	Square with X (Same as 0)
10	Diamond with Plus (Same as 8)
11	Triangle
12	Inverted Triangle
13	Solid Triangle
14	Solid Inverted Triangle
15	Solid Diamond

Graph Types

Number	Graph Name
0	2D Clustered Column
1	3D Clustered Column
2	2D Stacked Column
3	3D Stacked Column
4	3D Overlapped Column
5	2D Clustered Bar
6	3D Clustered Bar
7	2D Stacked Bar
8	3D Stacked Bar
9	2D Line
10	3D Line
11	2D Area
12	3D Area
13	2D Area (Same as 11)
14	3D Area (Same as 12)
15	2D Pie
16	3D Pie
17	2D Pie (Same as 15)
18	3D Pie (Same as 16)

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■ Reader Comment Form ■

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Topic	Poor	Fair	Good	Excellent
Organization of information	❑	❑	❑	❑
Accuracy of information	❑	❑	❑	❑
Completeness of information	❑	❑	❑	❑
Clarity of information	❑	❑	❑	❑
Amount of overview information	❑	❑	❑	❑
Explanation of processes	❑	❑	❑	❑

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