

# **Global System Manager Configuration Notes Version 8.1**

**For Microsoft  
Windows 2000,  
Windows 2003,  
Windows XP  
and Windows Vista**

## INTRODUCTION

These notes explain details of Global System Manager which are either too machine-specific or too changeable to appear in the Global System Manager manuals.

## OTHER DOCUMENTATION

These notes are only suitable for version 8.1 of Global System Manager

When used with version 8.1 of Global System Manager the following documentation is supplied and should be read in conjunction with these notes:

- MSMMV8.1 Global System Manager Manual version 8.1
- MSMNV8.1 Global System Manager Notes version 8.1
- MSM5V8.1 Global System Manager Operating Manual for Windows
- MBSRV8.1 Global System Manager Release Notice version 8.1  
(only relevant if upgrading from an earlier version of Global System Manager)
- MBSMV8.1 Global Utilities Manual version 8.1 (not normally supplied - describes advanced features)

## CONFIGURATIONS AVAILABLE

These notes cover two configuration numbers; there are separate configuration numbers for those Global System Manager configurations which operate in conjunction with MS-DOS, Windows 3.1, Windows 3.11, Novell NetWare, BOS, Unix and Windows (non Intel). The following table shows the configuration numbers associated with these configuration notes:

Distribution media	Configuration number
CD-ROM	5663

All configuration numbers are for LAN configurations. Configurations are available for price codes A to G inclusive (1 to 99 screens inclusive) and also for price code Z (9999 screens). All configurations require the XL Global System Manager or the ML Global System Manager PM.

Note that configuration code 5661 (GSM (Windows) distributed on 3½" 02A diskette is no longer available.

Global System Manager (Windows) has been implemented as a true Client-Server architecture. Figure I shows the full details of the Client configurations. Figure II shows the full details of the Server configurations.

All Client configurations are supplied with the following items in the configuration file:

Type	Device
disk	1 Discrete Data File Domain 1 Integrated Data File DLV
diskette	1 3½" Diskette Drive
console	1 Global GUI Console
printer	1 Printer via Windows interface
network	Client/Server network via RPC interface

Configurations can be modified using Global Configurator to add, amend or delete any of the above and also to add one or more of the following so long as the restrictions on number of screens and network/multi-user restrictions are not breached:

Type	Device
disk	Discrete Data File Domain Integrated Data File Domain
console	Serial terminal on COM1 or COM2 Serial terminal on TCL CC/8B Serial terminal on TCL Superport-186 Serial terminal on TCL GlobeServer Serial terminal on TCL DataServer-16
printer	Network terminal via TCP/IP Printer via DOS Interface Printer via Windows Interface
tape	Auxiliary (back of screen) printer Windows tape device

**Figure I** - Configurations for Global Client

All Server configurations are supplied with the following items in the configuration file:

Type	Device
disk	1 Discrete Data File Domain (5661) 2 Discrete Data File Domains (5663 master server only) 1 Integrated Data File DLV
diskette	1 3½" Diskette Drive
network	Client/Server network via RPC interface

Configurations can be modified using Global Configurator to add, amend or delete any of the above:

Type	Device
disk	Discrete Data File Domain Integrated Data File Domain

Note that Server configurations cannot include consoles, printers or tapes.

**Figure II** - Configurations for Global Server

## MINIMUM REQUIREMENTS

Global System Manager runs as a standard Windows application thus the hardware requirements are largely determined by the requirements of the Microsoft operating system. However, the following "rule of thumb" guidelines apply:

The minimum requirement for a Global Client on a Windows workstation is a Pentium P-100 with 32Mb of RAM. The minimum requirement for a Global Server on a Windows workstation is a Pentium P-150 with 32Mb of RAM.

The minimum requirement for a Global Client on a Windows server is a Pentium P-100 with 64Mb of RAM. The minimum requirement for a Global Server on a Windows server is a Pentium P-150 with 64Mb of RAM.

More memory will be required to obtain satisfactory performance on large multi-user Global System Manager configurations.

Although not particularly recommended we have not experienced too much performance degradation when running Global System Manager on a Windows Primary Domain Controller or Backup Domain Controller server.

Global System Manager (Windows) has only been tested on processors in the Intel 80x86 family, up to, and including, the 400 MHz Pentium II. It has not been tested on any non-Intel 80486-compatible or Pentium-compatible processors.

Global System Manager (Windows) has been designed for, and should operate correctly with, Windows on multi-processor servers.

The software supplied with this configuration code will NOT function on the PowerPC, MIPS or DEC Alpha processors. However, it is possible to connect Windows (Intel) and Windows (PowerPC) computers on the same Global System Manager network.

Global System Manager (Windows) is only supported on the following versions of Windows:

- Microsoft Windows 2000 Professional
- Microsoft Windows 2000 Server
- Microsoft Windows 2000 Advanced Server
- Microsoft Windows 2003 Server family
- Microsoft Windows XP (32-bit) Professional edition
- Microsoft Windows XP (32-bit) Home edition
- Microsoft Windows Vista (32-bit) Home Basic edition
- Microsoft Windows Vista (32-bit) Home Premium edition
- Microsoft Windows Vista (32-bit) Business edition
- Microsoft Windows Vista (32-bit) Ultimate edition

**Support for GSM on a version of Windows only applies while that version of Windows is supported by Microsoft.**

Global System Manager (Windows) is NOT supported on the following versions of Windows:

- Microsoft Windows 3.1 or 3.11 (with or without Win32s)
- Microsoft Windows 95
- Microsoft Windows 98
- Microsoft Windows NT Server V3.51
- Microsoft Windows NT Workstation V3.51

Microsoft Windows NT Server V4.0  
Microsoft Windows NT Workstation V4.0  
Microsoft Windows 2003 64-bit  
Microsoft Windows XP 64-bit  
Microsoft Windows Vista 64-bit  
Microsoft Windows CE

## INSTALLATION DETAILS

The installation details are fully explained in the Global Operating Manual for Windows (MSM5V8.1).

For CD-ROM installations all the "BACNAT software" (i.e. BACNAT part-1 and BACNAT part-2) and the "Global System Manager software" (i.e. BACRES, BEA, HAA, EPA, CFA etc.) are distributed on the CD. To install from CD-ROM, run the SETUP.EXE utility from the \GLOBAL directory of the CD (e.g. D:\GLOBAL\SETUP.EXE) and follow the installation instructions described in Chapter 2 of the Global Operating Manual for Windows (MSM5V8.1).

## TERMINAL ATTRIBUTE PROGRAMS (TAPS)

The following TAPs are available for use with Global System Manager (Windows):

Terminal	Mode	Comments
711	GUI	Standard TAP for Global Windows Workstation
712	Text	Standard non-GUI TAP for TCP/IP protocol module (TCPWSCLT.EXE)
713	GUI	As 711 but with reduced (40 character) status line
714	GUI	As 711 but with hash/pound translation
715	GUI	As 713 but with hash/pound translation
716	Text	Standard non-GUI TAP for GLOBAL.EXE and GSMWIN.EXE (status line is not supported)
717	Text	As 716 but with a temporary status line
718	Text	As 716 and allows SHIFT-3 to be used
719	Text	As 718 but with hash/pound translation
751	GUI	As \$.711 except that status-line messages appear in a Dialogue Box
754	GUI	As \$.714 except that status-line messages appear in a Dialogue Box
811	GUI	8-bit equivalent of the 7-bit \$.711
812	Text	8-bit equivalent of the 7-bit \$.712
816	Text	8-bit equivalent of the 7-bit \$.716

Note that GSMWIN.EXE V2.2 (and later), GSMWIN32.EXE V2.2 (and later) and GLOBAL.EXE V2.6 (and later) support a permanent status line with terminal types 716, 718 and 719. Note also that all the "GUI" and "text" TAP's released with GSM V8.1j, and later, include the "GWW" option.

Note that the following Terminal Types are no longer supported and should be considered obsolete: 730, 731, 732, 733, 734, 735.

## DISKETTE FORMATS

The following diskette formats are supported as standard:

Format code	Unit	Capacity	Description
O2A	140	1.44Mb	3½" IBM high capacity (99 files)
O2B	142	1.44Mb	3½" IBM high capacity (250 files)
B3B	170	720Kb	3½" IBM low capacity

## SUPPORTED SERIAL DEVICES

Although Global System Manager should function with any serial device that is supplied with a Microsoft device driver, only the following serial devices have been tested and are currently supported:

- COM1
- COM2
- TCL ISA CC/4B and CC/8B (Hostess emulation)
- TCL PCI CC/4B and CC/8B
- TCL Superport-186
- TCL GlobeServer
- TCL DataServer-16

Note that none of the TCL device drivers have been tested with Windows 2000 or Windows 2003.

Up to the hardware maximum of 64 Superport channels per card are supported (provided the version of the TCL supplied drivers is V1.11.1, or later). At the time of writing, the current version of the TCL supplied drivers is V1.15.1.

At the time of writing, the following serial devices have NOT been certified for use with GSM (Windows):

- TCL PCC/4, PCC/8 and PCC/16
- TIS Hyperport
- TCL Hyper/MX
- TCL Superport-RISC
- Any other "intelligent" serial cards (e.g. Chase, Specialix etc.)

## SUPPORTED TAPE DEVICES

Although Global System Manager should function with any tape device which is supplied with a Microsoft device driver, only the following combinations of tape devices and adapter cards have been tested and are currently supported:

- Tandberg Panther 2500S (2.5Gb) with Adaptec AHA-2940
- WangDAT 3100SE with Adaptec AHA-2940
- Wangtek 5100ES with Adaptec AHA-2940

## CONFIGURATION-SPECIFIC SYSTEM VARIABLES

The configuration-specific Global Cobol system variables contain the following values for Global System Manager (Windows) configurations:

```
$$ARCH      "W"  
$$MCOB     "W1"  
$$SYSM     4
```

## THE GLOBAL SYSTEM MANAGER (WINDOWS) THIN-CLIENT OPTION

To add a "thin client" console to an existing Global Client configuration use CFUPDATE to add a NETWORK controller in the USER DISPLAY ATTRIBUTES section of the Global Client configuration file (see section 8.3 of the V8.1 Global Operating Manual (Windows)).

**Important note:** The date of the A.W1 Action File must be 22-May-1997, or later.

The TYPE AHEAD BUFFER LENGTH, DISPLAY BUFFER LENGTH, FUNCTION KEY BUFFER LENGTH, SCREEN IMAGE WIDTH, SCREEN IMAGE DEPTH, NUMBER OF STORED ATTR' BYTES, NUMBER OF VIRTUAL PARTITIONS, CHARACTER TRANSLATION ENABLED and CONSOLE EXECUTIVE FLAG BYTE are all described in section 2.4 of the V8.1 Global Configurator Manual. The "Screen Number" must match the following numeric sub-key in the Registry:

```
KEY_LOCAL_MACHINE\Software\Global\Client\Screens\Network\nn
```

where nn is a double-digit network console number between 01 and 99 (note that leading zeroes are mandatory for console numbers between 1 and 9).

The parameters specified by the following ValueNames under the:

```
HKEY_LOCAL_MACHINE\Software\Global\Client\Screens\Network
```

sub-key of the Registry affect all NETWORK consoles:

ReceivePollDivisor This setting is fully described in section 8.3.2.2.1 of the V8.1 Global Operating Manual (Windows);

TransmitPollDivisor This setting is fully described in section 8.3.2.2.1 of the V8.1 Global Operating Manual (Windows).

The parameters specified by the following ValueNames under the:

```
HKEY_LOCAL_MACHINE\Software\Global\Client\Screens\Network\nn
```

sub-key of the Registry only affect a single NETWORK console:

Port This parameter allows the TCP/IP port number to be changed from the default of 23;

OperatorID This 4 character string specifies the Global System Manager operator-id for the user accessing the network screen;



- TerminalType This 5 character string specifies the Global System Manager Terminal Type for the network screen (e.g. 711);
- DisplayBufferSize This value allows the size of the internal Display Buffer used by the NETWORK console controller to be altered from the default value of 512. Increasing the size of the display buffer **may** improve the "transmit character" performance of the NETWORK console controller under some circumstances.

To convert a standard Global System Manager (Windows) "fat client" configuration (i.e. a "server computer" running both a Global Server (i.e. GLSERVER.EXE) as System "A" and a Global Client (GLOBAL.EXE); and a number of "workstations" running the Global Client) into a "thin client" configuration:

1. On the Global System Manager (Windows) server, use GLREGED to add a local DDF to the Global Client. Note that this initial step will be unnecessary if a "local DDF" was selected when the Global Client was installed;
2. Copy all the program and data units from sub-volumes on domain A00 to sub-volumes on domain 200. This can be achieved using a combination of \$V and \$F; or, more conveniently, using Windows Explorer to copy or move the corresponding sub-volume files (e.g. 10G3DATA.SVL). If the sub-volume files are copied directly, the normal precautions with this technique (e.g. ensuring that no files exist with the same sub-volume number) must be followed. There is no need to copy/move the SYSRES sub-volume from domain A00 to domain 200 - this procedure assumes the SYSRES will continue to be accessed via the Global Server process;
3. Amend the menus and parameter files to reflect the new unit assignments and file locations;
4. On the server, use GLREGED to change the Network Protocol for BOTH Server "A" and the Client-to-Server "A" connection from the "network visible" protocol (e.g. ncacln\_ip\_tcp) to the local RPC protocol, ncalrpc.

**Important note:** If a hybrid fat-client/thin-client configuration is required (i.e. with some workstations converted to thin client, while other workstations remain fat clients) the protocol used to connect to the "A" server must NOT be changed to ncalrpc;

5. On the server, use GLREGED to add a number of ..\Client\Screens\Network\ sub-keys to the Registry, as described above;
6. Use Global Configurator to add a number of NETWORK console controllers, as described above. Re-load the Global Client and run \$STATUS to confirm the client is "multi-user";
7. On each fat-client workstation that was formerly running the Global Client (i.e. GLOBAL.EXE), run the Global Windows Workstation, suitably configured with the network address of the server computer (as explained in the Global Windows Workstation

Notes) to login to the "multi-user" Global Client.

**Important note:** No extra Global Windows Workstation (GUI) licences are required for Global System Manager (Windows) configurations. An "infinite" GUI licence is inherent in all Global System Manager (Windows) configurations.

## USING GLOBAL-2000 APPLICATIONS ON GSM (WINDOWS)

The standard Global System Manager (Windows) installation assumes that Global-3000 products will be used. In particular, the default Terminal Type is 711 and a number of Registry ValueNames are established to map the standard Global System Manager colours, as specified by the default \$CUS Colour Customisations, to the Microsoft standard colours (i.e. predominantly black-on-grey).

To change the standard Global System Manager (Windows) "look-and-feel" to a Global System Manager (MS-DOS) "look-and-feel" perform the following:

1. Use GLREGED.EXE to change the value of the following Registry ValueName from the default value of 711 to a "non-GUI" terminal code (e.g. 716):

HKEY\_CURRENT\_USER\Software\Global\Client\TerminalType

2. Use GLREGED.EXE to remove the following Registry ValueNames:

HKEY\_LOCAL\_MACHINE\Software\Global\Client\GUI\Colour\CombinationNN

The MainFramePosition, NarrowModeFont and WideModeFont registry settings (all of which are documented in Appendix F of the Global Operating Manual for Windows) can be used to change the initial appearance of the Global System Manager window. The NarrowModeFont registry setting defines the size of the font used for the 80 \* 24 text screen. The WideModeFont registry setting defines the size of the font for the 132 \* 24 text screen.

By default (i.e. with a MainFramePosition set to 0,0,0,0), the Global System Manager window will occupy the entire screen (allowing for the Windows taskbar). The MainFramePosition setting can be used to minimise the unused part of the window Client Area (i.e. the grey border that appears around the text box) by reducing the size of the Global System Manager window.

When calculating the width of the 80 \* 24 window use the following algorithm:

Number of pixels = (80 \* pixel width of the NarrowModeFont)  
+ (2 \* MainFrame border width)

When calculating the width of the 132 \* 24 window use the following algorithm:

Number of pixels = (132 \* pixel width of the WideModeFont)  
+ (2 \* MainFrame border width)

When calculating the depth of the 80 \* 24 window use the following algorithm:

Number of pixels = (24 \* pixel depth of the NarrowModeFont)  
+ (2 \* MainFrame border width)  
+ height of Main Window caption bar  
+ height of toolbar (if enabled)  
+ height of status bar (if enabled)  
+ height of menu line  
+ height of Application caption bar

When calculating the depth of the 132 \* 24 window use the following algorithm:

Number of pixels = (24 \* pixel depth of the WideModeFont)  
+ (2 \* MainFrame border width)  
+ height of Main Window caption bar  
+ height of toolbar (if enabled)  
+ height of status bar (if enabled)  
+ height of menu line  
+ height of Application caption bar

The various Windows parameters are configurable in the Windows Control Panel.

If the font size selected is too large for the window size, characters at the right-hand side and bottom of the screen may be clipped. For some font sizes, this clipping may also occur when the window is maximised (e.g. only 77 or 78 characters may be fit in the window).

#### A WORKED EXAMPLE USING THE "SYSTEM PC" AND "SYS132PC" FONTS

Two special OEM fonts, **SystemPC** and **Sys132PC**, are available (upon request) to allow the 80-wide and 132-wide text mode windows to cover a large portion of the screen. These fonts have been released to overcome the complaint that the GLOBAL.EXE window only occupies the top-left section of the screen (particularly on high-resolution displays).

Taking a 1024 \* 768 screen as an example: The font-width should be the first parameter to calculate because most fonts are designed to provide a reasonable width/height ratio. If a "good-fit" font-width can be found then a reasonable font-height is normally available. Dividing 80 (i.e. the number of **character positions** in narrow mode) into 1024 (i.e. the number of pixels **across** the screen) provides a result of 12.8. Round this value down to 12 (as fonts are always an integral number of pixels; and some reduction is required to allow for the MainFrame border width). Dividing 132 (i.e. the number of **character positions** in wide mode) into 1024 (i.e. the number of pixels **across** the screen) provides a result of 7.7. Round this value down to 7 (as fonts are always an integral number of pixels; and some reduction is required to allow for the MainFrame border width).

The font-height is calculated by dividing 24 (i.e. the number of **character lines** in both narrow and wide-screen mode) into 768 (i.e. the number of pixels **down** the screen) provides a result of 32. This value will have to be considerably reduced to allow for the Caption bar, Status bar, Tool bar and MainFrame border depth etc.). The "rule of thumb" is to allow approx. 7 character positions for the various window objects that reduce the required font-height.

The default "Narrow-screen character font" is TERMINAL. The default "Wide-screen character font" is also TERMINAL. When GLOBAL.EXE initialises the font-handling logic automatically creates a small log

file, fontsize.txt, in the current directory (i.e. not the "log" directory). Although the format of the fontsize.txt file is fully described in Appendix S of the Global Windows Workstation V3.0 Notes, only the last two sections apply to this discussion. This example shows just the last two sections in an example fontsize.txt file:

```
Font name = TERMINAL
Width x Height
  8 x 12
 10 x 20
  4 x  6
  5 x 12
  6 x  8
  7 x 12
 10 x 18
 12 x 16
  8 x  8
```

```
Font name = TERMINAL
Width x Height
  8 x 12
 10 x 20
  4 x  6
  5 x 12
  6 x  8
  7 x 12
 10 x 18
 12 x 16
  8 x  8
```

The last section in the fontsize.txt file lists all the available fonts for the "Wide-screen character font" (TERMINAL by default). The penultimate section in the fontsize.txt file lists all the available fonts for the "Narrow-screen character font" (also TERMINAL by default).

From the sizes available for the TERMINAL font the "best fit" font-sizes are 12x16 for the narrow mode font and 7x12 for the wide-mode font. These options are specified using the following settings in the ..\Client\Screens\GUI\Miscellaneous section of the registry (see Appendix A of the of the Global Windows Workstation V3.0 Notes for full details).

```
NarrowModeFont=12x16
WideModeFont=7x12
```

Two special OEM fonts, SystemPC and SysPC132, are available (upon request) to provide many more font size combinations. The last two sections of the fontsize.txt file produced when these fonts are enabled (see below) contain:

```
Font name = SYSTEMPC
Width x Height
  4 x  4
  4 x  5
  4 x  6
  5 x  7
  5 x  8
  6 x  9
```

```

6 x 10
7 x 11
7 x 12
7 x 13
8 x 14
8 x 15
8 x 16
8 x 17
9 x 18
9 x 19
10 x 20
10 x 21
10 x 22
10 x 23
10 x 24
12 x 25
12 x 26
12 x 27
12 x 28
12 x 29
12 x 30

```

```

Font name = SYS132PC
Width x Height
4 x 13
6 x 18
6 x 20

```

The 12x25 font provides the best 1024x768 screen-coverage in narrow (80-character) mode. The 6x20 font provides the best 1024x768 screen-coverage in wide (132-character) mode.

The SystemPC and Sys132PC fonts are available as files SYS437.FON and S132437.FON, respectively. To install and enable these fonts, the following steps are required:

- 1). Copy the two font files to the Windows Fonts directory (e.g. C:\WINDOWS\FONTS);
- 2). Add the following settings, **exactly as documented**, to the ..\Client\Screens\GUI\Miscellaneous section of the registry (see Appendix A of the of the Global Windows Workstation V3.0 Notes for full details):

```

TextModeFont=SystemPC
TextModeFontFile=SYS437.FON,OEM
TextModeFontWide=SYS132PC
TextModeFontWideFile=S132437.FON,OEM

```

- 3). Change the "NarrowModeFont" and "WideModeFont" settings (see above) to:

```

NarrowModeFont=12x25
WideModeFont=6x20

```

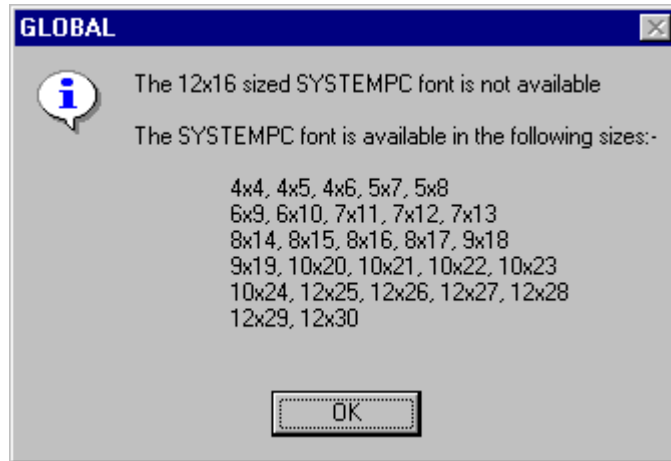
- 4). If required, change the MainFramePosition and MainFramePositionWide settings to ensure Main Frame Window fits exactly around the text-screen window. The following values are suitable for the above font-sizes (assuming no toolbar options etc. that effect the size of the window border, have been

modified):

```
MainFramePosition=0,0,980,696  
MainFramePositionWide=0,0,812,576
```

Both these settings position the top-left corner of the Global Client window on the top-left of the screen. This initial position may be adjusted by modifying the first two values of the MainFramePosition and/or MainFramePositionWide settings.

- 5). Reload the Global Client for these changes to take effect.
- 6). If a Dialogue Box similar to the one below appears then one of the font size parameters (in this example, the NarrowMode font) is incorrect:



Note that the standard client, GLOBAL.EXE, does NOT support a "full screen" option. This is a fundamental restriction of all Microsoft "Windows Applications". Consequently, an alternate Global Client is now available (i.e. an "snap-in" replacement to GLOBAL.EXE) which has been developed as a Windows "Console Application" to provide a "full screen" option. The "full screen" Global client, GLCONS.EXE, is fully described in the GSM V8.1 Notes.

#### **Worked Example for VGA screen (640 \* 480) for 80 \* 24 text window**

Consider the screen-width first. Dividing 80 into 640 gives 8 exactly. However some pixels will be taken up by the left and right borders so this value must be reduced 1 to give 7.

Now consider the screen-depth. Dividing 24 into 480 gives 20 exactly. Reducing this value by the "fudge factor" of 7 gives a value of 13.

The fontsize.txt file shows that a 7x13 SystemPC font is available so we can configure a very "close fit" for VGA screens.

The 4x13 Sys132PC represents the "best fit" for 132-character, wide-mode.

The INI file parameters must be set to:

```
TextModeFont=SystemPC  
TextModeFontFile=SYS437.FON,OEM  
TextModeFontWide=SYS132PC  
TextModeFontWideFile=S132437.FON,OEM  
NarrowModeFont=7x13
```

WideModeFont=4x13

Using a 7x13 font on a VGA screen, the "best fit" value for the MainFramePosition setting is:

MainFramePosition=0,0,582,440

This value assumes a TAP in the \$.711 family (e.g. \$.711, \$.714, \$.811 etc.) is being used. The window depth factor must be adjusted (reduced) if a TAP in the \$.712 family (e.g. \$.712, \$.716, \$.812 etc.) is being used to allow for the absence of the Toolbar. Note this value will also have to be reduced if the Toolbar or Status-bar INI file settings (see A.7.5 and A.7.6, respectively) are disabled.

The percentage of the screen occupied by the Global Windows Workstation window is given by:

$$582 * 440 * 100 / (640 * 480) = 83.4\%$$

The percentage of the screen occupied by the 80 \* 24 text window is given by:

$$80 * 7 * 24 * 13 * 100 / (640 * 480) = 56.9\%$$

**Important Note:** Some resellers have commented that characters in the 7x13 SystemPC font are difficult to read (particularly the "zero" character). For VGA screens a more satisfactory result for 80 character windows may be achieved using the 7x12 Terminal font:

```
TextModeFont=Terminal
;;;TextModeFontFile=          NOT REQUIRED
TextModeFontWide=Terminal
;;;TextModeFontWideFile=     NOT REQUIRED
NarrowModeFont=7x12
WideModeFont=4x6
```

Using the Terminal font, the percentage of the screen occupied by the 80 \* 24 text window is:

$$80 * 7 * 24 * 12 * 100 / (640 * 480) = 52.5\%$$

However, the percentage of the screen occupied by the 132 \* 24 text window is only:

$$132 * 4 * 24 * 6 * 100 / (640 * 480) = 24.7\%$$

#### **Worked Example for SVGA screen (800 \* 600) for 80 \* 24 text window**

Consider the screen-width first. Dividing 80 into 800 gives 10 exactly. However some pixels will be taken up by the left and right borders so this value must be reduced 1 to give 9.

Now consider the screen-depth. Dividing 24 into 600 gives 25 exactly. Reducing this value by the "fudge factor" of 7 gives a value of 18.

The fontsize.txt file shows that a 9x18 SystemPC font is available so we can configure a very "close fit" for SVGA screens.

The 6x18 Sys132PC represents the "best fit" for 132-character, wide-mode.

The INI file parameters must be set to:

```
TextModeFont=SystemPC
TextModeFontFile=SYS437.FON,OEM
TextModeFontWide=SYS132PC
TextModeFontWideFile=S132437.FON,OEM
NarrowModeFont=9x18
WideModeFont=6x18
```

Using a 9x18 font on a SVGA screen, the "best fit" value for the MainFramePosition setting is:

```
MainFramePosition=0,0,742,560
```

This value assumes a TAP in the \$.711 family (e.g. \$.711, \$.714, \$.811 etc.) is being used. The window depth factor must be adjusted (reduced) if a TAP in the \$.712 family (e.g. \$.712, \$.716, \$.812 etc.) is being used to allow for the absence of the Toolbar. Note this value will also have to be reduced if the Toolbar or Status-bar INI file settings (see A.7.5 and A.7.6, respectively) are disabled.

The percentage of the screen occupied by the Global Windows Workstation window is given by:

$$742 * 560 * 100 / (800 * 600) = 86.6\%$$

The percentage of the screen occupied by the 80 \* 24 text window is given by:

$$80 * 9 * 24 * 18 * 100 / (800 * 600) = 64.8\%$$

#### **Worked Example for XGA screen (1024 \* 768) for 80 \* 24 text window**

Consider the screen-width first. Dividing 80 into 1024 gives 12.8. However some pixels will be taken up by the left and right borders so this value must be rounded down to give 12.

Now consider the screen-depth. Dividing 24 into 768 gives 32 exactly. Reducing this value by the "fudge factor" of 7 gives a value of 25.

The fontsize.txt file shows that a 12x25 SystemPC font is available so we can configure a very "close fit" for XGA screens.

The 6x20 Sys132PC represents the "best fit" for 132-character, wide-mode.

The INI file parameters must be set to:

```
TextModeFont=SystemPC
TextModeFontFile=SYS437.FON,OEM
TextModeFontWide=SYS132PC
TextModeFontWideFile=S132437.FON,OEM
NarrowModeFont=12x25
WideModeFont=6x20
```

Using a 12x25 font on an XGA screen, the "best fit" value for the MainFramePosition setting is:

```
MainFramePosition=0,0,982,726
```

This value assumes a TAP in the \$.711 family (e.g. \$.711, \$.714, \$.811



etc.) is being used. The window depth factor must be adjusted (reduced) if a TAP in the \$.712 family (e.g. \$.712, \$.716, \$.812 etc.) is being used to allow for the absence of the Toolbar. Note this value will also have to be reduced if the Toolbar or Status-bar INI file settings (see A.7.5 and A.7.6, respectively) are disabled.

The percentage of the screen occupied by the Global Windows Workstation window is given by:

$$982 * 726 * 100 / (1024 * 768) = 90.6\%$$

The percentage of the screen occupied by the 80 \* 24 text window is given by:

$$80 * 12 * 24 * 25 * 100 / (1024 * 768) = 73.2\%$$

## **THE GLOBAL SYSTEM MANAGER (WINDOWS) SYMMETRIC MULTIPLE CLIENT OPTION**

This section describes a technique that can be used to overcome the 99 partitions per system problem that occurs on moderately large GSM (Windows) "thin client" configurations. Note that the same problem doesn't occur on GSM (Unix) or GSM (Windows) "fat client" configurations because in both of these scenarios, the multi-user GSM system is emulated by a real network (for GSM (Windows)), or pseudo-network (for GSM (Unix)).

For the purposes of this discussion a GSM (Windows) "thin client" configuration consists of one, or more, Global Servers (i.e. GLSERVER.EXE) and a single Global Client (i.e. GLOBAL.EXE) that includes a single GUI console controller and several NETWORK console controllers. Note that the same technique also applies to a GSM (Windows) "ultra-thin client" configuration (i.e. with a Global Client (i.e. GLOBAL.EXE) that includes a single GUI console controller and several SERIAL console controllers.

The V2.5h, and later, GLOBAL.EXE allows the node-id of the Global Client, which is normally obtained from the ..\Client\NodeID value in the Registry, to be over-riden by the /EN command line argument. For example, to run a Global Client as hex node-id 1C (i.e. 28 decimal) change the properties of the desktop shortcut to:

```
C:\GSMNT\GLOBAL.EXE C:\GSMNT\GL-IPL.DLV /EN=28
```

This independence from the fixed ValueName in the Registry allows a number of separate Global Clients to run on the same computer. For example, 3 desktop shortcuts can be established with the following Targets:

```
C:\GSMNT\GLOBAL.EXE C:\GSMNT\GL-IPL.DLV /EN=28  
C:\GSMNT\GLOBAL.EXE C:\GSMNT\GL-IPL.DLV /EN=29  
C:\GSMNT\GLOBAL.EXE C:\GSMNT\GL-IPL.DLV /EN=30
```

This allows 3 Global Clients to be started as node-id's (in hex) of 1C, 1D and 1E.

Because of the single "Global" key in the registry, all 3 (in this example) Global Clients, will be configured in the exactly same way (i.e. the multiple client configuration is symmetric).

The use of a single Registry key means that care has to be taken with the following peripherals:

- Diskette Care must be taken when attempting to access the diskette drive. It is possible that 2 clients could attempt to access the diskette drive simultaneously with unpredictable results. Access to the diskette drive should be via a specific Global Server;
- Tape Care must be taken when attempting to access the tape drive (if \$TAPE is used). It is possible that 2 clients could attempt to access the tape drive simultaneously with unpredictable results;
- IDF & DDF Care must be taken when attempting to access local, simulated hard-disk volumes. It is possible that 2 clients could attempt to access the same simulated hard-disk simultaneously with unpredictable results;
- DOSPrint Care must be taken when attempting to access DOS Printers. It is possible that 2 clients could attempt to access the same DOS printer simultaneously with unpredictable results.

Note that WinPrint printers are shareable between the separate clients.

Note also that the TCP/IP Port numbers of NETWORK controllers on Global Clients that are not the "natural" client (i.e. on Global Clients that use the /EN node-id over-ride) are modified from the value specified in the registry (or the default of 23 if a Port value is not specified in the registry). The port number is adjusted by using the Port Number in Registry (or 23 if not specified) and adding the difference between the NodeID specified by the /EN command line override and the "natural" NodeID specified in the ..\Global\NodeID value in the registry.

You are advised to set the Port Number of all NETWORK controllers in the registry to 1025 so that, for example:

NodeID	Port number
1B	1025
1C	1026
1D	1027

Port numbers of 1025, and above, should not clash with any "well known" ports used by other TCP/IP applications running on the Server.

On the PC's that are running the GUI as a thin client, the appropriate .INI file (i.e. either TCPWSCLT.INI for the 16-bit GUI; or GSMWIN32.INI for the 32-bit GUI) must be modified to specify the Port address.

Note that a non-standard Port number is only supported by the V2.2, or later, Global Windows Workstation.

The following example describes how to change a 30-user (1 GUI + 29 NETWORK) single Global Client configuration (i.e. with a maximum of approx. 3 partitions per screen) to a 3-fold, 11-user (1 GUI + 10

NETWORK) SMC Global Client configuration (i.e. with a maximum of 9 partitions per screen).

This example assumes that a "standard" fat client GSM (Windows) configuration has already been installed.

- A. Use CFUPDATE to set the number of NETWORK controllers in the configuration file to 10. On a fresh installation, this will mean adding 10 NETWORK controllers; on an existing large multi-user, single-client configuration, this may mean removing some existing NETWORK controllers. **Important Note:** This change using CFUPDATE is **NOT** required if the option to disable the Global Configuration file has been selected in the registry (i.e. "UseConfigurationFile=Off") - see Technical Note IN181 for further details);
- B. Use GLREGED.EXE to mirror the configuration file changes in the Registry (i.e. either add or remove Network\\* entries to match the number in the configuration file);
- C. Leave the existing Global Client shortcut as "natural" i.e. no /EN option is required so that the Client uses the NodeID in the registry (i.e. normally 1B).
- D. Add 2 more shortcuts to the Global Client shortcut. In the first extra shortcut, set the NodeID to 1C by using the /EN=28 command line switch; in the second extra shortcut, set the NodeID to 1D by using the /EN=29 command line switch;
- E. Each Global Client will "control" a bank of 10 thin client NETWORK controllers. Obviously, each Global Client will have to run on the Server before any thin client can attach to the server.
- F. On the 10 PC's designated to sign-on to Global Client 1B, set the Port number in the relevant GUI .INI file to 1025.  
On the 10 PC's designated to sign-on to Global Client 1C, set the Port number in the relevant GUI .INI file to 1026.  
On the 10 PC's designated to sign-on to Global Client 1D, set the Port number in the relevant GUI .INI file to 1027.

## THE GLOBAL SYSTEM MANAGER (WINDOWS) REGISTRY

This section which supersedes appendix E of the Global System Manager (Windows) V8.1 manual, has itself been superseded by document GLMACH.DOC (available from the Global web-site).

## THE GLOBAL SYSTEM MANAGER (WINDOWS) GLOBAL.INI FILE

This section supersedes appendix K of the Global System Manager (Windows) V8.1 manual by providing a description of optional Global Client initialisation file, GLOBAL.INI. This file, which must be in the Windows directory (e.g. C:\WINDOWS), conforms to standard Windows INI file format (i.e. it is split into sections each containing a group of related settings). Users of the Global Windows Workstation, who have examined the GSMWIN.INI file, will be familiar with the format of the GLOBAL.INI file.

Note that the installation process for GSM (Windows) BACNAT variant V2.7, and later, an empty GLOBAL.INI file is installed into the Windows directory.

The section and settings are set up in the following way:

```
[section name]
keyname=value
```

The section name must be enclosed by square-brackets. The left square-bracket must be in the first column of the file.

The keyname is the name of a setting which can be formed by any combination of letters (not case sensitive) and digits and must be followed immediately by an equal sign. The value of a setting can be a string or an integer.

A comment line is denoted by a semicolon character which must be at the beginning of a line.

The following sections in the GLOBAL.INI file are recognised:

[programs] Specifies the associations between a number of Global System Manager programs and corresponding Windows applications. See section A.6 and Appendix O of the Global Windows Workstation Notes for further details;

[bitmaps] Specifies the bitmap files associated with each bitmap index number. See section A.8 of the Global Windows Workstation Notes for further details;

[triggers] Specifies the associations between a number of Global System Manager programs, "trigger" conditions and corresponding Windows applications. See section A.9 and Appendix P of the Global Windows Workstation Notes for further details;

[miscellaneous] Two highly-specialised settings are loaded from the [miscellaneous] section of the GLOBAL.INI file, rather than the ..\GUI\Miscellaneous key of the registry:

```
FilterOutputPort
SPDPort
```