GSM and Global 3000 Payroll

1. Introduction

This document **must** be read **carefully** by every reseller who is planning to install Global 3000 Payroll.

This document consists of normal text and tables; and Action Boxes such as this text box. Resellers who want to run through a check-list for a Payroll V6.8 to Global 3000 Payroll upgrade on a particular GSM configuration should read through all the Action Boxes for that GSM configuration (see sections 3,4,5,6 and 7).

Unlike previous versions of Global Payroll (e.g. Payroll V6.8), which could be installed and used on all recent versions of GSM, Global 3000 Payroll will only function on:

- GSM-PM or GSM-PR;
- GSM Service Pack-10, or later;
- a 32-bit version of GSM.

This document, which expands upon the technical information in Global Sales Bulletin GS-202, explains the above three requirements and describes, in complete detail, the possible upgrade paths for all existing configurations. The remainder of this document is split into the following sections:

Section	Description	Config. code(s)
2	Section-2 must be read before upgrading Payroll V6.8 to Global 3000 Payroll on a GSM non-PM system. As explained in this section, no special licencing considerations apply when upgrading Payroll V6.8 on a GSM-PM system.	All
3	Section-3 of this document must be read before upgrading Payroll V6.8, running on a **GSM (Windows)** configuration. A GSM platform change will **not** be required. **Important Note:** The version of GSM for configuration codes 5661 and 5663 was originally referred to as GSM (NT) or GSM (Windows NT). More recently, this name has been changed to just GSM (Windows) to emphasize the point that these GSM configurations are supported on Windows 98, Windows ME, Windows 2000 and Windows XP. Throughout this document, GSM for configuration codes 5661 and 5663 will be referred to as GSM (Windows).	5661 5663

4	Section-4 of this document must be read before upgrading Payroll V6.8, running on a **GSM (Unix)** configuration. Under most circumstances a GSM platform change will **not** be required.	5527 5539 5550 5552 5558 5567 5590
5	Section-5 of this document must be read before upgrading Payroll V6.8, running on a **GSM (DOS)** configuration. A GSM platform change **will** always be required. **Important Note:** The version of GSM for configuration codes 5622 and 5623 was originally referred to as GSM (DOS) or GSM (MS-DOS). During the lifetime of this version of GSM, when it was certified for use on Windows 3.11 and Windows-95, it was also referred to as GSM (DOS/Windows). Throughout this document, GSM for configuration codes 5622 and 5623 will be referred to as GSM (DOS) to prevent any confusion with GSM (Windows) for configuration codes 5661 and 5663.	5622 5623
6	Section-6 of this document must be read before upgrading Payroll V6.8, running on a **GSM (Novell)** configuration. Under most circumstances a GSM platform change will **not** be required.	5611 5613
7	Section-7 of this document must be read before upgrading Payroll V6.8, running on a **GSM (BOS)** configuration. A GSM platform change **will** always be required.	5700 5704 5705 5708 5709 5714 5715
8	Section-8 of this document describes a number of other issues that may affect the Payroll V6.8 to Global 3000 Payroll upgrade.	All

IF THE CONFIGURATION CODE OF AN EXISTING PAYROLL V6.8 SITE IS NOT IN THE ABOVE TABLE PLEASE CONTACT THE HOTLINE IMMEDIATELY.

2. GSM-PR

Global 3000 Payroll is a 32-bit application which uses Speedbase databases. Normally, a 32-bit application requires a GSM-PM run-time licence and will not operate on the version of the GSM run-time that excludes Presentation Manager. However, Global 3000 Payroll, unlike all other 32-bit Speedbase applications, **will** operate successfully on a GSM configuration that is **NOT** subject to an annual PM service licence.

For the purposes of Global 3000 Payroll we have introduced a new version of GSM, referred to as GSM-PR (i.e. GSM PayRoll), that allows the use of Global 3000 Payroll on non-PM systems. The switch from GSM non-PM to GSM-PR is performed simply by using $CUS (providing the GSM version is GSM SP-10, or later).

For existing GSM-PM systems no **licence** changes are required to install and run Global 3000 Payroll (although a Service Pack upgrade and/or platform change **may** be required - see section 3, onwards).

The following terms are defined:

Term	Definition
GSM	Global System Manager without Presentation Manager (product codes XL and NG). This variant of GSM is **NOT** subject to any annual licence. Displayed by $S as "GSM".
GSM-PM	Global System Manager with Presentation Manager (product codes ML and NT). This variant of GSM is subject to an annual PM Service Licence. Displayed by $S as "GSM PM".
GSM-PR	Global System Manager with Presentation Manager for Payroll. This variant of GSM is **NOT** subject to any annual licence. GSM-PR is simply upgraded from GSM by using $CUS. Displayed by $S as "GSM PR".

An existing GSM system is trivially upgraded to a GSM-PR system, using $CUS, as part of the Global 3000 Payroll installation process. **No re-installation is required to upgrade from GSM SP-10 to GSM-PR SP-10.**

The requirement for GSM-PR, rather than GSM-PM, to run Global 3000 Payroll only applies if **all** the Global 3000 Payroll databases are held as Global format "native" databases. If **any** of the Global 3000 Payroll databases are converted to Pervasive SQL (Btrieve), Microsoft SQL or C-ISAM format, a GSM-PM system will be required.

This table summarizes the GSM run-time system requirements for the various classes of Global applications:

Application type	GSM non-PM	GSM-PM	GSM-PR
Global 2000	Yes	Yes	Yes
Payroll V6.8	Yes	Yes	Yes
Global 3000 (excluding Global 3000 Payroll) with Global format databases	No	Yes	No
Global 3000 (excluding Global 3000 Payroll) with Btrieve, SQL or C-ISAM format database	No	Yes	No
Global 3000 Payroll with Global format database	**No**	**Yes**	**Yes**
Global 3000 Payroll Btrieve, SQL or C-ISAM format database	No	Yes	No

3. GSM (Windows) sites

The following questions must be asked before considering installing Global 3000 Payroll on an existing GSM (Windows) configuration. The instructions in the "action boxes" refer to actions that should be taken by a reseller when planning the upgrade of a Payroll V6.8 site to Global 3000 Payroll.

3.1 Are any Global Clients running on Windows 95 OSR-1?

GSM SP-10, which is a pre-requisite for Global 3000 Payroll, requires the V3.7, or later, version of the Global Client (GLOBAL.EXE). GLOBAL.EXE V3.7 is **not** supported on Windows 95 OSR-1. Although Windows 95 OSR-1 compliant versions GLOBAL.EXE V3.3 etc. have been released we have no intention of producing a Windows 95 OSR-1 version of GLOBAL.EXE V3.7. Note that Windows 95 is no longer supported by Microsoft.

Any PC running Windows 95 OSR-1 must be upgraded to a supported version of Windows.

3.2 Are any Global Clients running GLCONS.EXE?

GSM SP-10, which is a pre-requisite for Global 3000 Payroll, requires the V3.7, or later, version of the Global Client. Only the "Windows Application" GLOBAL.EXE client has been upgraded to V3.7. A V3.7 version of the "full screen, Console Application" GLCONS.EXE will not be available.

Any PC running GLCONS.EXE must be upgraded to GLOBAL.EXE V3.7. The loss of a full screen mode imposed by this upgrade is unavoidable. The GSM (Windows) Configuration Notes explain how to install and configure the SystemPC fonts to obtain text-mode windows that occupy nearly 100% of the screen. We will endeavour to include the font installation and "best fit" registry customisation automatically in the GSM (Windows) installation.

3.3 Global 3000 Payroll requires GSM SP-10, or later

Global 3000 Payroll will only operate on GSM SP-10, or later. Although installing a GSM Service pack on a GSM V8.1l (lower-case "L") system is relatively straightforward, upgrading a pre-V8.1l system to V8.1l for a subsequent Service Pack installation can be time-consuming. We will endeavour to allow GSM SP-10 to be applied directly to any version of GSM (Windows), including pre-V8.1l versions of GSM, to avoid the initial upgrade to "vanilla" GSM V8.1l, which must be performed by either a re-installation from BACRES, BEA etc. or a slow $CUSUPD process.

As mentioned above, GSM SP-10 requires the non-GSM components of GSM (Windows) (e.g. GLOBAL.EXE and GLSERVER.EXE) to be V3.7, or later. The upgrade to GLOBAL.EXE and GLSERVER.EXE will be a trivial file copy and should NOT require a re-install of GSM (Windows) using the SETUP.EXE utility.

All sites upgrading from Payroll V6.8 to Global 3000 Payroll must be upgraded to GSM SP-10. Resellers should be familiar with the GSM Service pack upgrade mechanism. See Technical Note IN282 for further details. Note that it may be necessary to upgrade the GLOBAL.EXE version before attempting to apply the GSM Service Pack.

3.4 Possible complications with GSM SP-10

The application of GSM SP-10 will involve the conversion of the $STARH file to the external global.lic file if the current version of GSM is V8.1 SP-5, or earlier (GSM SP-6, SP-7, SP-8 and SP-9 sites are already running with an external global.lic file). The conversion of $STARH to global.lic has caused no problems on thin-client configurations but has caused minor problems on fat-client configurations. Technical Notes IN245 and IN256 describe the various (easily surmountable) problems that have been encountered.

Resellers applying GSM SP-10 to "fat client" GSM (Windows) configurations should be familiar with the contents of Technical Notes IN245 and IN256.

3.5 Global 3000 Payroll is installed from CD - Part-1

Global Payroll will be distributed on the GPS Reseller CD. It will not be available on any other media (e.g. diskette, tape etc.). In order to fulfill an order for a 32-bit product distributed on CD a Global Product Licence file is sent via email from our Production Department.

All resellers should be familiar with the "Installing 32-bit Applications" (from CD) procedure (see Technical Note IN283) and should be ready to receive Global Product Licence files via email from our Production Department.

3.6 Global 3000 Payroll is installed from CD - Part-2

As explained in the "Installing 32-bit Applications" documentation (IN283), the installation of a 32-bit product involves accessing a Global Cabinet File (GCF) from the Global Product Set (GPS) CD. At least one computer on the network must be configured with CD drive. If a CD drive is not available at the end-user site, the reseller must transfer the Global 3000 Payroll GCF file from the GPS CD via diskette. Note that the size of the Global 3000 Payroll GCF file is expected to greatly exceed the capacity of a single 1.44Mb diskette (even when zipped).

If the site that is being upgraded from Payroll V6.8 to Global 3000 Payroll does not include a Windows PC with a CD drive. The Global 3000 Payroll GCF must be copied from the GPS CD to the target site via a series of Windows format diskettes.

4. GSM (Unix) sites

The following questions must be asked before considering installing Global 3000 Payroll on an existing GSM (Unix) configuration. The instructions in the "action boxes" refer to actions that should be taken by a reseller when planning the upgrade of a Payroll V6.8 site to Global 3000 Payroll.

4.1 Is the version of Unix supported by 32-bit GSM (Unix)

GSM SP-10, which is a pre-requisite for Global 3000 Payroll, requires the 32-bit version of the GSM (Unix) kernel. This 32-bit kernel (i.e. the GSM (Unix) "BACNAT components") are only supported on the following versions of Unix:

Unix	Supported versions	BACNAT variant	Configuration Code
HP-UX	V11.00 only	At least V3.311	5550
AIX V3.x	V3.2.5 only. Note that IBM no longer support this version of Unix.	At least V3.311	5551
SCO Unix	All versions from V3.3.2 to Open Server 5	V3.311, or later	5552
AIX V4.x	V4.3 only	At least V3.311	5557

All Unix servers that are currently running Payroll V6.8 must upgrade to one of the supported versions of Unix listed above in order to upgrade to Global 3000 Payroll.

4.2 Is the BACNAT software supported by GSM SP-10

As described in the above table, the installation of 32-bit GSM SP-10 requires the BACNAT software to be upgraded to an appropriate variant. The upgrade of a GSM (Unix) BACNAT should not present any special problems except that resellers should be aware that GSM (Unix) BACNAT software is now only available from the Global web site, or via a Windows format CD. The GSM (Unix) BACNAT software is no longer available on diskette, QIC tape or DAT tape. However, the GSM (Unix) BACNAT upgrade utility, *glinstall*, is fully compatible with earlier versions.

All Unix servers that are currently running Payroll V6.8 must upgrade the BACNAT version to V3.311, or later. The GSM (Unix) BACNAT software is only available on CD or via the Global web site. Note that the GSM (Unix) BACNAT software is currently available on the serialised GSM CD (i.e. the CD that includes BACRES etc.). The GSM (Unix) BACNAT software is NOT currently distributed on the monthly reseller Global Product Set CD.

4.3 Global 3000 Payroll requires GSM SP-10, or later

Global 3000 Payroll will only operate on GSM SP-10, or later. Because most existing GSM (Unix) servers that are running Global Payroll have not been upgraded to GSM V8.1l, the upgrade to GSM SP-10 will invariably require a re-installation of GSM (Unix). The Production version of GSM (Unix) is always the same as the latest GSM Service pack. However, the GSM (Unix) Generation Procedure has been improved so that all

generations (and regenerations) of GSM (Unix) are only supplied on a Windows format CD (i.e. GSM (Unix) is no longer supplied on diskette, QIC tape or DAT tape).

The application of GSM SP-10 will involve the conversion of the $STARH file to the external global.lic file. The conversion of $STARH to global.lic is not expected to cause any problems on GSM (Unix).

All sites upgrading from Payroll V6.8 to Global 3000 Payroll must be upgraded to GSM SP-10. For most existing sites this will normally require a regeneration of GSM (Unix) using one of the configuration codes listed above and the transfer of GSM from a Windows format CD to the target Unix server. Resellers should also be familiar with the GSM Service pack upgrade mechanism. See Technical Note IN282 for further details.

4.4 Global 3000 Payroll is installed from CD - Part-1

Global Payroll will be distributed on the Windows format GPS Reseller CD. It will not be available on any other media (e.g. diskette, tape etc.). In order to fulfill an order for a 32-bit product distributed on CD a Global Product Licence file is sent via email from our Production Department.

All resellers should be familiar with the "Installing 32-bit Applications" (from CD) procedure (see Technical Note IN283) and should be ready to receive Global Product Licence files via email from our Production Department.

4.5 Global 3000 Payroll is installed from CD - Part-2

As explained in the "Installing 32-bit Applications" documentation (IN283), the installation of a 32-bit product involves accessing a Global Cabinet File (GCF) from the Windows format Global Product Set (GPS) CD. A number of Windows files must be transferred from the GPS CD to the Unix server.

The Global 3000 Payroll GCF, and a number of related files, must be copied from the Windows format GPS CD to the Unix server. If the GSM (Unix) server does not contain a Windows compliant CD drive, the required files (e.g. the Global Cabinet Files) must be copied to the target computer/network by the reseller.

5. GSM (DOS) sites

The 32-bit run-time GSM environment will **NOT** be ported to GSM (DOS). Thus, unless the stand-alone GSM (Windows) option described in GS202 is taken, an existing GSM (DOS) configuration must upgrade to GSM V8.1 SP-10 (Windows) or, much less likely, GSM (Novell) or GSM (Unix) in order to upgrade to Global 3000 Payroll.

5.1 Check the versions of Windows

The following table shows the various DOS and Windows operating systems supported by GSM (DOS) and GSM (Windows):

Operating system	GSM (DOS)	GSM (Windows)	PCWS.COM
DOS V3.0 onwards	Yes	No	Yes
Windows V3.1	Yes	No	Yes
Windows V3.11, V3.12	Yes	No	Yes
Windows 95	Yes	Yes (see section 3.1)	Yes
Windows 98	Yes	Yes	Yes
Windows NT 3.51	No	No	No
Windows NT 4	No	Yes	No
Windows ME	No	Yes	No
Windows 2000	No	Yes	No
Windows XP	No	Yes	No

Table 5 - Versions of DOS and Windows supported by various Global software

Thus, unless the version of Windows that is currently running GSM (DOS) is either Windows-95 or Windows-98 a Windows upgrade **will** be necessary in order to run GSM (Windows). For most sites this is also expected to involve a hardware upgrade. See also the comments in section 3.1 regarding Windows-95 OSR-1.

All PC's running any version of DOS, Windows V3.1, Windows V3.1x or Windows 95 OSR-1 must be upgraded to a version of Windows that is supported by GSM (Windows). Note that GSM (Windows) is only distributed on CD so the "target" PC must include a CD drive.

5.2 Arcnet and Ethernet

All existing GSM (DOS) LAN configurations are using Arcnet hardware. Arcnet networks are **not** supported by Windows. Thus, Arcnet networks are not supported by GSM (Windows).

All GSM (DOS) networks that are currently using Arcnet must upgrade to Ethernet in order to continue to use a network configuration. Note that for most small GSM (DOS) networks it should be possible to replace the "fat client" GSM (DOS) network by a "thin client" GSM (Windows) configuration.

All Arcnet networks running GSM (DOS) must be upgraded to ethernet to support GSM (Windows).

5.3 Serial Devices

GSM (Windows) only supports serial devices that are supported by Windows. Some serial devices that are widely used in GSM (DOS) configurations are not supported by Windows (i.e. the required Windows device drivers are not available); and thus are not supported by GSM (Windows). In particular, TCL do not provide Windows device drivers for the

"original" BOS Hyperport serial i/o sub-system. Any serial i/o sub-system currently used by GSM (DOS) that is not supported by Windows must be replaced by an alternative that is supported. Note that GSM (Windows) supports all the serial TAP's, including the PCWS terminal emulator, that are supported by GSM (DOS).

If it is intended to upgrade a multi-user GSM (DOS) PC to GSM (Windows) and to retain the same serial screens check that Windows device drivers are available for the serial i/o sub-system. If Windows device drivers are not available, it will be necessary to replace the serial i/o sub-system to one that is supported by Windows; or to use the GSM (Windows) ethernet-based "thin-client" option to provide the equivalent multi-user configuration.

Extra Note on PCWS: See table 5 for a list of the Windows versions that are supported by the PCWS.COM terminal emulator. If you wish to run a serial interface terminal emulator (e.g. PCWS.COM) on any version of Windows other than Windows-95 or Windows-98 then a 32-bit product such as the Global Windows Workstation GSMWIN32.EXE, operating in serial-mode, must be used.

5.4 Tape Devices

GSM (Windows) only supports tape devices that are supported by Windows. Some tape devices that are widely used in GSM (DOS) configurations are not supported by Windows (i.e. the required Windows device drivers are not available); and thus are not supported by GSM (Windows). Furthermore, $TDUMP is not supported on GSM (Windows); and $TAPE is only supported on Windows NT, Windows 2000 and Windows XP Professional.

Check that the existing tape device is supported by Windows. Note that tape devices are only supported by GSM (Windows) on Windows NT, Windows 2000 and Windows XP Professional. Note also that $TDUMP is NOT supported on GSM (Windows).

5.5 Global Comms

Global Comms is not supported on GSM (Windows). In particular, the 2780 Comms that may be used for BACS submissions is not supported on GSM (Windows). See the following Global Technical Bulletins:

http://www.global3000.com/varworld/support/bulletins/gt847.html
http://www.global3000.com/varworld/support/bulletins/gt849.html

Any GSM (DOS) sites using 2780 Comms for BACS must switch to interfacing Global 3000 Payroll with a 3rd party specialised BACS product.

5.6 Full Screen DOS Application now a Windows Application

During the initial wave of GSM (DOS) to GSM (Windows) migrations the issue that attracted the most comments from end-users was the switch from full-screen capable GSM (DOS) to the GLOBAL.EXE "Windows application". The "Console application" GLCONS.EXE was released to counter these complaints. However, as explained in section 3.2, we have withdrawn GLCONS.EXE because it used some Windows functions that have been withdrawn from Windows 2000 and Windows XP. See section 3.2 for further details.

The "full screen" GSM (DOS) look-and-feel will be replaced by a Windows look-and-feel. As explained in the GSM (Windows) Configuration Notes special fonts are available to provide large windows on most screen resolutions.

5.7 Data Migration

The GSM (DOS) .SVL files are 100% compatible with GSM (Windows) .SVL's so data migration, assuming the DOS/Windows files can be moved from the GSM (DOS) computer to the GSM (Windows) computer should not present a problem.

Data migration from GSM (DOS) to GSM (Windows) should be as simple as moving the existing .SVL files from a GSM (DOS) Domain Directory to a GSM (Windows) Domain Directory. NO REORGANISATION OR FILE CONVERSION WILL BE REQUIRED.

5.8 Global 3000 Payroll is installed from CD - Part-1

Global Payroll will be distributed on the GPS Reseller CD. It will not be available on any other media (e.g. diskette, tape etc.). In order to fulfill an order for a 32-bit product distributed on CD a Global Product Licence file is sent via email from our Production Department.

All resellers should be familiar with the "Installing 32-bit Applications" (from CD) procedure (see Technical Note IN283) and should be ready to receive Global Product Licence files via email from our Production Department.

5.9 Global 3000 Payroll is installed from CD - Part-2

As explained in the "Installing 32-bit Applications" documentation (IN283), the installation of a 32-bit product involves accessing a Global Cabinet File (GCF) from the Global Product Set (GPS) CD. At least one computer on the network must be configured with CD drive. If a CD drive is not available at the end-user site, the reseller must transfer the Global 3000 Payroll GCF file from the GPS CD via diskette. Note that the size of the Global 3000 Payroll GCF file is expected to greatly exceed the capacity of a single 1.44Mb diskette (even when zipped).

If the site that is being upgraded from Payroll V6.8 to Global 3000 Payroll does not include a Windows PC with a CD drive. The Global 3000 Payroll GCF must be copied from the GPS CD to the target site via a series of Windows format diskettes.

6. GSM (Novell) sites

The 32-bit run-time GSM environment will **NOT** be ported to 16-bit GSM (Novell) clients. **HOWEVER, THE 32-BIT RUN-TIME GSM ENVIRONMENT IS SUPPORTED ON 32-BIT GSM (Novell) CLIENTS**. Thus, unless the stand-alone GSM (Windows) option described in GS202 is taken, an existing GSM (Novell) configuration must upgrade to GSM V8.1 SP-10 (Windows) **or install at least one 32-bit GSM (Novell) client**.

IT IS ANTICIPATED THAT MOST GSM (NOVELL) SITES WILL SELECT THE OPTION TO INSTALL ONE, OR MORE, 32-BIT GSM (NOVELL) CLIENTS, INSTEAD OF MIGRATING THE ENTIRE GSM NETWORK TO GSM (WINDOWS).

6.1 Migrating GSM (Novell) to GSM (Windows)

Most of the issues that may arise when upgrading from 16-bit GSM (DOS) or upgrading a 16-bit GSM (Novell) client to 32-bit GSM (Windows) are fully described in section 5. In addition to the issues that must be considered for a GSM (DOS) to GSM (Windows) migration, the following additional issues may affect a GSM (Novell) to GSM (Windows) migration.

6.1.1 Replace Novell File-Server by a Windows server

If the option to install one, or more, 32-bit GSM (Novell)) clients on an existing Novell network is **NOT** taken then the GSM networking section of the network must be transferred from Novell NetWare to a Windows network. The Novell NetWare server must be replaced by a server that is capable of running GSM (Windows). This is typically expected to involve the replacement of the Novell Netware server by a Windows 2000, or Windows NT server.

If a GSM (Novell) network is being converted to GSM (Windows), and no further hardware is being purchased, ensure that the existing Novell server will run Windows NT or Windows 2000.

6.1.2 Replace SPXWS Thin Clients by GX or GSMWIN32

If the option to install one, or more, 32-bit GSM (Novell)) clients on an existing Novell network is **NOT** taken then all SPXWS thin-clients must be replaced by GX or GSMWIN32 thin-clients. This change from SPX to TCP/IP is necessary because an equivalent of the "SPX" or "SPXFULL" console controllers is not supported by GSM (Windows).

If a GSM (Novell) network is being converted to GSM (Windows) check that all existing SPXWS client PC's can run GX or GSMWIN32. Also, ensure that any Wide-Area connections that are currently handling IPX/SPX packets can also handle TCP/IP packets.

6.1.3 Other Considerations

If the option to install one, or more, 32-bit GSM (Novell)) clients on an existing Novell network is **NOT** taken then all the issues described in section 5 (with the exception of section 5.2) for a GSM (DOS) to GSM (Windows) upgrade must be considered.

Now read section 5, with the exception of 5.2.

6.2 Installing a 32-bit GSM (Novell) Client

Most of the issues that may arise when upgrading from 16-bit GSM (DOS) or upgrading a 16-bit GSM (Novell) client to 32-bit GSM (Windows) are fully described in section 5 (with the exception of section 5.2). In addition to the issues that must be considered for a GSM (DOS) to GSM (Windows) migration, the following additional issues may affect the installation of a 32-bit GSM (Novell) client.

Subject to User Number counts the 32-bit GSM (Novell) client(s) can either be a new Windows PC (i.e. node-id) or an upgrade to an existing 16-bit GSM (Novell) client. Any combination of 16-bit and 32-bit GSM (Novell) clients can be configured on a GSM (Novell) network providing, of course, that all the node-id's are unique. Thus, it is possible to continue to run 16-bit Global 2000 applications on the 16-bit GSM (Novell) clients, while running Global 3000 Payroll on the 32-bit GSM (Novell) client(s).

6.2.1 The Novell File-Server Must Support TCP/IP

The 16-bit GSM (Novell) implementation consists of a number of workstations communicating with the GSM.NLM File Server(s) via the SPX protocol. The 32-bit GSM (Novell) client communicates with the "TCP/IP aware" version of GSM.NLM via the TCP/IP protocol. Technical details of the 32-bit GSM (Novell) client are fully described in Technical Note IN286.

Before installing a 32-bit GSM (Novell) client, check that the version of Novell Netware supports the TCP/IP network protocol. Furthermore, check that the TCP/IP service is running and operating correctly on the Novell server.

6.2.2 Replace SPXWS Thin Clients by GX or GSMWIN32

If the option to install one, or more, 32-bit GSM (Novell)) clients on an existing Novell network is taken then all SPXWS thin-clients that are connected to an "SPX Terminal Server" PC that has been upgraded from the 16-bit GSM (Novell) client to the 32-bit GSM (Novell) client must be replaced by GX or GSMWIN32 thin-clients. This change from SPX to TCP/IP is necessary because an equivalent of the "SPX" or "SPXFULL" console controllers is not supported by the 32-bit GSM (Novell) client.

If a 16-bit GSM (Novell) client that is functioning as an SPX Terminal Server is upgraded to a 32-bit GSM (Novell) client then check that all the SPXWS client PC's can run GX or GSMWIN32. Also, ensure that any Wide-Area connections that are currently handling IPX/SPX packets can also handle TCP/IP packets.

6.2.3 Other Considerations

If the option to upgrade one, or more, 16-bit GSM (Novell) clients to 32-bit GSM (Novell)) clients is taken then all the issues described in section 5 (with the exception of section 5.2) for a GSM (DOS) to GSM (Windows) upgrade must be considered.

Now read section 5, with the exception of 5.2.

7. GSM (BOS) sites

The 32-bit run-time GSM environment will **NOT** be ported to GSM (BOS). Thus, unless the stand-alone GSM (Windows) option described in GS202 is taken, an existing GSM (BOS) configuration must upgrade to GSM V8.1 SP-10 (Windows) or, much less likely, GSM (Novell) or GSM (Unix) in order to upgrade to Global 3000 Payroll.

7.1 Replace BOS by a Supported Version of Windows

The upgrade from GSM (BOS) to GSM (Windows) will involve either a re-installation of a supported version of Windows on the BOS computer(s) or, more likely, the repurchase of a new computer pre-configured with a suitable version of Windows.

Will a supported version of Windows (see section 5.1) run on the BOS server(s). If the answer is "no" then the purchase of a Windows-capable PC or server will be required.

7.2 Arcnet and Ethernet

All existing GSM (BOS) LAN configurations are using Arcnet hardware. Arcnet networks are **not** supported by Windows. Thus, Arcnet networks are not supported by GSM (Windows).

All GSM (BOS) networks that are currently using Arcnet must upgrade to Ethernet in order to continue to use a network configuration. Note that for most small GSM (BOS) networks it should be possible to replace the "fat client" GSM (BOS) network by a "thin client" GSM (Windows) configuration.

All Arcnet networks running GSM (BOS) must be upgraded to ethernet to support GSM (Windows).

7.3 Serial Devices

GSM (Windows) only supports serial devices that are supported by Windows. Some serial devices that are widely used in GSM (BOS) configurations are not supported by Windows (i.e. the required Windows device drivers are not available); and thus are not supported by GSM (Windows). In particular, TCL do not provide Windows device drivers for the "original" BOS Hyperport serial i/o sub-system. Any serial i/o sub-system currently used by GSM (BOS) that is not supported by Windows must be replaced by an alternative that is supported. Note that GSM (Windows) supports all the serial TAP's, including the PCWS terminal emulator, that are supported by GSM (BOS).

If it is intended to upgrade a multi-user GSM (BOS) PC to GSM (Windows) and to retain the same serial screens check that Windows device drivers are available for the serial i/o sub-system. If Windows device drivers are not available, it will be necessary to replace the serial i/o sub-system to one that is supported by Windows; or to use the GSM (Windows) ethernet-based "thin-client" option to provide the equivalent multi-user configuration.

Extra Note on PCWS: See table 5 for a list of the Windows versions that are supported by the PCWS.COM terminal emulator. If you wish to run a serial interface terminal emulator (e.g. PCWS.COM) on any version of Windows other than Windows-95 or Windows-98 then a 32-bit product such as the Global Windows Workstation GSMWIN32.EXE, operating in serial-mode, must be used.

7.4 Tape Devices

GSM (Windows) only supports tape devices that are supported by Windows. Some tape devices that are widely used in GSM (BOS) configurations are not supported by Windows (i.e. the required Windows device drivers are not available); and thus are not supported by GSM (Windows). Furthermore, $TDUMP is not supported on GSM (Windows); and $TAPE is only supported on Windows NT and Windows 2000.

Check that the existing tape device is supported by Windows. Note that tape devices are only supported by GSM (Windows) on Windows NT and Windows 2000. Note also that $TDUMP is not supported on GSM (Windows).

7.5 Global Comms

Global Comms is not supported on GSM (Windows). In particular, the 2780 Comms that may be used for BACS submissions is not supported on GSM (Windows).

Any GSM (BOS) sites using 2780 Comms for BACS must switch to interfacing Global 3000 Payroll with a 3rd party specialised BACS product.

7.6 Full Screen BOS Application now a Windows Application

During the initial wave of GSM (BOS) to GSM (Windows) migrations the issue that attracted the most comments from end-users was the switch from full-screen GSM (BOS) to the GLOBAL.EXE "Windows application". The "Console application" GLCONS.EXE was released to counter these complaints. However, as explained in section 3.2, we have withdrawn GLCONS.EXE because it used some Windows functions that have been withdrawn from Windows 2000 and Windows XP. See section 3.2 for further details.

The "full screen" GSM (BOS) look-and-feel will be replaced by a Windows look-and-feel. As explained in the GSM (Windows) Configuration Notes special fonts are available to provide large windows or most screen resolutions.

7.7 Data Migration

Data migration is expected to be a major issue when migrating GSM (BOS) to GSM (Windows). The following routes are available:

1. Diskette. Although copying more than 10Mb, or so, of data via diskette may seem very labourious this may well be the most expedient data transfer method. This technique assumes that the GSM (BOS) computer is fitted with a suitable (i.e. 3½ inch) diskette drive! Note that $RESTORE on GSM (Windows) is, of course, 100% compatible with $SAVE on GSM (BOS);

2. $TAPE. Although it should be possible to move a suitable tape drive from a BOS computer to a Windows computer and use $TAPE on GSM (Windows) to restore a backup tape created on GSM (BOS) several resellers have encountered problems with this technique. As explained below, the tape drive used to effect the data transfer must be supported by Windows;

3. $REMOTE. This technique has been used to transfer small amounts of data. It should only be used in cases where the diskette and tape data transfer options are not viable (e.g. where the GSM (BOS) computer is configured with a 5¼diskette drive);

4. Transfer via Arcnet to an intermediate GSM (DOS) computer, followed by a simple migration from GSM (DOS) to GSM (Windows). This technique was used (years ago) to migrate the Global Technology development system to GSM (Windows). However, it does assume the GSM (BOS) configuration is, or can be converted to, a BOS-LAN Arcnet system;

5. Transfer via hard-disk to an intermediate GSM (DOS) computer, followed by a simple migration from GSM (DOS) to GSM (Windows). This technique can be used providing the GSM (BOS) hard-disk can be configured into a suitable GSM (DOS) computer. Note that Rick has developed a technique that allows data transfer via a specially configured GSM (DOS) system that is pre-configured with a "native" BOS P88Z hard disk. See the following document for more details:

   ftp://www.tissoft.co.uk/pub/gsm/p88z.htm

The data migration from GSM (BOS) to GSM (Windows) must be carefully planned and, if possible, trial copies should be attempted before the final data transfer.

7.8 Global 3000 Payroll is installed from CD - Part-1

Global Payroll will be distributed on the GPS Reseller CD. It will not be available on any other media (e.g. diskette, tape etc.). In order to fulfill an order for a 32-bit product distributed on CD a Global Product Licence file is sent via email from our Production Department.

All resellers should be familiar with the "Installing 32-bit Applications" (from CD) procedure (see Technical Note IN283) and should be ready to receive Global Product Licence files via email from our Production Department.

7.9 Global 3000 Payroll is installed from CD - Part-2

As explained in the "Installing 32-bit Applications" documentation (IN283), the installation of a 32-bit product involves accessing a Global Cabinet File (GCF) from the Global Product Set (GPS) CD. At least one computer on the network must be configured with CD drive. If a CD drive is not available at the end-user site, the reseller must transfer the Global 3000 Payroll GCF file from the GPS CD via diskette. Note that the size of the Global 3000 Payroll GCF file is expected to greatly exceed the capacity of a single 1.44Mb diskette (even when zipped).

If the site that is being upgraded from Payroll V6.8 to Global 3000 Payroll does not include a Windows PC with a CD drive. The Global 3000 Payroll GCF must be copied from the GPS CD to the target site via a series of Windows format diskettes.

8. Various other issues

This section describes a number of minor non-platform-specific issues that may affect the upgrade from Payroll V6.8 to Global 3000 Payroll.

8.1 8-bit and 7-bit Character Sets

Payroll V6.8, like all other 16-bit applications, assumes a 7-bit ASCII character set where the (hex) #23 character represents either a "pound" or "hash" character, depending on the language of the font and keyboard. The dual-definition of the #23 character in the 7-bit ASCII character set has lead to the plethora of 7-bit TAP's that swap the "pound" and "hash" characters.

Global 3000 Payroll has been designed to use the 8-bit ISO-8859-15 (Latin9) character set (which also supports the euro character). This character set defines the (hex) #A3 character as "pound". Consequently, Global 3000 Payroll has been coded to assume character (hex) #A3 is displayed as "pound". This character will appear in some labels and column headings in some Global 3000 Payroll windows.

On a 7-bit TAP the #A3 character may not appear as "£" but may appear as "#" or "ú". In these circumstances it will be necessary to use an 8-bit TAP or enable the 7-bit "pound-to-hash" translation. The following table summarises the situation:

Terminal type	Possible problems with 8-bit character set

GX ($.911)	None. GX has been designed to operate with the 8-bit ISO-8859 character set.
GSMWIN32 ($.811 etc.)	None. GSMWIN32 will operate with the 8-bit ISO-8859 character set.
GSMWIN32 ($.711 etc.)	Depending on the font used it may be necessary to switch to GX; use an 8-bit TAP (e.g. $.811) or use a 7-bit TAP with pound translation (e.g. $.714).
Other	Switch to GX or enable pound translation in the TAP.

8.2 Speedbase Database Utilities

The introduction of Global 3000 Payroll databases has required some changes to the various non-DBX Speedbase utilities. This table summarises the changes to the Speedbase utilities for GSM SP-10:

Utility	What happens with a Payroll database	What happens when run on GX
$BADGN	Functions correctly with Global 3000 Payroll databases	Automatically runs the "GX-only" $32BADG (see below)
$BADG	Will not recognise a Global 3000 Payroll database. This "cut-down" version of $BADGN is considered obsolete.	Runs in text mode in Window Zero
$BADCT	Functions correctly with Global 3000 Payroll databases	Runs in text mode in Window Zero
$BARBL	Functions correctly with Global 3000 Payroll databases	Automatically runs the "GX-only" $32BADG (see below)
$BASTS	Functions correctly with Global 3000 Payroll databases, although this simple status utility has effectively been replaced by $BAST	Runs in text mode in Window Zero, although this simple status utility has effectively been replaced by $BAST
$BASAV	Functions correctly with Global 3000 Payroll databases	Automatically runs the "GX-only" $32BADG (see below)
$BAST	Does not function with Global 3000 Payroll databases but automatically runs $BAST32, which does (see below)	Automatically runs the 32-bit $BAST32 (see below)
$BADN	Does not function with Global 3000 Payroll databases but automatically runs $BN32, which does (see below)	Automatically runs the 32-bit $BN32 (see below)
$BADS	Does not function with Global 3000 Payroll databases but automatically runs $BS32, which does (see below)	Automatically runs the 32-bit $BS32 (see below)
$BADB	Will not recognise a Global 3000 Payroll database. For GSM SP-10 it will not be possible to convert a Global 3000 Payroll database to C-ISAM. This restriction will be removed after the release of GSM SP-10.	Runs in text mode in Window Zero

$BADC	Will not recognise a Global 3000 Payroll database. For GSM SP-10 it will not be possible to convert a Global 3000 Payroll database to Extended C-ISAM. This restriction will be removed after the release of GSM SP-10.	Runs in text mode in Window Zero
$BN32	Functions correctly with Global 3000 Payroll databases	This is a 32-bit application so it will operate in GX-mode on GX, although it does not make use of GX-only features such as butttons.
$BS32	Functions correctly with Global 3000 Payroll databases	This is a 32-bit application so it will operate in GX-mode on GX, although it does not make use of GX-only features such as butttons.
$BAST32	Functions correctly with Global 3000 Payroll databases	This is a 32-bit application so it will operate in GX-mode on GX, although it does not make use of GX-only features such as butttons.
$32BADG	Functions correctly with Global 3000 Payroll databases	This is a 32-bit, GX-only application which does make use of GX-only features such as buttons.