GXPrint Registry Settings

1. Introduction

This document describes the various Global registry settings under the following registry key:

HKEY_LOCAL_MACHINE\Software\Global\Client\Printers\GXPrint

Although some of these settings are documented elsewhere in the Global Operating Manual (Windows) V8.1 Manual, various global *nn*. doc Release Notes and IN*nnn*. doc Technical Notes, this note only refers to 3 other documents:

GOMW81 Global Operating Manual (Windows) V8.1 (man81gsmwindows.doc)
IN181 Removing Config. File Technical Note (in181-removingconfigfile.doc)
CFM81 Global Configurator Manual V8.1 (man81configurator.doc)

Unless otherwise stated, a change to a registry setting only becomes effective when the Global Client (GLOBAL.EXE) is reloaded.

Technical Note IN259 should be read in conjunction with this document.

1.1 Registry Hierarchy

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Some of the settings described in this document appear under several keys in the Global section of the registry. For example:

```
HKEY_LOCAL_MACHINE\Software\Global\Client\Printers\+PageDepth
HKEY_LOCAL_MACHINE\Software\Global\Client\Printers\GXPrint\+PageDepth
HKEY_LOCAL_MACHINE\Software\Global\Client\Printers\GXPrint\500\+PageDept
```

The **printer-number** specific setting immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the **printer-class** specific setting immediately under the "Printers\GXPrint" key, which in turn, overrides the **generic-printer** setting under the "Printers" key. For example, if:

- ..\Software\Global\Client\Printers\+PageDepth=60
- ..\Software\Global\Client\Printers\GXPrint\+PageDepth=66
- ..\Software\Global\Client\Printers\GXPrint\500\+PageDepth=70

a value of 70 will be used for printer unit 500; a value of 66 will be used for all GXPrint printers that do not have an equivalent "Printers\GXPrint\5nn" registry setting (a value of 60 will be used for all other classes of printers (e.g. WinPrint) that do not have "Printers\xxxxxxxxxx+PageDepth" or "Printers\xxxxxxxxx\5nn\+PageDepth" setting).

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2. Registry Settings under GXPrint

The GXPrint printer controller provides a GX equivalent of the AuxPrint controller that is available for GSMWIN32.EXE thin clients.

The feature-rich GXPrint interface, which contains a considerable number of options on the "GX thin-client" PC, is fully described in a separate Technical Note (see IN259 for full details). This document merely describes the "application server side" registry settings.

Although superficially similar to the AuxPrint interface, the GXPrint interface includes many significant improvements:

- Both the GXPrint and AuxPrint printer interfaces involve sending print data to the thinclient. The performance of the GXPrint interface is superior to the AuxPrint interface, particularly in large multi-user configurations;
- The AuxPrint printer controller merely sends print data to the GSMWIN32.EXE thinclient. The GXPrint printer controller also sends print data to GX but, most importantly, accepts status information back from GX.EXE. Thus, printer error conditions can detected and reported by the GXPrint interface;

- The GXPrint interface is easy (trivial) to configure on the server;
- The GX.EXE side of the GXPrint interface provides many options, configured in the GXPRINT.INI file;
- The GXPrint interface allows Global applications to access a far wider range of printers than those supported by the traditional DOSPrint and WinPrint interfaces. In particular, the "GDI option" of the GXPrint interface allows Global applications to print to those printers which do not support standard escape-sequence based Printer Control Language (PCL). For example, most Bubble-Jet printers do not support a PCL and thus can only be accessed using the GXPrint interface.

However, the GXPrint does involve some restrictions that are not present in the more primitive AuxPrint interface:

- The GXPrint interface is only supported by 32-bit applications. See Technical Note IN259 for further details. Important Note: An option in the DOSPrint controller has removed this 32-bit only-restriction (see section 3.44 of Technical Note IN406 for further details);
- The GXPrint can only be used to print to a printer connected to, or otherwise accessible by, the PC that is running the GX thin-client (the AuxPrint controller allowed one user to print to a printer connected to another user's PC).

2.1 +DeviceCharacteristics

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the DEVICE CHARACTERISTICS option in the configuration file as documented in CFM81.

The printer-class specific +DeviceCharacteristics setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +DeviceCharacteristics setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +DeviceCharacteristics settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 0.

2.2 +HardwareFormFeed

This string setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the HARDWARE FORMFEED option in the configuration file as documented in CFM81.

The +PageDepth option (see section 2.4) is only recognised if the +HardwareFormFeed option is disabled. If the +HardwareFormFeed option is enabled the +PageDepth setting is ignored.

The printer-class specific +HardwareFormFeed setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +HardwareFormFeed setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +HardwareFormFeed settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default setting is "On". Valid strings that enable the option are "On", "True", "Yes" and "1". Valid strings that disable the option are "Off", "False", "No" and "0". All invalid strings default to "On".

2.3 +MaximumPageWidth

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the MAXIMUM PAGE WIDTH option in the configuration file as documented in CFM81.

The printer-class specific +MaximumPageWidth setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +MaximumPageWidth setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +MaximumPageWidth settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 250 (note that the default value for the MAXIMUM PAGE WIDTH configuration file option is 132).

2.4 +PageDepth

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the PAGE DEPTH option in the configuration file as documented in CFM81.

The +PageDepth option is only recognised if the +HardwareFormFeed option (see section 2.2) is disabled. If the +HardwareFormFeed option is enabled the +PageDepth setting is ignored.

The printer-class specific +PageDepth setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +PageDepth setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +PageDepth settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 0.

2.5 +PrinterDescription

This string setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the DESCRIPTION option in the configuration file as documented in CFM81.

The printer-class specific +PrinterDescription setting (if present) immediately under the "Printers\GXPrint" key is overridden by any printer-number specific +PrinterDescription settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599). Note there is no generic-printer +PrinterDescription setting under the "Printers" key.

The default setting is "GX Local Printer".

2.6 +PrinterExecFlagByte

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the PRINTER EXECUTIVE FLAG BYTE option in the configuration file as documented in CFM81.

The printer-class specific +PrinterExecFlagByte setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +PrinterExecFlagByte setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +PrinterExecFlagByte settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 0xff (255).

2.7 +PrinterExecTimeout

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the TIME-OUT IN TENS OF SECONDS option in the configuration file as documented in CFM81.

The printer-class specific +PrinterExecTimeout setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +PrinterExecTimeout setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +PrinterExecTimeout settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 2. The value must be between 0 and 63, inclusive.

2.8 +PrinterPool

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the bottom 4-bits of the DEVICE CHARACTERISTICS option in the configuration file as documented in CFM81.

See section 3.8 for further details.

The printer-class specific +PrinterPool setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +PrinterPool setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +PrinterPool settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 0. The value must be between 0 and 7, inclusive.

2.9 +SpoolerControlBits

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the SPOOLER CONTROL BITS option in the configuration file as documented in CFM81. Note that the value of the +SpoolerControlBits setting (i.e. 0, 1, 2 or 3) is shifted left by 6 bits (i.e. multiplied by 64) to form the equivalent SPOOLER CONTROL BITS value (i.e. #00, #40, #80 or #C0). This value is then combined (by a Logical OR operation) with the +PrinterExecTimeout value.

The printer-class specific +SpoolerControlBits setting (if present) immediately under the "Printers\GXPrint" key overrides the generic-printer +SpoolerControlBits setting (if present) immediately under the "Printers" key; and is itself overridden by any printer-number specific +SpoolerControlBits settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599).

The default value is 0. The value must be between 0 and 3, inclusive.

2.10 MultiUserPrinterExecutive

This string setting is the printer-class specific GXPrint equivalent of the printer-number specific MultiUserPrinterExecutive setting that is fully described in section <u>3.10</u>.

The printer-class specific MultiUserPrinterExecutive setting (if present) immediately under the "Printers\GXPrint" key is overridden by any printer-number specific MultiUserPrinterExecutive settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599). Note there is no generic-printer MultiUserPrinterExecutive setting under the "Printers" key.

The default setting is "Off". Valid strings that enable the option are "On", "True", "Yes" and "1". Valid strings that disable the option are "Off", "False", "No" and "0". All invalid strings default to "Off".

2.11 BufferStackDepth

This value setting is the printer-class specific GXPrint equivalent of the printer-number specific BufferStackDepth setting that is fully described in section <u>3.11</u>.

The printer-class specific BufferStackDepth setting (if present) immediately under the "Printers\GXPrint" key is overridden by any printer-number specific BufferStackDepth

settings under the relevant "Printers\GXPrint\5nn" key (where 5nn = 500 to 599). Note there is no generic-printer BufferStackDepth setting under the "Printers" key.

The default value is 10.

3. Registry Settings under GXPrint\5nn

The settings under each individual printer key (500 to 599) only apply to a single printer.

3.1 +DeviceCharacteristics

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the DEVICE CHARACTERISTICS option in the configuration file as documented in CFM81.

The printer-number specific +DeviceCharacteristics setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +DeviceCharacteristics setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +DeviceCharacteristics setting (if present) under the "Printers" key.

The default value is 0.

3.2 +HardwareFormFeed

This string setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the HARDWARE FORMFEED option in the configuration file as documented in CFM81.

The +PageDepth option (see section 3.4) is only recognised if the +HardwareFormFeed option is disabled. If the +HardwareFormFeed option is enabled the +PageDepth setting is ignored.

The printer-number specific +HardwareFormFeed setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +HardwareFormFeed setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +HardwareFormFeed setting (if present) under the "Printers" key.

The default setting is "On". Valid strings that enable the option are "On", "True", "Yes" and "1". Valid strings that disable the option are "Off", "False", "No" and "0". All invalid strings default to "On".

3.3 +MaximumPageWidth

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is

equivalent to the MAXIMUM PAGE WIDTH option in the configuration file as documented in CFM81.

The printer-number specific +MaximumPageWidth setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +MaximumPageWidth setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +MaximumPageWidth setting (if present) under the "Printers" key.

The default value is 250 (note that the default value for the MAXIMUM PAGE WIDTH configuration file option is 132).

3.4 +PageDepth

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the PAGE DEPTH option in the configuration file as documented in CFM81.

The +PageDepth option is only recognised if the +HardwareFormFeed option (see section 3.2) is disabled. If the +HardwareFormFeed option is enabled the +PageDepth setting is ignored.

The printer-number specific +PageDepth setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +PageDepth setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +PageDepth setting (if present) under the "Printers" key.

The default value is 0.

3.5 +PrinterDescription

This string setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the DESCRIPTION option in the configuration file as documented in CFM81.

The printer-number specific +PrinterDescription setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +PrinterDescription setting (if present) immediately under the "Printers\GXPrint" key. Note there is no generic-printer +PrinterDescription setting directly under the "Printers" key.

The default setting is "GX Local Printer".

3.6 +PrinterExecFlagByte

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the PRINTER EXECUTIVE FLAG BYTE option in the configuration file as documented in CFM81.

The printer-number specific +PrinterExecFlagByte setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +PrinterExecFlagByte setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +PrinterExecFlagByte setting (if present) under the "Printers" key.

The default value is 0xff (255).

3.7 +PrinterExecTimeout

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the TIME-OUT IN TENS OF SECONDS option in the configuration file as documented in CFM81.

The printer-number specific +PrinterExecTimeout setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +PrinterExecTimeout setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +PrinterExecTimeout setting (if present) under the "Printers" key.

The default value is 2. The value must be between 0 and 63, inclusive.

3.8 +PrinterPool

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the bottom 4-bits of the DEVICE CHARACTERISTICS option in the configuration file as documented in CFM81. The +PrinterPool setting affects the bottom 4 bits of Printer DEVICE CHARACTERISTICS BYTE (PADC1) as follows:

+PrinterPool value	Bottom 4 bits of PADC1
0	#08
1	#09
2	#0A
3	#0B
4	#0C
5	#0D
6	#0E
7	#0F

The +PrinterPool option is available to allow simultaneous, multiple-user printing to a particular Windows folder, with a single \$PR assignment, without the need to run the Global spooler, \$SP. If any printer in a particular Printer Pool is IN USE, printing will automatically use another printer in the same pool, avoiding the IN USE error that would normally result when two, or more users, attempt to print to the same Printer Device (e.g. 500) simultaneously.

Consider the following "non Pooled Printer" configuration:

- ..\Printers\GXPrint\500\Name=C:\SPOOLFOLDER1\
- ..\Printers\GXPrint\503\Name=C:\SPOOLFOLDER1\

By default, while a particular user is printing to SPOOLFOLDER1 via Printer Device 500, that printer will remain IN USE. During the print operation, any attempt by another user to create a file on SPOOLFOLDER1 will require the exclusive use of Printer Unit 500, which will be denied (i.e. an IN USE error will be returned by the OPEN operation). Note that while Printer Unit 500 is IN USE the operator can still create a file on SPOOLFOLDER1 but only by explicitly changing the printer assignment (e.g. \$PR) from 500 to 503. Changing the Printer Unit to overcome IN USE errors is **EXTREMELY** inconvenient.

Now consider the following "PooledPrinter" configuration:

- ..\Printers\GXPrint\500\Name=C:\SPOOLFOLDER1\
- ..\Printers\GXPrint\500\+PrinterPool=0
- ..\Printers\GXPrint\501\Name=C:\SPOOLFOLDER1\
- ..\Printers\GXPrint\501\+PrinterPool=0
- ..\Printers\GXPrint\502\Name=C:\SPOOLFOLDER1\
- ..\Printers\GXPrint\502\+PrinterPool=0

If a user is printing to SPOOLFOLDER1 via Printer Device 500, that printer will still remain IN USE. However, during the print operation, any attempt by another user to create a file on SPOOLFOLDER1 via Printer Unit 500 will be automatically be redirected to Printer Unit 501. If Printer Unit 501 is also IN USE, the operation will be automatically be redirected to 502. Thus, the print operation is automatically redirected to the first available Printer Unit within the pool **WITHOUT** the need to explicitly change the printer assignment. An IN USE error will only be returned if **ALL** the printers in the pool are simultaneously IN USE. Obviously, the size of the Printer Pool, in terms of the number of Printer units that are participating, depends on the number of users and the frequency of print operations.

The printer-number specific +PrinterPool setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +PrinterPool setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +PrinterPool setting (if present) under the "Printers" key.

The default value is 0. The value must be between 0 and 7, inclusive.

The +PrinterPool option has been effectively replaced by the more convenient MultiUserPrinterExecutive option (see section <u>3.10</u>).

3.9 +SpoolerControlBits

This value setting is fully described in IN181. When the option to replace the Global Configuration File by registry settings is enabled (UseConfigurationFile=Off) this value is equivalent to the SPOOLER CONTROL BITS option in the configuration file as

documented in CFM81. Note that the value of the +SpoolerControlBits setting (i.e. 0, 1, 2 or 3) is shifted left by 6 bits (i.e. multiplied by 64) to form the equivalent SPOOLER CONTROL BITS value (i.e. #00, #40, #80 or #C0). This value is then combined (by a Logical OR operation) with the +PrinterExecTimeout value.

The printer-number specific +SpoolerControlBits setting (if present) immediately under the "Printers\GXPrint\5nn" key (where 5nn = 500 to 599) overrides the printer-class specific +SpoolerControlBits setting (if present) immediately under the "Printers\GXPrint" key, which in turn, overrides the generic-printer +SpoolerControlBits setting (if present) under the "Printers" key.

The default value is 0. The value must be between 0 and 3, inclusive.

3.10 MultiUserPrinterExecutive

This string setting is available to enable the Multi-User Printer Executive (MUPE) option. The MUPE option has effectively replaced the "Pooled Printer" interface, available with other types of printers, for those configurations where a single Printer Unit is being used in a multi-user environment.

THIS SETTING MUST BE ENABLED FOR THE GXPrint INTERFACE.

A diagnostic option (MultiUserPrinterDiagnostics) is available to trouble-shoot any problems with the MUPE option (see Technical Note IN401.DOC).

The default setting is "Off". Valid strings that enable the option are "On", "True", "Yes" and "1". Valid strings that disable the option are "Off", "False", "No" and "0". All invalid strings default to "Off".

3.11 BufferStackDepth

This value setting specifies the number of internal print buffers maintained by the GXPrint controller. Most print lines are copied to a single "output buffer" by the GXPrint control. However, some reports that involve character translation or other features available in the Printer Control File may require several buffers.

If a complex Printer Control File is being used to print a report to a GXPrint printer the controller may have insufficient internal print buffers resulting in a TOO MANY OPEN FILES error message (i.e. error code "T"). If this error occurs when using a GXPrint controller the BufferStackDepth registry setting must be increased from the default value of 10.

The default value is 10. The value must be between 1 and 9999, inclusive.

Important Note: An attempt to use the GXPrint interface from a 16-bit application will also result in the TOO MANY OPEN FILES error message.

3.12 IgnoreThisPrinter

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This string setting can be set to "On" etc. to temporarily remove a specific GXPrint printer from the Global configuration. This option is useful because it removes the printer without deleting the GXPrint\5nn key from the registry, and thus removing all the other **printer-number** specific settings, which can remain in the registry. The GXPrint printer can be easily re-instated by either setting IgnoreThisPrinter=Off, or by deleting the IgnoreThisPrinter setting entirely.

The default setting is "Off". Valid strings that enable the option are "On", "True", "Yes" and "1". Valid strings that disable the option are "Off", "False", "No" and "0". All invalid strings default to "Off".

Important Note: This setting is only supported by GLOBAL.EXE V3.8e, or later.