

Miscellaneous System Manager hints and tips

INTRODUCTION

This bulletin is a collection of System Manager hints and tips.

There are a number of sections:

- **System Manager Version Numbers:** this explains the various version numbers applied to the different layers of System Manager; it will act as useful background information for support staff dealing with tricky System Manager problems.
- **Steering Routine Diagnostics:** this explains the diagnostics available during the bootstrap phase of System Manager for BOS, MS-DOS/Windows or Novell
- **System Manager (Unix) Troubleshooting Guide:** this reminds readers about the already-published information for Unix GSM.
- **Terminal Type Error Messages:** this provides an explanation of the error messages which might occur when loading a TAP.

SYSTEM MANAGER VERSION AND VARIANT NUMBERS

Global System Manager consists of several software layers. Each layer may have an independent software version (or variant).

SYSTEM MANAGER (BOS) GSM VERSION

For System Manager (BOS) the highest level in the software hierarchy consists of the Global Cobol "\$ programs" (e.g. \$F) and related files (e.g. \$MONITOR). The version of this software layer is referred to as the "GSM version" (e.g. V7.0, V8.0). This level number is displayed together with the contract protection message at start-up time and also on the first line of the \$S report.

SYSTEM MANAGER (BOS) EXECUTIVE VERSIONS

For System Manager (BOS) the next level in the software hierarchy consists of the executives held in the +J0 library. The version of the executive library is displayed by \$S. When a new version of System Manager is initially released, the "executive version" (i.e. the members of the +J0 library) will usually be the same as the version of the library and the GSM version. During the lifetime of a particular version of System Manager, the versions of the individual executives and the version of executive library may increase. For example:

Library +.J0 V8.0 8086 Executives

<i>Member</i>	<i>Created</i>	<i>Type</i>	<i>Size</i>	<i>Title</i>	
+J0CA63	23/01/91	R2	356	V7.0	RAM disk controller
+J0EA00	14/12/92	R2	11214	V8.0A	File Executive
+J0EB00	02/05/92	R2	17574	V8.0	Console Executive
+J0EE00	01/05/92	R2	4244	V8.0	Printer Executive
+J0EF00	14/12/92	R2	4972	V8.0A	LAN Executive
+J0M000	23/01/91	R2	1778	V7.0	Memory Bank Module
+J0N000	01/05/92	R2	11274	V8.0	Interpreter & SVCs
+J0S000	14/12/92	R2	9958	V8.0A	Steering Routine

SYSTEM MANAGER (BOS) CONTROLLER VARIANTS

For System Manager (BOS) the controllers represent the next level in the software hierarchy. The controllers are held in one of the following libraries: +.J5, +.J5HP, +.J5PS. The variant of the main controller library (i.e. +.J5) is displayed by \$S. In general, the "controller variant" is **independent** of the GSM version and executive version. For example the V3.0 controllers for System Manager (BOS), in the V3.0 .J5 library, will operate with System Manager V7.0 and V8.0.

Library +.J5 V3.0 IBM PC Nucleus

<i>Member</i>	<i>Created</i>	<i>Type</i>	<i>Size</i>	<i>Title</i>	
+J5CA01	01/01/93	R2	1896	V3.0	IBM PC Diskette
+J5CA04	01/02/90	R2	628	V2.0	IBM PC Winchester
+J5CA08	01/02/90	R2	862	V2.0	Data Pack Controller
+J5CA63	01/02/90	R2	362	V2.0	EMS Version of +J0CA63
+J5CB01	01/07/93	R2	7730	V3.0	Integral Console
+J5CB02	01/01/93	R2	2132	V3.0	TTY Serial Console
+J5CB06	01/02/90	R2	2486	V2.0	Smartport Console
+J5CB60	01/01/93	R2	108	V3.0	Hyperport Console
+J5CE01	01/01/93	R2	388	V3.0	Parallel Printer
+J5CE02	01/01/93	R2	1928	V3.0	S.Print Serial Printer
+J5CE06	01/02/90	R2	2324	V2.0	Smartport Printer
+J5CE60	01/01/93	R2	490	V3.0	Hyperport Printer
+J5CF02	01/02/90	R2	1398	V2.0	Arcnet Controller
+J5M000	01/02/90	R2	1756	V2.0	EMS Version of +J0M000
+J5NASP	01/01/93	R2	11080	V3.0	PCC/I Module
+J5NBOX	02/02/90	R2	8550	V2.0	Smartport Nucleus
+J5NEXT	02/02/90	R2	1062	V2.0	Ext Memory Controller
+J5NHYP	01/01/93	R2	12170	V3.0	Hyperport Module
+J5NINT	01/01/93	R2	4390	V3.0	Serial Interrupts
+J5NMXF	01/01/93	R2	12328	V3.0	HyperMx Module
+J5NSIM	01/02/90	R2	730	V2.0	SIM Memory Controller
+J5NSV9	01/02/93	R2	1020	V2.0	Timer Controller

SYSTEM MANAGER (BOS) BACNAT VARIANT

For System Manager (BOS) no BACNAT software is required, consequently the concept of a BACNAT variant number is meaningless.

SYSTEM MANAGER (MS-DOS, WINDOWS, NOVELL) GSM VERSION

For System Manager (MS-DOS, Windows, Novell) the highest level in the software hierarchy consists of the Global Cobol "\$ programs" (e.g. \$F) and related files (e.g. \$MONITOR). The version of this software layer is referred to as the "GSM version" (e.g. V7.0, V8.0). This level number is displayed together with the contract protection message at start-up time and also on the first line of the \$S report.

SYSTEM MANAGER (MS-DOS, WINDOWS, NOVELL) EXECUTIVE VERSIONS

For System Manager (MS-DOS, Windows, Novell) the next level in the software hierarchy consists of the executives held in the +J0 library. The version of the executive library is displayed by \$S. When a new version of System Manager is initially released, the "executive version" (i.e. the members of the +.J0 library) will be the same as the version of the library and the GSM version. During the lifetime of a particular

version of System Manager, the versions of the individual executives and the version of executive library may increase.

SYSTEM MANAGER (MS-DOS, WINDOWS, NOVELL) CONTROLLER VARIANTS

For System Manager (MS-DOS, Windows, Novell) the controllers represent the next level in the software hierarchy. For System Manager (MS-DOS and Windows) the controllers are held in one of the following libraries: `+.JW`, `+.JWDOS`. For System Manager (Novell) the controllers are held in one of the following libraries: `+.JW`, `+.JWDOS`, `+.JWNV`. The variant of the main controller library (i.e. `+.JW`) is displayed by `$S`. In general, the "controller-variant" is independent of the "GSM-version" and the "executive-version". For example, the V4.0 controllers for System Manager (MS-DOS and Windows) in the V4.0 `+.JW` library will operate with System Manager V7.0 and V8.0.

Library `+.JW` V4.0 GSM (DOS) Nucleus

<i>Member</i>	<i>Created</i>	<i>Type</i>	<i>Size</i>	<i>Title</i>	
+JWCA01	01/01/93	R2	1896	V3.0	IBM PC Diskette
+JWCA04	01/02/90	R2	628	V2.0	IBM PC Winchester
+JWCA08	01/02/90	R2	862	V2.0	Data Pack Controller
+JWCA63	01/02/90	R2	362	V2.0	EMS Version of +J0CA63
+JWCB01	01/07/93	R2	7732	V4.0	Integral Console
+JWCB02	01/01/93	R2	2132	V3.0	TTY Serial Console
+JWCB06	01/02/90	R2	2486	V2.0	Smartport Console
+JWCB60	01/01/93	R2	108	V3.0	Hyperport Console
+JWCE01	01/01/93	R2	388	V3.0	Parallel Printer
+JWCE02	01/01/93	R2	1928	V3.0	S.Print Serial Printer
+JWCE06	01/02/90	R2	2324	V2.0	Smartport Printer
+JWCE60	01/01/93	R2	490	V3.0	Hyperport Printer
+JWCF02	01/02/90	R2	1398	V2.0	Arcnet Controller
+JWM000	01/02/90	R2	1756	V2.0	EMS Version of +J0M000
+JWNBOX	02/02/90	R2	8550	V2.0	Smartport Nucleus
+JWNEXT	02/02/90	R2	1062	V2.0	Ext Memory Controller
+JWNHYP	01/01/93	R2	12170	V3.0	Hyperport Module
+JWNINT	01/01/93	R2	4390	V3.0	Serial Interrupts
+JWNMXP	01/01/93	R2	12328	V3.0	HyperMx Module
+JWNSIM	01/02/90	R2	730	V2.0	SIM Memory Controller
+JWNSV9	01/07/93	R2	1086	V4.0	Timer Controller

SYSTEM MANAGER (MS-DOS, WINDOWS, NOVELL) BACNAT VARIANT

The `BACNAT` software represents the lowest level in the software hierarchy. The `BACNAT` software does not currently include an explicit version number – the version of the software is implied from the dates of the MS-DOS files.

SYSTEM MANAGER (NOVELL) NLM VARIANT

The variant of the System Manager (Novell) NLM is displayed when the NLM is loaded. For example:-

Global System Manager NLM V1.4

SYSTEM MANAGER (UNIX) GSM VERSION

For System Manager (Unix) the highest level in the software hierarchy consists of the Global Cobol "\$ programs" (e.g. `$F`) and related files (e.g. `$MONITOR`). The version of this software strata is referred to as the "GSM version" (e.g. V7.0, V8.0). This level number is displayed together with the contract protection message at start-up time and also on the first line of the `$S` report.

SYSTEM MANAGER (UNIX) EXECUTIVE VERSION

For System Manager (Unix) the executive library (i.e. `+.C0`) is empty because the code for the executives is included within the `BACNAT` software (see below). The version of the executive library displayed by `$S` is meaningless.

SYSTEM MANAGER (UNIX) CONTROLLER VARIANTS

For System Manager (Unix) the controller library (i.e. +.C2) is empty because code for the controllers is included within the BACNAT software (see below). The version of the executive library displayed by \$\$ is meaningless.

SYSTEM MANAGER (UNIX) BACNAT VARIANT

The BACNAT software represents the lowest level in the software hierarchy. The BACNAT variant number, is displayed when the first user loads System Manager. The variant number is also held within the \$GLDIR/sys/version (sic) and \$GLDIR/sys/machine files. Please quote the BACNAT variant number when reporting problems with System Manager (Unix) to the Hotline.

STEERING ROUTINE DIAGNOSTICS

This section only applies to System Manager (BOS), System Manager (DOS, Windows) and System Manager (Novell). All versions of the 8086-family Steering Routine (components `+J0S000` in library `+.J0`) include diagnostic software. Recently, these relatively crude diagnostics have been enhanced. This note describes the level of diagnostic software incorporated into the various "current" versions of the Steering Routine.

Please note that the version of the Steering Routine is only loosely associated with the version of System Manager (although the two versions normally coincide – see above). To determine the version of the Steering Routine, use `$LIB` to list the `+.J0` library on `SYSRES` (or `SYSIPL`).

V6.0, V6.1, V6.2 AND V7.0 STEERING ROUTINE

The diagnostic code included in the pre-V8.0 versions of the Steering Routine displays `MODULE filename LOADED AT address` messages for all the executives and controllers that are loaded during the bootstrap process. **This diagnostic software is only enabled if the last character of the configuration file name is a "D".** For example, rename `++5700XJ` to `++5700XD` to enable the diagnostics.

V8.0 STEERING ROUTINE

In addition to the diagnostics present in the V7.0 Steering Routine, the V8.0 version includes code to check for multiple occurrences of nucleus components. If this code detects an error, the following message will be displayed: `WARNING - MULTIPLE ENTRIES IN IX-BLOCK FOR filename`. **THIS MESSAGE IS A SEVERE WARNING AND SHOULD NOT BE IGNORED.**

Note that the display of the message cannot be disabled. It is not switched on by renaming the last letter of the configuration filename to a "D" (see above) but is permanently enabled.

The message warns that there is more than one version of the file *filename* present on the IPL device. This situation will never occur with distributed or cleanly installed software but may occur if new nucleus components are copied to a `SYSRES` (or `SYSIPL`) volume without correctly "de-activating" the redundant component. The most common examples of this mistake are:

- Copying a single nucleus component to an IPL volume without renaming the version included in the `+.J0` or `+.J5` library;
- Attempting to de-activate a nucleus library by renaming it `+.J5OLD`, for example. The BOS bootstrap loader considers all nucleus libraries with names that start with "+" as valid.

V8.0A STEERING ROUTINE

In addition to the diagnostics present in the V8.0 Steering Routine, the V8.0A version includes code to display the results of those nucleus components that fail to load. The failure may be due to the absence of the required component (error 3), insufficient memory in the 64 Kb nucleus segment to load the module (error M) or an error from the module itself (error D – usually due to missing or inappropriate hardware). Note that details of the failed components are displayed by System Manager itself (once the bootstrap process has completed) on distributed software (i.e. on `BACRES` when the \$CP assignment in `$MONITOR` is PAM'ed to `uuuS`). However, the System Manager diagnostics are disabled on installed systems (i.e. when the \$CP assignment in `$MONITOR` is PAM'ed to `uuuT`).

The V8.0A diagnostic code is only enabled if the last character of the configuration file name is a "D". For example, rename `++5700XJ` to `++5700XD`.

The most common problem diagnosed by the V8.0A Steering Routine occurs when there is insufficient memory in the 64 Kb nucleus segment to load the integral screen controller, +J5CB01. With the pre-V8.0A Steering Routine, enabling the diagnostics (by renaming the 1st character of the Steering Routine to "D") would indicate that the system "hangs" after displaying the message ENTERING INTERPRETER.

The absence of the message MODULE +J5CB01 LOADED AT hhhhhh is evidence of the problem, but this "evidence of absence" is easy to miss.

Using the V8.0A Steering Routine, with diagnostics enabled, the following message will appear: MODULE +J5CB01 LOAD FAILED, ERROR M immediately pin-pointing the "console controller memory problem".

SYSTEM MANAGER (UNIX) TROUBLE-SHOOTING GUIDE

Your attention is drawn to the fact that a System Manager (Unix) trouble-shooting guide (GSMUNIX.ZIP) is available on the Bulletin Board System.

TERMINAL TYPE ERROR MESSAGES

The following error messages may appear when replying to the PLEASE KEY TERMINAL CODE prompt. These errors are not documented in the V8.0 Global Operating manual:-

INVALID TERMINAL TYPE

This error message appears if you attempt to load a TAP for a serial screen on a memory – mapped screen or vice versa.

UNABLE TO LOAD TRANSLATION TABLE

This error message appears if the TAP requires character translation but this option has not been enabled in the configuration file. Use \$CUS or CFUPDATE to enable character translation for the appropriate screen.

INCORRECT TERMINAL DEPTH

This error message appears if the terminal depth, specified in the TAP, is greater than the screen image depth, specified in the configuration data. Use \$CUS or CFUPDATE to increase the screen image depth for the appropriate screen.

INCORRECT TERMINAL WIDTH

This error message appears if the terminal width, specified in the TAP, is greater than the screen image width, specified in the configuration data. Use \$CUS or CFUPDATE to increase the screen image for the appropriate screen.