

# 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

| <b>Member</b> | <b>Created</b> | <b>Type</b> | <b>Size</b> | <b>Title</b>             |
|---------------|----------------|-------------|-------------|--------------------------|
| +J0CA63       | 23/01/91       | R2          | 356         | V7.0 RAM disk controller |
| +JOEA00       | 14/12/92       | R2          | 11214       | V8.0A File Executive     |
| +JOEB00       | 02/05/92       | R2          | 17574       | V8.0 Console Executive   |
| +JOEE00       | 01/05/92       | R2          | 4244        | V8.0 Printer Executive   |
| +JOEF00       | 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

| <b>Member</b> | <b>Created</b> | <b>Type</b> | <b>Size</b> | <b>Title</b>                |
|---------------|----------------|-------------|-------------|-----------------------------|
| +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      |
| +J5NMXP       | 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

| <b>Member</b> | <b>Created</b> | <b>Type</b> | <b>Size</b> | <b>Title</b>                |
|---------------|----------------|-------------|-------------|-----------------------------|
| +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 \$S 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.