

SPOOL-A-MATIC

Version 1 Release 4 Modification 0
Enhancement Summary
Program Number 2A55-SAM

Third Edition (January 2001)

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Installation Instructions

Restoring the new release

Read the Enhancement Summary to determine if any changes affect your installation. To install Ver 1 Rel 4 Mod 0, sign on as the security officer, insert the distribution media in the appropriate device and run the Restore Licensed Program (RSTLICPGM) command:

- o If you are restoring from CD-ROM run:

```
RSTLICPGM LICPGM(2A55SAM) DEV(device-name)
```

- o If you are restoring from tape to V4 of OS/400 run:

```
RSTLICPGM LICPGM(2A55SAM) DEV(device-name) SEQNBR(3)
```

- o If you are restoring from tape to V3 of OS/400 run:

```
RSTLICPGM LICPGM(2A55SAM) DEV(device-name) SEQNBR(5)
```

Where “device-name” is the device the media was mounted on and is usually OPT01 for CD-ROM or TAP01 for tape.

Note: This can be a long running process. We recommend that you submit the command to batch.

Enter your permanent authorization code.

Enhancements for Spool-A-Matic Version 1 Release 4 Modification 0

What's In This Section

This section provides information on Spool-a-Matic enhancements for the current release, notes any customer code implications, and describes where to find more information when applicable.

Authorization Algorithm Changes

The product's authorization algorithm has been updated. Permanent authorization codes are now release dependent. You will receive the correct permanent authorization code with each new release you receive. The changes affect your installation procedure and may affect disaster recovery plans.

The installation process preserves the authorization information found in the previous release of the software when a new release is installed. In the past, this meant that you did not have to re-enter your permanent authorization code. With this release and all subsequent releases you are required to enter the release specific authorization code after restoring the software.

If the new permanent authorization code is not entered after the software is restored, the algorithm will grant a 90 day release upgrade grace period based on your old authorization information.

If you have a disaster recovery plan, you may need to review it. While the hot site installation instructions specify that you can restore an otherwise authorized copy of the software to a back up machine, this was not enforced. It was possible to delete and reinstall the software from any distribution media and receive a new 30 day automatic authorization.

Now you must use an authorized copy when restoring to a back up machine in order to receive the an automatic 30 day authorization. The correct sequence of steps is as follows:

1. Install the software and enter the permanent authorization on your production machine.
2. Save the software from your production machine using the Save Licensed Program (SAVLICPGM) command. This creates an authorized copy, save it with your back ups.
3. When restoring to the back up machine you must first insure that any previous copies have been deleted. To delete a previous copy use the Delete Licensed Program (DLTLICPGM) command.
4. Restore the authorized copy to the back up machine using the Restore License Program (RSTLICPGM) command.
5. The back up machine will create an automatic authorization running for 30 days from the first time the software is used. This allows you install the authorized copy in advance of a disaster.

PDF Password Protection and Encryption Added

A PDF Document Security (PDFDOCSEC) parameter was added to the Spool Convert (SPLCONVERT) command.

PDF documents can be encrypted to protect their contents from unauthorized access. An encrypted PDF document has two passwords: an owner password and a user password. The PDF document also specifies operations that should be restricted even when the PDF document is decrypted: printing, copying text and graphics out of the PDF document, modifying the PDF document, and adding or modifying text notes (annotations). When opening an encrypted PDF document, Adobe's Acrobat Reader prompts for a password, if one is required. When the correct user password is supplied, the PDF document is opened and decrypted but these operations are restricted; when the owner password is supplied, all operations are allowed. The owner password is required to change these passwords and restrictions.

A PDF document is encrypted whenever a user or owner password or restrictions are supplied for the PDF document. However, a user is prompted for a password on opening a PDF document only if the PDF document has a user password.

Because Adobe's Acrobat Reader checks first to see if a proffered password is the user password, you can effectively render the PDF document as read only by setting the owner and user password to the same value.

PDF Font Embedding Added

When converting spooled files Spool-a-Matic processes external print resources such as page segments and overlays (except *PDFxxxBASIC). By default, fonts are mapped to one of the fonts built in to Adobe's Acrobat reader. The built in fonts are:

- o Courier (including bold, italic and bold italic)
- o Helvetica (including bold, italic and bold italic)
- o Times (including bold, italic and bold italic)
- o Symbol

For host resident fonts, you can improve the font fidelity (at the expense of file size) by specifying PDFFONTIMB(*TYPES13) on Spool-a-Matic's Change Spool-a-Matic Default (CHGSAMDFT) command. Imbedding fonts includes a copy of the font's definition in the generated PC file.

PDF Exact Text Placement Added

Most OS/400 spooled files use absolute text positioning operations to place the text exactly. For spooled files and print resources that contain relative positioning operations, positional accuracy can be improved for host resident fonts (at the expense of processing time) by specifying TXRELPOS(*EXACT) on Spool-a-Matic's Change Spool-a-Matic Default (CHGSAMDFT) command.

DLTSPLF() Parameter Added

A Delete file after processing (DLTSPLF) parameter was added to the Spool Convert (SPLCONVERT) command. With this parameter you can specify that the spooled file is deleted after it is successfully processed.

PAGERANGE() Parameter Added

A Page range to print (PAGERANGE) parameter was added to the Spool Convert (SPLCONVERT) command. For the following transforms you can select a range of pages to be included in the generated PC file:

- o *PDF811
- o *PDF814
- o *PDFA4
- o *PDF811814
- o *PDF814811
- o *TXT
- o *RTF811
- o *RTF814
- o *RTFA4
- o *HTMLBASIC
- o *FFTBASIC
- o *AFPPRINTFILE

Additional PDF Enhancements

A wide range of additional enhancements were made to Spool-a-Matic's support for Adobe's Portable Document Format (PDF) conversion. These include:

- o Color support for PTOCA print text and GOCA graphic lines.
- o Conversion of DDS DOCIDXTAG (Document Index Tag) keyword into book marks.
- o Support for complex OfficeVision spooled files containing both *SCS and *IPDS print data.
- o Support for ImagePlus generated incomplete images.
- o Support for ImagePlus generated "bad width" CCITT G4 compressed images.
- o Support for V4R4M0's rotated page segments.
- o Support for *SCS margins.
- o Support for OfficeVision's \$OVL special overlay processing.
- o Enhanced margin processing using new "Refprtdev offset default" and "Refprtdev offset correction" values.
- o Increased maximum number of pages from 32k to approximately 80k.
- o Rearrange internal page resources to enable Acrobat Editing of generated file.
- o Support for bit reversed images.
- o Unprintable character replacement.
- o Improved floating point conversion performance.
- o Support for graphics line styles.

Font Processing Enhanced

Font processing was enhanced to include parsing of coded font, character set and code page resources, allowing more accurate rendering by file generators.

AFP Print File (*AFPPRINTFILE) Transform Added

AFP Print File (*AFPPRINTFILE) Transform was added. Spool-a-Matic generates an AFP Print File by copying the contents of the spooled file and inserting any related page segments and overlays. The resulting PC file is ready for viewing with IBM's AFP Workbench Viewer.

Additional Corrections and Fixes

A wide range of additional corrections and fixes were made to Spool-a-Matic These include:

Note: Thanks to all who reported problems or assisted in their resolution.

- o TXT Generator
 - Line merge error corrected.
- o PDF Generator
 - Rotated text mirroring problem corrected.
 - 198 column at 15 CPI handling corrected.
 - Erroneous page rotation for certain spooled files corrected.
 - Mis-aligned *SCS underscore corrected.
 - "Object not found during resource processing" error for complex overlays specified in *SCS and *IPDS spooled files corrected.
 - Mis-handling of reference print device during resource processing corrected.
 - Multiple corrections to computer output reduction (*COR) logic made.
 - Image width error for some IBM MMR encoded images corrected.
 - Placing of back overlay on both the front and back corrected.
 - "Invisible" multi-image page segments corrected.
 - Erroneous handling of images whose EOF marker straddles segments corrected.
 - Image "not enough data" error in Acrobat corrected.
 - Erroneous portrait orientation for some spooled files corrected.
 - Error with malformed graphics window specification corrected.
 - Acrobat display problems with certain clipping paths corrected.
 - Graphics text placement corrected.
 - ASCII translated as EBCDIC error corrected.
- o Print Data Stream Processor
 - Double retrieve of spooled file print data stream for spooled files with overlays corrected.
 - Conversion failure for > 16 meg spooled files corrected.
- o Font Resource Processor
 - Size rounding error corrected.
 - Size calculations for *DEV D corrected.
 - Decimal data error at V3R2M0 corrected.
 - Width calculations for fixed fgids with font descriptors corrected.
 - MCH3601 when processing raster fonts and code page specifies a GCGID not found in the character set corrected
- o Mixed Object Content Architecture Processor
 - EzPrint generated malformed and proprietary data tolerated.
 - Stack overflow for AFP print driver generated spooled files corrected.
 - Medium Modification Control stack overflow error corrected.
 - Malformed Begin Named Page Group field now tolerated.
- o Spool-a-Matic
 - CHGSAMDFT REFPRTDEV(*NONE) failure corrected.
 - TOOBJ() corrected to allow substitution special values.
 - Functions and tables added to abstract printer configuration processing.
- o SNA Character String Processor

- Line wrapping error corrected.
 - Font calculations corrected.
 - Set margin now correctly resets position.
 - Rotation error causing bottom to top printing corrected.
- o Graphics Object Content Architecture Processor
 - Graphics processing floating point error corrected.
 - o Print Text Object Content Architecture Processor
 - Enhanced to tolerate invalid print descriptors generated by Group 1 Software's Doc1 product.
 - Enhanced font processing and text placement.
 - o Miscellaneous Functions
 - SPC Added generated name feature to avoid clean up access to QRPLOBJ library which fails on highly secure machines.
 - IFS Erroneous counting of directories, which generate IFS1001 reason code 3471 when directory in root didn't exist, corrected.

Performance and Serviceability Enhancements

Several enhancements were made to increase the performance of the software and improve serviceability. These include:

- o Large reference tables for font character set, code page, fgid definition and TIFF decoding were moved from program static storage to external user spaces to reduce program load times and PTF sizes.
- o Print data stream parser and file generator components were isolated to reduce interface dependencies and simplify updates by PTFs.
- o Result caching was improved to reduce parsing of resources and processing of definitions.
- o PTOCA and SCS text attribute referencing performance was enhanced.
- o Objects now automatically decompressed on install.

API Authority Granted During Installation

The installation process has been changed to grant public authority *USE to OS/400 APIs QSPONSP, QSPGETSP, and QSPCLOSP the first time Spool-a-Matic is installed on a system. These are used to open, read and close spooled files in order to convert them.

New Tape Packaging Addresses Install Problems

Some customers encountered problems installing the previous release of Spool-a-Matic. Typically, the install ran for a long time and negatively impacted machine performance.

The previous release of Spool-a-Matic was compiled on a V4 AS/400 and saved with a target release of V3R2M0. When OS/400 performs this specific save operation it strips the instruction stream from each program object and saves only the creation template. When Spool-a-Matic was restored, OS/400 created a new instruction stream for each program by re-encapsulating the creation template. In essence the programs are recompiled during the restore.

To make matters worse, the re-encapsulation occurs at the microcode level and is performed by a series of load/dump tasks. This has several implications. First, the CPU utilized by these tasks is not attributed to the job performing the restore operation. When WRKACTJOB was used to check the progress of the restore operation, the job appeared to be "dead in the water" even though huge amounts of machine resources were being consumed.

Additionally, the page faulting generated by the re-encapsulation, being at the microcode level, escapes the notice of OS/400 automatic performance adjustment algorithm. If the memory pool the restore operation occurs in happens to be too small for the work, the machine can thrash (spend

most of its time paging memory without performing any real work). Some installs ran for a very long time.

Spool-a-Matic tape media is packaged differently for this release. The tape contains the identical software saved in three different ways.

- o The first save at tape sequence number 1 is saved from a V4 machine with target release V3R2M0.
 - This is the same as the tapes from the previous release.
 - The program objects do not have instruction streams which are created during the restore operation.
 - Use tape sequence number 1 if you did not encounter problems restoring the last release of Spool-a-Matic:

```
RSTLICPGM LICPGM(2A55SAM) DEV(TAP01) SEQNBR(1)
```

- o The second save at tape sequence number 3 is saved from a V4 machine with target release V4R1M0.
 - The program objects have risc instruction streams and therefore are not re-encapsulated when restored to a V4 machine.
 - This save will not restore to a V3 machine.
 - Use tape sequence number 3 if you are restoring to a V4 machine:

```
RSTLICPGM LICPGM(2A55SAM) DEV(TAP01) SEQNBR(3)
```

- o The third save at tape sequence number 5 is saved from a V3 machine with target release V3R2M0.
 - The program objects have cisc instruction streams and therefore are not re-encapsulated when restored to a V3 machine.
 - This save will restore to a V4 machine, but the programs will be re-encapsulated.
 - Use tape sequence number 5 if you are restoring to a V3 machine:

```
RSTLICPGM LICPGM(2A55SAM) DEV(TAP01) SEQNBR(5)
```

Note: If you received the software on CD-ROM, you can ignore the above discussion as you are necessarily on a V4 machine and the CD-ROM only contains programs with V4 instruction streams.