

# Excel-erator

Enhancement Summary

Licensed Program 2A55XL1 V1R7M0



Data Base Conversion

# **Excel-erator**

Enhancement Summary V1R7M0  
Product Number 2A55XL1

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## **Edition**

**Seventh Edition (September 2009)**

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## Installation Instructions

Read the Enhancement Summary to determine if any changes affect your installation.

Follow these instructions to install Excel-erator V1R7M0 on your System i:

**Note:** If you have downloaded this software from the web, instructions specific to installing from the download can be found in the file "readme.htm" which is included in the download.

1. Sign on to the system as the security officer (QSECOFR).
2. Verify that your machine is at i5/OS V5R4M0 or later by running:

```
DSPDTAARA DTAARA(QGPL/QSS1MRI)
```

**Note:** If you are running a version of i5/OS earlier than V5R4M0 you can not install Excel-erator V1R7M0 on your machine. You must install an earlier version of Excel-erator or upgrade the operating system.

3. Verify that user domain objects are allowed in the libraries XLERATOR and QSRV, by running:

```
WRKSYSVAL SYSVAL(QALWUSRDMN)
```

Take option 5 to display the value. If the value is not \*ALL, use option 2 to add libraries XLERATOR and QSRV to the list of libraries where user domain objects are allowed.

**Note:** QSRV is required to correctly process PTFs when they are loaded and applied.

4. Insure that i5/OS will be able to verify the signatures that we apply to our product's objects by installing our Signing Certificate and Root CA Certificate using Digital Certificate Manager. Alternately, insure that signature verification will not prevent the restore operation by running:

```
WRKSYSVAL SYSVAL(QVfyOBRST)
```

Take option 5 to display the value. If the value is 3 or higher, use option 2 to temporarily change the value to 1.

5. Mount the distribution media in the appropriate device.
6. Submit the Restore Licensed Program (RSTLICPGM) command to batch:

```
RSTLICPGM LICPGM(2A55XL1) DEV(device-name) LNG(2924)
```

**Note:** "device-name" is the device the media was mounted on and is usually OPT01.

**Note:** During the restore operation the system operator message queue may receive inquiry message CPA3DE4 "Directory not registered. (C G)". Unless you are using a directory naming convention similar to ours (that is the directory specified in the CPA3DE4's second level text is unrelated to our software), You can safely respond with a "G" to reestablish the relationship between the directory and the product. Typically the message will occur three times.

7. Enter your permanent authorization code by following the instructions on your Authorization letter.
8. Determine which PTFs were included on the media by entering the following command:

```
DSPPTF LICPGM(2A55XL1)
```

9. Visit [www.gumbo.com](http://www.gumbo.com) to determine if newer PTFs are available. If so, download and install them. The bottom of our PTF web page also includes a listing of any IBM PTFs that affect the product.

**Note:** ***GUMBO*** recommends downloading the current cumulative PTF package after installing the software.

## Enhancements For Excel-erator V1R7M0

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### What's In This Section

This section provides information on Excel-erator enhancements for release V1R7M0, notes any customer code implications with a **COMPATIBILITY WARNING**, and describes where to find more information when applicable.

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### New Transform (TRANSFORM) Parameter

A new Transform (TRANSFORM) parameter has been added to the Send File Excel (SNDFEXCEL) command, and to the Copy To Excel (CPYTOEXCEL) command. The parameter specifies the format of the generated spreadsheet and takes the following values.

Transform	Format Description
<b>*BIFF8</b>	Microsoft's Binary Interchange File Format Version 8, the format used by Excel version 8.0 (Excel 97/98), Excel 9.0 (Excel 2000/2001), Excel 10.0 (Excel XP/v.X) and Excel 11.0 (Excel 2003/2004).
<b>*BIFF4</b>	Microsoft's Binary Interchange File Format Version 4, the format used by Excel version 4.0 (Excel 4.0). <b>Note:</b> *BIFF4 is include for compatibility reasons and its use is not recommended in preference to *BIFF8
<b>*CSVUTF8</b>	Comma Separated Values (CSV) format. Data is converted to UTF-8.
<b>*CSVUTF8M</b>	Comma Separated Values (CSV) format. Data is converted to UTF-8 and Byte Order Mark xEFBBBF is inserted at the start of the file.
<b>*CSVRFC</b>	Comma Separated Values (CSV) format. Data is converted to US-ASCII in strict compliance with <i>RFC4180 Common Format and MIME Type for Comma-Separated Values (CSV) Files</i>

Previous releases of Excel-erator always produced \*BIFF4. With this release the default has been changed to \*BIFF8.

### COMPATIBILITY WARNING

If you have software that is consuming (reading) the generated spreadsheet, and that software depends on the spreadsheet being in \*BIFF4 format, you must modify the CL program that generates the spreadsheet to specify TRANSFORM(\*BIFF4).

---

### Changes Resulting From \*BIFF8 Implementation

Implementing \*BIFF8 enabled many enhancements to Excel-erator:

- Maximum Field Size Lifted

All valid database character field sizes are now supported. Previously the limit was a field length of 255.

- Support Added For Additional Database Field Types

The following DBCS field types can now be processed by Excel-erator.

Data Type	Description
<b>J</b>	DBCS-only: Only Shift Out/Shift In bracketed DBCS data.
<b>E</b>	DBCS-either: Either all SBCS or all Shift Out/Shift In bracketed DBCS data.
<b>O</b>	DBCS-open: Both SBCS and Shift Out/Shift In bracketed DBCS data.
<b>G</b>	DBCS-graphic: Only nonbracketed double-byte data.

- All CCSIDs including DBCS now supported

\*BIFF8 spreadsheets store text fields in a modified UNICODE format. With the change to \*BIFF8 data in any CCSID supported by i5/OS can be included in a spreadsheet. Since every field in an i5/OS database file is tagged with a CCSID, and the output is always UNICODE, Excel-erator ignores the SRCCSID() and TRGCCSID() parameters found on the CPYTOEXCEL and SNDFEXCEL commands.

- Multiple Worksheets in a spreadsheet supported

Previously a spreadsheet could have one and only one worksheet per spreadsheet. Now a spreadsheet can have multiple worksheets. Additional sheets to be included are specified on CPYTOEXCEL's new Add worksheet (ADDWS) parameter or be using SNDFEXCEL's new \*APPEND special value. In all cases, each worksheets name can be specified. If duplicates are encountered, the names are appended with a number.

- 65536 row limit lifted

\*BIFF8 enforces a limit of 65536 rows per worksheet. When Excel-erator processes a database file with a record count larger than this limit, it splits the file into multiple worksheets, each with 65536 rows (except the last). Since the number of worksheets per spreadsheet supported by Excel-erator is 32, this give an effective limit of 2,097,152 records.

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### **New Attachment file name Special Value Added**

A new special value \*APPEND has been added to the Attachment file name of Send File Excel (SNDFEXCEL) command's File specifications (SNDF) parameter. In previous releases, each occurrence SNDF() file specification resulted in a separate spreadsheet being attached to the generated email. Now, when \*APPEND is specified as the Attachment file name, the file specification is appended to the previous file as an additional worksheet.

**Note:** \*BIFF4 does not support this value and it is ignored when TRANSFORM(\*BIFF4) is specified.

---

### **Add worksheet (ADDWS) Parameter Added**

A new parameter, Add worksheet (ADDWS), has been added to the Copy To Excel (CPYTOEXCEL) command. The parameter allows you to specify additional database files to be included in the generated spreadsheet as additional worksheets.

**Note:** \*BIFF4 does not support this value and it is ignored when TRANSFORM(\*BIFF4) is specified.

---

### **Sheet title Added**

Excel-erator now allows you to specify 0-5 lines of title information at the top of each worksheet. Title lines are formatted based on the COLHDG() parameter. The function is implemented as the SHEETTITLE() parameter on the CPYTOEXCEL command and as a new element on SNDFEXCEL's SNDF() parameter.

**Note:** \*BIFF4 does not support this value and it is ignored when TRANSFORM(\*BIFF4) is specified.

---

### **Sheet name Added**

Excel-erator now allows you to specify the name assigned to a worksheet. The function is implemented as the SHEETNAME() parameter on the CPYTOEXCEL command for the base sheet, as an element on CPYTOEXCEL's ADDWS() parameter and as a new element on SNDFEXCEL's SNDF() parameter.

**Note:** \*BIFF4 does not support this value and it is ignored when TRANSFORM(\*BIFF4) is specified.

---

### **SNDF() Maximum Now 32**

The maximum number of data base files that can be specified on Send File Excel (SNDFEXCEL) command's File specifications (SNDF) parameter has been increased from 16 to 32.

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## Product Build Enhancements

The manner in which programs and service programs in our products are compiled and bound has undergone a significant change in order to incorporate and take advantage the \*TERASPACE storage model and \*LLP64 data model added to i5/OS.

You will probably not notice a difference, but you may face an exposure that is worth considering. Several of our products can call programs that you provide to perform processing. SpoolMail "Address mapping programs" and Report Manager "User process programs" are examples of this. If you do not use a "we call you" feature, you are not exposed. When source is compiled and a program bound, it specifies the storage model it uses, the activation group it attaches to and whether or not it is teraspace enabled. If you take the default values for these and you are coding in languages other than C and C++ (RPG and CL for example), you are not exposed.

### COMPATIBILITY WARNING

If on the other hand your programs are not teraspace enabled (the default for C and C++) and/or you are attaching to our product's activation group either by specifying ACTGRP(\*CALLER) or by specifying our named activation group, your program may fail when we call it. You can avoid this by changing your program to TERASPACE(\*YES) for the first, and compiling with ACTGRP(\*NEW) for the second.

**Note:** Excel-erator does not contain any "we call you" interfaces.

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## S/MIME Signed Message Capability Added

Email produced by Excel-erator can be, optionally, digitally signed using S/MIME Signed Message format. S/MIME (Secure / Multipurpose Internet Mail Extensions) is a standard for public key encryption and signing of email encapsulated in MIME. A signed message is an ordinary message with a digital signature added by the sender. The signature has two purposes: it identifies the sender, and it verifies that the content of the message has not been altered since the message was sent.

You create digitally signed email by specifying an Application ID when the email is created. There are two ways to accomplish this: at the command level and at the system (or LPAR) level. The command level overrules the system level. For command level, specify an Application ID directly on the send command's new Signing key (SGNKEY) parameter. For the system level, specify an Application ID on the CHGXLDFT command's new Signing key (SGNKEY) parameter.

The shipped default values for the Signing key (SGNKEY) parameters are \*DEFAULT and \*NONE respectively.

Application ID refers to the name you have given to a digital certificate when placing it in the \*OBJECTSIGNING Certificate Store using i5/OS's Digital Certificate Manager (DCM). DCM is option 34 of i5/OS. You can determine if DCM has been installed by running the Display Software Resources (DSPSFWRSC) command.

Complete information on setting up DCM, creating and storing certificates and adding Application IDs, can be found in the *Security > Digital Certificate Manager* topic in the IBM i Information Center at <http://www.iseries.ibm.com/infocenter>.

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## Product Manual "Enhancements"

In a sad passing, the printed manual's command diagrams have been retired. They have been replaced by the output of IBM's Generate Command Documentation (GENCMDDOC) command, the new "normal". While we view them as inferior, they obviate the grueling job of hand maintaining the diagrams. We won't miss the work.

With the change, the printed and green screen version of the manual have been converged. Both are now generated from the green screen UIM help source. In most instances this means that the figures in the printed manual have been degraded to the level available using UIM. Their level was never high to begin with.

The convergence will make it easier to better document the product as it only needs be done once. And being machine generated, the documentation is much easier to manipulate. If you have suggestions for format improvement, we'd like to hear them.

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## Field Name Substituted For Blank Alias

When generating column heading cells from field aliases, the field name is used if there is no alias specified for the field.

---

## Path Special Values Corrected

Path name special values \*MBRCYY and \*MBRGYY were returning the wrong values from the creation and change date respectively. The substring specification was off by 1, returning CY instead of YY.

Path name special values \*MBRCTIM and \*MBRGTIM were returning the wrong values from the creation and change date respectively. The substring specification was off by 7, returning CYYMMD instead of HHMMSS.

---

## Authorization Component Corrections And Updates

- Check Excel-erator Authorization (CHKXL1AUT) command wasn't working correctly for non-tiered products.

---

## Spreadsheet Processor Corrections And Updates

- New support for BIFF8 required record types added.

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## Encryption Component Corrections And Updates

- ArcFour encryption functions accessible from the product interface were removed and replaced with calls to i5/OS supplied apis. This reduces the product's Export Control Classification Number (ECCN) to EAR99-NLR i.e. innocuous and exportable anywhere.
- Functions implementing the SHA-1 message digest algorithm have been added.

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## Glib Component Corrections And Updates

- Initial build. Portions of the glib library have been compiled into a service program to provide low level code support.

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## Libgsf Component Corrections And Updates

- Initial build. Portions of the libgsf library have been compiled into a service program to provide structured file processing.

---

## Integrated File System Component Corrections And Updates

- oflag process was expanded in IfsOpen() to provide more fine grain control required by some digital signing methods.

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## Mail Set Up Corrections And Updates

- Mail Set Up manual instructions rewritten to include new material and remove obsolete material.
- Obsolete processing was removed from the VFYLOCAL command.
- Option 61 on the Mail Verification And Set Up (MAILSETUP) menu now defaults to \*NO for the purge parameters.
- QtocRtvTCPA() api parameter prototyped as signed instead of unsigned causing potential api in mail set up functions to fail.

- Name of job started when TCPIP is started changed from QTCPIP to QTCPWRK at V6R1. VFYLOCAL command now checks correct name.
- Name of job started when TCPIP is started changed from QTCPIP to QTCPWRK at V6R1. VFYROUTER command now checks correct name.
- Malformed SMTP commands cause PINGMAIL to always fail to send test message.

---

## National Language Support Component Corrections And Updates

- Added new simple string conversion function export.

---

## Program Distribution Corrections And Updates

- Additional manual sections with product usage information added.
- Menu option to 'Verify the product is installed correctly CHKPRDOPT' now specifies CHKSIG(\*NONE). Since we digitally sign our objects but most customers do not install our digital certificates, the option gave unnecessarily alarming results. If you have installed our digital certificates, you can run a complete check using:

```
CHKPRDOPT PRDID (2A55XL1) RLS (V1R7M0) CHKSIG (*ALL)
```

- Added function to retrieve a product's installed home directory coded in the requesting job's default ccsid.
- Added function to produce a system wide unique temporary file name. The file is in the product installed home directory's /tmp folder unless /tmp contains variant EBCDIC, as is the case for Japanese ccsid 5026 jobs. In this case the file is placed in the system /tmp directory using a /TMP name.

---

## System Distribution Directory Processor Corrections And Updates

- Added functions to test for the existence of user ID in the system distribution directory and in the system distribution lists.
- Search System Directory (QOKSCHED) API performs erroneous conversion on converted data resulting in incorrect directory data for ccsids that do not contain the EBCDIC invariant characters i.e. 5026 Japan.

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## Send Mail Component Corrections And Updates

- Portions of manual instructions rewritten to include new material and remove obsolete material.
- New special value for email address parameters, \*USRID, has been added. \*USRID is used to specify a directory entry or distribution list that supplies email address(es). The correct form is: \*USRID:NAME:ADDRESS where NAME is either a directory entry's "User ID" or a distribution list's "List ID" and where ADDRESS is either a directory entry's "Address" or a distribution list's "List ID qualifier".
- New functions, definitions, and parameter types were added. These allow direct entry of arbitrary MIME message headers.
- To correct the encoding of MIME parameter values for attachment names of unusual length or containing blanks, *RFC2231* was implemented. Not all mail clients have implemented *RFC2231* (outlook 2000, 2002, 2003) resulting in odd attachment names. *RFC2231* encoding is now avoided unless it is required to meet other MIME constraints.
- Attachment names containing blanks or of unusual length resulted in an incorrectly formed mime message. Mime is now correctly formed.

- i5/OS' mail server framework can't find files when the path is encoded in a ccsid that does not contain the EBCDIC invariant characters. The tmpnam() api returns a name containing lowercase letters, which, when run in a ccsid 5026 job aren't in the invariant code points. QtmmSendMail() api requires path names to be in the job's ccsid. Send component was modified to use only uppercase (always invariant) path names when the job's ccsid causes tmpnam() to produce variant characters. Japanese 5026 now can be processed by the MSF.
- Sending an email to a user id/address fails in all cases.
- Sending an email to a user id/address that utilizes an \*ANY entry from the directory to supply the domain name for the email address was inadvertently broken by a change to the code. \*ANY entries are now correctly processed.
- Sending an email that contains no body part such as attached file or message results in malformed email.
- Specifying a variable containing the special value '\*N' on the INCOBJ() parameter to signify "no value" does not work correctly.

---

### Space Management Component Corrections And Updates

- QUSCRTUS() api parameter 11's default behavior changed at i5/OS V6R1M0 rendering some uses of large user spaces an error. Call to api changed to specify original behavior.
- Added locking protocol to insure that pointer retrieved during space creation points at newly created space.
- Space locking now uses job default wait time.

---

### OpenSsl Component Corrections And Updates

- Initial build. Portions of OpenSSL.org's OpenSSL library have compiled into a service program to generate asn.1 encoded Pkcs7 signatures rendered base 64.