

# **Excel-erator**

Enhancement Summary V1R9M0  
Product Number 2A55XL1

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## Edition

**Ninth Edition (January 2012)**

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## Installation Instructions

Follow these instructions to install Excel-erator V1R9M0 on your System i:

### Prepare

If you are upgrading a previous release (if Excel-erator is currently installed on your System i) perform these steps before installing the software:

1. Read the Enhancement Summary to determine if any changes affect your installation.
2. Insure that the product is not in use, as the installation process must clear the product's library. This will fail if objects such as menus are in use. If the installation fails, the previous release will be restored.

### Install

**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 was included.

1. Sign on to the system as the security officer (QSECOFR).
2. Verify that your machine is at IBM i V6R1M0 or later by running:

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

**Note:** If you are running a version of IBM i earlier than V6R1M0 you cannot install Excel-erator V1R9M0 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 IBM i 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(QVfyOBJRST)
```

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:** Where "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.

## Finish

When the RSTLICPGM command completes, library XLERATOR and directory '/Gumbo/ProdData/2A55XL1' contain the new software. To complete the installation:

1. If you have an Authorization letter with your permanent authorization code, enter it now.

**Note:** Excel-erator automatically grants 30 days usage for new installs or 90 days usage for release upgrades.

2. Retrieve the current cumulative PTF package by running the following command:

```
XLERATOR/RTVGSIPTF
```

**Note:** **GUMBO** recommends downloading the current cumulative PTF package from [www.gumbo.com](http://www.gumbo.com) after installing the software.

3. You can access the Excel-erator menu by running the following command:

```
GO MENU(XLERATOR/XLERATOR)
```

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## Enhancements For Excel-erator V1R9M0

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### What's In This Section

This section provides information on Excel-erator enhancements for release V1R9M0, notes any customer code implications by marking them with a **COMPATIBILITY WARNING**, and describes where to find more information when applicable.

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### Custom Numeric Editing

#### COMPATIBILITY WARNING

Previously, the user defined edit codes 5-9 were convert to format strings based on the edit descriptions shipped with the operating system and custom edit descriptions were ignored. Now an edit mask is generated from the actual edit description and the mask in turn is converted to a format string.

Previously, edit words were ignored and the equivalent of EDTCDE(Z) was applied. Now an edit mask is generated from an edit word and the mask in turn is converted to a format string.

For relatively straight forward edit descriptions and edit words, the conversion is faithful. However, it is possible to create edit descriptions and edit words for which there is no faithful conversion. In particular, if yours is a system that uses decimal format 'I' or 'J' (comma used as the decimal format), and if you are using the user defined edit codes 5-9, and if the edit descriptions remain as originally shipped by IBM (period as the decimal point), the commas separating thousand groups are not suppressed by insignificant digits. Previously, we used the IBM definitions corrected to the local decimal format. Except as noted, the conversion should degrade to a passable facsimile. But, you should check the results for reasonableness. If you encounter an anomalous result, contact us and we will look to improve the conversion.

---

### New COLHDG() Values

Six new special values were added to the Column headings (COLHDG) parameter. they are:

- |                   |   |
|-------------------|---|
| <b>*COLTXT</b>    | The file's field column headings are used as column headings. A heading with multiple lines is text wrapped into a single cell. If the column headings are blank, the field text is used.                               |
| <b>*COLTXTBLD</b> | The file's field column headings are used as column headings. A heading with multiple lines is text wrapped into a single cell. If the column headings are blank, the field text is used. The column headings are bold. |
| <b>*TXT</b>       | The file's field texts are used as column headings.   |
| <b>*TXTBLD</b>    | The file's field texts are used as column headings. The column headings are bold.   |
| <b>*TXTCOL</b>    | The file's field texts are used as column headings. If the field text is blank the field column heading are used. A heading with multiple lines is text wrapped into a single cell.                                     |
| <b>*TXTCOLBLD</b> | The file's field texts are used as column headings. If the field text is blank the field column heading are used. A heading with multiple lines is text wrapped into a single cell. The column headings are bold.       |

---

### Excel 2010 Validation Failure

A malformed \*BIFF8 record causes spreadsheets generated by Excel-erator to fail Microsoft Excel 2010's file validation. The record is corrected.

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### CSV Separator Character Parameter Added

New parameter, CSV separator character (CSVSEPCHR), has been added to commands SNOFEXCEL and CPYTOEXCEL. For comma separated value transforms, it allows you to specify the separator used in the generated output.

---

### % Format Assigned Incorrectly

Built-in format assignment for percent was incorrect, disarming the interface button.

---

## Microsoft's Office Open XML implemented

Office Open XML (also informally known as OOXML or OpenXML) is a zipped, XML-based file format developed by Microsoft for representing spreadsheets, charts, presentations and word processing documents. The Office Open XML specification was initially standardized by Ecma (as ECMA-376) and later by ISO and IEC (as ISO/IEC 29500).

Starting with Microsoft Office 2007, the Office Open XML file formats have become the default target file format of Microsoft Office, although the Strict variant of the standard is not yet fully supported. Microsoft Office 2010 provides read support for ECMA-376, read/write support for ISO/IEC 29500 Transitional, and read support for ISO/IEC 29500 Strict.

**Note:** Above from [http://en.wikipedia.org/wiki/Office\\_Open\\_XML](http://en.wikipedia.org/wiki/Office_Open_XML)

A new transform to generate Microsoft Office Open XML files has been added:

**\*OOXML** Office Open XML developed by Microsoft. Excel-erator implements the ISO/IEC 29500:2008 Strict specification, suitable for use with Excel 2010 and suitable for use with Excel 2007 if dates are not present in the spreadsheet. See [http://en.wikipedia.org/wiki/Office\\_Open\\_XML](http://en.wikipedia.org/wiki/Office_Open_XML) for additional information.

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## \*OOXML Conversion

### Details

The **\*OOXML** conversion creates Office Open XML developed by Microsoft. Excel-erator implements the ISO/IEC 29500:2008 Strict specification, suitable for use with Excel 2010 and suitable for use with Excel 2007 if dates are not present in the spreadsheet. See [http://en.wikipedia.org/wiki/Office\\_Open\\_XML](http://en.wikipedia.org/wiki/Office_Open_XML) for additional information. The first rows of the spreadsheet contain the title lines specified on the Sheet title (SHEETTITLE) parameter, followed by column headings specified on the Column headings (COLHDG) parameter, which serve as column headings for the cells in subsequent rows. The generated spreadsheet contains the fields selected from the input file's record format. Fields containing character data (types A, J, E, O, and G) are converted to UTF8 based on the field's coded character set identifier (CCSID).

**Note:** Values specified in the Target coded character set id (TRGCCSID), and Source coded character set id (SRCCSID) parameters are ignored.

The conversion of fields to cells depends on the field's data type:

| Data Type                 | Processing   |
|---------------------------|--|
| <b>A (Character)</b>      | Convert to a String cell in UTF8 based on the CCSID of the field. Trailing blanks are trimmed. |
| <b>P (Packed decimal)</b> | Convert to a Number cell.  |
| <b>S (Zoned decimal)</b>  | Convert to a Number cell.  |
| <b>B (Binary)</b>         | Convert to a Number cell.  |
| <b>F (Floating point)</b> | Convert to a Number cell.  |
| <b>H (Hexadecimal)</b>    | Convert to a String cell as a character representation.  |
| <b>L (Date)</b>           | Convert to an ISO DateTime cell.   |
| <b>T (Time)</b>           | Convert to an ISO DateTime cell.   |
| <b>Z (Timestamp)</b>      | Convert to an ISO DateTime cell. The microseconds are truncated to three positions.            |
| <b>J (DBCS-Only)</b>      | Convert to a String cell in UTF8 based on the CCSID of the field. Trailing blanks are trimmed. |
| <b>E (DBCS-Either)</b>    | Convert to a String cell in UTF8 based on the CCSID of the field. Trailing blanks are trimmed. |
| <b>O (DBCS-Open)</b>      | Convert to a String cell in UTF8 based on the CCSID of the field. Trailing blanks are trimmed. |
| <b>G (DBCS-Graphic)</b>   | Convert to a String cell in UTF8 based on the CCSID of the field. Trailing blanks are trimmed. |
| <b>1 (BLOB)</b>           | Omit and issue a warning.  |
| <b>2 (CLOB)</b>           | Omit and issue a warning.  |
| <b>3 (DBCLOB)</b>         | Omit and issue a warning.  |
| <b>4 (Datalink)</b>       | Omit and issue a warning.  |

### Limitations

Office Open XML format and Excel-erator impose certain limits on the conversion process. These are:

- A spreadsheet may have no more than 64 worksheets.
- Office Open XML does not support encryption.
- Office Open XML format strings do not support all the features of IBM i's edit words.

While Office Open XML format does not impose limits on the number of rows or columns in a spreadsheet, various file viewers do, most prominently Excel.

---

### Special value \*TRNEXT updated

The dynamic path name special value \*TRNEXT has been updated for OOXML. When found, the special value is resolved to a file extension appropriate to the transform specified:

- XLS for \*BIFF8 or \*BIFF4.
- csv for \*CSVUTF8, \*CSVUTF8M or \*CSVRFC.
- xml for \*XMLSS.
- xlsx for \*OOXML.

---

### Verify Mailhub Server (VFYMAILHUB) Command Added

A new command, Verify Mailhub Server (VFYMAILHUB) has been added to Excel-erator as a replacement for our Verify Mail Router (VFYROUTER) command. We are tracking an IBM change.

Both Verify Mailhub Server (VFYMAILHUB) and Verify Mail Router (VFYROUTER) are intended as a one time set up aids, and are not intended for inclusion in your programs or procedures. However, in order to provide a transition period, Excel-erator will continue to include VFYROUTER for a period of time. The VFYROUTER command will be removed in a future release.

At V6R1M0, IBM i's Change SMTP Attributes (CHGSMTPA) command added a new parameter: Forwarding mailhub server (FWDHUBSVR). FWDHUBSRV() implements the function intended for a mail server specified using CHGSMTPA's MAILROUTER() parameter with FIREWALL(\*YES). Apparently the function was not implemented correctly, but couldn't be changed. When FWDHUBSRV() is specified, all email is forwarded to the server for delivery. This effectively trumps the FIREWALL() parameter.

IBM's FWDHUBSRV() parameter is more capable than the function revealed by our VFYMAILHUB command. If you wish to take advantage of these functions, for example specifying a domain from which a server is resolved from MX records, configure it manually.

With the addition of VFYMAILHUB, menu options, help text and manual sections have been updated as well.

---

### Retrieve Gumbo PTF (RTVGSIPTF) Command Added

Previously, loading and applying PTFs for Excel-erator required a visit to [www.gumbo.com](http://www.gumbo.com), downloading a file and many manual steps. We've added a command to automate the process.

The Retrieve Gumbo PTF (RTVGSIPTF) command checks a remote system for new product PTFs, and, if available, downloads and installs them.

The command assumes that the System i has connectivity to the PTF server. Unless you are running your own internal server hosting our PTFs, this means that the System i has access to the internet and that FTP is not blocked by a firewall.

The command first checks the availability of new PTFs by retrieving a product and release specific file (Ex. q1x90LastPtf.txt) from the remote system and comparing its contents to the last PTF applied locally. If newer PTFs are available, a product and release specific PTF save file (Ex. q1x90all.svf) is downloaded, and the PTFs it contains are loaded and applied.

**Note: *GUMBO*** only delivers immediate PTFs. Immediate PTFs do not require an IPL and an IPL is never performed by the command.

The previous method of supplying PTFs will be supported until all supported product releases contain RTVGSIPTF and until the vast majority of customers are using RTVGSIPTF. At a minimum this will be several years.

---

### Include object (INCOBJ) Enhanced

Excel-erator's Include object (INCOBJ) parameter now supports specification of "multipart/alternative" groups. For example, you can specify a text version of an email's message and an alternative HTML version, relying on the recipient's mail client to select among them.

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### Binary Interface File Format Changes

- Malformed \*BIFF8 comment records failed Excel 2010 validation test.

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### Comma-Separated Value Changes

- Added support for user specified separator character.

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### Integrated File System Changes

- Added missing message id IFS1014 and IFS1016.
- Corrected usage of message id IFS1014 and IFS1016.
- Functions were added for creating and removing hard links for stream files.

---

### Mail Set Up Changes

- DSPMAILLOG was sending a "no data available" message regardless of the reason for failure of the DSPJRN command. Command now sends an "error encountered" message for DSPJRN failures unless the failure is CPF7062 "No entries converted ...".

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### OfficeOpen XML Spreadsheet Processor Changes

- Initial build. Functions to generate OfficeOpen XML Spreadsheet. (OOX) file format were created and compiled into a service program to provide file processing.

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### Program Distribution Changes

- Fine tuning of the Trouble Shooting chapter's instruction for clearing a product from a machine to get to a stable state.
- Service programs now take advantage of deferred activation introduced at release V6R1 of IBM i. Only the service programs that are needed are activated, at the point at which they are needed. Unnecessary activations are avoided
- Added object text to user space containing resolved product directory.

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### Send Mail Changes

- Improperly initialized variable resulted in garbage in message data for message id SND1009 and SND1030.
- Objects in unlinkable file systems now handled properly.

- New export to allow client to select synchronous vs. asynchronous processing and thus avoid a temporary directory used for asynchronous.
- Previously, included files sent as "text/html" used 8bit encoding (basically a straight copy). For signed email, this resulted in invalid signatures at the mail client. Additionally, the message arrived "quoted-printable"; presumably rewritten by IBM i. Encoding of "text/html" has been changed to "quoted-printable", avoiding the problem.
- Previously when adding files as attachments, calling functions had to insure that each file was available until the email was finalized and sent. Internal processing was changed to establish hard links to the files, allowing the calling function to delete them immediately.
- Previously, MIME parts were added to an email under construction without regard to order. I.e. parts were added as they were processed. While this behavior is compliant with the relevant MIME specifications, it befuddles some of the most popular email clients. Outlook treats text MIME parts preceded by an attachment as an attachment, giving it a name and failing to display it. In the same scenario, Thunderbird displays the text part as intended but also assigns a name and shows it in the list of attachments muddying the overall appearance of the message.

Now, generation of MIME parts is postponed until the full content of the email is known. Once known, the text MIME parts are processed first, placing them at the top of the email in the order received, followed by any and all attachments, again in the order received. In the case of alternative groups, if the first alternative is a text MIME part, all alternatives are moved as a group to the top of the email.