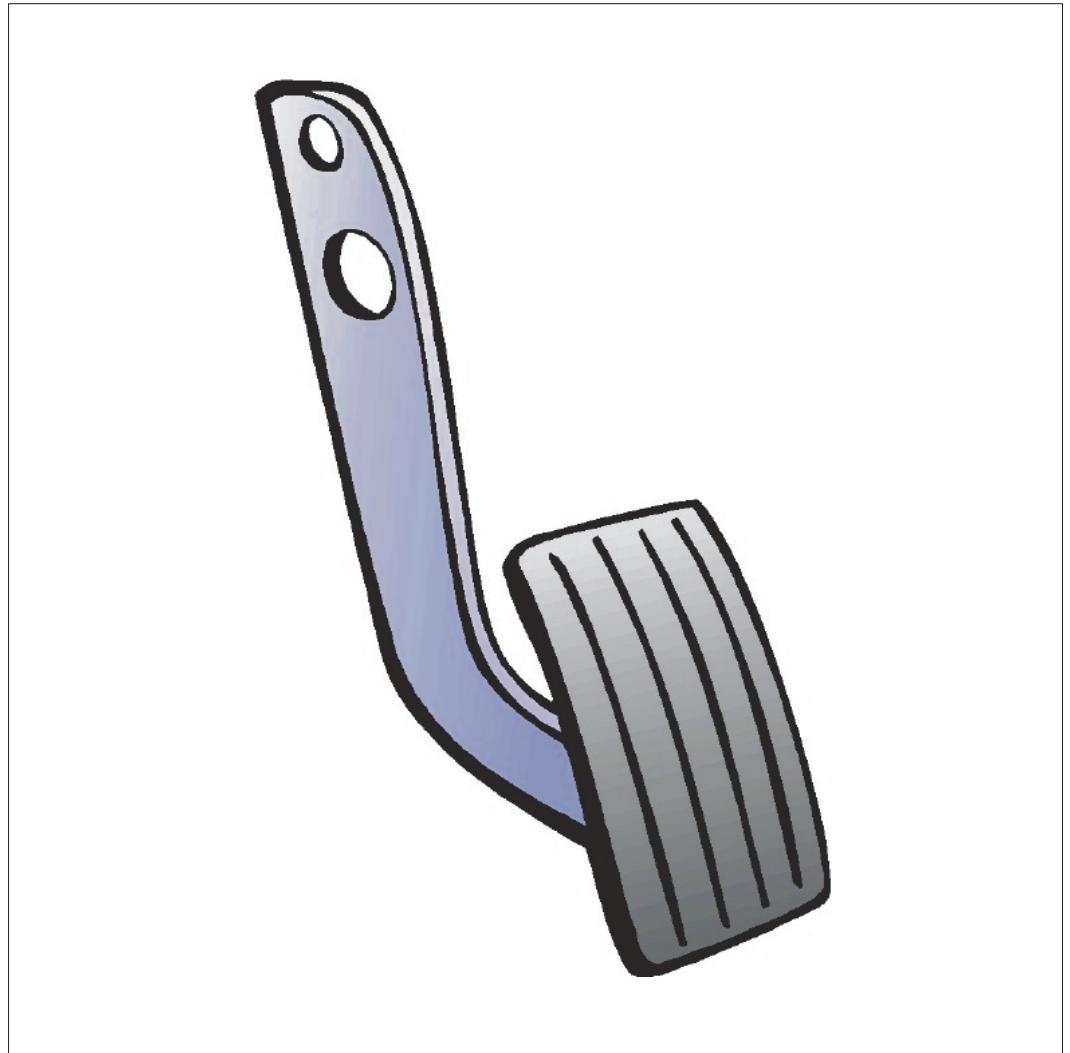




GUMMB
Software, Inc.

Excel-erator

Programmer's Guide and Reference



Data Base Conversion

This edition applies to the licensed program Excel-erator (Program 2A55XL1), V1R6M0, and to all subsequent releases and modifications until otherwise indicated in new editions. This revision makes all previous editions obsolete. Make sure you are using the proper edition for the level of the product.

A version of this manual in Adobe's Portable Document Format (PDF) is available on the web.

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Chapter 1 Introduction

What's In This Chapter

This chapter introduces you to Excel-erator. The chapter:

- o Describes the features of Excel-erator
- o Describes what Excel-erator does
- o Describes Excel-erator's TOOBJ() parameter
- o Describes Excel-erator's relationship to other products
- o Outlines future directions for the product

Excel-erator Features

Excel-erator is a software utility that converts I5/OS database files into spreadsheets in Microsoft's Excel format. The resulting PC files are either placed into any directory in I5/OS Integrated File System or sent as an attachment to an e-mail. With Excel-erator you can make I5/OS data available to your users in the form best suited to them.

Excel-erator supports the following data base files:

- o Physical files
- o Logical files with a single record format

When sending the e-mail, you have a wide variety of options to tailor the delivered message to your specific needs. Addressing includes multiple recipients, copy recipients and blind copy recipients. Additionally, you can include multiple Reply-To: addresses as well as specify the e-mail address the message appears to come from. Delivery confirmation by read receipt can also be specified.

Commands to help you trouble shoot and, optionally, automatically configure I5/OS for mail delivery are also included with Excel-erator.

What Excel-erator Does

Excel-erator converts database files into spreadsheets in Microsoft's Excel format. There are two commands that provide the conversion:

- o Copy To Excel (CPYTOEXCEL)
- o Send File Excel (SNDFEXCEL)

The Copy To Excel (CPYTOEXCEL) command takes a database file and an Integrated File System object (PC file) name as input. The file's contents are converted into a spreadsheet in Microsoft's Excel format. The converted file is then placed in the requested Integrated File System object (PC file).

The Send File Excel (SNDFEXCEL) command takes a database file and an e-mail address as input. The file's contents are converted into a spreadsheet in Microsoft's Excel format. The converted file is then e-mailed to the requested recipient using I5/OS built-in mail support. I5/OS delivers the mail in the manner appropriate to the recipient's mail client. The spreadsheet arrives as a MIME attachment to an e-mail message.

The conversion process is described in detail in Chapter 6 Conversion.

Excel-erator's TOOBJ() Parameter

The key to generating PC files when using Excel-erator's Copy To Excel (CPYTOEXCEL) command is the TOOBJ() parameter. The parameter specifies the name of the file in terms of I5/OS Integrated File System.

An Object (PC file) is a path that specifies the name and location of the file in terms of I5/OS Integrated File System. This naming convention may be unfamiliar.

By specifying the correct Integrated File System name you can place the generated file in any file system known to I5/OS including writing directly to Windows NT/2000, another eServer i5 (iSeries) Server, Novell NetWare or NFS server. Run the Work with Object Links (WRKLNK) command to view the available directories and file systems.

As an example, the generated file can be placed in a directory in I5/OS Open Systems file system (QOpenSys). To create file "ABC.XLS" in directory "MYDIRECTORY" in I5/OS QOpenSys, use the following TOOBJ() parameter:

```
TOOBJ('/QOpenSys/MYDIRECTORY/ABC.XLS')
```

The name you specify must follow the naming conventions of the file system involved. For example QOpenSys supports case-sensitive names and each component of the path can be up to 255 characters long. For complete details on file system name restrictions see [AS/400 Integrated File System Introduction SC41-5711](#). For additional information see the Accessing Files In The Integrated File System section of this manual.

Note: We recommend that you **not** use the /QDLS file system, which is accessed using the WRKFLR command, unless you have a specific requirement for its features.

Excel-erator provides several special values that can be used to construct dynamic object (PC file) names. When the special values are found, the associated data is blank trimmed and substituted into the name specified when the file is processed. If the data associated with a special value is blank, "BLANK" is substituted. The special values are:

*FILE	File name CHAR(10).
*FILELIB	Library containing the file CHAR(10).
*MBR	Member name CHAR(10).
*TEXT	Member Text 'description' CHAR(50).
*MBRCDAT	Date the member was created CHAR(7) CYYMMDD.
*MBRCCYY	CYY portion of *MBRCDAT CHAR(3).
*MBRCYY	YY portion of *MBRCDAT CHAR(2).
*MBRCMM	MM portion of *MBRCDAT CHAR(2).
*MBRCDD	DD portion of *MBRCDAT CHAR(2).
*MBRCTIM	Time the member was created CHAR(6) HHMMSS.
*MBRGDAT	Date the member was changed CHAR(7) CYYMMDD.
*MBRGYY	CYY portion of *MBRGDAT CHAR(3).
*MBRGYY	YY portion of *MBRGDAT CHAR(2).
*MBRGMM	MM portion of *MBRGDAT CHAR(2).
*MBRGDD	DD portion of *MBRGDAT CHAR(2).
*MBRGTIM	Time the member was changed CHAR(6) HHMMSS.

Product Positioning

Gumbo Software, Inc. has several I5/OS based products:

Number	Licensed Program
2A55RM1	Report Manager - Monitors output queues and distributes spooled files.
2A55SM1	SpoolMail - Sends spooled files as e-mail.
2A55SAM	Spool-a-Matic - Converts spooled files into PC files.
2A55XL1	Excel-erator - Converts/e-mails database files into/as Excel Spreadsheets.
2A55DCR	Dicer - Merge/sort/split/duplicate spooled files.
2A55RDA	Report Designer - Edit DDS, RPG and ILE/RPG print specifications.
2A55SM2	Gumbo Mail - Sends e-mail from your applications.

There is some overlap between and unique function within the products. Choose the product or combination of products that provide the function you need:

Function	Product						
	RM1	SM1	SAM	XL1	DCR	RDA	SM2
Monitor an output queue for work	YES	YES	YES	-	-	-	-
Spooled file distribution	YES	-	-	-	-	-	-
Burst (bundle) spooled files	YES	YES	YES	-	YES	-	-
Merge/sort/duplicate spooled files	YES	-	-	-	YES	-	-
Convert spool to ASCII text PC file	YES	-	YES	-	-	-	-
Convert spool to PDF/RTF/HTML etc.	-	-	YES	-	-	-	-
Convert database file to Excel	-	-	-	YES	-	-	-
E-mail spool as ASCII text attach	YES	YES	-	-	-	-	-
E-mail spool as PDF/RTF/HTML etc.	-	YES	-	-	-	-	-
E-mail database file as Excel	-	-	-	YES	-	-	-
E-mail any IFS file	-	YES	-	YES	-	-	YES
Set up i5/OS SMTP & mail router	YES	YES	-	YES	-	-	YES
Edit DDS, RPG, ILE/RPG source code	-	-	-	-	-	YES	-

Figure: Product Function Comparison

Future Directions

Future releases of Excel-erator will include enhanced functionality based on customer feedback. Additionally, enhancements are often added to a current release by Program Temporary Fix (PTF). Candidate enhancements include:

- o Support for edit words if possible
- o Additional of title lines
- o Multi-tabbed spreadsheets

Contact Gumbo Software Inc for information on scheduling or to suggest additional enhancements.

Chapter 2 Installation

What's In This Chapter

This chapter describes:

- o How to install Excel-erator
- o How to verify that Excel-erator is installed correctly
- o How to include the XLERATOR library in a job's library list
- o How to determine release dependencies
- o How to test a new release while leaving the old in production.
- o How to remove Excel-erator from the system
- o How to find additional installation information
- o How to contact technical support
- o Hot site installation

Installing The Excel-erator Licensed Program Product

Follow these instructions to install Excel-erator V1R6M0 on your iSeries server:

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 V5R2M0 or later by running:

```
DSPDTAARA DTAARA(QGPL/QSSLMRI)
```

Note: If you are running a version of i5/OS earlier than V5R2M0 you can not install Excel-erator V1R6M0 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. Mount the distribution media in the appropriate device.
5. 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.

When the RSTLICPGM command finishes a new library XLERATOR and a new directory '/Gumbo/ProdData/2A55XL1' are on the system. You can access the Excel-erator menu by entering the following command:

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

You can determine which PTFs were included on the media by entering the command:

```
DSPPPTF LICPGM(2A55XL1)
```

A list of current PTFs can be found at www.gumbo.com. If there are newer PTFs available, download and apply them. The bottom of our PTF web page also includes a listing of any IBM PTFs that affect the

product.

Note: Gumbo Software recommends downloading the current cumulative PTF package after installing the software.

Verifying Excel-erator Installation

You may verify that Excel-erator has been correctly installed by running the installation verification program.

- o Access the Excel-erator menu by entering the following command:

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

- o Select the option to 'Verify that Excel-erator is installed correctly' and press enter.

If the message 'Excel-erator is installed correctly.' is displayed on the bottom of your display when the option finishes, installation is complete.

Library List Considerations

Library XLERATOR must be in the library list of jobs using Excel-erator commands, or the commands must be qualified with library XLERATOR. Depending on your installation and intended use you may choose to:

- o Add library XLERATOR to the system library list. This insures every job in the system has access to SpoolMail commands. However this introduces problems with installing new releases and is not recommended.
- o Add library XLERATOR to the initial library list parameter of job descriptions controlling jobs which will use Excel-erator commands. (recommended)
- o Run a ADDLIBLE XLERATOR command in individual jobs requiring Excel-erator commands.
- o Qualify the command names on each use:

```
XLERATOR/CHGXLLAUT
```

Library XLERATOR will be temporarily added to the product portion of the job's library list.

Determine the best method for your installation and perform any changes required.

Release Considerations

Excel-erator operates under i5/OS V5R2M0 or higher. Releases occur on a different schedule than IBM releases. Once Excel-erator is installed the following considerations apply:

- o A new release of i5/OS may be installed without installing a new release of Excel-erator.

Excel-erator uses only published or IBM sanctioned interfaces and is upward compatible with all releases of i5/OS. The Excel-erator authorization code does not change.

- o A new release of Excel-erator may be installed without installing a new release of i5/OS.

Any change in the requirements for operating system release level will be noted in the documentation accompanying the Excel-erator release. The new authorization for the release must be entered.

- o More than one release of Excel-erator may be installed on a system at one time.

By restoring Excel-erator to a library other than XLERATOR a new release can be installed for testing while the current release remains in production. Any release to release considerations that may apply will be noted in the documentation accompanying the new release. Additional operational considerations may apply. For more information on renaming a library during licensed program installation see the Restore Licensed Program (RSTLICPGM) command and the New Release Testing section of this chapter.

- o When a new release of Excel-erator is installed in the same library as an old release the following processing is performed in order to preserve data and authorization information:
 1. All objects are saved to the save file QGPL/XL1V1R6M0.
 2. Product objects that contain default settings and operational information are copied to library QTEMP.
 3. The Excel-erator library is cleared.
 4. Excel-erator is restored.
 5. Default settings and operational information are copied to the product objects.
 6. All objects duplicated to QTEMP are deleted.
 7. Save file QGPL/XL1V1R6M0 is deleted.

Note: Gumbo Software recommends making a backup of the current release before installing a new release of Excel-erator.

New Release Testing

Unlike IBM licensed programs, Gumbo Software licensed programs are packaged in a way that allows multiple release to be installed on your eServer i5 (iSeries) at the same time. This feature allows you to test a new release while the current release remains in production.

The key to new release testing are the LIB() and CODHOMEDIR() parameters of i5/OS's Restore License Program (RSTLICPGM) command which allow you to restore the product to a library name and directory different than the those used during packaging. To test a new release, follow this procedure:

1. Install the new release in library XL1V1R6M0 and directory '/Gumbo/ProdData/2A55XL1V1R6M0':

```
RSTLICPGM LICPGM(2A55XL1) DEV(device-name) LIB(XL1V1R6M0) REPLACERLS(*NO) LNG(2924)
CODHOMEDIR(' /Gumbo/ProdData/2A55XL1V1R6M0')
```

2. Perform your new release testing.
3. When testing is complete you must delete the new release.

```
DLTLICPGM LICPGM(2A55XL1) RLS(V1R6M0) OPTION(*ALL)
```

Note: Do not delete nor rename libraries and directories to move the new release into production. Doing so will corrupt the license program information kept internally by i5/OS. If this has already occurred, see the "Software Installation Problems" section of the "Trouble Shooting" chapter.

4. Follow the installation instructions to place the new release into production.

Deleting the Excel-erator Licensed Program Product

Follow these instructions to remove Excel-erator from your eServer i5 (iSeries):

1. Sign on to the system as the security officer (QSECOFR).
2. Delete the product by using the Delete Licensed Program (DLTLICPGM) command:

```
DLTLICPGM LICPGM(2A55XL1) OPTION(*ALL)
```

Additional Installation Information

Additional detailed installation information and instructions can be found in [Software Installation SC41-5120](#).

Technical Support

If you encounter a problem with Excel-erator you should:

- o Review the information in the Trouble Shooting chapter for a description of and solution to common problems.
- o Load and apply the current cumulative PTF package for the software. You can obtain the current package by visiting the web site listed below.

If the problem remains unresolved, contact:

Mailing address: Gumbo Software, Inc.
809 W Howe St
Seattle, WA 98119
United States of America

Fax: (206) 284-5029
Telephone: (206) 284-5078
E-mail: support@gumbo.com
World Wide Web: www.gumbo.com

Hot Site Installation

In the event of a catastrophic system failure, an otherwise properly licensed and authorized copy of our product may be copied to a back up or fail over machine. The product's authorization algorithm will detect that the software is operating on a machine serial number different than the licensed and authorized serial number and automatically create and install a 30 day temporary authorization code for the back up or fail over machine. You do not need to contact Gumbo Software, Inc. in the event of an emergency.

An otherwise properly licensed and authorized copy of this product may be transferred to a back up or fail over machine for the purpose of testing your emergency recovery procedures and the product's automatic temporary authorization function.

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 or fail over 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 or fail over machine using the Restore License Program (RSTLICPGM) command.
5. The first time the software is used on the back up or fail over machine the product's authorization algorithm will create and install a temporary authorization code running for 30 days. This allows you install the authorized copy in advance of a disaster.

Chapter 3 Excel-erator Menu

What's In This Chapter

This chapter describes how to access the Excel-erator menu, and reviews the functions that can be performed from the menu.

Accessing The Menu

The Excel-erator commands and functions that you will use are collected on a single menu named XLERATOR. To access this menu use the Go To Menu (GO) command:

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

Library XLERATOR is added to the product portion of your job's library list while the menu is displayed.

Menu Options

```
-----+-----
XLERATOR                               Excel-erator                               System:  GUMBO
Select one of the following:
      1. Online Manual
Excel-erator
      2. Copy To Excel                    CPYTOEXCEL
      3. Send File Excel                  SDFEXCEL
      3. Verify that Excel-erator is installed correctly
Other Options
      60. Mail Verification And Set Up    MAILSETUP
      61. Display Current PTF Status     DSPTF
      62. Change Excel-erator Authorization  CHGXLLAUT
      63. Search Help Index              STRSCHIDX
      64. Change Excel-erator Default     CHGXLLDFT
      65. Check Excel-erator Authorization CHGXLLAUT
                                           Bottom
Selection or command
===> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel
©) Copyright Gumbo Software, Inc. 2001, 2006. All Rights Reserved.
-----+-----
```

Figure: Excel-erator Menu

The Excel-erator (XLERATOR) menu options are summarized below:

Note: See the detailed descriptions in later chapters for a complete explanation of each option.

Option 1. Online Manual

The online manual allows you to view the contents of the Excel-erator Manual from a work station.

Option 2. Copy To Excel

The Copy To Excel (CPYTOEXCEL) command converts an I5/OS database file into an Excel spreadsheet which is stored in I5/OS Integrated File System.

Option 3. Send File Excel

The Send File Excel (SDFEXCEL) command converts one or more I5/OS database files into Excel spreadsheets which are then sent as an e-mail to recipients.

Option 4. Verify that Excel-erator is installed correctly

Installation verification checks to make sure that Excel-erator has been correctly installed.

Option 60. Mail Verification And Set Up Menu

The Mail Verification And Set Up menu provides commands to help you set up mail on your system and verify that it is operating correctly.

Option 61. Display Current PTF Status

Displays the Excel-erator PTFs that have been applied to the software.

Option 62. Change Excel-erator Authorization

The Change Excel-erator Authorization (CHGXL1AUT) command changes the authorization value for Excel-erator. The command is used to extend a demonstration period or to permanently authorize Excel-erator for a system.

Option 63. Search Help Index

Search help index allows you to access the Excel-erator help index and search for specific information.

Option 64. Change Excel-erator Default

The Change Excel-erator Default (CHGXL1DFT) command changes values used by Excel-erator to control processing and other activities.

Option 65. Check Excel-erator Authorization

The Check Excel-erator Authorization (CHKXL1AUT) command executes Excel-erator's authorization verification function. This allows you to determine whether and how the product is authorized for use.

Chapter 4 Set Up

What's In This Chapter

This chapter provides information on setting up your system to use Excel-erator. The chapter describes:

- o How to select a quick start mail set up procedure
- o Quick start mail set up - LAN.
- o Quick start mail set up - Domino/400 and one SMTP stack.
- o Quick start mail set up - Domino/400 and two SMTP stack.
- o How to determine if you need to set up SMTP on your system.
- o How to use the Verify/Set Up Local SMTP (VFYLOCAL) command.
- o Manual SMTP steps you may need to perform.
- o How to determine if you need to set up a mail router on your system.
- o How to use the Verify/Set Up Mail Router (VFYROUTER) command.
- o How to store e-mail addresses as directory entries.
- o How to set up postmaster and non-delivery accounts.
- o How to forward mail to another address.

Selecting The Quick Start Mail Set Up Procedure

There are three quick start mail set up procedures for configuring i5/OS mail services described in this chapter. The configuration procedures are:

- o Quick start mail set up - LAN.
- o Quick start mail set up - Domino/400 and one SMTP.
- o Quick start mail set up - Domino/400 and two SMTP.

You only perform one of these. If you are not running Domino/400 on the system you are setting up, proceed to the section for a typical LAN installation. If you are running Domino/400 on the system you are setting up you must select between the two Domino/400 mail set up procedures.

Our software uses i5/OS' SMTP services to deliver mail. Originally, Domino/400's SMTP stack or i5/OS' SMTP could be active on a system but not both. To use both Domino/400 and i5/OS mail services, Domino/400 is configured to use i5/OS' SMTP in place of its own. That is Domino/400 and i5/OS share a single (i5/OS) SMTP stack and no new IP address is required.

More recently, IBM has added a feature that allows i5/OS' SMTP stack to bind to a specific IP address. With this feature, both the Domino/400 and i5/OS SMTP stacks can be active at the same time. This appears to be the preferred set up as it leaves Domino/400 untouched but allows the i5/OS SMTP stack to be active. The feature requires that a new IP address be designated for the i5/OS SMTP stack.

Determine which alternative your installation will use and proceed to the one or two SMTP stack procedure.

Quick Start Mail Set Up - LAN

If yours is a typical LAN installation the following steps will get you started quickly. The typical LAN installation is an eServer i5 (iSeries) connected to a LAN with the post office (a.k.a. mail router) on a LAN attached PC running Exchange, Notes, Domino, Groupwise or similar mail server with or without a connection to the internet at large. At the typical installation this is the first application to generate e-mail from the eServer i5 (iSeries). If any of the steps fail or yours is a more complex installation, move on to the detailed sections of this chapter.

1. Install the product on your eServer i5 (iSeries) (see the Installation chapter for details).
2. Display the product menu.
3. Run the option to verify that the product is installed correctly.
4. Display the Mail Verification And Set Up menu.
5. Run option 12 to set up the EServer i5 (iSeries).
6. Determine the name and IP number of the mail router.
7. Run option 14 to set up the mail router specifying its name and IP.

8. Return to the product menu by hitting F12.
9. Send a test to yourself using your "real" e-mail address.
10. Check your e-mail.

If after a reasonable time no e-mail arrives perform the following additional steps.

1. Add your "real" e-mail address to your directory entry by running (this example uses "real" e-mail address "billg@acme.com" and the directory entry "MYUSER MYSYSTEM"):

```
CHGDIRE USRID(MYUSER MYSYSTEM) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
      USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If you are still signed on as QSECOFR, start a second session and sign on with your regular user profile to perform the send.

2. Display the Mail Verification And Set Up menu.
3. Run option 61 to restart/purge local mail on your system.

Note: If your EServer i5 (iSeries) is currently being used to generate e-mail from another application, change the Clear SMTP during restart (SMTPPURGE) and Clear MSF during restart (MSFPURGE) parameters to *NO to prevent e-mail from being deleted.

4. Send a test to yourself taking by taking the default *CURRENT.
5. Check your e-mail.

If after a reasonable time no e-mail arrives move on to the detailed sections of this chapter. For additional information see the Trouble Shooting chapter.

Quick Start Mail Set Up - Domino/400 One SMTP

If yours is a typical Domino for i5/OS installation, the following steps will get you started quickly and use only one SMTP stack. The typical Domino for i5/OS installation is an eServer i5 (iSeries) connected to a LAN with Domino for i5/OS installed using the Domino SMTP stack with or without a connection to the internet at large. At the typical installation this is the first application to generate e-mail from the eServer i5 (iSeries), outside Domino. If any of the steps fail or yours is a more complex installation, move on to the detailed sections of this chapter.

Note: Additional detailed information can be found in the Redbook [Lotus Domino for i5/OS R5: Implementation SG24-5592-00](#).

1. Install the product on your eServer i5 (iSeries) (see the Installation chapter for details).
2. Display the product menu.
3. Run the option to verify that the product is installed correctly.
4. Run the End Domino Server (ENDDOMSVR) command.
5. Change the Domino Server to use i5/OS' SMTP stack:
 - A. Run the Change Domino Server (CHGDOMSVR) command.
 - B. Add *SMTP to the "Internet mail packages MAIL()" parameter.
 - C. Change the "SMTP services SMTP()" parameter from *DOMINO to *MSF.
6. Display the Mail Verification And Set Up menu.
7. Run option 12 to set up the eServer i5 (iSeries).
8. Run option 14 to set up the mail router specifying its name and IP.
9. Run option 61 to restart/purge local mail on your system.
10. Run the Start Domino Server (STRDOMSVR) command.
11. Return to the product menu by hitting F12.
12. Send a test to yourself using your "real" e-mail address.
13. Check your e-mail.

If after a reasonable time no e-mail arrives perform the following additional steps.

1. Add your "real" e-mail address to your directory entry by running (this example uses "real" e-mail

address "billg@acme.com" and the directory entry "MYUSER MYSYSTEM"):

```
CHGDIRE USRID(MYUSER MYSYSTEM) MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If you are still signed on as QSECOFR, start a second session and sign on with your regular user profile to perform the send.

2. Send a test to yourself taking by taking the default *CURRENT.
3. Check your e-mail.

If after a reasonable time no e-mail arrives move on to the detailed sections of this chapter. For additional information see the Trouble Shooting chapter.

Quick Start Mail Set Up - Domino/400 Two SMTP

If yours is a typical Domino for i5/OS installation, the following steps will get you started quickly using two SMTP stacks. The typical Domino for i5/OS installation is an eServer i5 (iSeries) connected to a LAN with Domino for i5/OS installed using the Domino SMTP stack with or without a connection to the internet at large. At the typical installation this is the first application to generate e-mail from the eServer i5 (iSeries), outside Domino. If any of the steps fail or yours is a more complex installation, move on to the detailed sections of this chapter.

Note: Additional detailed information can be found in the Redbook [Lotus Domino for I5/OS R5: Implementation SG24-5592-00](#).

1. Install the product on your eServer i5 (iSeries) (see the Installation chapter for details).
2. Display the product menu.
3. Run the option to verify that the product is installed correctly.
4. Determine the i5/OS version by running:

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

5. For versions before V5R1M0 run DSPPTF 5769TC1 and insure that the bind to specific IP PTFs are installed:

I5/OS	Required PTFs
V4R5M0	SF60827, SF61136
V4R4M0	SF60787, SF60764
V4R3M0	SF58661, SF59663
V4R2M0	SF55697, SF55704

6. Determine the new IP address to be assigned to i5/OS' SMTP stack. If your i5/OS SMTP stack will use Domino to deliver e-mail to internet users (the recommended approach) and you otherwise do not have an internet address for the i5/OS SMTP stack, you can use internet address "192.168.1.1" and Subnet Mask "255.255.255.0". This number is taken from the class B "192.168.0.0" network which is reserved for internal networks as described in RFC1597.

Note: This example will use 192.168.1.1.

7. Determine the **Internet Address**, **Line Description** and **Line Type** used by the existing TCP/IP interface:
 - A. Run the Configure TCP/IP (CFGTCP) command.
 - B. Select option 1: Work with TCP/IP interfaces.
 - C. Note the **Internet Address**, **Line Description** and **Line Type** used by the existing TCP/IP interface (Do not use *LOOPBACK).

Note: This example will use **Internet Address** 10.10.10.2, **Line Description** LINE01 and **Line Type** *ELAN.

8. Insure that Domino's SMTP stack is bound specifically to the IP number of the existing interface:
 - A. Prompt the CHGDOMSVR command for the Domino server and hit F10.
 - B. Locate the **TCP/IP port options** (TCPOPT) parameter.
 - C. Locate the **Internet Address** element.
 - D. If the internet address is *SYSTEM, change it to the IP number of the existing interface (In our example it is 10.10.10.2).
 - E. Restart Domino.

9. Add a TCP/IP interface for the i5/OS SMTP stack:

```
ADDTCPIFC INTNETADR(192.168.1.1) LIND(LINE01) SUBNETMASK('255.255.255.0')
```

10. Start the TCP/IP interface:

```
STRTCPIFC INTNETADR(192.168.1.1)
```

11. Create the binding data areas:

```
CRTDTAARA DTAARA(QUSRSYS/QTMSCBNDIP) TYPE(*CHAR) LEN(16)
          VALUE('192.168.1.1') TEXT('SMTP Bind To Specific IP') AUT(*USE)
CRTDTAARA DTAARA(QUSRSYS/QTMSSEBNDIP) TYPE(*CHAR) LEN(16)
          VALUE('192.168.1.1') TEXT('SMTP Bind To Specific IP') AUT(*USE)
```

Note: For V5R1M0 you can use OpsNav to accomplish the binding. See the Bindings tab of the SMTP properties page.

12. Determine your company's domain name. For us it is **gumbo.com**. For you it is probably the portion of your e-mail address to the right of the @.

Note: This example will use acme.com.

13. Add a host table entry for the new interface:

```
ADDTCPHTE INTNETADR(192.168.1.1) HOSTNAME(('os400smtp') ('os400smtp.acme.com'))
          TEXT('I5/OS SMTP')
```

Note: If you are using DNS, make the same addition to the configuration.

14. Change the identification used by i5/OS' SMTP stack to reflect the new information:

```
CHGTCPD MN HOSTNAME('os400smtp') DMNNAME('acme.com')
```

15. Display the Mail Verification And Set Up menu.
16. Run option 12 to complete the i5/OS SMTP set up.
17. Run option 14 to set up Domino as the mail router for the i5/OS SMTP stack. Specify Domino's host name (not server name) and IP.

Note: If you will use a mail router other than Domino and you used an address from the "192.168.0.0" class B network, you must also add a TCP/IP route using the Add TCP/IP Route (ADDTCP RTE) command.

19. Return to the product menu by hitting F12.
20. Send a test to yourself using your "real" e-mail address.
21. Check your e-mail.

If after a reasonable time no e-mail arrives perform the following additional steps.

1. Add your "real" e-mail address to your directory entry by running (this example uses "real" e-mail address "billg@acme.com" and the directory entry "MYUSER MYSYSTEM"):

```
CHGDIRE USRID(MYUSER MYSYSTEM) MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
          USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If you are still signed on as QSECOFR, start a second session and sign on with your regular user profile to perform the send.

2. Send a test to yourself taking by taking the default *CURRENT.
3. Check your e-mail.

If after a reasonable time no e-mail arrives move on to the detailed sections of this chapter. For additional information see the Trouble Shooting chapter.

Do I Need To Set Up SMTP

Our software works in conjunction with the Mail Server included in i5/OS. If you are already successfully sending e-mail to users from your system then no further set up is required.

If you are not yet sending e-mail from your system or are not sure that your system has been set up correctly for SMTP then continue with this chapter.

Using The SMTP Set Up Command

Verify/Set Up Local SMTP (VFYLOCAL) command performs automatic verification and set up of SMTP on your system. The command accepts a single parameter that determines if changes are made to the system. To verify the system without making any changes select option 11 on the Mail Verification And Set Up menu or run the following command:

```
VFYLOCAL SETUP(*NO)
```

To make changes to your system select option 12 on the Mail Verification And Set Up menu or run the following command:

```
VFYLOCAL SETUP(*YES):
```

In both cases SMTP verification is performed. Only if SETUP(*YES) is specified does the command try to perform set up functions. You must be authorized to perform all of the verification and set up functions or the command fails. You can insure that you are authorized to perform all functions by signing on as QSECOFR.

Note: If you prefer to manually perform the functions of this program see the Appendix.

A log of activity is created during verification and set up. To view the log run DSPJOB, take option 4 and display the last spooled file.

If errors are encountered, detailed information can be found in your joblog. To view the information generated by VFYLOCAL, run the following command after the program has completed:

```
DSPJOBLOG
```

When the joblog is displayed, press F10 to display detailed messages and F18 to position to the end of the log.

The recommended procedure is to run a verification first and review the results before running automatic set up.

Manual SMTP Steps You May Need To Perform

Depending on your system, network configuration and your intended usage, there are several manual set up steps you may need to perform in order to use SMTP. These are described here.

- o Installing SMTP and TCP Connectivity Utilities

In order to send e-mail from your system, SMTP support must be installed. SMTP functions are delivered free of charge with i5/OS as part of a separately installed licensed program product: 5722-TC1 (V5) or 5769-TC1 (V4) Connectivity Utilities/400. Detailed installation information and instructions can be found in [AS/400 Software Installation SC41-5120](#).

- o Changing Local Domain and Host Names

SMTP uses your system's local domain and host name to identify itself to remote SMTP hosts from which it is receiving mail or to which it is sending mail. To configure the names:

- Run the Configure TCP/IP (CFGTCP) command.
- Select option 12 (Change local domain and host names).
- Enter a domain and host name for your system.

As an example, we use gumbo.com as the domain name and the eServer i5 (iSeries) system name as the host name on our machines.

- o Creating a TCP Interface

A TCP interface establishes your eServer i5 (iSeries) identity (internet address) on a given line description. Typically the line description for a local area network is used.

In order to add a TCP interface to a line description, you must determine the internet address and subnet mask to use. If you have a network administrator or other person responsible for assigning internet addresses (a.k.a. IP numbers), contact them. If you will connect your eServer i5 (iSeries) directly to the Internet, you must request that the InterNIC assign you a network number. If you will not connect your eServer i5 (iSeries) directly to the internet, and otherwise do not have an internet address for your system, you should use internet address "192.168.1.1" and subnet mask "255.255.255.0". This number is taken from the class B "192.168.0.0" network which is reserved for internal networks as described in RFC1597. To add an interface after you have determined an internet address and subnet mask, run the following command:

```
ADDTCPIFC INTNETADR(192.168.1.1) LIND(line_description_name)
          SUBNETMASK(255.255.255.0)
```

Substitute your values for the three parameters.

- o Setting Up Local Users

A local user is someone who has a user profile (sign-on) on your eServer i5 (iSeries). You should set up each local user who will be sending e-mail to insure that the apparent "From:" address in the e-mail will be correct and to insure that replies reach the sender. You do not need to set up local users who will not be sending mail. To configure hypothetical user JOE SALES (user profile JOES) as joe@acme.com, perform the following:

- If Joe already has a directory entry run:

```
CHGDIRE USRID(JOE SALES) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
          USRDFNFLD((SMTPAUSRID SMTP 'joe') (SMTPDMN SMTP 'acme.com'))
```

- If Joe doesn't have a directory entry run:

```
ADDIRE USRID(JOE SALES) USRD('Sample entry') USER(JOES) SYSNAME(*LCL)
          MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
          USRDFNFLD((SMTPAUSRID SMTP 'joe') (SMTPDMN SMTP 'acme.com'))
```

The user is now ready to send mail from your system as joe@acme.com.

- o Changing The System Start Program

You may wish to check your system's start up program to insure that the required subsystems are started automatically when your system IPLs. The following steps are recommended:

- Insure that the SMTP server starts automatically when the Start TCP/IP (STRTCP) command is run:

```
CHGSMTPA AUTOSTART(*YES)
```

- Insure that your system start up program starts TCP/IP by including the command:

```
STRTCP
```

- Insure that your system start up program starts the i5/OS Mail Server by including the command:

```
STRMSF
```

- o Changing The Time Zone System Value

Note: This item applies to i5/OS releases V5R3M0 or later. If you are running a release prior to V5R3M0, see the item below.

The time stamp placed in the e-mail is based on the system values QTIME and QTIMZON. Since most eServer i5 (iSeries) have the correct time, an incorrect time stamp usually indicates an incorrect time zone setting. For information on correctly setting the QTIMZON system value see "Time management" under "System management" at the IBM Information Center <http://publib.boulder.ibm.com/series/>

- o Changing The Universal Time Coordinate Offset System Value

Note: This item applies to i5/OS releases prior to V5R3M0 or later. If you are running V5R3M0, see the item above.

The time stamp placed in the e-mail is based on the system values QTIME and QUTCOFFSET. While most eServer i5 (iSeries) have the correct time, few have the correct QUTCOFFSET which stands for "Coordinated universal time offset". The value specifies the difference in hours and minutes between UTC, also known as Greenwich mean time, and the current system time. The following table shows the correct setting for several time zones:

Time Zone	Standard/Day Light Savings
Atlantic Time	-04:00 / -03:00
Eastern Time	-05:00 / -04:00
Indiana	-05:00 / (no change)
Central Time	-06:00 / -05:00
Mountain Time	-07:00 / -06:00
Arizona	-07:00 / (no change)
Pacific Time	-08:00 / -07:00
Alaska Time	-09:00 / (no change)
Hawaii-Aleutian Time	-10:00 / (no change)
Dublin, Edinburgh	+00:00
London, Lisbon	+00:00
Berlin, Stockholm,	+01:00
Rome, Bern, Amsterdam	+01:00
Brussels, Vienna	+01:00
Paris, Madrid	+01:00
Prague, Warsaw	+01:00
Hong Kong, Perth	+08:00
Singapore, Taipei	+08:00
Tokyo, Osaka	+09:00
Adelaide, Darwin	+09:30
Brisbane, Canberra	+10:00
Melbourne, Sydney	+10:00
Wellington, Auckland	+12:00

Additional detailed information and instructions can be found in the [i5/OS TCP/IP Configuration and Reference SC41-5420](#).

Do I Need To Set Up A Mail Router

i5/OS SMTP support can be configured to deliver e-mail to an external mail router when SMTP cannot find the name and address of the recipient in the system or personal alias tables or when SMTP is not able to resolve the address of the recipient.

An external mail router is a system that is running a mail application. Examples of mail applications include:

- o Microsoft Exchange Server
- o Lotus Notes Mail
- o Group Wise
- o Your Internet Service Provider's (ISP's) mail gateway

If you want the mail application to handle delivery for SMTP mail originating from the i5/OS, then continue with this chapter.

If your configuration does not include a system running a mail application, or if you are running Domino for i5/OS with one SMTP stack, you should not set up a mail router. If you intend to have i5/OS directly deliver mail to recipients, you do not need to set up a mail router.

Using The Mail Router Set Up Command

Verify/Set Up Mail Router (VFYROUTER) command performs automatic verification and set up of a mail router for your system. The command accepts a three parameters that determine if changes are made to the system and the identity of the mail router. To verify the mail router without making any changes select option 13 on the Mail Verification And Set Up menu or run the following command (substitute the name and internet address of your external mail router for "system_name" and "ip"):

```
VFYROUTER RMTSYS(system_name) INTNETADR(ip) SETUP(*NO)
```

To make changes to your system select option 14 on the Mail Verification And Set Up menu or run the following command (substitute the name and internet address of your external mail router for "system_name" and "ip"):

```
VFYROUTER RMTSYS(system_name) INTNETADR(ip) SETUP(*YES)
```

In both cases mail router verification is performed. Only if SETUP(*YES) is specified does the command try to perform set up functions. You must be authorized to perform all of the verification and set up functions or the command fails. You can insure that you are authorized to perform all functions by signing on as QSECOFR.

Note: If you prefer to manually perform the functions of this program see the Appendix.

A log of activity is created during verification and set up. To view the log run DSPJOB, take option 4 and display the last spooled file.

If errors were encountered, detailed information can be found in your joblog. To view the information generated by VFYROUTER, run the following command after the command has completed:

```
DSPJOBLOG
```

When the joblog is displayed, press F10 to display detailed messages and F18 to position to the end of the log.

The recommended procedure is to run a verification first and review the results before running set up.

Storing E-mail Addresses As Directory Entries

i5/OS's (OS/400's) system distribution directory can contain addressing information for users. In essence you store the user's email address in a directory entry. Directory entries can be created for users who are local to the iSeries Server (have an i5/OS (OS/400) user profile) and for users who are remote (do not have an i5/OS (OS/400) user profile). Local users can receive their mail on the iSeries Server using i5/OS's (OS/400's) POP server or from a remote mail application such as Exchange.

To add a directory entry for local user MYUSER who has a user profile on the iSeries Server MYSYSTEM run the following command (for this example assume the user's e-mail address is billg@acme.com):

```
ADDIRE USRID(MYUSER MYSYSTEM) USRD('Sample entry') USER(MYUSER) SYSNAME(*LCL)
MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If you are running Lotus Domino for i5/OS (OS/400) run:

```
ADDIRE USRID(MYUSER MYSYSTEM) USRD('Sample entry') USER(MYUSER) SYSNAME(*LCL)
MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If the user already has a directory entry, change it by running:

```
CHGDIRE USRID(MYUSER MYSYSTEM)
MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

To add a directory entry for a remote user who will receive e-mail mail from the iSeries Server run the following command (for this example assume the user's e-mail address is johnp@acme.com):

```
ADDIRE USRID(RMT1 EMAIL) USRD('Sample entry 2') USER(*NONE) SYSNAME(TCPIP)
MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
USRDFNFLD((SMTPAUSRID SMTP 'johnp') (SMTPDMN SMTP 'acme.com'))
```

Note: The choice of USRID(RMT1 EMAIL) is arbitrary, select names that are convenient. The system name must be TCP/IP.

To add a directory entry for a Domino user who does not have an i5/OS (OS/400) user profile run the following command (for this example assume the user's e-mail address is suej@acme.com):

```
ADDIRE USRID(DOMINO EMAIL) USRD('Sample entry 3') USER(*NONE) SYSNAME(TCPIP)
MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
USRDFNFLD((SMTPAUSRID SMTP 'suej') (SMTPDMN SMTP 'acme.com'))
```

Note: The choice of USRID(DOMINO EMAIL) is arbitrary, select names that are convenient. The system name must be TCP/IP.

Setting Up Postmaster and Non-delivery Accounts

i5/OS provides support for postmaster and non-delivery accounts and provides feedback on mail operations to these if they exist. Gumbo suggests that you set up both and forward them to a real person who can monitor for problems. This section describes how to set up these generic accounts. See Forwarding Mail To Another Address for details on setting up the forward. To create the generic accounts:

1. Create user profiles for the postmaster and non-delivery accounts by running:

```
CRTUSRPRF USRPRF(POSTMASTER) PASSWORD(*NONE) STATUS(*DISABLED) INLMNU(*SIGNOFF)
TEXT('Postmaster Account')
CRTUSRPRF USRPRF(NONDELIVER) PASSWORD(*NONE) STATUS(*DISABLED) INLMNU(*SIGNOFF)
TEXT('Non-delivery Account')
```

2. Determine your system's **Host name** and **Domain name** by running the command CFGTCP and taking option 12. When a period is placed between these, they are the fully qualified host name.
3. Enroll the postmaster and non-delivery accounts by running:

```

ADDDIRE USRID(POSTMSTR EMAIL) USRD('Postmaster') USER(POSTMASTER) SYSNAME(*LCL)
      MSFSRVLV(L(*SYSMS) PREFADR(*SMTP) USRDFNFLD((SMTPAUSRID SMTP 'postmaster')
      (SMTPDMN SMTP 'iseries.widget.com'))
ADDDIRE USRID(NONDELIV EMAIL) USRD('Nondelivery') USER(NONDELIVER) SYSNAME(*LCL)
      MSFSRVLV(L(*SYSMS) PREFADR(*SMTP) USRDFNFLD((SMTPAUSRID SMTP
      'nondelivery')
      (SMTPDMN SMTP 'iseries.widget.com'))

```

The accounts are now ready for use.

Forwarding Mail To Another Address

i5/OS allows you to forward e-mail directed to one e-mail address to another address. This is useful for example when a user's e-mail address changes or when a specific individual should receive mail directed at generic email addresses such as `postmaster@<hostname.localdomain>` and `nondelivery@<hostname.localdomain>` set up in the previous section. To enable mail forwarding on your system, create two user-defined fields in the system distribution directory by running the following command:

```

CHGSYSDIRA USRDFNFLD((FORWARDING *NONE *ADD *ADDRESS 256)
      (FWDSRVLV(L *NONE *ADD *MSFSRVLV(L 1))

```

Note: You only do this step once per system, the fields are defined in the system distribution directory from then on.

Suppose the 2 generic accounts set up in the previous sections should be forwarded to the e-mail address `billg@widget.com` for handling. Run the following commands:

```

CHGDIRE USRID(POSTMSTR EMAIL) USRDFNFLD((FORWARDING *NONE 'billg@widget.com))
      MSFSRVLV(L(FWDSRVLV(L *NONE) PREFADR(FORWARDING *NONE ATMIME)
CHGDIRE USRID(NONDELIV EMAIL) USRDFNFLD((FORWARDING *NONE 'billg@widget.com))
      MSFSRVLV(L(FWDSRVLV(L *NONE) PREFADR(FORWARDING *NONE ATMIME)

```

Note: On some systems, "ATMIME" is not defined and, in this case, use "MIME" in place of "ATMIME".

Forwarding is now set up.

Chapter 5 Implementation

What's In This Chapter

This chapter describes how to implement Excel-erator in your environment. The chapter:

- o Gives an overview of implementation choices.
- o Describes changing programs to convert files.
- o Describes manually converting files.
- o Describes accessing files in the Integrated File System.
- o Shows how to create a PDM option to run the CPYTOEXCEL command.
- o Shows how to create a PDM option to run the SNDFEXCEL command.
- o Shows how to use OPNQRYF to select specific records.
- o Describes e-mail address formats.
- o Describes the from (originator) address.
- o Describes using distribution lists.
- o Describes adding line breaks to the message.

Overview

Excel-erator converts database files into spreadsheets in Microsoft's Excel format. There are two commands that provide the conversion:

- o Copy To Excel (CPYTOEXCEL)
- o Send File Excel (SNDFEXCEL)

To implement Excel-erator in your environment you have two basic choices:

1. Modify each program that creates files that will be converted to directly run the Copy To Excel (CPYTOEXCEL) or the Send File Excel (SNDFEXCEL) command.
Pros The file is always converted as soon as it is created.
Cons Programs must be modified and recompiled.
2. Manually run the Copy To Excel (CPYTOEXCEL) or the Send File Excel (SNDFEXCEL) command from a command line.
Pros Good for casual or on demand use, no program changes required.
Cons Requires manual operations and scheduling.

See the following sections for a detailed discussion of the choices.

Changing Programs

Excel-erator can be implemented by changing the programs that create files to convert them directly. A typical batch Control Language (CL) program that creates a file would contain the following CL sequence:

```
OVRDBF      FILE(INVENTORY) TOFILE(INVLIB/INVENTORY)
OVRDBF      FILE(CUSTOMER) TOFILE(INVLIB/CUSTOMER)
CLRPFM      FILE(INVLIB/INVSTATUS)
CALL        PGM(INVLIB/INV320)
```

If program INV320 generates file INVSTATUS then the following changes will convert the file to the /Excel/INV320 directory and create a file with the date and time created as the name:

```
OVRDBF      FILE(INVENTORY) TOFILE(INVLIB/INVENTORY)
OVRDBF      FILE(CUSTOMER) TOFILE(INVLIB/CUSTOMER)
CLRPFM      FILE(INVLIB/INVSTATUS)
CALL        PGM(INVLIB/INV320)
CPYTOEXCEL  FROMFILE(INVLIB/INVSTATUS) TOOBJ('/Excel/INV320/InventoryStatus.xls')
```

The file is converted as soon as program INV320 has completed processing. Alternately, the following changes will e-mail the file to 'billg@acme.com':

```
OVRDBF      FILE(INVENTORY) TOFILE(INVLIB/INVENTORY)
OVRDBF      FILE(CUSTOMER) TOFILE(INVLIB/CUSTOMER)
CLRPFM      FILE(INVLIB/INVSTATUS)
CALL        PGM(INVLIB/INV320)
SNDFEXCEL   SNDF((INVLIB/INVSTATUS)) TO((billg@acme.com))
```

The file is e-mailed as soon as program INV320 has completed processing.

Manually Processing Files

Excel-erator can be implemented by assigning an operator the task of manually converting files. The Copy To Excel (CPYTOEXCEL) and Send File Excel (SNDFEXCEL) commands can be run from any command line or from the XLERATOR menu.

Accessing Files In The Integrated File System

Files are created in i5/OS's Integrated File System (IFS). There are a variety of ways to access the contents of the IFS. The following common methods are described here:

- o Accessing the file from a PC using i5/OS's support for Windows Network Neighborhood (NetServer).
- o Creating the file directly on a Windows machine using the IFS's QNTC file system.
- o Transferring the file using FTP from a PC.
- o Transferring the file using FTP from i5/OS.
- o Accessing the file from a PC using iSeries Access.

Windows Network Neighborhood (NetServer)

i5/OS Support for Windows Network Neighborhood (NetServer) allows a TCP/IP attached PC to access the Integrated File System using the file and print sharing built into Windows.

i5/OS NetServer support does not require you to install any additional software on your personal computer. Similarly, NetServer does not require any software other than base i5/OS V4R2M0 or later.

Follow these guidelines to get your eServer i5 (iSeries) set up to use NetServer. These instructions assume that you do not have access to Operations Navigator support. Whenever possible, you should use Operations Navigator.

Note: You must have *IOSYSCFG special authority to change any part of NetServer configuration. In addition, you must have *SECADM special authority to change the NetServer guest user profile. These changes will take effect the next time NetServer is started.

1. Verify that TCP/IP support is configured on your eServer i5 (iSeries).
2. Use the Work with Subsystems (WRKSBS) command to confirm that the QSERVER subsystem has started.
3. Verify that the NetServer name is unique on the network. To change the NetServer default server and domain name, use the following command:

```
CALL QZLSCHSN PARM(server-name domain-name
                    'text description or comment' X'00000000')
```

4. To change NetServer guest support, use the following command:

```
CALL QZLSCHSG PARM(guest-user-profile X'00000000')
```

Users who require the file and print-sharing capabilities of NetServer, but do not have an i5/OS user profile need a guest user profile.

Note: The Guest User Profile should not have a password or any special authority.

5. Stop and start NetServer, using the following commands:

ENDTCPSVR SERVER(*NETSVR)
STRTCPSVR SERVER(*NETSVR)

The only directory that is automatically shared with the network is the \QCA400 directory. To create additional shares you must use Operations Navigator and follow these steps:

1. Open a connection to your eServer i5 (iSeries) in Operations Navigator.
2. Expand Network.
3. Expand Servers.
4. Click TCP/IP to retrieve a list of TCP/IP servers available.
5. Right-click NetServer and select Open.
6. Right-click Shared Objects and select New and then File.
7. Use the General Properties page to configure the new file share with a name, description, access, maximum number of users, and directory path name.

Note: The Operations Navigator online help provides more details about NetServer file share properties.

Once a share has been created, map to it from your Windows PC by following these steps:

1. Right-click the Start button and choose Explore to open the Windows Explorer.
2. Open the Tools pull-down menu on the Windows Explorer and select Map network drive.
3. Select the letter of a free drive for the file share.
4. Enter the name of a NetServer file share. For example:

`\\server-name\Sharename`

Note: server-name is the system name of NetServer on eServer i5 (iSeries), and Sharename is the name of the file share you want to use.

5. Click OK.

Alternately you can use Network Neighborhood to access the share:

1. Open Windows Network Neighborhood.
2. Open server-name (Where server-name is the NetServer on eServer i5 (iSeries)).
3. Select a file share.

QNTC File System

i5/OS's QNTC file system allows the Integrated File System to write directly to Windows file shares (disk) as if it were local i5/OS disk storage.

Path (file) names in QNTC consist of the file system name, the Windows server name, the sharename, the directory and sub-directory names, and the object name. Path (file) names have the following form:

`/QNTC/Servername/Sharename/MyDirectory/MyFile.pdf`

Use the Make Directory (MKDIR) command to add a Windows machine to QNTC. For example:

```
MKDIR DIR('/QNTC/NTSRV1')
```

Adds the NTSRV1 server into the QNTC file system directory structure to enable access of files and directories on that server.

FTP Using PC

FTP can be used to transfer the files to another system. In brief, the steps for retrieving the file /mydirectory/myfile.pdf from IFS to your PC are:

1. Insure the i5/OS FTP server is active by running this command from an i5/OS command line:

```
STRTCPSVR SERVER(*FTP)
```

2. From your PC, open a command prompt (a.k.a. DOS session).
3. Open an FTP connection to the eServer i5 (iSeries) by running (use your system's name or IP address):

```
FTP system_name
```

4. Enter a user name and password as prompted.
5. Change to binary (image) mode by running:

```
binary
```

6. Switch to i5/OS Integrated File System by running:

```
quote site namefmt 1
```

7. Retrieve the file by running:

```
get /mydirectory/myfile.pdf
```

8. End FTP and command prompt (DOS session) by running:

```
quit  
exit
```

For more details see [Networking](#) topic in the iSeries Information Center.

FTP Using i5/OS

FTP can be used from i5/OS to transfer the files to another system interactively or in batch. The interactive procedure is similar to the PC procedure, using "put" instead of "get". In brief, the steps for transferring the file /mydirectory/myfile.pdf from IFS to another system in batch are:

1. Create a source member containing the FTP commands that you would otherwise have to type at the terminal during an interactive session with the target server. By way of example, we use the following command sequence in member FTPCMDS in QGPL/QCLSRC.

```
user password  
binary  
namefmt 1  
put /mydirectory/myfile.pdf  
quit
```

2. Add the following statements to your program:

```
...  
OVRDBF FILE(INPUT) TOFILE(QGPL/QCLSRC) MBR(FTPCMDS)  
OVRDBF FILE(OUTPUT) TOFILE(QGPL/QCLSRC) MBR(FTPLOG)  
FTP RMTSYS(system_name)  
...
```

For more details see [Networking](#) topic in the iSeries Information Center.

iSeries Access

iSeries Access includes software that connects to the eServer i5 (iSeries) and makes the integrated file system available to the PC. For more information see [iSeries Access](#) topic in the iSeries Information Center.

Creating a CPYTOEXCEL PDM Option

IBM's Program Development Manager (PDM) allows creation of user-defined options. The following steps will create the user-defined option "XL" which will submit a job to run the CPYTOEXCEL command from within PDM when "XL" is keyed next to a member name:

- o Enter PDM by using the WRKMBRPDM command.
- o Press F16 to work with user defined options.
- o Press F6 to create a new user defined option.

```
-----+-----
                          Create User-Defined Option
Type option and command, press Enter.
Option . . . . . XL      Option to create
Command . . . . . /* Excel-erator CPYTOEXCEL Batch      */
sbmjob job(&N) jobd(&J) cmd(xlerator/cpytoexcel fromfile(&l/&f)
toobj('/Excel/*filelib.*file.*mbr.xls') frommbr(&N) crtmdir(*yes))
-----+-----

F3=Exit      F4=Prompt      F12=Cancel
-----+-----
```

- o Key the user defined option definition as shown above, and press Enter.
- o Press F3 to exit the Work with User-Defined Options display. Now key XL in the option field for members to submit a batch conversion.

Creating a SNDFEXCEL PDM Option

IBM's Program Development Manager (PDM) allows creation of user-defined options. The following steps will create the user-defined option "XS" which will prompt the SNDFEXCEL command from within PDM when "XS" is keyed next to a file name:

- o Enter PDM by using the WRKMBRPDM command.
- o Press F16 to work with user defined options.
- o Press F6 to create a new user defined option.

```
-----+-----
                          Create User-Defined Option
Type option and command, press Enter.

Option . . . . . XS      Option to create
Command . . . . . /* Excel-erator SNDFEXCEL */
?xlerator/sndfexcel sndf((&l/&n))
-----+-----

F3=Exit      F4=Prompt      F12=Cancel
-----+-----
```

- o Key the user defined option definition as shown above, and press Enter.
- o Press F3 to exit the Work with User-Defined Options display. Now key XS in the option field for file to send it.

Selecting Records With OPNQRYF

In some cases, you may wish to create a spreadsheet containing a subset of records from the underlying database file. This can be accomplished using I5/OS Open Query File (OPNQRYF) command.

As an example, suppose you wish to select only the records for customer A1234 from the invoice records file QGPL/QINVREC which contains the field CUST. To accomplish this with OPNQRYF, run the following commands:

```
OVRDBF      FILE(QINVREC) TOFILE(QGPL/QINVREC) OVRSCOPE(*JOB) SHARE(*YES)
OPNQRYF     FILE((QINVREC)) QRYSLT('CUST *EQ "A1234"') OPNSCOPE(*JOB)
CPYTOEXCEL  FROMFILE(QINVREC) TOOBJ('/Excel/CustA1234InvoiceRecords.xls')
CLOF        OPNID(QINVREC)
DLTOVR      FILE(QINVREC) LVL(*JOB)
```

This procedure also works with the Send File Excel (SNDFEXCEL) command.

E-mail Address Formats

The mail function supports the full range of e-mail address formats, including route specifications. Valid formats for e-mail addresses include:

- o 'mali@acme.com'
- o '<mali@acme.com>'
- o 'Mohammed Ali <mali@acme.com>'
- o '"Mohammed Ali" <mali@acme.com>'
- o 'Mohammed Ali (I am the Greatest) <mali@acme.com>'

In all of these examples the message is delivered to the mail box mali@acme.com.

From (originator) Address

The product uses the following steps to determine the From (originator) address that appears in the generated e-mail.

- o If one of the special values is not used and an e-mail address is entered on the From (originator) (FROM) parameter this value is used.
- o If the user profile implied by a special value specified on the FROM() parameter is enrolled in the system distribution directory and the entry contains an e-mail address the e-mail address is used.
- o If the user profile implied by a special value specified on the FROM() parameter is enrolled in the system distribution directory and the entry does not contain an e-mail address an i5/OS style address is generated in the form: userid?address@host.domain.
- o If the user profile implied by a special value specified on the FROM() parameter is not enrolled in the system distribution directory an e-mail address is generated in the form:
userprofile@host.domain

Note: In the above, host and domain are taken from the values entered on the CFGTCP option 12 panel.

Therefore to have the correct from (originator) address on the out going e-mail without retyping it each time, you should add or update a system distribution directory entry for each sending user profile.

To add a directory entry for user profile MYUSER run the following command: (for this example assume the user's e-mail address is billg@acme.com):

```
ADDIRE USRID(MYUSER MYSYSTEM) USRD('Sample entry')
      USER(MYUSER) SYSNAME(*LCL) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
      USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If you are running Lotus Domino for i5/OS run:

```
ADDIRE USRID(MYUSER MYSYSTEM) USRD('Sample entry')
      USER(MYUSER) SYSNAME(*LCL) MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
      USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: To update an existing directory entry for user profile MYUSER run the following command:

```
CHGDIRE USRID(MYUSER MYSYSTEM) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
      USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Using Distribution Lists

There are two choices for addressing mail created by the software, direct SMTP addressing and distribution lists addressing using the system distribution directory. With direct SMTP addressing, you enter the recipient's e-mail address on the To (recipient) parameter. No additional addressing set up is required, making this a good choice for impromptu sending to SMTP recipients. With distribution list addressing, you can set up lists of recipients that can be maintained independently of the programs that use the lists.

Using i5/OS distribution lists and system distribution directory requires additional set up and is the subject of the remainder of this section.

i5/OS' system distribution directory can contain addressing information for users. In essence you store the user's email address in a directory entry. Directory entries can be created for users who are local to the eServer i5 (iSeries) (have an i5/OS user profile) and for users who are remote (do not have an i5/OS user profile). Local users can receive their mail on the eServer i5 (iSeries) using i5/OS' POP server or from a remote mail application such as Exchange.

i5/OS Distribution lists are used to create named groups of directory entries from the system distribution directory. By sending to a distribution list, you send to to each entry on the list.

To add a directory entry for local user MYUSER who has a user profile on the eServer i5 (iSeries) MYSYSTEM run the following command: (for this example assume the user's e-mail address is billg@acme.com):

```
ADDDIRE USRID(MYUSER MYSYSTEM) USRD('Sample entry')
        USER(MYUSER) SYSNAME(*LCL) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If you are running Lotus Domino for i5/OS run:

```
ADDDIRE USRID(MYUSER MYSYSTEM) USRD('Sample entry')
        USER(MYUSER) SYSNAME(*LCL) MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

Note: If the user already has a directory entry, change their mail service level and preferred address by running:

```
CHGDIRE USRID(MYUSER MYSYSTEM) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP 'acme.com'))
```

To add a directory entry for a remote user who will receive e-mail mail from the eServer i5 (iSeries) run the following command: (for this example assume the user's e-mail address is johnp@acme.com):

```
ADDDIRE USRID(RMT1 EMAIL) USRD('Sample entry 2')
        USER(*NONE) SYSNAME(TCPIP) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'johnp') (SMTPDMN SMTP 'acme.com'))
```

Note: The choice of USRID(RMT1 EMAIL) is arbitrary, select names that are convenient. The system name must be TCPIP.

To add a directory entry for a Domino user who does not have an i5/OS user profile run the following command: (for this example assume the user's e-mail address is suej@acme.com):

```
ADDDIRE USRID(DOMINO EMAIL) USRD('Sample entry 3')
        USER(*NONE) SYSNAME(TCPIP) MSFSRVLVL(*DOMINO) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'suej') (SMTPDMN SMTP 'acme.com'))
```

Note: The choice of USRID(DOMINO EMAIL) is arbitrary, select names that are convenient. The system name must be TCPIP.

Like directory entries, distribution list IDs have two parts. To make it convenient to manage the system, set up a naming convention for list IDs; for example, INV320 REPORT and INV330 REPORT could be

list IDs for recipients of the INV320 and INV330 reports respectively. Such a convention allows lists to be easily associated with their use.

Suppose that reports created by program INV320 should be sent to billg@acme.com and to johnp@acme.com. To create a distribution list to reflect this, run the following commands:

1. Create the distribution list:

```
CRTDSTL LSTID(INV320 REPORT) LSTD('Report INV320 distribution')
```

2. Add 2 entries to the distribution list:

```
ADDSTLE LSTID(INV320 REPORT) USRID((MYUSER MYSYSTEM) (RMT1 EMAIL))
```

You are now ready to send to the two users with one command by specifying the To (distribution list) parameter:

```
... TOUSRID(INV320 REPORT)
```

Adding Line Breaks To The Message

The following CL program fragment shows how to create a message variable that contains a line break (carriage return/line feed pair):

```
...
DCL VAR(&MSG) TYPE(*CHAR) LEN(2048)
DCL VAR(&CRLF) TYPE(*CHAR) LEN(2) VALUE(X'0D25')
...
CHGVAR VAR(&MSG) VALUE('First line.' *CAT &CRLF *CAT 'Second line.')
...
```

The resulting message is:

```
First line.
Second line.
```


Chapter 6 Conversion

What's In This Chapter

This chapter describes the file conversion available with Excel-erator. The chapter:

- o Gives an overview of the conversion process
- o Describes the details of the conversion
- o Describes the limitations of conversion

Overview

Excel-erator retrieves the requested file from I5/OS and converts the data into a PC file in Microsoft's Excel spreadsheet format.

The first row(s) of the spreadsheet contain the column headings specified on the Column headings (COLHDG) parameter. These serve as column headings for the cells in subsequent rows.

Each record in the database file creates a row in the spreadsheet, while each field in the record creates a cell in the row.

The following section describe the conversion in more detail.

Conversion Details

As described above, of the generated spreadsheet contains the field names selected from the file's record format. These are converted from EBCDIC to ASCII based on the values specified in the command's Target coded character set id (TRGCCSID), and Source coded character set id (SRCCSID) parameters.

Then each record of the file is converted in turn as a row of cells in the spreadsheet with each selected field in a cell under its associated column heading. The conversion of fields to cells depends on the field's data type:

- o A (Character) Converted to a text cell based on the SRCCSID and TRGCCSID.
- o P (Packed decimal) Converted to a number cell.
- o S (Zoned decimal) Converted to a number cell.
- o B (Binary) Converted to a number cell.
- o F (Floating point) Converted to a number cell.
- o H (Hexadecimal) Copied to a text cell without conversion.
- o L (Date) Converted to a date cell with *ISO formatting.
- o T (Time) Converted to a time cell with *ISO formatting.
- o Z (Timestamp) Converted to a date cell with *ISO formatting. The microseconds are dropped.
- o J (DBCS-Only) Data is omitted from spreadsheet and a warning is issued.
- o E (DBCS-Either) Data is omitted from spreadsheet and a warning is issued.
- o O (DBCS-Open) Data is omitted from spreadsheet and a warning is issued.
- o G (DBCS-Graphic) Data is omitted from spreadsheet and a warning is issued.
- o 1 (Binary large object BLOB) Data is omitted from spreadsheet and a warning is issued.
- o 2 (Character large object CLOB) Data is omitted from spreadsheet and a warning is issued.
- o 3 (Graphic data large object DBCLOB) Data is omitted from spreadsheet and a warning is issued.
- o 4 (Datalink) Data is omitted from spreadsheet and a warning is issued.

Our calls to the underlying I5/OS APIS specify that overrides should be processed when retrieving file information and data.

Conversion Limitations

Microsoft's Excel spreadsheet format and Excel-erator impose certain limits on the conversion process. These are:

- o Double byte character set data is not supported.
- o A spreadsheet may have no more than 65535 rows.
- o A character field may have a maximum length of 255.
- o All Excel numbers are represented internally as long doubles which can give slightly different decimal position results. That is, the I5/OS value 123.456 might show up as 123.456001 when viewed in the cell.
- o Logical files are supported, but only if they have a single record format.

Chapter 7 Command Descriptions

What's In This Chapter

This chapter describes the control language (CL) commands supplied by the product. Commands are arranged in alphabetic order by command name (mnemonic). In the printed version of the manual, each description contains a syntax diagram presenting all the parameters and values that can be coded for a command. In both the printed and online version an explanation is given for all the parameters and values that can be coded for a command. A detailed explanation of the format of the command descriptions and syntax diagrams can be found in [Control Language Reference SC41-5722](#).

Change Excel-erator Default (CHGXL1DFT) Command

```
+-----+
|                                     Job: B,I  Pgm: B,I  REXX: B,I  Exec |
| >>--CHGXL1DFT-----> |
+-----+
```

PURPOSE

The Change Excel-erator Default (CHGXL1DFT) command changes values used by Excel-erator to control processing and other activities.

Note: Currently there are no parameters. Command included as a place holder for future additions.

CPYTOEXCEL

Note: To create a file with name abc.xls in a directory with name mydirectory, specify '/mydirectory/abc.xls'

Excel-erator provides several special values that can be used to construct dynamic object (PC file) names. When the special values are found, the associated data is blank trimmed and substituted into the name specified when the file is processed. If the data associated with a special value is blank, "BLANK" is substituted. The special values are:

- ***FILE** File name CHAR(10).
- ***FILELIB** Library containing the file CHAR(10).
- ***MBR** Member name CHAR(10).
- ***TEXT** Member Text 'description' CHAR(50).
- ***MBRCDAT** Date the member was created CHAR(7) CYYMMDD.
- ***MBRCCYY** CYY portion of *MBRCDAT CHAR(3).
- ***MBRCYY** YY portion of *MBRCDAT CHAR(2).
- ***MBRCMM** MM portion of *MBRCDAT CHAR(2).
- ***MBRCDD** DD portion of *MBRCDAT CHAR(2).
- ***MBRCTIM** Time the member was created CHAR(6) HHMMSS.
- ***MBRGDAT** Date the member was changed CHAR(7) CYYMMDD.
- ***MBRGCYY** CYY portion of *MBRGDAT CHAR(3).
- ***MBRGYY** YY portion of *MBRGDAT CHAR(2).
- ***MBRGMM** MM portion of *MBRGDAT CHAR(2).
- ***MBRGDD** DD portion of *MBRGDAT CHAR(2).
- ***MBRGTIM** Time the member was created CHAR(6) HHMMSS.

From member (FROMMBR)

Specifies the name of the member to copy. CHAR(10).

***FIRST**
The first member in the database from-file is copied.

***LAST**
The last member in the database from-file is copied.

member-name
Specify the name of the database from-file member being copied.

Column Headings

Specifies the column headings placed in the file. CHAR(10).

***FLDNAM**
The file's field names are used as column headings.

***ALIAS**
The file's field aliases are used as column headings.

***COLHDG**
The file's field column headings are used as column headings.

***NONE**
No column headings are included.

***FLDNAMBLD**
The file's field names are used as column headings. The column headings are bold.

***ALIASBLD**
The file's field aliases are used as column headings. The column headings are bold.

***COLHDGBLD**
The file's field column headings are used as column headings. The column headings are bold.

Field (FIELD)

Specifies the list of fields to include in the spreadsheet. CHAR(10)

***ALL**
All fields in the database file are included in the spreadsheet in the order they appear in the file.

field-name
Specify the list of field names to be included in the spreadsheet. The fields appear in the spreadsheet in the order specified, duplicates are allowed.

Print header (PRTHEADER)

Specifies the print header placed in the file. CHAR(50).

***NONE**
No print header is included in the file.

***RCDTEXT**
The record text is used as the print header.

***MBRTEXT**
The member text is used as the print header.

***FILTEXT**
The file text is used as the print header.

print-header
Enter the value to use as the print header.

Print footer (PRTFOOTER)

Specifies the print footer placed in the file. CHAR(50).

***NONE**
No print footer is included in the file.

***RCDTEXT**
The record text is used as the print footer.

***MBRTEXT**
The member text is used as the print footer.

***FILTEXT**
The file text is used as the print footer.

print-footer
Enter the value to use as the print footer.

Font typeface (FONT)

Specifies the font name placed into the file. The font specified must be available on the PC that is running Excel. CHAR(32).

***ARIAL**
Font Arial is used.

***COURIER**
Font Courier New, a fixed pitch font, is used.

typeface
The name of the font to use.

Cell comments (COMMENT)

Specifies cell comments, consisting of a cell's coordinate column/row and the comment text, that are added to the generated spreadsheet. A comment can be added to a cell even if it does not contain data. BIN(4) (where A=1, B=2, etc.), BIN(4) CHAR(2048) The possible column values are:

***NONE**

No comments are added to the spreadsheet.

cell-column

The column of the cell that receives the comment. You can use either a letter or number designation.

The possible row values are:

cell-row

The row of the cell that receives the comment.

The possible text values are:

text

Enter the text that is to appear in the comment.

Target coded character set identifier (TRGCCSID)

Specifies the ASCII coded character set identifier (CCSID) that is used to map all single-byte character set (SBCS) data. BIN(4).

1252

The default coded character set identifier is used.

coded-character-set-identifier

Specify the coded character set identifier to use.

Source coded character set identifier (SRCCSID)

Specifies the coded character set identifier (CCSID) used to create the file. BIN(4). The possible values are:

***KBDTYPE**

The system determines the coded character set identifier value from the QKBDTYPE system value.

***SYSVAL**

The system determines the coded character set identifier value from the QCCSID system value.

***JOBDFI**

The system uses the current job's default coded character set identifier.

Coded-character-set-identifier

Specify the coded character set identifier to use.

Replace object (REPLACE)

Specifies whether or not to the object should be replaced if it already exists. CHAR(1). The Possible values are:

***YES**

An existing object is replaced.

***NO**

An existing object is not replaced.

Data authorities (DTAAUT)

Specifies the *PUBLIC data authorities assign to the created PC file. CHAR(10). The Possible values are:

***ALL**

The *PUBLIC is given *RWX authority to perform all operations on the object except those limited to the owner or controlled by object existence, object management, object alter, and object reference authority. The *PUBLIC can change the object and perform basic functions on the object. *RWX authority provides object operational authority and all the data authorities.

***NONE**

The *PUBLIC does not have any of the data authorities to the object.

***RWX**

The *PUBLIC is given *RWX authority to perform all operations on the object except those limited to the

owner or controlled by object existence, object management, object alter, and object reference authority. The *PUBLIC can change the object and perform basic functions on the object. *RWX authority provides object operational authority and all the data authorities.

***RX**

The *PUBLIC is given *RX authority to perform basic operations on the object, such as run a program or display the contents of a file. The user is prevented from changing the object. *RX authority provides object operational authority and read and execute authorities.

***RW**

The *PUBLIC is given *RW authority to view the contents of an object and change the contents of an object. *RW authority provides object operational authority and data read, add, update, and delete authorities.

***WX**

The *PUBLIC is given *WX authority to change the contents of an object and run a program or search a library or directory. *WX authority provides object operational authority and data add, update, delete, and execute authorities.

***R**

The *PUBLIC is given *R authority to view the contents of an object. *R authority provides object operational authority and data read authority.

***W**

The *PUBLIC is given *W authority to change the contents of an object. *W authority provides object operational authority and data add, update, and delete authorities.

***X**

The *PUBLIC is given *X authority to run a program or search a library or directory. *X authority provides object operational authority and data execute authority.

***EXCLUDE**

Exclude authority prevents the *PUBLIC from accessing the object.

Create directories (CRTDIR)

Specifies whether or not directories in the object name should be created if they do not exist. CHAR(1).

***NO**

Directories are not created.

***YES**

Directories are created.

Owner

Specifies the user profile that is the owner of the newly created object. CHAR(10).

***CURUSRPRF**

The object is owned by the current effective user of the current job or thread.

user-profile-name

Specify the user profile that is the owner of the newly created object. If the current effective user does not have *ADD data authority to the user profile, or if the profile does not exist, ownership of the object is determined in the same manner as *CURUSRPRF.

Object attribute (OBJATR)

CPYTOEXCEL

Specifies additional attributes for the generated file and is similar in function to the CHGATR command. Each attribute is specified as an attribute/value pair. If an attribute is specified more than once, the last one wins. BIN(4) BIN(4)

***NONE**

No additional attributes are specified.

***DISKSTGOPT**

Determines how auxiliary storage is allocated by the system for the object. This attribute can only be specified for byte stream files in the Root (/), QOpensys and User-defined file systems. This attribute will be ignored for *TYPE1 byte stream files. Valid values are:

***NORMAL** The auxiliary storage will be allocated normally. That is, as additional auxiliary storage is required, it will be allocated in logically sized extents to accommodate the current space requirement, and anticipated future requirements, while minimizing the number of disk I/O operations. If the *DISKSTGOPT attribute has not been specified for an object, this value is the default.

***MINIMIZE** The auxiliary storage will be allocated to minimize the space used by the object. That is, as additional auxiliary storage is required, it will be allocated in small sized extents to accommodate the current space requirement. Accessing an object composed of many small extents may increase the number of disk I/O operations for that object.

***DYNAMIC** The system will dynamically determine the optimum auxiliary storage allocation for the object, balancing space used versus disk I/O operations. For example, if a file has many small extents, yet is frequently being read and written, then future auxiliary storage allocations will be larger extents to minimize the number of disk I/O operations. Or, if a file is frequently truncated, then future auxiliary storage allocations will be small extents to minimize the space used. Additionally, information will be maintained on the byte stream file sizes for this system and its activity. This file size information will also be used to help determine the optimum auxiliary storage allocations for this object as it relates to the other objects sizes.

File sharing (FILESHARE)

Specifies how the generated spreadsheet is secured. Each element corresponds to an Excel setting accessible from the "Save As" dialog. **Note:** Excel security is notoriously insecure and may not be suitable for all environments.

Element 1 Password to open CHAR(15)

Specifies the case sensitive password required to open and decrypt the file. If a password is not specified, the file is not encrypted and can be opened by anyone.

Element 2 Password to modify CHAR(15)

Specifies the case sensitive password required to update the file. If a password is specified and someone changes the file without the password, that person can save the file only by giving it a different name. If a password is not specified, the file can be updated by anyone. This password does not cause the file to be encrypted.

Element 3 Read-only recommended CHAR(1)

When *YES is specified, users get a read-only (read-only:

A setting that allows a file to be read or copied but not changed or saved.) recommendation when they open the file. This does not prevent users from opening the file as read-write so that they can edit and save changes.

Column heading format (COLHDGFMT)

Specifies formatting applied to the cells containing column headings. Each element corresponds to an Excel setting accessible by selecting Format->Cells. The values that each element accepts have their usual Excel meanings with one exception: "Alignment-Horizontal" accepts a *TYPE special value which is not available in Excel. When *TYPE is specified, the column headings of character fields are given *LEFT horizontal alignment while the column headings of numeric fields are given *RIGHT horizontal alignment. See Excel's help for additional information. Each element is BIN(2).

Element 1 Alignment-Horizontal BIN(2)

*TYPE Alignment is determined by the field's data type: right for numeric fields, left for character fields.

*GENERAL Cells are given Excel's "General" alignment.

*LEFT Cells are given Excel's "Left" alignment.

*CENTER Cells are given Excel's "Center" alignment.

*RIGHT Cells are given Excel's "Right" alignment.

*FILL Cells are given Excel's "Fill" alignment.

*JUSTIFY Cells are given Excel's "Justify" alignment.

*CENTERSEL Cells are given Excel's "Center Across Selection" alignment.

Elements 2-5 Border-Line styles. BIN(2)

Specify the Top/Left/Bottom/Right border line styles.

*NONE Line is removed.

*THIN Line is thin.

*MEDIUM Line is medium.

*DASHED Line is dashed.

*DOTTED Line is dotted.

*THICK Line is thick.

*DOUBLE Line is doubled.

*HAIR Line is hair.

Elements 6-9 Border-Line colors. BIN(2)

Specify the Top/Left/Bottom/Right border line colors. See **Color Special Values** below for the list of values.

Element 10 Patterns-Type BIN(2)

*NONE No pattern is used.

*SOLID Excel's "Solid" pattern.

*GRAY75 Excel's "75% Gray" pattern.

*GRAY50 Excel's "50% Gray" pattern.

*GRAY25 Excel's "25% Gray" pattern.

*GRAY12 Excel's "12.5% Gray" pattern.

*GRAY6 Excel's "6.25% Gray" pattern.

*STRIPEH50 Excel's "Horizontal Stripe" pattern.

- ***STRIPEH25** Excel's "Thin Horizontal Stripe" pattern.
- ***STRIPEV50** Excel's "Vertical Stripe" pattern.
- ***STRIPEV25** Excel's "Thin Vertical Stripe" pattern.
- ***STRIPED50** Excel's "Diagonal Stripe" pattern.
- ***STRIPED25** Excel's "Thin Diagonal Stripe" pattern.
- ***STRIPEDR50** Excel's "Reverse Diagonal Stripe" pattern.
- ***STRIPEDR25** Excel's "Thin Reverse Diagonal Stripe".
- ***HATCHD75** Excel's "Thick Diagonal Crosshatch" pattern.
- ***HATCHD50** Excel's "Diagonal Crosshatch" pattern.
- ***HATCHD38** Excel's "Thin Diagonal Crosshatch" pattern.
- ***HATCHH38** Excel's "Thin Horizontal Crosshatch" pattern.

Element 11-12 Patterns-Colors BIN(2)

Specify the foreground and background pattern colors. See **Color Special Values** below for the list of values.

Element 13 Protection-Locked BIN(2)

Specifies if the cells are locked. Locking cells or hiding formulas has no effect unless the worksheet is protected.

- ***YES** Cells are locked.
- ***NO** Cells are not locked.

Color palette (PALETTE)

Specifies replacements for the default colors included in the spreadsheet's palette. The color palette is made up of the specification for sixteen colors, numbered 1 through 16, and assigned names such as *BLACK, *RED, etc. Each color in turn is made up of the specification for the amount of red, green, and blue (RGB) components that make up the color. The amount is a number between 0 and 255. The larger the amount, the more of the component present. You can determine the RGB values for a specific color using Excel's Tools-> Options-> Color-> Custom tab. BIN(2), BIN(2), BIN(2) repeated 16 times.

You specify a replacement for a default color by specifying its name and the new RGB values to use. If a color is modified then all references to the color's name, used in other parameters, are also modified. For example if color *RED is changed to (255 106 0), color *RED becomes orange and all parameters that specify *RED will produce this orange.

Color Special Values

The following is a list of color special values used on several parameters and elements. These are listed by their common name and generic name along with their default RGB color values.

- ***SYSTEM** System default color.
- ***BLACK**, ***COLOR1** Red=0, Green=0, Blue=0
- ***WHITE**, ***COLOR2** Red=255, Green=255, Blue=255
- ***RED**, ***COLOR3** Red=255, Green=0, Blue=0
- ***BRIGHTGREEN**, ***COLOR4** Red=0, Green=255, Blue=0
- ***BLUE**, ***COLOR5** Red=0, Green=0, Blue=255
- ***YELLOW**, ***COLOR6** Red=255, Green=255, Blue=0
- ***PINK**, ***COLOR7** Red=255, Green=0, Blue=255
- ***TURQUOISE**, ***COLOR8** Red=0, Green=255, Blue=255
- ***DARKRED**, ***COLOR9** Red=128, Green=0, Blue=0
- ***GREEN**, ***COLOR10** Red=0, Green=128, Blue=0
- ***DARKBLUE**, ***COLOR11** Red=0, Green=0, Blue=128
- ***DARKYELLOW**, ***COLOR12** Red=128, Green=128, Blue=0
- ***VIOLET**, ***COLOR13** Red=128, Green=0, Blue=128
- ***TEAL**, ***COLOR14** Red=0, Green=128, Blue=128
- ***GRAY25**, ***COLOR15** Red=192, Green=192, Blue=192
- ***GRAY50**, ***COLOR16** Red=128, Green=128, Blue=128

Examples

```
CPYTOEXCEL FROMFILE(CUSTOMER)
            TOOBJ('/Excel/*FILE.XLS')
            CRTDIR(*YES)
```

This command converts file "CUSTOMER" into an Excel spreadsheet with the name "CUSTOMER.XLS". The spreadsheet is placed in the "Excel" directory which is created if it does not exist.

```
CPYTOEXCEL FROMFILE(INVOICE)
            TOOBJ('/QNTC/NT1/C/ardept/invoice.*MBRCDAT.xls')
```

This command converts file "INVOICE" into an Excel spreadsheet with the name "INVOICE.cymmdd.XLS" (where the from member's creation date is substituted for cymmdd). The spreadsheet is placed on a Windows NT server with the name "NT1" in subdirectory "ardept" of the "C" share.

Display Mail Log (DSPMAILLOG) Command

```

Job: B,I Pgm: B,I REXX: B,I Exec
>>-DSPMAILLOG----->
|                               |                               | |
|  +-*AVAIL-----+ +-*CURRENT---+ |                               |
| +-PERIOD(-----start-time-----) |                               |
|                               |                               |
|                               | +-*BEGIN-----+ | +-*AVAIL---+ +-*CURRENT-+ |
|                               | +-start-date-+ | +-(-end-time-----+-----)-+ |
|                               |                               |                               |
|                               |                               | +-*END-----+ |
|                               |                               | +-end-time-+ |
|                               |                               |
|                               |                               |
| +-*-----+ |
+-OUTPUT(-----*PRINT-----)-+
  
```

PURPOSE

The Display Mail Log (DSPMAILLOG) command shows the system mail log (journal QZMF). The mail log contains information about the processing of mail.

Note: Mail journaling must be turned on. Only journal receivers in the current chain are searched.

Time period for log output (PERIOD)

Specifies the period of time for which the logged message data is shown. This parameter contains two lists of two elements each.

Beginning time

One of the following is used to specify the starting time at which or after which the data must have been logged. Any entries logged before the specified time and date are not shown.

*AVAIL

The logged data that is available for the specified starting date is shown.

start-time

Specify the time from which data for the specified date is shown. The time is specified in 24-hour format and can be specified with or without a time separator:

- o Without a time separator, specify 4 or 6 digits (hhmm or hhmmss) where hh = hours, mm = minutes, and ss = seconds. Hours, minutes and seconds must each be 2 digits; use leading zeros if necessary.
- o With a time separator, specify 5 or 8 digits where the time separator specified for your job is used to separate the hours, minutes, and seconds.

Beginning date

One of the following is used to specify the starting date on which or after which the data must have been logged. Any entries logged before the specified date are not shown.

*CURRENT

The logged data for the current day and between the specified starting and ending times (if specified) is shown.

*BEGIN

The logged data from the beginning of the log is shown.

start-date

Specify the starting date. The date must be specified in the job date format.

Ending time

One of the following is used to specify the ending time before which the data must have been logged.

*AVAIL

The logged data that is available for the specified ending date is shown.

End-time

Specify the ending time for the specified ending date that determines the logged data to be printed. See start-time for the formats in which time can be entered.

Ending date

One of the following is used to specify the ending date before which or on which the data must have been logged.

*CURRENT

The current day is the last day for which logged data is shown.

*END

The last day on which data was logged is the last day for which the logged data is shown.

end-date

Specify the ending date for which logged data is to be printed. The date must be entered in the format specified by the system values QDATFMT and, if separators are used, QDATSEP.

Output (OUTPUT)

Specifies whether the output from the command is shown at the requesting display station or printed with the job's spooled output. The possible values are:

*

Output requested by an interactive job is shown on the display. Output requested by a batch job is printed with the job's spooled output.

*PRINT

The output is printed with the job's spooled output.

Examples

DSPMAILLOG

The mail log entries for today are displayed on the screen.

```
DSPMAILLOG PERIOD((*AVAIL *BEGIN) (*AVAIL *END)) OUTPUT(*PRINT)
```

All available mail log entries in the current journal receiver chain are printed.

Send File Excel (SNDFEXCEL) Command

```

-----
Job: B,I Pgm: B,I REXX: B,I Exec
-----
>>--SNDFEXCEL--SNDF(-----| SNDF Details |-----)----->
>-----
| +-*CURRENT-----+ | | +-*DEFAULT--+ | | +-*FLDNAM-----+ |
+-TO(---+ <------(2)---+)+ +-SUBJECT(---+*NONE-----+)+ +-COLHDG(---+*ALIAS-----+)+
+e-mail-address--+ +subject--+ +*COLHDG-----+
+*NONE-----+
+*FLDNAMBLD--+
+*ALIASBLD--+
+*COLHDGBLD--+
-----
| +-*NONE-----+ | | +-*NONE-----+ | | +-*DEFAULT--+ |
+-PRTHEADER(---+*RDCTEXT---+)+ +-PRTFOOTER(---+*RDCTEXT---+)+ +-MSG(---+*NONE-----+)+
+*MBRTEXT--+ +*MBRTEXT--+ +message--+
+*FILTEXT--+ +*FILTEXT--+
+header-----+ +footer-----+
-----
| +-*ARIAL-----+ | | +-*NONE-----+ | | +-*DEFAULT--+ |
+-FONT(---+*COURIER---+)+ +-COMMENT(---+ <------(4)---+ +---+)+
+typeface--+ +---column---row---text---+
-----
| +-*NONE-----+ | | +-*NONE-----+ | | +-*CURRENT-----+ |
+-CC(---+ <------(2)---+)+ +-BCC(---+ <------(2)---+)+ +-FROM(---+e-mail-address---+)+
+e-mail-address--+ +e-mail-address--+
-----
| +-*NO--+ | | +-*NONE-----+ | | +-*UTF8-----+ |
+-CFMDEL(---+*YES---+)+ +-REPLYTO(---+ <------(2)---+)+ +-CHRENC(---+*ISO88591---+)+
+*OBS--+ +e-mail-address--+
+*ISO88592--+
+*ISO88595--+
+*ISO88596--+
+*ISO88597--+
+*ISO88598--+
+*ISO88599--+
+*BIG5-----+
-----
| +-*NONE-----+ | | +-*NONE-----+ | | +-*DEFAULT-----+ |
| <------(4)---+ | | +COLHDGFMT(---+| COLHDGFMT Details |---+)+
+-INCOBJ(---+object-path-name---+)+
+*ATTACH-----+
+*TEXTPLAIN--+
+*TEXTHTML--+
+*ATTACHPDF--+
+*ATTACHPS--+
-----
| +1252-----+ | | +-*KBDTYPE-----+ |
+-TRCCSID(---+coded-chaaracter-set-id---+)+ +-SRCCSID(---+*SYSVAL-----+)+
+*JOBDF-----+
+coded-chaaracter-set-id--+
-----
| +open+ +modify+ +*YES+ |
+-FILESHARE(-----*NO-----)+
-----
| <------(1)---+ |
+-PALETTE(---color---red---green---blue---)+
-----
SNDF Details:
+*LIBL/-----+ +*FIRST-----+ +*ALL-----+
|-----file-name---+*FILE.XLS-----+ +*LAST-----+ + <------(3)---+
+*CURLIB/-----+ +attachment-name+ +member-name+ +---field-name---+
+library-name/---+

```

SNDFEXCEL

COLHDGFMT Details:

|---alignment---style---style---style---style---color---color---color---color---pattern---color----->

+--*YES--+

>---color-----*NO----->

alignment: *TYPE, *GENERAL, *LEFT, *CENTER, *RIGHT, *FILL, *JUSTIFY, *CENTERSEL
style: *NONE, *THIN, *MEDIUM, *DASHED, *DOTTED, *THICK, *DOUBLE, *HAIR
color: *SYSTEM, *BLACK, *WHITE, *RED, *BRIGHTGREEN, *BLUE, *YELLOW, *PINK, *TURQUOISE, *DARKRED, *GREEN, *DARKBLUE,
*DARKYELLOW, *VIOLET, *TEAL, *GRAY25, *GRAY50
pattern: *NONE, *SOLID, *GRAY75, *GRAY50, *GRAY25, *GRAY12, *GRAY6, *STRIPEH50, *STRIPEH25, *STRIPEV50, *STRIPEV25,
*STRIPED50, *STRIPED25, *STRIPEDR50, *STRIPEDR25, *HATCHD75, *HATCHD50, *HATCHD38, *HATCHH38

Note 1: Maximum of 16 repetitions

Note 2: Maximum of 300 repetitions

Note 3: Maximum of 256 repetitions

Note 4: Maximum of 64 repetitions

PURPOSE

The Send File Excel (SNDFEXCEL) command converts one or more I5/OS database files into Excel spreadsheets which are then sent as an e-mail to recipients.

File specification (SNDF)

Specifies the name and library of one or more database files that are sent, the attachment file name for each file as it appears in the e-mail, the member name to be sent for each file, and the list of fields to be included for each file. CHAR(10), CHAR(10), CHAR(32), CHAR(10) CHAR(10) This is a required parameter.

The name of the database file can be qualified by one of the following library values:

*LIBL

All libraries in the job's library list are searched.

*CURLIB

Use the current library for the job. If no library is specified as the current library for the job, QGPL is used.

library-name

Specify the name of the library.

The possible file name to use when naming the attachment value is:

*FILE.XLS

The name is made up of the database file name with .XLS appended.

file-name

Specify the name of the attached file.

Excel-erator provides several special values that can be used to construct dynamic PC file names. When the special values are found, the associated data is blank trimmed and substituted into the name specified when the file is processed. If the data associated with a special value is blank, "BLANK" is substituted. The special values are:

*FILE File name CHAR(10).

*FILELIB Library containing the file CHAR(10).

*MBR Member name CHAR(10).

*TEXT Member Text 'description' CHAR(50).

*MBRCDAT Date the member was created CHAR(7) CYYMMDD.

*MBRCCYY CYY portion of *MBRCDAT CHAR(3).

*MBRCYY YY portion of *MBRCDAT CHAR(2).

*MBRCMM MM portion of *MBRCDAT CHAR(2).

*MBRCDD DD portion of *MBRCDAT CHAR(2).

*MBRCTIM Time the member was created CHAR(6) HHMMSS.

*MBRGDAT Date the member was changed CHAR(7) CYYMMDD.

*MBRGCYY CYY portion of *MBRGDAT CHAR(3).

*MBRGYY YY portion of *MBRGDAT CHAR(2).

*MBRMMM MM portion of *MBRGDAT CHAR(2).

*MBRGDD DD portion of *MBRGDAT CHAR(2).

*MBRGTIM Time the member was created CHAR(6) HHMMSS.

The possible member name value is:

*FIRST

The first member in the database from-file is copied.

*LAST

The last member in the database from-file is copied.

member-name

Specify the name of the database from-file member being copied.

The possible field values are:

*ALL

All fields in the database file are included in the spreadsheet in the order they appear in the file.

field-name

Specify the list of field names to be included in the spreadsheet. The fields appear in the spreadsheet in the order specified, duplicates are allowed.

To (TO)

Specifies the e-mail address(es) to which the generated e-mail is sent. Up to 300 addresses can be specified. CHAR(128)

*CURRENT

The e-mail address stored in the directory entry associated with the user running the command is used.

e-mail-address

Specify the e-mail address of the recipient.

Subject (SUBJECT)

Specifies the subject for the generated e-mail. CHAR(60)

*DEFAULT

The subject of the e-mail is generated from the file

specification.

***NONE**

No subject is included in the e-mail.

subject

Specify the subject of the e-mail.

Column Headings

Specifies the column headings placed in the file.
CHAR(10).

***FLDNAM**

The file's field names are used as column headings.

***ALIAS**

The file's field aliases are used as column headings.

***COLHDG**

The file's field column headings are used as column headings.

***NONE**

No column headings are included.

***FLDNAMBLD**

The file's field names are used as column headings.
The column headings are bold.

***ALIASBLD**

The file's field aliases are used as column headings.
The column headings are bold.

***COLHDGBLD**

The file's field column headings are used as column headings.
The column headings are bold.

Print header (PRTHEADER)

Specifies the print header placed in the file. CHAR(50).

***NONE**

No print header is included in the file.

***RCDTEXT**

The record text is used as the print header.

***MBRTEXT**

The member text is used as the print header.

***FILTEXT**

The file text is used as the print header.

print-header

Enter the value to use as the print header.

Print footer (PRTFOOTER)

Specifies the print footer placed in the file. CHAR(50).

***NONE**

No print footer is included in the file.

***RCDTEXT**

The record text is used as the print footer.

***MBRTEXT**

The member text is used as the print footer.

***FILTEXT**

The file text is used as the print footer.

print-footer

Enter the value to use as the print footer.

Font typeface (FONT)

Specifies the font name placed into the file. The font specified must be available on the PC that is running Excel.
CHAR(32).

***ARIAL**

Font Arial is used.

***COURIER**

Font Courier New, a fixed pitch font, is used.

typeface

The name of the font to use.

Cell comments (COMMENT)

Specifies cell comments, consisting of a cell's coordinate column/row and the comment text, that are added to the generated spreadsheet. A comment can be added to a cell even if it does not contain data. BIN(4) (where A=1, B=2, etc.), BIN(4) CHAR(2048) The possible column values are:

***NONE**

No comments are added to the spreadsheet.

cell-column

The column of the cell that receives the comment. You can use either a letter or number designation.

The possible row values are:

cell-row

The row of the cell that receives the comment.

The possible text values are:

text

Enter the text that is to appear in the comment.

Message (MSG)

Specifies a message to include in the generated e-mail.
CHAR(2048)

***DEFAULT**

The message in the e-mail is generated from the file specification.

***NONE**

No message is placed in the e-mail.

message

Specify the message placed in the e-mail.

Cc (CC)

Specifies the e-mail address(es) to which a copy is sent. Up to 300 addresses can be specified. CHAR(128)

***NONE**

An e-mail address is not specified.

e-mail-address

Specify the e-mail address to receive a copy.

Bcc (BCC)

Specifies the e-mail address(es) to which a blind copy is sent. Up to 300 addresses can be specified. CHAR(128)

***NONE**

An e-mail address is not specified.

e-mail-address

Specify the e-mail address to receive a blind copy.

From (FROM)

Specifies the e-mail address that appears as the From on the generated the e-mail. You can use this to control the address used when the recipient replies to the e-mail.
CHAR(128)

Note: One or more of the special values for this parameter access the system distribution directory to determine an e-mail address based on a user profile. If the user profile does not have a directory entry (i.e. the user has not been enrolled), the user name is used to construct an e-mail address. If the user has been enrolled but an e-mail address has not been specified on the directory entry, the

SNDFEXCEL

user id and address are used to construct an e-mail address. In either case the constructed address, in all likelihood, is not a valid e-mail address. The e-mail will deliver but recipient replies will be lost (bounce).

***CURRENT**

The e-mail address stored in the directory entry associated with the user running the command is used.

e-mail-address

Specify the e-mail address of the originator.

Confirmation of delivery (CFMDEL)

Specifies whether a request for a read receipt is sent with the message. Message recipients can choose whether or not to send receipts. If the message recipient agrees to send a read receipt, the receipt will be sent when the message is opened.

***NO**

Confirmation of delivery is not requested.

***YES**

Confirmation of delivery is requested.

***OBS**

Confirmation of delivery is requested as with *YES but the obsolete non-standard "Return-Receipt-To" header field is also included in the message. Some mail user/transport agents understand the obsolete field but don't understand the standard "Disposition-Notification-To" supplied by *YES.

Reply to (REPLYTO)

Specifies the e-mail address(es) to which replies should be sent when replies should go to an address other than the From (originator) (FROM) parameter or to multiple addresses. Up to 300 addresses can be specified. CHAR(128)

***NONE**

Replies are directed to the address the e-mail is from.

e-mail-address

Specify the e-mail address to which replies should be directed.

Include object (INCOBJ)

Specifies the path name of an additional object (stream file) to include in the generated e-mail message. For example a stream file containing standard terms and conditions can be included as an additional attachment. A maximum of 64 path names can be specified. For more information on specifying path names, refer to Chapter 2 of the CL Reference, SC41-5722. This parameter has two elements.

The first element specifies the object to send.

***NONE**

No objects are sent.

'object-path-name'

Specify an object path name.

The second element specifies how the object is included in the e-mail. CHAR(10)

***ATTACH**

Send the object as an attached file using MIME and specifying "application/octet-stream".

***TEXTPLAIN**

Copy the object into the body of the mail message specifying content type text/plain. Note: Some servers

disregard this request and form an attachment from the message in all cases. Some servers disregard this request for the second and subsequent body parts. If this is the case, try MSG(*NONE).

***TEXTHTML**

Copy the object into the body of the mail message specifying content type text/html. Note: Some servers disregard this request and form an attachment from the message in all cases. Some servers disregard this request for the second and subsequent body parts. If this is the case, try MSG(*NONE).

***ATTACHPDF**

Send the object as an attached file using MIME and specifying "application/pdf". Use this value if the attached file contains Adobe's Portable Document Format (pdf) data.

***ATTACHPS**

Send the object as an attached file using MIME and specifying "application/postscript". Use this value if the attached file contains postscript data.

Character encoding of mail (CHRENC)

Specifies the character set used to create the e-mail and MIME headers (the transfer encoding).

***UTF8** RFC 2279 UTF-8 encoding.

***ISO88591** ISO-8859-1 Latin 1 Western European "8-bit ASCII" encoding.

***ISO88592** ISO-8859-2 ROECE Latin 2 Eastern European encoding.

***ISO88595** ISO-8859-5 Cyrillic encoding.

***ISO88596** ISO-8859-6 Arabic encoding.

***ISO88597** ISO-8859-7 Greek encoding.

***ISO88598** ISO-8859-8 Hebrew encoding.

***ISO88599** ISO-8859-9 Latin 9 other Latin-using languages encoding.

***BIG5** Traditional Chinese, Taiwan Industry Standard Big5 encoding.

Target coded character set identifier (TRGCCSID)

Specifies the ASCII coded character set identifier (CCSID) that is used to map all single-byte character set (SBCS) data. BIN(4).

1252

The default coded character set identifier is used.

coded-character-set-identifier

Specify the coded character set identifier to use.

Source coded character set identifier (SRCCSID)

Specifies the coded character set identifier (CCSID) used to create the file. BIN(4). The possible values are:

***KBDTYPE**

The system determines the coded character set identifier value from the QKBDTYPE system value.

***SYSVAL**

The system determines the coded character set identifier value from the QCCSID system value.

***JOBDFI**

The system uses the current job's default coded character set identifier.

Coded-character-set-identifier

Specify the coded character set identifier to use.

File sharing (FILESHARE)

Specifies how the generated spreadsheet is secured. Each element corresponds to an Excel setting accessible from the "Save As" dialog. **Note:** Excel security is notoriously insecure and may not be suitable for all environments.

Element 1 Password to open CHAR(15)

Specifies the case sensitive password required to open and decrypt the file. If a password is not specified, the file is not encrypted and can be opened by anyone.

Element 2 Password to modify CHAR(15)

Specifies the case sensitive password required to update the file. If a password is specified and someone changes the file without the password, that person can save the file only by giving it a different name. If a password is not specified, the file can be updated by anyone. This password does not cause the file to be encrypted.

Element 3 Read-only recommended CHAR(1)

When *YES is specified, users get a read-only (read-only: A setting that allows a file to be read or copied but not changed or saved.) recommendation when they open the file. This does not prevent users from opening the file as read-write so that they can edit and save changes.

Column heading format (COLHDGFMT)

Specifies formatting applied to the cells containing column headings. Each element corresponds to an Excel setting accessible by selecting Format->Cells. The values that each element accepts have their usual Excel meanings with one exception: "Alignment-Horizontal" accepts a ***TYPE** special value which is not available in Excel. When ***TYPE** is specified, the column headings of character fields are given ***LEFT** horizontal alignment while the column headings of numeric fields are given ***RIGHT** horizontal alignment. See Excel's help for additional information.

Element 1 Alignment-Horizontal BIN(2)

***TYPE** Alignment is determined by the field's data type: right for numeric fields, left for character fields.

***GENERAL** Cells are given Excel's "General" alignment.

***LEFT** Cells are given Excel's "Left" alignment.

***CENTER** Cells are given Excel's "Center" alignment.

***RIGHT** Cells are given Excel's "Right" alignment.

***FILL** Cells are given Excel's "Fill" alignment.

***JUSTIFY** Cells are given Excel's "Justify" alignment.

***CENTERSEL** Cells are given Excel's "Center Across Selection" alignment.

Elements 2-5 Border-Line styles. BIN(2)

Specify the Top/Left/Bottom/Right border line styles.

***NONE** Line is removed.

***THIN** Line is thin.

***MEDIUM** Line is medium.

***DASHED** Line is dashed.

***DOTTED** Line is dotted.

***THICK** Line is thick.

***DOUBLE** Line is doubled.

***HAIR** Line is hair.

Elements 6-9 Border-Line colors. BIN(2)

Specify the Top/Left/Bottom/Right border line colors. See **Color Special Values** below for the list of values.

Element 10 Patterns-Type BIN(2)

***NONE** No pattern is used.

***SOLID** Excel's "Solid" pattern.

***GRAY75** Excel's "75% Gray" pattern.

***GRAY50** Excel's "50% Gray" pattern.

***GRAY25** Excel's "25% Gray" pattern.

***GRAY12** Excel's "12.5% Gray" pattern.

***GRAY6** Excel's "6.25% Gray" pattern.

***STRIPEH50** Excel's "Horizontal Stripe" pattern.

***STRIPEH25** Excel's "Thin Horizontal Stripe" pattern.

***STRIPEV50** Excel's "Vertical Stripe" pattern.

***STRIPEV25** Excel's "Thin Vertical Stripe" pattern.

***STRIPED50** Excel's "Diagonal Stripe" pattern.

***STRIPED25** Excel's "Thin Diagonal Stripe" pattern.

***STRIPEDR50** Excel's "Reverse Diagonal Stripe" pattern.

***STRIPEDR25** Excel's "Thin Reverse Diagonal Stripe".

***HATCHD75** Excel's "Thick Diagonal Crosshatch" pattern.

***HATCHD50** Excel's "Diagonal Crosshatch" pattern.

***HATCHD38** Excel's "Thin Diagonal Crosshatch" pattern.

***HATCHH38** Excel's "Thin Horizontal Crosshatch" pattern.

Element 11-12 Patterns-Colors BIN(2)

Specify the foreground and background pattern colors. See **Color Special Values** below for the list of values.

Element 13 Protection-Locked BIN(2)

Specifies if the cells are locked. Locking cells or hiding formulas has no effect unless the worksheet is protected.

***YES** Cells are locked.

***NO** Cells are not locked.

Color palette (PALETTE)

Specifies replacements for the default colors included in the spreadsheet's palette. The color palette is made up of the specification for sixteen colors, numbered 1 through 16, and assigned names such as ***BLACK**, ***RED**, etc. Each color in turn is made up of the specification for the amount of red, green, and blue (RGB) components that make up the color. The amount is a number between 0 and 255. The larger the amount, the more of the component present. You can determine the RGB values for a specific color using Excel's Tools-> Options-> Color-> Custom tab. BIN(2), BIN(2), BIN(2) repeated 16 times.

You specify a replacement for a default color by specifying

SNDFEXCEL

its name and the new RGB values to use. If a color is modified then all references to the color's name, used in other parameters, are also modified. For example if color *RED is changed to (255 106 0), color *RED becomes orange and all parameters that specify *RED will produce this orange.

Color Special Values

The following is a list of color special values used on several parameters and elements. These are listed by their common name and generic name along with their default RGB color values.

- ***SYSTEM** System default color.
- ***BLACK**, ***COLOR1** Red=0, Green=0, Blue=0
- ***WHITE**, ***COLOR2** Red=255, Green=255, Blue=255
- ***RED**, ***COLOR3** Red=255, Green=0, Blue=0
- ***BRIGHTGREEN**, ***COLOR4** Red=, Green=255, Blue=0
- ***BLUE**, ***COLOR5** Red=0, Green=0, Blue=255
- ***YELLOW**, ***COLOR6** Red=255, Green=255, Blue=0
- ***PINK**, ***COLOR7** Red=255, Green=0, Blue=255
- ***TURQUOISE**, ***COLOR8** Red=0, Green=255, Blue=255
- ***DARKRED**, ***COLOR9** Red=128, Green=0, Blue=0
- ***GREEN**, ***COLOR10** Red=0, Green=128, Blue=0

- ***DARKBLUE**, ***COLOR11** Red=0, Green=0, Blue=128
- ***DARKYELLOW**, ***COLOR12** Red=128, Green=128, Blue=0
- ***VIOLET**, ***COLOR13** Red=128, Green=0, Blue=128
- ***TEAL**, ***COLOR14** Red=0, Green=128, Blue=128
- ***GRAY25**, ***COLOR15** Red=192, Green=192, Blue=192
- ***GRAY50**, ***COLOR16** Red=128, Green=128, Blue=128

Examples

```
SNDFEXCEL SNDF((CUSTOMER))
          TO((billg@acme.com))
```

This command converts file "CUSTOMER" into an Excel spreadsheet with the name "CUSTOMER.XLS". The spreadsheet is sent as an e-mail attachment to billg@acme.com.

```
SNDFEXCEL SNDF((INVOICE) (CUSTOMER))
          TO((billg@acme.com))
```

This command converts files "INVOICE" and "CUSTOMER" into separate Excel spreadsheets with the names INVOICE.XLS and CUSTOMER.XLS respectively. These are sent as attachments to an e-mail sent to billg@acme.com.

Chapter 8 Trouble-Shooting

What's In This Chapter

This chapter provides information and procedures useful for correcting or reporting Excel-erator problems. The chapter:

- o Describes general trouble-shooting
- o Describes Software Installation problems
- o Describes Excel file problems
- o Describes general mail delivery problems
- o Describes MSF specific delivery problems
- o Describes SMTP specific delivery problems

General Trouble-Shooting

If a command fails to run to completion or if the results you receive are different than those expected, perform these items:

- o Check the messages in your job log:
 - Run the DSPJOBLOG command.
 - Press F10 to display detailed messages.
 - Locate the messages related to the conversion.
 - Place your cursor on each message in turn and press F1.
 - Take any corrective actions suggested by the messages.
- o Download the current cumulative PTF package from www.gumbo.com.
- o Check the bottom of the PTF page at www.gumbo.com for IBM PTFs that may be required.
- o Review the detailed trouble shooting procedures in this chapter for solutions related to your problem.

If you are unable to correct the problem, prepare a problem report and contact your service provider.

Software Installation Problems

This sections describes problems, causes, and solutions specific to software installation.

- o Installation Generates "Directory not registered. (C G)"

Symptom During installation inquiry message id CPA3DE4 "Directory not registered. (C G)" is issued.

Cause We believe this is an artifact from the first releases of products to include or create directories. The products did not properly register the directories /Gumbo and /Gumbo/ProdData as belonging to Gumbo products and hence the inquiry.

Solution You can safely take a "G" to this message. You will receive the message 3 times.

If you wish to avoid the problem during installation of subsequent releases of the product, follow the instructions for getting the system to a stable, consistent state found later in this section including the removal of the /Gumbo and /Gumbo/ProdData directories. Reinstall the product.

- o Installation Fails

- Symptom** Installation fails and diagnostic message id CPF9898 "Unable to clear old release. Is the software being used?." appears in the job log. Or, when the installation verification option is run, verification fails with diagnostic message id CPD0C2E appearing in the job log.
- Cause** This usually arises from attempting to install a new release over an old release while objects in the old release are in use.
- Solution** End the jobs that are holding locks on (using) objects from the old release and perform the installation again.

o Installation Fails or Installation Verification Fails

- Symptom** Installation or installation verification fails and messages in the job log do not help in recovering.
- Cause** The software is not installed correctly or the installation is damaged. This can be caused for a variety of reasons including renaming of libraries, directories, or objects that make up the product.
- Solution** Get the system to a clean and stable state and re-install the software by performing the following:

1. Delete the licensed program by running:

```
DLTLICPGM LICPGM(2A55XL1) RLS(*ALL) OPTION(*ALL)
```

It is okay if this fails with diagnostic CPD3D91 "Product 2A55XL1 option *ALL release *ALL not installed."

2. Delete the product's library by running:

```
DLTLIB LIB(XLERATOR)
```

It is okay if this fails with escape CPF2110 "Library XLERATOR not found."

3. Delete the product's directory by running:

```
RMVLNK OBJLNK('/Gumbo/ProdData/2A55XL1')
```

It is okay if this fails with escape CPFA0A9 "Object not found. ...". But if it fails because the directory is not empty, delete the contents using WRKLNK.

If there are no other products installed:

```
RMVLNK OBJLNK('/Gumbo/ProdData')
RMVLNK OBJLNK('/Gumbo')
```

4. Rebuild i5/OS's (OS/400's) internal licensed program information by running:

```
CALL PGM(QSYS/QSZRECOV)
```

This takes several minutes depending on machine size.

5. Install the product according to the instructions in the Installation chapter.

6. Enter your authorization code.

XLS File Problems

This sections describes problems, causes, and solutions specific to Excel Format (XLS) files.

- o Large Character Fields Are Truncated

Symptom The file is generated and displays without error however some large character fields are truncated.

Cause Excel imposes a 255 byte limit on the length of character fields.

Solution There really is none, but sub-dividing the field into multiple fields, each less than or equal 255 bytes in length will insure that all the data is present in the generated file.

General Mail Delivery Problems

This sections describes common problems, causes, and solutions for general mail delivery problems. They are listed roughly in the order in which you should proceed. During general mail delivery trouble shooting you should send tests to yourself. Once this works properly, you can move on.

The bulk of the entries in this section are derived from trouble shooting performed by or with customers and in some sense presume that you have an "average" installation. The "average" installation is an eServer i5 (iSeries) connected to a LAN with the post office (a.k.a. mail router) on a LAN attached PC running Exchange, Notes or Groupwise with or without a connection to the internet at large. At the "average" installation this is the first application to generate e-mail from the eServer i5 (iSeries). Some of the entries in this section may not apply to your situation.

- o Source Of Problem Is Unknown

Symptom The send operation runs to completion but no mail arrives.

Cause The problem may be with the mail router or with i5/OS, but the source is unknown.

Solution Run PINGMAIL to generate a test message to your e-mail address and directly deliver it to the mail router by passing i5/OS' mail machinery entirely:

Note: Substitute the name of your mail router for the value "mail_router" and substitute your e-mail address for the value "you@domain.com" in the following command.

```
PINGMAIL RMTSYS(mail_router) SMTPNAME(you@domain.com)
```

If you receive the test message, the mail router is working correctly and an i5/OS issue is indicated. In particular, if the rest of the entries in this section do not correct the problem, you may have a DNS issue.

If you do not receive the test message then there is a problem with the mail router. You may be able to get an indication of the problem by reviewing the SMTP conversation which appears in your joblog. Run DSPJOBLOG, hit F10 and page back for details.

- o i5/OS Servers Are Down

Symptom The send operation runs to completion but no mail arrives.

Cause The i5/OS servers responsible for mail delivery may be down, particularly if the eServer i5 (iSeries) has been IPLed.

Solution Rerun VFYLOCAL to verify that all local servers are up and running:

```
VFYLOCAL SETUP(*NO)
```

If local verification fails, run option 12.

```
VFYLOCAL SETUP(*YES)
```

- o Mail Router Is Not Processing Mail

Symptom The send operation runs to completion but no mail arrives.

Cause The mail router responsible for mail delivery may be down, or not accepting mail from i5/OS.

Solution Rerun VFYROUTER to verify that the mail router is up and running:

```
VFYROUTER SETUP(*NO)
```

If mail router verification fails, run option 12.

```
VFYROUTER SETUP(*YES)
```

- o Mail Router Refuses Mail with "Funny" Originator Address

Symptom The send operation runs to completion but no mail arrives. Or mail arrives for some users but not all users, for example for all but AOL accounts.

Cause An e-mail address has not been assigned to your directory entry and the mail router doesn't like the "funny" address i5/OS generates for the originator's address.

Solution Assign your e-mail address to your system distribution directory entry: (assume for this example that your "User ID and Address" are "BILLG S1234567" and you "real" e-mail address is "billg@acme.com")

```
CHGDIRE USRID(BILLG S1234567) MSFSRVLVL(*SYSMS) PREFADR(*SMTP)
        USRDFNFLD((SMTPAUSRID SMTP 'billg') (SMTPDMN SMTP
        'acme.com'))
```

Note: If the you a local Domino for i5/OS user substitute MSFSRVLVL(*DOMINO) for MSFSRVLVL(*SYSMS).

- o Mail Server Framework Is Clogged With Junk

Symptom The send operation runs to completion but no mail arrives.

Cause i5/OS' Mail Server Framework may contain dead letters or other junk that it can not deliver. This can be the result of previous attempts to set up mail on the system.

Solution Clear out i5/OS' Mail Server Framework:

Note: Only perform this procedure if you are sure there is no valid deliverable mail in the Mail Server Framework.

```
INZLOCAL SMTP(*NO) SMTPPURGE(*NO) MSF(*YES) MSFPURGE(*YES)
```

- o SMTP Servers Require Reinitialization

Symptom The send operation runs to completion but no mail arrives.

Cause i5/OS' SMTP servers may need to reinitialize. This is undocumented but our experience and discussions with i5/OS' SMTP architect confirm this.

Solution Reinitialize i5/OS' SMTP servers:

```
INZLOCAL SMTP(*YES) SMTPPURGE(*NO) MSF(*NO) MSFPURGE(*NO)
```

- o SMTP Servers Are Clogged With Junk

Symptom The send operation runs to completion but no mail arrives.

Cause i5/OS' SMTP server may contain dead letters or other junk that it can not deliver. This can be the result of previous attempts to set up mail on the system.

Solution Clean out i5/OS' SMTP server:

Note: Only perform this procedure if you are sure there is no valid deliverable mail in the SMTP servers.

INZLOCAL SMTP(*YES) SMTPPURGE(*YES) MSF(*NO) MSFPURGE(*NO)

o Mail Server Framework Is Reporting Errors

- Symptom** The send operation runs to completion but no mail arrives.
- Cause** i5/OS' Mail Server Framework jobs may be unable to process mail and are reporting errors.
- Solution** Review job logs for the Mail Server Framework jobs:
- Work with active jobs by running the following command:
WRKACTJOB
 - Page down to the QSYSWRK subsystem.
 - Locate the job or jobs with the name QMSF and repeat the following steps for each job.
 - Display the job by using option 5 and pressing enter.
 - Display the job log by selecting option 10 and pressing enter.
 - Display detailed messages by pressing F10.
 - You should see a job started (CPF1124) and job submitted (CPI1125) message. If there are no other messages the Mail Server Framework is not reporting errors. (End of procedure).
 - Display detailed information for each additional message by placing your cursor on the message and pressing F1.
 - Take any corrective action specified in the messages.
 - See the MSF Specific Delivery Problems section of this chapter.

o Mail Server Framework Is Ending Abnormally

- Symptom** The send operation runs to completion but no mail arrives.
- Cause** i5/OS' Mail Server Framework jobs may be unable to process mail and are ending abnormally.
- Solution** Review job logs for the Mail Server Framework jobs:
- Locate job logs for Mail Server Framework jobs that have ended by running the following command:
WRKSPLF SELECT(QMSF)
 - If there are no spooled output files, the Mail Server Framework is not ending abnormally (end of procedure).
 - Page down to the end of the list of spooled files.
 - Display the date and time of the spooled files by pressing F11. If there are no recent spooled files, the Mail Server Framework is not ending abnormally (end of procedure).
 - For each recent job log repeat the following steps:
 - Display the job log by using option 5 and pressing enter.
 - Review the job log for diagnostic and escape messages.
 - Take any corrective action specified in the messages.
 - See the MSF Specific Delivery Problems section of this chapter.

o SMTP Servers Are Reporting Errors

- Symptom** The send operation runs to completion but no mail arrives.
- Cause** i5/OS' SMTP server jobs may be unable to process mail and are reporting errors.
- Solution** Review job logs for the SMTP server jobs:
- Work with active jobs by running the following command:
WRKACTJOB
 - Page down to the QSYSWRK subsystem.
 - Locate the 4 SMTP server jobs with names that start with QSMTP*. Repeat the following steps for each job.
 - Display the job by using option 5 and pressing enter.
 - Display the job log by selecting option 10 and pressing enter.
 - Display detailed messages by pressing F10.

- You should see a job started (CPF1124) and job submitted (CPI1125) message. If there are no other messages the Mail Server Framework is not reporting errors. (End of procedure).
- Display detailed information for each additional message by placing your cursor on the message and pressing F1.
- Take any corrective action specified in the messages.
- See the SMTP Specific Problems section of this chapter.

o SMTP Servers Are Ending Abnormally

- Symptom** The send operation runs to completion but no mail arrives.
- Cause** i5/OS' SMTP server jobs may be unable to process mail and are ending abnormally.
- Solution** Review job logs for the SMTP server jobs:
- Locate job logs for SMTP server jobs that have ended by running the following command:

```
WRKSPLF SELECT(QTCP)
```

 If there are no spooled output files, the SMTP server jobs are not ending abnormally (end of procedure).
 - Page down to the end of the list of spooled files.
 - Display the date and time of the spooled files by pressing F11. If there are no recent spooled files, the SMTP server jobs are not ending abnormally (end of procedure).
 - For each recent job log repeat the following steps:
 - Display the job log by using option 5 and pressing enter.
 - Review the job log for diagnostic and escape messages.
 - Take any corrective action specified in the messages.
 - See the SMTP Specific Problems section of this chapter.

MSF Problems

This sections describes problems, causes, and solutions specific to i5/OS' Mail Server Framework.

- o MSF Job Log Contains QTCPTMM/ATTABOX Messages

- Symptom** A QMSF job is complaining about a directory such as QTCPTMM/ATTABOX.
- Cause** i5/OS' MSF jobs depend on specific directories in the Integrated File System which are added by installing the TCP/IP Utilities and may have been deleted.
- Solution** Check the existence of the TCP/IP related directories an reinstall them if they are missing by:
- Run the WRKLNK command and locate the QTCPTMM directory.
 - Display QTCPTMM's contents using option 5.
 - Verify that subdirectories ATTABOX, ENCODE, MAIL, SMTPBOX and TMP exist.
 - If directories are missing continue with this procedure otherwise end of procedure.
 - Use the DLTLICPGM command to remove the TCP/IP Utilities.
 - Use the RSTLICPGM command to reinstall the TCP/IP Utilities.

- o MSF Job Log Contains "System storage threshold exceeded" Message

- Symptom** A QMSF job complains that "System storage threshold exceeded".
- Cause** i5/OS' MSF jobs stop processing mail when amount of disk space used rises above a set percentage. i5/OS is shipped with this value set to 90%.
- Solution** Either free disk space by deleting unused items or bump the threshold value with this procedure:
- Run the STRSST command and select option 3 Work with disk units.
 - Select option 2 Work with disk configuration.
 - Select option 3 Work with ASP threshold.
 - Use 1=Select for the appropriate ASP (usually ASP 1).
 - Press F1=Help to review help for the Change Storage Threshold display.
 - Change the ASP threshold to 95% or what ever is a comfortable value for your installation.

SMTP Problems

This sections describes problems, causes, and solutions specific to i5/OS' SMTP server.

- o SMTP Retries Set To Zero

Symptom The send operation runs to completion but no mail arrives, or mail arrives for awhile then stops until the next IPL.

Cause The mail router is periodically slow or unavailable and i5/OS' SMTP attributes for retries are set too low or set to zero.

Solution Increase the retry values to give the mail router more chances at fielding the incoming mail:

- Prompt the CHGSMTPA command.
- Increase the number of retries for the retries by minute parameter.
- Increase the number of retries for the retries by day parameter.
- Press enter.

- o Multiple Garbled E-mail Messages Arrive

Symptom Multiple messages arrive for a send operation and the messages are garbled.

Cause i5/OS' SMTP is splitting the messages.

Solution Turn off message splitting entirely by changing the POP attributes:

CHGPOPAMSGSPLIT(*NOMAX)

- o Time On Mail Is Incorrect

Symptom Mail delivers but contains the wrong time.

Cause i5/OS' QUTCOFFSET or QTIMZON system values have not been set.

Solution See: Manual SMTP Steps You May Need To Perform section of the Set Up chapter for instructions to correct these value.

Appendix A Processing Descriptions

What's In This Appendix

This appendix provides detailed descriptions of the processing performed by Excelerator's set up and verification programs. In highly secure environments, it may be against policy to allow third party software to change your system. If this is your situation, you can perform these steps manually. The appendix details:

- o Processing Performed During SMTP Verification
- o Processing Performed During SMTP Set Up
- o Processing Performed During Mail Router Verification
- o Processing Performed During Mail Router Set Up

Processing Performed During SMTP Verification

The following verification steps are performed by the Verify/Set Up Local SMTP (VFYLOCAL) command when SETUP(*NO) is specified.

Note: No changes are made to your system during verification.

- o Verify that TCP Utilities have been installed on the system.
The system is checked to insure that library QTCP exists. If the library is found then TCP Connectivity Utilities have been installed on the system.
- o Verify that SMTP has been installed on the system.
The QSYSWRK subsystem is checked to insure that it contains a routing entry with compare data of SMTPROUT. If the routing entry is found then SMTP has been installed on the system.
- o Verify that the SMTP distribution queues are present.
The system is checked for the existence of QSMTPQ distribution queue.
- o Verify that a host and domain name have been configured for the system.
 - If the host name is blank, verification fails.
 - If the domain name is blank, verification fails.
- o Verify that the system distribution directory is searchable.
A search is attempted on the system distribution directory.
- o Verify that the i5/OS Mail Server is active.
The system is checked for an active job with the job name QMSF. If one or more QMSF jobs are active then the Mail Server is active.
- o Verify that the TCP is active.
The system is checked for an active job with the job name QTCTIP. If job QTCTIP is active then TCP is active.
- o Verify that TCP loopback is operating correctly.
The TCP interfaces are searched to locate the *LOOPBACK internet address. The *LOOPBACK interface is started if it is not active and its internet address is PINGed to verify that TCP is operating correctly.
 - If the *LOOPBACK interface is not found, verification fails.
 - If the *LOOPBACK interface is not active and can not be started, verification fails.
 - If the *LOOPBACK interface can not be PINGed, verification fails.The *LOOPBACK interface is ended if it was started by the verification program.
- o Verify that a TCP interface is defined.

The TCP interfaces are searched to locate one or more internet addresses (excluding *LOOPBACK).

- If no interfaces are found, verification fails.
- o Verify that active TCP interfaces are reachable.
 - The TCP interfaces are searched to locate one or more internet addresses (excluding *LOOPBACK). Each interface is contacted (PINGed) to verify the connection.
 - If an interface is not active, verification fails.
 - If an interface can not be contacted, verification fails.
- o Verify that the SMTP server is active.
 - The system is checked for an active job with the job name QTSMTPSRVR or QTSMTPSRVD.
 - If either job is active then the SMTP server is active.
- o Verify that this host's IP address can be reached by SMTP.
 - Retrieve the host and domain names for this system.
 - If the host name is blank, verification fails.
 - Verify (PING) TCP/IP connection to host name.
 - If the host is contacted, verification is complete and no further processing is performed.
 - Verify (PING) TCP/IP connection to the host.domain name.
 - If the host.domain name cannot be contacted, verification fails.
- o Verify that message splitting has been turned off.
 - The current setting can not be retrieved so no test is performed and it is assumed that splitting has not been turned off yet.

After all test are completed, a message summarizing the results is issued.

Processing Performed During SMTP Set Up

The following set up work is performed by the Verify/Set Up Local SMTP (VFYLOCAL) command when SETUP(*YES) is specified.

- o If the TCP Utilities have not been installed on the system.
 - Manual intervention is required to install the utilities. Automatic set up can not perform the installation.
- o If the SMTP has not been installed on the system.
 - Manual intervention is required to install SMTP. Automatic set up can not perform the installation.
- o If QSMTPQ distribution queue is not found.
 - Create the distribution queue using the Add Distribution Queue command:
ADDSTQ DSTQ(QSMTPQ) RMTLOCNAME(TCPIPLOC) DSTQTYPE(*RPDS)

o If a host or domain name have not been configured.

- Manual intervention is required to configure a host and domain name. Use option 12 (Change local domain and host names) of the Configure TCP/IP (CFGTCP) command. Automatic set up can not perform the change.

o If the system distribution directory entry can not be searched.

- The directory is changed to allow searches using the Change System Directory Attributes command:
CHGSYSDIRA ALWSCH(*YES)

- o If the i5/OS Mail Server is not active.
 - Start the Mail Server using the STRMSF command:
STRMSF

o If TCP is not active.

- Start TCP using the STRTCP command:
STRTCP
- o If TCP loopback is not operating correctly.
 - If missing, *LOOPBACK interface is added using command:
ADDTCPIFC INTNETADR('127.0.0.1') LIND(*LOOPBACK) SUBNETMASK('255.0.0.0')
MTU(576)
 - If loopback PING fails:
Manual intervention is required to correct the problem which is beyond the scope of set up.
- o If no TCP interfaces are found.
Manual operation is required to add an interface using the ADDTCPIFC command.
- o If no TCP interfaces can be contacted.
Manual operation is required to correct the problem. If the interface can not be contacted because it is not active, start the interface using the STRTCPIFC command.
- o If the SMTP server is not active.
 - Start the SMTP server using the STRTCPSVR command:
STRTCPSVR SERVER(*SMTP)
- o If the host's IP address can not be reached by SMTP.
 - If system is using a remote name server, set up fails.
Manual operation required. Contact the remote name server's administrator to add this system's host name.
 - If multiple TCP interfaces are found, set up fails.
Manual operation required. Add this system's name to i5/OS' host table using the ADDTCPHTE command.

- If no TCP interfaces are found, set up fails.
Manual operation required. Add a TCP interface using the ADDTCPIFC command.
- An entry is added for this host using the Add TCP Host Table Entry command:
ADDTCPHTE INTNETADR(&THISIP) HOSTNAME((&HOST)) TEXT('Entry Added By
Gumbo Auto TCP/IP Config')
- o If message splitting has not been turned off.
 - Message splitting is turned off
The POP attributes are changed:
CHGPOPAMSGSPLIT(*NOMAX)

After all steps are completed, a message summarizing the results is issued.

Processing Performed During Mail Router Verification

The following verification steps are performed by the Verify/Set Up Mail Router (VFYROUTER) command when SETUP(*NO) is specified.

Note: No changes are made to your system during verification.

- o Verify that TCP is active.
 - The system is checked for an active job with the job name QTCPIP. If job QTCPIP is active then TCP is active.
- o Resolve system names and internet addresses for command parameters and current mail router.
 - Verify domain name server.
 - If a domain name server is configured, it is tested to insure that it is responding. If it does not respond, verification fails.
 - Retrieve currently configured mail router name and IP.
 - Resolve internet address parameter.
 - If a special value was specified, it is resolved. If it can not be resolved, verification fails.
 - Resolve remote system parameter.
 - If a special value was specified, it is resolved. If it can not be resolved, verification fails.
- o Edit the resulting names and IPs for conflicts.
 - Edit remote system and internet address IP.
 - If the IP of the remote system is different than the internet address, verification fails.
 - Edit remote system and internet address names.
 - If the name of the internet address is different than the remote system name, verification fails.
 - Edit current mail router and internet address IP.
 - If the IP of the current mail router is different than the internet address, verification fails.
- o Verify that the internet address is responding.
 - The internet address is PINGed to insure that it is reachable and responding. If it is not, verification fails.
- o Verify that the internet address is accepting SMTP mail.
 - The internet address is tested to insure that it is accepting SMTP mail from this EServer i5 (iSeries). If it is not, verification fails.
- o Verify that remote system can be located in the host table.
 - If a host table entry is required and not present, verification fails.
- o Verify that the mail router is configured.
 - If the remote system is not configured as the mail router, verification fails.

After all test are completed, a message summarizing the results is issued.

Processing Performed During Mail Router Set Up

The following set up work is performed by the Verify/Set Up Mail Router (VFYROUTER) command when SETUP(*YES) is specified.

- o If TCP is not active.
 - Start TCP using the STRTCP command:
STRTCP
- o If system name and internet address resolution fails.
 - If a domain name server is configured but not responding.
Manual intervention required. Either insure that the configured domain name server is available or remove the domain name server from this eServer i5 (iSeries) configuration using option 12 of the CFGTCP menu.
 - If the internet address parameter can not be resolved.
Manual intervention required to correct the internet address parameter.
 - If the remote system parameter can not be resolved.
Manual intervention required to correct the remote system parameter.
- o If the resolved names and IPs for conflicts.
 - If the remote system and internet address IPs are different.
Manual intervention required to correct the parameters.
 - If the remote system and internet address names are different.
Manual intervention required to correct the parameters.
 - If the current mail router and internet address IPs are different.
Manual intervention required. Either correct the parameters or remove the currently configured mail router by running the following command:
CHGSMTPA MAILROUTER(*NONE)
- o If the internet address is not responding.
Manual intervention required. Either correct the internet address or make the system at that address ready.
- o If the internet address is not accepting SMTP mail.
Manual intervention required. Either correct the internet address, or contact the system's administrator and request that the system accept SMTP from this EServer i5 (iSeries). The words you use to request this differ depending on the software running on the remote system:
 - For Microsoft's Exchange Server request that the "Internet Mail Connector" be configured and started.
 - For Lotus' cc:Mail request that the "Link to SMTP" be configured and started.
 - For all others request that the "SMTP gateway" be configured and started.
- o If the remote system can not be located in the host table.
Add an entry using the Add TCP/IP Host Table Entry (ADDTCPHTE) command:
ADDTCPHTE INTNETADR(&INTNETADR) HOSTNAME((&RMTSYS)) +
TEXT('Mail router added by Gumbo automatic configuration')
- o If the mail router is not configured.
Configure the mail router using the Change SMTP Attributes (CHGSMTPA) command:
CHGSMTPA MAILROUTER(&RMTSYS) FIREWALL(*YES)

Note: The FIREWALL() parameter is probably misnamed. When set to *YES, it instructs i5/OS to send all e-mail through the mail router. When set to *NO, i5/OS tries to deliver the e-mail directly. If this fails, it gives it to then gives it to the mail router.

After all steps are completed, a message summarizing the results is issued.

Appendix B Notices

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