helpsystems

User Guide
Esend

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Welcome to Esend

Esend supports both E-mail and FTP routing of System i data to remote users. Spooled output and other IFS file data can be sent to e-mail and ftp addresses on the Internet or your office LAN. Esend may be used as a stand alone product, but its functions are also built into other HELP/SYSTEMS products and facilitate the automatic distribution of output produced by them. Esend commands also provide for ad-hoc selection and routing of files and spooled output from other sources on your System i.

Esend uses IBM's AnyMail mail server framework to support the E-mail feature. Esend does not require SNADS to be running or force you to setup the SNADS (SNA Distribution Services) directory, distribution queues, or system routing tables. If you have an System i e-mail system that already sends SMTP (Simple Mail Transfer Protocol) messages to the Internet, you will probably not need to perform any additional setup.

Esend provides a common, consistent interface to FTP and E-mail. The required processes are automatically invoked based on the RECIPIENT you specify on your Esend requests. You do not need to learn separate commands for each of these processes.

Summary of Features

- Supports up to 300 attachments per message.
- Address lists can be used to facilitate e-mail broadcasts.
- Attachment contents may optionally be imbedded within the message body.
- FTP and E-mail can be mixed in a single recipient parameter, allowing a file to be sent from one location to multiple FTP locations and multiple e-mail recipients in one command.
- E-mail messages include date sent and automatic inclusion of up to 6 lines of signature text.
- Default settings tailor many aspects of e-mail to individual user requirements.
- Can use RTF formatting for sending spool files to maintain margins, font, and rotation.
- Sends spool files to another System i to be received as spool files on the remote system.
- FTP spool and text files to non System i servers - received as ASCII converted text file.
- Sends file data in binary mode to a remote System i to preserve packed data.
  (target file must already exist on remote system)
- FTP Server Profiles can be used to maintain address information for remote locations and to encrypt remote passwords.This allows users to refer to a profile name instead of an FTP address.
- An FTP List can be predefined and used to easily send to multiple locations with one command.
- Supports use of Address Books.
- Manage spool files with option driven list displays.
- Bursts Spool files for the purposes of report distribution.
- Monitor output queues and automatically send selected spool files.

Getting Started

FTP requires no setup beyond having a TCP/IP connection. However, FTP recipients must have an active FTP server in order to receive a file via FTP. You cannot normally FTP to user PC's as most user PC's do not run FTP servers.

E-Mail setup is somewhat more involved. The following checklist will guide you through the required and optional steps.

Checklist

1. Verify your system meets all requirements. See Appendix page 81.
2. Configure your System i to support e-mail. See Appendix page 81.
3. Setup an E-mail user with an explicit return (sender) address. See Appendix page 84.
4. Send a test message.
5. Setup Additional users.
6. Setup FTP Sever Repository (Optional - useful if you will use ftp to send files). See page 16.
7. Customize for country specific EBCDIC to ASCII conversion. See Appendix page 88.
8. Optional: Customize your e-mail settings.

These checklist steps are described briefly in the following sections. Additional details are provided in the appropriate section for each topic throughout the document.

E-mail Setup and Sender Return Address (steps 1-3)

After verifying that your system meets Esend requirements (step 1) and performing the steps described in the Appendix - System i Email Setup step 2 (page 82), you are nearly ready to send a first message. But, since some mail systems will not route mail correctly if the message does not have a valid 'return' or sender address, the following process will insure that you do not encounter this problem. Make sure you have QSECOFR or equivalent authority when performing these steps.

1. Add Esend to your library list.
2. Type ESNDADR on a command line and press enter.
3. Press F6 to add a new user.
   Type the User Id that you will be testing with in the User ID field. Enter the first and last name or initials. Finally enter the e-mail address you want reply messages sent to for messages sent by this user from the System i. Normally, this is simply the e-mail address of the person who's user id is being set up.
4. Press ENTER to accept your entries and then ENTER again to return to a command line.

You are now ready to send a test message. See Appendix page 84 for a complete discussion about setting up return e-mail addresses.

Send a Test Message (step 4)

1. Type ESNDMAIL on a command line and press F4.
2. Enter a recipient that can easily verify receipt of the message.
   Enter an imaginative subject - "Test" generally works nicely.
3. Press the Page Down key to access the MSG parameter and type a brief message.
4. Press Enter to send your message.

After pressing enter, you should see a system message confirming that 'Send Mail Instructions have been issued' and your recipient should be able to confirm receipt within a few moments if the recipient is on the local network.

Set Up Additional Users (step 5)

You can use ESNDADR to set up the return address information for each user that will be using the Esend facility. Before doing so, we recommend that you study the available options discussed in the Appendix (page 84) for establishing return addresses for your System i E-mail users. You may find that it is not necessary to maintain this information for each user id.

Setup an FTP Repository (step 6)

Use the EFTPSVR command (page 16) to maintain a repository of ftp servers you will send files to using ftp.

Customize Country specific EBCDIC to ASCII conversion (step 7)

Conversions between EBCDIC and ASCII rely on using the appropriate source and target CCSIDs. Esend uses the target CCSID specified in the EMTRN data area in Esend. Many users, those using Window's CCSID 01252, will have no need to customize Esend for successful character translation. There are a number of languages, however, that require a language specific target CCSID. If Esend requests result in e-mail messages that contain incorrect characters, it will be necessary to determine the correct target CCSID for your language. Please see Appendix (page 88) for additional information.

Customize your Esend Settings (step 8)

The next section describes the options for setting both global and user specific options.

Customize Esend Global Settings

This section presents important setup related items that are not necessarily required, but will facilitate your use of the Esend features.

Date/Time Stamp for E-Mail Messages

The date that an e-mail message is sent is included with the message. Some mail applications display this information.

The ESNDMAIL function uses system values to format the date and time information, including the system value QUTCOFFSET which specifies the local time offset from Universal Time / Greenwich Mean Time.

IBM ships the system value for QUTCOFFSET set to +0000. To have the correct send time sent with the e-mail message, the value must be set according to the local specification,

e.g. Chicago is -0500 (CDT - CENTRAL DAYLIGHT TIME)

or -0600 (CST - CENTRAL STANDARD TIME)

It is important to keep this system value current (i.e. Adjust for daylight savings time changes) to ensure the correct date and time information on sent messages.

Prevent message splitting

Large e-mail messages will be split into sections by the mail server framework. Unfortunately, not all mail servers can reassemble the parts into a single message again.

Issue the following command to prevent message splitting:

```
CHGPOPA MSGSPLIT(*NOMAX)
```

Customize Esend User Settings

Various e-mail and ftp options can be set for each Esend user. These settings are automatically applied by Esend based on the user id of the job running each Esend function. In addition, an alternate user id can be specified on e-mail and ftp requests to supply an alternate set of control values for the request.

Note: Commands in other HelpSystems products, such as Sequel, do not provide a separate parameter for overriding user defaults. When using Esend functions from such commands, you can still override the user defaults by creating a data area in QTEMP containing the name of the user id whose defaults you want to use. The following command would accomplish this:

```
CRTDTAARA DTAARA(QTEMP/ESNDPFDA) TYPE(*CHAR) LEN(10) VALUE(ALTUSER)
```

This would cause subsequent Esend requests in the same job to use the user settings for user id 'ALTUSER'.

User send mail signature

E-mail messages can contain up to 6 lines of additional text (50 characters per line) with a message. The purpose is to provide signature information with a message.

Use ESNDSGN USER(*SYSTEM) to modify the system signature first. Enter your company name and company phone number. Each time a new user works with any Esend feature, the system value is copied, with any common information, as all other signatures are based on this.

e.g. (name)
My company name
(e-mail address)
Tel: 800-555-1234   Fax: 800-555-6789

That way only the user name and the e-mail address need to be entered. Telephone extensions can easily be inserted or the fax number could be placed on the next line.

There is no validity checking on these 6 lines.

User send mail defaults

User defaults are accessed and maintained by using the ESNDUSR command (page 10). This command maintains both the 'System' defaults and individual user defaults. The system default values are copied for each new user the first time that user works with an Esend function requiring a default value. Once established, the user default settings can be customized for each user.

E-Mail Recipient Lists[1]

Esend features include integrated email address books. An alternate method for building recipient lists involves using SEU (Source Edit Utility) and standard source files. If you need to broadcast messages to predefined groups and also specify different to: and cc: lists, the e-mail recipient list is the way to do this.

Multiple E-mail addresses can be entered into a source file and referenced on the recipient parameter by naming the source file, library and member to be used. Specify the file as library/file(member). If you omit the library, *LIBL is assumed. If you omit the member name, *FIRST is assumed. The source records can be entered and maintained using SEU or any other suitable source file maintenance program. In the source file, each record may contain multiple addresses separated by commas or semicolons, but e-mail addresses cannot wrap and continue on the next record. If no type modifier occurs before the first address in the file, "(to)" is assumed.

The following type delimiters are supported:

- TO   =   **to:**   **(to)**   **(to:)**   **(t)**   **t:**
- CC   =   **cc:**   **(cc)**   **(cc:)**   **(c)**   **c:**
- BCC =   **bcc:**   **(.bc)**   **b:**
- FTP   =   **ftp:**
- SFTP =   **sftp:** (use when running with SSL)

Create a source file for an email or ftp list using a command like the following:

```
CRTSRCPF FILE(FINANCE/FTPLIST) MBR(CC1) TEXT('Cost Cntr FTP lists')
```

---

1. See page page 92 for information on "Invalid Email Address Processing and Error Message Handling".

Working with Esend

Using Esend is easy since there are only four Esend commands that actually 'send' System i data. These commands are **ESNDFILE**, **ESNDMAIL**, **EDISTRIB** and **WRKSPLFE**. The following table shows which Esend commands you can use to accomplish different tasks.

Find the row that most closely matches the task you want to accomplish. The columns with a 'Y' indicate which commands perform that function. Refer to the command reference for the respective commands to see how they can be used to address your requirement.

Esend Functions	ESNDFILE	ESNDMAIL	EDISTRIB	WRKSPLFE	CPYSPLIFS
Send data using e-mail	Y	Y	Y	Y	
Send data using ftp	Y		Y	Y	
Send an i-Series database file	Limited				
Send files from the IFS	Y	Y			
Send multiple attachment e-mail		Y			
Embed file data within message body	Y	Y		Y	
E-mail and ftp data in single request	Y			Y	
Send spool files to remote System i output queue	Y			Y	
Burst spool files to multiple recipients			Y		
Convert spool files to PDF, HTML, RTF format	Y[a]	Y	Y	Y	Y
Ad hoc operations against spool files List, display, copy, move, e-mail, convert to PDF.				Y	
Copy to multiple recipients	Y	Y	Y	Y	
Convert spool data to ASCII	Y	Y	Y	Y	Y
Copy/Convert spool data to IFS file					Y

a. When using ftp to send spool files, conversion is to plain text. Use CPYSPLIFS, then ESNDFILE if you need to ftp spool files in specific formats.

Esend commands can be used anywhere a System i command can be used. In addition, Esend provides a menu for easy access to the various Esend functions. Issue the following command to open the Esend main menu.

GO ESEND/ESEND

A menu like the following will be displayed:

```
 3/23/07 16:50:12          ESEND Main Menu (ESEND)

Select one of the following:
  Standard Features
     1. E-Mail with multiple attachments in batch          ESNDMAIL
     2. FTP or E-Mail a single attachment in batch          ESNDFILE
     3. Set email default                                   ESNDUSR
     4. Work with email signature                           ESNDSGN
     5. Maintain FTP List                                   EFTPLST
     6. Copy Spool to IFS in batch                          CPYSPLIFS
  Enhanced Features
     10. Manage spool files                                 WRKSPLFE
     11. Work with SPLF Distribution Rules                  ERPTRULES
     12. Email a SPLF using Distribution Rules in batch     EDISTRIB
     13. Maintain Distribution Address Book                 ESNDDST
     14. Enter Spool Forward Rules                          EFWDRULES
     15. List Output Queues to Forward                      EFWDOUTQ
  Other
     20. Configure system                                   ESENDCFG...
     21. SMTP Journal Analysis                              ESENDJRN...
Selection or command
===> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F14=Submit  F24=More Keys
(C) Copyright Help/Systems 1982, 2006
```

Option 20 opens the configuration menu below.

```
 5/15/12 09:38:20     ESEND Configuration Menu (ESENDCFG)      System: BEAR

Select one of the following:
  Standard Features
     1. Set System E-Mail defaults                          ESNDUSR
     2. Set up FTP server profiles                          EFTPSVR
     3. Work with E-Mail FROM addresses                     ESNDADR
  Enhanced Features
     10. Build E-Mail Address Book from User Profiles        EBLDDST
     11. Start Forwarding Subsystem                          STRSBS
     12. End Forwarding Subsystem                            ENDSBS

  System Configuration
     20. Email Configuration Assistant                       ESETUP..
     21. Start SMTP server                                   STRTCPSVR
     22. End SMTP server                                     ENDTCPSVR
     30. Change TCP/IP Domain                                CHGTCPDMN
     31. Configure TCP/IP                                    CFGTCP..
     32. Work with TCP/IP status                             WRKTCPSTS..

Selection or command
===> _____
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F14=Submit  F24=More Keys
(C) Copyright Help/Systems 1982, 2006
```

Note that a number of the options indicate that the function will run in batch mode. Each user can set a default value to control whether or not these functions will be submitted to run in batch. By pressing F18 on a menu, the default settings are displayed and can be set as desired.

Email Setup Commands

ESNDADR - Work with SMTP Addresses

Esend automatically determines a 'sender' e-mail address for the SMTP messages it sends. In many networks, a valid sender address is required in order to forward a message. Issues relating to the 'sender' address associated with e-mail messages are covered in Appendix C. ESNDADR provides a convenient way to maintain e-mail addresses for your System i user id's and to provide a valid return address.

There are no parameters for this command. The command will list existing users and allow entry of new users. The following display illustrates the entry screen for maintaining user e-mail addresses.

```
 3/26/07   13:47:00         Work with SMTP Addresses
                              ADD Address


 User ID . . . . .  QUSER
 Last Name . . . .  SYSTEM
  First Name . . .  Fred
 SMTP Address  . .  Fred@helpsystems.com
 _____

 _____
 _____




 F3=Exit   F12=Previous
```

User ID

Enter the user profile name for the user.

Last Name/First Name

Enter the name of this user for identification purposes.

SMTP Address

Enter the e-mail address for this user. This is the e-mail address that anyone could use to contact this person.

ESNDSGN - Work with E-mail Signatures

The ESNDSGN command maintains signature information for e-mail messages. Six additional lines of text (50 characters per line) are available.

The following image illustrates the display that results when you prompt the ESNDSGN command, specify a user id (*SUPPORT in this case) and press enter.

```
                 Work with E-Mail Signatures (ESNDSGN)

Type choices, press Enter.

User . . . . . . . . . . . . . . USER              quser

                            Signature file for: QUSER


                     _____
                     Help/Systems_____
                     chi.support@helpsystems.com_____
                     (952)933-0609_____
                     _____
                     _____

                     Enter, F3=Exit




                                                             Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

The 6 signature lines can be used to enter a standard signature that will be appended to each message sent by the user.

ESNDUSR - Modify E-Mail Defaults

The ESNDUSR command lets each user control default options for various aspects of the Esend Send Mail function. Each user's defaults are stored as a member in the ESNDPF file. The Esend library contains the original copy of ESNDPF, and additional copies can be maintained in other libraries.

Prompting the ESNDUSR command results in the following display.

```
                   Modify E-Mail Defaults (ESNDUSR)

Type choices, press Enter.

User . . . . . . . . . . . . . . USER              *CURRENT
Library  . . . . . . . . . . . . LIB               *LIBL









                                                             Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

The default user is *CURRENT.

System defaults may be maintained by the system security officer or any other user id that has at least *CHANGE authority to the data area named ES#DFT in Esend. Maintain the system defaults by entering *SYSTEM as the user value.   Press enter to access the default values for the specified user.

A display like the following will appear.

```
 5/23/12   08:59:09    Send Mail Defaults for: *SYSTEM        System:

Type options, press Enter.
  2=Edit    5=Display

Opt  Key          Description
  _  ADDENDUM     Add Message Addendum
  _  ADDRBOOK     Distribution Address Book
  _  EXT          Assume extension if not provided
  _  FTP          Default FTP options
  _  FTPLOG       Default FTPLOG options
  _  HTML         HTML color code, font size and name
  _  MESSAGE      Default message text
  _  MSGTYPE      E-Mail message type
  _  PDF          PDF Security Permissions
  _  RECEIPT      E-Mail receipt notification
  _  RTF          RTF font type, name and size
  _  SIGN         Send signature file with message
  _  SPOOL        Default Spool File Output Type
  _  SUBJECT      Default subject line (needed)
  _  TEXT         PC File extension for a text file


F3/F12=Exit                                               Bottom
```

User defaults can be maintained by the individual users or by any user who has *CHANGE authority to the data area named ES#DFT in the Esend library. Use a profile like QSECOFR that has authority to the individual profiles.

The following defaults can be customized:

ADDENDUM - Message Addendum

Each message sent by a user can have a designated text file added to the body of the message. Addendums are included in the message before the signature if a signature is also included.

All defaults are underlined.

Use - Should this user have an addendum attached to each message.

>   ***NO** - Do not attach an addendum file.

>   ***YES** - Attach the file named in the next field to each message sent by this user.

File - Given the path and name of the file to include as an addendum to each mail message sent by this user.

ADDRBOOK - Address Book

*SYSTEM - *SYSTEM is the default address book for all users.

Name - Name the address book used for resolving names for email sent by this user.

FTP - Default FTP Options

Remote File - Specify if FTP should replace the file on the target system if it already exists, create a 'New Copy' (by appending a digit to the file name), or append data to the existing file.

>   **0** - Replace (default)

>   1 - New Copy

2 - Append

Login Id - The default Login Id and Password are used unless explicit user id and password are supplied on the FTP request.

Login Pwd - Default value is 'Guest'

Note that these login values are not encrypted either in the file ESNDPF or when used in FTP sessions.

Print Log - Controls the creation of an FTP log.

0 - Only on errors(default)

1 - Always

FTPLOG - Default FTPLOG Options

OutQ Name - Output Queue name for FTP logs that may be produced
*JOB=Default Outq for the job.

Library - Library name containing Output Queue.

HTML

Specifies default settings for HTML conversion of spooled output. These settings do not apply to message text entered into ESNDFILE or ESNDMAIL commands.

Body Color - This is the color to use as the background for the HTML output.
(See note below on RGB color key)

#FFFFFF (default White)

Font Size - The font size to be used in the HTML output. Not all browsers utilize the font size. Some have their own size options from the desktop.

2 (default)

1-7 - allowed

Font Name - This is the name of the font to be used in the HTML output. If the font name does not exist in the recipients browser, the browser will provide its own default.

Courier New (default)

Font Color - This is the color to use for the font in the HTML output.
(See note below on RGB color key)

#000000 (default Black)

Font Style - This controls bold and italic.

Weight:
Blank - Normal
B - Bold

Style:
Blank - Normal
I - Italic

Suppress in HTML - This controls output of automatic CSS (cascading style sheet) controls. It is sometimes desirable to suppress style sheet controls in order to preserve custom formatting in existing HTML.

RGB Color key

The color key is based on the RGB decimal format converted to hexadecimal. RGB is the standard based on the use of 3 colors Red, Green and Blue. Each color has a range of 0 through 255, where 0 is the least of that color and 255 is the most. The following chart shows some example colors and the associated RGB decimal, hexadecimal and HTML keys.

Color		RGB Decimal			RGB Hexadecimal			HTML Key
		Red	**Green**	**Blue**	**Red**	**Green**	**Blue**	
Standard	White	255	255	255	FF	FF	FF	#FFFFFF
	Black	0	0	0	00	00	00	#000000
	Red	255	0	0	FF	00	00	#FF0000
	Green	0	255	0	00	FF	00	#00FF00
	Blue	0	0	255	00	00	FF	#0000FF
	Cyan	0	255	255	00	FF	FF	#00FFFF
	Yellow	255	255	0	FF	FF	00	#FFFF00
	Magenta	255	0	255	FF	00	FF	#FF00FF
Various	Cream	255	251	240	FF	FB	F0	#FFFBF0
	Light Grey	211	211	211	D3	D3	D3	#D3D3D3
	Light Sky Blue	135	206	250	87	CE	FA	#87CEFA

Most browsers also allow the use of common names for use as color options, such as those listed in the chart above. 10 characters for each font color parameter are available to allow a color name to be entered. Colors that exceed 10 characters or have spaces between words, such as "Light Grey" should use the HTML color key code instead.

MESSAGE

The default message text to be sent when a message of '*' is entered as the message on Esend commands.

<u>*NONE</u> - default

MSGTYPE - E-Mail message type

MSGTYPE applies only to the ESNDMAIL command.

<u>4</u> - *TEXT

5 - *HTML

PDF - PDF Security Permissions

Apply the following permissions (the default is *NO) for PDF output:

• Allow Print

• Allow Modify

• Allow Annotation

• Allow Copy

- These setting are applied ONLY if an OWNER password is specified when creating PDF output using the following commands: CPYSPLIFS, EDISTRIB, ESNDMAIL, ESNDFILE and PDFSPLF.

- Documents created with only a USER password will have no security settings, but will require a password to open.

- Documents created with only an OWNER password will open without prompting, but will have security settings as defined above.

- Documents created with both passwords will require the USER password to open and the OWNER password to change any of the security settings as defined above.

RECEIPT - E-Mail receipt notification

When an e-mail is sent, some receiving applications have the capability to return a notification of delivery to the sender. Esend can request receipt notification.

*NO - default

RTF - RTF defaults as shipped

Font type	1 - Modern
Font Name	Courier New
Margin Left:	0.75
Margin Right:	0.75
Margin Top:	1.00
Margin Bottom:	1.00
Margin Unit:	I (I = Inches, P = Points)
Page Rotation	0 (0 = Portrait, 1 = Landscape)

The send mail programs translate your inches or points dimensions into TWIPS, the RTF standard unit of measure.   Note that 1 point = 20 TWIPS.

Calculate sizes using: 72 points = 1 inch

Care must be taken to specify the correct margin unit. The send mail programs calculate TWIPS to a maximum of 99999 and a minimum of 1. Therefore a margin value with the wrong unit may create a truncated TWIPS value that may not be obvious to someone debugging a margin problem.

E.g. 72 inches (where 72 points is intended) calculates to 103680 TWIPS. This would truncate to 03680.

There is NO value checking. You must ensure that the values entered are valid.

SIGN - Send signature file

This is the default option to provide a user defined signature with a sent message. The signature can be up to 6 lines of text, each line is 50 characters.

0 - No

1 - Yes

SPOOL - Spool File Conversion Type

Determines the default spool file format for mail delivery when not explicitly indicated on the ESNDFILE command.

4 *TXT - sends standard ascii text

5 *HTML - sends HTML formatted text

6 <u>*RTF</u> - sends rich text formatted text

SUBJECT

This is the default subject line if the subject parameter on the Send Mail command is * .

<u>**HELP/SYSTEMS ESEND**</u> - default

TEXT - PC File Extension for a Text File

Select the default extension for spooled files converted to text, such as .txt or .wri. There is also an option available to supress the form feed charcter that is created when spooled files are converted to text.

Using Other User Defaults

The ESNDFILE and ESNDMAIL commands (pages 25 and 33) have an additional parameter OVRUSROPT into which the profile of any user that currently has defaults in the options file can be specified. This will allow the send mail process to override to that specific user's default options. Since mail defaults depend on an actual user profile, it may be necessary to create dummy user ids to take full advantage of this capability.

The default for the OVRUSROPT parameter is *CURRENT which will override the current users options.

To maintain the user options file for a profile other than your own, you must have authority to modify that user profile.

To set up dummy profiles,

- Create the dummy profile using password *NONE
- This will prevent anyone from signing on using the profile.
- Run the command ESNDUSR using the dummy user profile in the USER parameter. Set up the default options.

e.g. Set up dummy profiles called PORTRAIT and LANDSCAPE

ESNDUSR USER(PORTRAIT)

For the SPOOL keyword, change 'Spool Type' to 06 (RTF)

For the RTF keyword, change 'Rotation' to 0 (Portrait)

ESNDUSR USER(LANDSCAPE)

For the SPOOL keyword, change 'Spool Type' to 06 (RTF)

For the RTF keyword, change 'Rotation' to 1 (Landscape)

This sample command,

```
ESNDFILE ...TYPE(*SPL) OVRUSROPT(LANDSCAPE)
```
will send the spool attachment using the settings specified for the 'LANDSCAPE' user - an RTF file in landscape mode.

EFTPSVR - Maintain Server Profiles

This command allows you to maintain a repository of FTP recipient information. A recipient in the repository can be referenced by name on the recipient parameter on various HelpSystems commands by using the ftp or sftp address type modifiers. SFTP calls for use of SSL when running the request. This provides a handy 'shortcut' method for supplying target system, path and login information for the remote system. There are no command parameters for running the Server Profile Maintenance program.

The command initially displays a list of previously defined server profiles like the following display.

```
                          FTP Server Profiles

Type options, press Enter.
  2=Edit, 3=Copy, 4=Toggle Delete, 5=Display

     Server      Remote Address   Remote Directory      Remote Login
 _   ASC403LLT   ASC403                                 LARRYT
 _   ASC404IC    asc404           /tmp                  irac
 _   ASC404SJS   asc404           /tmp                  steves
 _   ASC404SJS2  asc404           /tmp                  steves
 _   ASC406PC    asc406           /tmp                  roberth
 _   CHUCK406A   38.155.98.106    qsys/chuck            chuckb
 _   FREDK       asc403                                 fredk
 _   LARRYFTP    ASC404           /tmp                  larryt
 _   LARRYT404   ASC404           /sequelwrap           larryt
 _   LYNNP406    192.168.1.107    /home/larryt          lynnp
 _   MIKES       asc404           /tmp                  mikes
 _   RICH        ftp.asc-iseries  /outgoing             ascftp
 _   ROS         requiemofsouls.                        requiemofsouls
 _   RWHNT       ascserver1       /incoming             roberth
                                                             More...


F3=End  F12=Previous  F6=Add new line
```

On the Server Profile List panel, you can select profiles to edit, copy, delete or review. The delete option requires an active confirmation to accept the delete request and the record is not actually deleted until you exit the program.

Use either the edit option or F6 to add a new line to access the following entry display.

```
                          FTP Server Profiles


Server Profile Name . . . . SALES123

Remote System Name (F11)  . prodsys1


Remote FTP Directory (F11). /home/QUSER/SEQUELDATA


Current Directory (F11) . . /home/QUSER/SEQUELDATA


PASV / PORT mode. . . . . . *ON  / *OFF    Use Extended mode: Y  Y or N
Remote File:                0  0=Rpl, 1=New, 2=Add

Remote Login Id (F11) . . . salesgroup

Remote Login Password . . .
Verify Login Password . . .

F3=End  F11=Expand  F12=Previous  F17=Secure FTP  ENTER=Add new line
```

Server Profile Name

This is the name you create that can be entered as a shortcut on the Recipient parameter on many HELP/SYSTEMS commands. Server names follow the standard System i rules for object names.

- Up to 10 characters.
- Uppercase only.
- An alphanumeric value that follows IBM's *NAME rules.

Remote System Name

The Remote System Name specifies the name or IP address of the system to which files are transferred. If a name is used, it must be a name that can be resolved either through a local host name table or through DNS. Remote System names have the following attributes:

- Up to 255 characters.
- Upper or Lower case
- May be a name or an IP address in the format xxx.xxx.xxx.xxx
- If a name is used, the local system must be able to resolve the name in FTP.
- See Remote System Address above under direct parameter entry-FTP Recipient Requirements for more information.

Remote FTP Directory

This optional entry allows the file path to be specified at the ftp recipient when sending a single file member with ESNDFILE. If the path begins with /QSYS or simply QSYS, the ftp destination will be a remote System i library system. Paths that do not begin with QSYS represent other non System i target systems or System i IFS file systems. The path cannot specify the target file name.   The following attributes apply to this entry:

- Up to 255 characters.
- Upper or Lower case.
- Does not need to include the initial '/'.
- If left blank, the root directory is used.
- Corresponds to the '/path/' portion of the FTP String for RECIPIENT Parameter described above.

Current Directory

The Current Directory entry for a server profile differs from the remote FTP directory primarily in the functions that use it. Users often specify the same path for both remote FTP directory and for the Current directory. The current directory is used for sending multimember files or spool files.

The current directory has special significance for sending spool files, because it determines whether the recipient is a System i type library system or a non-System i type system (including System i IFS). System i type systems are indicated by current directory entries that do not begin with the '/' character. Non-System i type system current directories always begin with a '/'. Spool files sent to another System i type system are converted to spool files on the remote system. They are always placed on output queue QSYSPRT with a spool file name of EFTPSPL and are owned by the remote login user ID specified for the remote system. Notice that for spool file transfers to System i type systems, the actual value of the Current Directory does not determine where the spool file is placed on the remote system. Spool files sent to non-System i type systems undergo conversion to ASCII and

are placed on the target path indicated by the Current Directory value. This field may have the following attributes:

- Begins with '/' to indicate non-System i type system.
- Up to 255 characters.
- Upper and Lower case
- Should not be blank if you intend to send spool files or multimember files.

Examples

MYLIB - This identifies the System i library named MYLIB as the current directory. This would be the target for multimember files. The absence of a leading '/' results in 'MYLIB' being used as a library name and causes spool files to be sent to output queue QSYSPRT.

/QSYS.LIB/MYLIB.LIB - This also identifies the System i library named MYLIB as the target for multimember files. For spool files, MYLIB will also be the destination for the content of the spool files. Because of the leading '/', the target system will not receive the spool files on an output queue. Some OS versions may not be successful receiving spool files using this form for current directory. The spool file content will be placed in a file named EFTPDTAF if the operation is successful.

/spooltext - This identifies a non-System i type system as the target. Spooltext will be the destination folder for both spool files and for multimember files. Spool data is automatically converted to ASCII. Since ftp does not handle conversion of packed data to ASCII, multimember file transfers are generally appropriate only for source code files and other text files.

PASV / PORT mode

PASV, PORT, EPSV, EPRT are FTP subcommands that affect how an ftp connection is negotiated. PASV and PORT are appropriate for IPv4 network protocols while the extended EPSV and EPRT subcommands are appropriate for IPv6 protocols. The discussion of PASV and PORT differences is beyond the scope of this manual.

By default, ftp connections made by IBM i systems will issue the first enabled subcommand from the following list:

EPSV - Extended Passive
PASV - Passive
EPRT - Extended Port
PORT - Port

If the connection is not successful, there is no retry using alternate modes from the list.

Esend gives you direct control of the connection mode used by the IBM i, which allows for quick resolution of many FTP connection problems. It is generally best to give preference to the connection modes as determined by IBM. But as troubleshooting tip when having trouble connecting to a new server, start by disabling Extended mode and continue by disabling Passive mode if problems persist.

PASV - Send PASV subcommand

*ON - The PASV subcommand is sent to the remote system. The PORT subcommand is not sent.

*OFF - The PASV subcommand is not sent to the remote system. You must set PORT to *ON.

PORT - Send PORT subcommand only if PASV not sent.

> ***OFF** - The PORT subcommand is not sent to the remote system. You must set PASV to *ON.

> *ON - The PORT subcommand is sent to the remote system.

Extended - Use Extended Mode. Note that not all servers can recognize these new sub-commands, therefore the use of the extended mode can be easily disabled.

> **Y** - The extended modes of Passive and Port will be used.

> **N** - The extended modes of Passive and Port will not be used.

Remote Login Id

Enter login id that will be used at the remote ftp site.

- Up to 255 characters.
- Upper and Lower case (some FTP login id's are case sensitive)
- If left blank, assumes user defined anonymous login and password (see ESNDUSR)
- If specified, Login Password is also required.

Remote Login Password

Login Passwords are encrypted for storage in the Server Profile or FTP List entry.

- Up to 50 characters.
- Upper and Lower case (some FTP login password's are case sensitive)
- If left blank, assumes user defined anonymous login and password (see ESNDUSR)
- If specified, Login Id is also required.

F17 - Secure FTP

These three parameters are used to define a secure connection. Secure FTP (SFTP) settings are used when the type modifier SFTP is used instead of FTP.

```
                      Work with Secure FTP


   Server Profile  . . . . LLTCYBR

   Port Number . . . . . . *SECURE        1-65535, *DFT, *SECURE

   Security Type . . . . . *IMPLICIT      *DFT, *SSL, *IMPLICIT, *NONE

   Data Protection . . . . *DFT           *DFT, *CLEAR, *PRIVATE


   Create Date . . .  4/07/2017        Change Date . . . 11/07/2018
   Create Time . . . 17:46:05          Change Time . . . 10:29:17
   Created by  . . . LARRYT             Changed by  . . . STEVES




   F3=Exit  F12=Previous  F7=Accept  F17=GoAnywhere Settings    F23=Delete
```

*Note: Secure FTP refers to 'FTP over SSL'. This is not to be confused with 'Secure Shell FTP', which is a totally different protocol to FTP. For Secure Shell FTP, use **F17-GoAnywhere** (page 21).*

Port Number

Specifies the port number to be used for connecting to the FTP server.

Normally the "well-known" port value of 21 is used to connect to the FTP server. Under some circumstances, the FTP server may be contacted at a port other than port 21. In those situations, the port parameter may be used to specify the server port to connect to.

*DFT - The value 00021 is used.

*SECURE - The value 00990 is used. Port 990 is reserved for secure FTP servers which immediately use Transport Layer Security (TLS) or Secure Sockets Layer (SSL) protocols to encrypt data.

1-65535 - The requested port value is used. This value is validated to ensure it is in the proper range.

Note: If 990 is specified, the FTP client will perform the same functions as if *SECURE were specified.

Security Type

Specifies the type of security mechanism to be used for protecting information transferred on the FTP control connection (which includes the password used to authenticate the session with the FTP server). Transport Layer Security (TLS) and Secure Sockets Layer (SSL) are compatible protocols which use encryption to protect data from being viewed during transmission and verify that data loss or corruption does not occur.

Note: Note: The FTP client subcommand SECOPEN can be used to open a protected FTP connection during an FTP client session.

*DFT - If the PORT parameter specifies *SECURE or 990, *IMPLICIT is used; otherwise, *NONE is used.

*IMPLICIT - The FTP client immediately attempts to use TLS/SSL when connecting to the specified FTP server (without sending an AUTH subcommand to the server). If the server does not support implicit TLS/SSL on the specified port, or the TLS/SSL negotiation fails for any reason, the connection is closed.

*SSL - After connecting to the specified FTP server, the FTP client sends an AUTH (authorization) subcommand requesting a TLS/SSL protected session. If the server supports TLS/SSL, a TLS/SSL negotiation is performed. If the server does not support TLS/SSL or the TLS/SSL negotiation fails, the connection is closed.

*NONE - The FTP client does not use encryption when connecting to the specified FTP server.

Data Protection

Specifies the type of data protection to be used for information transferred on the FTP data connection. This connection is used to transfer file data and directory listings. The FTP protocol does not allow protection of the data connection, if the control connection is not protected.

Note: The DTAPROT parameter controls the use of the PROT (protection) FTP server subcommand. The FTP client subcommand SECDATA can be used to change protection for specific FTP data connections during an FTP client session.

*DFT - If the SECCNN parameter specifies a protected control connection, *PRIVATE is used; otherwise, *CLEAR is used.

*PRIVATE - Information sent on the FTP data connection is encrypted.

Note: If the SECCNN parameter specifies that the FTP control connection is not encrypted, *PRIVATE cannot be specified.

*CLEAR - Information sent on the FTP data connection is not encrypted.

F17 - GoAnywhere Settings

If the GoAnywhere product is installed on the system, an additional screen is available to record GoAnywhere values for Esend to link to. F17 allows the screen to toggle between GoAnywhere settings and Esend FTP settings.

```
                           Work with Secure FTP


   Server Profile  . . . . LLTCYBR

   GoAnywhere Library  . . *NONE            Name, *NONE

   GoAnywhere Resource . . *NONE                       Name, *NONE
     OR
   GoAnywhere Port#  . . . _____       1-65535, *DFT


   Create Date . . .  4/07/2017        Change Date . . . 11/07/2018
   Create Time . . . 17:46:05          Change Time . . . 10:25:12
   Created by  . . . LARRYT             Changed by  . . . STEVES




   F3=Exit  F12=Previous  F7=Accept  F17=ESEND SFTP Settings   F23=Delete
```

GoAnywhere Library

Specify the product library for GoAnywhere. The default is GOANYWHERE.

*NONE - GoAnywhere is not used.

Library Name - If GoAnywhere is installed, enter the library name.

GoAnywhere Resource

Specifies the resource name already configured in GoAnywhere that controls all the values needed to use GoAnywhere for Secure Shell FTP (SFTP) using SSH. Is only used if the GoAnywhere library has been specified.

*NONE - No resource is available for this FTP. Instead use the GoAnywhere Port, plus the Domain, Login Id and Login Password from the FTP values for this server name.

Resource-Name - If this resource has been configured in GoAnywhere, then the resource name is passed to the GoAnywhere API to initiate the secure FTP. If this resource has not been configured in GoAnywhere, then the call to GoAnywhere will result in a failed tranfer.

GoAnywhere Port#

Specifies the port used by GoAnywhere for use when a Resource Name is not used. If this port is used, it is done in conjunctin with the Domain, Login ID and Password configured in the Server profile.

> ***DFT** - The default Port for GoAnywhere is 22.

> **1-65535** - The requested port value is used. This value is validated to ensure it is in the proper range.

EFTPLST - Maintain FTP Directory

The EFTPLST command allows you maintain and create FTP Distributions Lists. An FTP Distribution List provides a way to send files to multiple destinations with a single command. Each entry on a list may simply reference a Server Profile name, as defined with EFTPSVR, or directly specify all FTP information without reference to any server profile. Issue the EFTPLST command to specify the distribution list to work with. The following display shows the parameters for EFTPLST.

```
                        Maintain FTP List (EFTPLST)

 Type choices, press Enter.

 FTP Distribution List  . . . . . LIST          *ALL
   Library  . . . . . . . . . . .                *LIBL




                                                                    Bottom
 F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
 F24=More keys
```

FTP Distribution List

*ALL - Shows all distribution list names in the specified library.

*CREATE - Presents the list entry definition screen.

Generic* - Distribution lists meeting the generic criteria are chosen. Enter the beginning portion of the object name and append an asterisk.

Name - Specify the name of the list to work with. A specific name presents a display listing the remote servers that comprise the list.

Library

*LIBL - The current job library list will be searched for the distribution list(s).

*CURLIB - The job's current library (CURLIB) will be searched for lists.

Name - Specific library name.

When a server list is entered or selected, the servers currently defined in that list are displayed. Each server can be edited and new servers can be added.

```
 4/02/07                     Work with FTP Lists

Type option, press Enter.
  1=Select   4=Delete

Opt Name         Library      Description
 _   FTPAS2PC    ESEND        FTP List to test AS/400 to PC
 _   FTPPC2PC    ESEND        FTP List to test PC to PC
 _   FTPSPL      ESEND        FTP List to test spool file FTP to AS/400
 _   FTPSPLPC    ESEND        FTP List to test spool file FTP to PC








                                                             Bottom
 F3/F12=End    F6=New List
```

Servers in a list may be fully described in the list entry as in line 1 above, or simply refer to a server profile defined through EFTPSVR as in the second line. The third server in this list refers to a defined profile, FTP100TST, and also overrides the remote directory for FTP100TST.

Pressing F6 to add a new server presents a display like the one below.

```
                          FTP List Entry              *CREATE


 Server Profile Name . . . . _____

 Remote System Name (F4) . . _____
                             _____
 Remote FTP Directory (F4) . _____
                             _____
 Current Directory (F4)  . . _____
                             _____
 Remote Login Id (F4)  . . . _____
                             _____
 Remote Login Password . . .
 Verify Login Password . . .


 F3=End  F12=Previous  ENTER=Add new line
```

See EFTPSVR for a description of each of the entry fields. When a list entry refers to a server profile and additional values are entered such as remote system name, or current directory, the values entered here override the profile values when the list is used in an FTP operation.

Esend Functions

Using Esend is easy since there are only 4 Esend commands that actually 'send' System i data. These commands are ESNDFILE, ESNDMAIL, EDISTRIB and WRKSPLFE. ESNDFILE incorporates the basic functionality of Esend while the other 3 commands simply extend that functionality in specific useful ways. EDISTRIB and WRKSPLFE are covered in the Advanced Features Section of this manual.

To understand Esend, it is useful to focus on just 2 parameters of the ESNDFILE command: RECIPIENT and TYPE. The RECIPIENT parameter controls where your data is to be sent, while the TYPE parameter is the first step in controlling what data to send.

The simplest RECIPIENT example is a single email address that would look something like: yourname@yourcompany.com. As with most mail products, multiple recipients can be listed separated by commas or semicolons. FTP recipients are almost as simple and are explained in detail in later sections.

The type parameter is important because you can send almost any type of System i data, including spool files, System i database files, Office documents, IFS stream files, or plain messages with no System i data at all. By indicating the type you wish to send, command prompting displays only those additional parameters that are relevant to that type of data. This makes it easy for you to specify the folder and document or library and file name or streamfile path and name or spool file name and job identification.

Please note that System i library system files cannot be sent to email recipients, though they can be sent to ftp recipients.

ESNDFILE - E-mail / FTP System i Data

ESNDFILE can FTP or email data base and spool file data from the System i library system or other file data from the System i IFS to remote FTP servers and SMTP addresses. ESNDFILE is also able to send multiple member files to remote systems.

When you prompt the ESNDFILE command, a display like the following will appear. You will need to page down to see some of the parameters. The value you enter for file type also controls the content of subsequent prompt displays.

```
                        ASC E-Send File (ESNDFILE)

 Type choices, press Enter.

 Recipient List . . . . . . . . . RECIPIENT    > _____
 _____
 _____
 _____
 _____
 _____
 _____
 _____ ...
 E-mail Subject . . . . . . . . . SUBJECT       *_____
 _____ ...
 E-Mail Message . . . . . . . . . MSG           *NONE_____
 _____
 _____
 _____
 _____ ...

 File Type  . . . . . . . . . . . TYPE          > *NONE___
                                                                More...
 F3=Exit   F4=Prompt   F5=Refresh   F10=Additional parameters   F12=Cancel
 F13=How to use this display        F24=More keys
```

RECIPIENT[1] - Recipient List

This parameter indicates the addresses that will receive your mail message or file transfer. Multiple entries can be separated with a semicolon (;) or a comma (,). You may enter as many addresses, email distribution lists, FTP entries and FTP lists as will fit into the 2000 character parameter. The RECIPIENT parameter is analyzed and split into two processing groups: email and FTP.

- Multiple addresses can be listed separated with a semicolon (;) or a comma (,). You may enter as many addresses as will fit into the parameter, up to 2000 characters

- Address type modifiers (to), (cc), (bcc) in front of an address set the address type for all subsequent addresses until the next type modifier is encountered. If no type modifier is specified on the first address, "(to)" is assumed.

  The following email type modifiers are supported:

to:	(to)	(to:)	(t)	t:
cc:	(cc)	(cc:)	(c)	c:
bcc:	(bc)	b:		

  The following FTP type modifiers are supported:

  ftp:
  ftpa: (to append)
  ftplist:
  sftp: (use for running with SSL

- A list of recipients in a source file may be referenced. Specify the file as *library/file(member)*. If you omit the library, *LIBL is assumed. If you omit the member name, *FIRST is assumed. See E-mail Recipient Lists.

  If you have access to the advanced Esend functions, you can also enter a name from an address book. The address book to be used is identified in the user defaults of the user (or OVRUSROPT parameter) sending the email. When a name is entered for a recipient, Esend first tries to find an address book entry if the advanced features are enabled. If an address book entry is not found, Esend will next try to find a file with the same name. If such a file is found, Esend will assume the first member contains recipient addresses.

Examples

1. `RECIPIENT('you@domain.com;(cc)him@domain2.com, her@domain.com; (bcc)nothim@domain3.com; mailgroups(distribs)')`

   The first addressee will be listed in the TO: part of the message, the second and third addressees will be listed in the CC: part, and the final address will receive a copy of the message, but won't be noted on the messages received by the other recipients. The DISTRIBS member in the file *LIBL/MAILGROUPS will be opened and the records in it will be processed in the same way.

2. `RECIPIENT('user1@mycompany.com;(cc)user2@mycompany.com; to:user3@mycompany.com;(bcc)user4@mycompany.com; cc:user5@mycompany.com')`

   The recipient parameter above creates:

   To: user1@mycompany.com;user3@mycompany.com
   Cc: user2@mycompany.com;user5@mycompany.com
   Bcc: user4@mycompany.com

---

1. See page page 92 for information on "Invalid Email Address Processing and Error Message Handling".

FTP Recipients

Multiple FTP recipients can also be referenced in the recipient parameter. See FTP Recipient Requirements on page 41 for details.

SUBJECT - E-Mail Subject

Specify the subject line that will be sent to email recipients.

<u>*</u> - The default value for keyword "SUBJECT" as set using the ESNDUSR command is used as the subject.

Subject - Up to 60 characters of mixed case text.

MSG - E-Mail Message

Specify the message text that will be sent to email recipients.

* - The default value for keyword "MESSAGE" as set using the ESNDUSR command is used as the message text.

<u>*NONE</u> - Indicates that no message text is sent with the email.

Message - Up to 512 characters of mixed case text. Two formatting controls (followed by a blank) may be used within the text:

&N or &n - Forces a line feed break.

&P or &p - Forces a paragraph break (with a preceding blank line).

TYPE - File Type

Specifies the type of file that will sent via email or FTP.

<u>*NONE</u> - No attachments will be sent with the email. ESNDFILE can be used to send simple messages from the System i.

*FILE - Used only for FTP. A System i database file will be sent.

*DOC - This uses the ATTFILE, DOC and FLR parameters to determine the document file to be sent by email or ftp.

*IFS - This uses the STMF parameter to determine the IFS stream file to be sent.

*SPL - Uses the SPLF, JOB and SPLNBR parameters to determine the spool file to be sent. This is the same as *SPL400 and uses the ESNDUSR (keyword: SPOOL) option to determine the actual conversion type. The RTF (Rich Text Format) options are determined by the Send Mail User Defaults (ESNDUSR - keyword: RTF).

*SPL400 - This is the same as *SPL and uses the ESNDUSR (keyword: SPOOL) option to determine the actual conversion type. The RTF (Rich Text Format) options are determined by the Send Mail User Defaults (ESNDUSR - keyword: RTF).

*SPLRTF - Same as *SPL, but uses the RTF (Rich Text Format) for sending Spool Information. The RTF options are determined by the Send Mail User Defaults (ESNDUSR).

*SPLHTML - Same as *SPL, but uses the HTML (HyperText Markup Language) for sending Spool Information. The HTML options are determined by the Send Mail User Defaults (ESNDUSR).

*SPLPDF - Same as *SPL, but converts the spool file to a PDF document. PDF conversion also offers the option of adding from 1 to 20 jpg image files to the PDF document as overlays.

*SPLFC - This yields a text file that includes Function Control information so that the first character of every record contains one of the ANSI forms control codes listed in the CL Reference manual. This option may be useful for microfiche production.

*SPLPC - This yields a text file that includes Print Control information so that the first four characters of every record contains skip- and space-before values useful in high-level language programs. This code can be viewed as SSSL, where SSS is the skip-before line value and L is the space-before value.

Many parameters described below depend on the value entered for the Data Type (TYPE) parameter. When you press enter after choosing a TYPE value, the appropriate parameters for the selected type will be presented.

Each type has its own unique set of parameters. They are explained below.

Sending System i Documents

A file type of *DOC results in prompting the ATTFILE, DOC and FLR parameters as shown below:

```
File Type  . . . . . . . . . .  TYPE           > *DOC____
Attachment File Name . . . . . .  ATTFILE        *_____



                                                 _____
Document . . . . . . . . . . .  DOC            _____
Folder . . . . . . . . . . . .  FLR            _____

Override to Send User Options  .  OVRUSROPT     *CURRENT___
PDF Passwords:                    PDFPWD
  User Password  . . . . . . .                  *NONE
  Owner Password . . . . . . .                  *NONE
```

ATTFILE - Attachment File Name

File name associated with the email attachment. Note, this does not identify the file to be sent, only the name to associate with the attachment. Up to 255 characters may be used, including a file extension.

* - Use the same name as the file being sent.

file-name - The name entered here will be the name of the email attachment.

DOC - Document

Specify the name of the DLS (document library system) document that will be sent via email and/or FTP. If a document is specified, the folder is also required.

FLR - Folder

Specify the name of the DLS folder containing the document to be sent via email and/or FTP.

OVRUSROPT - Override to Send User Options

Several ESNDFILE parameters can use default values maintained by the ESNDUSR command (page 10). The OVRUSROPT parameter allows the ESNDMAIL process to use defaults from a different user id than the user actually running ESNDMAIL.

*CURRENT - Default settings for the user running the ESDFILE request are used.

name - Defaults for the named user id are used.

Sending System i Database Files

A file type of *FILE results in prompting the FILE, MBR and DATATYPE parameters as shown below.

```
File Type  . . . . . . . . . .  TYPE        > *FILE____
Frombase File  . . . . . . . .  FILE          _____
  Library  . . . . . . . . . .                *LIBL_____
Member . . . . . . . . . . . .  MBR           *FIRST____
Data Type  . . . . . . . . . .  DATATYPE      *DATA
Override to Send User Options  . OVRUSROPT    *CURRENT__
PDF Passwords:                  PDFPWD
  User Password  . . . . . . .                *NONE_____
  Owner Password . . . . . . .                *NONE_____
```

FILE (and library) - From Base File

This parameter is used to specify the name of the System i database file that is to be sent. When sending database files, be sure the target system has a file with the exact same fields with correct field lengths and data types in the record because ftp cannot create a file with the correct attributes.

Note: Do not use this parameter for email. Database files can only be sent using FTP.

file-name - Specify the full name of the file to send with FTP.

library - Used with the FILE parameter to identify the library in which the file resides.

*LIBL - Causes the library list to be searched for the file.

library-name - Name of the library where the file is located.

MBR - Member

Used with the LIBRARY parameter to specify the file member.

*FIRST - The first member in the file is sent.

*ALL - All the members in a file are to be sent. When sending multiple member files, the target path is the Current Directory entry in the server profile and/or FTP list named on the recipient parameter above. Any path information specified in the recipient parameter is ignored for multiple member files.

member - The specified member is sent. If not found, an error occurs. For a single member, the target path is the Remote FTP Directory in the server profile and/or FTP list named on the recipient parameter. For direct entry of the remote server address on the recipient parameter, the target path is the specific path specified as part of the recipient parameter. If the path is omitted, the root directory will be used.

DATATYPE - Data Type

Specify how a System i file should be sent when using FTP (Spool files automatically default to *TEXT).

*DATA - Sends data files in binary mode to all remote systems. This allows packed field information to be sent without conversion. Files sent to a remote System i using *DATA should first be created on the remote system to ensure record and field information is preserved.

*TEXT - Sends text files in EBCDIC mode to a remote System i and in ASCII mode to a remote PC or System i PC File system. This is a convenient method of sending text files such as source

code files. Text files sent using *TEXT are created on the remote system with the correct record length and a single field per record. Files with packed data should not be sent using *TEXT.

Sending IFS Stream Files

A file type of *IFS results in prompting the ATTFILE, and STMF parameters as shown below.

```
File Type  . . . . . . . . . .   TYPE        > *IFS____
Attachment File Name . . . . . . ATTFILE       *_____

                                             _____
Stream File  . . . . . . . . . . STMF          _____


 ...
Override to Send User Options  . OVRUSROPT     *CURRENT___
```

ATTFILE - Attachment File Name

Attachment file name - The name associated with the email attachment. Note, this does not identify the file to be sent, only the name to associate with the attachment. Up to 255 characters may be used, including a file extension.

* - Use the same name as the file being sent.

file-name - The name entered here will be the name of the email attachment.

STMF - Stream File

Specify the path and name of the PC stream file that is sent via email and/or FTP. Up to 2,000 characters are allowed. Specify the FULL path name. If the path and file name are not valid, an error message is issued, and the command will not complete successfully.

IFS Path Rules

Path names are entered left-to-right, beginning with the highest level directory and ending with the name of the object to be created. The name of each component in the path is separated by a slash (/) or back slash (\); for example:

Dir1/Dir2/Name.ext' or 'Dir1\Dir2\Name.ext'

A '/' or '\' at the beginning of a path name means that the path begins at the topmost directory, the "root" (/) directory. For example, '**/Dir1/Dir2/Name.ext**' where **/Dir1** is a subdirectory of the "root".

If the path name does not begin with '/' or '\', the path is assumed to begin at the current directory of the user entering the command. The current directory can be determined using the DSPCURDIR command. For example, '**Dir1/Name.ext**' where **Dir1** is a subdirectory of the users current directory.

If the path begins with a '~' followed by '/' or '\', the path is assumed to begin at the home directory defined in the user profile of the user entering the command. For example, '**~/Dir1/Name.ext**' where **Dir1** is a subdirectory of the users home directory.

If the path begins with a '~' followed by a user name and then followed by '/' or '\', the path is assumed to begin at the home directory of the user identified by the user name. For example: '~UserName/Dir1/Name.ext', where Dir1 is a subdirectory of the home directory for UserName.

Sending Spool Files

A file type of *SPL(*SPLTXT, *SPLHTM, *SPLRTF, *SPLPDF) results in prompting the ATTFILE, SPOOLED FILE INFORMATION AND JOB parameters as shown below:

```
File Type  . . . . . . . . . .  TYPE       > *SPL
Attachment File Name . . . . .  ATTFILE      *


Spooled File . . . . . . . . .  SPLF         _____
Job Name . . . . . . . . . . .  JOB          *_____
  User . . . . . . . . . . .                 _____
  Number . . . . . . . . . . .               _____
Spooled file number  . . . . .  SPLNBR       *LAST
Number of Consecutive Spools . .  CONSEC     1
Override to Send User Options  .  OVRUSROPT  *CURRENT
```

ATTFILE - Attachment File Name

Attachment file name - The name associated with the email attachment. Note, this does not identify the file to be sent, only the name to associate with the attachment. Up to 255 characters may be used, including a file extension.

* - Use the same name as the file being sent.

file-name - The name entered here will be the name of the email attachment.

SPLF - Spooled File

Specify the name of the spool file to be sent via email and/or FTP.

For email, spool files can be emailed as text, rtf or html files. For FTP, spool files can be sent to another System i as a spool file. They are sent to Output Queue, QSYSPRT, on the remote System i with file name EFTPSPL and held. Spool files sent to a PC, or a PC type file system on a System i, are sent as text files without any formatting options. e.g. no CRLF.

JOB - Job Name/User/Number

Specify the name of the job that created the spool file named in the SPLF parameter.

* - The job that issued this command is the job that created the spool file.

job-name - The job name associated with the spool file.

user-name - The user name associated with the spool file.

number - The job number associated with the spool file.

SPLNBR - Spooled File Number

Specify the spool file number to be associated with the SPLF parameter.

*LAST - The SPLF with the highest number is used.

*ONLY - Only one spool file in the job has the specified file name; therefore, the number of the spool file is not necessary.

spool-file-number - The SPLF with this specific number will be sent.

CONSEC - Number of Consecutive Spools

Specify the number of consecutively-numbered files to be sent when multiple spool files with the same file name and job are to be included as attachments via FTP or email.

1 - Only one spool file is sent as the attachment.

Range - The range for this parameter is 1 to 8. If a value greater than 8 is entered, the maximum 8 is assumed.

PDF Related Parameters

```
PDF Passwords:                    PDFPWD
  User Password  . . . . . . . .          *NONE_____
  Owner Password . . . . . . . .          *NONE_____

PDF Image Overlays:               PDFOVERLAY
  Unit of Measure  . . . . . . .          *IN
  Image Definition:                       _
  Image file path  . . . . . . .                    _____

  Scaling percentage . . . . . .          100_____
  Offset Down  . . . . . . . . .          0_____
  Offset Across  . . . . . . . .          0_____
                        + for more values _

  Remove file after sending  . . REMOVE   *NO_
```

PDFPWD - PDF Passwords

Use this parameter to specify user and owner passwords for a created PDF document. These values only apply when a PDF formatted result will be created. The parameter allows two values to be specified. The USER password controls access to the document. When a user password is applied to a PDF document, it cannot be opened unless the password is supplied.

The OWNER password controls access (as defined in the user defaults on page 13) to the document's security settings. If specified, the permissions set in the document (the ability to print, change text, and so on) cannot be changed unless this password is provided.

*NONE - No password will be applied to the document.

PDFOVERLAY - PDF Image Overlays

Specifies JPG image files to overlay on spool file output that is to be converted to PDF. Up to 20 image files can be included in the resulting pdf. The image files become the background for the pdf document with the spool text on top. When adding multiple images, they must be positioned properly to avoid interfering with one another.

Unit of Measure - *IN for inches, *CM for centimeters. Unit of measure applies to the offset parameters that follow.

The following elements can be specified for each of up to 20 image overlays.

Image file or URL - Enter the path or Web location and file name for the overlay.

Scaling percentage - Set a scaling value to shrink or expand the image.

100 - The value 100 retains original image size. Greater values expand, smaller values shrink.

*FIT - Scale image to fit the page.

*FITWIDTH - Scale image to fit page width while keeping original height.

*FITLENGTH - Scale image to fit page length while keeping original width.

Offset Down - The number of units, based on Unit of Measure, to shift the top of the image lower on the page.

Offset Across - The number of units, based on Unit of Measure, to shift the left edge of the image.to the right.

REMOVE

Specifies whether the file should be deleted after sending.

*NO - The original file is not deleted.

*YES - The file is deleted.

ESNDMAIL - E-Mail Multi-Attachment Messages

The ESNDMAIL command is designed to provide a mail merge type of capability where the attachment information can be either merged into the body of a message, or sent as a separate attachment. With the ability to include information from multiple sources within a single email message, it is a simple matter to create hybrid messages where some information is embedded as part of the message body while other distinct attachments such as XLS spreadsheets can be included to be used in other PC programs.

Attachments can be any combination of System i spool files and/or pc formatted files from the IFS. Up to 300 individual attachments can be included with a single message.

Information from multiple attachments can be embedded into the body of the message with full control over the insertion location for each attachment. In addition, it is possible to include attachments that are both embedded within the message body and preserved as distinct attachments.

Each ATTACHMENT is described by an instance of the list parameter named ATTLIST. ATTLIST has several elements that identify the attachment and other elements that control how the attachment is to be processed.

Embedding text within the Message Body

ESNDMAIL supports two methods for embedding text in a message. The easiest method simply appends the attachment contents at the end of the text supplied on the MSG parameter. The other method inserts the attachment contents at a designated insertion point that is marked with a place-holder in the message text. The actual method used is controlled through the attachment type in conjunction with the presence of placeholders in the message. These controls are discussed in the discussions about the MSG and Attachment Type parameters below.

An important consideration for embedding attachment text within a message is to make sure that the attachment content is consistent with the message type as specified on the MSGTYPE parameter. Messages can be either *TEXT or *HTML. When sending an *HTML message, any embedded attachments should also be HTML in order to insure the best possible message appearance. For IFS stream files, the format is determined by the process that creates the file. ESNDMAIL does not convert IFS data from one type to another. For spool file attachments, the attachment type is controlled directly by the ATTACHMENT TYPE element of the ATTLIST parameter. Spool file data is converted to *TEXT, *RTF, *HTML or *PDF according to the value specified for ATTACHMENT TYPE.

The following display is representative of the command prompting for ESNDMAIL. Several separate displays have been combined into the image below for convenience.

ESNDMAIL supports specialized functions for email and does not support FTP processing.

```
                    E-Mail Multi-Attachments (ESNDMAIL)

 Type choices, press Enter.

 Recipient List . . . . . . . . . RECIPIENT      _____
                                                                          ...

 E-mail Subject . . . . . . . . . SUBJECT        *_____
                                                                          

 E-Mail Message . . . . . . . . . MSG            *NONE_____
                                                                          ...

 Message Type . . . . . . . . . . MSGTYPE        *DFT_
 PDF Passwords:                    PDFPASSWRD
    User Password  . . . . . . . .                *NONE_____ ...
    Owner Password . . . . . . . .                *NONE_____ ...

                          Additional Parameters

 Importance . . . . . . . . . . . IMPORTANCE     *NORMAL
 Override to Send User Options  . OVRUSROPT       *CURRENT___

 List of Attachments:             ATTLIST         _
    Attachment File Name . . . . .                *_____ ...

    Attachment Type  . . . . . . .                *DFT___
    Stream File  . . . . . . . . .                _____
                                                                          ...

    Spooled File . . . . . . . . .                _____
    Job Name . . . . . . . . . . .                *_____
       User . . . . . . . . . . . .                _____
       Number . . . . . . . . . . .                _____
    Spooled file number  . . . . .                *LAST_____
    Maximum Returned Spools  . . .                *ONLY_
                          + for more values       _
 PDF Images Unit of Measure . . . IMAGEUOM        *IN

 PDF List of Image Files:         IMAGES          _
    Image file path  . . . . . . .                _____ ...
    Scaling percentage . . . . . .                100_____
    Offset Down  . . . . . . . . .                0_____
    Offset Across  . . . . . . . .                0_____
                          + for more values       _
```

RECIPIENT[1] - Recipient List

This parameter indicates the addresses that will receive your mail message or file transfer. Multiple entries can be separated with a semicolon (;) or a comma (,). You may enter as many addresses, and email distribution lists as will fit into the 2000 character parameter.

- Multiple addresses can be listed separated with a semicolon (;) or a comma (,). You may enter as many addresses as will fit into the parameter, up to 2000 characters

- Address type modifiers (to), (cc), (bcc) in front of an address set the address type for all subsequent addresses until the next type modifier is encountered. If no type modifier is specified on the first address, "(to)" is assumed.

  The following email type modifiers are supported:

to:	(to)	(to:)	(t)	t:
cc:	(cc)	(cc:)	(c)	c:
bcc:	(bc)	b:		

---

1. See page page 92 for information on "Invalid Email Address Processing and Error Message Handling".

- A list of recipients in a source file may be referenced. Specify the file as *library/file(member)*. If you omit the library, *LIBL is assumed. If you omit the member name, *FIRST is assumed. See E-mail Recipient Lists.

  If you have access to the advanced Esend functions, you can also enter a name from an address book. The address book to be used is identified in the user defaults of the user (or OVRUSROPT parameter) sending the email. When a name is entered for a recipient, Esend first tries to find an address book entry if the advanced features are enabled. If an address book entry is not found, Esend will next try to find a file with the same name. If such a file is found, Esend will assume the first member contains recipient addresses.

Examples

1. `RECIPIENT('you@domain.com;(cc)him@domain2.com, her@domain.com; (bcc)nothim@domain3.com; mailgroups(distribs)')`

The first addressee will be listed in the TO: part of the message, the second and third addressees will be listed in the CC: part, and the final address will receive a copy of the message, but won't be noted on the messages received by the other recipients. The DISTRIBS member in the file *LIBL/MAILGROUPS will be opened and the records in it will be processed in the same way.

2. `RECIPIENT('user1@mycompany.com;(cc)user2@mycompany.com; to:user3@mycompany.com;(bcc)user4@mycompany.com; cc:user5@mycompany.com')`

The recipient parameter above creates:

```
To:  user1@mycompany.com;user3@mycompany.com
Cc:  user2@mycompany.com;user5@mycompany.com
Bcc: user4@mycompany.com
```

Note: TO is assumed if the list starts without a type delimiter.

SUBJECT - E-Mail Subject

Specify the subject line that will be sent to email recipients.

* - The default value for keyword "SUBJECT" as set using the ESNDUSR command is used as the subject.

Subject - Up to 60 characters of mixed case text.

MSG - E-Mail Message

Specify the message text that will be sent to email recipients.

*NONE - Indicates that no message text is sent with the email.

* - The default value for keyword "MESSAGE" as set using the ESNDUSR command is used as the message text.

*MSG - The data from the attachment is still used in the body of the message.

Message - Up to 1000 characters of mixed case text. Attachment place holders (see below) can be specified anywhere in this text to determine which attachments to embed and where. Two formatting controls (followed by a blank) may be used within the text:

&N or &n - Forces a line feed break.

&P or &p - Forces a paragraph break (with a preceding blank line).

Attachment Place Holders

Attachment place holders are the mechanism for controlling where attachments are embedded into the email message body.

Each attachment parameter list entry (ATTLIST parameter) that is not defined as type *MSG is allocated a place holder number.

Stream files, documents and spool file attachment can all be assigned a place holder number. When multiple spool files are selected by a single ATTLIST entry (see ATTLIST parameter) the same place holder number is used for all the spool files selected by that entry.

The place holder entered into the text of the MSG parameter determines exactly where the corresponding attachment is embedded in the message. Place holders are coded in a message as follows:

*ATT or *ATT1   references the first attachment parameter list entry.

*ATT2   references the second attachment parameter list entry, etc.

For example, the message text "Phrase one *ATT phrase two." would embed the content of first attachment between "Phrase one" and "phrase two", in the body of the message.

When multiple spool files are selected by a single ATTLIST entry (see ATTLIST parameter) the same place holder number is used for all the spool files selected by that entry.

MSGTYPE - Message Type

Specify the format of the message body.

*DFT - The message type is determined from the ESNDUSR defaults (keyword: MSGTYPE).

*TEXT - The body of the email message is formatted as plain text.

*HTML - The body of the email message is formatted as HTML.

PDFPWD - PDF Passwords

Use this parameter to specify user and owner passwords for a created PDF document. These values only apply when a PDF formatted result will be created. The parameter allows two values to be specified. The USER password controls access to the document. When a user password is applied to a PDF document, it cannot be opened unless the password is supplied.

The OWNER password controls access (as defined in the user defaults on page 13) to the document's security settings. If specified, the permissions set in the document (the ability to print, change text, and so on) cannot be changed unless this password is provided.

*NONE - No password will be applied to the document.

IMPORTANCE

A hint from the originator to the recipients about how important a message is. Not used to control transmission speed.

*NORMAL - Importance is normal

*HIGH - Importance is high. Most email applications can identify mail with high importance.

*LOW - Importance is low. Most email applications can identify mail with low importance.

OVRUSROPT - Override to other user settings Parameter

Several ESNDMAIL parameters can use default values maintained by the ESNDUSR command (page 10). The OVRUSROPT parameter allows the ESNDMAIL process to use defaults from a different user id than the user actually running ESNDMAIL.

*CURRENT - Default settings for the user running the ESDMAIL request are used.

name - Defaults for the named user id are used.

ATTLIST - List of Attachments

The ATTLIST parameter identifies and describes the attachments to be included with the message. Each instance of ATTLIST identifies a single attachment. Up to 300 attachment entries that can be sent in a single email process. Each ATTLIST instance defines the selection of one PC file OR the criteria for selecting one or more spool files.

Attachment File Name - The attachment file name as it will seen by the recipient(s). Where multiple attachments have the same name, a file naming convention ensures that all attachment names are unique.

> * - The attachment file name is the same as the PC file or the spool file name used to identify the attachment.

> Name - Text entered here becomes the attachment name seen by the recipients.

Note: The attachment file name is ignored if the Attachment Type (next parameter) is *MSG or *NONE.

Attachment Type - The attachment type determines whether the attachment can be embedded in the message body or sent as a distinct attachment. Also, for spool files, how they should be formatted, i.e. txt, pdf, html, etc.

> ***DFT** - The type for a spool file is determined by the ESNDUSR default settings for keyword SPOOL. This option is assumed for all PC file attachments. All attachments with this type can be positioned in the message body through the use of a place holder.

> *MSG - The attachment is only used in the body of the message and is appended to the message body after the text and any other embedded attachments. See Example 1.

> *NONE - The attachment is only used in the body of the message and can be positioned within the message text by means of a place holder. See Example 2.

> *TEXT - Spool files are sent unconverted. Attachments with this type are available for use with place holders.

> *TEXTFC - This yields a text file that includes Function Control information so that the first character of every record contains one of the ANSI forms control codes listed in the CL Reference manual. This option may be useful for microfiche production.

> *TEXTPC - This yields a text file that includes Print Control information so that the first four characters of every record contains skip- and space-before values useful in high-level language programs. This code can be viewed as SSSL, where SSS is the skip-before line value and L is the space-before value.

> *HTML - Spool files are converted to HTML format. Attachments with this type are available for use with place holders.

> *RTF - Spool files are converted to RTF (Rich Text Format). Attachments with this type are available for use with place holders, however Rich Text Format is NOT the same as Enriched Text. It is not advisable to embed RTF attachments.

*PDF - Spool files are converted to PDF (Adobe). PDF attachments cannot be embedded within the message body.

*Note: For spool files with Attachment Type *MSG or *NONE, the formatting is determined by the MSGTYPE parameter above. Attachment types *MSG and *NONE are not sent as distinct attachments.*

This is a summary of embedding and attachment options.

Attachment Type	Embedded	Place Holder	Attachment
*MSG	Always at end	No	No
*NONE	If selected	Yes	No
Other	If selected	Yes	Yes

Stream File - Specifies the path and name of the PC stream file to be sent via email. If the path and file name is not valid, an error message is issued, and the command does not complete successfully.

Indicate a valid PC path and file name.

For documents and folders, specify a path of /qdls/folder_name/document_name

Path names are entered left-to-right, beginning with the highest level directory and ending with the name of the object to be created. The name of each component in the path is separated by a slash (/) or back slash (\); for example; 'Dir1/Dir2/Name.ext' or 'Dir1\Dir2\Name.ext' Path Rules

A '/' or '\' at the beginning of a path name means that the path begins at the topmost directory, the "root" (/) directory. For example, "/Dir1/Dir2/Name.ext" where /Dir1 is a subdirectory of the "root".

If the path name does not begin with '/' or '\', the path is assumed to begin at the current directory of the user entering the command. For example, 'Dir1/Name.ext' where Dir1 is a subdirectory of the users current directory.

If the path begins with a '~' followed by '/' or '\', the path is assumed to begin at the home directory of the user entering the command. For example, '~/Dir1/Name.ext' where Dir1 is a subdirectory of the users home directory.

If the path begins with a '~' followed by a user name and then followed by '/' or '\', the path is assumed to begin at the home directory of the user identified by the user name. For example, '~UserName/Dir1/Name.ext', where Dir1 is a subdirectory of the home directory for UserName.

Note: Directories in a path MUST exist prior to running the command. Current directory is changeable by command. The home directory is defined in the user profile.

Spooled File - The 4 entries for spool file information allow one or more spool file attachments to be selected based on a selection criteria. Specify the spool file name or group of spool files to be included.

*ALL - All spool files that fit other criteria (Job, User Id and Job number) are selected.

generic* - All spool files that have a spool file name beginning with the same characters as those preceding the * are included if they fit within other selection criteria.

name - Only spool files with the same name are selected if they fit within other selection criteria.

Job Name - Specifies the name of the job that created the spooled file whose data records are to be included in the selection criteria.

* - Uses the name, user and number from the current job. Using * for the job name requires that the user name and job number must be blank.

name - The job name associated with the selection criteria. If blank, all job names are included in the election.

User - The selection is based on the selected user only.

*CURRENT - The selection is based on the current user only.

*ALL - The selection is not based on user name.

Number - The job number associated with the selection criteria. If left blank, the selection is based on any job number.

Spooled File Number - Allows further selectivity by file number.

*LAST - Uses the last spool file. The spool file name, and job information must be specified as allowed by the IBM command DSPSPLF. I.e. you cannot specify generic, *ALL or blank where a value is normally required.

*ONLY - Assumes that only one spool file exists for the job information specified. An error occurs of there is more than one.

*ALL - The selection is based on any spool file number.

Number - Determines the starting spool number for selection.

Maximum Returned Spools - Determines how many of the spooled entries that meet the criteria above will be included with the email.

*ONLY - The first spool file that is selected is the only one used.

*ALL - Up to 300 (maximum) spool files can be selected.

number - In the range 1 to 300 (maximum) spool files can be selected.

IMAGEUOM - PDF Images Unit of Measure

Unit of measure applies to the offset parameters that follow.

*IN - for inches

*CM - for centimeters

IMAGES - PDF List of Image Files

Specifies JPG image files to overlay on spool file output that is to be converted to PDF. Up to 20 image files can be included in the resulting pdf. The image files become the background for the pdf document with the spool text on top. When adding multiple images, they must be positioned properly to avoid interfering with one another.

The following elements can be specified for each of up to 20 image overlays.

Image file or URL - Enter the path or Web location and file name for the overlay.

Scaling percentage - Set a scaling value to shrink or expand the image.

> 100 - The value 100 retains original image size. Greater values expand, smaller values shrink.
>
> *FIT - Scale image to fit the page.
>
> *FITWIDTH - Scale image to fit page width while keeping original height.
>
> *FITLENGTH - Scale image to fit page length while keeping original width.

Offset Down - The number of units, based on Unit of Measure, to shift the top of the image lower on the page.

Offset Across - The number of units, based on Unit of Measure, to shift the left edge of the image.to the right.

FTP Overview

FTP is used by Esend whenever the recipient value designates an FTP recipient. FTP recipients are denoted with a prefix of (ftp) or ftp: as described in the discussion of FTP recipient below.

Target Machine - EBCDIC vs. ASCII

Esend supports specific transfer types to ensure that files are transferred between systems with content preserved. Transfer type is determined automatically depending on the type of file and the remote system type as determined by the form and content of the destination path. See FTP Path Rules below.

All transfers between System i library systems are Binary. Binary format is used to transfer data without conversion to prevent loss or corruption of data. While binary transfer is able to send packed numeric data, it is important to note that FTP is not able to transfer Database file definition information to the recipient. This means that FTP cannot create a file in a target System i library that looks like the original file on the sending system. It will create a file, but will use an arbitrary record length with a single field in the record. Therefore, in order to use FTP to transfer System i library system files, it is necessary to first create the target file on the recipient system with the proper attributes.

Spool files sent to a remote System i arrive as spool files on the remote system. They are placed on the QSYSPRT output queue with a file name of EFTPSPL and are owned by the remote user id. Spool files sent to a non System i become ASCII text files named EFTPDTAF.TXT1 and are placed in the default current directory for the login id used for the transfer.

Files transferred from the System i library system to non System i type systems use EBCDIC to ASCII conversion. ASCII conversion allows both spooled file and text file data to be transferred correctly from the System i to non System i systems including System i IFS file systems. Transfer of files containing packed data can also be accomplished by using the Sequel EXECUTE function to unpack the data so that conversion to ASCII will accurately translate numeric data.

FTP Recipient Requirements

A number of Esend commands have a recipient parameter where an ftp (or email) recipient can be entered. Information for frequently used recipients can be entered in a repository to reduce data entry requirements at runtime. Before getting into the specific repository commands, the following discussion will review the different types of information required to send data using ftp. The following dis-

cussion is relevant to each command that supports a recipient parameter, as well as the specific repository commands that save this information for future use.

Effective use of FTP depends on understanding the different types of information provided to FTP through the RECIPIENT parameter on various Esend commands.

FTP String for RECIPIENT Parameter:

The following diagram illustrates the distinct types of information needed.

```
                                 .-(ftp)----.
>>----COMMAND---RECIPIENT-+----------+---Remote System Address--[-+------------+-]-->
                          '-ftp:-----'                            +-/path/file-+
                          '-ftpa:----'                            +-/path/*----+
                          '-sftp:----'                            '-/file------'

>-----[ (remote login / remote loging password) ]----------------+-----+---------->
                                                                  +-[,]-+
                                                                  '-[;}-'
```

(ftp), ftp:, ftpa: sftp:, or ftplist:

The FTP prefix is required to indicate that the address which immediately follows is an FTP address, server profile or ftp list.

Depending on the FTP user default settings (page 11) the FTP prefix '(ftp)' and 'ftp:' will either replace an existing file, create a new copy, or append the existing file. The prefix 'ftpa:' is used explicitly to append the existing file.

Secure FTP
Use SFTP (secure FTP), to transfer files using SSL (Secure Sockets Layer). This requires a Server Profile entry that defines the secure connection. See the Secure FTP settings of the EFTPSVR command (page 19) to create this entry. Before using SFTP, you must have installed the prerequisite programs and set up digital certificates on your Power System. See the Secure FTP section in the Appendix for more information.

Remote System Address

The Remote System Address (RSA) specifies the name or IP address to which files are transferred. A name may be an Esend defined Server Profile, a name in a local host table or a Domain Name System (DNS) address.

The Remote System Address can also be supplied by referencing an Esend FTP list. Server profiles and FTP lists are described in the following sections. Syntax for using a server profile name is identical to the syntax for using an actual remote system address, though the path and login information are optional when a server profile name is used.

/path/file or %file

This optional parameter allows a file path to be specified at the target location. Note that this path and file name are not used when sending spool files or multimember files. The process for sending spool

files and multimember files uses the default current directory instead of the path entered in this parameter. The '%' character is an optional delimiter that can be used to omit the leading '/' as a path.

path - The path entry begins and ends with the '/' character and immediately follows the RSA. When a server profile is used for the Remote System Address, the Remote FTP directory from the profile supplies the path value unless an explicit path is entered as part of the Recipient Parameter. The path may be omitted by entering a single '/' followed by a file name or by omitting the path and file name entirely.

file - The file part of the Recipient parameter specifies the filename that ftp will write to on the remote system. If the file does not exist, it will be created. The file name immediately follows the path specification. A file name can be specified even when the path is not. The omitted path is represented by a single '/' character. When a server profile is used and the explicit path is omitted, the file name is concatenated to the server profile path to determine the complete destination for the ftp data. When an explicit path is entered, the explicit path overrides any path information from any server profiles or ftp lists that may be used to supply the remote system address. Note that the file name cannot be followed by a '/' character. If the path ends in a '/' FTP acts as though an '*' placeholder name has been entered. It is recommended that the target file name be supplied. '*' is a placeholder that gets replaced with the source file name when the transfer begins. The '*' placeholder may be a useful shortcut when using the ESNDFILE command to send file data to another system.

Path examples:

`ftp:111.222.333.444%filename`

This example will put the file to the remote server without a leading '/'.

`ftp:111.222.333.444/qdls/ftpdocs/filename`

This direct entry ftp recipient explicitly specifies the full destination. The machine appears to be a System i, and the destination is a folder in the document library system.

`ftp:111.222.333.444/filename`

This direct entry ftp recipient omits the path specification. The file will be written to the root directory.

`ftp:serverid#1/dir1/sub1/sub2/filename`

This recipient is specified as serverid#1. Esend first checks for a server profile by that name and uses the available information if found. If there is no server profile named serverid#1, Esend treats the name as a Domain Name and lets the System i attempt to resolve the IP address. Since a path is explicitly specified, the remote ftp directory information in the server profile (if found) will be ignored. The file will be written to folder sub2 in folder sub1 in folder dir1.

`ftplist:<eastftplst>/filename`

or

`ftplist:<*LIBL/eastftplst>/filename`

This recipient is specified as eastftplst, an Esend defined ftp list. Each recipient in the list may have its own remote ftp directory path defined as part of the list entry or as part of the server profile referenced in the list entry. Since a path is not specified, the remote ftp directory information for each remote address in the list will be concatenated with the filename to supply a complete destination for the ftp data

`ftp:111.222.333.444/qsys/ftpdatalib/filename`

This direct entry ftp recipient explicitly specifies the full destination. The machine appears to be a System i, and the destination is a library named FTPDATALIB in the library file system. Remember, ftp cannot create a library system file to match the definition of the source file, so the target file in ftpdatalib must be created prior to doing the ftp.

Note that path and file name information is not relevant when sending spool files or multiple member file data. The process for sending these types of information makes use of current directory information and ignores the path information entered here.

Remote Login Id and Password

Login Id and Password are enclosed in parentheses and separated by a '/'. The Login Id and Password must be valid on the remote system and must enable sufficient authority to perform the transfer. Passwords entered in the line are NOT encrypted and are therefore available to anyone who could retrieve the command (as from a joblog).   This is one of the more important reasons for using Server Profiles to supply remote FTP information in preference to direct parameter entry.

Login and Password Example

This example shows how the SEQUELEX/CUSTMAST file can be sent. The RECIPIENT parameter of the ESNDFILE command begins with FTP to indicate an FTP address and is followed by the RSA, target path (library TRAINING), target file name (CUSTMAST) and login id of USER3 with a password of USER3.

```
ESNDFILE RECIPIENT('FTP:11.222.33.444/QSYS/TRAINING/CUSTMAST
         (USER3/USER3)') TYPE(*FILE) FILE(SEQUELEX/CUSTMAST)
```

Note that the CUSTMAST file must exist in the TRAINING library before initiating the FTP in order to receive the data in an easily usable form. The record format of the destination file must match that of the source file. FTP is not able to perform any data mapping operations, so if the target file is does not have the required record format, the results of the ftp operations will not be usable.

Additional Examples

Using a server profile (EFTPSVR) with a remote directory path:

Recipient Parameter	Remote Directory from SRV01	Remote Path for FTP
ftp:svr01/myfile.xls	/rmtdir	/rmtdir/myfile.xls
ftp:svr01/myfile.xls	Blank	/myfile.xls
ftp:svr01%myfile.xls	/rmtdir	/rmtdir/myfile.xls
ftp:svr01%myfile.xls	\rmtdir	\rmtdir\myfile.xls
ftp:svr01%myfile.xls	Blank	myfile.xls
ftp:svr01%/myfile.xls	/rmtdir	/rmtdir/myfile.xls
ftp:svr01%/myfile.xls	Blank	/myfile.xls

When not using a server profile:

Recipient parameter	Remote path for FTP
ftp:10.1.1.10/myfile.xls	/myfile.xls
ftp:10.1.1.10%myfile.xls	myfile.xls
ftp:10.1.1.10%/myfile.xls	/myfile.xls
ftp:10.1.1.10%/rmtdir/myfile.xls	/rmtdir/myfile.xls
ftp:10.1.1.10%rmtdir/myfile.xls	rmtdir/myfile.xls

FTP Path Rules

It is important to understand the path and file syntax that FTP can process. A file name is the name of a PC file with or without an extension that resides in a directory or is a System i file that resides in a library. The name does not include the directory or library in which the file resides. A path name is the name of the PC directory and sub directories or of the System i library in which the file will or does reside. When combined, these constitute the FTP path.

When looking at a completed FTP path, the file name is the identifier following the last '/' (forward slash). The path name is the text string preceding the last '/' (forward slash).

FTP Path syntax

A valid FTP path name can be in System i format or in PC format.

PC Format (Namefmt 1 in IBM FTP terms):

The PC format can be used to designate any IFS path as well as System i library system paths.

Library System paths specify a qualifier for each part of the path indicating what type of information each piece of the path represents.

Examples:

Library file system: /qsys.lib/libname.lib/filename.file/mbrname.mbr

PC File system: /mydir/mysubdir/myfile.ext

System i format (Namefmt 0 in IBM FTP terms):

The System i format is a simplified version of the PC format and is provided to facilitate entry of path information when the destination is a System i library.

/QSYS/Libraryname/Filename . Member name

e.g. /qsys/mylib/myfile.mymbr

Esend interprets any path that begins '/qsys/' as a System i formatted path. For this reason, you cannot use Esend to FTP to an IFS folder named QSYS. (Note that the folder name for the library system is QSYS.LIB.

FTP Target Path hierarchy

FTP recipients can be specified by direct entry of all information in the recipient parameter or by referencing named server profiles or ftp lists on the recipient parameter. When using named profiles and ftp lists, target path information can still be directly entered as part of the recipient value. When both named profiles/lists and direct path entry is used, there is a hierarchy for determining the actual ftp target path.

The target path used will be based on selection of the first available in the order shown:

- Direct parameter entry - overrides all other sources
- List entry - overrides Server Profile path entries
- Server Profile - used when not overridden by list entry or direct entry

For example, a path specified directly in the RECIPIENT parameter overrides the path in a list. Likewise, a path specified in a list entry overrides the path in the Server Profile referenced in the list entry.

A target path of * (asterisk) will substitute the source path.

FTP Target File Name

If a target path is available, the target file name is concatenated to the path to provide the FTP target path.

If neither the target path nor target file is specified, the FTP path of the source file is used as the target FTP path.

If a target path exists and a target file name is not specified or is * (asterisk), the source file name is used as the target file name.

Path Examples

This chart shows how the local and remote target paths are related.

Source FTP Path	Target Path	Resulting FTP target
Locallib/localfile.localmbr	remotelib/*	remotelib/localfile.localmbr
/tmp/target.txt	/home/mydir/*	/home/mydir/target.txt
Locallib/localfile.localmbr	*	locallib/localfile.localmbr
/tmp/target.txt	*	/tmp/target.txt
Locallib/localfile.localmbr	remotelib/ remotefile.remotembr	remotelib/remotefile.remotembr
/tmp/target.txt	/home/mydir/ newtarget.txt	/home/mydir/newtarget.txt

Advanced Features

Address Book Setup and Maintenance

Esend supports an Address Book repository for recipient names and distribution lists. As in other systems, each address book is a list of names that can be used for addressing email messages. Multiple address books can be created and customized for specific users or groups of users. By default, Esend will use the address book named *SYSTEM when attempting to resolve names entered on a recipient parameter. Users can designate an alternate address book to be used for resolving recipient names when their Esend requests are processed.

Names contained in an address book can be organized into named distribution lists. Each distribution list becomes a new name in the address book and can be used as a shortcut for addressing messages to a whole list of recipients.   Simply use the list name on the recipient parameter of any Esend command.

A nice feature supported in Esend address books is the ability to temporarily deactivate individual recipients in an address book. You may want to deactivate a recipient for example if someone is known to be on vacation for a period of time. Any reference to a deactivated recipient will simply be ignored by Esend.

Two commands are available for building and maintaining address books: EBLDDST (Build Address Book) and ESNDDST (Address Book Maintenance). These commands are described in the command reference section of this manual. Both commands utilize existing address information in the system directory or in a separate Esend recipient address file to facilitate the task of entering email addresses.

As with other Esend default values, users can control which address book they will use by using the ESNDUSR command.

EBLDDST - Build Address Book

EBLDDST allows you to create address books and conveniently capture existing email address information that may already exist on the system.

When you run the command, you can specify the name of the address book you wish to build or maintain. Prompting the command presents the following display.

```
                        Build Address Book (EBLDDST)

Type choices, press Enter.

Address Book Name  . . . . . . .    *DEFAULT_____









                                                               Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

When you press enter, EBLDDST creates a list of User Id's that are not yet contained in the address book. A display similar to the following is presented:

```
 4/10/07   10:08:44     Build Addresses from Profiles        System:

Type options, press Enter.                        Book: *SYSTEM
  1=Select

Opt Profile    Description
    _____
 _  QDFTOWN    Default Owner for System Objects
 _  QSECOFR    Security Officer
 _  QSPLJOB    Internal Spool User Profile
 _  QSYSOPR    System Operator
 _  RICHGALL   Richard A. Galeba
 _  ROBERTX    Work Station User
 _  SALESREP   Salesrep Group Profile




                                                               Bottom

F3=Exit    F17=Top    F18=Bottom
```

Select the users you want to add to the address book and press enter. The selected names will be added to the book and the program will end.

ESNDDST - Address Book Maintenance

ESNDDST allows you to create and maintain address books. It can conveniently capture existing email address information that may already exist on the system.

```
                    Address Book Maintenance (ESNDDST)

Type choices, press Enter.

Address Book . . . . . . . . . .    *DEFAULT_____






                                                                     Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

When you press enter, Esend presents a display listing the names contained in the address book. A display like the following is presented.

```
  4/10/07   10:13:49      Address Book names and lists        System:
Book: *SYSTEM
Type options, press Enter.
  2=Edit   3=Copy   4=Delete   5=Display   A=Activate   S=Suspend

Opt Name                         Type  Act  Addr/List
    @helpsystems.com_____
  _  400 list                    List       daves, markp, roberth
  _  aliciam                                 aliciam@helpsystems.com
  _  andrewc                                 andrewc@helpsystems.com
  _  andrewx                                 andrewx@helpsystems.com
  _  asc404                                  asc404@helpsystems.com
  _  atest2                       List       andrewc, chuckb, mikes
  _  atestx                                  chrisw
  _  chrisw                                  chrisw@helpsystems.com
  _  chuckb                                  chuckb@helpsystems.com
  _  daveg                                   daveg@helpsystems.com
  _  daveo                                   daveo@helpsystems.com
  _  daves                                   daves@helpsystems.com
  _  davew                                   davew@helpsystems.com
  _  Dev                          List       andrewc, daveo, daves, irac, k
                                                                  More...
F3=Exit   F6=Add New Entry   F11=Toggle sequence
```

This name list includes information about the type of name, status and the first 30 characters of the address. If the name represents multiple recipients, the type will show 'List' and the address will include the first 30 characters of the names in the list.

Names with a status of 'DLT' will remain in the address book when you exit from the maintenance program. 'DLT' means the name is deactivated and will be ignored if used on a recipient parameter. If a deactivated name is the only entry made on a recipient parameter, Esend will act as though no name has been entered and signal a message accordingly.

Select the name you wish to edit and press enter. You can also deactivate or remove a name by entering a 4 next to the name. A Delete prompt will allow you to indicate whether the name should be removed from the list or simply deactivated.

For editing, a display like the following will be presented:

```
 4/10/07   10:13:49      Address Book names and lists         System:
Book: *SYSTEM                     EDIT Address


Name . . . . 400 list                      Status . . . _

Addr/List. . daves, markp, roberth
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____


F3=Exit   F12=Previous   F4=Prompt
```

This display shows either the recipient address, or in the case of a list name, the list of names associated with that list.

Spooled File Management and Conversion

Esend provides a central point to manage, work with, send, and convert your spooled files. Using the 'Work with Spooled files for Esend' display (WRKSPLFE), most of the commands discussed previously in this guide, as well as some that follow, can be applied to spooled files from this display. This section describes the use of the display, and some of the conversion functions that are available.

WRKSPLFE - Work with Spooled Files

WRKSPLFE, like IBM's WRKSPLF provides a function for listing and working with spooled files on your system. It extends the IBM command with a number of useful options, including the ability to email or ftp spool files directly from the spool list. See the appendix (page 93) for instructions on suppressing the command entry line on the WRKSPLFE menu, and also for removing options from WRKSPLFE that expose the command entry line.

Prompting the command results in a display like the following.

```
                    Display Spool Files (WRKSPLFE)

Type choices, press Enter.

Spool File Selection . . . . . .  SPLFILE      *ALL
User Name  . . . . . . . . . . .  USER         *CURRENT
Job Name . . . . . . . . . . . .  JOB          _____
  User . . . . . . . . . . . .                 _____
  Number . . . . . . . . . . .                 _____
OutQ Name  . . . . . . . . . . .  OUTQ         _____
  Library  . . . . . . . . . .                 _____
User Data  . . . . . . . . . . .  USRDTA       _____




                                                            Bottom
F3=Exit    F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The selection criteria for the command allows one or more parameters to be combined to provide a high level of selectivity.

SPLFILE - Spool File Selection

Specifies the name or group of spool files that are to be included in the selection criteria. The possible values are:

*ALL - All spool files that meet other selection criteria are to be included.

generic-name - Specify the generic name of the spool files to be included. A generic name is a character string that contains one or more characters followed by an asterisk (*).

*ABC - Display a list of spool files for each of the letters of the alphabet, starting with all the A's and using the enter key to progress through each list alphabetically.

* - Same as *ALL

spool-name -Specify the name of the spool files to be included.

USER - User Name

Specifies the name of one or all users to be included in the selection criteria. The possible values are:

*CURRENT - Only spool files belonging to the current user are considered in the selection.

*ALL - All users are considered in the selection.

> *Note: If there are many users, this could take significantly longer*

Name - Only spool files belonging to the named user are considered in the selection.

JOB - Job Name/User/Number

Specifies all or partial job information to be included in the selection criteria.

Job Information is made up of 3 elements:

JOB NAME	*CHAR	Length:10
JOB USER	*CHAR	Length:10
JOB NUMBER.	*CHAR	Length:6

The partial job information can be any combination of the 3 elements that make up the job information. The possible values are:

* - The job where this command is run. This is a single value that spans all 3 elements. This is entered in the job name element. The other 2 elements must be blank.

JOB Name - The name of the job in which the spool file was created.

JOB User - The user profile under which the job was running when the spool file was created.

JOB Number - The number of the job that created the spool file.

OUTQ - Outq Name (and library)

Specifies the name of an output queue that contains the spool file references to be used in the selection criteria. The possible values are:

*JOB - The output queue associated with the current job is used in the selection criteria. The library name must be blank if specified.

OutQ Name - Name of a specific output queue to be used in the selection

library - Only used if OutQ Name is specified.

        *LIBL (or blank) - searches library list for OutQ.

        library-name - Name of the library where the outq is located.

User Data

Specifies user data associated with a spool file to be included in the selection criteria.

all-blank - The user data is not used in the selection criteria.

user-data - The user data assigned to a spool file must match exactly to be selected.

WRKSPLFE List Display

The command WRKSPLFE builds lists of spool files that are selected based on the parameters entered from the command. The display shows:

- Available Options
- Spool File Information
- Command Line
- Function Keys

```
 *ALL                  Work with Spooled Files for ESend               *

 Type options, press Enter.
     E=ESndMail  S=ESndFile  I=CpytoIFS  X=EDistrib  P=PDFSPLF  1=SndNetSplf  .

 Opt   File        Job          User        Number    Spl    Date    Page  Status
  _    QPJOBLOG    ARMTRCVDST   ALDONCMS    257660     2    3/22/07     7  *READY
  _    QPJOBLOG    ARMTINSDST   ALDONCMS    257662     2    3/22/07    14  *READY
  _    QPJOBLOG    ASC405       KENK        257663     1    3/22/07     1  *READY
  _    QPJOBLOG    QRY007       KENK        257667     2    3/23/07     1  *READY
  _    QPJOBLOG    QRY003       KENK        257668     2    3/23/07     1  *READY
  _    QPJOBLOG    QRYC02       KENK        257669     2    3/23/07     1  *READY
  _    QPJOBLOG    ASC404       TSTPROD     257670     1    3/23/07     1  *READY
  _    QPJOBLOG    ASC404       TSTPROD     257671     1    3/23/07     1  *READY
  _    QPJOBLOG    ASC404       TSTPROD     257672     1    3/23/07     1  *READY
  _    QPJOBLOG    ASC404       TSTPROD     257673     1    3/23/07     1  *READY
  _    QPJOBLOG    ASC404       LARRYT      257687     1    3/23/07     1  *READY
  _    QPJOBLOG    ASC404       LARRYT      257688     1    3/23/07     1  *READY
  _    QPJOBLOG    QRYC02       ANDREWC     257689     2    3/23/07     1  *READY
                                                                        More...
 Parameter or Command
 ===> _____
 F3=Exit    F5=Refresh    F6=Print               F23=More Options   F24=More keys
```

Available Options

These are the options that may be used to perform specific functions on individual spool files by entering the option number next to a spool file data line.

    1=Snd   Prompts the IBM SNDNETSPLF command. This command sends a spooled file to another user on the local system or on a remote system on the SNADS network. The file is placed on the output queue that is specified in the user profile of the user to whom the spooled file was sent.

    2=Chg   Change attributes of a spooled file while it is on an output queue. These changes affect only the current processing of the file. The next time the job runs and the file is produced, the file attributes are derived from the device file description, the program, and any override commands.

    3=Hld   Use this option to hold the spooled file.

4=Del	Use this option to delete the specified spooled file. When you choose this option and press the Enter key, the Confirm Delete of Spooled Files display is shown. This display allows you to confirm the deletion before the IBM Delete Spooled File (DLTSPLF) command is processed.
5=Dsp	Use this option to display the data in the spooled file. When you choose this option, you cause the IBM Display Spooled File (DSPSPLF) command to be processed.
6=Rls	Use this option to release a held spooled file.
7=Wtr	If the spool file is associated with a printer device that has been started, the Work with Printer Writer display is shown for that device, otherwise the Work with All Printers display is shown.
	Use this option to resolve a *MESSAGE status.
8=Attr	Use this option to display the attributes of the specified spooled file. When you choose this option, you cause the Work with Spooled File Attributes (WRK-SPLFA) command to be processed.
C=Cpy->Usr	Copy a spool file to another user. To use this option, you must have *CHANGE authority to the "To User" profile.
M=Mov->Usr	Move a spool file to another user. To use this option, you must have *CHANGE authority to the "To User" profile.
D=CpySplf	Copies a spool file to a database file. Uses the CPYSPLFDB command to copy a spool file to a database file. The database file should have a record length equal to the spool record length plus the number of characters required for print control information.
	Print control information is determined by the CTLCHR parameter on the command.
	*PRTCTL has 4 bytes for the control characters. *FCFC has 1 byte for the control character. *NONE has no control characters.
	If the database file does not exist, a file is created with a record length of 382. This allows 378 for the maximum spool record length plus up to 4 characters for print control information.
Q=ChgOutq	Simplified form for changing the output queue of one or more spool files instead of using option 2.
O=WrkOutq	Displays the contents of the output queue associated with the selected spool file.
J=WrkJob	Displays the job information of the job associated with the selected spool file.
E=EsndMail	email Multiple Spool Files. Use this option to select one or more spool files for email distribution in a single message. A second window will show all the selected spool files with prompting for recipient and other parameters.
S=EsndFile	email or FTP a single Spool File. Use this option to select one spool file for email or FTP distribution in a single message. The ESNDFILE command will be prompted for each selection individually.
I=CpytoIFS	Copy a Spool file to the IFS. You will be prompted for the IFS file name and for the desired conversion type. You can choose between text, html, rtf and pdf.
K=CpyOutQ	Use this option to propagate a spooled file to another output queue.

X=Edistrib Email a spool file using rules. You will be shown the command prompts for this command, already filled in with command parameters for the spool file in question.

Spool File Information

This part of the display lists spool files and related information. There are 4 different information displays that are available by toggling from one list to the next using the function key F11 (see Function Keys).

Certain spool file information data is common to all the display screens.

These are:

File   The file name that was specified by the user program when the file was created, or the name of the device file used to create this file.

Page   The total number of pages in the file. If the file is still open, the current number of pages spooled is shown.

Status The status of the spooled file. The following list of values is used to describe the file's status:

      *READY   The file is available to be written to an output device by a writer.

      *OPEN   The file has not been completely processed and is not ready to be selected by a writer.

      *DEFERRED   The file has been deferred from printing.

      *SENDING   The file is being or has been sent to a remote system.

      *CLOSED   The file has been completely processed by a program but SCHEDULE(*JOBEND) was specified and the job that produced the file has not yet finished.

      *HELD   The file has been held.

      *SAVED   The file has been written and then saved. This file will remain saved until it is released.

      *WRITING   This file is currently being produced by the writer on an output device.

      *PENDING   The file is pending to be printed.

      *PRINTER   The file has been completely sent to the printer but print complete status has not been sent back.

      *MESSAGE   This file has a message which needs a reply or an action to be taken. (Use option 7 to respond to messages).

Use F11 to switch between the remaining displays. The following information is available on each display:

Display 1 - Job, User, Number

Specifies the name of the job associated with the spool file. A spool file job is the job name, user and number.

Spl   Specifies the unique number of the spool file within the job that created the spool file.

Date   The date when the file was created.

Display 2 - OutQ and Library

The name of the output queue and library that contains the spooled file.

Dplx   How the printed output will appear on the printed page. Possible values are:

   *NO   Printing will be done on only one side

   *YES   Printing will be done on both sides with the top of the page the same end or both sides

   *TUMBLE   Printing will be done on both sides, but the top of one printed page will be at the opposite end from the top of the other printed page

   *FORMDF   Printing information will be taken from the Form Definition defined for this file.

   Cpy   The number of copies remaining to print for files to be processed by a printer writer.

   Wrt   The page number currently being printed if the file has a status of *WRITING. The page number shown may be lower or higher than the actual current number because of buffering done by the system.

   Page   The page number currently being converted if the file has a status of *PENDING.

Display 3 - Date, Time and Form Type

Date   The date when the file was created.

Time   The time when the file was created.

FormType The type of the forms which should be loaded on the printer.

RcLen   The length of the file records.

Lpi   The number of lines per vertical inch defined in the spooled file.

Cpi   The number of characters per horizontal inch defined in the spooled file.

Display 4 - DevNam and DevLib

The device file associated with this output.

UsrData The 10 characters of user-specified data which describe this file.

Size   The size of the spooled file including all control information, shown in its highest denomination.

   Denominations are:

Kb	Kilobytes	1024 bytes
Mb	Megabytes	1024 Kb = 1,048,576 bytes
Gb	Gigabytes	1024 Mb = 1,073,741,824 bytes
Tb	Terabytes	1024 Gb = 1,099,511,627,776 bytes

Function Keys

You can use various function keys to perform particular actions from the display. The function keys available for each display are listed at the bottom of the display, provided that the "Full screen" mode has not been selected. You can cycle through the list by repetitively pressing F24.

These are the options:

F1=Help	Shows additional information about the display.
F2=NewSel	Shows a prompt to allow a re-selection of spool file criteria.
F3=Exit	End the current task and return to the display where you began without processing any options you have entered on the display.
F5=Refresh	Changes input fields on the display back to their original values and rebuilds the current selection list.
F6=Print	Produces a hard copy print of the selection list.
F9=Retrieve	Retrieve previous command.
F10=Command Entry	Displays IBM's command entry screen.
F11=Toggle	Toggles to the next view of the spool file information display.
F12=Cancel	Returns to the previous menu or display.
F13=Repeat	Uses the first non blank option and fills the contiguous blank options until another option or the end of the list is met.
F17=Top	Brings you back to the top of the list.
F18=Bottom	Brings you to the bottom of the list.
F20=DspMsg	Uses the IBM command DSPMSG to show the messages received at the current message queue.
F21=Toggle CmdLin	Toggles the command entry line between 1 line and 2 lines on the same display.
F23=More Options	Cycles the list of available options.
F24=More Keys	Cycles the list of available function keys.

CPYSPLIFS - Copy Spool to IFS

CPYSPLIFS is a tool for converting spool file data to ASCII. It is not one of the Esend commands that actually sends data from the System i machine, but is a handy way to copy and convert your spool files to various ASCII formats. Conversion options include formatting as RTF, HTML, PDF or plain text. By using this command along with the ESNDFILE command, you are able to use the special formatting options along with FTP.

CPYSPLIFS is most easily accessed by using option 'I' against the desired spool file when using the WRKSPLFE command. It can also be used within CL programs or elsewhere by supplying the required parameter values. CPYSPLIFS will copy a single spool file to an IFS file per request.

All the available parameters of the CPYSPLIFS command are displayed below.

```
                       Copy Spool to IFS (CPYSPLIFS)

 Type choices, press Enter.

 Spooled File . . . . . . . . . .   SPLF          _____
 Job Name . . . . . . . . . . . .   JOB           *_____
   User . . . . . . . . . . . . .                   _____
   Number . . . . . . . . . . . .                     _____
 Spooled file number  . . . . . .   SPLNBR        *LAST_____
 Spool Type . . . . . . . . . . .   TYPE          *SPL___
 To Stream File . . . . . . . . .   STMF          _____
                                                                                ...

 Replace  . . . . . . . . . . . .   REPLACE       *NO_

 Title  . . . . . . . . . . . . .   TITLE         *SPLF_____ ...

 Override to User Options . . . .   OVRUSROPT     *CURRENT__
 PDF Passwords:                     PDFPWD
   User Password  . . . . . . . .                 *NONE_____ ...

   Owner Password . . . . . . . .                 *NONE_____ ...

 PDF File Title . . . . . . . . .   PDFTITLE      _____ ...

 PDF File Subject . . . . . . . .   PDFSUBJECT    _____ ...

 PDF File Author  . . . . . . . .   PDFAUTHOR     _____ ...

 PDF File Creator . . . . . . . .   PDFCREATOR    _____ ...

 PDF File Keywords  . . . . . . .   PDFKEYWDS     _____ ...

 PDF Image Overlays:          ·     PDFOVERLAY
   Unit of Measure  . . . . . . .                 *IN
   Image Definition:                              _
   Image file path  . . . . . . .                 _____ ...
   Scaling percentage . . . . . .                 100_____
   Offset Down  . . . . . . . . .                 0_____
   Offset Across  . . . . . . . .                 0_____
                          + for more values   _


                         Additional Parameters

 Page Range:                        PAGES
   From Page Number . . . . . . .                 *FIRST_____
   To Page Number . . . . . . . .                 *LAST_____
```

SPLF - Spooled File

Specify the spool file name you wish to convert and place on the IFS.

JOB - Job Name/User/Number

Specify the name of the job that created the spool file named in the SPLF parameter.

* - The job that issued this command is the job that created the spool file.

job-name - The job name associated with the spool file.

user-name - The user name associated with the spool file.

number - The job number associated with the spool file.

SPLNBR - Spooled File Number

Specify the spool file number to be associated with the SPLF parameter.

<u>*LAST</u> - The SPLF with the highest number is used.

*ONLY - Only one spool file in the job has the specified file name; therefore, the number of the spool file is not necessary.

spool-file-number - The SPLF with this specific number will be sent.

TYPE - Spool Type

Specify the type of conversion that will be used before placing the file on the IFS.

<u>*SPL</u> - Use the ESNDUSR default for keyword SPOOL to determine the conversion type. (See ESNDUSR command)

*TEXT - Convert to plain ASCII text.

*HTML - Convert to HTML formatted text.

*RTF - Convert to Rich Text Format

*PDF - Convert to Adobe PDF format

*TEXTFC - Copy with forms control characters but no skipping or spacing - useful for certain spool archiving utilities.

STMF - To Stream File

Specify the path and file name to produce. See path rules on following pages.

REPLACE

<u>*NO</u> / *YES - Control whether or not an existing stream file of the same name will be replaced.

TITLE

Used to define the description of the IFS file being created. For PDF conversion, specify the title for the PDF file.

<u>*SPLF</u> - The file description will be the spool file name.

OVRUSROPT - Override to User Options

Specifies the name of the user defaults id that is used for obtaining the Spool Type when *SPL is specified. This parameter is used more for other functions of the Esend application, which utilize this process internally, and has very little functionality at the command level.

<u>*CURRENT</u> - The current user defaults are used.

USERID - Use the specified user's defaults.

PDFPWD - PDF Passwords

Use this parameter to specify USER and OWNER passwords for a created PDF document. These values only apply when a PDF formatted result will be created. The parameter allows two values to be specified. The USER password controls access to the document. When a user password is applied to a PDF document, it cannot be opened unless the password is supplied.

The OWNER password controls access (as defined in the user defaults on page 13) to the document's security settings. If specified, the permissions set in the document (the ability to print, change text, and so on) cannot be changed unless this password is provided.

<u>*NONE</u> - No password will be applied to the document.

PDFTITLE - PDF File Title

Specify up to 60 characters to appear in the 'Title' section of the PDF document information panel.

PDFSUBJECT - PDF File Subject

Specify up to 60 characters to appear in the 'Subject' section of the PDF document information panel.

PDFAUTHOR - PDF File Author

Specify up to 30 characters to appear in the 'Author' section of the PDF document information panel.

PDFCREATOR - PDF File Creator

Specify up to 30 characters to appear in the 'Creator' section of the PDF document information panel.

PDFKEYWDS - PDF File Keywords

Specify up to 256 characters to appear in the 'Keywords' section of the PDF document information panel.

PDFOVERLAY - PDF Image Overlays

Specifies JPG image files to overlay on spool file output that is to be converted to PDF. Up to 20 image files can be included in the resulting pdf. The image files become the background for the pdf document with the spool text on top. When adding multiple images, they must be positioned properly to avoid interfering with one another.

Unit of Measure - *IN for inches, *CM for centimeters. Unit of measure applies to the offset parameters that follow.

The following elements can be specified for each of up to 20 image overlays.

Image file or URL - Enter the path or Web location and file name for the overlay.

Scaling percentage - Set a scaling value to shrink or expand the image.

100 - The value 100 retains original image size. Greater values expand, smaller values shrink.

*FIT - Scale image to fit the page.

*FITWIDTH - Scale image to fit page width while keeping original height.

*FITLENGTH - Scale image to fit page length while keeping original width.

Offset Down - The number of units, based on Unit of Measure, to shift the top of the image lower on the page.

Offset Across - The number of units, based on Unit of Measure, to shift the left edge of the image.to the right.

PDFSPLF - Make PDF file from Spooled file

This command will generate a PDF formatted file in the integrated file system (IFS) from a spooled file on an output queue.

PDF conversion supports AFP files and overlays if the file type is SCS. Overlays are not supported for IPDS and USERASCII print file types.

System i form sizes (length&width) and character/line spacing (cpi/lpi) do not always map well to standard pc printer form sizes. Consequently, PDF converted spool files may appear in Acrobat to have unreasonably large side margins or bottom margins. In order to help you determine what PDF page attributes you can expect when converting spool files, the following paragraph provides some details about the conversion process.

First, figure out page size based on form width and height and cpi and lpi and overflow. Then pick the next bigger standard PC form that will accommodate this, allowing for at least .5 inch margins. If the page is wider than it is tall, set the LANDSCAPE indicator. Next figure out what point size font will allow fitting each page of spool output onto a single page of standard pc paper. In figuring out what font size to use in generating PDF, we calculate a point size based on as/400 cpi (120/cpi=point size) and another point size based on as/400 lpi (72/lpi=point size). Then we choose the smaller font to insure that the output will not overflow either the line or the page.

The following display illustrates the parameters available on the command.

```
                    Make PDF from spooled file (PDFSPLF)

  Type choices, press Enter.

  Stream File  . . . . . . . . . .  STMF          _____
                                                  _____  ...

  Spooled file:                     SPLF        _
    Spooled File Name  . . . . . .                _____
    Job Name . . . . . . . . . . .              *_____
      User . . . . . . . . . . .                  _____
      Number . . . . . . . . . .                    _____
    Spooled file number  . . . . .              *LAST_____
                        + for more values       _

  PDF File Title . . . . . . . . .  TITLE         _____  ...

  PDF File Subject . . . . . . . .  SUBJECT       _____  ...

  PDF File Author  . . . . . . . .  AUTHOR        _____  ...

  PDF File Creator . . . . . . . .  CREATOR       _____  ...

  PDF File Keywords  . . . . . . .  KEYWORDS      _____  ...
  PDF Page size  . . . . . . . . .  PAGESIZE    *LETTER___
  Owner Password . . . . . . . . .  OWNERPWD    *NONE_____  ...
  User Password  . . . . . . . . .  USERPWD     *NONE_____  ...

  PDF Image Overlays:              ·  OVERLAY
    Unit of Measure  . . . . . . .              *IN
    Image Definition:                           _
    Image file path  . . . . . . .                _____  ...
    Scaling percentage . . . . . .              100_____
    Offset Down  . . . . . . . . .              0_____
    Offset Across  . . . . . . . .              0_____
                        + for more values       _


                          Additional Parameters

  Page Range:                       PAGES
    From Page Number . . . . . . .              *FIRST_____
    To Page Number . . . . . . . .              *LAST_____
```

STMF Parameter

Specifies the path and name of the IFS stream file to be created. If the path and file name is not valid, an error message is issued, and the command does not complete successfully. If the file already exists, it will be overwritten with the content from the spooled file.

Indicate a valid PC path and file name. It may contain up to 2000 characters.

Path names are entered left-to-right, beginning with the highest level directory and ending with the name of the object to be created. The name of each component in the path is separated by a slash (/) or back slash (\); for example:

'Dir1/Dir2/Name.ext' or 'Dir1\Dir2\Name.ext'

SPLF - Spooled File

Specify the spool file name you wish to convert and place on the IFS.

JOB - Job Name/User/Number

Specify the name of the job that created the spool file named in the SPLF parameter.

* - The job that issued this command is the job that created the spool file.

job-name - The job name associated with the spool file.

user-name - The user name associated with the spool file.

number - The job number associated with the spool file.

SPLNBR - Spooled File Number

Specify the spool file number to be associated with the SPLF parameter.

*LAST - The SPLF with the highest number is used.

*ONLY - Only one spool file in the job has the specified file name; therefore, the number of the spool file is not necessary.

spool-file-number - The SPLF with this specific number will be sent.

TITLE - PDF File Title

Specify up to 60 characters to appear in the 'Title' section of the PDF document information panel.

SUBJECT - PDF File Subject

Specify up to 60 characters to appear in the 'Subject' section of the PDF document information panel.

AUTHOR - PDF File Author

Specify up to 30 characters to appear in the 'Author' section of the PDF document information panel.

CREATOR - PDF File Creator

Specify up to 30 characters to appear in the 'Creator' section of the PDF document information panel.

KEYWORDS - PDF File Keywords

Specify up to 256 characters to appear in the 'Keywords' section of the PDF document information panel.

PAGESIZE - PDF Page Size

Specifies the page size to use for the PDF document. You can choose to create a PDF document with the same measurements as the original file, or map the spooled file to a standard size. If you change the size of the page, PDFSPLF will choose a font size based on the actual content width of your spooled file. If you choose to keep the spooled file size, PDFSPLF will choose a fontsize based on the CPI/LPI of your spooled file.

*KEEP - The size of the spooled file will be retained in the PDF document. When printed on a same sized page, the results will match the original spooled file.

*LETTER - Letter paper is 8 1/2" x 11"

*LEGAL - Legal paper is 8 1/2" x 14"

*11x14 - Printer paper 11" x 14"

*A3 - A3 paper is 11 2/3" x 16 1/2" (297mm x 420mm)

*A4 - A4 paper is 8 1/4" x 11 2/3" (210mm x 297mm)

*A5 - A5 paper is 5 7/8" x 8 1/4" (148mm x 210mm)

*A6 - A6 paper is 4 1/8" x 5 7/8" (105mm x 148mm)

Note: The special values *11x14 and *11x17 must be enclosed in quotes and the 'x' must be lower case.

OWNERPWD - Owner Password

The OWNER password controls access (as defined in the user defaults on page 13) to the document's security settings. If specified, the permissions set in the document (the ability to print, change text, and so on) cannot be changed unless this password is provided.

*NONE - No password is needed to change document permissions.

USERPWD - User Password

Specifies the user password for the document. If specified, the document cannot be opened (viewed) until this password is provided.

*NONE - No password is needed to open the document

OVERLAY - PDF Image Overlays

Specifies JPG image files to overlay on spool file output that is to be converted to PDF. Up to 20 image files can be included in the resulting pdf. The image files become the background for the pdf document with the spool text on top. When adding multiple images, they must be positioned properly to avoid interfering with one another.

Unit of Measure - *IN for inches, *CM for centimeters. Unit of measure applies to the offset parameters that follow.

The following elements can be specified for each of up to 20 image overlays.

Image file or URL - Enter the path or Web location and file name for the overlay.

Scaling percentage - Set a scaling value to shrink or expand the image.

> 100 - The value 100 retains original image size. Greater values expand, smaller values shrink.
>
> *FIT - Scale image to fit the page.
>
> *FITWIDTH - Scale image to fit page width while keeping original height.
>
> *FITLENGTH - Scale image to fit page length while keeping original width.

Offset Down - The number of units, based on Unit of Measure, to shift the top of the image lower on the page.

Offset Across - The number of units, based on Unit of Measure, to shift the left edge of the image.to the right.

PAGES - Page Range

Specify starting and ending page range for pdf conversion.

*FIRST - Start with the first page of the spooled file.

***LAST** - End with the final page of the spooled file.

Burst and Distribute Forms

Two of the most powerful and time saving features of Esend is the ability to burst spooled files to email/ftp to multiple recipients, and automatic spooled file forwarding. Each has its own command to define rules that are applied to spooled files. There is also a command for each to run and apply the defined rules.

ERPTRULES - Enter Report Rules

The Esend Report Rules (ERPTRULES) command allows you to create rule sets that define how spooled files can be split or burst to send individual pages to different email addresses. The rule set name is then used on the RULESET parameter of the EDISTRIB command which processes the spooled output to burst the output as defined in the rule set.

Each rule in a rule set specifies an email or FTP recipient and a search condition to be met in order to send a page to that recipient. Each rule defines a search location, comparison operator and a character string for comparison. Every page in the spooled file that matches the search condition will be emailed to the recipient identified in that rule.

There are no parameters to the command, just simply a screen that lists the rule sets. To add a new rule set, press F6 on the display that lists existing rule sets.

The following display shows 2 of the rules in a rule set named SALESMGT.

```
 16:17:33                    Report Rule Maintenance                   4/10/07

  Set      SALESMGT    Sales Management Report Distribution _____

  3=Copy   4=Delete

  Option   Mail-to
    _      mgr1@megasales.com_____
           Line on page  __7 Position on line _28 Relationship *EQ
           Search text Marsha_____
  _____
           Starting page ____ Ending page ____
    _      mgr2@megasales.com_____
           Line on page  __7 Position on line _28 Relationship *EQ
           Search text Greg_____
  _____
           Starting page ____ Ending page ____




      F3=Exit  F4=Fold display  F6=Add  F11=Sort by Search Text  F12=Previous
```

Mail-to[1]

Multiple entries can be separated with a semicolon (;) or a comma (,). You may enter as many addresses, email distribution lists, FTP entries and FTP lists as will fit into the parameter. The special values USERPASSWORD and/or OWNERPASSWORD can be specified in order to use a value on the spooled file as a password for PDF output. See page 78 for an example.

Line On Page/Position on Line

Specify a line number on each page to search for the text. If you leave this blank, every line on the page will be searched. If both the line and the position are left blank the search will be made for the appearance of the search text anywhere on the page.

---

1. See page page 92 for information on "Invalid Email Address Processing and Error Message Handling".

Relationship

Specify the comparison operator to use when evaluating the search:

*EM:	This special operator directs Esend to read the recipient email address directly from the spool file at the line and position specified for the search text. The recipient address can be omitted from the emailed page by entering '*REMOVE' for the search text.
*EQ:	Checks to see if the search text is equal to the text found at the location requested. If the line position is left blank, the *EQ operator actually becomes a test to see if the line contains the search text.
*NE:	Checks to see if the search text is not equal to the text found at the location requested.
*NL:	Checks to see that the text found at the specified location is not in a list of values. The list of values is entered in the Search text. E.g. { 1}{ 3}{ 5}{ 7}{11}{13}.
*GT:	Checks to see if the search text is greater than the text found at the location requested.
*GE:	Checks to see if the search text is greater than or equal to the text found at the location requested.
*LT:	Checks to see if the search text is less than the text found at the location requested.
*LE:	Checks to see if the search text is less than or equal to the text found at the location requested.
*LS:	Checks to see if the text found at the location matches any of a list of values. Each value is delimited with brackets. For example: { 1}{ 3}{ 5}{ 7}{11}{13}
*RG:	Checks to see if the text found at the location falls within a range between 2 values. Each of the 2 values is delimited by brackets. For example: { 1}{13}
***:	This operator requests that the page will be sent if it is not included by any of the rules listed in the set. When using this operator, page, line, and text comparators are not considered.

If the line position is left blank, only *EQ may be specified. If you leave the relationship field and search field blank, all pages will be sent to the recipient/s specified on the mail to entry.

Search Text

Specify a character string to look for in the spooled file. If the line, position, and search text are left blank, the entire spooled file will be mailed. Use *REMOVE with the comparison operator *EM to suppress the recipient email address from the emailed page and with the Mail-to values USERPASSWORD or OWNERPASSWORD to suppress the password value from the emailed page.

Starting Page

Specify the first page to start looking for the search text on. Leave this blank to start on the first page.

Ending Page

Specify the last page to look for the search text on. Leave this blank to search until the end of the spooled file.

EDISTRIB - Email Using Rules

The EDISTRIB command is used to split a spooled file into parts to be emailed to various recipients. Rules to separate the spooled file and the corresponding email addresses are maintained using the Esend Report Rule Sets (ERPTRULES) command (page 64). All of the parameters are required.

```
                    Email a SPLF using rules (EDISTRIB)

 Type choices, press Enter.

 Job name . . . . . . . . . . . . JOB           *_____
   User profile . . . . . . . . .               _____
   Job number . . . . . . . . . .               _____
 Spooled file name  . . . . . . . SPLNAME       _____
 Spooled file number  . . . . . . SPLNBR        *LAST_
 Rule Set Identifier  . . . . . . RULESET       _____
 File Type  . . . . . . . . . . . FILTYP        *DFT_
 E-mail Subject . . . . . . . . . SUBJECT       *RULETEXT_____  ...

 E-Mail Message . . . . . . . . . MSG           *NONE_____
                                                                       ...

 Attachment File Name . . . . . . ATTFILE       *RULESET_____
                                                                       ...

 Override to Send User Options  . OVRUSROPT     *CURRENT_
 Delete original file . . . . . . DELETE        *NO_

 PDF Passwords:                    PDFPWD
   User Password  . . . . . . . .                *NONE_____

   Owner Password . . . . . . . .                *NONE_____

 PDF Image Overlays:               PDFOVERLAY
   Unit of Measure  . . . . . . .                *IN
   Image Definition:                             _
   Image file path  . . . . . . .                _____

   Scaling percentage . . . . . .                100_____
   Offset Down  . . . . . . . . .                0_____
   Offset Across  . . . . . . . .                0_____
                           + for more values  _
```

JOB - Job Name/User/Number

Specify the name of the job that created the spool file named in the SPLF parameter.

* - The job that issued this command is the job that created the spool file.

job-name - The job name associated with the spool file.

user-name - The user name associated with the spool file.

number - The job number associated with the spool file.SPLNAME Parameter

SPLNAME - Spooled File Name

Specifies the name of the spooled file to be sent. Specify *ALL for all spool files from the job requested.

SPLNBR - Spooled File Number

Specify the spool file number to be associated with the SPLF parameter.

*LAST - The SPLF with the highest number is used.

*ONLY - Only one spool file in the job has the specified file name; therefore, the number of the spool file is not necessary.

spool-file-number - The SPLF with this specific number will be sent.

RULESET - Rule Set Identifier

Specifies the name of rule set to apply to the spooled file and distribute the appropriate parts to the various recipients. Rule Sets are created using the ERPTRULES command.

FILTYP - File Type

Specifies the type conversion to be used on the spooled file.

*TXT - The results will be sent in text format.

*HTML - The results will be sent in HTML format.

*RTF - The results will be sent in RTF format.

SUBJECT - Email Subject

Specify the subject line that will be sent to the Email recipients.

* - The text for the Rule Set is used by default for the subject on the email message.

Subject - Up to 60 characters of mixed case text can be specified for the subject on the email message.

MSG - Email Message

Specify the message text that will be sent to Email recipients.

*NONE - Indicates that no message text is sent with the email.

Message - Up to 998 characters of mixed case text. Two formatting controls (followed by a blank) may be used within the text:

&N or &n - Forces a line feed break.

&P or &p - Forces a paragraph break (with a preceding blank line).

ATTFILE - Attachment File Name

Enter the name you wish to use for the attachment if you do not want the attachment name to be the same as the ruleset.

*RULESET - The attachment is given the name of the ruleset.

*SPLFNAME - The attachment is given the name of the spooled file.

*USRDATA - The attachment is given the name of user data attribute of the spooled file.

file-name - The attachment is given the name enter here.

OVRUSROPT - Override to Send User Options

Specifies the name of the user defaults id that is used for obtaining the Spool Type when *SPL is specified. This parameter is used more for other functions of the Esend application, which utilize this process internally, and has very little functionality at the command level.

*CURRENT - The current user defaults are used.

USERID - Use the specified user's defaults.

DELETE - Delete Original File

Specifies whether to delete the spooled file after processing

PDFPWD - PDF Passwords

Use this parameter to specify user and owner passwords for a created PDF document. These values only apply when a PDF formatted result will be created. The parameter allows two values to be specified. The USER password controls access to the document. When a user password is applied to a PDF document, it cannot be opened unless the password is supplied.

The OWNER password controls access (as defined in the user defaults on page 13) to the document's security settings. If specified, the permissions set in the document (the ability to print, change text, and so on) cannot be changed unless this password is provided.

*NONE - No password will be applied to the document.

PDFOVERLAY - PDF Image Overlays

Specifies JPG image files to overlay on spool file output that is to be converted to PDF. Up to 20 image files can be included in the resulting pdf. The image files become the background for the pdf document with the spool text on top. When adding multiple images, they must be positioned properly to avoid interfering with one another.

Unit of Measure - *IN for inches, *CM for centimeters. Unit of measure applies to the offset parameters that follow.

The following elements can be specified for each of up to 20 image overlays.

Image file or URL - Enter the path or Web location and file name for the overlay.

Scaling percentage - Set a scaling value to shrink or expand the image.

> 100 - The value 100 retains original image size. Greater values expand, smaller values shrink.
>
> *FIT - Scale image to fit the page.
>
> *FITWIDTH - Scale image to fit page width while keeping original height.
>
> *FITLENGTH - Scale image to fit page length while keeping original width.

Offset Down - The number of units, based on Unit of Measure, to shift the top of the image lower on the page.

Offset Across - The number of units, based on Unit of Measure, to shift the left edge of the image.to the right.

Example

```
EDISTRIB JOB(*) SPLNAME(CUSTORDR) RULESET(SLSMGR) SUBJECT('Sales Report')
MSG('Attached please find the sales report')
```

This example shows the EDSTRIB command being run from an interactive session and emails the appropriate pages of the Customer Order Report to the correct sales manager based on the SLSMGR rule set.
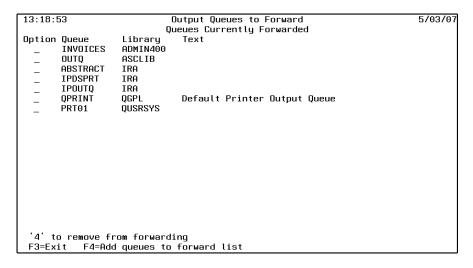
Automatic Spool File Forwarding

Esend offers a process for monitoring designated output queues and automatically forwarding via email any spooled files that meet defined criteria. Setting up this process involves identifying the output queues to be monitored, defining the spool forwarding rules and starting the monitor. Spool forwarding allows selected spool files to be converted to text, pdf, or html and emailed to one or more recipients. In addition, forwarding rules can also invoke the EDISTRIB function to 'burst' and distribute spool files.

There are two parts to each forwarding rule: file identification/selection and file processing. Forwarding rules allow for spool file selection by criteria as specific as output queue, spool file name, job name, user ID, forms type and user data or by rules as general as simply selecting by output queue and spool file name. The processing part of the rule allows for either an EDISTRIB rule to be specified, or for a recipient value. Recipient values can be explicit recipient email addresses or reference to any of the Esend supported methods for using distribution lists.

The Esend library comes with a subsystem named EFWD which includes an autostart job that initiates spool monitoring. Spool forwarding can be started and stopped simply by starting and ending this subsystem.

EFWDOUTQ - List Output Queues to Forward

This command has no parameters. Simply enter the command and you will see a list of output queues that are designated for monitoring. This list will initially be empty. The following example shows a number of output queues that have been identified for spool file forwarding.

```
 13:18:53                   Output Queues to Forward              5/03/07
                          Queues Currently Forwarded
Option Queue        Library     Text
   _     INVOICES    ADMIN400
   _     OUTQ        ASCLIB
   _     ABSTRACT    IRA
   _     IPDSPRT     IRA
   _     IPOUTQ      IRA
   _     QPRINT      QGPL        Default Printer Output Queue
   _     PRT01       QUSRSYS




 



  '4' to remove from forwarding
  F3=Exit   F4=Add queues to forward list
```
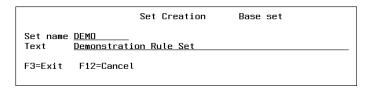
Listed output queues will be monitored whenever spool monitoring is turned on. Each output queue on the list is monitored based on rules that associate the rule with the output queue as described in the EFWDRULES command.

Pressing F4 presents a list of output queues that have not been included for monitoring. New output queues can be easily selected from that list and included in the former list. Use option 4 to remove queues from the list of monitored output queues.

EFWDRULES - Spool Forwarding Rule Maintenance

This command has no parameters. Simply enter the command and you will see a list of Forwarding Rules that have been established. This list will initially be empty. The following example shows a list containing a number of rules.

```
 14:43:50                 Forward Rules Maintenance              5/03/07


 Current Rules:    (1=Select, 3=Copy, 4=Delete)

    _      CUSTLISTR        Distribute Customer Listing
    _      FinanceQ         Financial Report Distribution
    _      PurchaseQ        Purchasing
    _      SalesQ           Order Processing
    _
    _
    _
    _
    _
    _
    _
    _
    _
    _
    _
    _                                                                    +
    _

 F3=Exit   F6=Add
```

Pressing F6 initiates the creation of a new rule set. The window below is displayed for naming and describing the forwarding rule.

```
                         Set Creation       Base set

 Set name  DEMO_____
 Text      Demonstration Rule Set_____

 F3=Exit    F12=Cancel
```

Pressing enter presents the rule maintenance screen:

```
 15:07:36                 Forward Rules Maintenance              5/03/07

 Rule       DEMO        Demonstration Rule Set_____

 Output queue name _____ Library _____   (blank,*ALL,generic name)
 Spooled file name _____ (blank,*ALL,generic name)
 Job name          _____ (blank,*ALL,generic name)
 User profile      _____ (blank,*ALL,generic name)
 Forms type        _____ (blank,*ALL,generic name)
 User data         _____ (blank,*ALL,generic name)

 Send file as       *SPL_____  (*SPL,*TXT,*PDF,*RTF,*HTM,*TEXTFC)
 After sending      *KEEP_____ (*REMOVE,*KEEP)
 Send file using a rule set or email address:
 Rule set   _____
 Send to    cmd:EDISTRIB splname(&splname) job(&jobnbr/&usrprf/&jobname) splnbr(
 &splnbr) ruleset(xxxx) filtyp(*html) msg('spooled file is here');cmd:SAVSPLF JOB
 (&jobnbr/&usrprf/&jobname) splname(&splname) splnbr(&splnbr) tooutq(qgpl/qprint)
  touser(*current) delete(*YES);IFS:/tmp/trigger.htm; MYReciplist_____
 _____
 _____
 _____

 F3=Exit   F4=Prompt (position cursor to 'Rule set' or 'Send to')   F12=Previous
```

Output queue name/Library

Specifies the name of the output queue monitored by this rule:

*ALL - All output queues in the designated library are monitored. The library name may also be a generic type name or *ALL.

generic-name - Specify the generic name of the output queue. A generic name is a character string that contains one or more characters followed by an asterisk (*).

spool-name - Specify the name of the output queue to be monitored.

Note: Spooled files in the *RDY status are sent immediately upon entering the queue.

Spooled file name

Specifies the name or generic name of the spooled file to use.

Job name

Specifies the name or generic name of the jobs to use.

User Profile

Specifies the name or generic name of the user profile to use.

Forms Type

Specifies the name or generic name of the form type to use.

User Data

Specifies the user data text or generic user data of the spooled file to use.

Send File As

Specifies the ascii file type for converting the spooled file.

*SPL - The type of spooled file output is determined by the SPOOL parameter of the Send Mail User Defaults (ESNDUSR). The types are TEXT, HTML, RTF and PDF.

*TXT - The spooled file is sent in TEXT format.

*PDF - The spooled file is sent as a PDF file.

*RTF - The spooled file is sent as a Rich Text file.

*HTM - The spooled file is sent as an HTML file.

*TEXTFC - The spooled file is sent as a text file with the first column containing printer spacing control characters.

After Sending

Spool monitoring will either keep or delete the spooled file after processing based on this setting.

*KEEP - Leave the spooled file on the output queue after the forwarding process. The status remains as *RDY.

*REMOVE - Delete the spooled file after the forwarding process.

*SAVE - Leave the spooled file on the output queue after the forwarding process. The status changes to *SAV.

Ruleset

If you wish to burst and distribute selected pages of a spooled file, enter a defined EDISTRIB rule set name. Any spooled file matching the spool forwarding rule will be bursted and sent according to the bursting rule. See page 66 on how to create bursting rules with EDISTRIB.

Send to

This field supports 3 different types of entry. The 3 entry types are: recipient, command string, and IFS path destination. In the sample screen image above, the Send to entry includes all 3 types, including the commands EDISTRIB and SAVSPLF, one copy of the file to the IFS, and 1 reference to the MYReciplist which could be reference to a list of recipients in an address book.

By default, an entry is a recipient value. Use this entry as you would any Recipient parameter in Esend. You can list email addresses separated by commas, enter a list name or reference an address book.

By specifying a qualifier, you can enter a command string or an IFS path and file name. The two allowed qualifiers are cmd: and ifs:

For example:

```
ifs:/tmp/spoolstuff.txt
```

or

```
cmd:sndmsg msg('spooled file &&splname is here') tomsgq(johndoe)
```

For command strings, the following substitution variables are available:

&splnbr	&usrdta	&splname	&usrprf
&jobnbr	&jobname	&outqname	&outqlib
&jobdate	&spldate	&sysdate	&usrdfndta[a]

a. same as &usrdta but allows 256 characters of text

These variables can be used anywhere in a command string. When the rule is activated by the arrival of a spool file, the appropriate value is substituted into the command string before the command is run. If a variable is used anywhere within a quoted string, you must remember to use '&&' in front of the variable name.

Note: If you wish to suppress the job and forwarding rule information in the body of the email, add 'msg:' following the email address like so:*

```
youremail@domain.com;msg:*
```

Practical Examples

Email Application Reports Automatically

Text file attachment to a single recipient

Scenario:

You have an order report that runs nightly from a job scheduler that needs to be distributed to a particular manager.

Solution:

It is a simple matter in most job schedulers, to add a command to the job definition. For this example, the only information you need about the job is the name of the spool file associated with the report. For example, the ESNDFILE command (page 25) could be added to a job that produces a spool file named ORDERSUM:

```
ESNDFILE RECIPIENT('jdoe@mycompany.com') SUBJECT('Customer Order Summary')
MSG('See attached') TYPE(*SPLTXT) ATTFILE(ORDERSUM.WRI) SPLF(ORDERSUM)
```

By omitting the job name, user id and job number parameter, the job defaults to the current job, i.e. the job that produced the report in a previous step. The TYPE(*SPLTXT) indicates that the spool file will be sent as a text file. ESNDFILE does not support embedded attachments, so the text file will be a distinct attachment that could be saved, printed, or edited further in any text editor. The ATTFILE parameter insures that the attachment name will facilitate opening the report with the default text editor directly from the message without having to save the attachment first.

Text file attachment to a list of recipients

Scenario:

This is similar to the previous example, except for the requirement to send the report to multiple recipients.

Solution:

While a small list of recipients could be entered directly in the recipient parameter, a better method would be to use an address book name list instead. That way, the recipient list can be as long as necessary, and the list can be maintained in the address book rather than by updating the job definition whenever the list of recipients needs to be changed.

```
ESNDFILE RECIPIENT('Salesmgrs') SUBJECT('Customer Order Summary')
MSG('See attached') TYPE(*SPLTXT) ATTFILE(ORDERSUM.WRI) SPLF(ORDERSUM)
```

In this example, there is an entry named 'Salesmgrs' in the address book. The ESNDDST command (page 49) can be used to maintain the names contained in the 'Salesmgrs' list.
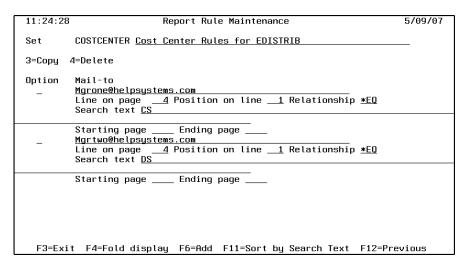
Bursting and Distributing Reports

Scenario:

A purchasing summary report organized to page break by cost center prints weekly. Each cost center manager wants to receive the appropriate section of the report by email.

Solution:

The solution involves some setup using the ERPTRULES command and then execution using the EDISTRIB command.

Use ERPTRULES (page 64) to define a rule set for distributing report pages to the managers. Each rule will describe how to route pages about a particular cost center to the manager for that cost center. The following display illustrates how two such rules might appear in a rule set.

```
 11:24:28                 Report Rule Maintenance              5/09/07

 Set        COSTCENTER Cost Center Rules for EDISTRIB _____

 3=Copy   4=Delete

 Option    Mail-to
     _         Mgrone@helpsystems.com _____
               Line on page  __4 Position on line __1 Relationship *EQ
               Search text CS_____
          _____
               Starting page ____ Ending page ____
     _         Mgrtwo@helpsystems.com _____
               Line on page  __4 Position on line __1 Relationship *EQ
               Search text DS_____
          _____
               Starting page ____ Ending page ____




    F3=Exit  F4=Fold display  F6=Add  F11=Sort by Search Text  F12=Previous
```

The first rule searches for the string 'CS' on line 4 position 1 of each page. Each page that has that string at that position is collected into a set of pages that will be emailed to Mgrone@helpsys-tems.com at the end of the process. The second rule does the same thing for Mgrtwo searching for a value of 'DS'.

With the rule set in place, it is a simple matter to add a command to the job stream that produces the report. Assuming the spool file name of the report is PURSUMMARY, the following EDISTRIB command (page 66) would accomplish the task:

```
EDISTRIB SPLNAME(PURSUMMARY) RULESET(COSTCENTER)
SUBJECT('Purchasing Managers report')
```

Customize EMAIL with Company Logos and Graphics
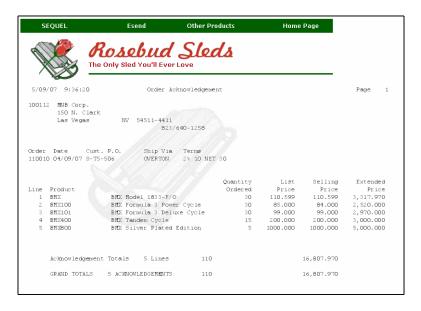
Scenario:

You want to send customers electronic order acknowledgements using email. The objective is to use html to create an attractive and stylish appearance using the company logo and graphics to create a positive impression.

Solution:

The approach is to use Esend to merge two distinct attachments into a single html formatted email message. One attachment is a standard, constant HTML document containing the message header, company logo and other graphics along with any necessary style controls. The second attachment is the text of the order acknowledgement.

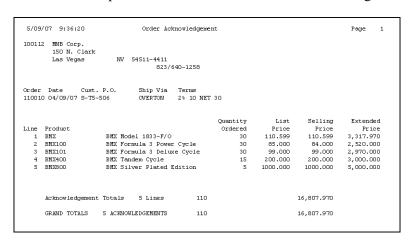This is an example of the type of message that can be produced:

This html document is composed of two basic components. The first is an html document that presents several graphic elements along with a number of links to various web pages that customers may wish to visit.

This is the html document that contains just the graphic elements.

The html document presents links to Sequel, Esend, other products, and to our home page across the top of the message. Below that is a sled image and rose representing a hypothetical product line. A larger sled image is used as a background watermark image over which the text of the acknowledgement report is displayed. This document also contains style elements that will control the appearance of other text occurring in the document.

The second component is the text from the order acknowledgement report.

In the example at left, the acknowledgement text is obtained from a spooled file.

This text could be obtained from an System i spooled file, or from a separate html formatted document on the IFS containing the necessary information. Whatever the source of the order acknowledgement text, the complete email message is created by using Esend to embed the two components into the body of the message. If a spool file is used, Esend automatically converts the spool text into an html document prior to embedding that part of the message into the message body.

The following ESNDMAIL command (page 33) illustrates how two different file attachments could be embedded in the message body to produce our example message:

```
ESNDMAIL RECIPIENT('MrBig@helpsystems.com')
         SUBJECT('Spool File with HTML Header')
         MSG('*ATT1 *ATT2')
         MSGTYPE(*HTML)
         ATTLIST((* *NONE '/esend/hdr.htm')
                 (* *NONE *N CUSTORDR 103950/ORDERMGR/*N))
         OVRUSROPT(ORDERACK)
```

In this example, the **MSG** parameter contains just two attachment placeholders to control the positioning of the two attachment files within the message body.

The **MSGTYPE** parameter, which determines the formatting for the message body, indicates the message will be an html formatted message. This format is required to obtain the high quality graphic appearance we desire. Most current mail clients are now able to handle html type messages effectively.

The **ATTLIST** parameter identifies the two attachment files that make up the two components of our message as described above. The Attachment Type for both attachments is *NONE, meaning that the attachments will be embedded in the message body and positioned by means of placeholders.

The first attachment is a stream file named hdr.htm in the esend folder on the System i machine. This document was created using a basic HTML editor to facilitate working with the several HTML features employed.

The second attachment is a spooled order acknowledgement. The spool file name is CUSTORDR and it is associated with job number 103950 and user id ORDERMGR. No Job Name is required in this process. Esend automatically converts the spool file to HTML because HTML was specified as the MSGTYPE for the message body.

Since we are using Esend to convert the spool file to HTML, certain Esend default settings will affect the message body and font colors as well as font name and style. Since we want to control these elements through style tags in the first attachment, we need to make sure the user defaults do not introduce tags that would override the styles specified in the first attachment.

A special user named ORDERACK has been created to provide appropriate user defaults for our acknowledgements, and is specified in the **OVRUSROPT** parameter in our example. The following ESNDUSR-HTML display (page 10) shows the settings that will allow the style elements contained in the first attachment to apply to the second attachment.

```
            Send Mail Defaults for: ORDERACK

  Keyword: HTML        HTML color code, font size and name

  Body Color. . *_____
  Font Size . .  __2 Type: _ (P=Point)
  Font Name . . Courier New_____
  Font Color. . *_____
  Font Style. . Weight: _ (B=Bold)  Style: _ (I=Italic)
  Suppress in HTML Message . . . . . . . : *NO_  *NO,  *YES
  Include HTML crosshairs script . . . . : *NO_  *NO,  *YES


  F12=No change
```

The use of the asterisks in this default example causes Esend to omit tags for controlling body color and font color when converting the spool file to html. As a result, the text from the spool file attachment will be formatted by style elements in the first attachment.
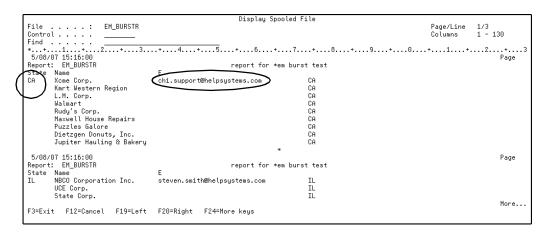
Recipient-Specific Passwords in Distribution Rules

Scenario:

Sensitive information needs to be password protected before it sent to users.
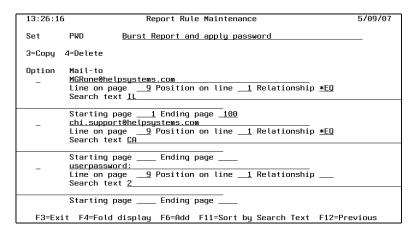
Solution:

Recipient-specific passwords can be applied to each section of a bursted report when sending as PDF. The new ERPTRULES Mail-to keywords USERPASSWORD and OWNERPASSWORD will use a value on the spool file defined by line and position as the password for each resulting pdf file. Something known by the recipient - like a SSN is a good example.

The report sample below page breaks on a state value (CA, or IL). There is also a different email address for each section.

```
                                    Display Spooled File
File . . . . . :   EM_BURSTR                                    Page/Line   1/3
Control . . . . .   _____                                      Columns    1 - 130
Find . . . . . .   _____
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....8....+....9....+....0....+....1....+....2....+....3
 5/08/07 15:16:00                                                              Page
Report:  EM_BURSTR                          report for *em burst test
State  Name                       E
CA     Xcme Corp.                      chi.support@helpsystems.com      CA
       Kmrt Western Region                                              CA
       L.M. Corp.                                                       CA
       Walmart                                                          CA
       Rudy's Corp.                                                     CA
       Maxwell House Repairs                                            CA
       Puzzles Galore                                                   CA
       Dietzgen Donuts, Inc.                                            CA
       Jupiter Hauling & Bakery                                         CA
                                               *
 5/08/07 15:16:00                                                              Page
Report:  EM_BURSTR                          report for *em burst test
State  Name                       E
IL     NBCO Corporation Inc.      steven.smith@helpsystems.com    IL
       UCE Corp.                                                  IL
       State Corp.                                                IL
                                                                            More...
F3=Exit   F12=Cancel   F19=Left   F20=Right   F24=More keys
```

Both the rules that follow use a new **Mail-to** value - USERPASSWORD (required to open) and/or OWNERPASSWORD (required to modify). Line and Starting positions are specified for a value on the page that will be used as a password. Both rule examples use the state value as a password for each section.

```
13:26:16                Report Rule Maintenance              5/09/07

Set      PWD         Burst Report and apply password

3=Copy   4=Delete

Option   Mail-to
  _      MGRone@helpsystems.com
         Line on page   _9 Position on line  _1 Relationship *EQ
         Search text IL
         ─────────────────────────────────
         Starting page  ___1 Ending page  _100
  _      chi.support@helpsystems.com
         Line on page   _9 Position on line  _1 Relationship *EQ
         Search text CA
         ─────────────────────────────────
         Starting page ____ Ending page ____
  _      userpassword:
         Line on page   _9 Position on line  _1 Relationship ___
         Search text 2
         ─────────────────────────────────
         Starting page ____ Ending page ____

  F3=Exit  F4=Fold display  F6=Add  F11=Sort by Search Text  F12=Previous
```
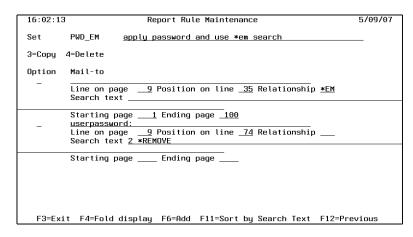
The bursting rule (ERPTRULES page 64) on the left, will search the spool file for the different state value and email to two different addresses.

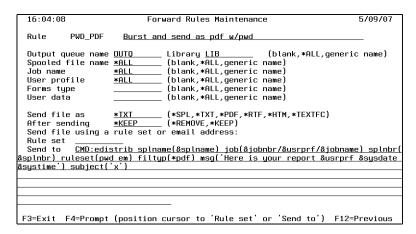The state value is also used as a password for each section.

The value of '2' for the Search Text indicates the number of positions for the password. If no length is specified, the password value is assumed to end at the first blank encountered.

The bursting rule below, uses the ***EM** Relationship to burst the spool file and email to two different addresses, along with a recipient-specific password (state value).

```
16:02:13                Report Rule Maintenance            5/09/07

Set      PWD_EM      apply password and use *em search

3=Copy  4=Delete

Option  Mail-to
  _     _____
          Line on page   __9 Position on line _35 Relationship *EM
          Search text _____
  _____
          Starting page  ___1 Ending page _100
  _       userpassword:_____
          Line on page   __9 Position on line _74 Relationship ___
          Search text 2 *REMOVE_____
  _____
          Starting page ____ Ending page ____




  F3=Exit  F4=Fold display  F6=Add  F11=Sort by Search Text  F12=Previous
```

Add *REMOVE to the **Search Text** value to remove the password value from the resulting pdf file. You must include the length value if using *REMOVE.

Either of the bursting rules above can be used in a forwarding rule. The forwarding rule (page 70) below uses the EDISTRIB command (page 66) to send and process the spool file based on the bursting rule specified by the 'RULESET' parameter - PWD_EM.

```
16:04:08                Forward Rules Maintenance            5/09/07

Rule      PWD_PDF    Burst and send as pdf w/pwd

Output queue name OUTQ_____ Library LIB_____   (blank,*ALL,generic name)
Spooled file name *ALL_____ (blank,*ALL,generic name)
Job name          *ALL_____ (blank,*ALL,generic name)
User profile      *ALL_____ (blank,*ALL,generic name)
Forms type        _____ (blank,*ALL,generic name)
User data         _____ (blank,*ALL,generic name)

Send file as      *TXT_____ (*SPL,*TXT,*PDF,*RTF,*HTM,*TEXTFC)
After sending     *KEEP_____ (*REMOVE,*KEEP)
Send file using a rule set or email address:
Rule set  _____
Send to   CMD:edistrib splname(&splname) job(&jobnbr/&usrprf/&jobname) splnbr(
&splnbr) ruleset(pwd em) filtyp(*pdf) msg('Here is your report &usrprf &sysdate
&systime') subject('x')
_____
_____
_____
_____
_____

 F3=Exit  F4=Prompt (position cursor to 'Rule set' or 'Send to')  F12=Previous
```

Note: The Password is NOT specified in the EDISTRIB command. It is added by the EDISTRIB rule - PWD_EM.

Appendix

Esend Requirements

Sending email with Esend from your System i requires several components. If you meet the following requirements and you can successfully send mail from your LAN, you should be able to email from the System i through the Internet or your local intranet.

- A RISC based System i at V4R4M0 or higher.

- A TCP/IP connection from your System i to your LAN

- A connection between your LAN and an Internet gateway

- Access to a mail router (your Internet service provider, MS Exchange, etc.)

- System i TCP/IP Connectivity Utilities (no charge license program)
  For V4R4 on up: 5769TC1 or 5722TC1 TCP/IP Connectivity Utilities

TCP/IP Setup

TCP/IP setup is beyond the scope of this document. For instructions on basic TCP/IP configuration see:

OS/400 TCP/IP Fastpath Setup (SC41-5430)

System i Email setup

Email setup requires the following information, which may not have been provided in your initial TCP/IP setup:

- Your organization's "domain name". This is the part of your email address that follows the "@". For instance, if your email address is JDoe@mycompany.com, then the domain name for your company is "mycompany.com"

  One or the other of the following must also be provided:

- The TCP/IP addresses that provide your domain name resolution (DNS) service

  OR

- The name or TCP/IP address of the mail router (Internet SMTP provider, Microsoft Exchange Server, Lotus Notes server, etc.) that you will be using

Once you have the required information, the instructions below will guide you through the remaining steps:

1. Specify your Domain information

Type `CFGTCP` at a command line to access the TCP/IP configuration menu. Use option 12 to change domain information.

Define your System i host and domain name

Your Host name is the name by which your System i is known in the TCP/IP domain. It is reasonable to use the same system name that appears on your sign on displays. To name your machine 'MYAS400' simply type the name into the Host name field.

The Domain name is easily derived from your email address. If, for example, your email address is Jdoe@mycompany.com, then the domain name is "mycompany.com". This naming scheme can simplify the email setup - especially if your System i user Id's match the email names for each user. See Appendix page 84 for more information about this topic.

Host name search priority

Your System i can resolve a TCP/IP name either by using a local host table, or by querying a Domain Name Service (DNS). This entry controls which source is used first. Because of restrictions imposed by some firewalls, we recommend that you specify *LOCAL as the primary search location.

DNS (Domain Name Resolution Service)

Domain name servers are responsible for providing routing information for your email messages. Your System i will query the DNS to obtain the IP address of the appropriate mail exchange server for each recipient of email messages it sends. The message is then sent by the System i to the required exchange server/s which are responsible for relaying the message to the actual recipient.

Enter the IP addresses of your domain name servers to enable the System i to route mail.

Note: DNS is an optional way to route email. If you do not require DNS for other services, like ftp, you may find it easier to configure email by omitting the DNS information.

2. Check your Host Table entries

You will probably not need any new host table entries unless you are configuring TCP/IP for the first time. Email will usually work fine with just an entry containing the IP address and host name of the System i itself. If you have named your System i, MYAS400, you must have an entry in your host table for 'MYAS400'.

However, some local network configurations prevent delivery of mail from local senders to local recipients if the messages are sent using DNS routing information. These configurations require such mail to be routed through a local mail server.

If you find that you have this type of local configuration, you will need a host table entry for the email domain described in step 1 above. This entry will associate the IP address of your mail server with the domain name of your local mail recipients.

For example, if your domain is "mycompany.com", your host table would include entries such as:

```
10.100.200.2      Myas400.mycompany.com
10.100.200.3      mycompany.com
```

where 10.100.200.2 is the IP address of your System i and 10.100.200.3 is the IP address of your mail server.

The host table entry for mycompany.com combined with the setting *LOCAL for host name search priority described above will insure that mail addressed to local recipients will be sent to the local server for routing.

3. Define the mail router (optional)

If you do not want your System i to use domain name services to resolve SMTP addresses, you must configure it to forward mail to a system that will. Follow these steps to tell the System i which system to use.

1. Verify that your Mail Server is available to the System i. Substitute your Mail Server IP address into the following command:

   `TELNET RMTSYS('11.222.33.444') PORT(25)`

   A telnet session should start and display a message confirming that you have contacted an SMTP server. If you do not obtain this confirmation, either the IP address does not have a mail server running or your System i is unable to communicate with that IP address. You will have to resolve this problem before continuing with the following steps. You may be able to skip the mail server setup altogether and let DNS handle System i mail, but the DNS approach seems more likely to have problems.

2. Prompt the CHGSMTPA command and scroll to the MAILROUTER parameter. Type a name up to 8 characters long (e.g. SMTPMAIL) and press Enter. You can choose any name (up to 8 characters) you please for your mail router.

3. Use CFGTCP and choose option 10 to Create a host table entry for your MAILROUTER. Create an entry for the name you just specified for the mail router and associate it with the IP address of your mail router.

4. Secure your system from use as an open relay

Prompt the CHGSMTPA command and roll down to the 'Allow relayed mail' (ALWRLY) parameter. Unless you have a specific need for your System i to act as a mail relay, set the ALWRLY parameter to *NONE.

Start the SMTP server and the AnyMail framework

Email will be handled by the SMTP server and the AnyMail mail server framework. Depending on how your system is configured, these services may already be started. The mail server framework, for example, is automatically started whenever the QSYSWRK subsystem is started. If you have changed any of the configuration definitions, you should stop and then restart it. To be certain that the services are running with the current definitions, type these commands:

`ENDMSF`

`ENDTCPSVR *SMTP`

`STRTCPSVR *SMTP`

`STRMSF`

Defining the 'Return' Address

All Internet email messages have a return email address associated with the message. Since it is unlikely you are using your System i as your primary mail system, you will probably want any replies to Esend email routed to a 'normal' email address.

Esend uses several sources for deriving this "From" or return address for the messages it sends. And it always searches these sources in the order discussed below. In the order searched, those sources are:

1. Data area named ESNDADTA in QTEMP
2. Esend address database maintained using the ESNDADR command
3. System Alias Table
4. Derived by concatenating the USER ID with the system Domain Name entered in the TCP/IP configuration

The first source is provided as a way for jobs to dynamically control the sender address by creating a 256 byte data area in QTEMP that contains the desired sender email address. For example, inserting the following command before making the email request would result in your message appearing to be sent by JohnDoe:

```
CRTDTAARA DTAARA(QTEMP/ESNDADTA) TYPE(*CHAR) LEN(256)
          VALUE('johndoe@helpsystems.com')
```

The recommended method is to use a simple Esend address database where you can specify an appropriate return email address for each System i user profile. While this method is direct and easy, it does require maintaining information for each user id that will be sending mail.

- Enter the command ESNDADR and create an entry for your user profile. This is an Esend application that allows a complete SMTP user id AND domain (up to 255 characters) to be associated with a user profile. The Send Mail function will check this area to determine the Originator SMTP Address.

  If Esend does not find an entry here, it will check the System Alias Table for an entry. If you already have directory entries created for users on your system, you may want to consider using these entries as the source of the return mail address.

- Enter the command WRKDIRE and find or create an entry for your user profile. Press F19 to define a SMTP address for your directory entry. Enter the address you would like to appear as the "From" address in Esend messages. If, for example, you want to use: jdoe@bigstuff.com, enter 'jdoe' as the SMTP user ID and 'bigstuff.com' as the SMTP domain. Press Enter to finish creating the entry. This type of entry is known as the System Alias Table (SAT) Entry. There is a limitation of 24 character for the SMTP user id and a directory entry is required for the profile.

If you already have SAT entries, and wish to convert them to the ESNDADR database, enter the command ESNDADB to copy SMTP address and Directory information to the ESNDADR database. Only profiles that are new to the database and have an entry in the SAT are copied. Use the ESNDADR command to maintain or view the database.

If Esend cannot find an SMTP address in either the ESNDADR database or in the System Alias table, it will create a return address by concatenating your user ID with the domain name found in the domain information part of the TCP/IP configuration. This derivation frequently produces invalid email addresses and can sometimes prevent Esend from successfully sending messages.

Create a Default Sender Address in Spool Forwarding

By default, email sent via the spool forwarding process (page 69), has a return address of the user that starts the EFWD job. This user can be anyone, and the forwarded mail address will change depending on who starts the subsystem.

Starting with version R03M13, Esend provides a method to control the sender address by overriding to the return address of any user profile specified in a user-created data area called OVRUSROPT. This creates a system-wide default sender address for spool forwarding.

The steps to implement this process are described below and include creating a new user profile, defining it's return address and email signature, and creating a data area that references this new user profile.

Follow the steps below to use this method:

1. Issue the following command to create a user profile (the name can be anything you like) without the ability to sign-on (password *NONE) but with public authority to *CHANGE:

    ```
    CRTUSRPRF USRPRF(FWDUSER) PASSWORD(*NONE) AUT(*CHANGE)
    ```

Note: The user profile MUST exist during the addition and maintenance of the From Address and Signature process. It does not need to exist for the User Defaults process.

2. Create a "from Address" entry for this user. Issue the ESNDADR (page 9) command and press F6 to add a new user. For example, entering the following values:

    ```
    User ID . . . . . FWDUSER
    Last Name . . . . BI
    First Name. . . . Customer Support
    SMTP Address. . . chi.support@helpsystems.com
    ```

    creates - 'BI Customer Support [chi.support@helpsystems.com]' as the sender address in the email.

3. Issue the command ESNDSGN (page 10) to create a signature entry for the user.

4. Issue the following to delete the user profile:

    ```
    DLTUSRPRF USRPRF(FWDUSER)
    ```

5. Change the Esend user defaults (page 10) to include the signature entry created in step 3. Issue the following command to change the users defaults:

    ```
    ESNDUSR USER(FWDUSER)
    ```

    Use option 2 on the SIGN option and set to *YES.

6. Issue the following command to create the required data area. This data area MUST reside in the library list of the EFWDSTART job in the forwarding subsystem (EFWD), such as QUSRSYS:

    ```
    CRTDTAARA DTAARA(QUSRSYS/OVRUSROPT) TYPE(*CHAR) LEN(256)
        VALUE('FWDUSER')
    ```

Note: If the data area is created in the Esend library, it may be lost in future installs.

Import Address Book API

The Address Book Import API provides a means for importing address book information that may be available from other sources, such as Outlook, for example.
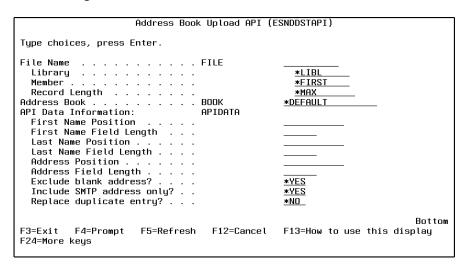
To import to any new or existing address book, including *SYSTEM, the user must have *CHANGE authority to the data area named ES#DFT in the Esend library. Without that authority, a user can ONLY upload to an address book defined by their own ADDRBOOK keyword of ESNDUSR provided they have *CHANGE authority to the ESNDDSTP file and the address book is not *SYSTEM

The import API works by reading name and address information from a file you either have or can create on the i-Series machine. Any reasonable record layout can be used, since you provide details about the location of each piece of information to the API at run time.

To use the import API, you must have a System i library system file that contains the following information:

- Recipient first name
- Recipient last name
- Email address

Run the API by using the ESNDDSTAPI command. Prompting the command results in a display like the following:

```
                    Address Book Upload API (ESNDDSTAPI)

 Type choices, press Enter.

 File Name  . . . . . . . . . . FILE            _____
   Library  . . . . . . . . . .                 *LIBL_____
   Member . . . . . . . . . . .                 *FIRST_____
   Record Length  . . . . . . .                 *MAX_____
 Address Book . . . . . . . . . BOOK          *DEFAULT_____
 API Data Information:          APIDATA
   First Name Position  . . . . .              _____
   First Name Field Length  . . .              _____
   Last Name Position . . . . . .              _____
   Last Name Field Length . . . .              _____
   Address Position . . . . . . .              _____
   Address Field Length . . . . .              _____
   Exclude blank address? . . . .            *YES
   Include SMTP address only? . .            *YES
   Replace duplicate entry? . . .            *NO

                                                               Bottom
 F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
 F24=More keys
```

File Name/Library/Member

This section identifies the database file containing the names and email addresses that will be used to upload to the Address Book.

Record Length

This is the length of the file record. It is only used to ensure that location values entered do not fall outside of the record boundaries. Allowed values are 1 to 32767.

*MAX - This assumes the maximum record length allowed.

Note: There are no checks to ensure the file has this record length. An error does NOT occur if this value is longer than the actual record length, however, if the boundaries of the field locations and length fall outside the actual record boundaries, unpredictable errors will occur.

Address Book Name

<u>*DEFAULT</u> - Uses the default from the ESNDUSR command (see page 10) as specified in the
      ADDRBOOK keyword.

API Data Information

The recipient name is based on a combination of first name and last name. It is not necessary to use
both first and last name. If the record only contains one name, use either first or last name positioning
to specify its location. The API concatenates first and last name when creating entries in the Esend
address book.

First Name Position/Length

This is the starting location and length in the record of the recipient first name.

Last Name Position/Length

This is the starting location and length in the record of the recipient last name.

Email Address Position/Length

This is the starting location and length in the record of the Email address.

Exclude Blank Addresses

When a field that contains the email address is blank, specify if that record should be excluded from
the upload.

<u>*YES</u> - Exclude the record with the blank email address.

*NO - Include the record with the blank email address.

Include only SMTP Addresses

An SMTP address is considered a string of characters that contains an at '@' sign, a period '.' and no
embedded spaces. When the content of the email address field does not contain a valid SMTP
address, specify if that record should be excluded from the upload.

<u>*YES</u> - Include the record with the invalid SMTP address.

*NO - Exclude the record with the invalid address.

Replace Address

If the selected or built name already exists in the Address Book being uploaded, specify if the origi-
nal address information should be overwritten by the uploaded address field.

<u>*YES</u> - Replace the existing record.

*NO - Do not replace the existing record.

Secure FTP

Overview

If you use your Power System as an FTP server on the Internet, it is accessible to the entire world. Therefore, attention to FTP security is necessary to ensure that vital business data stored on your Power System server is not compromised. There are also steps you can take to protect your FTP client.

Use SSL to secure the FTP server

The FTP server provides enhanced security while sending and receiving files over a network. FTP server uses Secure Sockets Layer (SSL) to secure passwords and other sensitive data during an information exchange. The FTP server supports either SSL or TLS protected sessions, including client authentication.

Most SSL-enabled applications connect a client to separate TCP ports, one port for "unprotected" sessions and the other for secure sessions. However, secure FTP is a bit more flexible. A client can connect to a non-encrypted TCP port (usually TCP port 21) and then negotiate authentication and encryption options. A client can also choose a secure FTP port (usually TCP port 990), where connections are assumed to be SSL. The Power Systems FTP server provides for both of these options.

Before you can configure the FTP server to use SSL, you must have installed the prerequisite programs and set up digital certificates on your Power System. Visit this IBM web page:

```
http://publib.boulder.ibm.com/infocenter/iseries/v5r3/
index.jsp?topic=%2Frzaiq%2Frzaiqrzaiqimplement.htm
```

or, search Google for 'Use SSL to secure the FTP server'.

To configure SSL to secure FTP, complete the following tasks :

* Create a local Certificate Authority or use DCM to configure the FTP server to use a public certificate for SSL.

* Associate a certificate with the FTP server

* Require client authentication for the FTP server (optional)

* Enable SSL on the FTP server

DBCS and Country Specific EBCDIC to ASCII Conversion

EBCDIC to ASCII translation is based on the System i Esend job CCSID and the target ASCII code page. The ASCII code page is specified to Esend through an entry in a data area named EMTRN in the Esend library. EMTRN data area content is designated as follows:

Position	Content
1 - 20	Reserved (Old translation table name)
21 - 25	Primary ASCII CCSID
26 - 30	Secondary ASCII CCSID

Successful character conversion requires that the System i data be identified with the correct CCSID. This in turn requires that System i applications that work with that data run in jobs that have the correct job CCSID. If this requirement is not met, undesirable results will be produced.

By default, Esend/EMTRN is shipped with a primary code page of 01252. If your PCs are set for a language that requires a different code page, you will need to update positions 21 - 25 of the EMTRN

data area to the appropriate value. The table below should help you find the correct ASCII code page. If a given System i system supports pcs having multiple local languages, each user's library list will need to be arranged so that Esend finds an EMTRN data area with the appropriate code page.

If the primary CCSID is Unicode, e.g. 13488, then it is also necessary to specify an appropriate single-byte secondary CCSID in positions 26 - 30. When the primary code page is Unicode, the secondary code page is used by Esend to create the mime header in each email message.

To update the data area, use a command like the following:

```
CHGDTAARA DTAARA(ESEND/EMTRN (21 5)) VALUE('01252')
```

You can also use the ESEND\EMTRN command to set the values. Simply enter the command and press enter. The Translation Data Area panel displays

```
                        Command Entry                    HS44
                                          Request level:   4
      Previous commands and messages:
         > addlible esend

         >      ESEND     Translation Data Area

                Translation Table Name:        QA6YBFA93
         >              Library:              QUSRSYS

         >      Primary Client CCSID . . . . .:  1252
                Secondary Client CCSID . . . .:  _____

                F3/F12=End    F4=Prompt

                                                      Bottom
      Type
      ===> ESEND/EMTRN _____
         _____
         _____
         _____
         _____

       F3=Exit   F4=Prompt    F9=Retrieve   F10=Include detailed messages
       F11=Display full       F12=Cancel    F13=Information Assistant   F24=More keys
```

Enter the translation table name and library, along with the primary and secondary CCSID values and press F12.

The following table is provided to help identify appropriate settings for EMTRN. If you need additional information about CCSID's please review IBM's System i Globalization reference material. Much of this information can be found online on IBM System i web pages. At the time this document was created, the following link was valid:

http://www-1.ibm.com/servers/eserver/iseries/software/globalization/ccsid.html

Languages and Related CCSID's

Language	System i Language Identifier	System i Job CCSID	Windows CCSID
Afrikaans	AFR	00037	1252
Albanian	SQI	00500	1252
Arabic	ARA	00420	1256
Australian English	ENA	00037	01252
Belgian Dutch	NLB	00500	01252

Language	System i Language Identifier	System i Job CCSID	Windows CCSID
Belgian French	FRB	00500	01252
Brazilian Portuguese	PTB	00037	01252
Bulgarian	BGR	01025	1251
Byelorussian	BEL	01025	1251
Canadian French	FRC	00500	01252
Catalan	CAT	00284	01252
Croatian	HRV	00870	1250
Czech	CSY	00870	1250
Danish	DAN	00277	01252
Dutch	NLD	00037	01252
Farsi	FAR	01097	
Finnish	FIN	00278	01252
French	FRA	00297	01252
German	DEU	00273	01252
Greek	ELL	00875	1253
Hebrew	HEB	00424	1255
Hungarian	HUN	00870	1250
Icelandic	ISL	00871	1252
Irish Gaelic	GAE	00285	01252
Italian	ITA	00280	01252
Japanese	JPN	01399	942
Korean	KOR	00933	949
Macedonian	MKD	01025	1251
Norwegian Bokmal	NOR	00277	01252
Norwegian Nynorsk	NON	00277	01252
Polish	PLK	00870	1250
Portuguese	PTG	00037	01252
Romanian	ROM	00870	1250
Russian	RUS	01025	1251
Serbian Cyrillic	SRB	01025	1251
Serbian Latin	SRL	00870	1250
Simplified Chinese	CHS	935	1381
Slovakian	SKY	00870	1250
Slovenian	SLO	00870	1250
Spanish	ESP	00284	01252
Swedish	SVE	00278	01252
Swiss French	FRS	00500	01252
Swiss German	DES	00500	01252
Swiss Italian	ITS	00500	01252
Thai	THA	00838	
Traditional Chinese	CHT	937	950

Language	System i Language Identifier	System i Job CCSID	Windows CCSID
Turkish	TRK	01026	1254
United Kingdom English	ENG	00285	01252
United States English	ENU	00037	01252
Uppercase English	ENP	00037	01252

Trouble Shooting using SMTP Journalling

Esend now includes a reporting module that provides easy access to the SMTP journal. SMTP journalling is controlled through the JOURNAL parameter on the CHGSMTPA command. SMTP records useful information about what happens when the AnyMail/400 Mail Server Framework processes message requests for Esend. Journalled information includes mail message transitions and other events related to each message request.

The raw journal entries are rather difficult to interpret, however, as many journal entries can be generated by a single email request. Esend extracts information from the current receiver of the QZMF journal. The reporting module next analyzes journal entries and assembles related entries into a coherent report of SMTP events related to each email request.

The reporting module provides 2 commands for accessing journal information which can be conveniently accessed from the Esend Journal Reporting menu as shown below.

```
 5/08/07 10:53:45     ESEND Journaling Menu (ESENDJRN)

Select one of the following:

   Enhanced Features
      1. Display SMTP journal entries                      DSPESNDJRN
      2. Print SMTP journal entries in batch               DSPESNDJRN
      3. Output SMTP journal entries to file in batch      DSPESNDJRN

      5. Display SMTP log entries from file                DSPESNDLOG
      6. Print SMTP log entries from file in batch         DSPESNDLOG

   System Configuration
      10. Set SMTP journaling                              CHGSMTPA




Selection or command
===>
F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F14=Submit  F24=More Keys
(C) Copyright Help/Systems 1982, 2006
```

DSPESNDJRN extracts the journal information from the receiver currently attached to the QZMF journal. The retrieved journal entries can be written to a file, to *PRINT or browsed online. This function may take a few minutes or longer depending on the number of entries being retrieved. You can improve response time by limiting the number of entries retrieved to a specific date and time range.

DSPESNDLOG reads a file previously created by DSPESNDJRN. Output can be browsed or sent to *PRINT and matches the output produced by DSPESNDJRN.

Overridden Spooled File Ownership

Changes have been made (version R03M44) to improve the Esend process to support users who override print file output so that ownership is set to the current job rather than QPRTJOB.

Prior to these changes, Esend failed to send the correct spooled file from the server job with an override to SPLFOWN(*JOB). Also, Esend requests for a spooled file from a server job with an explicit job number/user/name failed due to an arbitrarily change of the job name to QPRTJOB in the case where the current user does not match the job user.

To correct this, a new API— QSPRILSP—is used to retrieve the attributes of the spool file for any spooled file selection that asks for the *LAST spooled file for the current job (where current job is either * or the explicit number/user/name equivalent of *). If the spool name returned by the API matches the spool name selection criteria (exact or generic), the job information returned by the API is used in subsequent API calls to retrieve the spool file, and Esend will process the correct spool file even if the user owns more than 32,000 spool files.

With this change, a very small number of users may be affected provided both of the following are true:

- You use Esend commands in any job where spooled output is owned by the QPRTJOB.
- An Esend request is intended to send something other than the most recently generated spool file and the job is specified as job(*).

Prior to the change, requests meeting the above criteria would have correctly found the requested file in the QPRTJOB if the file existed. With this change, Esend will no longer automatically swap the job name to QPRTJOB. This means the Esend request might need to be changed to reference the QPRTJOB, or the spool file might need to be overridden so it remains owned by the same job the report is run in.

This change does NOT apply to Sequel requests that specify a recipient.

Invalid Email Address Processing and Error Message Handling

Prior to version R03M43, Esend would signal EML0004 as an escape message whenever an invalid email address was detected. In the case where the invalid address was part of a list, EML0004 was signaled, no email was sent, and the invalid address was identified in a diagnostic EML0069 message.

In version R03M43 (only) the behavior was changed to send EML0069 as diagnostic for each invalid recipient detected, and if there was not at least one recipient that looked valid, the process signaled EML0010 as an escape message indicating that at least one recipient was required.

Now with version R03M45, Esend includes a change that allows you to decide whether or not to send a message when invalid recipients are detected. Processing is controlled by the existence of a data area named ESNDNOML in any library in the jobs library list.

Esend will check for the existence of the ESNDNOML data area, and if it exists, no mail will be sent if there is one or more invalid recipients. If the data area does not exist:

- Messages will be sent to all of the valid recipients and each invalid recipient will signal EML0069 as a diagnostic message.
- EML0004 will be signaled as an escape message (because the recipient list was not entirely valid) if any invalid recipients are detected.
- If none of the recipients are valid, EML0010 will be signaled indicating that a valid recipient is needed to send a message and EML0004 is sent as an escape message.

WRKSPLFE Command Line Entry and Option Suppression

Suppress the Command Line

For security reasons, you may not want users to have a command entry line. By default, command entry is available on the WRKSPLFE spool file list display and is also exposed in several of the options available through WRKSPLFE.

To suppress the command line on the WRKSPLFE list display for all users issue the following command to create the ESNCLBLK data area:

```
CRTDTAARA DTAARA(ESEND/ESNCLBLK) TYPE(*LGL)
```

Esend uses the library list when checking for the existence of this data area. This allows for some users to have the command line while others do not based on individual library list settings.

Suppress WRKSPLFE Options

WRKSPLFE also gives users several options (the one-character codes at the top of the command display) that include command line entry. While the command line entry on these options cannot be suppressed, there is away to remove any option from the WRKSPLFE function that is viewed as giving users too much capability. This control can also be tailored to individual users by library list and/or authority settings. This process is also controlled by the existence (or not) of a data area.

The WRKSPLFE command checks the library list for the existence of a data area named WRKSPLFE. If found, Esend reads the data area to find the list of options to be suppressed.

To suppress the options that expose a command entry line, issue the following command to create the WRKSPFLE data area:

```
CRTDTAARA DTAARA(ESEND/WRKSPLFE) TYPE(*CHAR) LEN(25) VALUE(7OJ)
```

This example will suppress the options 7, O, and J as shown in the VALUES parameter. Review the table below for available values.

After the data area is created, edit the object authority and set *PUBLIC to *USE. You can use the CHGDTAARA command to modify the list.

*Note: Any user with *CHANGE authority will continue to see all options.*

The table below lists the available codes for the VALUES parameter, and the corresponding option to be suppressed. The codes are entered without spaces or commas.

Code	Option
E	ESNDMAIL
S	ESNDFILE
F	Fax
I	Copy to IFS
X	EDISTRIB
P	PDFSPLF
1	SndNetSplf
2	CHGSPLF
3	Hold Spooled File

4	DLTSPLF
5	DSPSPLF
6	Release Spooled File
7	WRKWTR
8	DSPSPLATR
D	CPYSPLF
Q	CHGOUTQ
O	WRKOUTQ
K	Copy to OUTQ
J	WRKJOB
C	Copy to User
M	Move to User

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