MGS. Inc.	
	Computer Business Solutions

DELIVER Utility for MCP Systems

Reference Manual

Version 1.10

June 2020 – Rev 2

DELIVER Utility for MCP Systems Reference Manual

Version 1.10

Disclaimer

NO WARRANTIES OF ANY NATURE ARE EXTENDED BY THIS DOCUMENT.

This document describes the current release of the DELIVER Utility for Unisys MCP Systems. The MGS DELIVER Utility for Unisys MCP Systems Software is a proprietary product suite offered for licensing by MGS, Inc. Use of this software requires that a license agreement be signed with MGS, Inc or one of its distributors. No part of this document may be copied, distributed, or transmitted in any form or by any means, mechanical or electronic, without the express written permission of MGS, Inc.

MGS, Inc. believes the information presented in this document is accurate and reliable. However, MGS, Inc. assumes no responsibility for any consequences arising from the use of the DELIVER Utility software, this document or the information contained herein. MGS, Inc. reserves the right to revise the contents of this publication without obligation to notify any person of such revisions.

All questions and comments concerning this document should be directed to:

MGS, Inc. Customer Support

MGS, Inc.
10901 Trade Road
Suite B
Richmond, VA 23236

Phone: 804-379-0230
Fax: 804-379-1299
E-mail: support@mgsinc.com

June 2020 – Rev 2

1.   Overview

The DELIVER utility can be run from a WFL job stream or a MARC/CANDE terminal to easily deliver MCP files exactly where you need them. Using DELIVER a file can be directed to one of the following destinations outside the MCP environment:

-       e-mail a disk file to a single e-mail recipient
-       copy a file to another MCP host via BNA
-       transfer a file to an FTP server
-       copy a file to a Windows™ share
-       send as a fax image to a facsimile machine (Internet facsimile service required)
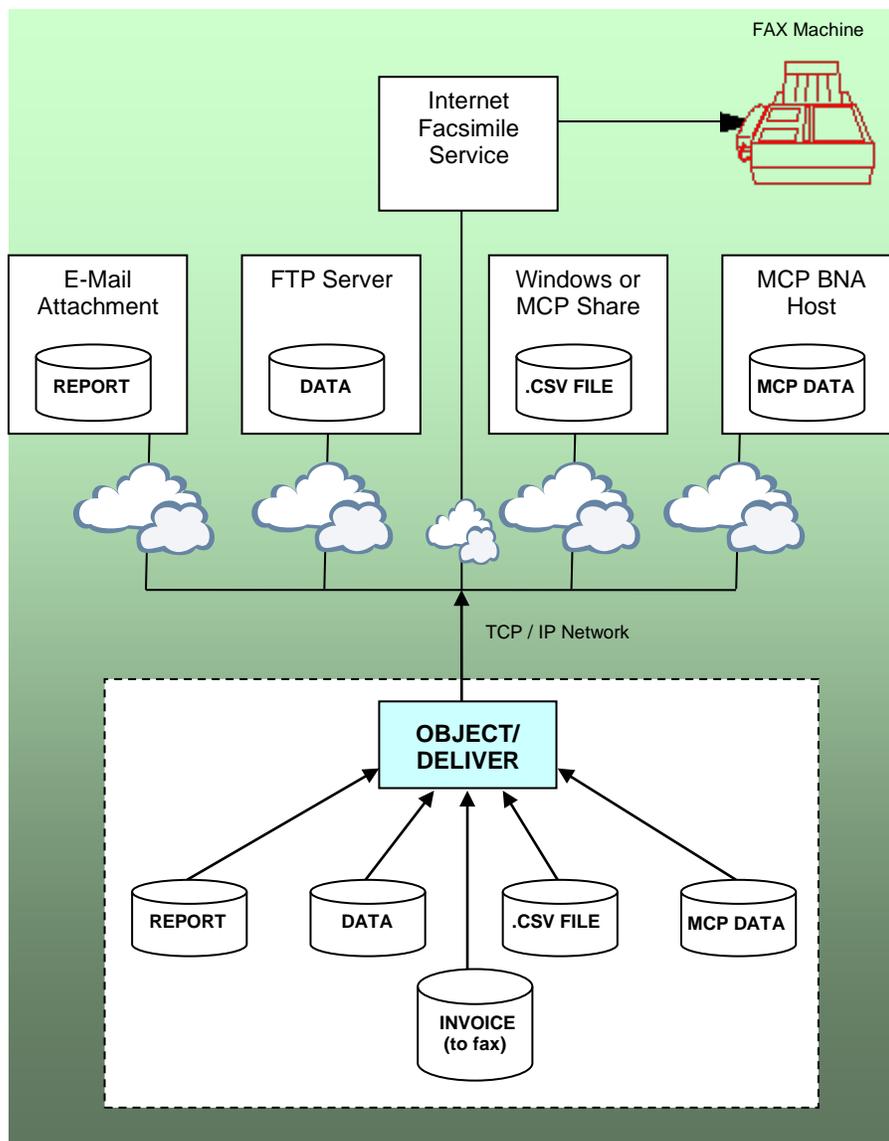

Fig 1. DELIVER Overview

DELIVER makes transfer of MCP files to these diverse destinations easy. No worrying about arcane syntax or difficult system setup. Using a simple, consistent input syntax, DELIVER allows you to move data without worrying about the complexity involved with all the different ways of transferring information out of the MCP environment. It even allows copying a file to a Windows share, something not provided by the MCP.

Deliver makes it easy to select the MCP file to transfer. You can specify a simple file name or a file name based on CANDE wild cards. You can also request transfer of one or more Printer Backup files for a WFL Job or a CANDE Session.

DELIVER makes sure your data arrives in a meaningful format at its destination. DELIVER does automatic, intelligent ASCII translation and carriage return/line feed insertion, based on the EXTMODE and FILEKIND attribute values of the file to be e-mailed, copied or faxed. This includes conversion of MCP printer backup files to straight text. It also automatically determines whether portrait or landscape orientation is best for your PDF and TIFF transfers. However, you can always use DELIVER's data conversion options to manually control ASCII translation and carriage return/line feed insertion for any file.

Note that with DELIVER, you can also select to have your "textual" data delivered in any of the following PC file formats:

- Plain ASCII text (CR/LF between records)
- Adobe Reader PDF
- Adobe Reader PDF using a background image/text "form"
- TIFF Image (graphic) of the text page(s)

Of course, DELIVER supports full binary transfer, where your file is replicated at the destination without a byte of information being changed.

How does DELIVER do all this so reliably? Rather than depend on other-vendor code, which may or may not be rigorously tested, DELIVER uses industrial strength internal client modules developed by MGS, Inc. These internal modules that have been tested against a wide range of Unisys and non-Unisys servers to insure reliable operation in the operating conditions found in the open software environment. DELIVER uses its own internal SMTP client to e-mail the file as an attachment or to direct it to an Internet facsimile service.   DELIVER has its own internal FTP client processor which it uses for FTP transfers. DELIVER uses internal REDIRECTOR I/O statements to copy files directly to a Windows share.

For BNA transfers, however, DELIVER builds and starts a Unisys WFL "COPY" statement to copy the file utilizing the standard Unisys BNA transfer capability, the proven standard for that protocol.

2.   Installation and Operation

The DELIVER program can be downloaded from the MGS website by linking to

> http://www.mgsinc.com/deliverdl.html

This will cause the MCP wrapped file DELIVER.CON to be downloaded to your PC.

2.1   System Requirements

DELIVER will run on any ClearPath NX, LX, CS or Libra system running MCP 8.0 or later. TCP/IP connectivity to your company's mail, FTP, MCP, UNIX and Windows servers is required for BNA, E-mail, FTP and WINDOWSCOPY transfers. Internet mail connectivity and an external Internet Facsimile Service (not included with the product) is required for sending facsimiles.

2.2   How to Install DELIVER

First, you must use a binary file transfer to get the DELIVER.CON wrap file to the host; the easiest way to do this is using Windows Explorer to drag and drop the wrapped file to a ClearPath MCP share.

Next, to unwrap the DELIVER code file, use the following command from a CANDE session logged on to a privileged usercode:

```
        WFL UNWRAP *= AS (<usercode>)= OUTOF "DELIVER.CON"
                TO <family> (PACK, RESTRICTED=FALSE)
```

where `<usercode>` is the usercode you want to install DELIVER and `<family>` is the family you want to install the file OBJECT/DELIVER.

Important Note: Without an activation key, the DELIVER utility will run for only five days from the date it is downloaded. To re-activate DELIVER, you can request a longer demonstration key or you can purchase an "activation key" from MGS, Inc (e-mail sales@mgsinc.com for details). When you are provided with a key by MGS, Inc, run DELIVER once using the KEY command (see Section 4.8 of this document) to re-activate the product.

2.3   How to Centrally Specify your SMTP Server

Both the EMAIL and FAX transfer types require that DELIVER know the hostname of your company's outgoing mail server (SMTP Server). While this information can be specified in each individual DELIVER command, it is usually unchanging and therefore becomes repetitive to include in every EMAIL and FAX command.

Because of this we recommend you create the following two files on your family DISK. They will establish the default SMTP Server name for all the EMAIL and FAX DELIVER commands executed on your system.

```
#FILE *DELIVER/EMAIL/OPTIONS ON DISK
100   SERVER SMTP
#

#FILE *DELIVER/FAX/OPTIONS ON DISK
100   SERVER SMTP
#
```

Fig 2. Recommended OPTIONS Files

The SERVER name ("SMTP" in the above example) must be the actual hostname of your internal corporate SMTP server. Be sure to set the security on these files to PUBLIC IO. If your SMTP server requires authentication, then the USER and even the PASSWORD option settings can also be specified in each of these files along with the SERVER option setting. See Section 4.7 for more details on use of the DELIVER OPTIONS files.

Important Note: If your SMTP server is already defined in your MCP systems's *INSTALLATION/OPTIONS file, you do not need to create the OPTIONS files above.

2.4   How to Run DELIVER

Deliver can be used within a WFL job using the following syntax:

```
RUN OBJECT/DELIVER(" <DELIVER parameters> ");
```

If the file is successfully e-mailed, copied or faxed, the DELIVER program's TASKVALUE will be zero when it completes; if the e-mail, copy or fax fails, DELIVER's TASKVALUE will be non-zero. Note that, when e-mailing or faxing a file, "success" does not mean that the file was actually delivered to the recipient; it means that the e-mail was successfully delivered to the SMTP server.

An example of using DELIVER within a WFL is as follows:

```
BEGIN JOB DELIVER/SAMPLE;
    TASK T;   STRING S;

    RUN OBJECT/DELIVER("EMAIL DAILY/REPORT TO CSUSER@MYCOMPANY.COM") [T];

    IF T(VALUE) EQL 0 THEN
      DISPLAY("FILE SUCCESSFULLY E-MAILED")
    ELSE
      S:=ACCEPT("FILE E-MAIL FAILURE");

END JOB.
```

Fig 3. Example DELIVER Workflow

The DELIVER program can be executed via the MARC interface using the RUN Choice. DELIVER can also be run directly from a CANDE terminal using the following syntax:

```
RUN DELIVER (" <DELIVER parameters> ")
```

DELIVER will then display a series of progress messages and a final message indicating whether the transfer was successful or not.

Important Note: If you use the CANDE Utility command to run DELIVER ("U DELIVER <parameters>"), make sure that you enclose any items that contain lowercase characters (such as path/file names or passwords) in single or double quotes. The quotes are required because CANDE will translate to uppercase any non-quoted text before passing it to DELIVER as a parameter.

3.   Requirements Needed to Run DELIVER

This section gives you the minimum basic hardware, software and information required for DELIVER to run successfully. Before you run the DELIVER utility you will need to confirm that you have the required hardware/software and gather the following basic information.

The information below is organized by transfer type.

3.1   BNACOPY Transfer

-       BNA must be installed and running on both the source and destination MCP systems.
-       There must be an active BNA LAN connection between the two systems (CPLAN or BNA-over-IP).
-       You must know the BNA hostname of the destination system
-       The usercode you use, to run DELIVER on the source system, must be defined as a REMOTEUSER of the destination system.

3.2   EMAIL Transfer

-       You must have a valid destination e-mail address.
-       There must be a TCP/IP LAN connection between the MCP system and your local SMTP server (outbound mail server).
-       You must have the TCP/IP hostname of your SMTP server.
-       If your SMTP server requires authentication, then you will need a valid username and password for the SMTP server logon.

3.3   FAX Transfer

-       You must open an account with an Internet based Facsimile Service. These services are designed to accept e-mails, with text attachments, and then they deliver the attachment as a fax. DELIVER has been tested with GreenFax.Com.
-       There must be a TCP/IP LAN connection between the MCP system and your local SMTP server (outbound mail server) and your SMTP server must be able to pass e-mail out to the Internet (to your Facsimile Service).
-       You must have the TCP/IP hostname of your SMTP server.
-       If your SMTP server requires authentication, then you will need a valid username and password for the SMTP server logon.
-       You must have the fax machine phone number including 1 and area code.
-       You must know your facsimile service's account information. See Section 5 of this document for details on using the GreenFax.Com service.

3.4   FTPCOPY Transfer

-        There must be a TCP/IP LAN connection between the MCP system and your
         FTP server.
-        You must know the TCP/IP hostname of your FTP server.
-        If your FTP server requires authentication, then you will need a valid username
         and password for the FTP server.
-        If you do not use the FORCE option, you must create all necessary folders and
         sub-folders ahead of time.

3.5   WINDOWSCOPY Transfer

-        There must be a TCP/IP LAN connection between the MCP system and your
         Windows server.
-        You must have the TCP/IP hostname of your Windows server.
-        You must know the Windows Share name on your Windows server.
-        You will need a valid username and password for the Windows server.
-        If you do not use the FORCE option, you must create all necessary folders and
         sub-folders ahead of time.

3.6   PDF Forms

-        The FORM file must be a single page PDF document that was created with the
         "Optimize for Fast Web View" option disabled and must be saved as
         "Standard," not "Minimum size."
-        You must use a binary file transfer to upload the FORM file to the MCP disk.
-        On the MCP system the FORM file must be visible to all usercodes, that will
         be using it, and have read-only or read-write access.

4.   DELIVER Parameters

Regardless of how it is initiated, you pass the program a single string parameter.

4.1   Detailed Syntax

The following contains the details of the DELIVER input parameter syntax.

                                                    BOLD indicates required option


```
       ------------- BNACOPY ------------- <MCP file title> --- <options> ------
       |     |  |--- EMAIL ---------|                                          |
       |- * -|  |--- FAX -----------|                                          |
       |     |  |--- FTPCOPY -------|                                          |
       |        |--- WINCOPY -------|                                          |
       |        |--- WINDOWSCOPY ---|                                          |
       |                                                                       |
       |- KEY -------- <activation key> ---------------------------------------|
       |                                                                       |
       |- KEYRING -------------------------------------------------------------|
       |                                                                       |
       |- DECOMPRESS - <MCP file title> ---------------------------------------|
                                       |---AS --- <MCP file title> ---|


    <MCP file title>

    -------- <standard MCP single file name> -------------------------------
        |                                                         |
        |---- <file name with CANDE wildcard characters> ----|
        |                                                         |
        |---- SESSION --------- <number> -------------------|
         |-- JOB ------|    |--- * ----------|


    <BNACOPY options> ::=

      |<------------------------------------|
    -------- **TO** -------- <BNA hostname> ---------
        |--- AS -------- <MCP file title> --|
        |--- REMOVE -----------------------|
        |--- COMPRESS -- <compress spec> ---|


    <EMAIL options> ::=

      |<------------------------------------|
    -------- **TO** -------- <e-mail address> -------
        |--- AS -------- <file name> -------|
        |--- FROM ------ <e-mail address> --|
        |--- SUBJECT --- <subject> ---------|
        |--- MESSAGE --- <message> ---------|
        |--- **SERVER** ---- <SMTP hostname> ---|
        |--- USER ------ <user name> -------|
        |--- PASSWORD -- <password> --------|
        |--- REMOVE -----------------------|
        |--- ENCRYPT ----------------------|
```

```
          |--- COMPRESS -- <compress spec> ---|
          |--- <data conversion options> -----|
          |--- <directory options> -----------|


     <FAX options> ::=

        |<----------------------------------|
     -------- TO -------- <phone number> --------
          |--- SERVICE --- <domain name> -----|
          |--- FROM ------ <e-mail address>---|
          |--- CODE ------ <sender code> -----|
          |--- MESSAGE --- <message> ---------|
          |--- SERVER ---- <SMTP hostname> ---|
          |--- USER ------ <user name> -------|
          |--- PASSWORD -- <password> --------|
          |--- REMOVE ------------------------|
          |--- <data conversion options> -----|
          |--- <directory options ------------|


     <FTPCOPY options> ::=

        |<-----------------------------------|
     -------- TO -------- <FTP hostname> ---------
          |--- AS -------- <file name> -------|
          |--- USER ------ <user name> -------|
          |--- PASSWORD -- <password> --------|
          |--- FORCE -------------------------|
          |--- EXISTS ------------------------|
          |--- REMOVE ------------------------|
          |--- COMPRESS -- <compress spec> ---|
          |--- <data conversion options> -----|
          |--- <directory options ------------|


     <WINCOPY options> or <WINDOWSCOPY options>  ::=

        |<----------------------------------|
     -------- TO --------- <Windows path> ---------
          |--- AS --------- <file name> ------|
          |--- USER ------- <user name> ------|
          |--- PASSWORD --- <password> -------|
          |--- DOMAIN ----- <Windows domain> -|
          |--- FORCE -------------------------|
          |--- EXISTS ------------------------|
          |--- REMOVE ------------------------|
          |--- ENCRYPT ---- <recipient> ------|
          |--- COMPRESS --- <compress spec> --|
          |--- <data conversion options> -----|
          |--- <directory options ------------|


     <compress spec>

     ------------------------------------------------
          |--- 48'<hex string>' --------------|


     <data conversion options> ::=

     -------- TEXT ----------------------------------
          |--- BINARY ------------------------|
          |--- PDF ---------------------------|
          |--- TIFF --------------------------|
```

```
      |--- FORM -------- <PDF form> ------|
      |--- TRANSLATE --- <value> ---------|
      |--- CRLF -------- <value> ---------|


  <directory options> ::=

  -------- COMBINE -------------------------------
      |--- NEWEST -----------------------|


  <recipient>

  ------------------- <email address> ---------
      |-- FOR --|   |-- <name> ------------|


  <value> ::=

  -------- YES -----------------------------------
      |--- NO ---------------------------|
```

Important Note: Since the <DELIVER parameters> are already enclosed in double quotes, the single quote must be used as a delimiter if there are embedded spaces in the following OPTION values:

- EMAIL **SUBJECT**
- FAX **CODE**
- EMAIL or FAX **FROM**
- EMAIL or FAX **MESSAGE**
- EMAIL, FTPCOPY or WINDOWSCOPY **TO** (destination file name)

Single quotes are also needed to delimit any **<MCP file title>** for those individual title nodes that contain embedded spaces or other special characters.

If there are no embedded spaces, then single quote delimiters are not needed.

4.2   Source File Name Specification

The name of the file or files to be transferred can be specified in three different ways.

<standard MCP single file name>: This is a standard MCP file name for a single file anywhere on the MCP platform. It can optionally contain the usercode and packname parts of an MCP file name.

The file name specified will be used as the source file for the transfer.

<file name with CANDE wildcard characters>: MCP filename(s) can be specified using CANDE supported wildcard characters (? = ~). See the section called "Character Matching with Wild-Card Characters" in the FILES command section in the "CANDE Operations Reference Manual" for details on using the wildcard characters.

Since the wildcard specification has the possibility of matching multiple file names, DELIVER will default to only sending only the newest file that matches the wildcard specification. The COMBINE directory option can be used to override this and to combine all files found into a single destination file.

<JOB/SESSION designation>: The syntax JOB nnnn, JOB *, SESSION nnnn and SESSION * is available when specifying the MCP source file name. This syntax will allow you to select that DELIVER transfer all the Printer Backup files for a specific JOB or SESSION. A "*" can be used in place of an explicit <job/session number> to indicate the current task's JOB or SESSION number.

If there is more than one Printer Backup file for the job/session, then all Printer Backup files found will be combined (stacked) into a single output file. The NEWEST directory option can be used to override this and to only transfer the single newest Printer Backup file found.

Examples:

EMAIL (PROD)REPORT/= TO Cust@company.com

> Directory search (PROD)REPORT/= and email the newest file found in that directory.

EMAIL SESSION * TO Programmer@company.com

> Find all the print files for the current CANDE session and e-mail them, stacked in a single text file.

WINCOPY DAILYREPORT?? AS DAILY TO \\Prodserv\report COMBINE

> Find all the files, with names 13 characters in length that start with "DAILYREPORT", and copy them, stacked, to a single text file named DAILY on the Windows share "report" on the Windows server "Prodserv".

WINCOPY JOB * AS LASTUPDATE TO \\Prodserv\update NEWEST

> Find the newest print file for the current WFL Job and copy it as a file named LASTUPDATE on the Windows share "update" and Windows server "Prodserv".

4.3   Transfer Commands and Options

The following commands are used to specify the type of transfer to be performed by the DELIVER utility program. Each section also discusses the command specific options.

4.3.1 BNACOPY

DELIVER will transfer an MCP file across a BNA connection. The Unisys MCP BNA software must be running on both the source and destination systems for this capability to be available. DELIVER must also be run under a usercode that has REMOTEUSER privileges on the destination system.

The **TO** option is used to specify the destination host for the copy, and it is required. All other `<BNACOPY options>` are optional. The **AS** option is used to specify the MCP file title and family of the destination file. If you do not include the **AS** option, the source file's name and family will be used for the destination file title.

Destination security is controlled by the privileges, on the destination host, of the usercode you use to run the DELIVER program on the source system. In other words, the standard BNA transfer security controls are used to control DELIVER based BNA transfers.

An example BNACOPY WFL command:

```
RUN OBJECT/DELIVER(
   "BNACOPY (PROD)DBDUMP/SAT ON DBBKUP TO BACKUP1 " &
   "AS (PROD)DBDUMP/SAT/COMPRESSED ON DBBKUP1 " &
   "COMPRESS"
);
```

In the above command, DELIVER will:

- Copy the MCP file "(PROD)DBDUMP/SAT ON DBBKUP" to the MCP host BACKUP1 using BNA to transfer the file
- The file will be named "COMPRESSED" and will be placed in the directory (PROD)DBDUMP/SAT on the family DBBKUP1
- COMPRESS causes compressing of the MCP data before transfer

4.3.2 EMAIL

DELIVER will transfer an MCP file as an e-mail attachment. The source MCP system must have TCP/IP connectivity to an SMTP server for this capability to be available.

The EMAIL transfer **TO** option, which specifies the destination e-mail address, is required. All other `<EMAIL options>` are optional.

The **SERVER** option is also required to specify the SMTP server name (that will handle the outbound e-mail message) unless the Unisys MCP *INSTALLATION/OPTIONS file contains a valid MAILSERVER name. If the *INSTALLATION/OPTIONS file has been setup then DELIVER will automatically use the MAILSERVER specified there. See Section 9 "Installing the EMAIL Utility" of the "Unisys System Software Utilities Operations Reference Manual" (8600 0460–510) for details on the *INSTALLATION/OPTIONS file.

Many SMTP servers require that you pass authentication before they will accept an outgoing e-mail message. If your SMTP server requires log on, use the **USER** and **PASSWORD** options to specify the log on information. DELIVER's internal SMTP client supports both "AUTH LOGON" and "AUTH PLAIN" SMTP authorization.

The **SUBJECT** option allows you to specify a subject line for the e-mail and must be enclosed in single quotes if it contains spaces. By default, the subject line is 'ClearPath MCP File'.

The **MESSAGE** option allows you to specify a short message to include in the body of the e-mail (the file itself is sent as an attachment to the e-mail). The MESSAGE must be enclosed in single quotes if it contains spaces. The default is for the e-mail to have no body.

The **FROM** option allows you to specify a "from" e-mail address. The default "from" e-mail address created by DELIVER is '<usercode>@<MCP system host.domainname>'.

The **AS** option allows you to specify the name for the attachment to the e-mail. By default, the source file name (including usercode) will be used as the attachment name, with the forward slashes converted to underscores; for example, the file (USER)MY/FILE ON PACK would be named USER_MY_FILE when received by the e-mail recipient. (The file extension ".txt", ".pdf" or ".tif" will be added to the default attachment name for anything other than a BINARY transfer. See the "Data Conversion Options" section later in this document for details on the possible transfer types.)

An example EMAIL WFL command:

```
RUN OBJECT/DELIVER(
  "EMAIL (PROD)DBDUMP/REPORT ON DBBKUP TO SUPERVISOR@MYCOMPANY.COM " &
  "AS DBDUMP.PDF" &
  "FROM MCPPROD@MYCOMPANY.COM " &
  "SUBJECT 'Daily DBDump Report'" &
  "MESSAGE 'DBDump Report for " & TIMEDATE(MMDDYY) &  "' " &
  "SERVER SMTP1.MYCOMPANY.COM"
  "USER PROD PASSWORD 'secret' " &
  "PDF"
);
```

In the above command, DELIVER will:

- Email the MCP file "(PROD)DBDUMP/REPORT ON DBBKUP" to the e-mail address SUPERVISOR@MYCOMPANY.COM
- The file will be an e-mail attachment named "DBDUMP.PDF"
- The "FROM" e-mail address will show as MCPPROD@MYCOMPANY.COM
- The SUBJECT line of the e-mail will be "Daily DBDump Report"
- The "FROM" e-mail address will show as MCPPROD@MYCOMPANY.COM
- The "BODY" of the e-mail will be "DBDump Report for MMDDYY"
- DELIVER will use the SMTP server named SMTP1.MYCOMPANY.COM to send the e-mail

- A valid username and password for the SMTP server is specified
- PDF causes the text data in the MCP file to be converted to a PDF document

4.3.3 FAX

DELIVER will send an MCP file as a facsimile image to a fax machine. The source MCP system must have TCP/IP connectivity to an SMTP server for this capability to be available. Your company must also subscribe to an Internet Facsimile Delivery service for the feature to be available. These services work by receiving the file (to be faxed) as an e-mail attachment with the phone number as part of the "TO" e-mail address. DELIVER has been qualified with the GreenFax.Com as an example of how this can be done. See Section 5 of this document for details about using the DELIVER Utility with the GreenFax.Com service.

For FAX transfers, the **TO** option which specifies the destination fax machine phone number, is required. Any special characters are stripped out. The **SERVICE** option, which specifies the domain name of your Internet Facsimile Delivery service, is also required. The **TO** option is pre-pended to the **SERVICE** option and the result is used as the e-mail address for the outgoing e-mail message to your Internet Facsimile Delivery service. For example, "SERVICE greenfax.com TO 1(804)379-0230" results in the fax being e-mailed to 18043790230@greenfax.com. All other `<FAX options>` are optional.

The **SERVER** option is also required to specify the SMTP server name (that will handle the outbound e-mail message) unless the Unisys MCP *INSTALLATION/OPTIONS file contains a valid MAILSERVER name. If the *INSTALLATION/OPTIONS file has been setup then DELIVER will automatically use the MAILSERVER specified there. See Section 9 "Installing the EMAIL Utility" of the "Unisys System Software Utilities Operations Reference Manual" (8600 0460–510) for details on the *INSTALLATION/OPTIONS file.

Many SMTP servers require that you pass authentication before they will accept an outgoing e-mail message. If your SMTP server requires log on, use the **USER** and **PASSWORD** options to specify the log on information. DELIVER's internal SMTP client supports both "AUTH LOGON" and "AUTH PLAIN" SMTP authorization.

The **CODE** option allows you to specify a GREENFAX.COM account code that is placed in the subject line of the outgoing e-mail message. By default, no account code is sent.

The **MESSAGE** option allows you to specify a short message that will appear in the body of the e-mail sent to the fax service (the greenfax.com fax service inserts this message on the facsimile cover page - other fax services may work differently). The message must be enclosed in single quotes if it contains spaces. The default is for the e-mail to have no cover page message.

The **FROM** option allows you to specify a "from" e-mail address for the outgoing e-mail to the Internet Facsimile Delivery service. In many cases, a fax completion confirmation will go to this e-mail address, so it should be a valid e-mail address. If not specified, the default "from" e-mail address created by DELIVER is 'deliver@<MCP system host.domainname>'.

Example:
```
    FAX (PROD)REPORT1 ON PRODPK TO 18005551212 SERVICE greefax.com
        CODE 292219 FROM faxadmin@mycompany.com
```

4.3.4 FTPCOPY

DELIVER allows you to transfer an MCP file to an FTP server. There must be a TCP/IP link between the MCP system and the FTP server for this capability to be available.

For FTPCOPY transfers the **TO** (destination host) is required. All other `<FTPCOPY options>` are optional.

The **AS** option allows you to specify the name of the file that is created on the FTP server. By default, the source file name (including usercode) will be used as the destination file name, with the forward slashes converted to underscores; for example, the file (USER)MY/FILE ON PACK would be named USER_MY_FILE when received by the FTP server. (The file extension ".txt", ".pdf" or ".tif" will be added to the default destination name for anything other than a BINARY transfer. See the "Data Conversion Options" section later in this document for details on the possible transfer types.)

Important Note: If the destination file is to be placed in a folder/subfolder on your FTP server, the folder/subfolder name should be included in either the **TO** specification (eg `TO` `ftp.mgsinc.com/incoming`) or in the **AS** specification (eg `AS /incoming/data.txt`), but not both. Normally any folder or subfolder must already exist on your FTP server, otherwise DELIVER will report a destination file open error. However, if you specify the **FORCE** option, DELIVER will automatically create all missing directories in the destination path before attempting to copy the file.

The **EXISTS** option is the opposite of the **FORCE** option – that is, it instructs DELIVER to report an error if any of the directories in the destination path do not exist. The **EXISTS** option is only required when using the DELIVER Print Server (because **FORCE** is the default for the Print Server).

Destination security is controlled by the FTP server you are transferring to. The **USER** and **PASSWORD** options may also be required if your FTP server requires log on information for the FTP transfer.

An example FTPCOPY WFL command:

```
  RUN OBJECT/DELIVER(
    "FTPCOPY (PROD)DBDUMP/SAT ON DBBKUP TO FTP.MYCOMPANY.COM " &
    "AS /DBDUMP/SAT/01.DMP " &
```

```
    "USER TEST PASSWORD 'tst' " &
    "FORCE COMPRESS"
);
```

In the above command, DELIVER will:

- Copy the MCP file "(PROD)DBDUMP/SAT ON DBBKUP" to the FTP server FTP.MYCOMPANY.COM.
- The file will named "01.DMP" and will be placed in the directories /DBDUMP/SAT
- A valid FTP username and password logon must be provided
- FORCE creates the FTP directories if they are not already there
- COMPRESS causes a binary transfer compressing the MCP data as transferred

4.3.5 **WINCOPY or WINDOWSCOPY**

DELIVER provides the capability to copy an MCP file to a Windows share on a Windows Server. A TCP/IP connection from the source MCP system to the Windows server is required for this capability to work.

For the WINDOWSCOPY transfers you must include the **TO** option. The **TO** option specifies the Windows path to the destination host, share, folder and subfolder. All other <WINDOWSCOPY options> are optional.

The **AS** option allows you to specify the name of the file on the Windows server. By default, the source file name (including usercode) will be used as the attachment name, with the forward slashes converted to underscores; for example, the file (USER)MY/FILE ON PACK would be named USER_MY_FILE when created on the Windows share. (The file extension ".txt", ".pdf" or ".tif" will be added to the default attachment name for anything other than a BINARY transfer. See the "Data Conversion Options" section later in this document for details on the possible transfer types.)

Security is controlled by the destination Windows server. Although the **USER** and **PASSWORD** options are usually required when using DELIVER to copy to a Windows share, DELIVER supports the use of a Unisys MCP credentials file for the destination host. The Unisys MAKECREDENTIALS utility can be used to create a default credentials file for use under a specific MCP usercode. This file contains an encrypted Windows **USER** and **PASSWORD** specification that will automatically be used for the DELIVER file transfer to the Windows share.

See the "MAKECREDENTIALS Utility" section in the *IO Subsystem Programming Guide* for more information on creating credentials files.

Important Note: If necessary, a specific Windows domain can be specified using the WINDOWSCOPY **DOMAIN** specification.

Important Note: If the destination file is to be placed in a folder/subfolder on the Windows server, the folder/subfolder name should be included in either the **TO** specification (eg TO \\SERVER1\USER) or in the **AS** specification (eg AS \USER\data.txt), but not both. Normally, the directories specified in the **TO** option must already exist on the destination host, or DELIVER will report a destination file open error. However, if you specify the **FORCE** option, DELIVER will automatically create all missing directories in the destination path before attempting to copy the file.

The **EXISTS** option is the opposite of the **FORCE** option – that is, it instructs DELIVER to report an error if any of the directories in the destination path do not exist. The **EXISTS** option is only required when using the DELIVER Print Server (because **FORCE** is the default for the Print Server).

An example WINCOPY WFL command:

```
RUN OBJECT/DELIVER(
  "WINCOPY (PROD)DBDUMP/SAT ON DBBKUP TO \\WINSERV1\DBSHARE " &
  "AS \DBDUMP\SAT\01.DMP " &
  "USER TEST PASSWORD 'tst' DOMAIN MYCOMPANY " &
  "FORCE COMPRESS"
);
```

In the above command, DELIVER will:

- Copy the MCP file "(PROD)DBDUMP/SAT ON DBBKUP" to the share DBSHARE on the windows server WINSERV1.
- The file will be named "01.DMP" and will be placed in the folders \DBDUMP\SAT
- A valid Windows username, password and domain for the server must be provided
- FORCE creates the windows folders if they are not already there
- COMPRESS causes a binary transfer compressing the MCP data as transferred

4.4   Common Options

The following options are common to all types of file transfer.

4.4.1 Default Data Conversion

The default mode is for DELIVER to automatically decide what kind of data conversion is needed. For the EMAIL, FAX, FTPCOPY, and WINDOWSCOPY transfers, if the source file can be recognized as containing textual data (FILEKIND is BACKUPPRINTER, SEQDATA, TEXTDATA, or any of the symbol file FILEKINDs), DELIVER will automatically do the following kinds of data conversions while transferring the source file:

- The file's data will be translated from EBCDIC to ASCII if the file's attributes show it as an EBCDIC file (EXTMODE is EBCDIC).

- Carriage return/line feed characters will be added after each record if the file is a record-oriented file (FILECLASS is not CHARACTERSTREAM)

- Printer backup files will be converted to straight ASCII text, with form feed characters inserted at each "channel skip", and carriage return/line feed characters inserted after each line.

- For PDF and TIFF output, portrait orientation is the default. However, for any source file containing records longer than 90 characters, landscape orientation is used.

- The destination file extensions are set to the Unisys MCP Programmers Workbench standard unless specifically set by the user using the **AS** option.

```
MCP Filekind      File Extension

ALGOLSYMBOL        .alg_m
BACKUPPRINTER      .txt
BASICSYMBOL        .bas_m
BINDERSYMBOL       .bnd_m
CCSYMBOL           .ccc_m
CDATA              .cdt_m
COBOLSYMBOL        .cob_m
COBOL74SYMBOL      .c74_m
COBOL85SYMBOL      .c85_m
CPPSYMBOL          .cpp_m
CSEQDATA           .csd_m
DASDLSYMBOL        .das_m
DATA               .dat
DCALGOLSYMBOL      .dca_m
DMALGOLSYMBOL      .dma_m
FORTRANSYMBOL      .for_m
FORTRAN77SYMBOL    .f77_m
JAVASYMBOL         .java
NEWPSYMBOL         .nwp_m
PASCALSYMBOL       .pas_m
PASCAL83SYMBOL     .p83_m
RPGSYMBOL          .rpg_m
SEQDATA            .seq_m
TEXTDATA           .txt
JOBSYMBOL          .wfl_m
```

For all BNACOPY transfers and for non-textual data the default transfer will be BINARY (no conversion).

4.4.2 Data Conversion Options

You can override the default data conversion behavior using the following data conversion options as part of the DELIVER command.

TEXT: This option forces DELIVER to treat the source file as a text file; that is, it will convert the file's data from EBCDIC to ASCII regardless of the file's EXTMODE value, and it will insert carriage return/line feed characters after each record regardless of the file's FILEKIND. The destination file's extension will be unconditionally set to ".txt".

This option also forces sequenced MCP source files to be reformatted using the <line number> <space> <text data> format, rather that keeping the sequence number in its original position in each line.

PDF: This option causes the DELIVER utility to convert the source file to the Adobe PDF format when it copies the file to the destination. The Adobe Acrobat viewer is then needed to view the resultant file. This option is only valid for the EMAIL, FAX, FTPCOPY and WINDOWSCOPY transfers. The destination file's extension will be unconditionally set to ".pdf".

This option also forces sequenced MCP source files to be reformatted using the <line number> <space> <text> format, rather that keeping the sequence number in its original position in each line.

When the PDF conversion option is specified, a background "form" template can also be designated using the FORM option. The FORM option specifies a PDF file that contains a single page document. As DELIVER converts the source file, the data will be overlaid so that each page of output will use the FORM document as background image/text.

TIFF: This option causes the DELIVER utility to convert the source file to the TIFF graphic format (bilevel file, packbits compression, 96 DPI portrait, 104 DPI landscape) when it copies the file to the destination. A TIFF graphic viewer is then needed to view the resultant file. This option is only valid for the EMAIL, FTPCOPY and WINCOPY transfers. The destination file's extension will be unconditionally set to ".tif".

This option also forces sequenced MCP source files to be reformatted using the <line number> <space> <text> format, rather that keeping the sequence number in its original position in each line.

FORM: This option allows a background form to be specified for use during PDF conversion. A PDF file, containing one page, is specified as the parameter to this option. *Important*: The "form" PDF file must not be generated with the "Optimize for Fast Web View". The first page of the form PDF will be used as a background image for all pages of the converted source file.

BINARY: This option forces DELIVER to transfer the file without any conversion at all; no ASCII translation will be done, and no carriage return/line feed characters will be added. No destination file extension is forced.

TRANSLATE: This option can be used to control just the EBCDIC to ASCII translation done during a transfer. Set TRANSLATE YES to force EBCDIC to ASCII translation, or set it to NO to prevent any translation at all, regardless of the file's EXTMODE value.

Note that this option is ignored if **TEXT**, **BINARY**, **PDF** or **TIFF** is used in the DELIVER command.

CRLF: This option can be used to control just the CR/LF insertion done during a transfer. Set CRLF YES to force DELIVER to add carriage return/line feed characters after each record, and set it to NO to prevent DELIVER from adding the characters, regardless of the file's FILEKIND. Note that this option is ignored if **TEXT**, **BINARY**, **PDF** or **TIFF** is used in the DELIVER command.

Special considerations for the DELIVER Data Conversion Options:

1. If more than one Data Conversion Option is specified (**TEXT**, **BINARY**, **PDF** or **TIFF**) then the last one specified will be the option used.

2. If you specify one of the Data Conversion Options (**TEXT**, **BINARY**, **PDF** or **TIFF**) in the DELIVER command then any **TRANSLATE** or **CRLF** option settings will be ignored.

3. DELIVER will <u>not</u> add carriage return/line feed characters to an MCP stream file (FILECLASS of CHARACTERSTREAM), even if you set the **CRLF** option to YES, because this would insert a carriage return/line feed pair after every character in the file.

4. For printer backup files, setting either the **TRANSLATE** or **CRLF** options to NO will cause DELIVER to send the file as if you had set the **BINARY** option to YES.

5. No data conversion is ever done for BNACOPY, so the data conversion options are not supported.

4.4.3 REMOVE Option

The **REMOVE** option is valid for all transfers; if specified, the original MCP file will be removed after it is successfully sent, copied or faxed.

4.4.4 Directory Options

The DELIVER Utility is only designed to move one MCP file at a time. However, it is recognized that there are circumstances when you must deal with an unpredictable file name or the need to move the data contained in a series of files (like print files). To address these special needs DELIVER provides some extraordinary capabilities.

DELIVER supports CANDE wildcard characters in the source file title. This will cause DELIVER to search for all files matching the wildcard specification. By default, DELIVER will then transfer the newest file found to match the wildcards. In this way, you can direct DELIVER to transfer a file, even if its actual name is unpredictable (cycle numbers, dates, etc).

DELIVER also supports specifying a JOB number or SESSION number as a source of data to transfer. This will cause DELIVER to find all Printer Backup files for a given job or session and transfer them, stacked in a single text output file. If you specify an asterisk ("*") for the job or session number, DELIVER will transfer the Printer Backup files for the current job/task.

However, if the above defaults do not meet your needs, DELIVER has two directory options to control how multiple source file are handled.

COMBINE: This option is used in conjunction with CANDE wildcards. It allows you to override the default behavior which is to only transfer the newest file found. **COMBINE** causes DELIVER to transfer all files found, that are textual files, stacked end-to-end in a single output TEXT, PDF or TIFF file.

NEWEST: This option is used in conjunction with the JOB/SESSION input specification. It directs DELIVER to only transfer the newest Printer Backup file for job/session. All other print files found are NOT transferred.

4.4.5 COMPRESS Option

The COMPRESS option can be specified with the BNACOPY, WINCOPY, FTPCOPY and EMAIL commands. It is not valid for the FAX command. If you specify the COMPRESS command, DELIVER will compress strings of the compression character(s) when transferring the source file's data. (Note that for BNACOPY, DELIVER has to compress the source file into a temporary file before copying it using a WFL job.)

By default, the compression character is the space (hex 40) character for source files, both the space and the NULL (hex 00) characters for print files, and the NULL character for all other files. However, you can specify different compression characters in the DELIVER command if you wish. The list of compression characters is stored in the compressed file, so you do not have to specify again them when decompressing the file.

When you specify the COMPRESS option, the destination file will be in a format that cannot be used until it is de-compressed by DELIVER. Therefore, you can not specify any other data conversion options (such as PDF or TIFF) with COMPRESS, and no data translation of the source data will be done (both ASCII transaction and CRLF insertion are disabled).

DELIVER stores some file attributes of the original file in the compressed file, so the file structure of the source file can be recreated when the file is decompressed. The following attributes are included in the compressed file: FILEKIND, FILESTRUCTURE, FRAMESIZE, MAXRECSIZE, BLOCKSIZE, AREASIZE, CYCLE and VERSION. (Note that BLOCKSIZE and AREASIZE are not included if the file is a stream file, and the FILEKIND will be stored as DATA if the source file is a system or code file.) If retention of MCP file attributes is critical then you should first WRAP the MCP file before transferring it with the DELIVER COMPRESS option.

4.4.6 ENCRYPT Option

The ENCRYPT option can be specified with the WINCOPY, FTPCOPY and EMAIL commands. It is not valid for the BNACOPY or FAX commands.

If you specify the ENCRYPT option, DELIVER will encrypt the source file's data using the PGP (Pretty Good Privacy) OpenPGP standard before transferring the data. To decrypt the data, the destination system must have PGP decryption software, as well as access to the private key corresponding to the public key used to encrypt the data.

When you specify the ENCRYPT option with the EMAIL command, the destination email address is used to select the public key to use for encryption. However, for the WINCOPY and FTPCOPY commands, you must specify recipient information (either the email address or name from the public key's User ID; partial email addresses and names are allowed) so DELIVER can select a key.

DELIVER uses 128-bit AES symmetric encryption to encrypt the source file data, and RSA to encrypt the AES session key. All DELIVER encryption code executes on the MCP system; the MCPCRYPTOAPI interface is not required.

When the ENCRYPT option is specified, the destination file name has the file extension ".pgp" automatically appended to it.

You can not specify the COMPRESS option when using the ENCRYPT option.

4.4.6.1   Key Ring

To find available public keys (the "key ring"), DELIVER searches following two directories for valid PGP public key files:

>   *DELIVER/KEYRING/=   (un-usercoded)
>   DELIVER/KEYRING/=   (under the current usercode)

DELIVER combines the list of public keys from the usercoded directory with the list of public keys from the un-usercoded directory, so you can place public keys used by more than one usercode in the un-usercoded directory on DISK, and personal keys under each usercode.

The files in the key ring directories must in standard PGP public key ("ASCII Armor") format, with one key per file. The first non-blank line in each file must be "-----
BEGIN PGP PUBLIC KEY BLOCK-----". The files can have a FILESTRUCTURE of STREAM or ALIGNED180, in ASCII or EBCDIC character encoding.

You can use the KEYRING command to display all public keys in the current usercode's key ring. For example: RUN DELIVER ("KEYRING")

4.5   OPTIONS Files

To eliminate the repetitive input of required or frequently used options in every DELIVER command, DELIVER supports a hierarchy of "default" option settings that are discovered and applied whenever a command is processed. When run, DELIVER looks for the following two files from which to acquire default option settings.

        *DELIVER/<transfer command>/OPTIONS   (un-usercoded)
         DELIVER/<transfer command>/OPTIONS   (under the current usercode)

The file name node <transfer command> must be:
      BNACOPY
      EMAIL
      FAX
      WINDOWSCOPY

When DELIVER is run it first looks for *DELIVER/<transfer command>/OPTIONS and changes the option defaults noted in this document for that <transfer command> based on the commands in that specific file. DELIVER then looks for DELIVER/<transfer command>/OPTIONS (under the running usercode) and further changes the option defaults based on the commands in that specific file. Finally the option settings from the actual command line are then applied and the transfer command is executed.

This enables you to establish both site defaults for common option settings, like the SMTP server name, and usercode-specific defaults (for the facsimile service SERVICE, CODE and FROM specifications, for example). This way, the information does not have to be continually re-entered on repetitive transfer commands.

Important Note: REMOVE is the only option that is ignored if encountered in an OPTIONS file. You cannot make "send and remove" the default.

Important Note: To totally eliminate the use of OPTIONS files (ie, only use the program standard defaults), you can include a "*" preceding the DELIVER command in the parameter string.

4.6   KEY Command

Without an activation key, the DELIVER utility will run for only five days from the date it is downloaded. To re-activate DELIVER, you can request a longer demonstration key or you can purchase an "activation key" from MGS, Inc (e-mail sales@mgsinc.com for details). When you are provided with a key by MGS, Inc, run DELIVER once using the KEY command to store the key on your system. (DELIVER stores the activation key in the NOTE attribute of the *OBJECT/DELIVER code file).

4.7   DECOMPRESS Command

This command accepts the name of the file to be decompressed and an optional AS file title. If you do not specify the AS file title, the decompressed file will be titled the same as the compressed file; if the decompression is successful, the compressed file will be replaced by the decompressed file. The DECOMPRESS command reverses the COMPRESS transfer option.

Note that some MCP file attributes are lost in the DELIVER compression process. If retention of all MCP file attributes are critical, then the MCP file should be WRAPped first before doing the COMPRESS file transfer.

4.8   KEYRING Command

This command will display all PGP public keys in the current usercode's "key ring." The *DELIVER/KEYRING/= and (<usercode>)DELIVER/KEYRING/= directories are searched, where <usercode> is the usercode DELIVER is running under.

For each public key, DELIVER will display the name of the file containing the key, the encryption algorithm, number of bits and User ID information. For example:

```
U DELIVER KEYRING
#RUNNING 4260
MGS, Inc Deliver Utility v1.08 #1235 LX100
Key Ring Files:
(DELIVER)DELIVER/KEYRING/FILE1 ON MGS1 contains a 1024-bit RSA public key, ID
DA2BAC3D, created 2010-07-06 for "MGS Inc <support@mgsinc.com>"
#ET=0.5 PT=0.3 IO=0.0
```

The files in the key ring directories must in standard PGP public key ("ASCII Armor") format, with one key per file. The first non-blank line of each file must be "-----
BEGIN PGP PUBLIC KEY BLOCK-----". They can have a FILESTRUCTURE of STREAM or ALIGNED180, in ASCII or EBCDIC character encoding.

5.   Greenfax.Com Internet Facsimile Service

Technically, the DELIVER Utility's ability to e-mail an attachment gives you the capability to send a facsimile using virtually any Internet based facsimile service. These services are all based on the premise that a document is delivered via standard e-mail and that control information in the e-mail headers will direct the outbound facsimile transmission to an actual fax machine.

However, to provide an actual example of such a capability, DELIVER has been qualified to send facsimile messages using the GreenFax.Com service. This section documents the details of using DELIVER in conjunction with the GreenFax.Com capabilities.

5.1   Service Sign Up

You first must go to http://www.greenfax.com to create a GreenFax account. The account is set up as a pre-paid service where the actual cost of each fax is deducted from a pre-paid account dollar reserve.

During the account setup you will also define the following:

1. **Account login and password.** This is used to login via the GreenFax.Com web interface to give you the ability to monitor your facsimile activity and to replenish your account's dollar reserve. The web interface provides access to the log of completed facsimile operations as well as the queue of currently pending outgoing facsimiles.

2. **Outbound Fax SendCode.** This is a code that identifies your GreenFax.Com account. It must be included as part of every facsimile transmission.

3. **Authorized E-Mail addresses.** This is a list of one or more e-mail addresses in your organization that are authorized to use the GreenFax.Com account.

5.2   Sending a Fax Using DELIVER

The DELIVER Utility provides a command for sending an MCP file to a fax machine. DELIVER has been customized for using the GreenFax.Com service to do this. To use DELIVER to send an MCP file to a fax machine, the following must be done.

1. The file must contain only textual information. All Internet Facsimile Services are basically text-to-fax applications. The text data in your MCP file will be converted to a graphic fax page image and then sent over the public phone network to the destination facsimile machine. If your MCP file contains more than 60 lines of text, it will be sent as a multi-page fax.

2. The following OPTIONS must be included in the DELIVER FAX command:

TO <phone number>
> You must specify the destination fax machine's phone number including "1" and area code (eg. TO 18005551212).

SERVICE greenfax.com
> This is the domain name of your Internet Facsimile Service. For GreenFax.Com it must be specified as above.

CODE <GreenFax SendCode>
> This is the Outbound Fax SendCode that you established when you created your GreenFax.Com account (eg. CODE mycofax).

FROM <Authorized e-mail address>
> This must be one of the e-mail addresses that have been listed with GreenFax.Com as authorized users of your GreenFax account. A confirming e-mail will be sent by GreenFax to this e-mail address to confirm the success/failure of the requested facsimile operation (eg. FROM faxadmin@mycompany.com).

SERVER <Local SMTP server>
> This is the TCP/IP hostname of a local outbound mail server that can forward e-mail to the Internet (eg. SERVER mail.mycompany.com). If your SMTP server requires authentication, then a USER and PASSWORD specification will also be needed.

An example of a completely self contained DELIVER FAX command would be as follows:

```
FAX (PROD)REPORT1 ON PRODPK TO 18005551212 SERVICE greefax.com
   CODE MYCOFAX FROM faxadmin@mycompany.com SERVER smtp.mycompany.com
```

5.3   Using OPTIONS File to Simplify FAX Commands

Because a DELIVER FAX command requires a lot of repetitive information, you can use the DELIVER OPTIONS file to dramatically simplify what you need for each individual fax transfer request. Typically, the SERVICE, CODE, FROM and SERVER options do not change from one fax to the next. Therefore, they can be specified as a default in a DELIVER/FAX/OPTIONS file located either under the usercode in question or un-usercoded on DISK. The file would be as follows:

```
#FILE *DELIVER/FAX/OPTIONS ON DISK
100 SERVICE = greenfax.com
200 CODE    = MYCOFAX
300 FROM    = faxadmin@mycompany.com
400 SERVER  = smtp.mycompany.com
```

Fig 4. Example FAX OPTIONS Files

With the above Options File in place, then each DELIVER Fax command would require only the following transfer specific information:

```
    FAX (PROD)REPORT1 ON PRODPK TO 18005551212
```

The DELIVER/FAX/OPTIONS file would supply everything else that was needed for the facsimile operation.

5.4   Additional GreenFax Features

Beyond the capabilities documented above, GreenFax.Com supports the following additional facsimile features.

CODE = '<GreenFax SendCode> JOBCODE=<individual fax> SENDER=<header id>'

> The **CODE** option can be used to specify more than just the GreenFax SendCode. You can optionally specify a JOBCODE and a SENDER. The JOBCODE is a user specified code that will appear in all GreenFax log records, billing records and in the facsimile confirmation e-mail sent documenting the ultimate disposition of the fax. If you do not specify a JOBCODE, the field will be blank.

> The SENDER field is a user specified id field included in the facsimile header line at the top of each page of the outgoing fax.

> Note that when specifying JOBCODE and SENDER, you must use single quotes to delimit the entire CODE field because of the embedded spaces.

> Example:

```
    FAX (PROD)REPORT1 ON PRODPK TO 18005551212
        CODE 'MYCOFAX JOBCODE=Fax001 SENDER=FX001'
```

MESSAGE = '<cover page message>'

> The DELIVER **MESSAGE** option allows you to specify a message body for an outgoing e-mail. The GreenFax.Com service checks to see if there is a body to the e-mail message and, if so, takes the text and uses as a cover page for the fax. If there is no message, then no cover page is generated.

> Example:

```
    FAX (PROD)REPORT1 ON PRODPK TO 18005551212
        MESSAGE 'URGENT! Attention Needed ASAP!'
```

5.5   Confirmation E-mail Message

Below is an example of an e-mail confirmation received for a GreenFax.Com facsimile operation. There is one e-mail generated for each DELIVER FAX transfer request. The e-mail is sent to the FROM e-mail address (specified in the DELIVER command) and indicates whether the fax operation was successful or not.

```
Date: 14 Jun 2006 13:47:16 -0000
To: faxadmin@mycompany.com
From: GreenFax <bounce@GreenFax.com>
Subject: Fax delivered to 18005551212

The fax that you sent to 18005551212 through GreenFax was transmitted
successfully.

Job Code: FAX002
Time Stamp: 06/14/2006 09:46:01 AM EST (GMT-5)
Destination: 18005551212 (USA / Canada)
Pages: 2
Duration: 66 seconds
Cost: $0.08
Account Balance: $20.07
GreenFax Reference Number: 17684831

For support, please email support@GreenFax.com
(do not reply directly to this email).
Thanks for using www.GreenFax.com
```

Fig 5. Example FAX Confirmation E-mail

6.   DELIVER PDF Print Server

The DELIVER product includes a virtual print server that converts any print file sent to it to a PDF document, and then sends the converted PDF file to a Windows share, an email address, or an FTP server. The print server runs the OBJECT/DELIVER code file (located under the same usercode and on the same family as the print server code file) to actually process the print file.

The code file name of the print server included in the DELIVER release is `DELIVER/PRINT/SERVER`.

Note that the print server, when processing a print request, runs under the usercode that generated the print request, so DELIVER can access the correct OPTIONS and credentials files. The `DELIVER/PRINT/SERVER` code file is marked with the **TASKING** privilege so it can switch usercodes without requiring passwords.

6.1   Configuring the Print Server

You need to create a virtual printer on your MCP system to use the DELIVER print server. We recommend that you name the virtual printer "MGSPDF," but you can use any name you wish.

To configure the print server on your MCP system, use the following ODT command:

```
PS CONFIG + <name> FORMID="*DONTCARE*", SERVER="PDF IN <codefile title>"
```

where <name> is the name of the virtual printer, and <codefile title> is the title of the DELIVER print server code file, including usercode and family. For example, if you loaded the DELIVER release files un-usercoded on PACK, you would use the following ODT command to create a virtual printer named MGSPDF:

```
PS CONFIG + MGSPDF FORMID="*DONTCARE*", SERVER="PDF IN
*DELIVER/PRINT/SERVER ON PACK"
```

6.2   Printing a Document

To print a document to the DELIVER print server, you have to set the `DESTINATION` and `NOTE` file attributes of the print file. The DESTINATION attribute should be set to the name of the virtual printer you configured in the previous section (eg. MGSPDF). The NOTE attribute contains the specifics on where to send the PDF image of your print file.

You will also have to set the `FORMID` file attribute if you want specify a PDF FORM file to be used as a background image for the created PDF image of your print file.

If any errors occur, the print request will be marked as an error in the print request queue, and a descriptive error message will be written to the DELIVER print server's log file.

6.2.1 DESTINATION Attribute

You must set the `DESTINATION` file attribute on your program's print file to the DELIVER virtual printer name you created in the previous section of this document. This will route the print file to the DELIVER PDF print server to be converted to a PDF and routed to its final destination.

6.2.2 NOTE Attribute

You must put a command to route the print file in the print file's `NOTE` file attribute. The syntax for the `NOTE` attribute is the same as the regular DELIVER syntax, except for the following:

-       that you do not include a source MCP file title at the start of the command as the print file is the source file

-       you do not include the FORM option as part of the command , rather you use the FORMID print file attribute

The general form of the NOTE command is:

                           <command> TO <destination e-mail, FTP or Windows share> <options>

See the EXAMPLES section below for more detail.

6.2.3 FORMID Attribute

The DELIVER PDF print server feature supports an optional capability where you can specify a file to be used as a background form. If you want to set a FORM file for the PDF conversion, you must specify the MCP file title of the FORM file in the print file's `FORMID` file attribute; do not include it in the `NOTE` attribute. The FORM file is an optional single page PDF file that will be used as the background image for all the pages of your PDF output file.

The FORMID can be a standard MCP file name including usercode and family name. If the usercode and/or family name is NOT specified, then they will default to the usercode and family name for the program that originally created the print file.

6.2.4 Examples

This section contains three print request examples, using the `CANDE PDEF` and `WRITE` commands to generate a print request. In a program, the program would simply set the print file's `DESTINATION, NOTE` and `FORMID` file attributes and then simply print to the file.

Remember that when these example print requests are processed, DELIVER will use the options from the OPTIONS files, both under the usercode that generated the request and un-usercoded, on the usercode's primary or secondary family.

(Note that the first CANDE command of each example is "`PDEF.`", which removes any existing print defaults settings for the current CANDE session.)

Email Example

If you want to email a listing of the source file SOURCE/FILE to the email address dest@company.com, and you want DELIVER to use the PDF FORM file *SOURCE/FILE/FORM ON PACK you could use the following CANDE commands:

```
PDEF.;
PDEF (DESTINATION="MGSPDF", FORMID="*SOURCE/FILE/FORM ON PACK",
     NOTE="EMAIL TO DEST@COMPANY.COM");
WRITE SOURCE/FILE; SPLIT
```

Note that to get the SMTP server name, the SMTP server user name and the SMTP server password from the OPTIONS file(s). See Section 4.5 of this manual on the use of OPTIONS files.

FTP Example

If you wanted to use FTP to copy the same file to ftp.server.com as "myfiles\source_file.pdf" with no PDF form file and using the user name and password "name/namepw," you could use the following CANDE commands:

```
PDEF.;
PDEF (DESTINATION="MGSPDF", NOTE="ftpcopy to ftp.server.com as
     myfiles\source_file.pdf user 'name' password 'namepw'");
WRITE SOURCE/FILE; SPLIT
```

Note that the "myfiles" directory would automatically be created on the FTP server if it did not already exist, because the FORCE option is enabled by default for print requests.

WindowsCopy Example

As a final example, if you wanted to copy the same file to the Windows share \\server\share as "myfiles\source_file.pdf" and use the user name, password and domain name from an OPTIONS (Section 4.5) or credentials (Section 4.3.5) file under your usercode, you could use the following CANDE commands:

```
PDEF.; PDEF (DESTINATION="mgspdf", NOTE="windowscopy to \\server\share
as myfiles\source_file.pdf exists"); WRITE SOURCE/FILE; SPLIT
```

Note that, because the EXISTS option is specified, the print request will get an error if the "myfiles" directory does not already exist on the Windows share.

6.2.5 OPTIONS and Credentials Files

Both OPTIONS and credentials files are supported by the DELIVER PDF Print Server. An OPTIONS (Section 4.5) file is a file containing DELIVER commands that will be appended to the commands already in the NOTE attribute. By using an OPTIONS file you can provide commands common to multiple transfers (like SMTP server name, userid and password) without having to specify those commands on each print file. The credentials (Section 4.3.5) file is an MCP file that provides programs running under your usercode with default domain, username and password information for accessing Windows shares.

As with running DELIVER manually, requests submitted through the DELIVER print server can use OPTIONS and credentials files. The print server changes to the usercode that created the print request before running DELIVER, so DELIVER can pick up the default OPTIONS and credentials files for the creating usercode.

DELIVER will also use any un-usercoded OPTIONS files on the primary, or secondary, family of the creating usercode.

Note: Unlike normal DELIVER commands, for the WINDOWSCOPY and FTPCOPY commands the FORCE option is enabled by default by the DELIVER print server. You can use the EXISTS option to turn the FORCE option off.

6.3   Print Server Log File

The DELIVER print server maintains a log file of all requests it processes. The name of the log is DELIVER/PRINT/SERVER/LOG under the same usercode and on the same family as the print server code file.

The following items are logged for every request: request number, originating job and task numbers, originating usercode, the command sent to DELIVER, and DELIVER's mix number and final message (either an error message or "successfully sent" message).

Here's an example of the entries in the print server's log:

```
-Time-----Mix----(date is 2010/05/12)--------------------------------
16:52:00 (08490) (DELIVER)DELIVER/PRINT/SERVER ON MGS1 v1.07
       initialized
16:52:00 (08478) Request # 88874: mix=8482/8483, usercode=DELIVER
16:52:00 (08478) EMAIL *BD/0008482/0008483/000000000000/LINE ON DISK TO
       RWS@MGSINC.COM PDF
16:52:06 (08478) From DELIVER (8492): File successfully emailed to
       RWS@MGSINC.COM
16:52:07 (08478) Request # 88874: mix=8482/8486, usercode=DELIVER
16:52:07 (08478) EMAIL *BD/0008482/0008486/000000000000/LINE ON DISK TO
       TEST@MGSINC.COM PDF
16:52:13 (08478) From DELIVER (8493): File successfully emailed to
       TEST@MGSINC.COM
```

Note that any passwords included in the command sent to DELIVER (from the NOTE attribute) will not be logged.

Appendix I   Release Notes

I.04 Release Notes

1. DELIVER now uses the standard MGS-format access key, instead of the custom key format used by previous versions.

I.05 Release Notes

1. The COMPRESS option has been implemented on this release. The COMPRESS option can be specified with the BNACOPY, WINCOPY, FTPCOPY and EMAIL commands. It is not valid for the FAX command. If you specify the COMPRESS command, DELIVER will compress strings of the compression character(s) when transferring the source file's data. (Note that for BNACOPY, DELIVER has to compress the source file into a temporary file before copying it using a WFL job.)

By default, the compression character is the space (hex 40) character for source files, both the space and the NULL (hex 00) characters for print files, and the NULL character for all other files. However, you can specify different compression characters in the DELIVER command if you wish. The list of compression characters is stored in the compressed file, so you do not have to specify again them when decompressing the file.

When you specify the COMPRESS option, the destination file will be in a format that cannot be used until it is de-compressed by DELIVER. Therefore, you can not specify any other data conversion options (such as PDF or TIFF) with COMPRESS, and no data translation of the source data will be done (both ASCII transaction and CRLF insertion are disabled).

DELIVER stores some file attributes of the original file in the compressed file, so the file structure of the source file can be recreated when the file is decompressed. The following attributes are included in the compressed file: FILEKIND, FILESTRUCTURE, FRAMESIZE, MAXRECSIZE, BLOCKSIZE, AREASIZE, CYCLE and VERSION. (Note that BLOCKSIZE and AREASIZE are not included if the file is a stream file, and the FILEKIND will be stored as DATA if the source file is a system or code file.)

To decompress compressed files, a new DECOMPRESS command has been implemented. This new command accepts the name of the file to be decompressed and an optional AS file title. If you do not specify the AS file title, the decompressed file will be titled the same as the compressed file; if the decompression is successful, the compressed file will be replaced by the decompressed file.

2. The example DELIVER commands in the documentation have been improved.

I.06 Release Notes

1. DELIVER has been enhanced to be able to use PDF files saved by Microsoft Word 2007 as a form file. The PDF file must be saved as "Standard," not "Minimum size."

2. DELIVER would get an "ATTRIBUTE ERROR: DSK.FILEKIND" error when uncompressing a compressed file that was originally a CONTAINERDATA or WRAPPEDFILE file. This has been corrected; DELIVER will now store the DATA FILEKIND value in the compression header for a file with either the CONTAINERDATA or WRAPPEDFILE FILEKINDs.

3. DELIVER has been updated to use the new PC based AccessKey mechanism.

I.07 Release Notes

1. The DELIVER print server has been implemented on this release.

2. The EXISTS option, which turns off the FORCE option, has been implemented on this release (required because the new print server enables the FORCE option by default).

I.08 Release Notes

1. DELIVER supports PGP encryption (using RSA public keys) on this release. This new feature requires a new AccessKey to enable it.

2. RETRIEVE implementation. See the "RETRIEVE Reference Manual" for details. A RETRIEVE-enabled key is needed to allow RETRIEVE operation.

I.09 Release Notes

1. DELIVER was not accepting a new access key if the old key had expired (or if the code file's grace period had expired). This has been corrected for both DELIVER and RETRIEVE.

2. A new CTRACE option has been implemented in both DELIVER and RETRIEVE. The CTRACE option works exactly the same as the TRACE option, except the trace print file will be purged if no errors occur.

I.10 Release Notes

1. The DELIVER default SMTP timeout has been increased from 15 seconds to 75 secs.

2. Remote file output of info messages has been eliminated. DELIVER now only does displays.

3. Provide both MCP Level 5 and Level 6 code files as part of the release kit in support of the new Emode Eta machines.