

Chapter 5

Compression

This chapter describes, in detail, the compression and decompression of iSeries data using i-effect *ZIP. i-effect enables the use of ZIP archives as well as simple GZIP files. This chapter is divided into two main parts.

Note: To use the functions described in this chapter, licenses for the i-effect modules *BASE and *ZIP are required.

- 1) Select menu item 20 from i-effect's main menu to access the compression menu.
- 2) Follow the instructions in the rest of the chapter.

Working with ZIP Archives

Menu Item 1: Creation of ZIP Archives (CRTARC)

This command creates a blank ZIP archive.

Note: The display is dependant on whether an archive in the DB2 or IFS file system will be created.

- 1) Select menu point 1 "Create ZIP Archive" from the i-effect Compression menu.
- 2) Enter the desired parameters according to the following explanation.

File System (FS)

Name of the file system in which the ZIP-archive will be created.

Possible values:

- *DB2 The archive will be created as a physical file, with a member.
- *IFS The archive will be created as a file in a path.

Archive File (ARCFILE) – only with FS (*DB2)

The qualified name of the archive file which will be created. Using this name, a physical file is created, whose contents correspond to the format of an empty ZIP archive.

Library

Name of the library in which the archive file will be created.

Possible Special Value:

- *CURLIB The archive file will be created in the current library.

Member

Name of the member in the archive file.

Possible Special Value:

- *FIRST The name of the member with the archive data corresponds to the name of the file.

Archive File (ARCPATH) – only with FS (*IFS)

The name of the archive file, which will be created, is rendered as a complete path (e.g. /usr/usrlib1/test.zip). Under this name a file will be written in the specified path, whose contents correspond to the format of an empty ZIP archive.

Codepage of the PC File (STMFCODPAG) – only with FS (*IFS)

The STMFCODPAG (Stream File Code Page) parameter allows the user to determine the way in which i-effect will convert data from the format in which it is saved on the iSeries (typically EBCDIC) to an appropriate format in the stream file (typically ASCII).

Possible Special Values:

- *WINDOWS (Default) Where appropriate, a suitable Windows ASCII encoding scheme is selected. For example, when converting a spooled file to * on a German System i (CCSID 273), code page 1252 (Windows Western ASCII encoding) is selected for the ASCII text, but on a Greek System i (CCSID 875), code page 1253 (Windows Greek) is selected.
- *PCASCII If possible, the appropriate Windows ASCII encoding scheme is selected. For example, when converting a spooled file to *TEXT on a US System i (CCSID 37), code page 1252 (Windows Western ASCII encoding) is selected for the ASCII text, but on a Greek System i (CCSID 875), code page 1253 (Windows Greek) is selected.
- *ISOASCII Where appropriate, a suitable ISO ASCII encoding scheme is selected. For example, when converting a spooled file to *TEXT on a German System i (CCSID 273), code page 819 (ISO 8859-1) is selected for the ASCII text, but on a Greek System i (CCSID 875), code page 813 (ISO 8859-7) is selected.
- *STDASCII If possible, the appropriate ISO ASCII encoding scheme is selected. For example, when converting a spooled file to *TEXT on a US System i (CCSID 37), code page 819 (ISO 8859-1) is selected for the ASCII text, but on a Greek System i (CCSID 875), code page 813 (ISO 8859-7) is selected.

Note: For the choice of data systems see “The Integrated File System” in the appendix. An explanation of IFS and the setup of QNTS can also be found there.

Menu Item 2: Work with ZIP Archives (WRKARC)

If a ZIP archive is already present on the system (as a physical file/member in a library on your system or a file in a path), then the program interface enables the administration of the contents. Entries can be inserted, deleted, extracted or displayed.

Note: The display content is dependant on whether the DB2 or IFS file system is being used.

- 1) Select menu item 2, "Work with ZIP Archive" from the i-effect Compression menu.
- 2) Enter the desired parameters according to the following explanation.

File System (FS)

The file system for the archive is selected here.

Possible Values:

- *DB2 The archive is a physical file with a member in a library.
- *IFS The archive will be created as a file in a path.

Archive File (ARCFIL) – only with FS (*DB2)

The qualified name of the archive file. The file must already exist and be in ZIP format.

Library

Name of the library where the archive files exists.

Possible Special Value:

- *CURLIB The archive file will be opened in the current library.

Member

Name of the member of the archive file.

Possible Special Value:

- *FIRST The name of the member with the archive data corresponds to the name of the file.

Archive File (ARCPATH) – only with FS (*IFS)

The qualified archive file's name including its path. The file must already exist and its contents must be formatted in standard ZIP format.

After pressing enter, an overview of the contents of the archive will be displayed:

```

Sitzung A - [24 x 80]
-----
Work with archive
System: DEVELOP
Archive file . . . . . /tmp/example.zip
Number . . . . . 4
Position to . . . . .
Please select option and press enter.
2=Extract 4=Delete 5=Display 8=Details
Select File Date Time Size compr. Size decompr. Ratio %
- example4.txt 01.04.2009 14:22:22 0 0 0
- example1.txt 01.04.2009 14:22:22 0 0 0
- example2.txt 01.04.2009 14:22:22 0 0 0
- example3.txt 01.04.2009 14:22:22 0 0 0
Bottom
Selection or command
===>
F3=Exit F4=Prompt F5=Refresh F6=Add F9=Retrieve F11=More
F12=Cancel F17=Top F18=Bottom F13=Extract all
© menten GmbH, 2004.
  
```

This overview enables the activation of further functions by entering a selection number shown or by pressing one of the displayed function keys, which activates other functions. These functions are described in the following and can be called up in the i-effect menu as well.

Note: The display of the archive entries contains a hidden column, which displays the sequence number of its archive entry.

F11 can be used to display the panel containing the new field.

Function keys F17 and F18 can be used to post the display at the start or the end.

The console display enables quick handling of large archive files having up to 65535 entries.

- 1) Enter the desired option in front of one or more of the archive files (see below for a description)

Option 2 – Extract Files

Enter option 2 into the choice box at the beginning of the line of the corresponding entry or press F13 to extract all files of the archive.

Please refer to the description of EXTARCFIL under menu item 5.

Option 4 – Delete Files

Enter option 4 into the choice box at the beginning of the line of the corresponding entry or press F13 to delete all files in an archive.

Please refer to the description of the command **DLTARCFIL** under menu item 6.

Option 5 – Display Content

This option displays the content of a file in the archive. The file will temporarily be decompressed. The user must enter further options for decompression after selecting this option.

Please refer to the description of the command **DSPARFIL** under menu item 4.

Option 8 – Displays details of the archive file

By selecting option 8, further information will be shown for every archive file.

The display looks as follows:

```

Sitzung A - [24 x 80]
Datei Bearbeiten Sicht Kommunikation Aktionen Fenster Hilfe
-----
Display details to archive entry
-----
Archive file . . . . . : /tmp/example.zip
Number/.Size compr./decompr. : 4          0          0
Please select option and press enter.
File name . . . . . : example4.txt
Path . . . . . :
Date/Time . . . . . : 01.04.2009 14:22:22
Size compr/decompr. . . . . : 0          0
Ratio in % . . . . . : 0
Encryption . . . . . : No
Type . . . . . :
Attr. . . . . :
Bottom
F3=Exit F12=Cancel
-----
IBM i902 - Sitzung wurde erfolgreich gestartet.

```

Note: In i-effect it is possible to call up commands in the program interface by pressing F9. This is possible if there is a command line in the program interface, for example, in WRKARC, WRKEFSPLF, and others.

Menu Item 3: Add Files to ZIP Archive (ADDZIP)

Use this command to add files to an archive..

Note: The command **ADDARCFIL** of older i-effect versions remains in this version for compatibility. Please note, that the new **ADDZIP** command does not have any spool conversion parameters. Use the i-effect ***SERVER** module to convert and compress spooled files into a server task.

- 1) Choose menu item 3 “Add Entry to ZIP Archive” from the i-effect compression menu. From the program interface **WRKARC**, press the F6 key. The command **ADDZIP** can be used if the aforementioned options are not desired.
- 2) The screen that will appear allows to add files and parameters, which are used for adding and compressing files. Set the parameters according to the following description.

Note: The monitor display is dependant on the data system in which the source files are saved, and into which system the archive will be created.

Note: For the choice of a data system, note the comments in the appendix “The Integrated File System”. Information about IFS and QNTS setup can be found there.

File System Archive (FS)

Name of the file system in which the ZIP archive will be created.

Possible Values:

- | | |
|------|--|
| *DB2 | The archive is a physical file with a member in a library. |
| *IFS | The archive will be created as a file in a path |

Archive File (ARCFILE)

The qualified name of the archive file in the DB-2 data system.

By entering CREATE (*YES) the archive can be created while data is being added.

Library

Name of the library in which the archive data will be created.

Possible Special Value:

**CURLIB* The archive file will be created in the current library.

Member

Name of the member in the archive file.

Possible Special Value:

**FIRST* The name of the member with the archive data corresponds to the name of the file.

Archive File (ARCPATH)

The qualified name of the archive file in the IFS data system, e.g. /tmp/test.zip

The following variables are possible in any combination. The correct path will automatically be generated:

% <i>TMP</i> %	Default value. The output path "/TMP" is used.
% <i>HOME</i> %	Using this option, i-effect searches for the home path ("/HOME/USERNAME") of the current user. If this path does not already exist, an error will occur. The error message suggests the creation of a home path for the current user.
% <i>CURDIR</i> %	Current directory.
% <i>USER</i> %	Name of current user.
% <i>DATE</i> %	Current date DD.MM.YYYY.
% <i>YEAR</i> %	Current year YYYY.
% <i>YEAR2</i> %	Current year YY.
% <i>MONTH</i> %	Current month MM.
% <i>MONTHNAME</i> %	Name of current month.
% <i>DAY</i> %	Current day.
% <i>WEEKDAY</i> %	Current day of week, e.g. 'Friday'.
% <i>TIME</i> %	Current time HH:MM:SS.
% <i>TIMESTAMP</i> %	Current time stamp, YYYY-MM-DD-HH.MM.SS.MSMSMS

Data Type (DTATYP)

Determines the type of files that are to be added to the archive.

* <i>FILE</i>	Files are to be added
* <i>SPOOL</i>	Spooled entries are to be added.

File System for the Input File (INFS)

Determines from which file system the data will be edited.

Possible Special Values:

* <i>DB2</i>	Data from the DB2 files system.
* <i>IFS</i>	Data from the IFS files system ("/" file system).

Input Path (FRMPATH)

The name of the path in the IFS file system from which the files will be read and to which the archive will be added, e.g. /usr/usrlib/lib1. The backslash is used to separate the paths. A separator at the end of the path input is not required.

Input File (FRMIFSFIL)

The name(s) of the input file(s) which will be created in the input path. By using the wild cards "*" and "?" several files can be selected at once.

Possible Special Values:

*	Replaces any number of characters in the file name.
?	Replaces exactly one character in the file name.

Input Files (NEWFILES)

The qualified name of the files which will be added.

Possible Special Values:

* <i>ALL</i>	All files/members of the designated library will be added.
* <i>CURLIB</i>	The files will be taken from the current library.

Create an Archive (CREATE)

If the designated archive does not exist, it is determined here if a new archive should be created automatically.

Possible Special Values

* <i>YES</i>	The missing archive will be created automatically.
* <i>NO</i>	The archive exists already.

Existing Files (REPLACE)

If the files, which will be added, already exist in the archive, this parameter determines what should happen to them. It is important to take the parameter NAMEFMT () into account, when pre-existing files are determined. The information fixed there sets the structure of the path name and with it the name under which the search in the archive will be made to locate possible pre-existent entries.

Possible Special Values

- *ADD Files are added to the archive, even when they already exist.
- *REPLACE Files replace pre-existing entries in the archive with the same name.

Rate of Compression (SPEED)

i-effect's compression speed has 9 different levels. With level 1 the program has the maximum speed, however without maximum compression. Level 9 has maximum compression, but the program runs more slowly. Users can set their own values, depending on their needs and variables such as storage space, processor speed, etc.

Format of the File Name (NAMEFMT)

The following patterns can be used to create path names which are entered in the archive. The File MYLIB/MYFILE (MYMEMBER) will be filed as shown in these examples. The choice of parameter conforms to the target system, which restores the data.

Possible Special Values:

Value	Explanation	Example
*FILE	The name of the archive file consists of the name of the file. The unspecified sample file contains the name:	„MYFILE“
*MEMBER	The name of the archive file consists of the member file name. The unspecified sample file contains the name:	„MYMEMBER“
*NAMEFMT0	The name of the archive file is created according to the rules for name format "0." The unspecified sample file contains the name:	„MYLIB/MYFILE.MYMEMBER“
*NAMEFMT1	The name of the archive file is created according to the rules for the name format "1." The unspecified sample file contains the name:	„QSYS.LIB/MYLIB.LIB/MYFILE.FILE/MYMEMBER.MBR“

Naming of Archive Entries (ARCENAME)

Entries, which are entered into the archive using this command, receive their entry name with regard to the settings listed below. A registration name will be created by either the pattern fixed in the parameter NAMEFMT (), by specifying *DEFAULT, or the name will be set in this parameter.

Possible Special Values:

- *DEFAULT The registration name will be created from the input file name. The name format set by NAMEFMT () will be used for the file.
- *NAMEONLY The original entry file name is used as entry name to the archive. When using DB2 archive entries, this is the name of the member file. When using IFS for archive entries, this is the file name without the path name. By using *NAMEONLY, the entry in NAMEFMT () is not considered.

Insert CRLF (CRLFINSERT)

i-effect can insert form feed characters at the end of every data record. When *YES is specified in this parameter, i-effect completes the end of every data record read with the character CRLF (carriage return – line feed (X'0D25')). If *NO is selected, then NO further insertion of control characters follows. This function can be required when the recipient of the data has to restore the original record structure in the file (text data). In this case the use of the parameter *YES is required.

Possible Special Values:

- *YES The EBCDIC control character for CRLF will be inserted at the end of the record.
- *NO No additional characters will be inserted.

Delete Susequent Blanks (BLANKCOMP)

The parameter BLANKCOMP(to suppress trailing blanks) can be used along with CRLFINSERT, to modify the data before compression. When the subsequent blanks of a data record should not be included in the compressed file, i-effect can remove these blanks if *YES has been entered. Simultaneous use of CRLFINSERT (*YES) will remove the blanks BEFORE the line feed control character is inserted.

Possible Special Values:

- *YES All blanks (Blanks, X'40') at the end of a data record will be removed.
- *NO No characters will be removed.

From CCSID (FRMCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the source data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix".

Possible Special Value

**JOB* The CCSID of the job will be used.

To CCSID (TOCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the target data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix."

Possible Special Value

**JOB* The CCSID of the job will be used.

Encryption (ENCRYPT)

The parameter "Encryption" is used to encrypt and decrypt ZIP archive entries according to the AES standard. Entries can be protected from unauthorized viewing by indicating a key, which can be up to 256 bits long. The protected archives can be edited by an AES compatible program such as WinZip@V9.

The CCSID in which the password was originally specified must also be indicated with the password. *DFT specifies the standard ASCII code page 819.

Possible Special Value:

**NONE* The archive entries will not be encrypted.

Delete after Editing (DELETE)

If desired, the original file can be deleted after it has been edited.

Possible Special Values:

**YES* The input member file will be deleted after it is processed. If the file has no more members, then the whole file will be deleted.

**NO* No files/member files will be deleted.

Handle X'00' at EOF (NULLCOMP)

Files to be compressed may contain the filling character with the hexadecimal value of 00. This can happen if files are transferred from other systems via FTP into the DB2 data system of System i. It is possible that these characters are part of the data, which will be compressed.

This parameter can specify if these characters should be compressed or not.

The number of X'00' filling characters can be adjusted to an even number, which may be required by certain applications.

Possible Special Values

**ALLNULL* All characters with the value X'00' at the end of the last data record of a physical file will be processed and compressed.

**NONULL* All characters with value X'00' at the end of the last data record of a physical file are to be disregarded and NOT compressed.

**EVENNULL* i-effect ignores all characters with the value X'00' at the end of the last data record of a physical file, inserts however ONE X'00' character, in case the total number of bytes to be compressed is odd. This guarantees that the number of bytes of the file after decompression will always be an even number, which may be required by certain applications.

File (FILE) File Name of the Spooled File

File name of the spooled file or one of the following special values.

Possible Special Values:

**SELECT* Files can be selected by entering further parameters.

**generic* Part of the file name may be substituted with an asterisk (*). Please enter the first part of a file or file group name followed by (*) to select all files, whose name begins with the first part entered.

Job Name (JOBNAM)

By entering a qualified job name, the selection of the spool entries, which will be archived, can be further specified. Enter an existing job name in order to archive the spool entries of the existing job.

Possible Special Values:

**ALL* All spooled files of the system will be archived.

**CURRENT* Only spooled files for the current job will be archived.

User

The name of the owner of the spooled file(s).

Job Number

The number of the job that created the spooled file(s).

User (USER)

To select the spool entries which will be transferred to the archive, users, who created entries, can also be specified.

Possible Special Values:

**ALL* Files are selected, independent of the user who created them.

**CURRENT* Only entries of the current user will be selected.

Output Queue (OUTQ)

The name of the output queue that is used to edit entries

Possible Special Value::

*ALL All files in the output queue will be processed.

Library

The name of the library containing the output queue.

Form (FORM)

The entries can be selected according to the Form's name.

Possible Special Values:

*ALL All form types will be processed.

*STD Only the standard form type will be processed.

User Data (USRDTA)

The spool entry "User Data" can be used for selection.

Possible Special Values:

*ALL Spool entries will be selected, independent of the entry in „User Data“

Status (STATUS)

Files can be selected based on their current status in the system.

Possible Special Values:

*ALL All spooled files will be selected.

*CLOSED Only spooled files with the status *CLOSED will be selected.

*DEFERRED Only spooled files with the status *DEFERRED will be selected.

*SENDING Only spooled files with the status *SENDING will be selected.

*FINISHED Only spooled files with the status *FINISHED will be selected.

*HELD Only spooled files with the status *HELD will be selected.

*MESSAGE Only spooled files with the status *MESSAGE will be selected.

*OPEN Only spooled files with the status *OPEN will be selected.

*PENDING Only spooled files with the status *PENDING will be selected.

*PRINTING Only spooled files with the status *PRINTING will be selected.

*READY Only spooled files with the status *READY will be selected.

*SAVED Only spooled files with the status *SAVED will be selected.

*WRITING Only spooled files with the status *WRITING will be selected.

Device (DEVICE)

The names of the devices, to which the spooled files are assigned, can be specified

Possible Special Values:

*ALL Spooled files are selected independent of the chosen device.

As soon as the entries are added to the archive, a status message will appear. The appropriate job protocol contains information about the number of added files.

```

Sitzung A - [24 x 80]
Datei Bearbeiten Sicht Kommunikation Aktionen Fenster Hilfe
-----
Display All Messages
Job . . . : SA1          User . . . : RIMKUS      System:   DEVELOP
Number . . . :                               040230

6 > DSPJOBLOG JOB(040230/*N/SA1)
6 > dspjoblog
6 > DSPJOBLOG JOB(040230/*N/SA1)
6 > DSPJOBLOG JOB(040230/*N/SA1)
6 > DSPJOBLOG JOB(*)
6 > ADDZIP
6 > ADDZIP ARCPATH('/tmp/testing.zip') FRMPATH('/tmp') FRMIFSFILE('test_cool1')
    ) CREATE(*NO)
    EFMONLST in PEP140 type *FILE not found.
    Cursor FETCHS100 not open.
    Cursor FETCHS100 not open.
    i-effect processing started.
    File /tmp/test_cool1 will be added to archive /tmp/testing.zip
    Ownership of object GZIP400 in QTEMP type *DTAARA changed.

Press Enter to continue.
F3=Exit  F5=Refresh  F12=Cancel  F17=Top  F18=Bottom

3902 - Sitzung wurde erfolgreich gestartet.
  
```

Menu Item 4: Display ZIP Archive Entries (DSPARCFIL)

Using i-effect, it is possible to display data from either the DB2 or IFS archives in either the DB2 or IFS file system.

- 1) From the i-effect Compression menu enter menu item 4 "Display ZIP Archive Entries".

From the program interface WRKARC enter option 5 for the desired file.

If the two aforementioned options are not desired, enter the DSPARCFIL command.

- 2) The next screen allows the indication of further parameters, which define the temporary extraction from the archive.

Enter parameters according to the following description.

Note: The screen content will vary, depending on whether the archive is from the DB2 or IFS file system, and whether it is to be displayed in the DB2 or IFS files system.

Archive File (ARCFILE) – only with FS (*DB2)

The qualified name of the archive file. The file must already exist and be in ZIP format

Library

Name of the library, in which the archive file exists.

Possible Special Value::

**CURLIB* The archive file will be created in the current library.

Member

Member name of the archive file.

Possible Special Value:

**FIRST* The name of the member with the archive data corresponds to the name of the file.

Archive Path (ARCPATH) – only with FS (*IFS)

The qualified name of the archive file in the IFS files system e.g. /tmp/test.zip.

For the files system choice, please refer to the section “The Integrated File System” in the appendix. More information about the IFS and QNTS set up can be found there.

Sequence Number or Name (NAMEPOS)

A file can be found in the archive in two different ways: either through entry of the relative position in the archive or through entry of the exact file and path name as well as from the creation date and time. In this parameter the search method will be chosen.

Possible Special Values:

**POS* The file choice is made according to the specific order of appearance in the archive.

**NAME* The file choice is made according to the name and creation date/time.

Path (FILEPATH)

By choosing NAMEPOS (*NAME) this parameter requires the EXACT path name. It must be entered EXACTLY the way it appears in the archive.

Date (FILEDATE)

The file's creation date is required with the choice of this parameter, if NAMEPOS (*NAME) is chosen. In order to be selected, the archived file must be marked with the creation date, .

Possible Special Value:

**ANY* Files will be selected without regard to their creation date.

Time (FILETIME)

The file's creation time is required with the choice of this parameter, if NAMEPOS (*NAME) is chosen. In order to be selected, the archived file must be marked with the creation time.

Possible Special Value:

**ANY* Files will be selected without regard to their creation time.

File System Output (OUTFS)

File system in which the archive entries will be shown.

Possible Values:

**IFS* Data will be shown in the IFS file system, i.e. in the data stream format.

**DB2* The data will be shown in the DB2 file system, i.e. in table format.

From CCSID (FRMCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the source data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 “Appendix”

Possible Special Values:

*JOB The CCSID of the job will be used.

To CCSID (TOCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the target data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation, if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix."

Possible Special Value:

*JOB The CCSID of the job will be used.

Encryption (PASSWORD)

AES encrypted Zip archives, require a password for decryption. The CCSID in which the password was originally specified must also be indicated with the password. *DFT specifies the standard ASCII code page 819.

Possible Special Value:

*NONE The archive entry is not encrypted. A password is not required.

Note: ASCII must be chosen, if the archive is to be extracted with WinZip or similar PC programs. The EBCDIC password will be converted before the encryption in ASCII and can be verified with the PC afterward.

Output Queue (OUTQ) – only with DTATYP (*SPOOL)

Defines the output queue for the display of spooled files.

Possible Special Value:

*SAME The same output queue is used from which the spool file was taken during transmission into the archive

Library

The name of the library containing the output queue.

After pressing Enter, the archive file found will be temporarily called up from the archive, decompressed and displayed (DSPPFM, DSPSAVF or DSPSPLF if OUTFS (*DB2) or DSPSTMF if OUTFS (*IFS)).

Menu Item 5: Extract Files from ZIP Archive (EXTARCFIL)

- 1) From the i-effect Compression menu enter item 5 "Extract Files from ZIP Archive."

From the program interface WRKARC enter option 2 next to the desired file.

If the aforementioned options are not desired, enter the command EXTARCFIL.
- 2) The next screen allows the indication of further parameters, which will be used for decompression and extraction.

Enter parameters according to the following descriptions.

i-effect can extract files from the DB2 and IFS archives into either DB2 or IFS file systems.

Note: The screen content will vary, depending on whether the archive is from the DB2 or IFS file system, and whether it is to be extracted into the DB2 or IFS files system.

Archive File (ARCFIL) – only with FS(*DB2)

The qualified name of the archive file. The file must already exist, and its contents must be in the standard ZIP format.

Library

Name of the Library of the archive.

Possible Special Value:

*CURLIB The archive file will be created in the current library.

Member

Name of the member of the archive file.

Possible Special Value:

*FIRST The name of the member with the archive data corresponds to the name of the file.

Archive File (ARCPATH) – only with FS (*IFS)

The qualified name of the archive file including its path. The file must already exist and its contents must be in the standard ZIP format.

Sequence Number or Name (NAMEPOS)

A file can be found in the archive in two different ways: either by entering the relative position in the archive or by entering the exact file and path name as well as by creation date and time. In this parameter the search method will be chosen.

Possible Special Values:

<i>*POS</i>	The file choice is made by the exact order in the archive.
<i>*NAME</i>	The file choice is made according to the creation date and time.

Path (FILEPATH)

By choosing NAMEPOS (**NAME*) this parameter requires the EXACT path name. It must be entered EXACTLY the way it appears in the archive.

Date (FILEDATE)

By choosing NAMEPOS (**NAME*) this parameter requires the file's creation date. In order to select the file in the archive, it must be marked with its creation date.

Possible Special Value:

<i>*ANY</i>	Any date will be used for file selection.
-------------	---

Time (FILETIME)

The creation time of the file is required, if NAMEPOS (**NAME*) is chosen. The file in the archive must be marked with its creation time in order to be selected.

Possible Special Value:

<i>*ANY</i>	Any time will be used for file selection.
-------------	---

File System Output (OUTFS)

Type of file system into which the files will be extracted. It is possible to extract files from either IFS or DB2 into either IFS or DB2.

The following instructions are possible:

<i>*IFS</i>	The data will be extracted into the IFS file system.
<i>*DB2</i>	The data will be extracted into the DB2 file system.

Output Library (OUTLIB) only with OUTFS (*DB2)

The name of an output library can be determined in this parameter either by entering the name of the library or by choosing the following special value:

<i>*FRMPATH</i>	The name of the output library is created from the path name of the file in the archive. The path name must be either in the <i>*NAMEFMT0</i> or <i>*NAMEFMT1</i> .
-----------------	---

Examples:

"PATH/PATH/MYLIB/MYFILE.MYMEMBER" -> MYLIB will be used as the library name.

"QSYS.LIB/MYLIB.LIB/MYFILE.FILE/MYMEMBER.MBR" ->

MYLIB will be used as the library name

Record Length Output File (OUTRECL) – only with OUTFS (*DB2)

For the extraction of an entry into a physical file in the DB2 system, the record length must be specified. The value **AUTO* is recommended.

Possible Special Value:

<i>*AUTO</i>	By using <i>*AUTO</i> with the decompression, the decompressed data will be analysed. If control characters are found, the output file will be created with the record length which is required to accommodate all data records (the file has the record length of the largest record found).
--------------	---

Output Path (TOPATH) – only with OUTFS (*IFS)

Name of the path into which the extracted files will be copied when complete.

Possible Special Value:

<i>*FRMPATH</i>	The name of the output path is determined by the path of the archive file. The path must be in one of the following formats in the archive:
-----------------	---

E.g. :path/path/path/LIBRARY/FILE.MEMBER

QSYS.LIB/LIBRARY.LIB/FILE.FILE/MEMBER.MBR

Files can be added to the archive by entering NAMEFMT(**NAMEFMT0*) or NAMEFMT(**NAMEFMT1*)

Replace Existing File (REPLACE)

If the file, which will be extracted, already exists, the options in this parameter determine whether the original files will be replaced or not.

Possible Special Values:

<i>*YES</i>	The data will replace the existing data.
<i>*NO</i>	No extraction will take place. The existing data will be retained.

From CCSID (FRMCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the source data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix."

Possible Special Value:

**JOB* The CCSID of the job will be used.

To CCSID (TOCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the target data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix."

Possible Special Value:

**JOB* The CCSID of the job will be used.

Encryption (PASSWORD)

AES encrypted Zip archives require a password for decryption. The CCSID in which the password was originally specified must also be indicated with the password. *DFT specifies the standard ASCII code page 819.

Possible Special Value:

**NONE* The archive entry is not encrypted. A password is not required.

Output queue (OUTQ) – only with DTATYP (*SPOOL)

This option defines the output queue for the restored spooled files.

Possible Special Value:

**SAME* The same output queue will be used for transfer, from which the spooled files were taken.

Library

Name of the library which contains the output queue.

Hold Spooled File? (HOLD) – Only with DTATYP (*SPOOL)

This option determines if the spooled file should be held after decompression or if they should be printed right away.

The following options are possible:

**YES* Spooled files will be held (not printed) if they have *HLD status.
**NO* Spooled files will be printed if they have *RDY status.

Menu Item 6: Delete Files from ZIP Archive (DLTARCFIL)

- 1) From the i-effect Compression menu enter item 6 "Delete Files from ZIP archive."
 From the program interface WRKARC enter option 4 in front of the desired file. Confirmation, which can be done by pressing enter, is required in order to delete the file.
 If the aforementioned options are not desired, the command DLTARCFIL can be entered.
- 2) The screen that will appear allows the user to determine further parameters, which can be used for deleting files.
 Enter the parameters according to the following description.

Archive file (ARCFIL) – only with FS (*DB2)

The qualified name of the archive file. The file must already exist and be in ZIP format.

Library

Name of the library, where the archive files exists.

Possible Special Value:

**CURLIB* The archive file will be opened in the current library.

Member

Name of the member of the archive file.

Possible Special Value:

**FIRST* The name of the member with the archive data corresponds to the name of the file.

Archive File (ARCPATH) – only with FS (*IFS)

The qualified name of the archive file including its path. The file must already exist and its contents must be in the standard ZIP format.

Sequence Number or Name (NAMEPOS)

A file can be found in the archive in two different ways: either by entering the relative position in the archive or by entering the exact file and path name as well as by creation date and time. In this parameter the search method will be chosen.

Possible Special Values:

**POS* The file choice is made by the exact order in the archive.
**NAME* The file choice is made according to the creation date and time.

Path (FILEPATH)

By choosing NAMEPOS (**NAME*) this parameter requires the EXACT path name. It must be entered EXACTLY the way it appears in the archive.

Date (FILEDATE)

By choosing NAMEPOS (**NAME*), this parameter requires the file's creation date. In order to select the file in the archive, it must be marked with its creation date.

Possible Special Values:

**ANY* Any date will be used for file selection.

Time (FILETIME)

The creation time of the file is required if NAMEPOS (**NAME*) is chosen. In order to be selected, the file in the archive must be marked with its creation time.

Possible Special Value:

**ANY* Any time will be used for file selection.

Menu Item 9: Create Self-Extracting Archive (CRTSFXARC)

This form of ZIP archive contains an executable program for the desired target platform and has the .EXE ending, e.g. for Windows systems.

Every existing ZIP archive can be converted into a self-extracting archive.

Along with the entry of the ZIP archive file and the output file (SFX), this command has parameters that can be used to edit the extraction program's runtime.

- 1) From the i-effect Compression menu enter menu item 9 "Create Self-Extracting Archive."
 If the aforementioned option is not desired, the command CRTSFXARC can be entered.
- 2) Fill in the fields as required and press enter. i-effect will start working and will show its progress in the display.

Work With Simple GZIP Archives

Menu Item 7: Simple GZIP Compression (STRGZIP COMPRESS(*COMP))

- 1) From the i-effect Compression menu enter menu item 7 "Simple GZIP Compression."
The command STRGZIP COMPRESS (*COMP) can also be used.
- 2) Fill in the fields as required and press enter. i-effect will start working and will show its progress in the display.

Note: The screen content will vary, depending on whether the archive is from the DB2 or IFS file system, and whether it is to be extracted into the DB2 or IFS files system.

File System Entry (FS)

The files can be compressed in the DB2 file system (a physical file will be created) or in the IFS file system (the "Root" file system of IBM System i). Enter the choice of data system and press enter to move to the next display.

- | | |
|-------------|---|
| <i>*DB2</i> | The file will be created as a physical file with a member in a library. |
| <i>*IFS</i> | The file will be created as a file in a path. |

Input File (FRMFILE) – Only with FS (*DB2)

The files/member files are indicated by a qualified name. Either one member file of a file, or all of a file's members, or all member files of all files can be edited. i-effect can search a library for the desired files as member files. The entry consists of three components (member/library/file).

File

Either a specific file can be entered or the following special value can be used to determine which files will be used.werden.

Possible Special Value:

- | | |
|-------------|---|
| <i>*ALL</i> | All files will be used. For every file found exactly one output file will be created. |
|-------------|---|

Library

Name of the input library.

Possible Special Value:

- | | |
|----------------|---|
| <i>*CURLIB</i> | The required files will be sought in the current library. |
|----------------|---|

Member

To determine the member files, a specific member file or the following special value can be indicated.

Possible Special Value:

- | | |
|-------------|---|
| <i>*ALL</i> | All member files will be edited. For every member file found, exactly one compressed output file will be created. |
|-------------|---|

Input Path (FRMPATH) – only with FS (*IFS)

The name of the path in the IFS files system, from which the files will be read and compressed, e.g. "/usr/usr/lib/lib1." The separating mark between the paths is a simple backslash. A backslash at the end of path entry is not needed.

Input File (FRMIFSFILE) – only with FS (*IFS)

The name(s) of the input file(s) in the input path. By using the wild cards "*" and "?" several files can be chosen at once.

Possible Special Characters:

- | | |
|---|---|
| * | Replaces an indefinite number of characters in the file name. |
| ? | Replaces exactly ONE character in the file name. |

File System Output (OUTFS)

The file system type in which the output files are copied. It is possible to compress files in and out of the IFS, and in and out of DB2 systems respectively.

Possible Special Values:

<i>*FRMINPUT</i>	The files will be put into the same file system that they came from.
<i>*IFS</i>	The data will be put into the IFS file system.
<i>*DB2</i>	The data will be put into the DB2 file system.

Output File (TOFILE) – only with OUTFS (*DB2)

The name of the target file can be created from the name of the input file by entering **GZNAME*. The name will have the ending *.GZ*. The file SALES would be named SALES.GZ, for example. The user can enter the desired output file name in this field as well.

Possible Special Values:

<i>*GZNAME</i>	The name of the output file will be created with the name of the input file and "GZ."
<i>*FRMFILE</i>	The name of the output file is the same as the name of the input file.

Output Member File (TOMBR) – only with OUTFS (*DB2)

The name of the target member file can be created from the name of the input member file by entering **GZNAME*. The name will contain the ending *.GZ*. The member file SALES07 will become SALES07.GZ, for example. The user can enter the output member file's name in the field.

Possible Special Values

<i>*GZNAME</i>	The name of the output member file will be created with the name of the input file and "GZ."
<i>*FRMFILE</i>	The name of the output member file is the same as the name of the input file.

Output Library (TOLIB) – only with OUTFS (*DB2)

The name of the output library must be entered. By entering **FRMLIB*, the data will be exported into a file which will be put in the same library in which the input file was opened.

Possible Special Value::

<i>*FRMLIB</i>	The name of the output library corresponds to the input library.
----------------	--

Output Path (TOPATH) – only with OUTFS (*IFS)

Name of the path in which the compressed files are put, e.g. "/usr/userlib1."

Possible Special Value:

<i>*FRMPATH</i>	The name of the output path corresponds to the name of the input path.
-----------------	--

Output File (TOIFSFILE) – only with OUTFS (*IFS)

The name of the output file. If only one file is to be compressed, the name can be defined here.

Possible Special Value:

<i>*GZNAME</i>	The name of the output file will be created by adding the gzip ending "GZ" to the name of the input file, e.g. /tmp/test.dat becomes /tmp/test.dat.gz
----------------	---

Record Length Output File (OUTRECL) (*DB2)

The record length of the output file can be directly determined here, or automatically determined by i-effect. If **AUTO* is entered in this parameter, i-effect uses the record length of the input file for the output file.

Possible Special Values:

<i>*AUTO</i>	i-effect determines the record length of the output file automatically.
--------------	---

Action (COMPRESS)

Tells the program which processes are to be executed.

Possible Special Values:

<i>*COMP</i>	The data of the input file(s) will be compressed by using this parameter.
<i>*DECOMP</i>	The compression of the data in the specified input files will be removed.

Rate of Compression (SPEED)

i-effect can vary its compression speed at 9 different levels. With level 1 the program has the maximum speed, however without maximum compression. Level 9 has maximum compression, but the program runs more slowly. Users can set their own values depending on their needs and variables such as storage space, processor speed, etc.

Use Original Name (NAME)

If needed, the name of the input file can be used in the compressed data. The receiver of the compressed data can save the file under the same name or use the information over the original file name for editing. With *Yes the function is activated. The option *NO stops the adding and later expanding of the name.

Possible Values:

- *YES The original name of the input file will be added.
- *NO The original name will not be entered.

Naming (ENAME)

If the insertion of the original name into the gzip file is desired, this parameter determines how the name will be provided. The name can be created by entering *DEFAULT from the name of the input file/member, or path name, or the name which has been entered in this parameter will be used.

Possible Special Values:

- *DEFAULT The name will be created from the input member file or the input file without the path name.

Insert CRLF (CRLFINSERT)

i-effect can insert form feed characters at the end of every data record. When *YES is specified in this parameter, i-effect completes the end of every data record read with the character CRLF (carriage return – line feed (X'0D25')). If *NO is given, then NO further insertion of control characters follows. This function can be required when the recipient of the data has to restore the original record structure in the file (text data). In this case, using the parameter *YES is required.

Possible Special Values:

- *YES The EBCDIC control character for CRLF will be inserted at the end of the record.
- *NO No additional characters will be inserted.

Delete Subsequent Blanks (BLANKCOMP)

The parameter BLANKCOMP(to delete subsequent blanks) can be used along with CRLFINSERT to modify the data before compression. When the subsequent blanks of a data record should not be included in the compressed file, i-effect can remove these blanks if *YES has been entered. Simultaneous use of CRLFINSERT (*YES) will remove the blanks BEFORE the line feed control character is inserted.

Possible Special Values:

- *YES All blanks (Blanks, X'40') at the end of a data record will be removed.
- *NO No characters will be removed.

From CCSID (FRMCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the source data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix."

Possible Special Value:

- *JOB The CCSID of the job will be used.

To CCSID (TOCCSID)

i-effect uses the indicated CCSID (Coded Character Set Identification) of the target data to translate fonts during processing. EBCDIC and ASCII fonts can be indicated. There will be no translation if the source and target CCSID are identical.

A complete list of all the CCSID can be found in Chapter 14 "Appendix."

Possible Special Value:

- *JOB The CCSID of the job will be used.

Delete after Editing (DELETE)

If desired, the original file can be deleted after it has been edited.

Possible Special Values:

- *YES The input file will be deleted after processing. If the file has no further member files, the file will also be deleted.
- *NO No files/member files will be deleted.

Handle X'00' at EOF (NULLCOMP)

Files to be compressed may have the filling character with the hexadecimal value of 00. This can happen if files are transferred from other systems via FTP into the DB2 data system of System i. It is possible that these characters are part of the data that will be compressed.

This parameter can specify if these characters should be compressed or not.

The number of X'00' filling characters can be adjusted to an even number, which may be required by certain applications.

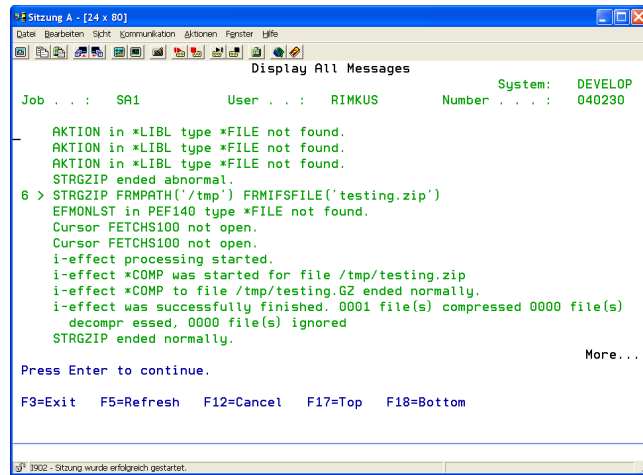
Possible Special Values:

- *ALLNULL All characters with the value X'00' at the end of the last data record of a physical file will be processed and compressed.
- *NONULL All characters with value X'00' at the end of the last data record of a physical file are to be disregarded and NOT compressed.

***EVENNULL** i-effect ignores all characters with the value X'00' at the end of the last data record of a physical file, inserts however ONE X'00' character, in case the total number of bytes to be compressed is odd. This guarantees that the number of bytes of the file after decompression will always be an even number, which may be required by certain applications.

When compression is finished a status message will appear and the job protocol will give a detailed summary of the number of compressions, errors, and overread files.

The job protocol contains detailed information:



```

Sitzung A - [24 x 80]
-----
Display All Messages
System:   DEVELOP
Job . . . : SA1      User . . . : RIMKUS   Number . . . : 040230

AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
STRGZIP ended abnormal.
6 > STRGZIP FRMPATH('/tmp') FRMIFSFIL('testing.zip')
EFMONLST in PEF140 type *FILE not found.
Cursor FETCHS100 not open.
Cursor FETCHS100 not open.
i-effect processing started.
i-effect *COMP was started for file /tmp/testing.zip
i-effect *COMP to file /tmp/testing.GZ ended normally.
i-effect was successfully finished. 0001 file(s) compressed 0000 file(s)
decompr essed, 0000 file(s) ignored
STRGZIP ended normally.

More...

Press Enter to continue.

F3=Exit  F5=Refresh  F12=Cancel  F17=Top  F18=Bottom

1902 - Sitzung wurde erfolgreich gestartet.

```

The last diagnostic message contains the total number of processed files.

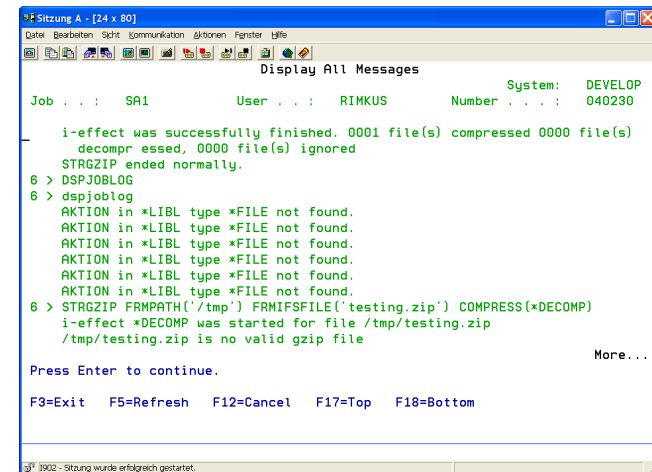
Menu Item 8: Simple GZIP Decompression (STRGZIP COMPRESS(*DECOMP))

- 1) From the i-effect Compression menu enter menu item 8 "Simple GZIP Decompression." [STRGZIP COMPRESS(*DECOMP)] can also be entered directly.
- 2) Fill in the fields as required and press enter. i-effect will show the compression status at the bottom of the display.

Note: The screen content will vary, depending on whether the archive is from the DB2 or IFS file system, and whether it is to be extracted into the DB2 or IFS files system.

Note: For a description of the parameters see menu item 7 "Simple GZIP Compression."

At the end of decompression, i-effect will give notice and a detailed account of the number of decompressions, errors and overread files.



```

Sitzung A - [24 x 80]
-----
Display All Messages
System:   DEVELOP
Job . . . : SA1      User . . . : RIMKUS   Number . . . : 040230

i-effect was successfully finished. 0001 file(s) compressed 0000 file(s)
decompr essed, 0000 file(s) ignored
STRGZIP ended normally.
6 > DSPJOBLOG
6 > dspjoblog
AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
AKTION in *LIBL type *FILE not found.
6 > STRGZIP FRMPATH('/tmp') FRMIFSFIL('testing.zip') COMPRESS(*DECOMP)
i-effect *DECOMP was started for file /tmp/testing.zip
/tmp/testing.zip is no valid gzip file

More...

Press Enter to continue.

F3=Exit  F5=Refresh  F12=Cancel  F17=Top  F18=Bottom

1902 - Sitzung wurde erfolgreich gestartet.

```

The last diagnostic message will contain information about the total number of files processed.

File System (FS)

The file system of the ZIP archive which will be decompressed.

Possible Special Values:

- *IFS The IFS file system (root) will be used.
- *DB2 The /QSYS.LIB file system (library/file/member) will be used.

Archive File (ARCFIL)

Name of the existing archive file which will be converted into a self-extracting archive. This parameter consists of three elements:

The first element names the file name of the ZIP archive file.

The second element allows the input of the library

Possible Special Values:

- *CURLIB Current library
- *LIBL Search library list

The third element names the member file.

Possible Special Value:

- *FIRST First member file of the file.

Archive File (ARCPATH)

The complete path name of the archive file in the IFS file system, e.g. /tmp/archive.zip.

Output Files System (OUTFS)

The file system for the self-extracting archive.

Possible Special Values:

- *IFS The IFS file system (root) will be used.
- *DB2 The /QSYS.LIB files system (library/file/member) will be used.

Name of the Self-Extracting (SFX) File (SFXFILE) to be created.

Name of the self-extracting file which is to be created. This parameter consists of three elements:

The first element names the name of the SFX file.

The second element allows library input.

Possible Special Values:

- *CURLIB Current Library
- *LIBL Search library list

The third element names the member files.

Possible Special Values:

- *FIRST Creates the member file of the file

Path of the SFX File to be created (SFXPATH)

The complete path name of the self-extracting file to be created.

Possible Special Values:

- *EXE The name will be created from the name of the input file with the ending .exe. All existing expansions will be removed.

Replace (REPLACE)

An output file which will be created can replace an existing file with the same name.

Possible Special Values:

- *YES An existing file with the same name will be replaced.
- *NO An existing file will NOT be replaced.

Operating System (OS)

Determines the operating system for which the SFX will be created.

Possible Special Values :

- *WINDOWS The SFX will be created for Windows (98, 2000, XP)

SFX Options (SFXOPTION)

The self-extracting archive can be configured by using the following options. Its characteristics will be different at its run time.

GUI Interface

The parameter consists of 5 elements.

The first parameter (GUI Interface) determines the appearance.

Possible Special Values:

- *YES A graphic user interface will appear during extraction.
- *NO The extraction will occur without a graphic interface.

Automatic Extraction

The second parameter determines if the contents will be extracted automatically from the archive as soon as the self-extracted archive is run.

Possible Special Values:

- *YES The contents of the archive will be extracted automatically. The user can determine other options such as target directory etc.
- *NO No automatic extraction will occur. The user must confirm the extraction and enter the target path before the contents of the ZIP archive will be decompressed.

Open Directory

The third parameter offers the possibility to view the contents of the target folder after the extraction is complete.

The following options are possible:

- *YES After extraction the contents of the target folder will be shown in a new window.
- *NO The contents of the target folder will not be displayed.

Run after extraction

With the fourth parameter, a program can be run in the target system after the files have been extracted from the archive. For example, Batch procedures for setup programs can be run.

Here it is possible to determine documents that will be linked to the application that is determined by the file suffix. Supported file formats are: Word documents (.DOC), Excel- documents (.XLS), Adobe Acrobat documents (.PDF), PowerPoint presentations (.PPT), Text files (.TXT), Adobe Photoshop documents (.PSD), HTML files (.HTM and .HTML), XML files, and MP3s.

Standard Directory

The target directory is specified with the fifth parameter. If "Automatic Extraction" was selected, this is the specified path. An acceptable Windows path or name must be specified. It cannot contain any invalid path characters (e.g. / \ : * ? " < > |) or the program will abort.

The following path variables are supported:

- \$desktop\$* The user's desktop
- \$programfiles\$* Program directory of the computer
- \$temp\$* Temporary system directory
- \$windir\$* Windows directory
- \$sysdir\$* Windows system directory
- \$curdir\$* The directory from which the SFX ran.
- \$targetdir\$* The target directory (shortcuts only)
- \$favorites\$* Internet Explorer Favorites folder.
- \$startup\$* The folder "Startup" (User's Startmenu)
- \$sendto\$* The send to directory of the user
- \$quicklaunch\$* QuickLaunch directory (IE4+); default is \$temp\$ if not found
- \$startmenu\$* The folder program in the user's startmenu

