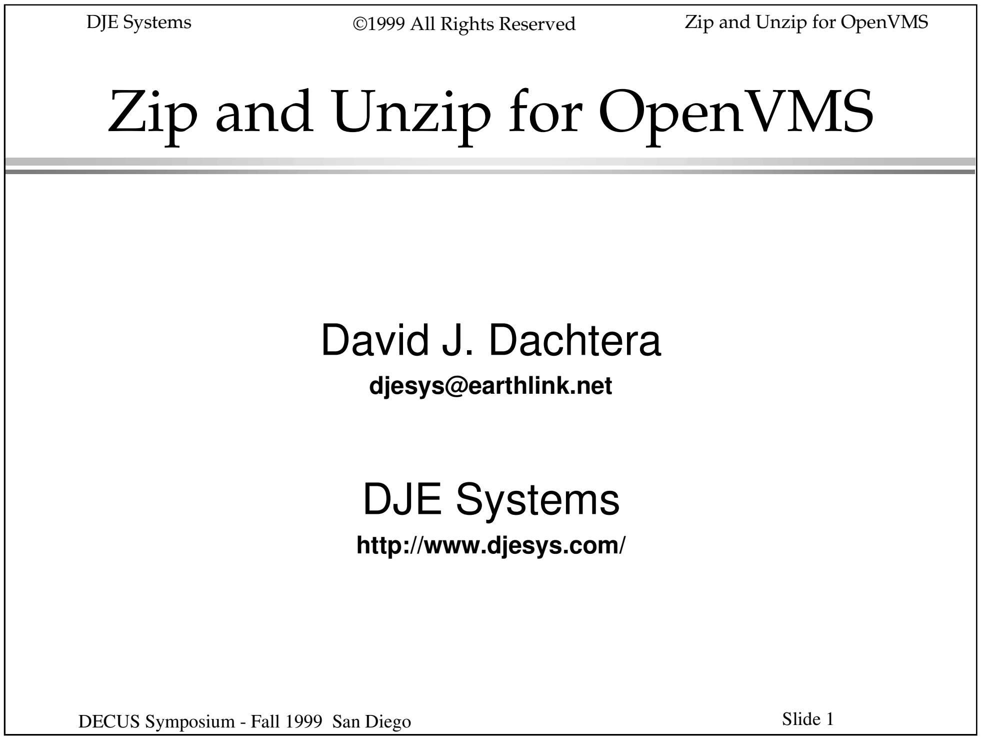

This presentation will provide an overview of the Zip and Unzip programs for OpenVMS.

Information is provided on how to use them, as well as some background on RMS and on files on other operating systems.

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Introduction

- InfoZip
  - Zip for OpenVMS
  - Unzip for OpenVMS

Zip and Unzip for OpenVMS are ports of the freeware Zip and Unzip programs developed by the InfoZip group (http://www.freesoftware.com/pub/infozip/).

In this presentation, we will discuss both Zip and Unzip. We will examine some of the commonly used command qualifiers and we will identify those qualifiers necessary for successfully archiving and restoring RMS files on OpenVMS.

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Agenda

- Overview
- Zip Command Line Qualifiers
- RMS File and Record Attributes
- DOS Files
- UN*X Files
- Making a VMS .ZIP Archive
- Making .ZIP Archives for DOS
- Making .ZIP Archives for UN*X

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In this discussion, we'll focus primarily on the Zip program. We will start with a brief overview of Zip; then, review some of the commonly used qualifiers of the Zip command lines, and their UN*X-like equivalents.

We'll look at RMS files and contrast them with files found on other operating systems.

Then, we look at creating .Zip archives with OpenVMS as the target system, with DOS as the target system and with UN*X as the target system.

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Agenda - Cont'd

- Unzip Command Line Qualifiers
- Unzipping a VMS archive on VMS
- Unzipping a non-VMS archive on VMS
- Making self-extracting archives for VMS
- Demonstration
- Q & A
- Freebies!

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Having looked at Zip in some detail, we take a brief look at some of Unzip's commonly used qualifiers and their UN*X-like equivalents, then review how to unpack an OpenVMS .ZIP archive. Lastly, we look at unpacking on OpenVMS a .ZIP archive that was created on another (non-VMS) operating system.

Provided an OpenVMS workstation is available, we will then look at Zip and Unzip in action, using DIRECTORY/FULL, DUMP/BLOCK and DUMP/RECORD to examine the data before and after being compressed and decompressed.

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Overview

- Zip provides efficient compression and storage of files of any size.
- Zip for OpenVMS can preserve RMS File and Record Attributes
- Zip for OpenVMS can produce .ZIP archives which are compatible with PKUnzip.
- Unzip for OpenVMS will restore only what is present in the archive.

Zip provides better compression than DCX, but can be slightly less efficient than Gnu-Zip.

Zip can preserve all OpenVMS and RMS file and Record attributes, if instructed to do so.

Zip can also produce archives suitable for use on both DOS and UN*X using either Unzip or PKUnzip.

Unzip can only restore VMS/RMS attributes if they were stored in the archive by Zip. Unzip can do nothing to recover files that were Zip-ped incorrectly.

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InfoZip and PKware Versions

InfoZip
- ZIP V2.2 (V2.0 and later)
- UNZIP V5.4 (V5.2 and later)

PKware (for DOS command line)
- PKZip V2.04G
- PKUnzip V2.04G

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For this presentation, the versions of the programs discussed are:

InfoZip
- ZIP V2.2 (V2.0 and later)
- UNZIP V5.4 (V5.2 and later)

PKware (for the DOS command line)
- PKZip V2.04G
- PKUnzip V2.04G

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Zip Command Line Qualifiers

/ADJUST_OFFSETS

Allow for prepended self-extract stub.

/BATCH=filespec

Specify a list of files to archive.

/COMMENT=keyword

Keywords:

- ZIP_FILE - Archive Comment(s)
- FILE - Individual File Comment (one line)

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/ADJUST_OFFSETS can be used to prevent Unzip from reporting extraneous data at the beginning of a self-extracting archive.

/BATCH can be used to provide a list of files to be archived when file selection criteria would otherwise be complex or difficult to code.

The /COMMENT qualifier can be used for both the archive comment and comments which accompany each file in the archive.

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Zip Command Line Qualifiers

/[NO]DIRNAMES

[Exclude] directory names from archive.

/EXCLUDE=filespec

Exclude files matching the file specification.

/EXLIST=filespec

Provides a list of files to be excluded from the archive

/NODIRNAMES can be used to prevent Unzip from creating empty directories for files which are not included in the archive.

The /EXCLUDE qualifier can be used to exclude certain files when the list of files to be archived is wild-carded.

/EXLIST can be used to specify a file containing a list of files to be excluded from the archive. This can sometimes be easier and quicker than building an include list.

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Zip Command Line Qualifiers

/FIX_ARCHIVE[=FULL]

Fix corrupted archive (maybe).

/HELP

Display parameters / qualifiers summary.

/INCLUDE=filespec

Include files matching the file specification.

/FIX_ARCHIVE can sometimes be used to recover a corrupted .ZIP archive.

/HELP can be used to display a summary of Zip’s qualifiers and command parameters.

/INCLUDE can be used to specify which files to include.

/INLIST (next slide) can be used to specify a file containing a list of files to be included.

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Zip Command Line Qualifiers

/INLIST=filespec

Provides a list of files to be included in the archive.

/JUNK

Discard path information; store only the filename.ext

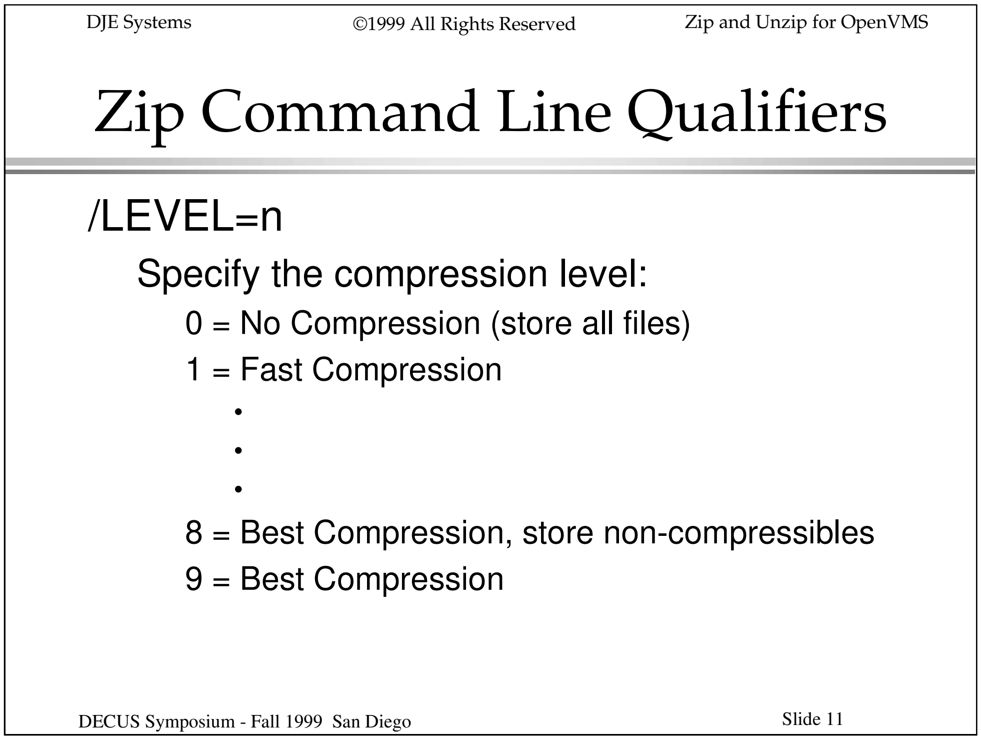
/KEEP_VERSION

Include the version number in the stored filename.ext(;vers)

Either /INCLUDE or /INLIST can be quicker and easier than specifying an extensive exclusion list.

/JUNK can be used to “junk” the path information for the files being archived. No path information will be included in the archive.

/KEEP_VERSION can be used to include the version numbers in the archive, in case multiple file versions are being archived, and/or if it may be necessary to restore the original version numbers when the archive is unpacked.



/LEVEL can be used to specify more or less than the “normal” compression.

/LEVEL=5 equates roughly to PKZip’s DeflateN.

/LEVEL=8 equates roughly to PKZip’s DeflateX. However, .ZIP files and other compressed files Zip recognizes will be stored in the archive without further attempts at compression.

/LEVEL=9 also equates roughly to PKZip’s DeflateX.

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Zip Command Line Qualifiers

/MOVE

Delete the files that were archived if the archive is successfully created. (Files are not deleted until the archive is complete.)

/PKZIP

Make the archive look like it was created by Phil Katz’s PKZip program.

/MOVE can be used to “move” files into the archive. After the archive has been completed, the files that were archived will be deleted.

/PKZIP can be used to make the archive appear to have been written by PKZip by Phil Katz. This is useful for porting files from OpenVMS to other operating systems.

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Zip Command Line Qualifiers

/TEMP_PATH=ddcu:[dir]

Specify a disk/directory where work files should be built (default = your current default disk/directory).

/TEST

Test the integrity of an existing archive

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/TEMP_PATH can be used to specify where the temporary archive will be built. If not specified, it defaults to your current default disk/directory.

If the target disk is not your current default disk, /TEMP_PATH can be used to specify the target disk/directory as the location for the temporary archive. When Zip completes the archive, it will rename the archive instead of copying it.

/TEST can be used to examine an existing archive and verify its integrity.

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Zip Command Line Qualifiers

/TRANSLATE_EOL={LF|CRLF}

Translate end-of-line to match what the target system expects:

LF = Convert <LF> to <CR><LF> (DOS)
CRLF = Convert <CR><LF> to <LF> (UN*X)

Used only for ASCII files.

/UNSFX

Strip off a self-extract stub that was pre-pended to the archive.

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/TRANSLATE_EOL can be used to tell Zip how to store the end-of-line for ASCII files when the .ZIP archive is intended for use on non-VMS systems.

The LF keyword causes Zip to store the end-of-line as a <CR><LF> (carriage-return, line-feed) pair. (DOS format)

The CRLF keyword causes Zip to store the end-of-line as a <LF> (line-feed). (UN*X format)

/UNSFX can be used to strip a self-extract stub or other pre-pended data off of an archive (archive_name.EXE).

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Zip Command Line Qualifiers

/VMS

Preserve RMS file and record attributes.

There are other qualifiers not listed in this presentation that are used less often, but may be important in certain cases.

See the on-line HELP or the ZIP/HELP display.

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/VMS can be used to preserve VMS/RMS attributes for files in the archive. This qualifier is required when the archive is intended to be used on an OpenVMS system.

Other qualifiers are not included in this presentation because they are less likely to be useful in everyday practice. Review the information and on-line HELP that comes with Zip for information on those qualifiers which are not discussed here.

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Zip - UN*X Equivalents

-0	/LEVEL=0
-9	/LEVEL=9
-@	/BATCH
"-A"	/ADJUST_OFFSET
-c	/COMMENT=FILE
-d	/NODIRECTORY
"-F"	/FIX_ARCHIVE
"-FF"	/FIX_ARCHIVE=FULL

Some versions of Zip and Unzip also support UN*X-like command syntax, but this is not always the case.

Here's a comparison of UN*X-like command line options to their DCL command qualifier equivalents.

Note that uppercase options must be enclosed in quotes on VMS.

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Zip - UN*X Equivalents

-h	/HELP (or -?)
-j	/JUNK
-k	/PKZIP
-l	/TRANSLATE_EOL=LF
-ll	/TRANSLATE_EOL=CRLF
-m	/MOVE
"-T"	/TEST
"-V"	/VMS

Some versions of Zip and Unzip also support UN*X-like command syntax, but this is not always the case.

Here, we continue with a comparison of UN*X-like command line options with DCL command qualifiers.

Again, a reminder that uppercase options must be enclosed in quotes on VMS.

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Zip - UN*X Equivalents

-w	/KEEP_VERSION
-z	/COMMENT=ZIP_FILE

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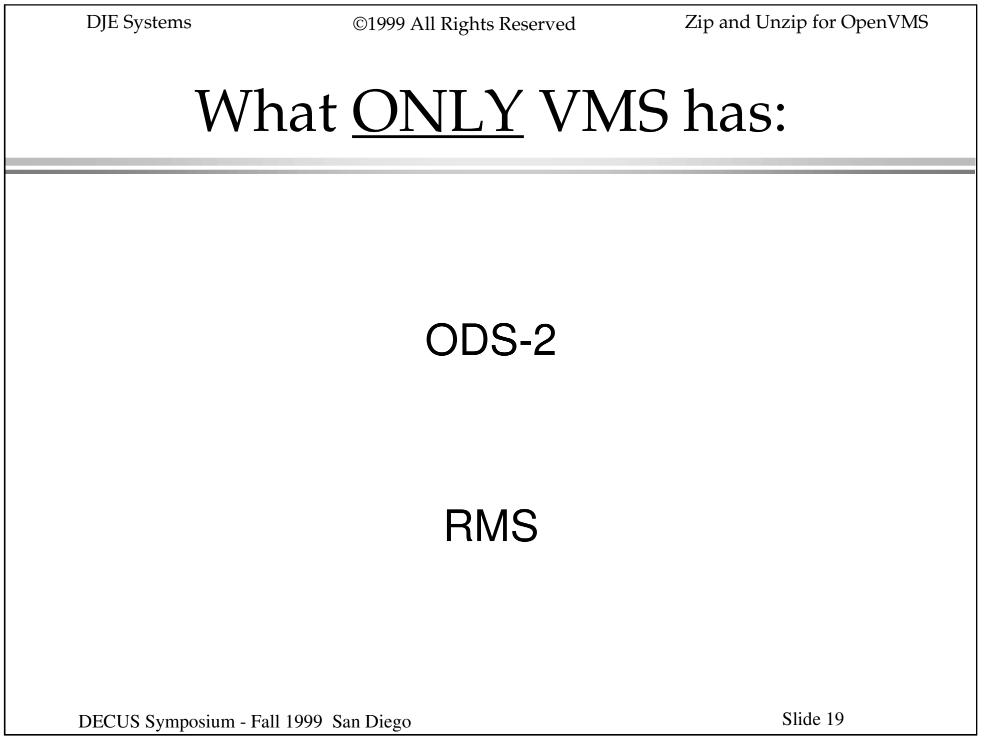
Some versions of Zip and Unzip also support UN*X-like command syntax, but this is not always the case.

Here, we conclude our comparison of UN*X-like command line options with DCL command qualifiers.

Again, a reminder that uppercase options must be enclosed in quotes on VMS.



Two features unique to OpenVMS make dealing with Zip and Unzip rather a challenge:

ODS or On-Disk Structure

RMS or Record Management Services

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ODS - On-Disk Structure

The VMS “filesystem”

Defines:

- On-disk data structures
- Disk File structures
  - (Directories are files, too!)
- File Security
  - Protection Mask, Access Control List (ACL)

ODS defines how files are structured on disk. This equates to the UN*X concept of a “filesystem” - a system of files and directories on disk.

File protections are provided for, including UIC-based protection masks and Rights Identifier based Access Control Lists.

ODS provides a file “version” (“generation”) number which makes unique files which otherwise have the same name and file-type extension.

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RMS - Record Mgt Services

THE VMS "file system"

Defines:
- Data structures within files.
  - Types of files.
  - Types of record formats.

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RMS is **THE** OpenVMS file system.

RMS defines how records are formatted within files as well as the types of files supported.

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RMS Basics

File Attributes

- Format
  - Indexed
  - Sequential
  - Relative
- Recordsize
  - Minimum (Indexed)
  - Maximum (Variable)
  - Fixed

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To understand the process of archiving files using Zip, it is helpful to be familiar with RMS file and record attributes.

RMS files have three formats: Indexed, Sequential and Relative.

Record sizes indicate the minimum record size for Indexed files, the maximum record size for variable record-length files and the actual record length for fixed record length files.

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RMS Basics

- Record Attributes
  - Format
    - Fixed Length
    - Variable Length
    - Stream
  - Carriage Control
    - VFC
    - Fortran
    - Carriage-Return
    - None

Record Attributes specify record format and carriage control attributes.

The record formats are: Fixed, Variable and Stream.

The types of carriage-control attributes are: VFC (Variable with Fixed Control), Fortran carriage control, Carriage-Return carriage control, and no carriage control.

This is primarily connected with TYPE-ing and PRINT-ing files. Carriage-control attributes do not cause extraneous data to be written to your files or input to your program.

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Indexed Files

Requires /VMS qualifier.

Stored with all index and data buckets as they were in the original file.

Zipping and Unzipping provides for no optimization or deleted bucket reclamation.

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Indexed files can be Zipped and Unzipped when the /VMS qualifier is used. All VMS and RMS attributes of Indexed files will be preserved when /VMS is used on the Zip command line.

The existing structure of the file is saved and restored. Zipping and Unzipping an indexed file will NOT help to restructure the file.

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Indexed Files

Cannot be Unzipped on any other (non-VMS) operating system.

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RMS files are unique to VMS. They cannot be restored on any other operating system. This is true of indexed files and other types of files such as relative files.

Similarly, text files, object files, .EXE files etc. will usually get hopelessly munged if you try to UNZIP them on a non-VMS operating system, then try to transfer them back to VMS.

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Sequential Files

Includes:

- ASCII text (.BAS, .COM, .C, etc.)
- Object code (.OBJ)
- Executables (.EXE)
- Libraries (.FLB, .HLB, .MLB, .OLB, .TLB)
- Archives (.TGZ, .ZIP, etc.)
- Savesets

Sequential files cover the bulk of VMS file types. Generally, any file whose organization is neither indexed nor relative is a sequential file.

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Relative Files

Access records by relative record number (first=1).

Requires /VMS qualifier

Cannot be Unzipped on any other (non-VMS) operating system.

Relative files are a sort of “half step” between sequential and indexed. They are typically found as having fixed-length records. Records can be accessed by relative record number.

The /VMS qualifier MUST be used when archiving relative files.

Relative files cannot be Unzipped on any other operating system. RMS files are unique to VMS.

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Record Attributes

Length attribute (RFMT=Variable)

- signed word integer (max=32767)
- in the first two bytes of each record
- stripped off by RMS before the record is returned to a program

Carriage Control

- stored in the file header
- not stored in the records

Records in variable record length files (except Stream files) are preceded by a two-byte length attribute. It is stored as a signed word integer; therefore it has a maximum value of 32767. RMS strips off the length attribute before returning the data to your program.

Carriage Control attributes are stored in the file header and are common to all the records in the file. They are not stored in the records nor are they part of the records.

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Zip & File / Record Attributes

Zip stores RMS file and record attributes in the archive if the /VMS qualifier is used.

```
$ ZIP :== $ZIP/VMS
```

Zip does NOT store RMS file and record attributes if the /PKZIP qualifier is used or if /VMS is not used.

Zip stores the RMS file attributes and record attributes for each file in the archive, but only when the /VMS qualifier is used to create or add files to the archive.

If the /VMS qualifier is NOT used, or if the /PKZIP qualifier is used, Zip will attempt to convert the files being archived to a format which is common to the bulk of the non-VMS operating systems supported by Zip.

Next, we'll discuss some non-VMS operating systems and their file characteristics.

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DOS, Win/9x, Win/NT Files

DOS includes MS-DOS™, PC-DOS™, DR-DOS™, etc.; DOS underlies Win/9x. NT uses DOS-like formats.

One file format

- VMS Equivalent is STREAM

Record terminator is <CR><LF>

No RMS on DOS/WIN (exc. 3rd party)

DOS includes MS-DOS, PC-DOS, DR-DOS (now known as OpenDOS), etc. Since this is the foundation of Windows, it also includes MS-Windows. Windows/NT uses similar file formats.

DOS has only one file format. The OpenVMS equivalent is Stream.

The DOS record terminator is a carriage-return line-feed pair, although line-feed alone is usually honored.

There is no RMS on DOS/Windows except for certain third-party add-on software.

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UN*X Files

Includes AT&T UNIX, SCO UNIX, BSD, Linux, AIX, etc.

One file format

- VMS Equivalent is STREAM_LF

Record terminator is <LF>

No RMS on UN*X (exc. 3rd party)

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UN*X includes AT&T UNIX, SCO UNIX, BSD, Linux, etc.

UN*X has only one file format. The OpenVMS equivalent is Stream_LF.

The UN*X record terminator is a line-feed, sometimes also called “new-line”.

There is no RMS on UN*X except for certain third-party add-on software.

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Making a VMS .ZIP Archive

`$ ZIP/LEVEL=9/VMS archive_name filespec`

“archive_name” need not include a filetype extension, defaults to .ZIP (Caveat: Beware of logical names!)

“filespec” can include wild-cards

- If path is wild-carded, ZIP will recurse directories.
  Example: [...]*.*

To make a .ZIP archive for VMS, invoke the Zip program using the /VMS qualifier. This will preserve all RMS file and record attributes by storing them in the archive.

The “archive_name” need not include the .ZIP filetype extension, the default extension of .ZIP will be applied. Be careful not to use an archive_name that is also a logical name, as this can produce unexpected results.

The “filespec” parameter can include wildcards. If the path is wildcarded, Zip will recurse directories by default.

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Making a VMS .ZIP Archive

```
$ ZIP/LEVEL=9/VMS archive_name filespec
```

Include /KEEP_VERSION to preserve VMS version numbers.

- required when “filespec” includes a wild-carded version number (ex: *.*;*)

Zip for OpenVMS does not store version numbers in the archive by default. If files must be restored with their original version numbers, use the /KEEP_VERSION qualifier.

Note that the /KEEP_VERSION qualifier is required when the “filespec” parameter includes a wild-carded version number. Otherwise, filename.ext’s within the archive would duplicate. The storage of the version number makes the filespec.’s unique, just as is seen in VMS.

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Making a DOS .ZIP Archive

```
$ ZIP/LEVEL=9/PKZIP/TRANSLATE=LF -
  archive_name filespec

$ ZIP -9kl archive_name filespec
```

Use this for ASCII files ONLY!

Binary files (.ZIP, .EXE, etc.) will get scrambled!

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To make a .ZIP archive for use on DOS or Windows, use the /PKZIP qualifier.

For ASCII (text) files (ONLY!), use the /TRANSLATE_EOL qualifier with the LF value. This will cause records in RMS files to be terminated with <CR><LF> pairs within the archive.

Binary files will be rendered useless under these conditions.

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Making a DOS .ZIP Archive

```
$ ZIP/LEVEL=9/PKZIP archive_name filespec

$ ZIP -9k archive_name filespec
```

Use this for Binary files <u>ONLY</u>!

ASCII files (. COM, .TXT, etc.) might not Unzip correctly!

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To make a .ZIP archive for use on DOS or Windows, use the /PKZIP qualifier.

For binary files, leave out the /TRANSLATE_EOL qualifier. This will prevent extraneous data from being inserted into the files being archived.

Note that ASCII (text) files may not be stored in the archive in a usable condition if the /TRANSLATE_EOL is not used.

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Making a UN*X .ZIP Archive

```
$ ZIP/LEVEL=9/PKZIP/TRANSLATE=CRLF -
  archive_name filespec

$ ZIP -9kll archive_name filespec
```

Use this for ASCII files ONLY!

Binary files (.ZIP, .EXE, etc.) will get scrambled!

To make a .ZIP archive for use on UN*X, omit the /VMS qualifier or use the /PKZIP qualifier.

For ASCII (text) files (ONLY!), use the /TRANSLATE_EOL qualifier with the CRLF value. This will cause records in RMS files to be terminated with <LF> (linefeeds) within the archive.

Binary files will be rendered useless under these conditions.

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Making a UN*X .ZIP Archive

```
$ ZIP/LEVEL=9/PKZIP archive_name filespec

$ ZIP -9k archive_name filespec
```

Use this for Binary files <u>ONLY</u>!

ASCII files (. COM, .TXT, etc.) might not Unzip correctly!

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To make a .ZIP archive for use on UN*X, omit the /VMS qualifier or use the /PKZIP qualifier.

For binary files, leave out the /TRANSLATE_EOL qualifier. This will prevent extraneous data from being inserted into the files being archived.

Note that ASCII (text) files may not be stored in the archive in a usable condition if the /TRANSLATE_EOL is not used.

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Archives for UN*X & DOS

CONVERT ASCII files from RMS sequential to Stream_LF before creating the .ZIP archive.

This eliminates the need to use the /TRANSLATE_EOF qualifier.

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When creating archives intended for use on DOS, Windows or UN*X systems, it is useful to first use the CONVERT command to convert any ASCII files (text files, DCL procedures, etc.) to Stream_LF format.

Records terminated by a <LF> are understood on DOS, Windows and UN*X.

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Zip Vs. PKZip

Zip includes path information in the archive by default. PKZip does not.

Zip recurses directories by default (if path wildcarded). PKZip does not.

Comparing the freeware Zip program to Phil Katz's PKZip V2.04G:

The freeware Zip program will store path information in the archive by default.

For PKZip, use the "-p" or "-P" options.

The freeware Zip program will recurse directories by default if the path is wild-carded.

For PKZip, use the "-r" option.

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Unzip Command Qualifiers

/JUNK

Discard Path information stored in the archive.

/VERSION

Restore version numbers, if stored in the archive.

/JUNK can be used to “junk” the path information for the files archived. No path information included in the archive will be used when restoring the files.

/VERSION can be used to restore the version numbers stored in the archive, if any. Note that Unzip cannot restore information which is not present in the archive. If version numbers were not saved in the archive, this qualifier has no effect.

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Unzip Command Qualifiers

/RESTORE

Restore file ownership and protection

/LIST

List the contents of the archive

/FULL

Use with /LIST for PKUNZIP -V behavior

/RESTORE can be used to restore the original file ownership and protection, if that information is present in the archive.

/LIST will produce a brief listing of the contents of the archive.

/FULL, when used with /LIST, will produce a full listing of the contents of the archive, similar to the “-v” option of PKUnzip.

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Unzip Command Qualifiers

/HELP

Display a summary of the parameters and qualifiers.

There are other qualifiers not listed in this presentation that are used less often, but may be important in certain cases.

See the on-line HELP or the UNZIP/HELP display.

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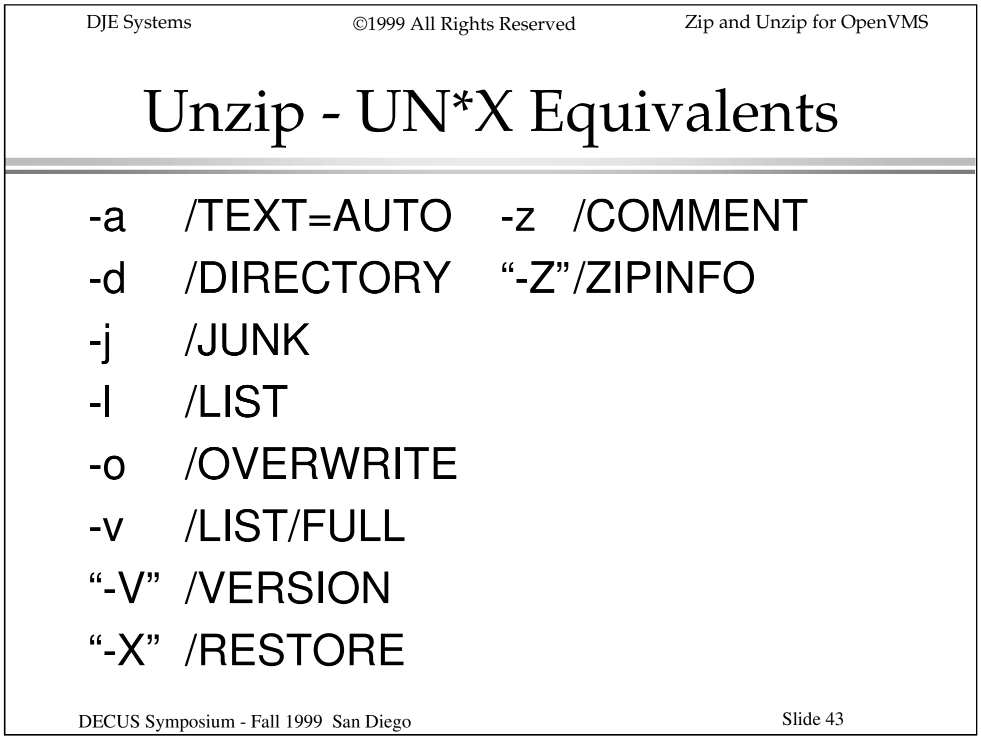
/HELP will produce a summary of command line syntax and qualifiers.

Some versions of Unzip also accept UN*X-like command line options and syntax, but this is not always the case.

Other qualifiers are not included in this presentation because they are less likely to be useful in everyday practice. Review the information and on-line HELP that comes with Unzip for information on those qualifiers which are not discussed here.



Some versions of Zip and Unzip also support UN*X-like command syntax, but this is not always the case.

Here’s a comparison of UN*X-like command line options to their DCL command qualifier equivalents.

Note that uppercase options must be enclosed in quotes on VMS.

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Unzipping a VMS Archive

```
$ UNZIP archive_name
```

Restores the files and all their attributes as stored in the archive.

Can't restore what wasn't saved!

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To Unzip an archive on OpenVMS, simply invoke the Unzip program and specify the archive_name (.ZIP is assumed - the extension can be left off).

Note that Unzip can only restore the information present in the archive. There are no defaults for those characteristics that were not archived. If /VMS was not used to create the archive, some files may be unusable. /VERSION can be used if /KEEP_VERSION was used to create the archive. If version numbers were not saved in the archive, /VERSION has no effect.

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Unzipping non-VMS Archives

```
$ UNZIP/TEXT=AUTO/BINARY=AUTO -
  archive_name
```

Use /TEXT=AUTO to restore ACSII files as RMS Sequential Variable instead of Stream_LF

Use /BINARY=AUTO to restore binary files as Fixed-512 instead of Stream_LF

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Archives created for other operating systems can sometimes be successfully restored using the /TEXT=AUTO and /BINARY=AUTO qualifier/value combinations.

/TEXT=AUTO will help ensure that ASCII (text) files are restored as Sequential, Variable record length instead of Stream_LF.

/BINARY=AUTO will help ensure that binary files are restored as Fixed-512 instead of Stream_LF.

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Unzip Vs. PKUnzip

Unzip restores directory trees by default. PKUnzip does not.

Unzip uses brief /LIST format by default. PKUnzip uses a “full” listing format.

Unzip has /ZIPINFO to display file system type from the archive. PKUnzip does not.

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The freeware Unzip program, by default, restores files using the path information stored in the archive.

For PKUnzip, use the “-d” option.

The freeware Unzip program, by default, uses the brief format for /LIST. PKUnzip uses a full listing format by default.

The freeware Unzip program has the /ZIPINFO qualifier which produces a display of the archive contents including filesystem info.

PKUnzip does not have this functionality.

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Self-Extracting Archives

To produce a self-extracting archive:

```
$ COPY -
  UNZIPSFX.EXE,archive_name.ZIP -
  archive_name.EXE
$ ZIP/ADJUST_OFFSET archive_name
```


To produce a self-extracting archive, pre-pend the self-extract stub to the archive to produce a new file.

Then, use the the Zip program with the /ADJUST_OFFSET qualifier.

Remember to use the self-extract stub appropriate to the target platform. VAX .EXEs do not run on Alpha, and Alpha .EXEs do not run on VAX.

Wrong stub? Self-extracting archives can be unpacked using the UNZIP program.

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Demonstration

If an OpenVMS workstation is available, we can review the material covered using a practical demonstration.

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Sample Zip Summary - VMS

```
$ zip               ! Or ZIP/HELP
Copyright (C) 1990-1997 Mark Adler, Richard B. Wales, Jean-loup Gailly,
Onno van der Linden, Christian Spieler and Igor Mandrichenko.
Type 'zip "-L"' for software license.
Zip 2.2 (November 3rd 1997). Usage: zip=="$disk:[dir]zip.exe"
zip zipfile[.zip] [list] [/EXCL=(xlist)] /options /modifiers
  The default action is to add or replace zipfile entries from list, except
  those in xlist. The include file list may contain the special name - to
  compress standard input.  If both zipfile and list are omitted, zip
  compresses stdin to stdout.
  Type zip -h for Unix style flags.
  Major options include:
    /FRESHEN, /UPDATE, /DELETE, /[NO]MOVE, /COMMENTS[={ZIP_FILE|FILES}],
    /LATEST, /TEST, /ADJUST_OFFSETS, /FIX_ARCHIVE[=FULL], /UNSFX
  Modifiers include:
    /EXCLUDE=(file list), /INCLUDE=(file list), /SINCE="creation time",
    /QUIET, /VERBOSE[=MORE], /[NO]RECURSE, /[NO]DIRNAMES, /JUNK,
    /[NO]KEEP_VERSION, /[NO]VMS, /[NO]PKZIP, /TRANSLATE_EOL[={LF|CRLF}],
    /[NO]EXTRA_FIELDS /LEVEL=[0-9], /TEMP_PATH=directory, /BATCH[=list file]
```

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This is a sample of the display produced by Zip when it is invoked with no command line parameters or options, or when it is invoked with the “/HELP” qualifier.

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Sample Zip Summary - UN*X

```
$ zip -H                 ! Or Zip -?
Copyright (C) 1990-1997 Mark Adler, Richard B. Wales, Jean-loup Gailly,
Onno van der Linden, Christian Spieler and Igor Mandrichenko.
Type 'zip "-L"' for software license.
Zip 2.2 (November 3rd 1997). Usage: zip=="$disk:[dir]zip.exe"
zip [-options] [-b path] [-t mmddyyyy] [-n suffixes] [zipfile list] [-xi list]
  The default action is to add or replace zipfile entries from list, which
  can include the special name - to compress standard input.
  If zipfile and list are omitted, zip compresses stdin to stdout.
  -f   freshen: only changed files  -u   update: only changed or new files
  -d   delete entries in zipfile    -m   move into zipfile (delete files)
  -R   recurse into directories     -j   junk (don't record) directory names
  -0   store only                   -l   convert LF to CR LF (-ll CR LF to LF)
  -1   compress faster              -9   compress better
  -q   quiet operation              -v   verbose operation/print version info
  -c   add one-line comments        -z   add zipfile comment
  -@   read names from stdin        -o   make zipfile as old as latest entry
  -x   exclude the following names  -i   include only the following names
 "-F"  fix zipfile("-FF" try harder) "-D"  do not add directory entries
 "-A"  adjust self-extracting exe  "-J"  junk zipfile prefix (unzipsfx)
 "-T"  test zipfile integrity      "-X"  eXclude eXtra file attributes
 "-V"  save VMS file attributes     -w   append version number to stored name
  -h   show this help               -n   don't compress these suffixes
```

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This is a sample of the display produced by Zip when it is invoked either with the “-h” or with the “-?” option.

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Sample Unzip Summary-VMS

```
$ unzip                ! Or unzip/help
UnZip 5.32 of 3 November 1997, by Info-ZIP.  For more details see: unzip -v.

Usage: unzip file[.zip] [list] [/EXCL=(xlist)] [/DIR=exdir] /options /modifiers
  Default action is to extract files in list, except those in xlist, to exdir;
  file[.zip] may be a wildcard.  Type "unzip /ZIPINFO" for ZipInfo-mode usage.

Major options include (type unzip -h for Unix style flags):
   /[NO]TEST, /LIST, /[NO]SCREEN, /PIPE, /[NO]FRESHEN, /[NO]UPDATE,
   /[NO]COMMENT, /DIRECTORY=directory-spec, /EXCLUDE=(file-spec1,etc.)

Modifiers include:
   /BRIEF, /FULL, /[NO]TEXT[=NONE|AUTO|ALL], /[NO]BINARY[=NONE|AUTO|ALL],
   /[NO]OVERWRITE, /[NO]JUNK, /QUIET, /QUIET[=SUPER], /[NO]PAGE,
   /[NO]CASE_INSENSITIVE, /[NO]LOWERCASE, /[NO]VERSION, /[NO]RESTORE

Examples (see unzip.doc or "HELP UNZIP" for more info):
   unzip edit1 /EXCL=joe.jou /CASE_INSENSITIVE    => extract all files except
      joe.jou (or JOE.JOU, or any combination of case) from zipfile edit1.zip
   unzip zip201 "Makefile.VMS" vms/*.[ch]         => extract VMS Makefile and
      *.c and *.h files; must quote uppercase names if /CASE_INSENS not used
   unzip foo /DIR=tmp:[.test] /JUNK /TEXT /OVER   => extract all files to temp.
      directory without paths, auto-converting text files and overwriting
```

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This is a sample of the display produced by Unzip when it is invoked with no command line parameters or options, or when it is invoked with the “/HELP” qualifier.

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Sample Unzip Summary - UN*X

```
$ unzip -h              ! Or Unzip -?
UnZip 5.32 of 3 November 1997, by Info-ZIP.  For more details see: unzip -v.

Usage: unzip [-Z] [-opts[modifiers]] file[.zip] [list] [-x xlist] [-d exdir]
  Default action is to extract files in list, except those in xlist, to exdir;
  file[.zip] may be a wildcard.  "-Z" => ZipInfo mode (`unzip "-Z"' for usage).

  -p  extract files to pipe, no messages     -l  list files (short format)
  -f  freshen existing files, create none    -t  test compressed archive data
  -u  update files, create if necessary      -z  display archive comment
  -x  exclude files that follow (in xlist)   -d  extract files into exdir

modifiers:                                   -q  quiet mode (-qq => quieter)
  -n  never overwrite existing files         -a  auto-convert any text files
  -o  overwrite files WITHOUT prompting      -aa treat ALL files as text
  -j  junk paths (do not make directories)   -v  be verbose/print version info
 "-C" match filenames case-insensitively    "-L" make (some) names lowercase
 "-X" restore owner/protection info         "-V" retain VMS version numbers
                                            "-M" pipe through "more" pager
Examples (see unzip.doc for more info):
  unzip data1 -x joe   => extract all files except joe from zipfile data1.zip
  unzip "-V" foo "Bar" => must quote uppercase options and filenames in VMS
  unzip -fo foo vms.c  => quietly replace existing vms.c if archive file newer
```

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This is a sample of the display produced by Unzip when it is invoked either with the “-h” or with the “-?” option.

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Sample ZipInfo Summary (Unzip)

```
DJMV01::DDACHTERA$ unzip/zipinfo
ZipInfo 2.22 of 3 November 1997, by Greg Roelofs and the fine folks at Info-ZIP.

List name, date/time, attribute, size, compression method, etc., about files
in list (excluding those in xlist) contained in the specified .zip archive(s).
"file[.zip]" may be a wildcard name containing * or % (e.g., "*font-%.zip").

   usage:  zipinfo [-12smlvChMtTz] file[.zip] [list...] [-x xlist...]
      or:  unzip "-Z" [-12smlvChMtTz] file[.zip] [list...] [-x xlist...]

main listing-format options:             -s  short Unix "ls -l" format (def.)
  -1  filenames ONLY, one per line       -m  medium Unix "ls -l" format
  -2  just filenames but allow -h/-t/-z  -l  long Unix "ls -l" format
                                         -v  verbose, multi-page format
miscellaneous options:
  -h  print header line       -t  print totals for listed files or for all
  -z  print zipfile comment  "-T" print file times in sortable decimal format
 "-C" be case-insensitive    "-M" page output through built-in "more"
  -x  exclude filenames that follow from listing

Remember that non-lowercase filespecs must be quoted in VMS (e.g., "Makefile").
```

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Here is a sample of the ZipInfo options available from Unzip.

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Where to get Zip and Unzip

Get VMSINSTALlable ZIP and UNZIP:

http://www.djesys.com/zip.html
http://www.djesys.com/unzip.html

InfoZip home site:

http://www.freesoftware.com/pub/infozip/

Here are some URLs where you can obtain a VMSINSTALlable kit for Zip and Unzip.

Also shown is the URL for InfoZip’s “home” site.

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Q & A

Speak now or forever hold your peas.

Please step to the microphone to ask your questions.

Please limit yourself to one question. If you have another, step to the end of the line and await another turn.

Practical examples and problem fixes are always welcome, of course!

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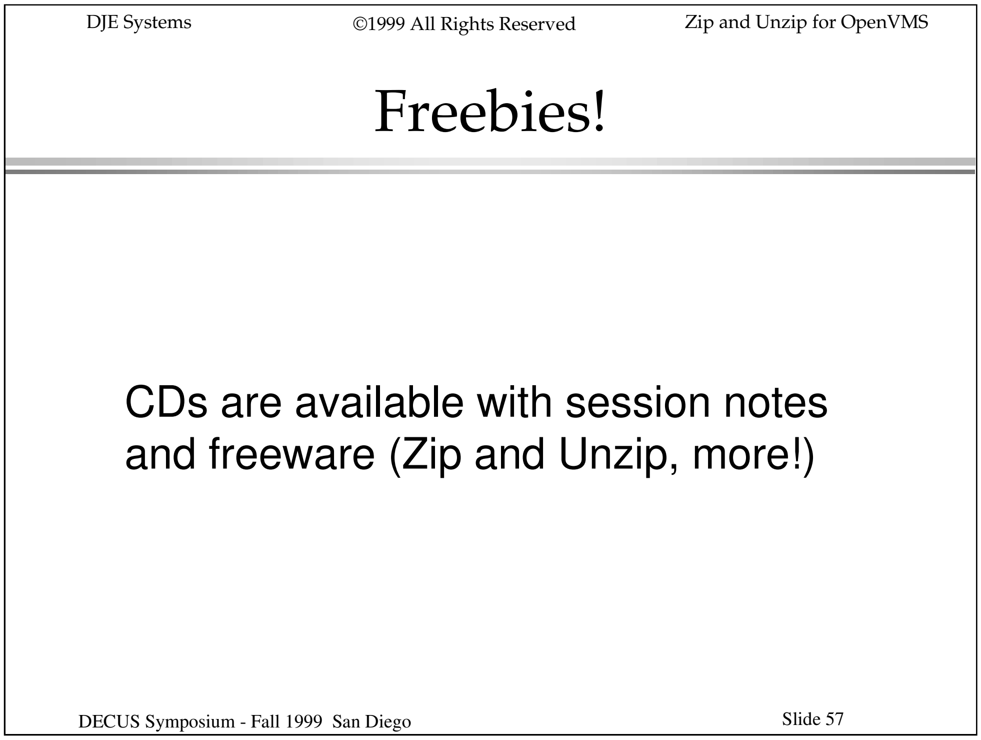
Summary

Zip and Unzip for OpenVMS provide an efficient way of compressing and storing files of any type and size.

Try using this to archive your month- and year-end reports!

Please complete the session evaluation forms!



Pending the availability of resources, CDs will be distributed.

The CDs contain the freeware Zip and Unzip programs for OpenVMS and the PowerPoint presentation from this session.

The CDs are in dual-format (ODS-2, ISO-9660) and can be used on OpenVMS as well as DOS, Windows and/or UN*X. Content differs between the ODS-2 and ISO-9660 partitions.