

VAX/VMS  
Exchange Utility  
Reference Manual

Order No. AA-Z416B-TE

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# **VAX/VMS Exchange Utility Reference Manual**

Order Number: AA-Z416B-TE

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This document describes the functions of the Exchange Utility program for use on VAX processors.

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# Preface

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## Intended Audience

The Error Log Utility is intended for use as a system management and maintenance tool to determine the source, frequency, and type of recurrent system and device errors.

---

## Structure of This Document

This document is composed of four major sections.

The Format Section is an overview of the Error Log Utility and is intended as a quick reference guide. The format summary contains the DCL command that invokes the Error Log Utility, listing all command qualifiers and parameters. The usage summary describes how to invoke and exit from the Error Log Utility, how to direct output, and any restrictions you should be aware of.

The description summary explains how to use the Error Log Utility.

The Qualifier Section describes each DCL command qualifier. Qualifiers appear in alphabetical order.

The Examples Section contains examples of common operations that you perform with the Error Log Utility.

---

## Associated Documents

Three other manuals that may be of use:

- *Guide to Using DCL and Command Procedures on VAX/VMS*
- *VAX/VMS DCL Dictionary*
- *Guide to VAX/VMS System Management and Daily Operations*

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## Conventions Used in This Document

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Convention	Meaning
<code>CTRL/x</code>	The phrase CTRL/x indicates that you must press the key labeled CTRL while you simultaneously press another key, for example, CTRL/C, CTRL/Y, CTRL/O.
\$ SHOW TIME 05-JUN-1985 11:55:22	Command examples show all output lines or prompting characters that the system prints or displays in black letters. All user-entered commands are shown in red letters.
\$ TYPE MYFILE.DAT . . . file-spec, . . .	Vertical series of periods, or ellipsis, mean either that not all the data that the system would display in response to the particular command is shown or that not all the data a user would enter is shown. Horizontal ellipsis indicates that additional parameters, values, or information can be entered.
[logical-name]	Square brackets indicate that the enclosed item is optional. (Square brackets are not, however, optional in the syntax of a directory name in a file specification or in the syntax of a substring specification in an assignment statement.)
quotation marks apostrophes	The term quotation marks is used to refer to double quotation marks ("). The term apostrophe (') is used to refer to a single quotation mark.

---

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## Summary of Technical Changes

The following qualifiers listed in the *VAX/VMS Exchange Utility Reference Manual* have been added to or modified for VAX/VMS Version 4.2.

---

Command	Parameter
COPY	/BOOT[=nn]
DIRECTORY	/[NO]BADBLOCKS
INITIALIZE	/BADBLOCKS[=RETAIN]
INITIALIZE	/REPLACE=RETAIN

---



---

## EXCHANGE

The Exchange Utility (EXCHANGE) allows you to manipulate mass storage volumes that are written in formats other than those normally recognized by VAX/VMS.

---

### FORMAT

**EXCHANGE** *command* [*file-spec*] [*file-spec*]  
**EXCHANGE**> *command* [*file-spec*] [*file-spec*]

---

#### Command Qualifiers

**/[NO]MESSAGE**

#### Defaults

**/MESSAGE**

#### Command Parameters

*command*

Defines the specific operation to be performed.

*file-spec*

The device name, directory, and/or file name for the EXCHANGE input or output device. It has the general form

device:[directory]filename.filetype;version

device: The device name can be either a standard VAX/VMS device name of the form ddcu: or a logical name that translates to a VAX/VMS device name. If the device field is omitted for a reference, the current default device is assumed. When a virtual device is mounted, a name is created for the virtual device and is used as the device name in subsequent EXCHANGE commands.

[directory] The syntax of the directory subfield is volume specific.

filename The name field file specification for an input or output file. The exact format allowed for the filename is dependent on the volume format qualifier used.

filetype The extension field of the file specification.

version The version number of the file, if supported by the volume type.

### usage summary

#### Invoking

You can use the Exchange Utility in either of two ways. You can work interactively (within the utility) by entering the following in response to the DCL prompt.

⚡ **EXCHANGE**

The utility responds with the prompt:

**EXCHANGE**>

You can now enter any EXCHANGE command.

As an alternative, you can enter a single EXCHANGE command at DCL level. For example, you can list the directory of a foreign volume by appending the EXCHANGE command DIRECTORY to the DCL command EXCHANGE, as follows:

⚡ **EXCHANGE DIRECTORY DMA1:/VOLUME\_FORMAT=RT11**

# EXCHANGE

Operations that require the use of multiple EXCHANGE commands, such as the manipulation of virtual devices, cannot be performed at DCL level. Since EXCHANGE can process only a single command at DCL level, you must use EXCHANGE interactively to perform these operations. (Section 4 describes the use of virtual devices.)

## Exiting

If you are using EXCHANGE at the DCL level, the utility returns you to the DCL prompt after it completes its task.

If you are using EXCHANGE interactively, you can return to DCL at any time by typing EXIT or CTRL/Z.

## Directing Output

The qualifier /[NO]MESSAGE allows you to control the default display of information related to EXCHANGE MOUNT, INITIALIZE, and DISMOUNT operations.

You can use the /LOG qualifier with the EXCHANGE commands COPY, DELETE, RENAME, and TYPE. This qualifier sends information about the files being processed to SYS\$OUTPUT. Refer to the command qualifier descriptions for details of the information displayed with each of these commands.

When you use the EXCHANGE command DIRECTORY, you can direct the output to a specified file by including the /OUTPUT[=file-spec] qualifier. If you specify /OUTPUT without a file specification, the output is directed to SYS\$OUTPUT. You can use the DIRECTORY command qualifier /PRINTER to direct output to a printer.

## Privileges/Restrictions

None.

## commands

---

### Syntax

EXCHANGE> command file-spec [file-spec]

---

### EXCHANGE Commands

#### COPY

- /ALLOCATION=n
- /[NO]BEST\_TRY\_CONTIGUOUS
- /BOOT[=nn]
- /CARRIAGE\_CONTROL=option
- /[NO]CONTIGUOUS
- /[NO]DELETE
- /EXTENSION=n
- /[NO]LOG
- /[NO]PROTECT
- /RECORD\_FORMAT=(option[, . . . ])
- /[NO]REPLACE
- /[NO]REWIND
- /START\_BLOCK=n
- /[NO]SYSTEM
- /TRANSFER\_MODE
- /[NO]TRUNCATE
- /VOLUME\_FORMAT=option

#### DELETE

- /[NO]LOG
- /[NO]SYSTEM
- /VOLUME\_FORMAT=option

**DIRECTORY**  
/[NO]ALL  
/[NO]BADBLOCKS  
/[NO]BLOCKS  
/[NO]BRIEF  
/COLUMNS=n  
/[NO]DATE  
/[NO]DELETED  
/[NO]FREE  
/[NO]FULL  
/[NO]OCTAL  
/OUTPUT[=file-spec]  
/[NO]OWNER  
/[NO]PRINTER  
/[NO]SIZE  
/[NO]SUMMARY  
/VOLUME\_FORMAT=option

**DISMOUNT**  
/[NO]MESSAGE

**EXIT**

**HELP**

**INITIALIZE**  
/ALLOCATION=n  
/BADBLOCKS[=RETAIN]  
/CREATE  
/DENSITY=density-value  
/EXTRA\_WORDS=n  
/[NO]MESSAGE  
/REPLACE=RETAIN  
/SEGMENTS=n  
/VOLUME\_FORMAT=option

**MOUNT**  
/DATA\_CHECK[=option]  
/FOREIGN  
/[NO]MESSAGE  
/VIRTUAL  
/VOLUME\_FORMAT=option  
/[NO]WRITE

**RENAME**  
/[NO]LOG  
/[NO]PROTECT  
/[NO]SYSTEM  
/VOLUME\_FORMAT=option

**SHOW**

**TYPE**  
/RECORD\_FORMAT=(option[, . . . ])  
/[NO]LOG  
/[NO]REWIND  
/VOLUME\_FORMAT=option

# EXCHANGE

## Description

---

**DESCRIPTION** EXCHANGE enables you to transfer files between foreign volumes and VAX/VMS native volumes. It converts the format of the files, as appropriate, when transferring files between volumes of different structures. EXCHANGE recognizes all Files-11 volumes on VAX/VMS devices, as well as all DOS-11 and RT-11 formatted volumes on 9-track magnetic tape devices. For example, it allows you to perform volume-specific initialization and manipulation functions on the foreign volumes.

You can use EXCHANGE commands to perform any of the following tasks:

- Locate bad blocks on volumes
- List directories of volumes
- Transfer files to and from volumes
- Delete and rename files for block-addressable devices (such as RT-11 disks)
- Create foreign volumes
- Manipulate Files-11 files that are images of foreign volumes

The Exchange Utility employs defaults to ensure that the volume formats and file structures are compatible with the type of operation you want to perform. In addition, there are volume format and record format qualifiers that you can use to override the defaults.

The following sections describe how you can use the EXCHANGE media, commands, qualifiers, and defaults.

---

## 1 The EXCHANGE Environment

This section provides an introduction to the types of media that you can manipulate with the Exchange Utility, and the commands you can use to perform the tasks.

---

### 1.1 The EXCHANGE Media

You can use the Exchange Utility to perform file transfers and format conversions on any of the following devices:

- DOS-11 magnetic tape volumes
- Files-11 volumes
- RT-11 block-addressable volumes

Note that while EXCHANGE recognizes RT-11 volumes on any VAX/VMS block-addressable device, RT-11 supports only some of the devices that are recognized by EXCHANGE.

You should note also that RT-11 imposes a size limit of 65,535 blocks for the volume. If an RT-11 volume is created on a device that is larger than this, the size of the RT-11 volume is set to the maximum and blocks 65,536 to the end of the volume cannot be utilized.

You can use EXCHANGE to manipulate Files-11 files that are images of foreign volumes; these files are called *virtual devices*. A virtual device "volume" is contained in a VAX Record Management Services (RMS) file on a VAX/VMS disk. EXCHANGE contains commands to copy a block-addressable volume both to and from the RMS virtual device file. The virtual device file can then be manipulated as if it were a block-addressable device.

Files-11 Structure Level 1 or Structure Level 2 volumes are the default for disk volumes initialized by the DCL command INITIALIZE. DOS-11 and RT-11 volumes are initialized using the EXCHANGE command INITIALIZE. Since the formats of these volumes are not recognized by VAX/VMS, the volumes must be mounted foreign; that is, you must use the DCL command MOUNT with the /FOREIGN or /NOLABEL qualifier. See the *VAX/VMS Utilities Reference Volume* for more information on the Mount Utility; refer to the *VAX/VMS DCL Dictionary* for more information on the DCL command INITIALIZE.

## 1.2 The EXCHANGE Command String

Most EXCHANGE command strings are very similar to DCL commands for native volumes. The form for the EXCHANGE command string is as follows:

```
command file-spec[ , . . . ] [file-spec]
```

You need to use the second file-spec only for EXCHANGE commands that specify data transfers or that require additional parameters.

The command defines the action that you want EXCHANGE to perform. The EXCHANGE command is the same as the DCL command that performs a similar function on native volumes. If no corresponding DCL command exists, the EXCHANGE command is taken from the command on the foreign operating system. See Table EXCH-1 for a summary of the EXCHANGE commands.

**Table EXCH-1 Exchange Utility Commands**

Command	Function
COPY	Copy files from input to output spec
DELETE	Delete files from block-addressable volumes
DIRECTORY	List names of files on volume
DISMOUNT	Dismount a volume
EXIT	Return to the DCL command level
HELP	Obtain help on EXCHANGE commands and features
INITIALIZE	Create an empty volume
MOUNT	Mount a volume on a device (foreign only)
RENAME	Rename files on block-addressable volumes
SHOW	Show volumes known to EXCHANGE
TYPE	Display files on the default output device

You use a specific format and set of qualifiers for each of the commands; refer to the Command Section for descriptions of these commands and qualifiers.

# EXCHANGE

## Description

### 1.3 The /[NO]MESSAGE Qualifier

You can use the EXCHANGE command line qualifier /[NO]MESSAGE to control whether or not EXCHANGE displays messages related to MOUNT, DISMOUNT, and INITIALIZE commands. The default is /MESSAGE, which remains in effect throughout the EXCHANGE session unless you explicitly change it. You can change the default by specifying /NOMESSAGE as follows:

```
EXCHANGE> $ EXCHANGE/NOMESSAGE
```

The EXCHANGE commands DISMOUNT, INITIALIZE, and MOUNT also support the /[NO]MESSAGE qualifier. You can use either /MESSAGE or /NOMESSAGE with any of these commands to reverse the default that was set by the EXCHANGE command line.

## 2 Volume Format Specification

The Exchange Utility allows you to define the physical format of the volumes to be processed. You specify the volume format by using the /VOLUME\_FORMAT=option qualifier. If you do not define a volume format, EXCHANGE uses defaults (Section 2.4 discusses the volume format defaults).

The /VOLUME\_FORMAT=option qualifier determines which operations are allowed on the volume, and the option you specify often implies certain defaults. In addition, the volume format qualifier determines the format of the file name and directory specifications.

Table EXCH-2 summarizes the volume format.

**Table EXCH-2 Volume Format Options**

Option	Function
FILES11	Identifies a Files-11 formatted native volume
RT11	Identifies an RT-11 formatted block-addressable volume
DOS11	Identifies a DOS-11 formatted magnetic tape volume

To use the volume format qualifiers, you must attach them to one or both of the file specification parameters; you cannot attach them directly to the command.

You can specify multiple volumes of different volume types, as in the following example:

```
EXCHANGE> COPY DMA1:*.FOR/VOLUME=RT11,MTAO:[11,132]*.FOR/VOLUME=DOS11 *
```

The following sections describe the volume format options and how EXCHANGE uses the various device and file specifications.

---

## 2.1 Files-11 Volume Format

Files-11 is the disk volume format maintained by VAX/VMS. Although VAX/VMS fully supports the volume formats of ANSI magnetic tape and Files-11 Structure Levels 1 and 2, the Exchange Utility uses VAX Record Management Services (RMS) for operations on these file structures.

You specify a Files-11 volume, or a file on a Files-11 volume, by using the standard form of VAX/VMS file specification as described in the *VAX/VMS DCL Dictionary*. The following two sections provide additional information on the use of EXCHANGE with Files-11 volumes and files.

---

### 2.1.1 Files-11 Device Specifications

Files-11 disk volumes must not be mounted with the `/FOREIGN` qualifier; the `/FOREIGN` qualifier applies only to volumes that are not structured in the standard VAX/VMS format.

Use the `FILES11` option when referencing any VAX/VMS device, even though the Files-11 structure specifically refers to directory-structured devices such as disks, diskettes, and DEctapes. This usage is consistent with VAX RMS, which allows unit-record devices (such as terminals) and magnetic tapes to be accessed in a device-independent manner.

If you specify `FILES11` when referencing a magnetic tape device, an ANSI-formatted magnetic tape device is implied. The tape must have been mounted as an ANSI volume. For more information on mounting tape devices, see the description of the Mount Utility in the *VAX/VMS Utilities Reference Volume*.

---

### 2.1.2 Files-11 File Specifications

There are no restrictions on the use of logical names in Files-11 file specifications. If you omit device or directory specifications from a Files-11 specification, EXCHANGE uses the current defaults that are in effect for your process.

You can use wildcard characters for both input and output file specifications. You should not, however, specify version numbers as wildcards on foreign volumes that do not support version numbers (such as RT-11 or DOS-11 volumes).

EXCHANGE allows you to use output file specifications. If you use wildcards in any field of the output file specification, EXCHANGE takes the corresponding name from the input file.

---

## 2.2 RT-11 Volume Format

The `RT11` option allows you to read and write block-addressable volumes in the format used by DIGITAL's RT-11 operating system. EXCHANGE permits you to use devices other than those that are supported by RT-11.

The following two sections describe how you can use the Exchange Utility to specify RT-11 volumes and files.

---

### 2.2.1 RT-11 Device Specifications

The device name you specify for the RT-11 volume can be either a standard VAX/VMS device name in the form `ddcu:` or a logical name that translates to a VAX/VMS device name. This device must have been mounted with the `/FOREIGN` qualifier.

# EXCHANGE

## Description

### 2.2.2 RT-11 File Specifications

You can specify an RT-11 file name that consists of any uppercase letters from A through Z and any digits from 0 through 9 (RADIX-50 characters). The file name field for RT-11 is six characters; the file type field is three characters. The RT-11 file specification has no directory field, since RT-11 volumes do not have user directories.

If you copy a file with a name that is not valid under RT-11 to an RT-11 volume, the RT-11 file name is produced from the first six valid characters of the name. The RT-11 file type is extracted from the first three valid characters of the input file type (for input names that are similar to Files-11 names). Lowercase letters are converted to uppercase before EXCHANGE checks for a valid file name. For example:

```
EXCHANGE> COPY/LOG SYS_CREATE_PROCESS.MACRO_32 DMAO:/VOLUME=RT11
%EXCHANGE-S-COPNEWNAME, DEVDS:[SYS.SRC]SYS_CREATE_PROCESS.MACRO_32;34
copied to DMAO:SYSCRE.MAC, 937 records
```

```
EXCHANGE> COPY/LOG MTAO:"ANSI (A) TAPENAME" DMAO:/VOLUME=RT11
%EXCHANGE-S-COPNEWNAME, MTAO:[]"ANSI (A) TAPENAME".:1
copied to DMAO:ANSIAT., 321 records
```

The Exchange Utility allows you to rename a file on a copy operation; therefore, you can supply any desired file name for the output file.

## 2.3 DOS-11 Volume Format

You use the DOS11 option with the /VOLUME\_FORMAT qualifier to specify that a magnetic tape is in the format defined by DIGITAL's early PDP-11 Disk Operating System, DOS-11.

The following two sections describe how you can specify DOS-11 devices and files using the Exchange Utility.

### 2.3.1 DOS-11 Device Specifications

You can use the DOS-11 format only on magnetic tape devices. Therefore, a VAX/VMS device specification for a 9-track magnetic tape drive must be present in order for you to specify the DOS11 option.

### 2.3.2 DOS-11 File Specifications

DOS-11 volumes accept directories only in the user identification code (UIC) format, for example [310,22]. The two numbers are octal and must be in the range 0 through 377. When you specify the directory in an input file specification, either number or both may be indicated by a wildcard character.

The EXCHANGE command DIRECTORY/OWNER uses a default directory of [\*,\*], so that all the files on the tape will be listed regardless of the DOS-11 directory. For all other commands, EXCHANGE uses your current default directory, as long as it is in UIC format; otherwise, your process UIC becomes a directory. If a file that appears in an EXCHANGE DIRECTORY command is not found by another EXCHANGE command, enter the command again and specify the same directory that was displayed for the file in the DIRECTORY/OWNER command.

The DOS-11 character set for file names is the same as for RT-11: the uppercase letters from A through Z and the digits 0 through 9. The DOS-11 file name field is nine characters long; the file type field is three characters.

If you copy a file with a name that is invalid under DOS-11 to a DOS-11 magnetic tape, the file name on the magnetic tape is formed from the first nine valid characters of the input file name. The DOS-11 file type is extracted from the first three valid characters of the input file type (for input names that are similar to Files-11 names). Lowercase letters are converted to uppercase before EXCHANGE checks for a valid file name. For example:

```
EXCHANGE> COPY/LOG SYS_CREATE_PROCESS.MACRO_32 MFAO:/VOLUME=DOS11
%EXCHANGE-S-COPNEWNAME, DEVDF:[SYS.SRC]SYS_CREATE_PROCESS.MACRO_32;34
copied to MFAO:SYSCREATE.MAC, 937 records
```

```
EXCHANGE> COPY/LOG MTAO:"ANSI (A) TAPENAME" MFAO:/VOLUME=DOS11
%EXCHANGE-S-COPNEWNAME, MTAO:[]"ANSI (A) TAPENAME".;1
copied to MFAO:ANSIATAPE., 321 records
```

## 2.4 Volume Format Defaults

If you do not use the /VOLUME\_FORMAT qualifier, EXCHANGE uses default volume formats.

If a volume is mounted as a native volume (without the /FOREIGN or /NOLABEL qualifier), the default is /VOLUME\_FORMAT=FILES11. This default applies to both block-addressable and magnetic tape devices.

EXCHANGE defaults to /VOLUME\_FORMAT=RT11 for block-addressable volumes (disks, diskettes, and TU-58 DECtapes) that are mounted with the /FOREIGN qualifier.

If the volume is a 9-track magnetic tape, mounted with the /FOREIGN qualifier, the default is /VOLUME\_FORMAT=DOS11.

If no device is given, EXCHANGE defaults to the current default device. For example:

```
‡ MOUNT/FOREIGN DMAO:
‡ SET DEFAULT DMAO:
```

Since the DCL command SET DEFAULT assigns DMA0: as the default device, any subsequent EXCHANGE command will default to DMA0: for a file reference that omits a device specification. EXCHANGE will assign DMA0: the default format option RT11 because the volume is mounted with the /FOREIGN qualifier.

## 3 Record Format and Attribute Specification

EXCHANGE allows you to specify the internal record structure and related attributes of a file. You define the record structure of a file by using the /RECORD\_FORMAT=option qualifier. In addition to the record structure options, the /RECORD\_FORMAT qualifier includes options that you can use to define other related attributes of the records. The /CARRIAGE\_CONTROL=option qualifier allows you to define the carriage control attributes.

The following sections describe how you can use the /RECORD\_FORMAT and /CARRIAGE\_CONTROL qualifiers.

# EXCHANGE

## Description

### 3.1 Record Format Options

The `/RECORD_FORMAT` qualifier has four options that you can use to define the internal record structure of a file. These options are `BINARY`, `FIXED`, `STREAM`, and `VARIABLE`. In addition, there are two options that you can use to define related file attributes: `FIXED=n` and `PAD=x`. Table EXCH-3 summarizes the record format and attribute options.

**Table EXCH-3 Record Format and Attribute Options**

Record Format	Function
<code>BINARY</code>	Identifies PDP-11 formatted binary record format
<code>FIXED</code>	Identifies fixed-length record format; sets fixed-length record size
<code>STREAM</code>	Identifies ASCII stream record format
<code>VARIABLE</code>	Identifies variable-length record format
<code>PAD</code>	Sets the character to pad short records on fixed-length output, valid only with the <code>FIXED</code> option

The four record format options are mutually exclusive; you can specify only one of these options. Certain combinations of volume and record format and attribute options are also invalid.

When you specify an input file, you can use the `/RECORD_FORMAT` qualifier to give EXCHANGE additional information to use in reading the file. This information is needed when a foreign file structure is not entirely self-descriptive, or when a special interpretation of the file structure is needed.

You are not required to include input record format qualifiers on Files-11 input, since Files-11 stores file attributes that allow EXCHANGE to read the file correctly. If a Files-11 file is not in a suitable format, you can use the Convert Utility (CONVERT) to change the file to the desired format. For a detailed description of CONVERT, refer to the *VAX/VMS Utilities Reference Volume*.

When you specify an output file, use the `/RECORD_FORMAT` qualifier to specify the characteristics the file should have after it is copied. Specific options are available with the `/RECORD_FORMAT` and `/CARRIAGE_CONTROL` qualifiers to provide commonly needed attributes.

The following sections describe the record format and attribute options.

#### 3.1.1 The BINARY Option

The `BINARY` record format is valid with DOS-11 or RT-11 volumes. `BINARY` files (also known as formatted binary) have variable-length records with headers and checksums added to each record.

The `BINARY` option is not valid for Files-11 output. On conversions from DOS-11 or RT-11 `BINARY` input to Files-11 output, EXCHANGE normally generates variable-length records. The output record size equals the input record size.

---

**3.1.2 The FIXED Option**

The **FIXED** option directs **EXCHANGE** to read or write fixed-length records only. The file contains no control information; since the records are all the same length, they are easily located.

You can use the **FIXED** option to indicate the desired number of bytes in the record. If you do not specify an explicit record length, **EXCHANGE** assumes a record length of 512 bytes.

If any input records are longer than the specified length, **EXCHANGE** truncates the records. If input records are shorter than the output record, **EXCHANGE** extends them with the **PAD** character. The default **PAD** character is the null character. You can specify an alternate **PAD** character with the **PAD** option.

As an input option, **FIXED** is valid only for non-Files-11 **FIXED** transfers. It is not valid for **STREAM**, **VARIABLE** or **BINARY** transfers, because these operations determine the record length by delimiters or control bytes.

---

**3.1.3 The STREAM Option**

Stream ASCII files, also known as formatted ASCII files, consist of ASCII data records that are terminated by carriage return/line feed (**CR-LF**), form feed (**FF**), or vertical tab (**VT**) characters.

In transfers from **DOS-11** or **RT-11** **STREAM** files to **Files-11** **VARIABLE** files, **CR-LF** pairs are removed from the ends of records. In transfers from **Files-11** **VARIABLE** files to **DOS-11** or **RT-11** **STREAM** files, **CR-LF** pairs are added to the end of each record that does not already end with **LF** or **FF**. **EXCHANGE** removes all null (**NUL**), delete (**DEL**), and vertical tab (**VT**) characters from input records in any of these transfers. ASCII data is transferred as 7-bit codes. Bit 7 (sometimes used as a parity bit) of each byte is masked before the transfer.

If the **RT-11** or **DOS-11** file is input or output as an ASCII text file with fixed-length records, you should use the **FIXED** option rather than the **STREAM** option. Note that an ASCII stream file whose records are of the same length is not the same as a file of fixed-length records. **STREAM** files have records delimited by control characters. **FIXED** files have no delimiters; **EXCHANGE** locates **FIXED** file records by counting bytes.

When you perform conversions from **DOS-11** or **RT-11** to **Files-11**, **EXCHANGE** normally generates variable-length records (**/RECORD\_**  
**FORMAT=VARIABLE**). The output record size equals the input record size.

---

**3.1.4 The VARIABLE Option**

Variable-length records are the most common type of **Files-11** record format. The file uses internal control information to separate the records, so that any sequence of bytes (even **CR-LF**) can be contained in the data. By default, **EXCHANGE** generates **Files-11** files with **VARIABLE** records unless the input file is **FIXED**.

**EXCHANGE** does not allow you to specify **VARIABLE** for **RT-11** and **DOS-11** output.

# EXCHANGE

## Description

### 3.1.5 The PAD Option

You use the PAD option to specify which character will be used to pad input records that are shorter than the fixed-length output record. By default, EXCHANGE pads with the null character (value 0).

Option	Character
PAD	NULL (00 Decimal)
PAD=c	c is ASCII A through Z (uppercase), or 0 through 9
PAD="c"	c is any other ASCII character
PAD=%bx	x is a number representing an ASCII character b represents the base of the number. Values for b: D = decimal O = octal X = hexadecimal

## 3.2 Record Format Defaults

EXCHANGE assumes defaults for the record formats if you do not specify an explicit /RECORD\_FORMAT option. The defaults are dependent on a number of factors and allow you to perform most transfer operations without using the /RECORD\_FORMAT qualifier.

Files-11 input files use a default /RECORD\_FORMAT option of FIXED, STREAM, or VARIABLE, depending on the actual record format of the file. If a Files-11 file is not in a suitable format, you can use the Convert Utility (CONVERT) to change the file to the desired format. For a detailed description of CONVERT, refer to the *VAX/VMS Utilities Reference Volume*.

EXCHANGE generates Files-11 output files with sequential organization by default. If the input file is in BINARY, STREAM, or VARIABLE format, however, the default Files-11 output record format is VARIABLE. If the input file has FIXED format, the default output format is FIXED.

For DOS-11 and RT-11, EXCHANGE assumes default record formats for a file based on the type field of the file name. These default record formats are listed below.

File Type	Record Format
OBJ, STB, BIN, LDA	BINARY
EXE, %LB, SAV, SML, SYS, TSK	FIXED=512
All other types (input files)	STREAM
All other types (output files)	Dependent on record format of the input file

EXCHANGE applies these defaults only for transfers between an RT-11 or DOS-11 volume and a Files-11 volume. When you perform a transfer between an RT-11 or DOS-11 volume and another RT-11 or DOS-11 volume, the file is copied block by block; no reformatting occurs unless you request a conversion with an explicit /RECORD\_FORMAT option.

# EXCHANGE

## Description

EXCHANGE usually applies a record format default to the input file and lets the resulting input record format imply the output record format. However, if any of the file types listed above is included in an output specification, it overrides the default implied by the input record format.

The following table shows how the output record formats are implied by various input record and volume formats. The input format can be defaulted, read from the file (for Files-11), implied by the input-filename-type field, or explicitly stated. Note that the default output formats are overridden by record formats implied by output-filename-type fields.

Input Volume Record	Input Record	Output Volume	Output
FILES-11	Fixed	FILES-11	Fixed
	Stream		Variable
	Variable		Variable
	Fixed	RT-11,DOS-11	Fixed
	Stream		Stream
	Variable		Stream
	Variable		Binary
RT-11,DOS-11	Binary	FILES-11	Variable
	Fixed		Fixed
	Stream		Variable

### 3.3 Carriage Control Options

When you want to specify the carriage control attributes of a Files-11 file, you use the /CARRIAGE\_CONTROL=option qualifier. Note that this qualifier is valid only for Files-11 output files. The carriage control options you can choose are summarized below.

Option	Function
CARRIAGE_RETURN	Indicates that each record is to be preceded by a line feed and followed by a carriage return when the record is written to a carriage control device (such as a line printer or terminal). The CARRIAGE_RETURN option is the default /CARRIAGE_CONTROL attribute.
FORTTRAN	Indicates that the first character of each record is to be interpreted as the carriage control specifier. This option does not alter any of the actual data. The FORTTRAN option is valid only with Files-11 output files and is incompatible with stream output to Files-11.
NONE	If specified, no carriage control is implied for the file. EXCHANGE assumes that each record contains the control characters necessary for proper formatting.

# EXCHANGE

## Description

### 4

## Virtual Devices

A *virtual device* is an RMS file that contains an image of a foreign block-addressable device. EXCHANGE treats a virtual device as if it were a foreign volume.

You must use the Exchange Utility interactively if you want to manipulate a virtual device; you cannot operate on a virtual device by entering the EXCHANGE commands at DCL level. The reason for this restriction is that a virtual device must be mounted before it can be accessed. EXCHANGE executes only a single command in DCL mode, and it is not possible to both mount and operate on the virtual device in a single command.

To create a virtual device, you use the command INITIALIZE/CREATE as follows:

```
EXCHANGE> INITIALIZE/CREATE MYPHILE
%EXCHANGE-S-INITIALIZED, the RT-11 volume DRA1:[TEST]MYPHILE.DSK
has been initialized
```

This command creates a virtual device in the directory [TEST] on DRA1:. EXCHANGE applies the default file type of DSK.

When you use the EXCHANGE command MOUNT/VIRTUAL, you include two parameters (as opposed to one parameter for MOUNT/FOREIGN). The first parameter supplies the name of the virtual device; the second parameter is the name of the RMS file that contains the device image. The virtual device name is thereafter used as if it were a physical device. EXCHANGE uses this virtual device name as a logical name to locate the virtual device. For example:

```
EXCHANGE> INITIALIZE/CREATE VIRTUAL
%EXCHANGE-S-INITIALIZED, the RT-11 volume DRA2:[DISKS]VIRTUAL.DSK
has been initialized
EXCHANGE> MOUNT/VIRTUAL DISK: VIRTUAL.DSK
%EXCHANGE-S-MOUNTVIR, the RT-11 virtual volume DISK: has been mounted
using the file DRA2:[DISKS]VIRTUAL.DSK;1
EXCHANGE> DIRECTORY DISK:
Directory DISK:      16-MAR-1985 08:30
using DRA2:[DISKS]VIRTUAL.DSK;1
  ANSI.COM      1 16-Mar-1985   QARINV.TXT    3 16-Mar-1985
  REASSI.COM   13 16-Mar-1985   SYSCRE.MAC    1 16-Mar-1985
Total of 4 files, 18 blocks. Free space 4944 blocks, largest 4474.
EXCHANGE> COPY /LOG SYS$LOGIN:WORKLIST.TXT DISK:
%EXCHANGE-S-COPIED, WRKD$:[JOYNER.LOGIN]WORKLIST.TXT;10 copied to
      DISK:WORKLI.TXT, 73 records
.
EXCHANGE> DISMOUNT DISK:
%EXCHANGE-S-DISMOUNTED, the RT-11 volume DISK: has been dismounted
```

The name "DISK:" is used in the same manner as a device name. Be careful not to assign virtual device names that are the same as any logical names you have defined. Since EXCHANGE applies logical name translations before it looks at the device name, you can create inaccessible virtual devices if the virtual device name matches a logical name.

---

### COMMANDS

The syntax of each of the EXCHANGE commands is similar to that of the corresponding DCL command. This section describes the functions and provides examples of the EXCHANGE commands.

# EXCHANGE

## COPY

---

## COPY

Transfers a file or files from an input volume to an output volume. You can use the COPY command to do any of the following:

- Copy a file between a foreign volume and a native volume
- Copy a file from one foreign volume to another foreign volume
- Convert the format of the file during the transfer
- Copy groups of files from volume to volume
- Give the output file a different name from the input

---

### FORMAT

**COPY** *input-file-spec[, . . . ] output-file-spec*

#### command parameters

#### *input-file-spec[, . . . ]*

Specifies the names of one or more input files to be copied. If you specify more than one input file, you can separate them with either commas or plus signs. You can specify standard VAX/VMS wildcards in file names, both Files-11 and foreign. COPY supports wildcard directories for Files-11 and DOS-11 input.

The syntax for the file names depends on the particular volume format option, present or implied. See Section 2 for descriptions of the volume format options.

#### *output-file-spec[, . . . ]*

Specifies the name of the output file, directory or device to which the input files are to be copied. You can give an explicit output name (that is, a rename on a copy operation) only if the input specifies a single file. If the input specifier specifies multiple files, the output specifier must be one of the following:

- Wildcards (\*, \*.\* or \*.\*\*) specifying current default device and directory
- An explicit device and/or directory for Files-11 output, such as BB:[EXCHANGE.TMP], with or without wildcards for the file name
- An explicit device for RT-11 as in DLA2:/VOLUME=RT11
- An explicit device or directory for DOS-11 output, such as TAPE:/VOLUME=DOS11 or TAPE:[11,132]/VOLUME=DOS11

The output file name(s) are constructed according to rules implied by the input and output volume qualifiers. COPY does not concatenate multiple input files into a single output file. Wildcard directories are not permitted.

The syntax for the output file names is dependent on the particular volume format qualifier present or implied. See Section 2 for a description of the volume format qualifier.

You must specify at least one field in the output file specification; COPY replaces missing fields with the corresponding field of the related input file specification. If the input file has no corresponding field, COPY substitutes null text fields and maximizes version numbers.

The UIC of the output file is the UIC of the current process. For DOS-11 output, EXCHANGE uses the current default directory, if it is in UIC format; otherwise, it uses the current process UIC as a directory. You can specify an alternate directory for DOS-11 output in the command.

### command qualifiers

#### ***/BOOT[=nn]***

Copies bootstrap information from a monitor and the handler files to blocks 0 and 2 through 5 of an RT-11 volume, permitting you to use that volume as a system volume. The COPY/BOOT operation does not create any files on the volume; it is intended only to create bootable RT-11 systems.

The /BOOT qualifier implies /VOLUME\_FORMAT=RT11 for both input and output specifications. The output device can be omitted, as it is assumed to be identical to the input device. You cannot combine the /BOOT qualifier with qualifiers other than /LOG. The COPY/BOOT command requires that both the input and output devices be the same volume or virtual device. The file name of the desired monitor must be specified as the input specification.

RT-11 Version 1.0 through Version 3.0 monitors had the system device handler linked into the monitor image. For Version 4.0 of RT-11, the system device handler uses the standard device handler, and the COPY/BOOT command must dynamically link the handler into the bootstrap area. COPY /BOOT finds the default handler for the specific device type and merges the handler with the monitor as it is copied to the boot area.

You can use the two-letter argument *nn* to override the default system device handler. The most frequent use of this option occurs when a floppy disk is mounted in an RX02 drive, and you want to create a floppy disk bootable from an RX01 drive. (The floppy disk must be single density.) The default handler for the RX02 is DY.SYS, and the handler for the RX01 is DX.SYS; therefore, you would use the command COPY/BOOT=DX to create the bootable RX01 system floppy disk. Do not specify /BOOT=*nn* for Version 3.0 and earlier systems; instead, choose the monitor file DYMNxx.SYS or DXMNxx.SYS as the source file.

#### ***/[NO]LOG***

Controls whether COPY displays the file specifications of each file copied.

If you specify /LOG, the EXCHANGE command COPY displays the following for each copy operation:

- The file specifications of the input and output files
- The number of blocks or the number of records copied (depending on whether the file is copied on a block-by-block or record-by-record basis).

The default is /NOLOG.

# EXCHANGE

## COPY

### file qualifiers

---

#### ***/ALLOCATION=n***

Forces the initial allocation of the output file to the number of 512-byte blocks that you specified as *n*. The */ALLOCATION* qualifier is valid only for Files-11 and RT-11 output files.

By default, COPY determines the initial allocation of the output file by the size of the input file. Typically, */ALLOCATION* is needed only when

- You are creating a contiguous file on Files-11 (using */BEST\_TRY\_CONTIGUOUS* or */CONTIGUOUS*) when the input file is on magnetic tape
- Additional space is desired at the end of the file

If you specify */ALLOCATION*, COPY leaves the file at the allocated size unless you also specify */TRUNCATE*. You may want to specify both */ALLOCATION* and */TRUNCATE* when you are unsure of the exact output size.

#### ***/[NO]BEST\_TRY\_CONTIGUOUS***

Indicates whether the Files-11 output file is to be allocated contiguously on a "best effort" basis; that is, whether EXCHANGE will attempt to place the file on consecutive physical disk blocks. If insufficient contiguous space is available, the file occupies the largest available contiguous space plus additional extents as necessary for the rest of the allocation. You can apply this qualifier only to a Files-11 output file.

By default, the EXCHANGE command COPY never attempts to create a file on a best-try-contiguous basis.

The */BEST\_TRY\_CONTIGUOUS* qualifier has no effect when you copy files to magnetic tape volumes. When you copy a file from a magnetic tape and you want the file to be contiguous if possible, you need to use both the */ALLOCATION* and the */BEST\_TRY\_CONTIGUOUS* qualifiers. The reason you need both of these qualifiers is that the size of the file on magnetic tape cannot be determined until after it is copied to the disk. If only the approximate size of the file is known, you can overestimate the size and specify */TRUNCATE* (along with */ALLOCATION* and */BEST\_TRY\_CONTIGUOUS*) to avoid wasted space.

#### ***/CARRIAGE\_CONTROL=option***

Defines the carriage control attributes of a file, as well as other attributes of the records.

Option	Function
CARRIAGE_RETURN	Implied carriage-return/line-feed control
FORTTRAN	FORTTRAN carriage control record attribute
NONE	No implied carriage control

See Section 3.3 for a complete description of the */CARRIAGE\_CONTROL* qualifier and defaults.

### ***/[NO]CONTIGUOUS***

Indicates whether the Files-11 output file is to be contiguous; that is, whether the file must occupy consecutive physical disk blocks on the volume. The */CONTIGUOUS* qualifier is valid only for a Files-11 output file.

By default, the EXCHANGE command COPY never creates a contiguous output file.

The */CONTIGUOUS* qualifier has no effect when you copy files to magnetic tape volumes. When you copy a file from a magnetic tape and want the file to be contiguous, you need to use both the */ALLOCATION* and */CONTIGUOUS* qualifiers because the size of the file on magnetic tape cannot be determined until after it is copied to the disk. If you do not know the exact size of the file, you can overestimate the size and specify the */TRUNCATE* qualifier (along with */ALLOCATION* and */CONTIGUOUS*) to avoid wasted space.

### ***/[NO]DELETE***

Controls whether COPY deletes existing files of the same name during the copy operation. This qualifier is valid for RT-11 output only.

The default is */DELETE*; EXCHANGE deletes existing identically named files *after* the new file is copied. A message is displayed if */LOG* is also in effect. You use */NODELETE* to prevent automatic file deletion. You can also use the */REPLACE* qualifier to control file deletion, but note that the function is somewhat different from that of */DELETE* (see the description of */REPLACE*).

The */DELETE* qualifier is equivalent to the RT-11 COPY command qualifier */REPLACE*.

### ***/EXTENSION=n***

Specifies the number of blocks to be added to the output file each time the file is extended. This qualifier is valid for Files-11 output files only.

EXCHANGE determines the default extension according to the following hierarchy:

- 1 An explicit value specified on the */EXTENSION* qualifier
- 2 The current process default extension value that was set by the command SET RMS\_DEFAULT
- 3 The current system default extension value that was set at system generation or with the SET RMS\_DEFAULT/SYSTEM command

You use the */EXTENSION* qualifier to set an extension quantity primarily with magnetic tape input; EXCHANGE preallocates a file of the correct size when the input is on a directory structured device.

### ***/[NO]PROTECT***

Determines whether protection is set for an RT-11 output file. The default is */NOPROTECT*.

This qualifier is not valid for Files-11 or DOS-11 output files. Protection attributes for Files-11 output are taken from the current process default protection.

# EXCHANGE

## COPY

EXCHANGE does not attempt to transfer protection attributes from the input file to the output file, because protection mechanisms of various operating systems do not readily translate to one another.

The owner UIC of the output file is the UIC of the current process.

### ***/RECORD\_FORMAT=(option[, . . . ])***

Defines the internal record structure of a file, as well as other attributes of the records. Table EXCH-3 summarizes the format options.

See Section 3.1 for a detailed description of the */RECORD\_FORMAT* qualifier and options.

### ***/[NO]REPLACE***

Requests that if an RT-11 output file already exists with the same file specification as that entered for the output file, the existing file is to be deleted *before* the copy proceeds. COPY allocates new space for the output file. This qualifier is valid for RT-11 output only.

By default on RT-11 output, COPY creates the new file and then deletes the existing file after the copy successfully completes. When you specify */REPLACE*, COPY deletes the file before starting the transfer. You can use this qualifier when there is insufficient room for two copies of the file.

Note that you should be careful when you use the */REPLACE* qualifier with RT-11 output. If the input file is unreadable for any reason, you could be left with no usable version of the file; the output file will already have been deleted.

The */REPLACE* qualifier is equivalent to the RT-11 COPY command qualifier */PREDELETE*.

### ***/[NO]REWIND***

Determines whether a DOS-11 input magnetic tape reel logically rewinds to the beginning-of-tape mark (BOT) before EXCHANGE searches for the file name specified in the input specifier. The default is */NOREWIND*.

Use this qualifier only for DOS-11 magnetic tape. You should use the */REWIND* qualifier when you want COPY to start searching for a file at the logical beginning of the magnetic tape, rather than start searching at the current position.

### ***/START\_BLOCK=[n]***

For RT-11 volumes, specifies the logical block number where the file is to be placed. This qualifier is especially useful with TU58 cartridges, because performance can be significantly enhanced by careful placement of files.

### ***/[NO]SYSTEM***

Controls whether the COPY command copies files that have a file type of SYS. Files with a file type of SYS are usually necessary for the operation of an RT-11 system. Only RT-11 volumes handle SYS files in this manner.

The default is */NOSYSTEM*; the COPY command does not copy an RT-11 file with a SYS extension, whether it is matched by a wildcard specification or is explicitly named. EXCHANGE displays a message whenever it skips over a SYS file during a copy operation.

### ***/TRANSFER\_MODE***

Specifies the I/O method to be used in a transfer. This option is useful for all volume formats.

Option	Function
AUTO	Select BLOCK transfer for efficiency if possible
BLOCK	Transfer block by block without looking at records
RECORD	Transfer record by record

A BLOCK transfer moves data between devices. Since no interpretation is done on the data, BLOCK transfers are more efficient than RECORD transfers. The block sizes on both devices must be identical. Both input and output must be in BLOCK format. Specifying BLOCK on one parameter implies BLOCK for the other file or device specification.

A BLOCK transfer produces an exact copy of the file. If the output device is Files-11, the file will be a sequential file with fixed-length 512-byte records. This feature is used primarily to avoid any interpretation of the data during the transfer. If the Files-11 file is a sequential file with 512-byte fixed-length records, there is no difference between a */TRANSFER\_MODE=BLOCK* transfer and a */RECORD=FIXED=512* transfer.

A RECORD transfer moves the data record by record. A RECORD transfer requires more time than a BLOCK transfer, but it must be used if the input and output record structures differ.

The default for EXCHANGE is to use the AUTOMATIC transfer mode. In AUTOMATIC mode, EXCHANGE attempts to use a BLOCK transfer whenever possible. BLOCK transfers are possible between RT-11 volumes or between RT-11 and DOS-11 volumes, since the internal file structures are identical. AUTOMATIC does not use the BLOCK transfer if either file specification contains a */RECORD\_FORMAT* qualifier.

When the */LOG* qualifier is used in a COPY command, EXCHANGE displays the size of the file that was transferred. If BLOCK mode was used, the message gives the file size as the number of blocks transferred. If RECORD mode was used, the message displays the number of records.

### ***/[NO]TRUNCATE***

Controls whether COPY truncates an output file at the end-of-file when copying it. The default is */NOTRUNCATE*; COPY uses the allocation of the input file to determine the size of the output file.

### ***/VOLUME\_FORMAT=option***

Defines the physical format of the volume to be processed. The default format qualifier is dependent on the device type.

Volume format qualifiers must be attached to one or both of the file specification parameters; you cannot attach them directly to the command. A volume format qualifier determines the format of the file name and directory specifications, and often implies certain defaults.

Table EXCH-2 summarizes the volume format options.

See Section 2 for a complete description of the */VOLUME\_FORMAT* qualifier, options, and defaults.

# EXCHANGE

## COPY

---

### DESCRIPTION

The EXCHANGE command COPY allows you to transfer a file or files from an input volume to an output volume.

You can create multiple output files by specifying multiple input files. When multiple output files are created, the corresponding field from each input file is used in the output file name.

If you do not specify a version number for Files-11 output, COPY applies a version number as follows:

- The same version number as that of the input file, if the input volume structure supports version numbers and no file exists with the same name and type
- A version number that is one greater than the highest version number of an existing file with the same file name and file type
- Version 1 if neither of the above applies

If you use an asterisk (\*) wildcard character to specify the output file version number, COPY uses the version numbers of the associated input files (if any) as the version numbers of the output files.

Note that ANSI-formatted magnetic tapes do not handle version numbers in the same manner as disks. Refer to the *Guide to VAX/VMS Disk and Magnetic Tape Operations* for an explanation of version numbers on tape.

EXCHANGE may need to reformat files during the copy operation. The defaults for reformatting are dependent on the volume format qualifiers that are attached to both the input and output file specifications, as well as the type fields of the file specifications. See Section 3 for a description of the /RECORD\_FORMAT qualifier and record format defaults.

The EXCHANGE copy operation skips files that have a file type of BAD, as it does by default with files that have a type of SYS (see the description of the /[NO]SYSTEM qualifier). However, EXCHANGE does not warn that BAD files are being skipped, and the /SYSTEM qualifier has no effect on BAD files. You can copy a BAD file by specifying the filename explicitly instead of using wildcards.

---

### EXAMPLES

**1** EXCHANGE> COPY TEST.DAT DYAO:NEWTST.DAT/VOLUME-RT11

This command copies the contents of the file TEST.DAT from the default disk and directory into a file named NEWTST.DAT on an RT-11 floppy diskette (mounted on DYAO:). If a file named NEWTST.DAT already exists, the COPY command replaces it. The record formats are variable length on the Files-11 input and ASCII stream on the RT-11 output.

**2** EXCHANGE> COPY/LOG TEST.DAT DYAO:NEWTST.DAT  
%EXCHANGE-S-DELETEPREV, previous copy of DYAO:NEWTST.DAT deleted  
%EXCHANGE-S-COPIED, WRKD#: [FRED]TEST.DAT;5  
copied to DYAO:NEWTST.DAT, 93 records

This command is the same as in the preceding example, except that the /LOG qualifier is included so that the actions of the command are displayed. The /VOLUME\_FORMAT qualifier is omitted; EXCHANGE defaults to

RT-11 format for the foreign mounted floppy diskette. Since a file named NEWTST.DAT already exists on the floppy diskette (from the command in the previous example), the first copy of the file is deleted after the second copy is successfully transferred.

```

3 EXCHANGE> COPY/LOG LARGE.DAT DYAO:/VOLUME=RT11
  %EXCHANGE-S-DELETEPREV, previous copy of _DYAO:LARGE.DAT deleted
  %EXCHANGE-W-RTOUTEOF, end-of-file on output _DYAO:LARGE.DAT,
  insufficient space on volume
  %EXCHANGE-I-PARTCOPIED, WRKD$:[FRED]LARGE.DAT;9 partially copied to
  _DYAO:LARGE.DAT, 1670 records
EXCHANGE> COPY/LOG/REPLACE LARGE.DAT DYAO:/VOLUME=RT11
  %EXCHANGE-S-DELETEPREV, previous copy of _DYAO:LARGE.DAT deleted
  %EXCHANGE-S-COPIED, WRKD$:[FRED]LARGE.DAT;9 copied to
  _DYAO:LARGE.DAT, 3288 records

```

The first command in this example fails because there is insufficient space on DYAO: for EXCHANGE to do a normal copy (that is, to copy the file into a temporary file on DYAO:, delete the existing file of the same name, and then rename the temporary file).

The second command includes the /REPLACE qualifier, which directs COPY to delete an existing version of the output file before copying the new file. The first message generated by this command indicates that EXCHANGE has deleted an existing file. The second message indicates that the copy operation has successfully completed.

```

4 EXCHANGE> COPY MTAO:[11,132]*.COM/VOLUME=DOS11 [FRED.TEMP]

```

This command copies all files with a file type of COM owned by UIC [11,132] to the subdirectory [FRED.TEMP]. The DOS-11 record format is STREAM by default; the Files-11 format is VARIABLE.

```

5 EXCHANGE> COPY/BOOT DYAO:RT11SJ.SYS DYAO:

```

This COPY/BOOT command makes the diskette mounted on the RX02 drive DYAO: a bootable RT-11 system. Bootstrap information is written to the volume, using the RT-11 single job monitor RT11SJ.SYS and the system device handler DY.SYS. The diskette can be formatted in single or double density.

```

6 EXCHANGE> COPY/BOOT=DX DYAO:RT11SJ.SYS DYAO:

```

As in the previous example, the COPY/BOOT command makes the diskette mounted on the RX02 drive DYAO: a bootable RT-11 system. In this example, however, the system device handler is DX.SYS, the RX01 diskette handler. The diskette must be formatted in single density in order to boot on the RT-11 system.

```

7 EXCHANGE> COPY/BOOT CSA1:CONSOL.SYS

```

This command writes bootstrap information on the console storage device on a VAX processor.

```

8 EXCHANGE> COPY DMAO:FROG.DAT/VOLUME=RT11/RECORD=STREAM -
  _EXCHANGE> FROG4JUN.DAT/RECORD=(FIXED=80,PAD=" ")

```

This command copies an ASCII stream file (the default) from an RT-11 volume to the current default device and directory. The output contains fixed-length records that are padded to 80 bytes with the space character.

# EXCHANGE

## DELETE

---

## DELETE

Deletes one or more files from a foreign block-addressable mass storage volume. EXCHANGE does not delete files from Files-11 volumes; the DELETE command is supported only on RT-11 volumes.

---

### FORMAT

**DELETE** *file-spec[, . . . ]*

#### command parameters

---

#### *file-spec[, . . . ]*

Specifies the names of one or more files to be deleted. You can specify wildcard characters in any of the file specification fields.

You can delete more than one file by separating the file specifications with commas or plus signs.

The DELETE command does not delete a file with a file type of SYS unless you specify the /SYSTEM qualifier. EXCHANGE displays a message if it passes over one or more SYS files during a delete operation.

EXCHANGE does not delete files with a type of BAD if the file specification contains wildcards. You can delete a BAD file by explicitly specifying its name. EXCHANGE does not warn that BAD files have not been deleted.

#### command qualifiers

---

#### **/[NO]LOG**

Controls whether the DELETE command displays the file specification of each deleted file.

The default is /NOLOG.

#### **/[NO]SYSTEM**

Controls whether the DELETE command deletes files that have a file type of SYS. These files usually are files that are necessary for the operation of an RT-11 system. Only RT-11 volumes handle SYS files in this manner.

The default is /NOSYSTEM; the DELETE command does not delete an RT-11 file that has a SYS extension, whether it is matched by a wildcard specification or is explicitly named. EXCHANGE displays a message whenever it skips over a SYS file during a delete operation.

#### **/VOLUME\_FORMAT=option**

Defines the physical format of the volume to be processed. RT-11 volumes are the only volumes on which DELETE is currently supported. Table EXCH-2 summarizes the volume format options. See Section 2 for a complete description of the /VOLUME\_FORMAT qualifier and the format defaults.

---

## EXAMPLES

1 EXCHANGE> DELETE DMA0:COMMON.SUM/VOLUME=RT11

This command deletes the file COMMON.SUM from the RT-11 device DMA0:.

2 EXCHANGE> DELETE DXA0:\*.OLD

The command in this example attempts to delete all files with file types of OLD from the floppy diskette.

3 EXCHANGE> MOUNT /VIRTUAL TEST: TEST.DSK/VOLUME=RT11

EXCHANGE> DELETE TEST:ALPHA.TXT,BETA.TXT

This command deletes the files ALPHA.TXT and BETA.TXT from the virtual device file TEST.DSK.

# EXCHANGE DIRECTORY

---

## DIRECTORY

Provides a list of files, or information about a file or group of files. The files must reside on a foreign volume; EXCHANGE does not list directories of Files-11 volumes.

---

**FORMAT**            **DIRECTORY** [*file-spec*[, . . . ]]

---

**command  
parameters**

***file-spec*[, . . . ]**

Specifies one or more files to be listed. The /VOLUME\_FORMAT qualifier determines the syntax of a file specification.

To specify more than one file, separate the file specifications with either commas or plus signs. You can use wildcard characters in the directory specification, file name, file type, or version number fields of a file specification to list all files that satisfy the specified components.

**command  
qualifiers**

---

***/[NO]ALL***

Lists all deleted or unused files on an RT-11 volume, in addition to other files selected by the command. For example, the following command lists all MACRO source files, in addition to deleted and unused files:

```
EXCHANGE> DIRECTORY DMAO:*.MAC/ALL
```

***/[NO]BADBLOCKS***

Scans the volume to find any blocks that return read errors. The data on the volume is not modified. If a bad block replacement table is present, the contents of the table will be displayed. This is valid for RT-11 volumes only.

***/[NO]BLOCKS***

Lists the starting block number of the file. This qualifier is valid only for directories of block-addressable devices. The first block of the device is block number 0.

The default is /NOBLOCKS.

***/[NO]BRIEF***

Includes only the file name of each file to be listed. Specifying the /BRIEF qualifier is equivalent to specifying /NODATE/NOSIZE. The default is /BRIEF.

***/COLUMNS=*n****

Lists the files, using the specified number of columns on each line of the display. This qualifier is used in conjunction with the /BRIEF qualifier (either explicitly or by default). The default number of columns is dependent on the volume format and the information requested. The DIRECTORY command attempts to use as many columns as possible. If you request too many columns, DIRECTORY displays a message and reduces the number of columns to the number that will fit on the listing.

***/[NO]DATE***

Includes the date for each file listed. If you omit this qualifier, the default is /DATE.

***/[NO]DELETED***

Lists a directory of files that have been deleted from an RT-11 device, but whose file name information has not been destroyed.

The listing includes the file names, types, sizes, creation dates and starting block numbers (in decimal, unless you also specify the /OCTAL qualifier) of the deleted files.

The /DELETED qualifier is valid only with block-addressable volumes that are in RT-11 format. The default is /NODELETED.

***/[NO]FREE***

Includes unused areas in the directory listing. The /FREE qualifier is valid only with RT-11 formatted volumes.

***/FULL***

Lists all the available information for each file. The format of the listing depends on the format of the volume.

The /FULL qualifier overrides the default brief listing format.

***/[NO]OCTAL***

Controls whether numeric information is displayed in decimal or octal format. The default is /NOOCTAL; numbers are displayed in decimal radix. Dates are always displayed in decimal format.

***/OUTPUT[=file-spec]***

Writes the DIRECTORY output to a specified file, rather than to the current SYS\$OUTPUT device. If you specify the /OUTPUT qualifier without a file specification, the output is directed to SYS\$OUTPUT. If you omit the file type in the file specification, the default file type is LIS. If you specify a file type and omit the file name, the default file name is EXCHDIRE.

No wildcard characters are allowed in the file specification.

***/OWNER***

Displays information about the owner of a volume and the files on the volume. For RT-11, the volume owner is shown. For DOS-11, the UIC of the file owner is shown.

***/PRINTER***

Queues the command output for printing under the name specified by the /OUTPUT qualifier. If you specify /PRINTER without the /OUTPUT qualifier, the output is directed to a file named EXCHDIRE.LIS, which is spooled for printing automatically and is then deleted.

***/[NO]SIZE***

Displays the file size in blocks for each file listed. If you omit this qualifier, the default is /SIZE.

# EXCHANGE

## DIRECTORY

### ***/[NO]SUMMARY***

Lists a summary of the usage of the directory segments for an RT-11 volume. If a bad block replacement table is present, the contents of the table will be displayed.

### ***/VOLUME\_FORMAT=option***

Defines the physical format of the volume to be processed. The default format is dependent on the device type. Table EXCH-2 summarizes the format options; see Section 2 for a complete description of the */VOLUME\_FORMAT* qualifier, options, and defaults.

The EXCHANGE command DIRECTORY is not valid for VAX/VMS devices.

---

## DESCRIPTION

The output of the DIRECTORY command depends on the volume format and on certain formatting qualifiers and defaults. These formatting qualifiers are the following:

<i>/ALL</i>	<i>/BLOCKS</i>	<i>/BRIEF</i>
<i>/COLUMNS</i>	<i>/DATE</i>	<i>/FULL</i>
<i>/OCTAL</i>	<i>/SIZE</i>	<i>/OWNER</i>

The files that are listed always appear in the order in which they appear in the volume directory, or the order in which they reside on a magnetic tape.

---

## EXAMPLES

**1** EXCHANGE> DIRECTORY DLA2:.OBJ/VOLUME=RT11/FULL

This command lists all files with the type OBJ on the RT-11 volume mounted on DLA2:. The */FULL* qualifier causes the file sizes and dates to be listed along with the names.

**2** EXCHANGE> DIRECTORY MFA0:/VOLUME=DOS11

The command in this example lists all files on the DOS-11 magnetic tape mounted on MFA0:. The magnetic tape is rewound before the files are listed.

## DISMOUNT

Releases a volume that was previously accessed with the EXCHANGE command MOUNT.

**FORMAT** DISMOUNT *device-name[:]*

### command parameters

***device-name[:]***

Specifies the name of the device to be dismounted. You can specify a physical device name or a logical name assigned to a physical device name. If you omit a controller designation and/or a unit number, the defaults are controller A and unit 0, respectively. You can also specify the name of a virtual device.

### command qualifiers

***/[NO]MESSAGE***

Controls whether or not EXCHANGE displays a message that the volume was dismounted. The default is determined by the /MESSAGE qualifier on the EXCHANGE command when EXCHANGE was activated.

**DESCRIPTION** The DISMOUNT command closes all connections that EXCHANGE maintains to the device. This command does not affect the state of the operating system mount; the device remains accessible to VAX/VMS. If you do not use the DISMOUNT command, an implicit DISMOUNT is automatically executed when you exit EXCHANGE.

The DISMOUNT command is valid only with foreign devices.

## EXAMPLE

```
EXCHANGE> MOUNT/FOREIGN MTA0:
EXCHANGE> COPY MTA0:AVERAGE.FOR/VOLUME=DOS11 *
EXCHANGE> DISMOUNT MTA0:
```

The first command in this example mounts the tape on the device MTA0:. The second command transfers a file from the magnetic tape to the current default directory. The last command releases the Exchange Utility's access to the volume; however, the volume is still mounted on the operating system and is accessible to VAX/VMS.

# EXCHANGE

## EXIT

---

## EXIT

Terminates execution of EXCHANGE. Control is returned to the DCL command level. You can also use CTRL/Z to exit EXCHANGE.

---

## FORMAT

## EXIT

---

## EXAMPLE

EXCHANGE> EXIT

EXCHANGE terminates, returning to the DCL command level.

---

## HELP

Displays information about EXCHANGE commands and qualifiers.

---

### FORMAT

**HELP** [command [qualifier [option [option]]]]

---

#### command parameters

##### *command*

Specifies the name of the EXCHANGE command for which you want information. If you omit the command, HELP displays general information listing all commands recognized by EXCHANGE.

##### *qualifier*

Gives the name of the qualifier to be explained.

---

### DESCRIPTION

You can obtain an overview of the Exchange Utility and a listing of the EXCHANGE command names by entering the HELP command with no arguments.

If you enter HELP and the name of an EXCHANGE command, HELP displays a description of the command followed by a list of related qualifiers. You can then obtain information on any of the related qualifiers by entering the qualifier name at the prompt.

As an alternative, you can obtain information on any EXCHANGE command qualifier by entering HELP, the command, and the qualifier at the EXCHANGE prompt, as follows:

✦ **HELP COPY /CONTIGUOUS**

If the qualifier has options, you can obtain information on an option by entering HELP, the command, the qualifier, and the option at the EXCHANGE prompt.

If you specify an asterisk (\*) in place of any keyword, the HELP command displays all information available at that level.

If you specify an ellipsis (...) after any keyword, you obtain everything in the help file that relates to that keyword.

You can specify percent signs and asterisks in the keyword as wildcard characters.

---

### EXAMPLES

1 **EXCHANGE> HELP**

This command displays a description of the HELP command and lists a table of EXCHANGE commands for which more help is available.

# EXCHANGE

## HELP

2 EXCHANGE> HELP COPY/VOLUME...

The command in this example displays all the help that is available for the COPY qualifier /VOLUME\_FORMAT, including descriptions of each of the options.

# INITIALIZE

Formats and writes a label on a foreign mass storage volume. For directory-structured devices, the device directory is also initialized.

## FORMAT

**INITIALIZE** *device-name* [*volume-label*]  
**INITIALIZE/CREATE** *file-name* [*volume-label*]

### command parameters

#### *device-name*

Specifies the name of the device on which the volume to be initialized is physically mounted.

The device name can also refer to the name of a mounted virtual device that is to be reinitialized.

#### *file-name*

For INITIALIZE/CREATE, *file-name* refers to the name of a file that is to be created and initialized as a virtual device.

#### *volume-label*

Specifies the identification to be written onto the volume header for RT-11 volumes only. The volume label can contain up to a maximum of 12 alphanumeric characters. The default is *VMS Exchange*. Use quotation marks to specify a volume label with lowercase letters.

### command qualifiers

#### **/ALLOCATION=*n***

Specifies the allocation of a new virtual device file, in terms of 512-byte blocks. The allocation specified is the number you entered as *n*. If you do not specify the /ALLOCATION qualifier when you create a new virtual device file, the default allocation is 494 blocks, the size of a single-density floppy diskette. The maximum allocation is 65,536 blocks.

A virtual device file is usually the size of a standard device supported by both RT-11 and VAX/VMS. These sizes are as follows:

Device	Blocks
TU58	512
RX01	494
RX02	494 (single density) 988 (double density)
RL02	20480
RK06	27126
RK07	53790

You can also use the /ALLOCATION qualifier to reduce the size of a physical device. For example, if you want to prepare an RL02 disk but have only an RK07 device available, you can initialize the RK07 to a volume of 20,480

# EXCHANGE

## INITIALIZE

blocks. Later, when the RL02 is available, you can transfer the files to the RL02 without concern as to whether or not they will fit on the smaller device.

### ***/BADBLOCKS[=RETAIN]***

Performs a bad block scan of the volume before initialization. A file named FILE.BAD is created on top of each bad block or group of bad blocks encountered on the device, preventing any future use of the bad areas.

If a bad block is found in either the boot block or the volume directory, the volume is not usable and EXCHANGE displays an error message. If the bad block is in a directory segment other than the first, you may be able to use the volume by reinitializing it with a smaller number of segments (see the /SEGMENTS qualifier description).

If you specify /BADBLOCKS=RETAIN, EXCHANGE uses the device's existing bad block information, instead of performing a bad block scan. The advantage of using RETAIN is that initializing takes less time. If you do not specify RETAIN, EXCHANGE writes a pattern on each block of the volume, then reads each block to verify that the block is usable. EXCHANGE prints a list of the bad blocks found on the device.

Note that RK06, RK07 and RL02 disk volumes support bad block replacement; DIGITAL recommends that you use the /REPLACE=RETAIN qualifier instead of /BADBLOCKS for these volumes. If you use the /BADBLOCKS or /BADBLOCKS=RETAIN qualifier with a volume that has been previously initialized with the /REPLACE qualifier, EXCHANGE will delete the bad block replacement table. If you use /BADBLOCKS, EXCHANGE will perform a bad block scan of the volume; if you use /BADBLOCKS=RETAIN, EXCHANGE will use the FILE.BAD files created from the previous initialization of the volume.

### ***/CREATE***

Specifies that a virtual device is to be created and initialized. The specification is a file name; if a file type is not given, EXCHANGE applies the default type of DSK. See Section 4 for more information on virtual devices.

### ***/DENSITY=density-value***

Specifies, for magnetic tape volumes, the density in bytes per inch (bpi) at which the tape is to be written.

For magnetic tape volumes, the density value specified can be 800 or 1600, as long as the density is supported by the magnetic tape drive. If you do not specify a density value for a blank tape, the system uses a default of the lowest density supported by the tape drive.

For the RX02 dual-density diskette drive, use the DCL command INITIALIZE /DENSITY=SINGLE or INITIALIZE /DENSITY=DOUBLE to reformat the diskettes to a different density; then use the EXCHANGE command INITIALIZE to create the RT-11 directory structure.

**Note:** Floppy diskettes formatted in double density cannot be read or written by the console block storage device (an RX01 drive) of a VAX-11/780 until they have been reformatted in single density.

### ***/EXTRA\_WORDS=n***

Specifies, for RT-11 volumes, the number of extra words to add to each directory entry, in addition to the required seven words. The ability to increase the length of directory entries is useful for some RT-11 applications.

# EXCHANGE INITIALIZE

Increasing the size of the directory entries reduces the number of entries that fit in each directory segment.

## ***/[NO]MESSAGE***

Controls whether or not EXCHANGE displays a message that the volume was initialized. The default is determined by the /MESSAGE qualifier that was entered with the EXCHANGE command when EXCHANGE was activated.

## ***/REPLACE=RETAIN***

Retains, when an RT-11 volume is initialized, the bad block replacement table and any existing FILE.BAD files.

Note that the RETAIN option is required; EXCHANGE cannot build a replacement table for a volume. The RT-11 system builds and uses the table based on specific hardware error conditions. The VAX/VMS I/O system is different, and cannot be relied upon to generate exactly the same error conditions. Therefore, it is not possible for EXCHANGE to generate the same replacement table that would be generated by RT-11.

If no replacement table is present, the qualifier /REPLACE=RETAIN is equivalent to /BADBLOCKS=RETAIN.

## ***/SEGMENTS=n***

Defines, for RT-11 volumes, the number of 2-block directory segments to allocate for the directory. The number of segments in the directory establishes the number of files that can be stored on a device. The system allows a maximum of 72 files per directory segment, and 31 directory segments per device. The argument n represents the number of segments; the valid range for n is from 1 to 31(decimal). The default values for n depend on the device type, as follows:

Device	Segments
TU58	1
RX01	1
RX02	1 (single density) 4 (double density)
RL02	16
RK06	16
RK07	31

## ***/VOLUME\_FORMAT=option***

Defines the physical format of the volume to be processed. Table EXCH-2 summarizes the format options. See Section 2 for a complete description of the /VOLUME\_FORMAT qualifier, options, and defaults.

The EXCHANGE command INITIALIZE is not valid for VAX/VMS devices.

**DESCRIPTION** You use the EXCHANGE command INITIALIZE to erase all files from a volume. After initialization, the volume directory contains no files. DOS-11 magnetic tapes and RT-11 block-addressable devices can be initialized.

The device must be mounted with the /FOREIGN qualifier.

# EXCHANGE

## INITIALIZE

---

### EXAMPLES

1   \$ MOUNT/FOREIGN DLA2:  
%MOUNT-I-MOUNTED,                    mounted on DLA2:  
\$ EXCHANGE  
EXCHANGE> INITIALIZE DLA2:  
%EXCHANGE-S-INITIALIZED, the RT-11 volume \_DLA2: has been initialized

This command initializes the volume mounted on the RL02 drive DLA2: Since DLA2: is a block-addressable device mounted with the /FOREIGN qualifier, RT-11 is the default format. EXCHANGE physically scans all blocks of the volume, builds a bad block replacement table, and displays a message indicating that it failed to turn up any bad blocks.

2   EXCHANGE> INITIALIZE MTA0:/DENSITY=1600

The command in this example initializes the DOS-11 magnetic tape volume loaded on MTA0:. The density is specified as 1600 bpi; the default would have been 800 bpi for an MT drive.

3   EXCHANGE> INITIALIZE/CREATE/ALLOCATION=1000 VIRTUAL  
%EXCHANGE-S-INITIALIZED, the RT-11 volume DRB0:[LOGIN]VIRTUAL.DSK has been initialized

This command creates a virtual device with an allocation of 1000 blocks in the directory [LOGIN] on DRB0:. EXCHANGE applies the default file type of DSK.

---

## MOUNT

Makes a foreign volume and the files or data it contains available for processing by EXCHANGE. The EXCHANGE command MOUNT enters the device into internal tables maintained by EXCHANGE.

---

### FORMAT

**MOUNT** *device-name*

**MOUNT/VIRTUAL** *device-name file-name*

---

### command parameters

#### ***device-name***

Specifies the physical device name or logical name of the device on which the volume is to be mounted. For MOUNT/VIRTUAL, the device-name parameter supplies a name by which the virtual device will be known.

#### ***file-name***

For MOUNT/VIRTUAL only, the file-name parameter gives the name of the file containing the image of the foreign volume.

---

### command qualifiers

#### ***/[NO]DATA\_CHECK[=(READ,WRITE)]***

Determines whether EXCHANGE performs a second operation after every I/O operation to verify that the data was correctly transferred.

If you specify /DATA\_CHECK=WRITE, after every write operation EXCHANGE rereads the data that was just written and compares it against the original data. If you specify /DATA\_CHECK=READ, EXCHANGE reads each block of data twice and verifies that both read operations received identical data.

If you specify the /DATA\_CHECK qualifier without an option, the default is /DATA\_CHECK=WRITE.

Note that it is usually more efficient to use the /DATA\_CHECK option on the DCL command MOUNT than to use the option on the EXCHANGE command MOUNT. If you mount a device with the DCL command MOUNT /FOREIGN/DATA\_CHECK, VAX/VMS is able to use features in the device hardware and device driver to perform the redundant I/O operations.

The RX01 and RX02 floppy diskette drives do not contain the necessary features for the operating system to perform data checking. If you use the DCL command MOUNT/DATA\_CHECK with a floppy diskette, the system is not able to perform data checking (even though no warning message is displayed). EXCHANGE is able to recognize, however, that a floppy diskette was mounted with the data checking option; in this case, EXCHANGE performs the software data checking internally, even if you have not specified an explicit MOUNT/DATA\_CHECK command.

#### ***/FOREIGN***

Indicates that the volume is not in the standard format used by the VAX/VMS operating system; that is, a magnetic tape volume is not in the standard ANSI format, or a disk volume is not in Files-11 format.

# EXCHANGE MOUNT

The EXCHANGE command MOUNT mounts only foreign volumes. The /FOREIGN qualifier is the default. You must use the DCL command MOUNT to mount VAX/VMS volumes.

The default protection applied to foreign volumes is RWLP (Read, Write, Logical I/O, Physical I/O) for the system and owner. If you mount a volume currently in Files-11 format with the /FOREIGN qualifier, you must have the user privilege to override volume protection (VOLPRO), or your UIC must match the UIC on the volume.

## ***/[NO]MESSAGE***

Controls whether or not EXCHANGE displays a message that the volume was mounted. The default is determined by the /MESSAGE qualifier that was specified with the EXCHANGE command when EXCHANGE was invoked.

## ***/VIRTUAL***

Mounts a Files-11 file as a virtual device. When you specify /VIRTUAL, the MOUNT command requires two parameters. The first parameter is a device name that is assigned as the name of the virtual device. The second parameter is the name of the Files-11 file that is the image of a foreign volume.

See Section 4 for more information on virtual devices.

## ***/VOLUME\_FORMAT=option***

Defines the physical format of the volume to be processed. Table EXCH-2 summarizes the format options. See Section 2 for a complete description of the /VOLUME\_FORMAT qualifier, options, and defaults.

## ***/[NO]WRITE***

Controls whether the volume can be written.

You can specify /NOWRITE to protect files by providing read-only access. Specifying /NOWRITE is equivalent to write-locking the device.

The default is /WRITE. If /WRITE is specified (either explicitly or by default) and the volume itself is write locked, EXCHANGE displays a message to inform you that the volume is write locked.

---

## **DESCRIPTION**

The EXCHANGE command MOUNT enters the description of the foreign volume in internal tables maintained by EXCHANGE. This command is different from the DCL command MOUNT, which enters the device in tables maintained by the VAX/VMS operating system.

If an EXCHANGE command is given on an unmounted foreign volume, EXCHANGE attempts to execute an implied MOUNT/FOREIGN/WRITE /NODATACHECK on the device. This feature is necessary so that EXCHANGE can operate in the single-command DCL mode.

A virtual volume must be explicitly mounted with the MOUNT/VIRTUAL command.

If a MOUNT/FOREIGN (either implied or explicit) command is given for a foreign device that has not been mounted on the VAX/VMS system, EXCHANGE issues the equivalent of the DCL command MOUNT/FOREIGN and attempts to make the volume known to the operating system. Any volume so mounted by the EXCHANGE command MOUNT remains mounted after EXCHANGE exits.

When EXCHANGE issues the MOUNT/FOREIGN command, the system checks the following:

- That the device has not been allocated to another user
- That a volume is physically loaded on the specified device
- For magnetic tapes, the volume accessibility field of the VOL1 label

For a detailed description of the Mount Utility, see the *VAX/VMS Utilities Reference Volume*.

---

## EXAMPLES

**1** EXCHANGE> MOUNT MT:  
%EXCHANGE-I-MOUNTED, MATH06 mounted on \_MTA0:

This command requests that the magnetic tape loaded on the device MTA0: be mounted as a foreign volume. The tape label is displayed, since the tape has been previously initialized as an ANSI-labeled tape with the label MATH06. This tape cannot be accessed as a Files-11 tape; it should be reinitialized as a DOS-11 tape during the current EXCHANGE session.

**2** EXCHANGE> MOUNT DMA1:  
%EXCHANGE-I-WRITELOCK, volume is write-locked  
%EXCHANGE-S-MOUNTED, volume DMA1: mounted

The command in this example mounts the foreign volume that is loaded in the RK07 device DMA1:, making the volume available for subsequent EXCHANGE commands. EXCHANGE recognizes that the volume itself is write locked, and displays a message.

# EXCHANGE

## RENAME

---

# RENAME

Changes the file specification of an existing file on an RT-11 volume.

---

## FORMAT

**RENAME** *input-file-spec output-file-spec*

---

### command parameters

#### *input-file-spec*

Specifies the names of one or more files whose specifications are to be changed.

You can use wildcard characters in the file name and file type specification; if you do, all files that satisfy the specified fields are renamed.

#### *output-file-spec*

Provides the new file specification to be applied to the input file. The RENAME command uses the file name and file type of the input file specification to provide defaults for nonspecified fields in the output file.

You can specify an asterisk (\*) in place of the file name or file type of the output file; the RENAME command uses the corresponding field in the input file specification to name the output file. Specifying wildcard characters in corresponding fields of the input and output file specifications results in multiple rename operations.

You can omit the device name from the output specification. EXCHANGE uses the device name specified for the input, since it is not possible to rename a file from one device to another.

### command qualifiers

---

#### ***/[NO]LOG***

Controls whether the RENAME command displays the file specification of each file that it renames.

The default is /NOLOG.

#### ***/[NO]PROTECT***

Determines whether protection is set for an RT-11 output file. The default is /NOPROTECT.

This qualifier is not valid for Files-11 or DOS-11 output files. Protection attributes for Files-11 output are taken from the current process default protection.

EXCHANGE does not attempt to transfer protection attributes from the input file to the output file, because protection mechanisms of various operating systems do not readily translate to one another.

The owner UIC of the output file is the UIC of the current process.

### ***/[NO]SYSTEM***

Controls whether the RENAME command renames files that have a file extension of SYS. These files are usually files that are necessary for the operation of an RT-11 system. Only RT-11 volumes handle SYS files in this manner.

The default is /NOSYSTEM; the RENAME command does not rename an RT-11 file with a SYS extension, whether it is matched by a wildcard specification or is explicitly named. EXCHANGE displays a message whenever it skips over a SYS file during a rename operation.

EXCHANGE handles files with a file type of BAD in a similar manner; that is, the rename operation skips BAD files. However, EXCHANGE does not warn that BAD files are being skipped, and the /SYSTEM qualifier has no effect on BAD files. You rename a BAD file by specifying the file name explicitly instead of using wildcards.

### ***/VOLUME\_FORMAT=option***

Defines the physical format of the volume to be processed. Table EXCH-2 summarizes the format options. See Section 2 for a complete description of the /VOLUME\_FORMAT qualifier, options, and defaults.

EXCHANGE supports the RENAME command only on RT-11 volumes.

---

## **EXAMPLES**

1 EXCHANGE> RENAME DMA0:AVERAG.OBJ MEAN

This command changes the file name of the file AVERAG.OBJ to MEAN.OBJ.

2 EXCHANGE> RENAME DLA2:\*.TXT \*.OLD

The command in this example renames all files with file types of TXT to files with file types of OLD; the file names are not changed.

3 EXCHANGE> RENAME/LOG DMA0:DATA.\* NEW  
%EXCHANGE-I-RENAMED, \_DMA0:DATA.AAA renamed to \_DMA0:NEW.AAA  
%EXCHANGE-I-RENAMED, \_DMA0:DATA.BBB renamed to \_DMA0:NEW.BBB  
%EXCHANGE-I-RENAMED, \_DMA0:DATA.CCC renamed to \_DMA0:NEW.CCC

The command in this example illustrates wildcard characters in the input file names. The device DMA0: contains three files with the file name DATA; the result is the renaming of all three files as displayed by the /LOG qualifier.

# EXCHANGE

## SHOW

---

## SHOW

Displays the devices currently mounted by EXCHANGE.

---

### FORMAT            SHOW

---

**command  
parameters**

*None.*

**command  
qualifiers**

*None.*

---

### EXAMPLE

```
EXCHANGE> MOUNT DBAO:
%EXCHANGE-I-VMSMOUNT, a "$ MOUNT /FOREIGN DBAO:" command was done by Exchange
%EXCHANGE-S-MOUNTED, the RT-11 volume _DBAO: has been mounted
EXCHANGE> MOUNT DLA2:
%EXCHANGE-I-VMSMOUNT, a "$ MOUNT /FOREIGN DLA2:" command was done by Exchange
%EXCHANGE-S-MOUNTED, the RT-11 volume _DLA2: has been mounted
EXCHANGE> SHOW
Mounted volumes:
_DLA2:
  volume format:      RT-11
  volume class:       disk
  physical device name: _DLA2:
  volume size:        20480 blocks
_DBAO:
  volume format:      RT-11
  volume class:       disk
  physical device name: _DBAO:
  volume size:        65535 blocks
EXCHANGE>
```

The MOUNT commands mount foreign devices on drives DBA0: and DLA2:.  
The SHOW command displays all devices currently mounted by EXCHANGE.

---

## TYPE

Displays the contents of a file or group of files on the current output device.

---

**FORMAT**      **TYPE** *file-spec[, . . . ]*

---

**command parameters**

***file-spec[, . . . ]***

Specifies the name(s) of one or more input files to be copied. If you specify more than one input file, you can separate them with either commas or plus signs. You can specify standard VAX/VMS wildcards in file names, both Files-11 and foreign. Wildcard directories are supported for Files-11 and DOS-11 input.

The syntax for the file names is dependent on the particular volume format option present or implied. See Section 2 for descriptions of the volume format, options, and defaults.

---

**command qualifiers**

***/[NO]LOG***

Controls whether TYPE displays the file specifications of each file displayed.

If you specify /LOG, the TYPE command displays the following for each copy operation:

- The file specifications of the input and output files
- The number of blocks or the number of records copied (depending on whether the file is copied on a block-by-block or record-by-record basis).

***/RECORD\_FORMAT=(option[, . . . ])***

Defines the internal record structure of a file and other attributes of the records. Table EXCH-3 summarizes the record format options. See Section 3 for a complete description of the /RECORD\_FORMAT qualifier, options, and defaults.

***/[NO]REWIND***

Controls whether the DOS-11 input magnetic tape reel rewinds to the logical beginning-of-tape mark before EXCHANGE searches for the file name given in the input specifier.

Use this qualifier only for DOS-11 magnetic tape devices. The default is /NOREWIND; you should use /REWIND when you want TYPE to start searching for a file at the beginning of the magnetic tape rather at the current position.

***/VOLUME\_FORMAT=option***

Defines the physical format of the volume to be processed. The default format qualifier is dependent on the device type. Table EXCH-2 summarizes the format options. See Section 2 for a complete description of the /VOLUME\_FORMAT qualifier, options, and defaults.

# EXCHANGE

## TYPE

---

### EXAMPLES

1 EXCHANGE> TYPE TEST.DAT

This command displays the contents of the file TEST.DAT, which resides on the default disk and directory.

2 EXCHANGE> TYPE DYAO:BEAM.RAT/VOLUME=RT11/RECORD=STREAM

The command in this example copies the RT-11 file to the current SYS\$OUTPUT device. The two qualifiers are actually the defaults, assuming DYAO: was mounted as a foreign volume.

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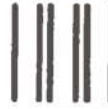
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