

VAX/VMS  
Error Log Utility  
Reference Manual

Order No. AA-Z402B-TE

digital  
software



# **VAX/VMS Error Log Utility Reference Manual**

Order Number: AA-Z402B-TE

**July 1985**

The Error Log Utility selectively reports the contents of an error log file. The error log entries are processed by selection for the interval and device type specified. Several forms of output can be directed to a terminal for display or to a disk or magnetic tape.

This manual contains updated information. Technical additions or changes are indicated by change bars (■) for additions, and bullets (●) for deletions.

**Revision/Update Information:** This document supersedes the *VAX/VMS Error Log Utility Reference Manual* Version 4.0.

**Software Version:** VAX/VMS Version 4.2

**digital equipment corporation  
maynard, massachusetts**

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**July 1985**

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ZK-2820

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## Preface

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### Intended Audience

This document is intended for users who need to transfer data between foreign volumes and VAX/VMS volumes.

### Structure of This Document

This document is composed of three major sections.

The Format Section is an overview of the Exchange Utility (EXCHANGE) and is intended as a quick reference guide. The format summary contains the DCL command that invokes EXCHANGE, listing all command and positional qualifiers and parameters. The usage summary describes how to invoke and exit from EXCHANGE, how to direct output, and any restrictions you should be aware of. The command summary lists all commands and qualifiers that can be used within the Exchange Utility.

The Description Section explains how to use EXCHANGE.

The Command Section describes each EXCHANGE command and the qualifiers that the command supports. The commands appear in alphabetical order.

### Associated Documents

The *Guide to VAX/VMS Disk and Magnetic Tape Operations* provides task-oriented instructions for performing EXCHANGE operations on private volumes.

The *Guide to VAX/VMS System Management and Daily Operations* includes system management tasks that use the Exchange Utility.

The *Guide to VAXclusters* includes examples that show the use of EXCHANGE in a VAXcluster environment.

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## Conventions Used in This Document

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Convention	Meaning
<code>RET</code>	A symbol with a one- to three-character abbreviation indicates that you press a key on the terminal, for example, <code>RET</code> .
<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. In examples, this control key sequence is shown as ^x, for example, ^C, ^Y, ^O, because that is how the system echoes control key sequences.
<code>\$ SHOW TIME</code> <code>05-JUN-1982 11:55:22</code>	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.
<code>.</code> <code>.</code> <code>.</code>	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. Vertical ellipsis in coding examples indicate that lines of code not pertinent to the example are omitted.
<code>file-spec, . . .</code>	Horizontal ellipsis indicates that additional parameters, values, or information can be entered.
<code>[logical-name]</code>	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**

This manual documents the Error Log Utility in Version 4.2 of VAX/VMS. This utility replaces the SYE Utility (SYE), which is no longer supported.



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## ERROR LOG

The Error Log Utility selectively reports the contents of an error log file.

---

### FORMAT **ANALYZE/ERROR\_LOG** [/qualifier(s)] [file-spec][,...]

Command Qualifiers	Defaults
/BEFORE[=date-time]	See text.
/[NO]BINARY[=file-spec]	/NOBINARY
/BRIEF	None.
/ENTRY[=(start:dec-value[,end:dec-value])]	See text.
/EXCLUDE=(device or entry-type[,...])	None.
/[NO]FULL	/FULL
/INCLUDE=(device or entry-type[,...])	None.
/[NO]LOG	/NOLOG
/OUTPUT[=file-spec]	/OUTPUT=SYS\$OUTPUT
/REGISTER_DUMP	None.
/REJECTED[=file-spec]	None.
/SID_REGISTER[=%Xhex-value]	None.
/SINCE[=date-time]	See text.
/STATISTICS	None.
/SUMMARY[=summary-type[,...]]	None.

#### Command Parameters

/qualifier(s)

The function(s) to be performed by the ANALYZE/ERROR\_LOG command.  
file-spec[,...]

Specifies one or more files that contain binary error information to be interpreted for the error log report. You can include wildcard characters in the file-spec. If you omit the file specification, the default file is SYS\$ERRORLOG:ERRLOG.SYS (see the *Guide to VAX/VMS System Management and Daily Operations* for information on maintaining this file).

See the *VAX/VMS DCL Dictionary* for details on specifying file specifications.

### usage summary

#### Invoking

You invoke the Error Log Utility by entering the following DCL command:

```
ANALYZE/ERROR_LOG [/qualifier(s)] [file-spec][,...]
```

The Error Log Utility does not prompt.

#### Exiting

You exit the Error Log Utility by entering CTRL/C or when end-of-file (EOF) is detected.

#### Directing Output

You direct output of the Error Log Utility with the /OUTPUT, /BINARY, and /REJECTED qualifiers.

# ERROR LOG

## Description

### Privileges/Restrictions

You must have SYSPRV privilege to run the Error Log Utility. However, only read access is required to access the file ERRORLOG.SYS. (It is not necessary to rename the file ERRORLOG.SYS to ERRORLOG.OLD before using the Error Log Utility.)

Do not use the /BINARY qualifier with the /FULL, /BRIEF, /OUTPUT, /REGISTER\_DUMP, or /SUMMARY qualifiers.

---

## DESCRIPTION

The Error Log Utility is a system management tool that selectively reports the contents of one or more error log files.

The VAX/VMS system automatically writes messages to the latest version of an error log file named SYS\$ERRORLOG:ERRLOG.SYS as the following events occur:

- Errors—Device errors, device timeouts, machine checks, bus errors, memory errors (hard or soft error correcting code (ECC) errors), asynchronous write errors, undefined interrupts, and bugchecks.
- Volume changes—Volume mounts and dismounts
- System events—Cold start-ups, warm start-ups, system failure (crash) start-ups, messages from the Send Message to Error Logger (\$SNDERR) system service, or time stamps.

The Error Log Utility processes error log entries by selection to produce six forms of optional output:

- A full report of selected entries. This is the default.
- A brief report of selected entries.
- A summary report of selected entries.
- A register dump report of selected device entries.
- A binary copy of selected entries.
- A binary copy of rejected entries.

These forms of output can be directed to a terminal for display or to a disk or magnetic tape file with the /OUTPUT qualifier. By default, the output is directed to the SYS\$OUTPUT device. The report formats can be changed by specifying /FULL, /BRIEF, /SUMMARY, /REGISTER\_DUMP, /REJECTED, or /BINARY.

Error log entries are processed by selection for the interval specified by the /SINCE, /BEFORE, or /ENTRY qualifiers. The selection qualifiers /INCLUDE and /EXCLUDE form a filter which is used to determine which error log entries to select or reject.

## ERROR LOG

### Description

All Error Log Utility reports are 72 columns wide, so that they can be displayed at the terminal. Note that these reports are primarily intended to assist DIGITAL Field Service personnel. However, in some cases, they can assist in system management by identifying recurrent failures that indicate outside attention is required.

The Error Log Utility will issue error messages for inconsistent error log entries. The *VAX/VMS System Messages and Recovery Procedures Reference Manual* lists these messages and provides explanations and suggested user actions.

The Example Section shows the format of a typical error log report.

# ERROR LOG

## Command Qualifiers

---

### COMMAND QUALIFIERS

The qualifiers for the ANALYZE/ERROR\_LOG command are described in this section.

## **/BEFORE**

Specifies that only those entries dated earlier than the stated date-time be selected for the error report.

**FORMAT**            **/BEFORE** [=date-time]

**qualifier value**    **date-time**

Limits the error report to those entries dated earlier than the specified time.

**DESCRIPTION**    You can specify an absolute time, a delta time, or a combination of absolute and delta times. See the *VAX/VMS DCL Dictionary* for details on specifying times.

If you omit the **/BEFORE** qualifier, or specify **/BEFORE** without a date or time, all entries are processed.

## **EXAMPLE**

♦ **ANALYZE/ERROR\_LOG/BEFORE=12-FEB-1985-10:00 ERRLOG.OLD;5**

The error log report generated for **ERRLOG.OLD;5** will contain entries that were logged before 10:00 on the 12th of February 1985.

# ERROR LOG

## /BINARY

---

## /BINARY

Used to control whether the binary error log records are converted to ASCII text or copied to the specified output file.

---

**FORMAT**            */BINARY [=file-spec]*  
                      */NOBINARY*

---

**qualifier value**    *file-spec*  
                          The output file selected to contain image copies of the input records.

---

**DESCRIPTION**    The */BINARY* qualifier creates a binary file that contains copies of the original binary error log entry—if selected because of the interval (*/SINCE*, */BEFORE*, and */ENTRY* qualifiers) and filter (*/INCLUDE* and */EXCLUDE* qualifiers) specified. If no interval or filter is specified, then all error log entries are copied.

If you specify */BINARY=file-spec*, the selected output file will contain image copies of the binary input records (the records will not be translated to ASCII). If you omit the device or directory specification, the current device and the default directory are used. If you omit the filename, then the file name of the input file is used. If you omit the file type, the file type is DAT.

Do not use */BINARY* with the */FULL*, */BRIEF*, */OUTPUT*, */REGISTER\_DUMP*, or */SUMMARY* qualifiers. These qualifiers generate an ASCII report; */BINARY* generates a binary file.

---

## EXAMPLE

✦ *ANALYZE/ERROR\_LOG/INCLUDE=DBA1/BINARY=DBA1\_ERR.DAT ERRLOG.OLD;5*

The output file *DBA1\_ERR.DAT* will contain image copies of the entries that apply to *DBA1*.

---

**/BRIEF**

Generates a brief report, which supplies minimal information for the error log entry.

---

**FORMAT /BRIEF**

---

**DESCRIPTION** Do not use /BRIEF with the /BINARY qualifier.

---

**EXAMPLE**

⚡ **ANALYZE/ERROR\_LOG/BRIEF ERRLOG.OLD;97**

The error log report generated from ERRLOG.OLD;97 will contain only minimal information.

# ERROR LOG

/ENTRY

---

## /ENTRY

Generates an error log report that covers the specified entry range or starts at the specified entry number.

---

**FORMAT**      */ENTRY [(start:decimal-value[,end:decimal-value])]*

---

**qualifier value**      *(start:decimal-value[,end:decimal-value])*  
The range of entries to be included in the error log report.

---

**DESCRIPTION**      If you specify /ENTRY without the entry range or omit the qualifier, the entry range defaults to START:1,END:end-of-file.

---

## EXAMPLE

§ *ANALYZE/ERROR\_LOG/ENTRY=(START:1,END:18) ERRLOG.SYS*

The entry range for the error log report generated from file ERRLOG.SYS is limited to entry numbers 1 through 18.

## **/EXCLUDE**

Excludes errors generated by the specified device(s) and/or error log entry type(s) from the error log report.

**FORMAT**            **/EXCLUDE** *=(device-or-entry-type[,...])*

**qualifier value**    ***device-or-entry-type[,...]***  
 The device(s) and/or entry type(s) to be excluded from the error log report.

**DESCRIPTION**    You can specify one or more devices by device class or name. The following keywords and name constructs are valid for specifying devices.

**Device Class Keywords**

- BUSES
- DISKS
- REALTIME
- SYNC\_COMMUNICATIONS
- TAPES

**Device Name Constructs**

- |                        |                             |
|------------------------|-----------------------------|
| DB                     | group of devices            |
| DBA1                   | specific device/unit number |
| (DBA1,HSC1\$DUA1,DYAO) | list of devices             |
| (DB,DR,XF)             | list of device groups       |

You can specify one or more of the following keywords that identify entry types:

- |            |  |
|------------|--|
| ATTENTIONS | Exclude device attention entries from the output report. |
| BUGCHECKS  | Exclude all types of bugcheck entries from the report.   |

# ERROR LOG

## /EXCLUDE

### CONTROL\_ENTRIES

Exclude control entries from the report. Control entries include the following entry types:

- System power-fail restarts
- Time stamps
- System start ups
- \$SNDEERR messages (system service to send messages to error log)
- Operator messages
- Network messages
- ERRLOG.SYS created

### CPU\_ENTRIES

Exclude CPU-related entries from the report. CPU entries include the following entry types:

- SBI alerts/faults
- Undefined interrupts
- MBA/UBA adapter errors
- Asynchronous write errors
- UBA errors

### DEVICE\_ERRORS

Exclude device error entries from the report.

### ENVIRONMENTAL\_ENTRIES

Exclude environmental entries from the report.

### MACHINE\_CHECKS

Exclude machine check entries from the report.

### MEMORY

Exclude memory errors from the report.

### SNAPSHOT\_ENTRIES

Exclude snapshot entries from the report.

### TIMEOUTS

Exclude device timeout entries from the report.

### UNKNOWN\_ENTRIES

Exclude any entry that had either an unknown entry type or an unknown device type/class.

### UNSOLICITED\_MSCP

Exclude unsolicited MSCP entries from the output report.

### VOLUME\_CHANGES

Exclude volume mount and dismount entries from the report.

The UNKNOWN\_ENTRIES keyword should be used to obtain a report that contains the contents of the device registers logged by unsupported devices.

Any known information for the entry is translated; the remaining information is output in hexadecimal longwords.

If you specify a device class keyword or a device name construct with both the /INCLUDE and /EXCLUDE qualifiers, the /INCLUDE qualifier takes precedence.

---

### EXAMPLES

**1** \* ANALYZE/ERROR\_LOG/EXCLUDE=MTA0

The error log entries for the device MTA0 are excluded from the error log report for the file ERRLOG.SYS.

**2** \* ANALYZE/ERROR\_LOG/EXCLUDE=(MTA0,DRA5) ERRLOG.OLD

The devices MTA0 and DRA5 are excluded from the error log report for the file ERRLOG.OLD.

**3** \* ANALYZE/ERROR\_LOG/EXCLUDE=(DISKS,BUGCHECKS)

All disk devices and all bugcheck entries are excluded from the error log report for the file ERRLOG.SYS.

**4** \* ANALYZE/ERROR\_LOG/INCLUDE=MTA0/EXCLUDE=TAPES

The device MTA0 is included in the error log report for the file ERRLOG.SYS. All other magnetic tape devices are excluded from the report.

**5** \* ANALYZE/ERROR\_LOG/EXCLUDE=(DISK,VOLUME\_CHANGES)

Entries for disk volume information are excluded from the error log report for the file ERRLOG.SYS.

**6** \* ANALYZE/ERROR\_LOG/EXCLUDE=(DISK,VOLUME\_CHANGES,DEVICE\_ERROR)

Entries for volume and device error information on disks are excluded from the error log report for the file ERRLOG.SYS.

**7** \* ANALYZE/ERROR\_LOG/EXCLUDE=(DISK,VOLUME\_CHANGES,DEVICE\_ERROR,BUGCHECK)

Entries for volume and device error information on disks, and bugcheck errors are excluded from the error log report for the file ERRLOG.SYS.

# ERROR LOG

/FULL

---

## /FULL

Generates a full report, which provides all possible information available for an error log entry. This is the default report format.

---

**FORMAT**      /[[NO]FULL

---

**DESCRIPTION** Do not use /FULL with the /BINARY qualifier.

---

## EXAMPLES

1    \$ ANALYZE/ERROR\_LOG/FULL ERRLOG.OLD;72

This command produces a full error log report.

2    \$ ANALYZE/ERROR\_LOG ERLOG.OLD;72

This command produces a full report. The default report type is /FULL; it is not necessary to specify it in the command line.

---

## **/INCLUDE**

Includes errors generated by the specified device(s) and/or error log entry type(s) in the error log report.

---

### **FORMAT**

**/INCLUDE=(*device-or-entry-type*[,...])**

### **qualifier value**

***device-or-entry-type*[,...]**

The device(s) and/or entry type(s) to be included in the error log report.

---

### **DESCRIPTION**

You can specify one or more devices by device class or name. The following keywords and name constructs are valid for specifying devices.

#### **Device Class Keywords**

BUSES  
DISKS  
REALTIME  
SYNC\_COMMUNICATIONS  
TAPES

#### **Device Name Constructs**

DB	group of devices
DBA1	specific device/unit number
(DBA1,HSC1\$DUA1,DYAO)	list of devices
(DB,DR,XF)	list of device groups

You can specify one or more of the following keywords that identify entry types:

ATTENTIONS	Include device attention entries in the output report.
BUGCHECKS	Include all types of bugcheck errors in the report.
CONTROL_ENTRIES	Include control entries in the report. Control entries include the following entry types:

- System power-fail restarts
- Time stamps
- System start ups
- \$SENDERR messages (system service to send messages to error log)
- Operator messages
- Network messages
- ERRLOG.SYS created

# ERROR LOG

## /INCLUDE

CPU_ENTRIES	Include CPU-related entries in the report. CPU entries include the following entry types: <ul style="list-style-type: none"><li>• SBI alerts/faults</li><li>• Undefined interrupts</li><li>• MBA/UBA adapter errors</li><li>• Asynchronous write errors</li><li>• UBA errors</li></ul>
DEVICE_ERRORS	Include device errors in the report.
ENVIRONMENTAL_ENTRIES	Include environmental entries in the report.
MACHINE_CHECKS	Include machine check errors in the report.
SNAPSHOT_ENTRIES	Include snapshot entries in the report.
MEMORY	Include memory errors in the report.
TIMEOUTS	Include device timeout errors in the report.
UNKNOWN_ENTRIES	Include any entry that had either an unknown entry type or an unknown device type/class.
UNSOLICITED_MSCP	Include unsolicited MSCP entries in the output report.
VOLUME_CHANGES	Include volume mount and dismount entries in the report.

The UNKNOWN\_ENTRIES keyword should be used to obtain a report that contains the contents of the device registers logged by unsupported devices.

Any known information for the entry is translated; the remaining information is output in hexadecimal longwords.

If you specify a device class keyword or a device name construct with both the /INCLUDE and /EXCLUDE qualifiers, the /INCLUDE qualifier takes precedence.

---

## EXAMPLES

1 \* ANALYZE/ERROR\_LOG/INCLUDE=MTA0

The report will consist of only error log entries for the device MTA0, which are in the default error log file ERRLOG.SYS.

2 \* ANALYZE/ERROR\_LOG/INCLUDE=(MTA0,VOL)

The report will consist only of error log entries and volume mounts and dismounts for the device MTA0, which are in the default error log file ERRLOG.SYS.

3 \* ANALYZE/ERROR\_LOG/INCLUDE=(DISK,VOLUME\_CHANGES)

The report will consist only of error log entries for disk volume information, which are in the default error log file ERRLOG.SYS.

# ERROR LOG

## /INCLUDE

**4** \$ ANALYZE/ERROR\_LOG/INCLUDE=(DISK,VOLUME\_CHANGES,DEVICE\_ERROR)

The report will consist only of error log entries for volume and device error information on disks, which are in the default error log file ERRLOG.SYS.

**5** \$ ANALYZE/ERROR\_LOG/INCLUDE=(DISK,VOLUME\_CHANGES,DEVICE\_ERROR,BUGCHECK)

The report will consist only of error log entries for volume and device error information on disks, and bugcheck errors. These entries are in the default error log file ERRLOG.SYS.

## ERROR LOG

/LOG

---

### /LOG

Controls whether informational messages that specify the number of entries selected and rejected for each input file are sent to SYS\$OUTPUT. By default, these messages are not displayed.

---

**FORMAT**      /[[NO]LOG

---

### EXAMPLE

⌘ ANALYZE/ERROR\_LOG/LOG ERRLOG.OLD;5

Informational messages generated about ERRLOG.OLD;5 are sent to SYS\$OUTPUT.

---

## /OUTPUT

Specifies the output file for the error log report.

---

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

---

**qualifier value**      **file-spec**

The output file selected for the error log report. See the *VAX/VMS DCL Dictionary* for details on specifying file specifications.

---

**DESCRIPTION**      If you omit the /OUTPUT qualifier, output is directed to SYS\$OUTPUT. If you specify /OUTPUT=file-spec, the selected output file will contain the error log report. If you omit the device or directory specification, the current device and the default directory are used. If you omit the filename, the filename of the input file is used. If you omit the file type, the file type is LIS.

Do not use /OUTPUT with the /BINARY qualifier.

---

## EXAMPLE

⚡ **ANALYZE/ERROR\_LOG/OUTPUT=ERROR\_LOG.LIS ERRLOG.OLD;72**

The output file ERROR\_LOG.LIS will contain entries generated from ERRLOG.OLD;72.

## ERROR LOG

### /REGISTER\_DUMP

---

## /REGISTER\_DUMP

Used in conjunction with the /INCLUDE qualifier to generate, in a hexadecimal longword format, a report that consists of device register information.

---

### FORMAT      /REGISTER\_DUMP

---

**DESCRIPTION** The /REGISTER\_DUMP qualifier can be used to obtain a report that lists the hexadecimal contents of the device registers for the device specified by the /INCLUDE qualifier. The /INCLUDE qualifier must be used with the /REGISTER\_DUMP qualifier.

/REGISTER\_DUMP only reports register contents for memory, device error, and device timeout entries. There is no translation of any of the device register information.

Do not use /REGISTER\_DUMP with the /BINARY qualifier.

---

### EXAMPLE

\* ANALYZE/ERROR\_LOG/INCLUDE=DB/REGISTER\_DUMP ERRLOG.OLD;72

The output will be in the format of a REGISTER\_DUMP report containing only entries that apply to the DB device.

## **/REJECTED**

Allows the user to specify the name of a file that will contain binary records for rejected entries.

**FORMAT** `/REJECTED [=file-spec]`

**qualifier value** *file-spec*  
 The name of the file that is to contain the rejected entries.

**DESCRIPTION** The `/REJECTED` qualifier creates a binary file that contains copies of the original binary error log entry. If an error log entry is rejected because of the filter (`/INCLUDE` and `/EXCLUDE` qualifiers) or interval (`/SINCE`, `/BEFORE`, and `/ENTRY` qualifiers) specified and the `/REJECTED` qualifier was also specified, the entry is written to the specified file.

Rejected entries are those entries that will not be translated because they fall into one of the following categories:

- All entries specified with the `/EXCLUDE` qualifier
- All entries not specified with the `/INCLUDE` qualifier
- Any entry that does not occur within the period specified by the `/SINCE` and `/BEFORE` qualifiers
- Any entry that is not in the range of entries specified by the `/ENTRY` qualifier

If you specify `/REJECTED=file-spec`, the output file will contain image copies of the rejected records. If you omit the device or directory specification, the current device and default directory are used. If you omit the file name, then the file name of the input file is used. If you omit the file type, the file type is REJ.

## **EXAMPLE**

**\* ANALYZE/ERROR\_LOG/INCLUDE=MTA0/REJECTED=REAL\_ERRS.DAT ERRLOG.OLD;5**

The output file REAL\_ERRS.DAT will contain image copies of all entries from ERRLOG.OLD;5 with the exception of those entries that apply to the MTA0 device.

# ERROR LOG

/SID\_REGISTER

---

## /SID\_REGISTER

Generates a report that consists of error log entries that occurred on the specified CPU.

---

**FORMAT**            /SID\_REGISTER [= %Xhexadecimal-value]

---

**qualifier value**    %Xhexadecimal-value

The value obtained from the system ID register. You use the \$GETSYI system service to obtain this value, which is unique to each system. The *VAX/VMS System Services Reference Manual* describes the \$GETSYI system service.

---

### EXAMPLE

⚡ ANALYZE/ERROR\_LOG/SID\_REGISTER=%X02006148 ERRLOG.OLD;72

The output will consist of only those entries that were logged for the system with the system ID of 02006148 (hexadecimal).

---

**/SINCE**

Specifies that only those entries dated later than the stated date-time be selected for the report.

---

**FORMAT**      **/SINCE** [=date-time]

---

**qualifier value**      **date-time**

Limits the error report to those entries dated later than the specified time.

---

**DESCRIPTION**      Only absolute date-time specifications are valid. See the *VAX/VMS DCL Dictionary* for details on specifying times.

If you omit the /SINCE qualifier, all entries are processed. If you specify /SINCE without a date-time, the default is TODAY.

---

**EXAMPLE**

‡ **ANALYZE/ERROR\_LOG/SINCE=22-MAR-1985-15:00 ERRLOG.OLD;56**

The error log report generated from ERRLOG.OLD;56 will contain entries that have been logged since 15:00 on March 22, 1985.

## ERROR LOG

### /STATISTICS

---

## /STATISTICS

Generates run-time statistical information.

---

### FORMAT      /STATISTICS

---

**DESCRIPTION** The /STATISTICS qualifier can be used to generate a report that consists of the page faults, buffered I/O, direct I/O, and CPU time used in the execution of the ANALYZE/ERROR\_LOG command.

---

### EXAMPLE

⚡ ANALYZE/ERROR\_LOG/STATISTICS ERRLOG.OLD;4

The output generated by this command consists of a full report of all entries in ERRLOG.OLD;4 and the run-time statistics for the execution of the command.

## /SUMMARY

Generates an error log report that consists of a statistical summary.

**FORMAT**            `/SUMMARY [=summary-type[,...]]`  
                       `/NOSUMMARY`

**qualifier parameter**        *summary-type*  
 The keyword for the selected type of summary.

**DESCRIPTION**    You may select the type of summary by specifying one or more of the following keywords:

Keyword	Meaning
DEVICE	Include the Device Summary section in the report.
ENTRY	Include the Summary of Entries Logged section in the report.
HISTOGRAM	Include the Processed Entries Hour of Day Histogram in the report.
MEMORY	Include the Summary of Memory Errors section in the report.
VOLUME	Include the Volume Label section in the report.

**Note:** If you specify `/SUMMARY` without a *summary-type*, the report contains all the summary types listed above. If only a summary report is desired, the command line must specify both the `/NOFULL` qualifier and the `/SUMMARY` qualifier.

No attempt should be made to correlate the error counts reported by the DCL command `SHOW ERROR` and the `/SUMMARY` qualifier. The discrepancy in these numbers could be due to any number of system events. For example, if an error occurs on a disk, the error is included in the summary report and the error count for the disk is incremented. The system may then attempt to retry the operation and, if another error occurs, only the error count for the disk is incremented; this second error is not included in the summary report.

Do not use the `/BINARY` qualifier with `/SUMMARY`.

## EXAMPLES

1    `$ ANALYZE/ERROR_LOG/SUMMARY ERRLOG.OLD;5`

The output generated by this command will include a full report and a summary report of all entries in `ERRLOG.OLD;5`.

2    `$ ANALYZE/ERROR_LOG/NOFULL/SUMMARY ERRLOG.OLD;5`

The output generated by this command will consist of only a summary report of all entries in `ERRLOG.OLD;5`.

# ERROR LOG

## /SUMMARY

3 \$ ANALYZE/ERROR\_LOG/SUMMARY=(ENTRY,DEVICE)

The output generated by this command will include only the Entry and Device sections of the summary report from the default input file ERRLOG.SYS.

4 \$ ANALYZE/ERROR\_LOG/INCLUDE=DBA4/NOFULL/SUMMARY ERRLOG.OLD;5

The output generated by this command will include only the summary report. The contents of the report will reflect only the device error, device timeout, and device attention entries that apply to the DBA4 device.

---

**ERROR LOG  
REPORT**

An error log report entry contains two sections: identification and device-dependent data. The identification section consists of the first four lines of the report. It is generated for all reports. The device-dependent data section, which follows the identification section, contains information on the selected error log entries.

The first line of the identification section identifies the error entry number. This number can be used to refer to a particular error log entry in a error log file. The second line contains the error sequence number and the system identification value. The error sequence number is a value assigned by the operating system to an error log entry to help determine if error log entries are being lost. This sequence number value will be reset to zero only when the system is rebooted. The third and fourth lines of this section specify the type of error log entry being reported, the date and time the entry was made, the processor type and revision level, and the system serial number.

The first line of the device-dependent data section may identify the device or subsystem on which the error occurred. The remainder of this section may consist of hardware information, which shows the contents of the device registers, and software information, which shows the contents of the I/O database at the time of the error.

The following output report is an example of the type generated by device errors, device attention, and device timeouts from a disk on the system.

*(Faint, illegible table content)*

# ERROR LOG

## Examples

```
V A X / V M S      SYSTEM ERROR REPORT      COMPILED 6-MAR-85 14:39
                                           PAGE 1.
***** ENTRY      5. *****
ERROR SEQUENCE 42.      LOGGED ON SID 01380101
DEVICE ERROR, 5-MAR-85 14:42:16.93
                     KA780 REV# 7. SERIAL# 257.
MASSBUS SUB-SYSTEM, UNIT _DBB1:
RH780 CSR      00000020      ADAPTER IS MBA
RH780 CR      00000004      INTERRUPT ENABLE
RH780 SR      00003080      "MASSBUS" EXCEPTION
                               DATA TRANSFER ABORTED
                               DATA TRANSFER COMPLETED
RH780 VAR      0000003C      60. BYTE, PAGE OFFSET
                               MAPPING REGISTER #0. SELECTED
RH780 BCR      FE00FE18      "SBI" BYTE COUNT, 488.
                               "MASSBUS" BYTE COUNT, 512.
RH780 MPR #0.  800034F1      VALID
                               TRANSFER PAGE, 6776.5. K
RPCS      00000830      WRITE DATA
                               DRIVE AVAILABLE
RPDS      000059C0      VOLUME VALID
                               DRIVE READY
                               DRIVE PRESENT
                               WRITE PROTECTED
                               MEDIUM ON-LINE
                               COMPOSITE ERROR
RPER1      00000800      WRITE LOCK ERROR
RPMR      00000100
RPAS      00000000
RPDA      00000105      SECTOR = 5.
                               TRACK = 1.
RPDT      00002012      DRIVE TYPE RPO6
                               MOVING HEAD
RPLA      00000110      SECOND QUARTER
                               SECTOR COUNTER = 4.
RPER2      00000000
RPDF      00009800      ECC INHIBIT
                               16-BIT FORMAT
                               SIGN CHANGE
RPDC      00000001      DESIRED CYLINDER = 1.
RPCC      00000001      CURRENT CYLINDER = 1.
```

# ERROR LOG

## Examples

```
V A X / V M S      SYSTEM ERROR REPORT      COMPILED 6-MAR-85 14:39
                                      PAGE 2.

RPSN              00000247
RPER3             00000000
RPEC1             00000000
RPEC2             00000000
UCB#B_ERTCNT      08
UCB#B_ERTMAX      08
UCB$L_OWNUIC      00000000
UCB$L_CHAR        1CC54008

UCB#W_STS         0910
UCB$L_OPCNT       0000000E
UCB#W_ERRCNT      0001
UCB$L_MEDIA       00010104

IRP#W_FUNC        000B
IRP#W_BCNT        0200
IRP#W_BOFF        001C
IRP$L_PID         0003003D
IRP#Q_IOSB        0000025C
                  00000000
```

8. RETRIES REMAINING

8. RETRIES ALLOWABLE

OWNER UIC [000,000]

DIRECTORY STRUCTURED  
FILE ORIENTED  
SHARABLE  
AVAILABLE  
ERROR LOGGING  
ALLOCATED  
CAPABLE OF INPUT  
CAPABLE OF OUTPUT  
RANDOM ACCESS

ONLINE  
BUSY  
SOFTWARE VALID

14. QIO'S THIS UNIT

1. ERRORS THIS UNIT

FUNCTION START ADDRESS,  
- CYLINDER #1.,  
- TRACK #1.,  
- SECTOR #4.

WRITE PHYSICAL BLOCK

TRANSFER SIZE 512. BYTE(S)

28. BYTE PAGE OFFSET

REQUESTOR "PID"

IOSB, 0. BYTE(S) TRANSFERRED

### Time Stamp, Volume Mount, and Volume Dismount Entries Examples

The following are examples of a system time stamp entry and volume mount and dismount entries. The time stamp entry contains only an identification section, which is logged by the operating system at 10 minute intervals. If no other error log entries are made during the 10 minute period, the previous time stamp is overwritten with the current time stamp at the end of the period.

The mount volume entry contains an identification section followed by a device-dependent data section. The device-dependent data section shows the name of the device the volume is mounted on, the volume label (if the volume has a label), and the I/O operations and error counts for the device.

The dismount volume entry is almost identical to the mount volume entry. In addition to the data provided in the volume mount entry, the I/O operations and error counts for the device the volume was mounted on are also reported.

# ERROR LOG

## Examples

```
***** ENTRY          93. *****
ERROR SEQUENCE 421.          LOGGED ON SID 01380101
TIME STAMP, 4-MAR-85 11:10:08.79
      KA780 REV# 7. SERIAL# 7.
***** ENTRY          94. *****
ERROR SEQUENCE 422.          LOGGED ON SID 01380101
MOUNT VOLUME, 4-MAR-85 11:14:12.51
      KA780 REV# 7. SERIAL# 7.
      UNIT _DMAO:, VOLUME LABEL "TEST"
      656. QIO OPERATIONS THIS UNIT, 1. ERRORS THIS UNIT
***** ENTRY          95. *****
ERROR SEQUENCE 423.          LOGGED ON SID 01380101
DISMOUNT VOLUME, 4-MAR-85 11:14:41.30
      KA780 REV# 7. SERIAL# 7.
      UNIT _DMAO:, VOLUME LABEL "TEST"
      697. QIO OPERATIONS THIS UNIT, 1. ERRORS THIS UNIT
      41. QIO OPERATIONS THIS VOLUME, 0. ERRORS THIS VOLUME
```

### Machine Check Entries Example

The following are examples of machine check error reports. Each report consists of three sections: the identification section, the program counter and summary code section, and an error-dependent section.

The program counter and summary code section of the report displays the contents of the program counter, the processor status longword, and the summary code. The contents of the processor status longword and the summary code are described in the text on the right side of the report.

The remainder of the report (the error-dependent section) consists of CPU-dependent information that was logged as a result of the machine check.

```
***** ENTRY          6. *****
ERROR SEQUENCE 3.          LOGGED ON SID 03003700
MACHINE CHECK, 6-MAR-1985 10:11:34.70
      KA730 REV# 0. MIC# 56.
      EXCEPTION PC      80038DC0
      ERROR PSL        01C00000
      SUMMARY CODE     00000007
      1ST PARAMETER    00166200
      INTERRUPT PRIORITY LEVEL = 00.
      PREVIOUS MODE = USER
      CURRENT MODE = EXECUTIVE
      UNCORRECTABLE ECC ERROR
      PAGE #2865. IN ERROR
***** ENTRY          60. *****
ERROR SEQUENCE 4872.          LOGGED ON SID 02006148
MACHINE CHECK, 6-MAR-1985 03:50:08.28
      KA750 REV# 72. MIC# 97.
      EXCEPTION PC      80006173
      ERROR PSL        00C80009
      C-BIT
      N-BIT
      INTERRUPT PRIORITY LEVEL = 08.
      PREVIOUS MODE = USER
      CURRENT MODE = KERNEL
```

# ERROR LOG

## Examples

```
SUMMARY CODE      00000002
VA LAST REF       800A079E
PC AT ERROR       80006178
MDR               8009F38C
SMR               00000008
TRANSLATION BUFFER OR BUS ERROR

CPU MODE = KERNEL
VIRTUAL
READ

RLTO              00000000
TBER              00000007
TB GO DATA ERROR
TB G1 DATA ERROR
TB GO TAG ERROR

CAER              00000000
BER               00000000
MCESR             00000004
OPERAND REFERENCE
TB PARITY ERROR

***** ENTRY      84. *****
ERROR SEQUENCE 4949.          LOGGED ON SID 01388525
MACHINE CHECK,  6-MAR-1985 15:09:11.31
                    KA780 REV# 7. SERIAL# 1317.
EXCEPTION PC      00004890
ERROR PSL         03C00000
INTERRUPT PRIORITY LEVEL = 00.
PREVIOUS MODE = USER
CURRENT MODE = USER

SUMMARY CODE      00000000
CES               00010084
CP READ TIMEOUT
- OR ERROR CONFIRMATION FAULT

SUPERVISOR AST PENDING
ALU C31
NESTED ERROR

MICRO PC          00000200
VA/VIBA           7FF736D4
D REGISTER        FFFFC284
TBERO             0000DC81
ENABLE MEMORY MANAGEMENT
TB HIT GROUP 1
MICRO CODE "MCT" FIELD = 07
MICRO CODE "ADS"
MICRO CODE "FS"

TBER1             00000040
LAST TB WRITE PULSE TO GROUP 1

SBITA            E00B83F5
TIMEOUT CONSOLE ADDR = 002E0FD4
PROTECTION CHECKED REFERENCE
TIMEOUT REFERENCE IN USER MODE

CACHE PE REG     00004000
CP ERROR

SBIER            00001802
SBI NOT BUSY
WAITING FOR READ DATA TIMEOUT
CPU TIMEOUT
```

# ERROR LOG

## Examples

```
***** ENTRY      82. *****
ERROR SEQUENCE 1077.          LOGGED ON SID 04FFFFFF
MACHINE CHECK 30-MAR-1985 20:55:17.41
      KA86 REV# 255. SERIAL# 4095. MFG PLANT 7.
      EHMSTS      40000802
                                VMS ERROR CODE = EBOX
                                MICRO TRAP VECTOR = 08 (X)
                                EHM ENTERED
      EVMQSAV     00000004
                                VIRTUAL ADDRESS FOR EBOX PORT
                                _ REQUESTS
      EBCS        00000800
                                ECS PARITY ERROR
      EDPSR       00000000
      CSLINT      04183D1F
                                C BUS ADDRESS = 1F (X)
                                C BUS DATA = 3D (X)
                                INTERRUPT PRIORITY REQUEST = 8.
                                INTERNAL SOURCE
                                I/O ADAPTER = 0.
                                INTERVAL TIMER
      IBESR       00004000
                                UOP SEL = IBOX REGISTER SELECT
                                UTPR <2:0> = EBOX PORT
                                ENABLE ETRAP
      EBXWD1      00000004
                                TOP OF "SP STACK"
                                _ CONTENT IS ONE OF THE LAST
                                _ LONGWORDS WRITTEN TO MBOX
      EBXWD2      7FF593D0
                                TOP OF "SP STACK" MINUS ONE
                                _ CONTENT IS ONE OF THE LAST
                                _ LONGWORDS WRITTEN TO MBOX
      VASAV       7FF593F8
                                VIRTUAL ADDRESS FOR OP FETCH
                                _ PORT REQUEST ADDRESS
                                _ CALCULATION FOR OPERAND
                                _ PRE-FETCH AND RESULT DELIVERY
      VIBASAV     0000E7FF
                                VIRTUAL ADDRESS OF NEXT IBUF
                                _ PORT REQUEST TO FILL IBUFFER
      ESASAV      0000E7F2
                                PC OF INSTRUCTION DURING EBOX
                                _ EXECUTION AND RESULT STORAGE
      ISASAV      0000E7F2
                                PC OF INSTRUCTION WHICH VA
                                _ CALCULATION UNIT IS DOING ADDRESS
                                _ CALCULATION OR OPERAND PRE-FETCH
                                _ OR IS PASSING OPERAND DATA
      CPC         0000E7F4
                                PC OF INSTRUCTION IN
                                _ DECODE UNIT
      MSTAT1      84006004
                                CO TAG MISS
                                BLOCK HIT
                                ABUS ADAPTER = 0.
                                WORD COUNT = 0.
                                CYCLE TYPE = READ REGISTER
                                DEST CP = EBOX
      MSTAT2      00004F00
                                DIAGNOSTIC STATUS FROM SBIA
                                _ RD COM/MSK <3:0> = F (X)
                                _ RD DAT L/S <1:0> = 0 (X)
                                _ ABUS BAD DATA CODE
                                PAMM DATA = ARRAY #0.,SLOT #1.
```

# ERROR LOG

## Examples

```
MDECC      00066200      (* DATA NOT VALID *)
MERRG      04000100      MEMORY MANAGEMENT ENABLE
CSHCTL     00000003      CACHE 0 ENABLE
                                CACHE 1 ENABLE
MEAR       0000007C      PHYSICAL ADDRESS IN PA LATCH
                                AT TIME OF ERROR = 0000007C
MEDR       0000001F      DATA WORD USED DURING ERROR
FBXERR     FFFFFFFF      (* DATA NOT VALID *)
CSES       1BD73E01      CS CODE = EBOX CONTROL STORE PARITY ERROR
                                CS SYNDROME = 3E (X)
                                CS ADDRESS = 1BD7 (X)
ERROR PC   0000E7F2
ERROR PSL  03C00004      Z-BIT
                                INTERRUPT PRIORITY LEVEL = 00.
                                PREVIOUS MODE = USER
                                CURRENT MODE = USER
IOA ES     00000000      (* DATA NOT VALID *)
```

AN/ER/INC=MACH ERR:ERRLOG.SYS\_31MAR1985/ENT=S=82/OUT=DP.

### Memory Error Entries Example

Memory error log entries consist of two types: fatal and nonfatal. A nonfatal memory error indicates that a single bit has failed within a memory location and that the ECC (error code correctable) was able to compensate for the error and correct the data. A fatal error indicates that multiple bits were erroneous and that the ECC could not correct the data. Both the fatal and nonfatal memory entries are similar in their format. The memory error log reports can be divided into two logical areas of information.

The first section of a memory error log report is the identification area. The second section contains memory controller-specific information. This data represents the information contained within the memory controller registers at the time of the memory error. Bit-to-text translation of the registers are performed, and then listed on the right side of the report.

```
***** ENTRY 7. *****
ERROR SEQUENCE 4. LOGGED ON SID 03003700
MEMORY ERROR, 6-MAR-1985 10:11:34.70
                KA730 REV# 0. MIC# 55.
CSR0           00166200      ERROR SYNDROME = 7F
                                CORRECTED ERROR, BIT #31.
                                ARRAY #1. IN ERROR
CSR1           18000000      MEMORY MAPPING ENABLE
                                ENABLE "CRD" REPORTING
CSR2           8100000F      MEMORY SIZE = 2048.K
                                64K RAMS PRESENT
```

# ERROR LOG

## Examples

```
***** ENTRY          91. *****
ERROR SEQUENCE 342.                LOGGED ON SID 0138207A
FATAL MEMORY ERROR, 4-MAR-85 08:16:45.20
KA780 REV# 7. SERIAL# 122.
CONTROLLER AT TR #5.
PRTCFNG      00000040
              ADAPTER IS MULTI-PORT MEMORY
              PORT NUMBER = 0.
PRTCR        00000003
              MASTER INTERRUPT ENABLE
              PORT INTERFACE INTERRUPT ENABLE
              RAM COUNT 0.
PCSR         07870003
              ERROR INTERRUPT ENABLE
IVDTCR       01870001
              INVALIDATE CACHE DEVICE ID = 0.
              8. ARRAY BOARD(S) PRESENT
              MEMORY BASE ADDRESS = 6144.K
AER          16A70005
              ERROR SYNDROME = 05
              RDS ERROR
              ARRAY #6. IN ERROR
              ARRAY BANK #1. IN ERROR
              ERROR LOG REQUEST
CSRO         0000C2C8
              MEMORY CONTAINS VALID DATA
              PORT #2. POWERED DOWN
              PORT #3. POWERED DOWN
              ERROR INTERRUPT FROM PORT #1.
              PORT #2. OFFLINE
              PORT #3. OFFLINE
CSR1         0000380A
              PORT #0. CONNECTED TO AN SBI
              PORT #1. CONNECTED TO AN SBI
              PORT #2. NOT PRESENT
              PORT #3. NOT PRESENT
              INVALIDATION MAP PRESENT
              PORT #0. INVALIDATION ACK RECEIVED
              PORT #1. INVALIDATION ACK RECEIVED
MAT          0000C000
```

### Nonfatal and User Bugchecks Entry Example

Shown below is an example of a fatal bugcheck. Both nonfatal and user bugcheck reports have the same format. These reports consist of three major sections: identification, bugcheck reason and process information, and system register information.

```
***** ENTRY          58. *****
ERROR SEQUENCE 1129.                LOGGED ON SID 03003700
FATAL BUGCHECK, 21-FEB-1895 11:06:53.49
KA730 REV# 0. MIC# 55.
ACPMBFAIL, ACP failure to read mailbox
PROCESS NAME  .....
PROCESS ID    00000000
ERROR PC     0000033C
ERROR PSL    00DF0008
              N-BIT
              INTERRUPT PRIORITY LEVEL = 31.
              PREVIOUS MODE = USER
              CURRENT MODE = KERNEL
```

# ERROR LOG

## Examples

```
STACK POINTERS
KSP 7FFE7D84  ESP 7FFE9E00  SSP 7FFED04E  USP 7FF7F194  ISP 80140000

GENERAL REGISTERS
R0 00000001  R1 00000000  R2 7FFDFD80  R3 80000F10  R4 00000001
R5 00000001  R6 7FFED78A  R7 7FFED78A  R8 7FFED052  R9 7FFED25A
R10 00000000  R11 7FFE3FC0  AP 00000000  FP 7FFE7DD0  SP 7FFE7DC8

SYSTEM REGISTERS
POBR          80199000          PO PTE BASE (VIRT ADDR)
POLR          00000003          TOTAL PO PAGES
P1BR          7F9A8A00          P1 PTE BASE (VIRT ADDR)
P1LR          001FFBE5          TOTAL NON-EXISTENT P1 PAGES
SBR           001FA600          SYSTEM PTE BASE (PHY ADDR)
SLR           00001680          TOTAL PAGES 'SYSTEM' VIRT MEM
PCBB          00024874          PCB BASE (PHY ADDR)
SCBB          001F8400          SCB BASE (PHY ADDR)
ASTLVL        00000002          SUPERVISOR MODE AST PENDING
SISR          00000000          INTERRUPT REQUEST ACTIVE = 0.
ICCS          800000C1          RUN
                                INTERRUPT ENABLE
                                INTERRUPT
                                ERROR
ICR           FFFF89D          INTERVAL COUNT REGISTER
TODR          396FEB84
```

### Unknown Entries Example

Shown below are example reports for error log entries of unknown type. These reports consist of an identification section and a error log record section. The error log record section will contain any field that can be interpreted and the longword values for the fields that cannot be interpreted.

```
***** ENTRY          95. *****
ERROR SEQUENCE 2.          LOGGED ON SID 03003600
"UNKNOWN DEVICE" ENTRY,  4-MAR-85 10:12:12.44
                          KA730 REV# 0. MIC# 54.

ERROR LOG RECORD
ERF$L_SID          03003600          SYSTEM ID REGISTER
ERL$W_ENTRY        0062          ERROR ENTRY TYPE
EXE$GQ_SYSTIME    C9764980          64 BIT TIME WHEN ERROR LOGGED
                          008C2F30
ERL$GL_SEQUENCE    0002          UNIQUE ERROR SEQUENCE = 2.
UCB$W_STS          0110          DEVICE STATUS
UCB$B_DEVCLASS     42          DEVICE CLASS = 66.
```

# ERROR LOG

## Examples

```
UCB$B_DEVTYPE      42
UCB$W_UNIT          0000
UCB$W_ERRCNT        0001
UCB$L_OPCNT         00000001
ORB$L_OWNER         00010004
UCB$L_DEVCHAR       0C440007
UCB$B_SLAVE         00
DDB$T_NAME          41515403
                    00000000
                    00000000
                    00000000
                    / .TQA...../
LONGWORD 1.         00000008
LONGWORD 2.         00000007
LONGWORD 3.         00000502
LONGWORD 4.         04000000
LONGWORD 5.         00010000
LONGWORD 6.         00000000
LONGWORD 7.         00000080
LONGWORD 8.         00000000
LONGWORD 9.         00000000

***** ENTRY      161. *****
ERROR SEQUENCE 213.                               LOGGED ON SID 070001FF
"UNKNOWN ENTRY", 4-MAR-85 11:35:15.73
                UVAX1 REV# 255. MIC# 1.

ERROR LOG RECORD
ERF$L_SID          070001FF
ERL$W_ENTRY        0008
EXE$GQ_SYSTIME    89953F20
                  008C3E2A
ERL$GL_SEQUENCE   00D5
LONGWORD 1.       00000001
LONGWORD 2.       00410001

SYSTEM ID REGISTER
ERROR ENTRY TYPE
64 BIT TIME WHEN ERROR LOGGED
UNIQUE ERROR SEQUENCE = 213.
/..../
/..A./
```

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## READER'S COMMENTS

**Note:** This form is for document comments only. DIGITAL will use comments submitted on this form at the company's discretion. If you require a written reply and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Did you find this manual understandable, usable, and well organized? Please make suggestions for improvement.

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Did you find errors in this manual? If so, specify the error and the page number.

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Please indicate the type of user/reader that you most nearly represent:

- Assembly language programmer
- Higher-level language programmer
- Occasional programmer (experienced)
- User with little programming experience
- Student programmer
- Other (please specify) \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

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