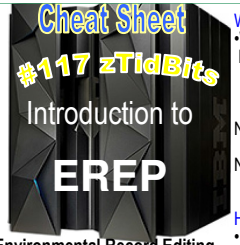


Environmental Record Editing and Printing Program

• The Environmental Record Editing and Printing Program (EREP) is a diagnostic application program that runs under the z/OS, z/VM and z/VSE operating systems.
- The purpose of EREP is to help IBM service representatives maintain your data processing installation.
- EREP edits and prints reports from the records placed in the error recording data set (ERDS) by the error recovery program (ERP) of your operating system.
- Some of these records are the result of device or system errors, while others are informational or statistical data.
- The service representative analyzes information in the EREP reports to determine if a problem exists, what the problem is, and where the problem is located.

What EREP Does

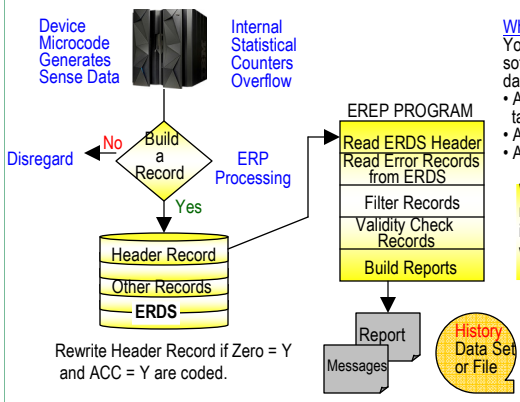
• EREP processes the error records from your operating system to produce formatted reports.
- These EREP reports can show the status of the entire installation, an I/O subsystem, or an individual device depending upon which report you request.
- EREP reports vary in format depending on type ▶

Report Type		Format
System summary	-	Error data in summary form
Trends	-	Error data by daily totals
Event history	-	Error data in a time sequence by occurrence.

NOTE:

1. EREP edits and prints records that already exist; it does *not* create the error records.
2. EREP is not designed to automate media maintenance or library management.
   - It is a service tool that shows statistical data that helps your IBM service representative determine whether a problem is media related or hardware related.

See illustration below on how records are built from device sense data and then what EREP does with those records.



Rewrite Header Record if Zero = Y and ACC = Y are coded.

Where Records Come From

Your operating system with its hardware and software captures statistical and error data, such as:
- A read error on a direct access device or tape volume
- A machine check on a processor
- An IPL of the operating system

When ERDS is almost full, the recording routines sense it and issues a message. Run EREP with the parameters required to clear the ERDS periodically.

You should always create a history file before running EREP reports. By creating a history file and then running all the reports against that file, you ensure that all of the reports are using the same set of records.

The record building report process and what EREP does with those records.

How Data is Processed and Records Built

- The system procedure executing EREP issues commands to write the buffered statistical data from the system-attached devices to the ERDS.
- The system ERP builds the records in the following stages:

STAGE	ACTION
1	The device attaches to the operating system generates sense data for The events encountered during the day. The sense data can be informational, error-related or statistical.
2	The ERP of the operating system looks at the sense data. If the sense data indicates that a record should be built, the ERP takes the sense data and places it after the standard header information. The combination of the header information and the sense data become the error record.
3	The operating system ERP writes the records onto the system ERDS.

- If any of the devices do not respond to the system commands, EREP stops and does not continue until the device that does not respond is brought back online.
  - System diagnostics can be used to determine which device is causing the problem.

Where the Records are Stored

- The records are stored in the ERDS of the operating system.
  - The ERDS goes by a different name in each operating system:
    z/OS it's stored in the ERDS and the default is SYS1.LOGREC, but it can be installation modified.
    z/VM it's stored in the *error recording area*.

You can receive three different kinds of output in each EREP run

- Messages files
- Report files
- History files.

(see lower right).

Invoking EREP

- You run EREP by executing a procedure containing the operating system EREP command, its associated parameter and control statements.
- You can only request one type of report each time you execute the EREP command for your system.
  - You may produce any number of different type reports by including additional EREP commands with the associated parameters and control statements.
- You must provide system controls that create the interface between EREP and the operating system's data management functions.

If your z/OS, z/VM, or z/VSE installation has multiple processors running under the same or different operating systems, it may be possible to combine all of your error records into one history file.

EREP should be run regularly and frequently. You can set up a series of jobs in cataloged procedures, that can be started by the operator or by a timer at set intervals. You can create several procedures to cover various situations.

Maintaining ERDS Data Integrity

- Whenever you offload data from a file, you run the risk of losing, duplicating, or otherwise ruining the data.

Note: If the step or job fails and you subsequently rerun it, be aware that you may duplicate some of the records already on the output.

If the step does not fail, but no records are copied to the output, subsequent steps can be using an empty input file for the reports.

What EREP does with the Records

- When you run EREP, it reads records directly from the ERDS and processes them to produce the report you have requested.

EREP processing includes:
- Filtering the records through the selection parameters set up for the report
- Checking records for validity
- Reviewing records to see if they belong in the reports

Note: IFCEREP1 always opens the ERDS for update mode. Users with only read authority will not be able to produce reports or copy the ERDS to a temporary history data set.

Note: With the exception of system summary report, IFCEREP1 opens the ERDS in read mode if ZERO=N is specified or defaulted. Users with only read authority can produce reports or copy the ERDS to a temporary history data set when ZERO=N is specified or defaulted.

How EREP Filtering is Done

- EREP filters through the records it read from the ERDS to determine:
  - Which records satisfy the selection parameters
  - The record length
  - Whether the first byte of data is a valid record type
  - Whether the record has been truncated by the operating system
- EREP then relays the following standard message to the EREP messages file where xxx is the number of valid records EREP saw.
  - If the message indicates 0 records passed filtering, the file may be missing or there may be invalid data in the file.
  - You may also receive the following message:
    IFC122I xxx records ignored because truncated bit on where xxx is the number of valid records ignored.
    IFC120I xxx records passed filtering.
- This indicates that a number of records were truncated as they were placed in the ERDS or history file.
  Note: The operating system, not EREP, truncates the records and does not indicate which records were not processed.

How EREP Checks Records for Validity

- To check all DASD OBR, MDR or A3 records for validity, EREP:
  - Uses a device product specification table to check each record
  - Reviews the content of certain bytes within the record

Note: EREP accepts only records that are built to the specifications of each device.

- If a record is invalid, EREP puts an IFC264I or IFC265I message and a hex dump of the record in the EREP messages file
- Invalid records may be the result of:
  - Invalid data, missing data, or conflicting data within the records
  - Down level microcode patch to the hardware
  - Program temporary fix (PTF) missing on the operating system
  - PTF missing on the EREP system maintenance.

How EREP Selects Records When Building Reports

After records have been filtered and validity checked, EREP reviews each record to see whether to include it in the requested reports.

- Since each report has its specific criteria, not all records appear in all reports.
  Note: If you do not see a record that you feel should be in the report, check the EREP messages file to see if the record is listed. If it is not, consider the following:
  - The sense data can cause a record to be excluded from a report. If sense byte 26, bit 6 is turned off in a 3390 record, the record is not included in the system exception series (SYSEXN) reports.
  - The record could be a type that is not normally processed by the particular report. SIM-producing device records do not appear on a TRENDS report.
  - The record may have been rejected; Records that have not passed through the previous checks are not included in the report.

Messages Files

EREP puts messages and processing information about the statements it executes into the messages (TOURIST) file.

- The EREP messages file shows:
  - Which parameters, including defaults, have been applied to the input records
  - The number of records passing filtering
  - The number of records processed
  - How EREP has interpreted the control statements you set up
  - The messages issued during processing.

Report Files

- EREP formats information about the recorded errors into the reports that you request.
  - You need to run EREP reports daily in large installations and weekly in smaller installations.
  - Use your EREP reports to look for indications of system or device problems.

Note: Because there is no way to show you all the possible variations caused by different devices and different parameter combinations, your reports will not look exactly like the reports in this manual.

- Your operating system, the hardware devices installed, and the version of EREP that you are running determine the reports you can print.
  - The examples in the maintenance documentation for your specific devices show information on the types of reports available and details of the various parts of the reports.

History Files

- You should always create a history file before running EREP reports.
  - By creating a history file and then running all the reports against that file, you ensure that all of the reports are using the same set of records.

Parameters and Control Statements

- All of the operating systems use the same parameters and control statements to tell EREP what specific information to print in the reports.
- The parameters and control statements can be grouped according to the kinds of information they convey to the EREP program.