

EDR Module Configuration Mode Commands

The EDR Module Configuration Mode allows you to configure Event Data Record (EDR) file transfer parameters.

Command Modes

Exec > Global Configuration > Context Configuration > EDR Module Configuration

configure > context *context_name* **> edr-module active-charging-service**

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-edr)#
```

Important The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

- cdr, on page 1
- end, on page 6
- exit, on page 6
- file, on page 7

cdr

This command allows you to configure EDR/UDR file transfer parameters.

Product

All

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > EDR Module Configuration

configure > context *context_name* **> edr-module active-charging-service**

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-edr)#
```

Syntax Description

cdr { purge { storage-limit *storage_limit* **| time-limit** *time_limit* **} [max-files** *max_records_to_purge* **] | push-interval** *push_interval* **| push-trigger space-usage-percent** *trigger_percentage* **| remove-file-after-transfer |**

```
transfer-mode { pull [ module-only ] | push primary { encrypted-url
encrypted_url | url url } [ [ max-files max_records ] [ max-tasks task_num ] [
module-only ] [ secondary { encrypted-secondary-url encrypted_secondary_url |
 secondary-url secondary_url } ] [ source-address ip_address ] [ via
local-context ] + ] | use-harddisk } | push-count push_count
default cdr [ purge | push-interval | push-trigger space-usage-percent |
 remove-file-after-transfer | transfer-mode [ module-only | push via ] |
 use-harddisk ] +  | push-count
no cdr [ purge | remove-file-after-transfer | use-harddisk ] +
```

default

Configures the default setting for the specified keyword(s):

- **purge**: Disabled
- **push-interval**: 300 seconds
- **push-trigger**: 80 percent
- **remove-file-after-transfer**: Disabled
- **transfer mode**: Pull
- **push via**: LC is used for push
- **use-harddisk**: Disabled

Important The **use-harddisk** keyword is available only on the ASR 5500 chassis.

no

If previously configured, disables the specified configuration:

- **purge**: Disables purging of records.
- **remove-file-after-transfer**: Retains a copy of the file even after it has been pushed or pulled to another server.
- **use-harddisk**: Disables data storage on the ASR 5500 hard disk array.

Important The **use-harddisk** keyword is available only on the ASR 5500 chassis.

- **push-count** *push_count*: Specifies the number of EDR/CDR/UDR files transferred in each EDR/UDR push SFTP session. Default value is "1". *push_count* is configured as an integer value between 1 and 32, inclusive.

purge { storage-limit *storage_limit* | time-limit *time_limit* } [max-files *max_records_to_purge*]

Specifies to purge/delete the EDR records based on "time" or "volume" limit.

When the configured threshold limit is reached on the hard disk drive, the records that are created dynamically in the */mnt/hd-raid/data/records/* directory are automatically deleted. Files that are manually created should be deleted manually.

- **storage-limit** *storage_limit*: Specifies to start deleting files when the specified megabytes of space is used for storage. The *storage_limit* specifies the volume limit for the record files, in megabytes, and must be an integer from 10 through 143360.
- **time-limit** *time_limit*: Specifies to start deleting files older than the specified time limit. The *time_limit* specifies the time limit for the record files, and must be an integer from 600 through 2592000.
- **max-files** *max_records_to_purge*: Specifies the maximum number of records to purge.

  The *max_records_to_purge* can be 0, or an integer from 1000 through 10000. If the value is set to 0, during each cycle, the records will be deleted until the purge condition is satisfied. If the value is set between 1000 and 10000, during each cycle, the records will be deleted until either the purge condition is satisfied or the number of records deleted equals the configured **max-files** value.

  Default: 0

push-interval *push_interval*

Specifies the transfer interval (in seconds) to push EDR and UDR files to an external file server.

The *push_interval* must be an integer from 60 through 3600.

Default: 300

push-trigger space-usage-percent *trigger_percentage*

Specifies the EDR/UDR disk space utilization percentage, upon reaching which an automatic push is triggered and files are transferred to the configured external server.

The *trigger_percentage* specifies the EDR/UDR disk utilization percentage for triggering push, and must be an integer from 10 through 80.

Default: 80

remove-file-after-transfer

Specifies that the system must delete EDR/UDR files after they are transferred to the external file server.
Default: Disabled

transfer-mode { pull [module-only] | push primary { encrypted-url *encrypted_url* | url *url* } [[max-files *max_records*] [max-tasks *task_num*] [module-only] [secondary { encrypted-secondary-url *encrypted_secondary_url* | secondary-url *secondary_url* }] [source-address *ip_address*] [via local-context] +]

Specifies the EDR/UDR file transfer mode—how the EDR and UDR files are transferred to the external file server.

- **pull**: Specifies that the external server is to pull the EDR files.
- **push**: Specifies that the system is to push EDR files to the external server for ASR 5500.
- **max-files** *max_records*: Specifies the maximum number of files sent per iteration based on configured file size.

Default: 4000

- **max-tasks** *task_num*: Specifies the maximum number of tasks (child processes) that will be spawned to push the files to the remote server. The *task_num* must be an integer from 4 through 8.

  Default: 4

Important Note that increasing the number of child processes will improve the record transfer rate. However, spawning more child will consume additional resource. So, this option needs to be used with proper resource analysis.

- **module-only**: Specifies that the transfer-mode is only applicable to the EDR module; if not configured it is applicable to both EDR and UDR modules. This enables to support individual record transfer-mode configuration for each module.
- **primary encrypted-url** *encrypted_url*: Specifies the primary URL location in encrypted format to which the system pushes the EDR files.

  The *encrypted_url* must be the location, and must be an alphanumeric string of 1 through 1024 characters in the "*//user:password@host:[port]/directory*" format.

  If colon is specified after host, the port number is mandatory. The default SFTP port number is 22.

  If colon is not specified after host, the port number need not be entered and the default SFTP port number is used.
- **primary url** *url*: Specifies the primary URL location to which the system pushes the EDR files.

  The *url* must be the location, and must be an alphanumeric string of 1 through 1024 characters in the "*//user:password@host:[port]/directory*" format.

  If colon is specified after host, the port number is mandatory. The default SFTP port number is 22.

  If colon is not specified after host, the port number need not be entered and the default SFTP port number is used.
- **secondary encrypted-secondary-url** *encrypted_secondary_url*: Specifies the secondary URL location in encrypted format to which the system pushes the EDR files when the primary location is unreachable or fails.

  The *encrypted_secondary_url* must be the secondary location in an encrypted format, and must be an alphanumeric string of 1 through 1024 characters in the "*//user:password@host:[port]/directory*" format.

  If colon is specified after host, the port number is mandatory. The default SFTP port number is 22.

  If colon is not specified after host, the port number need not be entered and the default SFTP port number is used.
- **secondary secondary-url** *secondary_url*: Specifies the secondary location to which the system pushes the EDR files when the primary location is unreachable or fails.

  The *secondary_url* must be the secondary location, and must be an alphanumeric string of 1 through 1024 characters in the "*//user:password@host:[port]/directory*" format.

  If colon is specified after host, the port number is mandatory. The default SFTP port number is 22.

  If colon is not specified after host, the port number need not be entered and the default SFTP port number is used.

- **source-address** *ip_address*: Configures the source IP address to be used to establish the connection for the SFTP/SSH file-transfer operation.
- **via local-context**: Configuration to select LC/SPIO for transfer of EDRs. The system pushes the EDR files via SPIO in the local context.

use-harddisk



Important The **use-harddisk** keyword is available only on the ASR 5500 chassis.

Specifies that on the ASR 5500 chassis the hard disk the FSC hard disk array be used to store EDR/UDR files. On configuring to use the hard disk for EDR/UDR storage, EDR/UDR files are transferred from DPCs to the hard disk array. Default: Disabled

+

Indicates that multiple keywords can be specified in a single command entry. When the "+" appears in the syntax, any of the keywords that appear prior to the "+" can be entered in any order.

push-count *push_count*

Specifies the number of EDR/CDR/UDR files transferred in each EDR/UDR push SFTP session. Default value is "1". push_count is configured as an integer value between 1 and 32,inclusive.



Note When push_count is set to “1”, file transfer operation is functionally identical to legacy behavior.

Usage Guidelines

Use this command to configure how the EDRs are moved and stored.

On the ASR 5500 chassis, you must run this command only from the local context. If you run this command in any other context it will fail and result in an error message.

If PUSH transfer mode is configured, the external server URL to which the EDR files need to be transferred to must be specified. The configuration allows a primary and a secondary server to be configured. Configuring the secondary server is optional. Whenever a file transfer to the primary server fails for four consecutive times, the files will be transferred to the secondary server. The transfer will switch back to the original primary server when:

- Four consecutive transfer failures to the secondary server occur.
- After switching from the primary server, 30 minutes elapses.

When changing the transfer mode from pull to push, disable the PULL from the external server. Make sure that the push server URL configured is accessible from the local context. Also, make sure that the base directory that is mentioned contains udr directory created within it.

After changing the transfer mode from push to pull, enable external server for ASR 5500. Any of the ongoing PUSH activity will continue till all the scheduled file transfers are completed. If there is no PUSH activity going on at the time of this configuration change, all the PUSH related configuration is nullified immediately.

The **cdr use-harddisk** command is available only on the ASR 5500 chassis. This command can be run only in a context where CDRMOD is running. Configuring in any other context will result in failure with the message *"Failure: Please Check if CDRMOD is running in this context or not."*

The **cdr use-harddisk** command can be configured either in the EDR or UDR module, but will be applicable to both record types. Configuring in one of the modules will prevent the configuration to be applied in the other module. Any change to this configuration must be done in the module in which it was configured, the change will be applied to both record types.

The VPNMgr can send a maximum of 4000 files to the remote server per iteration. However if the individual file size is big (say when compression is not enabled), then while transferring 4000 files SFTP operation takes a lot of time. To prevent this, the **cdr transfer-mode push** command can be configured with the keyword **max-files**, which allows operators to configure the maximum number of files sent per iteration based on configured file size.

Example

The following command retains a copy of the data file after it has been transferred to the storage location:

```
no cdr remove-file-after-transfer
```

end

Exits the current configuration mode and returns to the Exec mode.

Product All

Privilege Security Administrator, Administrator

Syntax Description

```
end
```

Usage Guidelines Use this command to return to the Exec mode.

exit

Exits the current mode and returns to the parent configuration mode.

Product All

Privilege Security Administrator, Administrator

Syntax Description

```
exit
```

Usage Guidelines Use this command to return to the parent configuration mode.

file

This command allows you to configure EDR file parameters.

Product

All

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > EDR Module Configuration

configure > context *context_name* **> edr-module active-charging-service**

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-edr)#
```

Syntax Description

file [charging-service-name { include | omit }] [compression { gzip | none }] [current-prefix *string* **] [delete-timeout** *seconds* **] [directory** *directory_name* **] [edr-format-name] [exclude-checksum-record] [field-separator { hyphen | omit | underscore }] [file-sequence-number rulebase-seq-num] [headers] [name** *file_name* **] [reset-indicator] [rotation [num-records** *number* **| tariff-time minute** *minute_value* **hour** *hour_value* **| time** *seconds* **| volume** *bytes* **]] [sequence-number { length** *length* **| omit | padded | padded-six-length | unpadded }] [storage-limit** *limit* **] [single-edr-format] [time-stamp { expanded-format | rotated-format | unix-format }] [trailing-text** *string* **] [trap-on-file-delete] [unique-seq-num] [xor-final-record] +**
default file [charging-service-name] [compression] [current-prefix] [delete-timeout] [directory] [edr-format-name] [field-separator] [file-sequence-number] [headers] [name] [reset-indicator] [rotation { num-records | tariff-time | time | volume }] [sequence-number] [storage-limit] [time-stamp] [trailing-text] [unique-seq-num] +

default

Configures the default setting for the specified keyword(s).

charging-service-name { include | omit }

Specifies to include/exclude name of the charging service in the file name.

- **include**: Include name of the charging service in the EDR file name.
- **omit**: Exclude name of the charging service in EDR file name.

compression { gzip | none }

Specifies compression of EDR files.

- **gzip**: Enables GNU zip compression of the EDR file at approximately 10:1 ratio.
- **none**: Disables Gzip compression.

current-prefix *string*

Specifies a string to add to the beginning of the EDR file that is currently being used to store EDR records.

string must be an alphanumeric string of 1 through 31 characters.

Default: **curr**

delete-timeout *seconds*

Specifies a timeout period (in seconds) when completed EDR files are deleted. By default, files are never deleted.

seconds must be an integer from 3600 through 31536000.

Default: Disabled

directory *directory_name*

Specifies a subdirectory in the default directory in which to store EDR files.

directory_name must be an alphanumeric string of 1 through 191 characters.

Default: **/records/edr**

edr-format-name

Specifies creation of separate files for EDRs that have different formats. Name of the EDR format is included in the file name.

exclude-checksum-record

When entered, this keyword excludes the final record containing #CHECKSUM followed by the 32-bit Cyclic redundancy check (CRC) of all preceding records from the EDR file.

Default: Disabled (inserts checksum record into the EDR file header)

field-separator [hyphen | omit | underscore]

Specifies the field inclusion/exclusion type of separators between two fields of EDR file name:

- **hyphen**: Specifies to use "-" (hyphen) as the field separator.
- **omit**: Excludes the field separator.
- **underscore**: Specifies to use "_" (underscore) as the field separator.

file-sequence-number rulebase-seq-num

Specifies that the file name sequence numbers must be unique per rulebase and EDR format name combination.

headers

Includes a file header summarizing the record layout.

name *file_name*

Specifies a string to be used as the base file name for EDR files.

Default: **edr**

file_name must be an alphanumeric string of 1 through 31 characters. The file name format is as follows:

base_rulebase_format_sequencenum_timestamp

- *base*: Specifies the type of record in file or contains the operator-specified string.

  Default: edr

- *rulebase*: Specifies the name of the ACS rulebase. EDRs from different rulebases go into different EDR files.

- *format*: Specifies the name of the EDR format if **single-edr-format** is specified, else the format field (and the trailing underscore) is omitted from the file name.

- *sequencenum*: This is a 5-digit sequence number to detect the missing file sequence. It is unique among all EDR files on the system.

- *timestamp*: Contains a timestamp based on file creation time in UTC time in MMDDYYYYHHMMSS format.

EDR files that have not been closed have a string added to the beginning of their filenames.

Filename for an EDR file in CSV format that contains information for rulebase named *rulebase1* and an EDR schema named *edr_schema1* appears as follows:

edr_rulebase1_edr_schema1_00005_01302006143409

If the file name is not configured the system will create files for EDRs/UDRs/FDRs (xDRs) using the following template with limits to 256 characters:

basename_ChargSvcName_timestamp_SeqNumResetIndicator_FileSeqNumber

- *basename*: A global-based configurable text string that is unique per system that uniquely identifies the global location of the system running ACS.

- *ChargSvcName*: A system context-based configurable text string that uniquely identifies a specific context-based charging service

- *timestamp*: Date and time at the instance of file creation. Date and time in the form of "MMDDYYYYHHmmSS" where HH is a 24-hour value from 00-23

- *SeqNumResetIndicator*: A one-byte counter used to discern the potential for duplicated FileSeqNumber with a range of 0 to 255, which is incremented by a value of 1 for the following conditions:

  - Failure of an ACS software process on an individual PAC/PSC.

  - Failure of the system such that a second system takes over. For example, a backup or standby system put in place according to Interchassis Session Recovery.

  - File Sequence Number (FileSeqNumber) rollover from 999999999 to 0

- *FileSeqNumber*: Unique file sequence number for the file with 9 digit integer having range from 000000000 to 999999999. It is unique on each system.

File name for a closed xDR file in CSV format that contains information for ACS system *xyz_city1* and charging service name *preapaid2* with timestamp *12311969190000*, and file sequence number counter reset indicator to *002* for file sequence number *034939002* appears as follows:

xyz_city1_preapaid2_12311969190000_002_034939002

File name for a running xDR file, not closed, in CSV format that contains information for the same parameters for file sequence number *034939003* prefixed with *curr_* and appears as follows:

curr_xyz_city1_preapaid2_12311969190000_002_034939002

Important When the "rulebase name" and "edr-format-name" options are enabled through this **file** command, if the "field-separator" value is "underscore" (default value) then, in the filename, the fields Rulebase name and EDR format name will be separated by "hyphen". If the "field-separator" value is "hyphen" then, in the filename, the fields Rulebase name and EDR format name will be separated by "underscore". This will ensure that the number of the fields in the filename is not increased and does not affect the backend billing system.

reset-indicator

Specifies inclusion of the reset indicator counter value, from 0 through 255, in the EDR file name, and is incremented (by one) whenever any of the following conditions occur:

- An ACSMgr/SessMgr process fails.
- A peer chassis has taken over in compliance with our Interchassis Session Recovery feature.
- The sequence number, see the **sequence-number** keyword, has rolled over to zero.

rotation { num-records *number* | tariff-time minute *minute_value* hour *hour_value* | time *seconds* | volume *bytes* }

Specifies when to close an EDR file and create a new one.

- **num-records** *number*: Specifies the number of records that should be added to the file. When the number of records in the file reaches the specified value, the file is complete.

  number must be an integer from 100 through 10240.

  Default: 1024

- **time** *seconds*: Specifies the period of time (in seconds) to wait before closing the EDR file and creating a new one.

  seconds must be an integer from 30 through 86400.

  Default: 3600

- **tariff-time minute** *minute_value* **hour** *hour_value*: Specifies the time of day (hour and minute) at which the files are rotated once per day.

  minute_value is an integer value from "0" up to "59".

  hour_value is an integer value from "0" up to "23".

Important The options **time** and **tariff-time** are mutually exclusive and only any one of them can be configured. Other file rotation options can be used with either of them.

- **volume** *bytes*: Specifies the maximum size (in bytes) of the EDR file before closing it and creating a new one.

  bytes must be an integer from 51200 through 62914560.

  Note that a higher setting may improve the compression ratio when the compression keyword is set to gzip.

sequence-number { length *length* | omit | padded | padded-six-length | unpadded }

Specifies including/excluding sequence number in the file name.

- **length** *length*: Includes the sequence number with the specified length.

  length must be the length of the file sequence number, with preceding zeroes, in the file name, and must be an integer from 1 through 9.



Important The **length** keyword is applicable in both EDR and UDR modules. When applied in both modules without the **file udr-seq-num** configuration, the minimum among the two values will come into effect for both the modules. With the **file udr-seq-num** keyword, each module will use its own value of length.

- **omit**: Excludes the sequence number from the file name.
- **padded**: Includes the padded sequence number with preceding zeros in the file name. This is the default setting.
- **padded-six-length**: Includes the padded sequence number with six preceding zeros in the file name.
- **unpadded**: Includes the unpadded sequence number in the file name.

single-edr-format

Creates separate files for EDRs having different formats.

Default: Disabled

storage-limit *limit*

Specifies deleting files when the specified amount of space (in bytes) is used up for EDR/UDR file storage RAM on packet processing cards.

The *limit* must be an integer from 10485760 through 536870912. Default: 33554432



Important The total storage limit is 536870912 bytes (512 MB). This limit is for both UDR and EDR files combined.

time-stamp { expanded-format | rotated-format | unix-format }

Specifies the timestamp of when the file was created be included in the file name.

- **expanded-format**: Specifies the UTC MMDDYYYYHHMMSS format.

- **rotated-format**: Specifies the time stamp format to YYYYMMDDHHMMSS format.
- **unix-format**: Specifies the UNIX format of *x.y*, where *x* is the number of seconds since 1/1/1970 and *y* is the fractional portion of the current second that has elapsed.

trailing-text *string*

Specifies the inclusion of an arbitrary text string in the file name.

string must be an alphanumeric string of 1 through 30 characters.

trap-on-file-delete

Instructs the system to send an SNMP notification (starCDRFileRemoved) when an EDR/UDR file is deleted due to lack of space.

Default: Disabled

unique-seq-num

Specifies that the file sequence numbers that are part of the EDR file names be independently generated. If disabled, a single set of sequence numbers are shared by both UDR and EDR files.

Default: Disabled

xor-final-record

Specifies inserting an XOR checksum (in place of the CRC checksum) into the EDR file header if the **exclude-checksum-record** is left at its default setting.

Default: Disabled

+

Indicates that multiple keywords can be specified in a single command entry. When the "+" appears in the syntax, any of the keywords that appear prior to the "+" can be entered in any order.

Usage Guidelines

Use this command to configure EDR file characteristics.

Example

The following command sets the prefix of the current active EDR file to *Current*:

```
file current-prefix Current
```

The following command sets the base file name to *EDRfile*:

```
file name EDRfile
```