

UP Call Summary Log

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Revision History

Revision Details	Release
First introduced.	21.24.1

Feature Description

The User Plane Call Summary Log (CSL) is a mechanism to report the following parameters to external log collection server:

- Session establishment
- Session Modification
- Session Deletion
- Usage Reporting

The system uses the CSL record to analyze and debug subscriber call.

This feature supports the following functionality:

- Support for UP CSL for Sxb and Sxab interface (For Pure-P, and Collapsed calls)
- The system stores the CSL records only in CSV format.
- The Sessmgr_u buffers the CSL records for defined time interval of max 30s.

How it Works

The interface between the UP and log collection server is based on SFTP. Each record is in the form of comma-separated ASCII values (CSV record). The UP sends one ASCII formatted CSV record per line. The system stores the CSV records in file and compresses the file before sending to external collection server. The CSV records can't be older than 15 minutes. So, the file needs to be SFTed to external collection server at least once in 15 minutes. The transfer of CSV record file between UP and collection server is either PULL or PUSH model. In case of PULL model, the external collection server is responsible for SFTP with UP. In case of PUSH model, UP is responsible for sending the CSV record file to external collection server. The file transfer happens based on the configured PUSH timer interval.

The following events trigger CSL record.

Event	Description
1	Session Establishment Request/Response
2	Session Modification Request/Response
3	Session Deletion Request/Response
4	Usage report Request/Response

The CSL record includes the following information in the CSV format:

Number	Description	Format Example
1	UP CSL Record No	Integer <proclet-type>|<instance-id>|<RTT-record-#>
2	UP Version No	Integer Version 1 in v21.24.0
3	Procedure No	PFCP IEs 29.244(Table 7.3-1: Message Types)
4	UP Name	Host Name of the Chassis
5	Procedure Start Time	Time in UTC, (to ms accuracy)
6	Procedure End Time	Time in UTC (to ms accuracy)
7	ASR5K CallID	Internal CallID 376efb10
8	Sx-PFCP Remote SEID	
9	Interface Type	
10	Reserved	
11	IMSI	Integer (15 digits) Example: [311480076488840]
12	MSISDN	Integer Example: [19728256305]

Number	Description	Format Example
13	IMEISV	Integer (16 Digits) Example: [9900028823793406]
14	RAT	IPv6 Address
15	SGW TEID (FARID, RTEID)	Tunnel Identifier for Peer Example: 1,0x084BC005|2,0x084BC01|3,0x084BC010|
16	PGW TEID (PDR ID, FTEID)	Tunnel Identifier for UP Example: 1,0x084BC005|2,0x084BC010|3,0x084BC010|
17	APN	String Example: [vzwims.mnc311.mcc480.3gppnetwork.org]
18	IPv4 Address	IPv4 Address UE assigned IPv4 address
19	IPv6 Address	IPv6 Address UE assigned IPv6 prefix/address
24	Uplink AMBR	Integer (0-4 Billion) In Kbps Example: [0-4294967295]
25	Downlink AMBR	Integer (0-4 Billion) In Kbps Example: [0-4294967295]
26	Uplink MBR	Integer (0-4 Billion) In Gbps. MBR. (QER ID, MBR) Example: 1,1234 | 2,3456 |3, 567
27	Downlink MBR	Integer (0-4 Billion) In Gbps. MBR. (QER ID, MBR)
	Uplink GBR	Integer (0-4 Billion) (QER ID, GBR)
	Downlink GBR	Integer (0-4 Billion)
	Sx Response Value	(Cause, Offending IE) 1,0 OR 64,44 Request/Acceptance/Rejection Cause, Example: [1-255] 1 thru 6
	PFCP Session Establishment Request/Response	Create PDR 1|2|3|4 Create FAR 1|2 Create QER 1|2 Create URR 1|2|3|4 Create TE 1|2

Number	Description	Format Example
	PFCP Session Modification Request/Response	Create PDR 5|6 Update PDR 3|4 Remove PDR 1|2 Create FAR 1|2 Update FAR. (RTEIDxxxx, Apply action) Create QER 1|2 Create URR 1|2|3|4 Create TE 1|2 Update TE 1|2
	PFCP Session Deletion Request/Response	Remove PDR 5|6 Remove FAR 7|8 Remove URR 1|2 Remove QER. Remove TE
	PFCP Session Report Request/Response	Report Type? (DLDR|USAR....|UISR)

Fault and Fault Reporting

The sessmgr provides a warning message in case of failure to post CSLs to cdrmod or any buffering issues due to memory allocation. There are no SNMP traps defined to report faults by Sessmgr. The Cdrmod separately reports the fault issue in case of issue in storing UP CSL record files in RAM.

Redundancy

Both Session recovery and ICSR are supported for UP CSL. After Sessmgr recovery, UP CSL continues, if UP CSL is enabled for the subscriber. Similarly, for ICSR calls, UP CSL continues, if UP CSL is enabled for the subscriber. During Session recovery and ICSR, the locally buffered Sessmgr CSL records are lost.

Session recovery at cdrmod requires minimal support because CSL record files are stored either using RAMFS or using Hard disk and are available across recovery. For ICSR, UP CSL record file needs to be transferred from old active chassis to new active chassis.

Interdependencies

Following CDRMOD functionality is required in support of this feature:

- New CDR Module type to support UP CSL records.
- Storing of UP CSL records using RAMFS

- Compression of UP CSL record file.
- Fault reporting
- SNMP Trap generation
- Stats /Bulkstat support
- Session Recovery and ICSR

Limitations and Restrictions

To enable this feature, CDRMOD, UP service configuration, and SFTP configuration is required. The CDRMOD configuration is required to setup the CDRMOD with necessary configuration parameters like CDRMOD module type, compression method, storage method and so on. The UP-service configuration is required to enable the reporting of UP CSL. The SFTP configuration is required to transfer the UP CSL record file from chassis to external collection server.

Configuring Call Summary Log in UP

Enabling/Disabling the CSL

Use the following configuration to enable or disable the reporting of UP event records to log.

```
configure
   context context_name
      apn apn_name
         [ no | default ] reporting-action up-event-record
         end
```

NOTES:

- **reporting-action:** Configures the event reporting
- **up-event-record:** Enables the reporting of event records. By default, reporting of event records is disabled

UP Service Configuration

Use the following as the UP-service configuration:

```
session-event-module
 file name evt-repo rotation volume 2097152 rotation time 30 compression gzip
 event use-harddisk
 event remove-file-after-transfer
 event transfer-mode push primary url  sftp://xxxxxxxx@xx.xx.xxx.xxx/tmp/  via local-
context
 event push-interval 30
```

Monitoring and Troubleshooting

At Sessmgr level, use the **show subs sgw-only full** CLI command to know whether UP CSL is enabled or not. You can also enable the Session manager warning message to know in case there is issue in reporting events at Sessmgr.

The CDRMOD uses separate CLI and/or SNMP Trap and/or Warring/Debug messages to aid troubleshooting of CDRMOD issue related to UP CSL.

Statistics

The following CLI command is available in support of the feature.

show up-event-record statistics interface-type [sxb | sxab | n4]

NOTES:

- **up-event-record**: Displays the number of event records.
- **statistics**: Displays the statistics for event records.
- **interface-type**: Displays the event records for interface type.

Show Command Outputs

Following is the sample output for **show up-event-record statistics interface-type sxb** CLI:

```
Number of event records: 80
Number of event records for sx procedures: 50
   PFCP Session Establishment procedure: 10
   PFCP Session Modification procedure: 20
   PFCP Session Deletion procedure: 10
   PFCP Session Report procedure: 100
```

Following is the sample output for **show config** or **show config verbose** when reporting of event records is enabled.

```
config
  context <>
    apn <>
      …
      reporting-action up-event-record
```

Following is the sample output for **show config verbose** when reporting event records is disabled.

```
config
  context <>
    apn <>
      …
      no reporting-action up-event-record
```