



# Capability to Record and Produce Call Transactions on ePDG

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## Feature Summary and Revision History

### Summary Data

|  |  |
|--|--|
| Applicable Product(s) or Functional Area | ePDG   |
| Applicable Platform(s)                   | <ul style="list-style-type: none"> <li>• ASR 5500</li> <li>• VPC-DI</li> <li>• VPC-SI</li> </ul> |
| Feature Default                          | Disabled - Configuration Required  |
| Related Changes in This Release          | Not Applicable   |
| Related Documentation                    | <i>ePDG Administration Guide</i>   |

### Revision History

| Revision Details   | Release    |
|--|------------|
| In this release, ePDG supports capability to record and produce call transactions. | 21.23      |
| First Introduced.  | Release 20 |

## Feature Description

Real Time Tool (RTT) is used in Regions and Network Operations Center (NOC) for debugging network issues and to understand user behavior. All call transactions in ePDG are generated in RTT files. The ePDG support allows to understand service impact on the ePDG chassis for WLAN offload service. ePDG transfers RTT files to the external server through SSH File Transfer Protocol (SFTP). The RTT files that are in comma separated values (.CSV) format are transferred either in compressed or non-compressed format based on the configuration to the external servers such as servers in customer network either directly or through the Cisco Collector server.



**Note** RTT Record Schema and its procedure numbers are genericized to Gateway RTT. Contact your Cisco account representative for detailed information on specific RTT Record Schema.

## How it Works

This section explains about RTT schema.

## RTT Procedures

Six new RTT procedures (Procedures 21 to 26) have been introduced with this feature and are specific to ePDG. Procedures that are existing for P-GW are enhanced to support ePDG are also listed in the following table.

| Procedure Number | Procedure Name                         | Applicability |
|------------------|--|---------------|
| 1                | S5/S8/S2b GTP Create Session           | P-GW, ePDG    |
| 2                | S5/S8/S2b GTP Create Bearer            | P-GW, ePDG    |
| 3                | S5/S8/S2b GTP Delete Session           | P-GW, ePDG    |
| 4                | S5/S8/S2b GTP Delete Bearer            | P-GW, ePDG    |
| 6                | S5/S8/S2b GTP Update Bearer            | P-GW, ePDG    |
| 7                | S6b/SWm – Diameter AAR/ AAA            | P-GW, ePDG    |
| 8                | S6b/SWm – Diameter RAR/RAA             | P-GW, ePDG    |
| 9                | S6b/SWm – Diameter Session Termination | P-GW, ePDG    |
| 10               | S6b – Abort Session                    | P-GW, ePDG    |
| 21               | SWu - IKEv2 SA INIT/Resp               | ePDG          |
| 22               | SWu - IKEv2 Auth Req/Resp              | ePDG          |
| 23               | SWu - IKEv2 Information Req/Resp       | ePDG          |

| Procedure Number | Procedure Name                    | Applicability |
|------------------|-----------------------------------|---------------|
| 24               | SWm - Diameter EAP Request/Answer | ePDG          |
| 25               | ePDG Router Advertisement         | ePDG          |
| 26               | SWu – CREATE_CHILD_SA Req/Resp    | ePDG          |

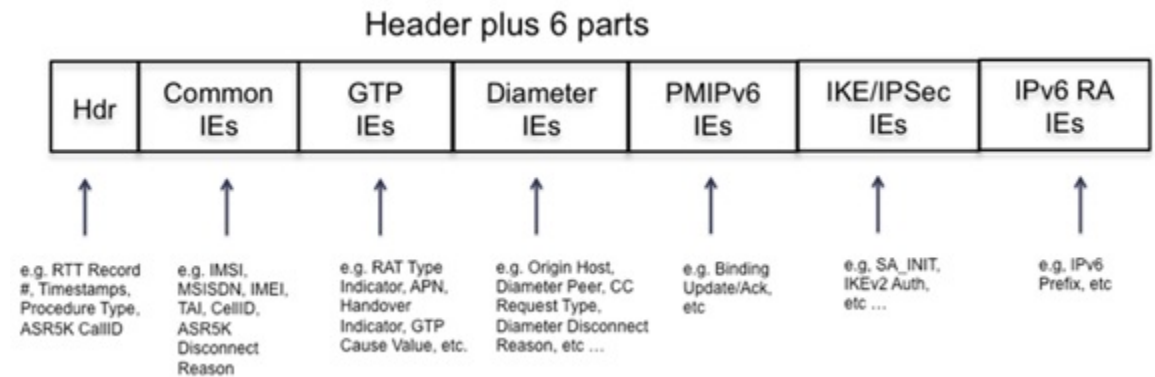


**Note** Procedures that are enhanced to support ePDG and new procedures that are introduced are only listed in the above table.

## RTT Record Schema

The following figure details the new RTT schema.

**Figure 1: RTT Record Schema**



RTT schema has a Header and the following six blocks of Information Elements (IEs). There are totally 170 IEs that are grouped in 6 blocks. Contact your Cisco account representative for the complete list of RTT Record Schema IEs.

- Common IEs
- GPRS Tunneling Protocol (GTP) IEs. These IEs are existing and are re-used.
- Diameter IEs (new IEs)
- Proxy Mobile IPv6 IEs
- Internet Key Exchange (IKE)/ Internet Protocol Security (IPsec) IEs
- Internet Protocol v6 Router Advertisement (IPv6 RA IEs)



**Note** IKE/IPSec and IPv6 RA IEs are new and they are contained inside new blocks. Diameter IEs are new and are appended to the existing Diameter IE blocks.

## Configuring RTT for ePDG

This section provides RTT configuration information for ePDG.

### Enabling RTT to Record and Produce Call Transactions

Use the following configuration for enabling RTT to record and produce call transactions.

```
configure
  context context_name
    epdg-service service_name
      [ no ] reporting-action event-record
  end
```

#### NOTES:

- **reporting-action event-record:** Enables event reporting through RTT in ePDG.
- **no:** Disables event reporting through RTT in ePDG.

### Configuring RTT

Use the following CLI commands to configure the RTT feature in ePDG.

```
configure
  context context_name
    session-event-module
      event transfer-mode push primary url URL_address
      file name file_name|rotation volume volume_size|rotation time
rotation_time|compression compression_type|extension extension_type
      event use-harddisk
      event remove-file-after-transfer
      event push-interval interval_time
  end
```

#### NOTES:

- **transfer-mode:** Enables the transfer mode in RTT.
- **push primary url:** Specifies the external server location where the records are transferred from ePDG.
- **file name:** Specifies the RTT file name where the records are stored.
- **rotation volume:** The volume based on which the RTT file is generated.
- **rotation time:** The time based on which the RTT file is generated.




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**Note** The RTT files are pushed to the external server based on the rotation volume or rotation time, whichever occurs first.

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- **compression:** Specifies the file compression type. If enabled, the RTT file is generated as a Gzip file, else it is generated as a normal file.
- **extension:** Specifies the RTT file extension (.csv).
- **use-harddisk:** Specifies hard disk as the storage space for the RTT file generation.
- **remove-file-after-transfer:** Specifies RTT files to be removed after pushing the files to the external server.
- **push-interval:** Specifies the push interval time at which the RTT file are transferred from ePDG to the external server.

## Monitoring and Troubleshooting

This section provides information on how to monitor and troubleshoot using show commands to support this feature.

### Show Commands and Output

This section provides information regarding show commands and their outputs for this feature.

#### show Event-Record Statistics ePDG

This command displays the number of RTT record types generated based on different event types.

*Table 1: show event-record statistics ePDG Command Output Descriptions*

| Field                         | Description  |
|-------------------------------|--|
| Total Number of Event Records | The total number of event records (GTPv2 + Diameter + IKE + RA). |
| GTPv2 Event Records           | The total number of GTPv2 records                                |
| CSR                           | The number of CSR (Create Session Request) events.               |
| CBR                           | The number of CBR (Create Bearer Request) events.                |
| DSR                           | The number of DSR (Delete Session Request) events.               |
| DBR                           | The number of DBR (Delete Bearer Request) events.                |
| UBR                           | The number of UBR (Update Bearer Request) events.                |
| IKEv2 Event Records           | The total number of IKE events.                                  |
| IKE_SA_INIT                   | The number of IKE_SA_INIT events.                                |
| IKE_AUTH                      | The number of IKE_AUTH events.                                   |
| IKE_INFORMATION               | The number of IKE_INFORMATION events.                            |

| <b>Field</b>           | <b>Description</b>                                      |
|------------------------|---|
| CREATE_CHILD_SA        | The number of CREATE_CHILD_SA events.                   |
| IPV6 RA Event Records  | The total number of IPV6 RA event records.              |
| RA Prefix              | The number of RA prefix events.                         |
| Diameter Event Records | The total number of Diameter event records.             |
| SWm Procedures         | The number of SWm interface specific events.            |
| AAR                    | The number AAR (AA-Request) events.                     |
| RAR                    | The number of RAR (Re-Auth-Request) events              |
| ASR                    | The number of ASR (Abort Session Request) events        |
| STR                    | The number of STR (Session Termination Request) events. |
| DER                    | The number of DER (DE-Request) events.                  |