Mapping High Throughput Sessions on Session Managers

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Feature Summary and Revision History

Summary Data

| Applicable Product(s) or Functional Area | • P-GW  
|                                         | • S-GW  
|                                         | • SAEGW |
| Applicable Platform(s)                  | • ASR 5500  
|                                         | • VPC - DI  
|                                         | • VPC - SI |
| Default Setting                         | Disabled - Configuration Required |
| Related Changes in This Release         | Not Applicable |
| Related Documentation                   | • Command Line Interface Reference  
|                                         | • P-GW Administration Guide  
|                                         | • S-GW Administration Guide  
|                                         | • SAEGW Administration Guide |
Feature Changes

Session managers are upgraded to manage several high throughput sessions without sharing the core and without creating a bottleneck on the CPU load.

The gateway – S-GW, SAEGW or P-GW, classifies a session as a high throughput session based on a DCNR flag present in the IE: FLAGS FOR USER PLANE FUNCTION (UPF) SELECTION INDICATION, in the Create Session Request. This DCNR flag is check-pointed and recovered by the gateway.

A high throughput session is placed on a session manager that has no other high throughput session. If all session manager are handling a high throughput session then these sessions are allocated using the Round-Robin method.

Note

• The selection of session managers for non-high throughput sessions remains the same in the existing setup.
• Non-high throughput sessions are placed along with the high throughput sessions on the same session manager.

Limitations

Managing high throughput sessions on a session manager has the following limitations:
• The following scenarios may result in placing two high throughput sessions on a session manager:
  • Initial attach from eHRPD/2G/3G sessions.
  • IP addresses – both IPv4 and IPv6, are placed on the same session manager.
  • For an S-GW, the second Create Session Request (PDN) from a UE lands directly on a session manager which has the first PDN of the same UE.
  • For a collapsed call, the second Create Session Request (PDN) from a UE lands directly on a session manager which has the first PDN of the same UE.
  • In a Multi-PDN call from a UE that is capable of DCNR. For example: VoLTE and Internet capable of DCN will be placed on the same session manager.
  • The DCNR flag is not defined by 3GPP for Wi-Fi. Therefore, a session cannot be assigned to a session manager during a Wi-Fi to LTE handover with the DCNR flag set.
• This feature manages and supports distribution of high throughput sessions on a session manager but
does not guarantee high throughput for a subscriber.

• In some cases, the round robin mechanism could place a high throughput session on a session manager
that was already loaded with other high throughput sessions.

Command Changes

The session manager selection for a high throughput session is CLI controlled. A set of new CLI under the
gtpc command, in the Context Configuration Mode must be enabled to place high throughput sessions evenly
on the session managers.

The configuration for selecting a session manager for a high throughput session is license controlled.

Use the following configuration to enable session manager selection for high throughput sessions:

```
configure
  context context_name
    [ no ] gtpc high-throughput-sub dcnr-based sessmgr-select round-robin
  end
```

NOTES:

• By default, the session manager selection for a high throughput session is disabled.
• high-throughput-subscribers: Enables the GTPC configuration for high throughput subscribers.
• dcnr-based: Applies this configuration to all Create Session Requests that have a DCNR flag.
• sessmgr-select: Specifies the method to select a session manager for a DCNR session.
• round-robin: Selects the session managers for a high throughput session using the round-robin method.

Performance Indicator Changes

This section provides information regarding show commands and/or their outputs in support of this feature.

```
show demux-mgr sessions egtpinmgr all
```

The output of this command displays the following field in support of this feature:

• DCNR Session

```
show demux-mgr statistics egtpinmgr instance instance_number
```

The output of this command displays the following field in support of this feature:

• #DCNR
show demux-mgr statistics egtpinmgr instance instance_number