



S-GW Engineering Rules

This appendix provides Serving Gateway-specific engineering rules or guidelines that must be considered prior to configuring the ASR 5500 for your network deployment. General and network-specific rules are located in the appendix of the *System Administration Guide* for the specific network type.

The following rules are covered:

- [Interface and Port Rules, on page 1](#)
- [S-GW Service Rules, on page 2](#)
- [S-GW Subscriber Rules, on page 3](#)

Interface and Port Rules

The assumptions and rules discussed in this section pertain to Ethernet line cards and the type of interfaces they facilitate.

Assumptions

Overall assumptions for the S5/S8 and S11 interfaces used in the LTE EPC between Serving Gateway and PDN-GW are listed below.

- GTPv2-C is the signaling protocol used on the S5/S8 and S11 interfaces. Message and IE definitions comply with 3GPP 29.274.
- S5 and S11 interfaces use IPv6 transport as defined in 29.274, section 10.
- MSISDN is assumed to be sent by MME in initial attach.
- MEI will always be retrieved by MME from UE and sent on S11 during initial attach and UE Requested PDN connectivity procedure.
- MME will always send UE time zone information.
- The default bearer does not require any TFT.
- The PCO IE in Create Session Request shall contain two DNS server IP addresses. [S5/S8]
- UE's location change reporting support is required. [S5/S8]
- The S-GW does not verify the content of the IEs which are forwarded on the S5/S8 interface from the S11 interface. The P-GW verifies the content of all the IEs received on the S5/S8 interface.

S1-U/S11 Interface Rules

The following engineering rules apply to the S1-U/S11 interface:

- An S1-U/S11 interface is created once the IP address of a logical interface is bound to an S-GW service. The S-GW supports a maximum of one million S1-U peers.
- The logical interface(s) that will be used to facilitate the S1-U/S11 interface(s) must be configured within an "ingress" context.
- S-GW services must be configured within an "ingress" context.
- At least one S-GW service must be bound to each interface, however, multiple S-GW services can be bound to a single interface if secondary addresses are assigned to the interface.
- Depending on the services offered to the subscriber, the number of sessions facilitated by the S1-U/S11 interface can be limited.

S5/S8 Interface Rules

This section describes the engineering rules for the S5 interface for communications between the Mobility Access Gateway (MAG) service residing on the S-GW and the Local Mobility Anchor (LMA) service residing on the P-GW.

MAG to LMA Rules

The following engineering rules apply to the S5/S8 interface from the MAG service to the LMA service residing on the P-GW:

- An S5/S8 interface is created once the IP address of a logical interface is bound to an MAG service.
- The logical interface(s) that will be used to facilitate the S5/S8 interface(s) must be configured within the egress context.
- MAG services must be configured within the egress context.
- MAG services must be associated with an S-GW service.
- Depending on the services offered to the subscriber, the number of sessions facilitated by the S5/S8 interface can be limited.

S-GW Service Rules

The following engineering rules apply to services configured within the system:

- A maximum of 256 services (regardless of type) can be configured per system.



Caution

Large numbers of services greatly increase the complexity of management and may impact overall system performance. Only create a large number of services only be configured if your application absolutely requires it. Please contact your local service representative for more information.

- The system maintains statistics for a maximum of 4,096 peer LMAs per MAG service.
- The total number of entries per table and per chassis is limited to 256.
- Even though service names can be identical to those configured in different contexts on the same system, this is not a good practice. Having services with the same name can lead to confusion, difficulty troubleshooting problems, and make it difficult to understand outputs of **show** commands.

S-GW Subscriber Rules

The following engineering rule applies to subscribers configured within the system:

- A maximum of 2,048 local subscribers can be configured per context.
- Default subscriber templates may be configured on a per S-GW or MAG service.

