



# HSGW Engineering Rules

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

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## Interface and Port Rules

The rules discussed in this section pertain to the Ethernet 10/100 line card, the Ethernet 1000 line card and the four-port Quad Gig-E line card and the type of interfaces they facilitate, regardless of the application.

### A10/A11 Interface Rules

The following engineering rules apply to the A10/A11 interface:

- An A10/A11 interface is created once the IP address of a logical interface is bound to an HSGW service.
- The logical interface(s) that will be used to facilitate the A10/A11 interface(s) must be configured within an "ingress" context.
- HSGW services must be configured within an "ingress" context.
- At least one HSGW service must be bound to each interface however, multiple HSGW services can be bound to a single interface if secondary addresses are assigned to the interface.
- Each HSGW service must be configured with the Security Parameter Index (SPI) of the Evolved Packet Control Function (ePCF) that it will be communicating with over the A10/A11 interface.
- Multiple SPIs can be configured within the HSGW service to allow communications with multiple ePCFs over the A10/A11 interface. It is best to define SPIs using a netmask to specify a range of addresses rather than entering separate SPIs. This assumes that the network is physically designed to allow this communication.
- Depending on the services offered to the subscriber, the number of sessions facilitated by the A10/A11 interface can be limited.

## S2a Interface Rules

This section describes the engineering rules for the S2a interface for communications between the Mobility Access Gateway (MAG) service residing on the HSGW and the Local Mobility Anchor (LMA) service residing on the P-GW.

### MAG to LMA Rules

The following engineering rules apply to the S2a interface from the MAG service to the LMA service residing on the P-GW:

- An S2a interface is created once the IP address of a logical interface is bound to an MAG service.



#### Important

For releases 15.0 and earlier, mag-service can only bind with IPv6 address. For releases 16.0 and forward, mag-service is capable of binding with IPv6 and IPv4 interfaces.

- The logical interface(s) that will be used to facilitate the S2a 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 HSGW service.
- Depending on the services offered to the subscriber, the number of sessions facilitated by the S2a interface can be limited.

## HSGW 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.



#### Important

Large numbers of services greatly increase the complexity of management and may impact overall system performance (i.e. resulting from such things as system handoffs). Therefore, it is recommended that a large number of services only be configured if your application absolutely requires it. Please contact your local service representative for more information.

- Up to 2,048 Security Parameter Indices (SPIs) can be configured for a single HSGW service.
- Up to 2,048 MAG-LMA SPIs can be supported for a single HSGW service.
- The system maintains statistics for a maximum of 4096 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 understanding outputs of show commands.

# HSGW 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 HSGW or MAG service.

