– PCHID

– Virtual Function ID (VF)

– Port number

► Determine which LPARs will be shared by one RoCE Express port.

► Assign the VFs between the sharing LPARs accordingly.

For configuration details, see 15.2.3, "Defining a RoCE PCIe function" on page 366.

For 10GbE RoCE Express2 or later features management details, see "RoCE Management" on page 371.

Consider Native PCIe feature Plugging and Resource Groups (RGs)

The native PCIe feature support is provided by Resource Group (RG) code running on the integrated firmware processor (IFP). For resilience, there are always four independent RGs on the system that share the IFP. For high availability purposes, always use at least two PCIe features located in different RGs as shown in Figure 2-4.
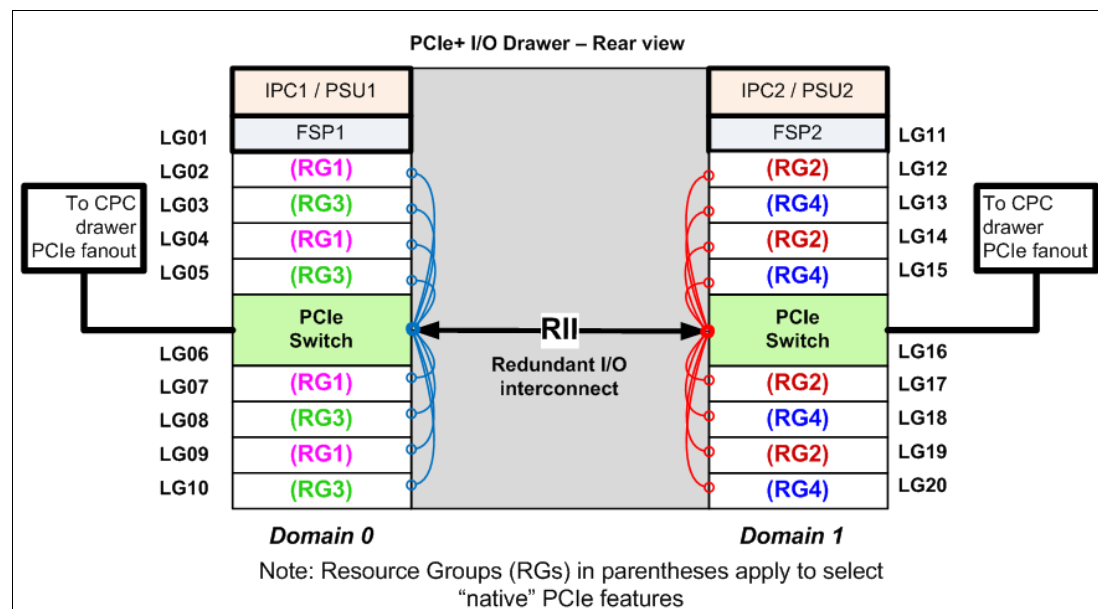

Figure 2-4   Relationship among PCIe+ I/O drawer slots, domains, and RGs in the z15

Shared Memory Communications - Direct Memory Access (SMC-D)

Starting with z13 (at HW Driver level 27) and z13s servers, IBM introduced SMC-D. SMC-D uses Internal Shared Memory (ISM) virtual PCIe adapters to provide direct memory access communications between LPARs inside the same IBM Z CPC.

SMC-D is a protocol that allows TCP socket applications to transparently use Internal Shared Memory (ISM). ISM is a virtual channel similar to IQD for HiperSockets. A virtual adapter is created in each z/OS LPAR and by using the SMC protocol, the memory is logically shared. The virtual network is provided by firmware.

SMC-R requires a TCP/IP connection and preserves the entire network infrastructure. SMC-D is also a "hybrid" solution. It uses a TCP connection to establish the SMC-D connection. The TCP path can be either through an OSA-Express port or through HiperSockets connection. A TCP option (called SMCD) controls switching from TCP to "out of band" SMC-D. The SMC-D information is exchanged within the TCP data stream. Socket