Brocade SAN Configuration Descriptions

For simplicity, only the 8-port switch configurations are drawn. However, these designs could be doubled to use the 16-port switch as well.

Single server with 8-port switches and zoning configurations:

Config 2 uses A3500FC
Config 3 uses T3WG
Config 4 uses T3ES

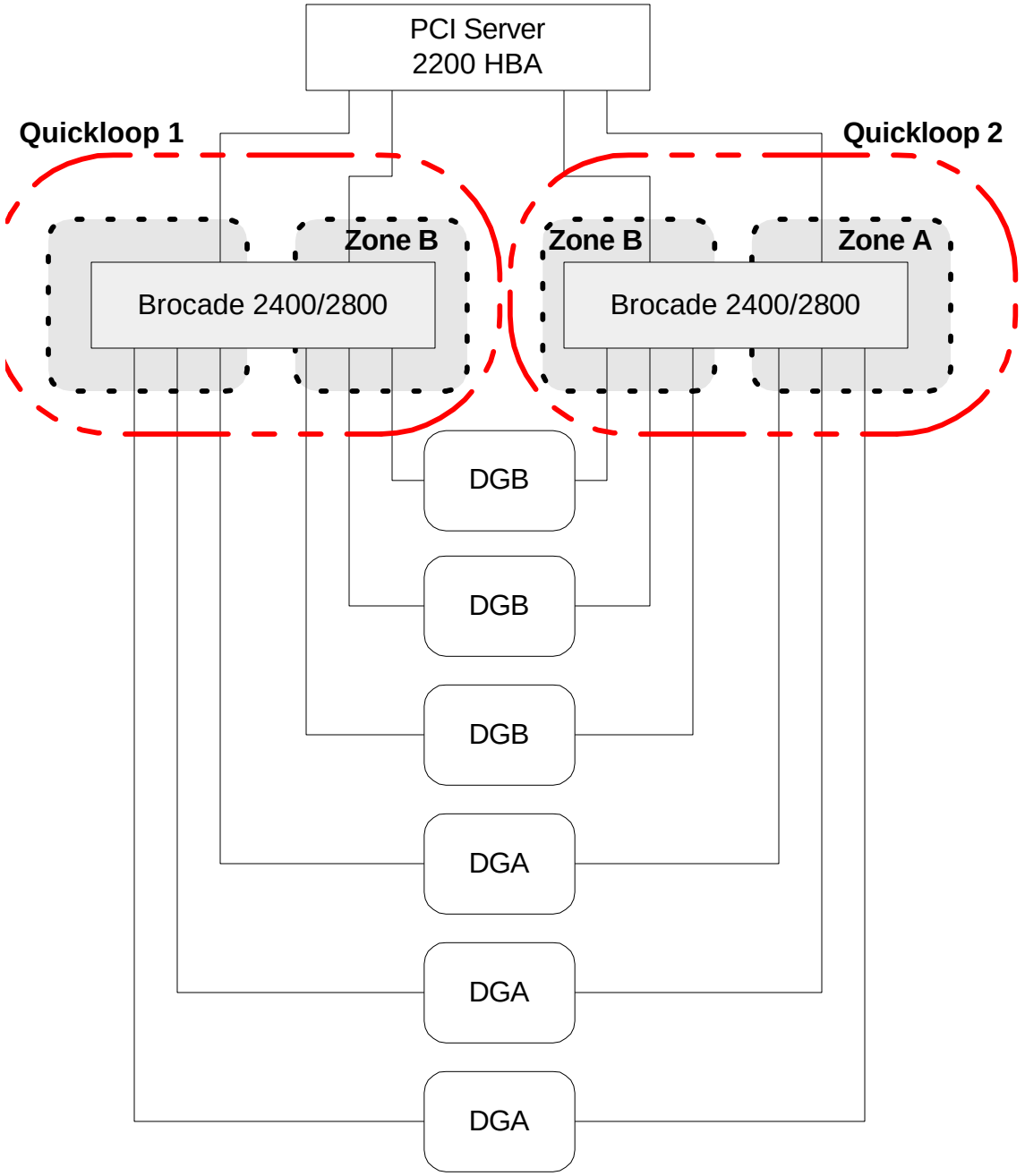
Dual servers with 8-port switches and zoning configurations:

Config 6 uses A3500FC
Config 7 uses T3WG
Config 8 uses T3ES

Config 9 - Why clustering won't work with T3ES without multi-host support.

- Multi-initiator works just fine (It's a SCSI term refering to the specific transport layer function of dealing with more
- Multi-Host (Generally related to more than ONE host trying to access a partner pair (ES config) at same time) is the issue. Two hosts can be connected to a ES pair, but only ONE host may ever access it at the same time.

Config 1: Single Host A5200 SAN



- Each line from the server equals 1 2200 HBA
- All Brocade switches **MUST** use Quickloop.
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each A5200 is configured as a single loop.
- Three A5200's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- DGA may be mirrored to DGB using VxVM

- Statistics:
- RAID 0+1, no hot spares
- 132 spindles
- 1201GB with 18GB disks
- 2402GB with 36GB disks
- Footprint is 1 rack cabinet
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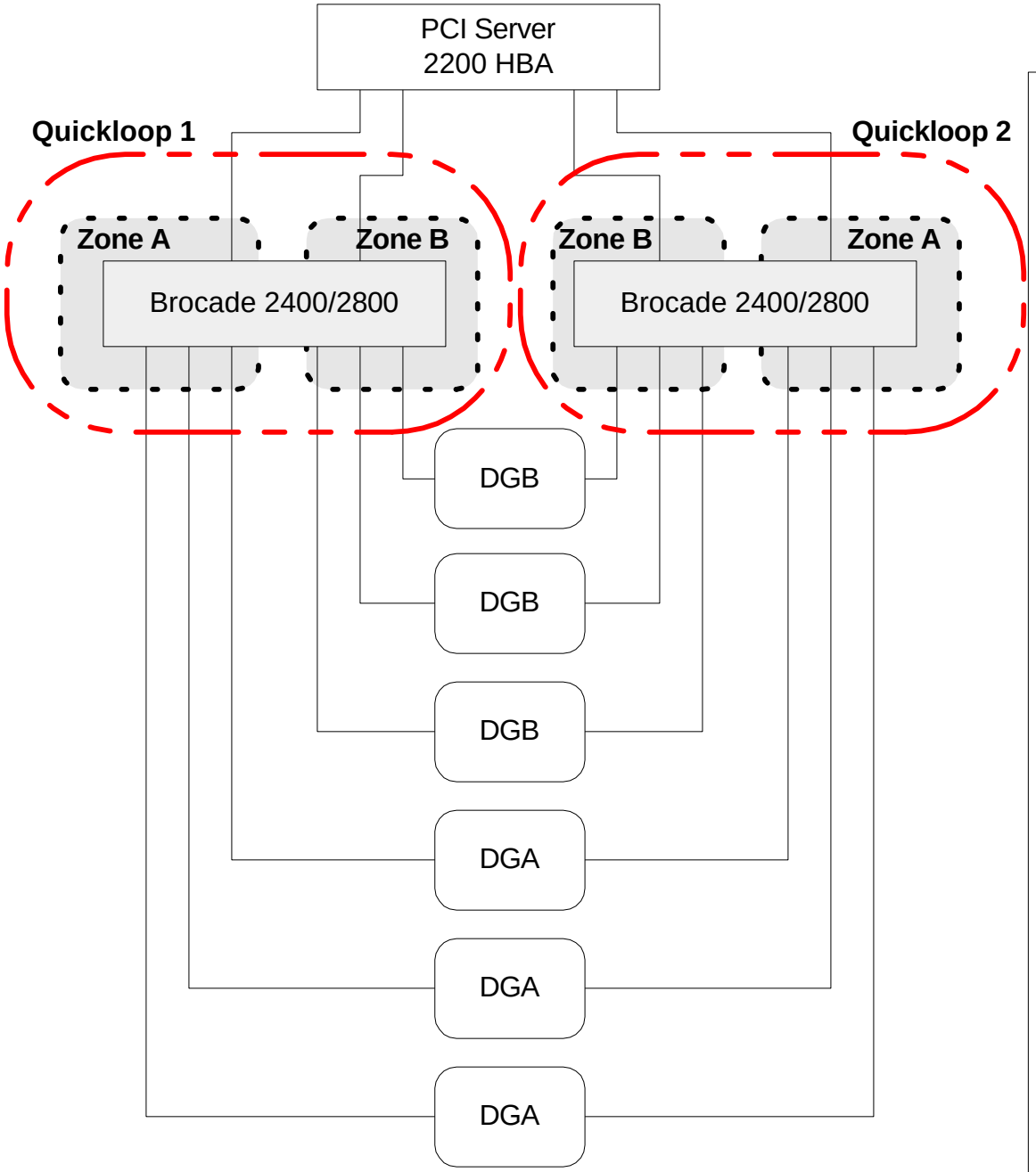
- Note: A5000 and A5100 may be config in this design. However, 9GB Seagate drives can NOT be used.

Config 2: Single Host A3500F



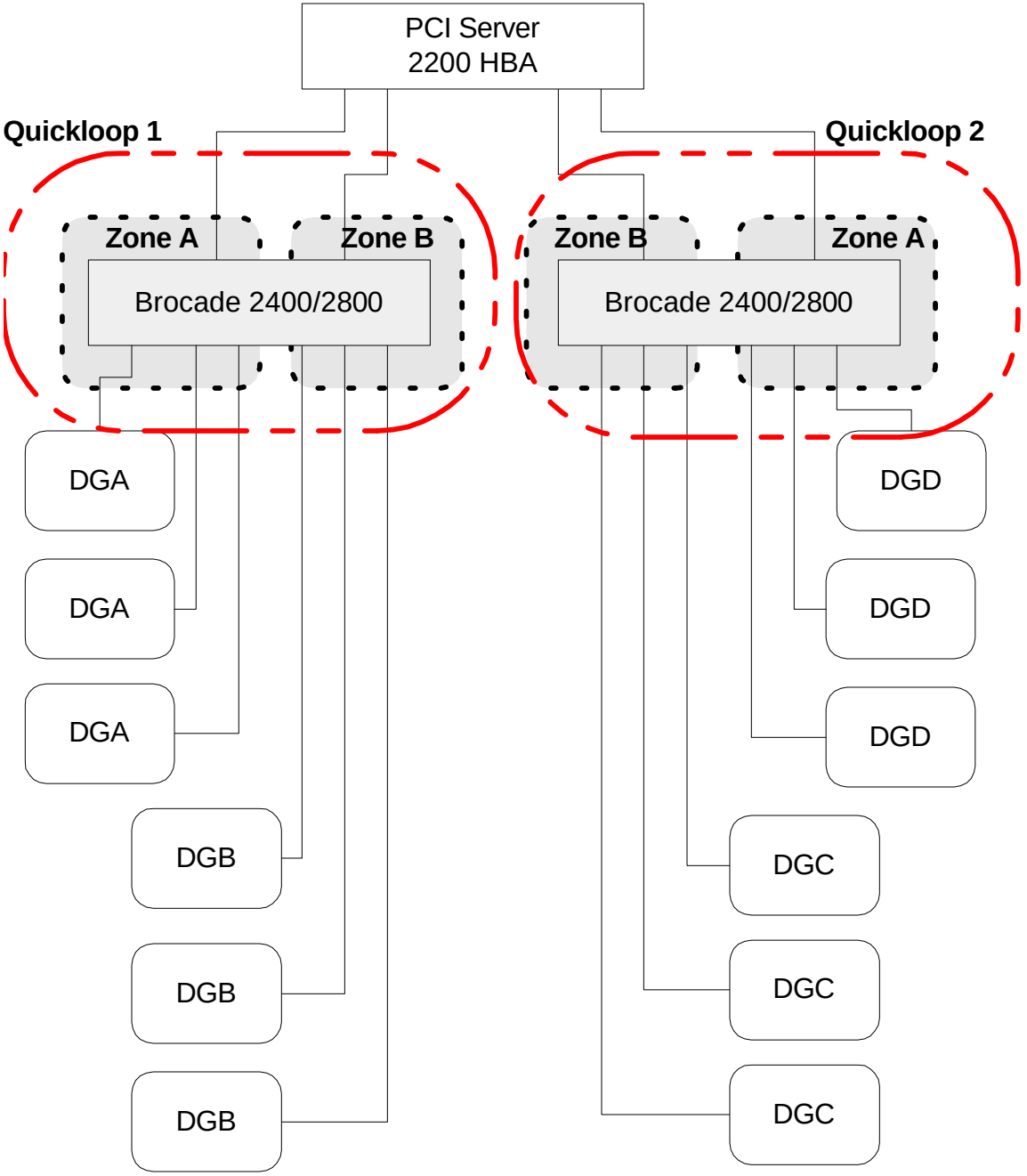
- Each line from the server equals 1 2200 HBA
- All Brocade switches **MUST** use Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each A3500FC is configured as RAID 5 with 1 hot spare per tray.
- Three A3500FC's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- MIrroring of Disk Groups may be accomplished using A3500FC controlle

- Statistics:
- RAID 5, one hot spare per tray
- 360 spindles
- 4804GB with 18GB disks
- 9608GB with 36GB disks
- Footprint is 6 rack cabinets

- Note: The A3500FC is configured as 1x5
  A (3x15) A3500FC could be substi

  The A3500FC must be configured
  Multi-initiator con

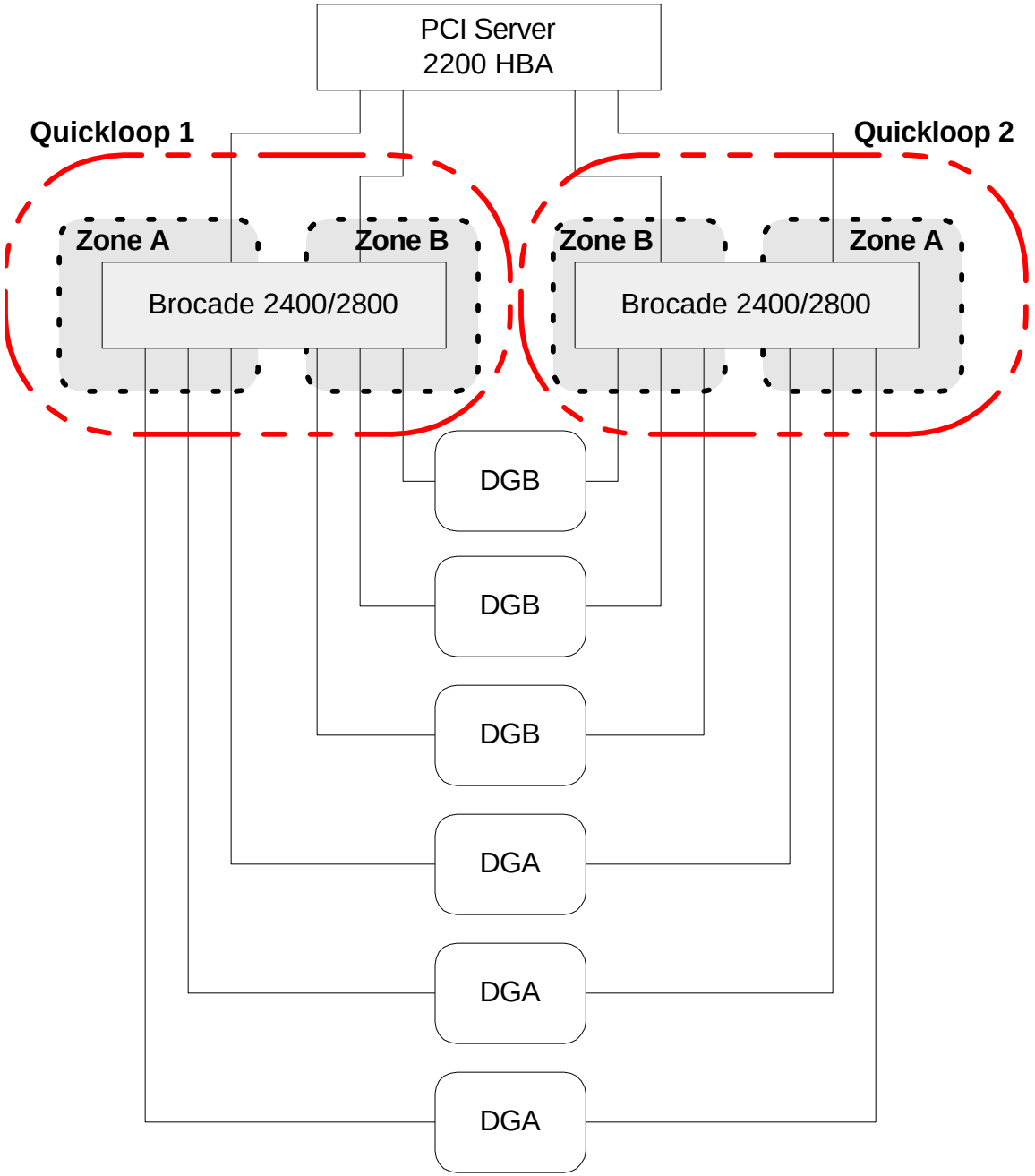
Config 3: Single Host T3WG SAN



- Each line from the server equals 12200 HBA
- All Brocade switches **MUST** run Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each T3WG is configured as RAID 5 with 1 hot spare.
- Three T3WG's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- Disk Group C = DGC
- Disk Group D = DGD
- DGA may be mirrored to DGB using VxVM

- Statistics:
- RAID 5, one hot spare
- 108 spindles
- 764GB with 18GB disks
- 1528GB with 36GB disks
- 3066GB with 73GB disks
- Footprint is 3 rack cabinets

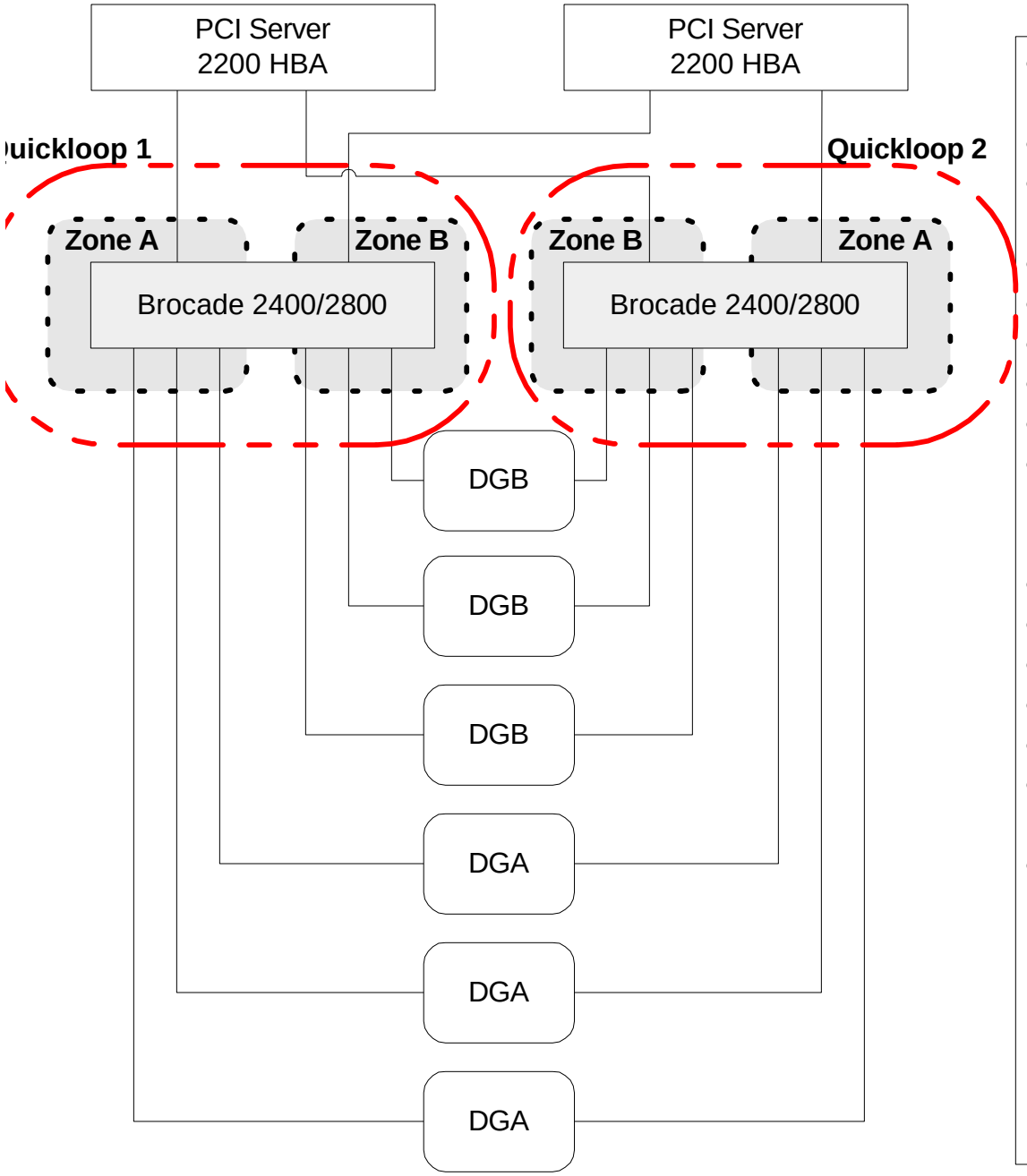
Config 4: Single Host T3ES SAN



- Each line from the server equals 1 2200 HBA
- All Brocade switches **MUST** run Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each T3ES is configured as RAID 5 with 2 hot spares.
- Three T3ES's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- DGA may be mirrored to DGB using VxVM
- LUN failovers will be handled by the T3ES through the back FC connections.

- Statistics:
- RAID 5, two hot spares
- 108 spindles
- 1528GB with 18GB disks
- 3056GB with 36GB disks
- 6132GB with 73GB disks
- Footprint is 1.5 rack cabinets

Config 5: Dual Hosts A5200 SAN

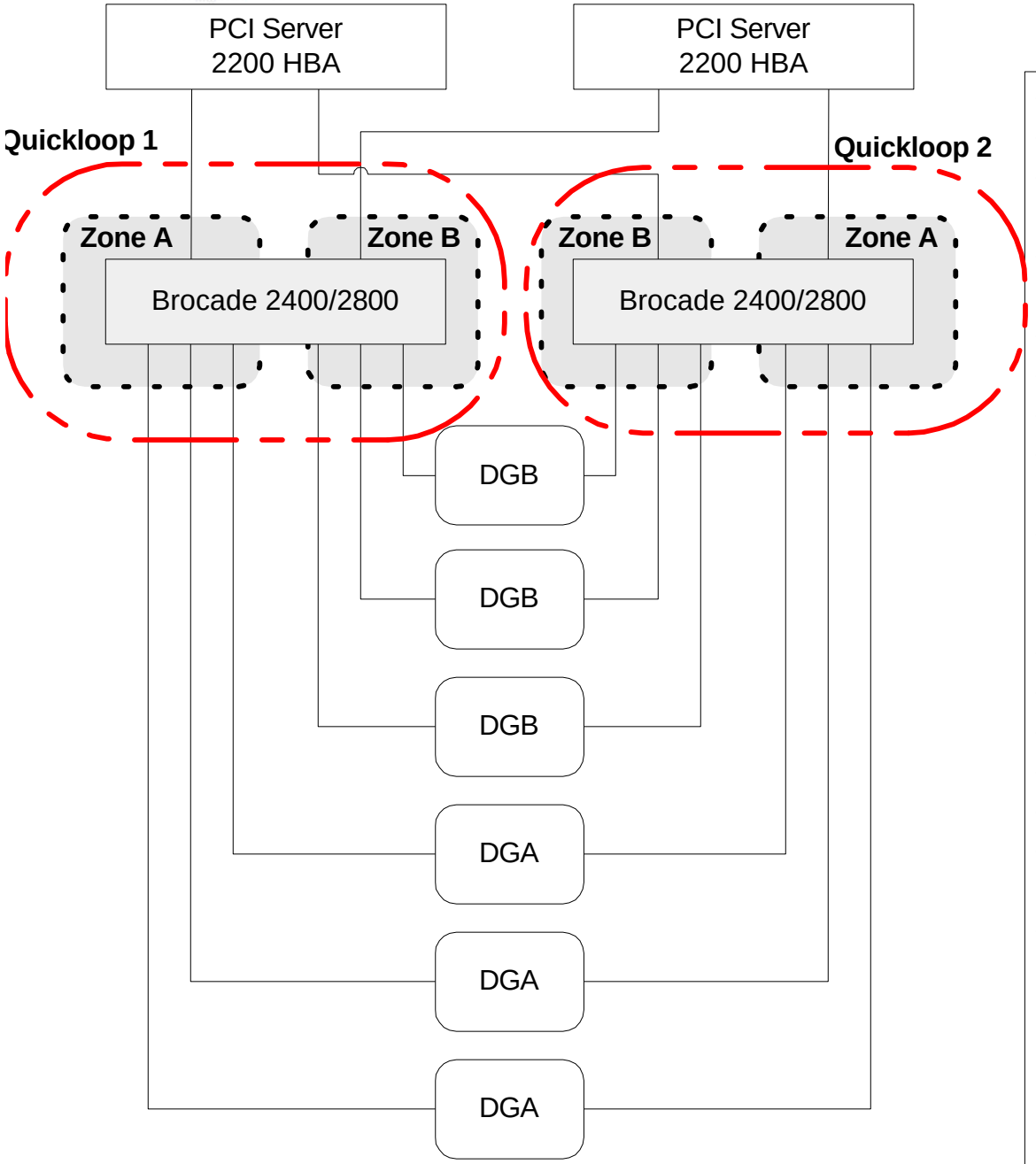


- Each line from the server equals 1 2200 HBA
- All Brocade switches **MUST** run Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each A5200 is configured as a single loop.
- Three A5200's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- DGA may be mirrored to DGB using VxVM
- All storage is accessible in the event of a server failover

- Statistics:
- RAID 0+1, no hot spares
- 132 spindles
- 1201GB with 18GB disks
- 2402GB with 36GB disks
- Footprint is 1 rack cabinet

- Note: A5000 and A5100 may be config in this design. However, 9GB Seagate drives can NOT be used.

Config 6: Dual Hosts A3500FC

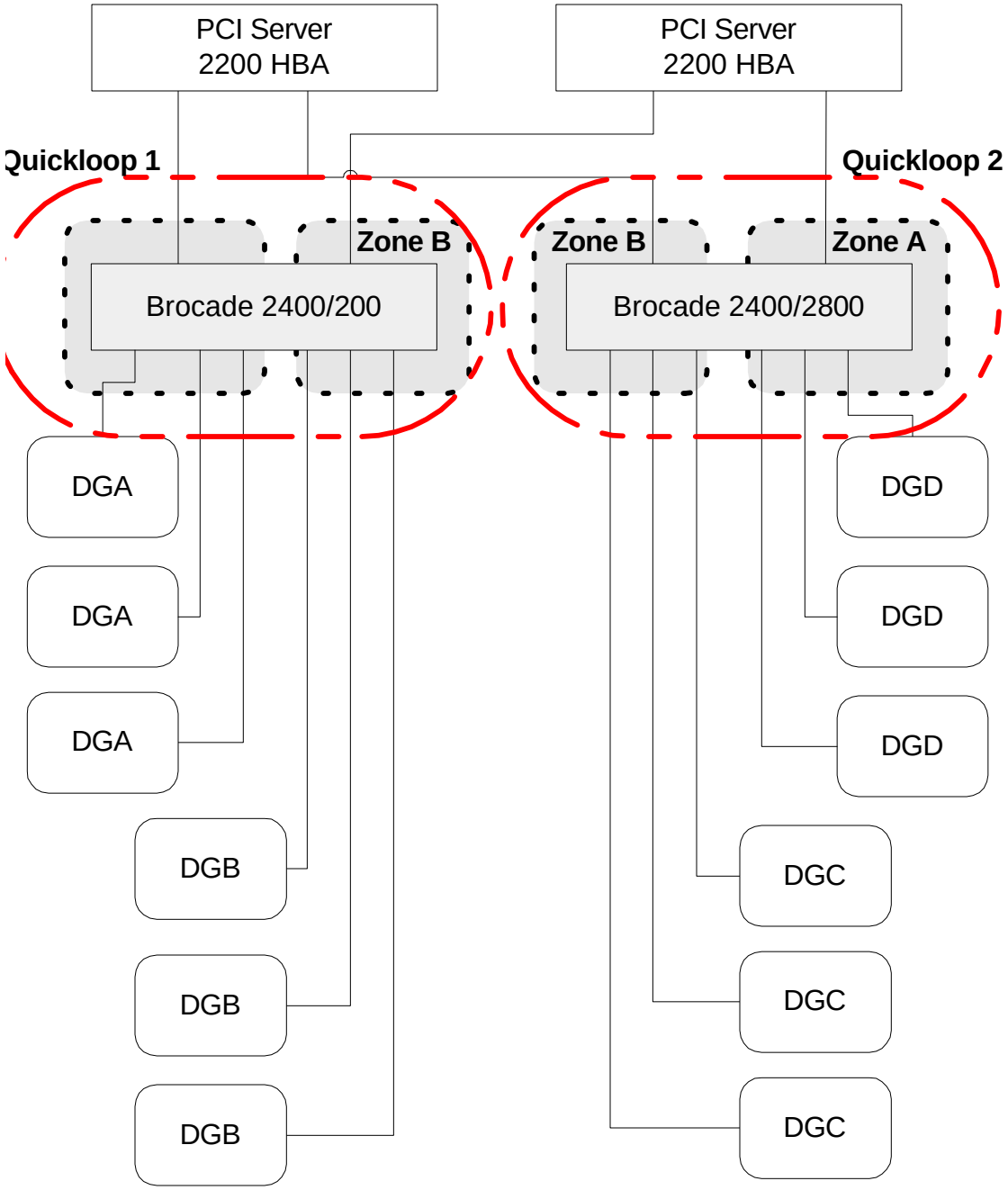


- Each line from the server equals 1 2200
- All Brocade switches **MUST** run Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each A3500FC is configured as RAID 5 with 1 hot spare per tray.
- Three A3500FC's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- MIrroring of Disk Groups may be accomplished using the A3500FC control
- All storage is accessible in the event of a server failover

- Statistics:
- RAID 5, one hot spare per tray
- 360 spindles
- 4804GB with 18GB disks
- 9608GB with 36GB disks
- Footprint is 6 rack cabinets

- Note: The A3500FC is configured as 1x5
  The A3500FC must be configured multi-initiator co

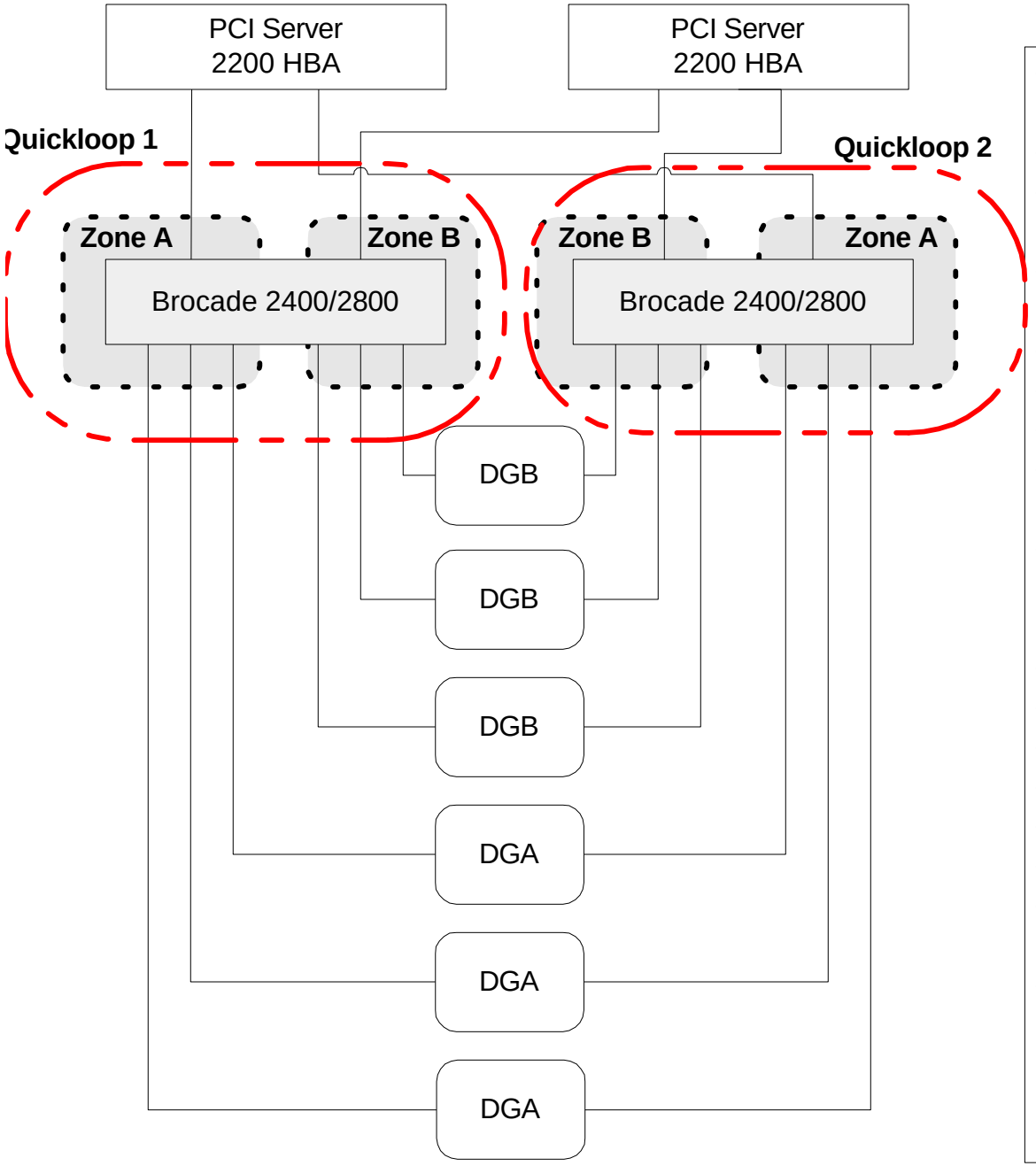
Config 7: Dual Hosts T3WG SAN



- Each line from the server equals 1 2202 HBA
- All Brocade switches **MUST** run Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each T3WG is configured as RAID 5 with 1 hot spare.
- Three T3WG's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- Disk Group C = DGC
- Disk Group D = DGD
- DGA may be mirrored to DGC using VxVM
- DGB may be mirrored to DGD using VxVM
- All storage is not accessible in the event one server fails.

- Statistics:
- RAID 5, one hot spare
- 108 spindles
- 764GB with 18GB disks
- 1528GB with 36GB disks
- 3066GB with 73GB disks
- Footprint is 3 rack cabinets

Config 8: Dual Hosts T3ES SAN

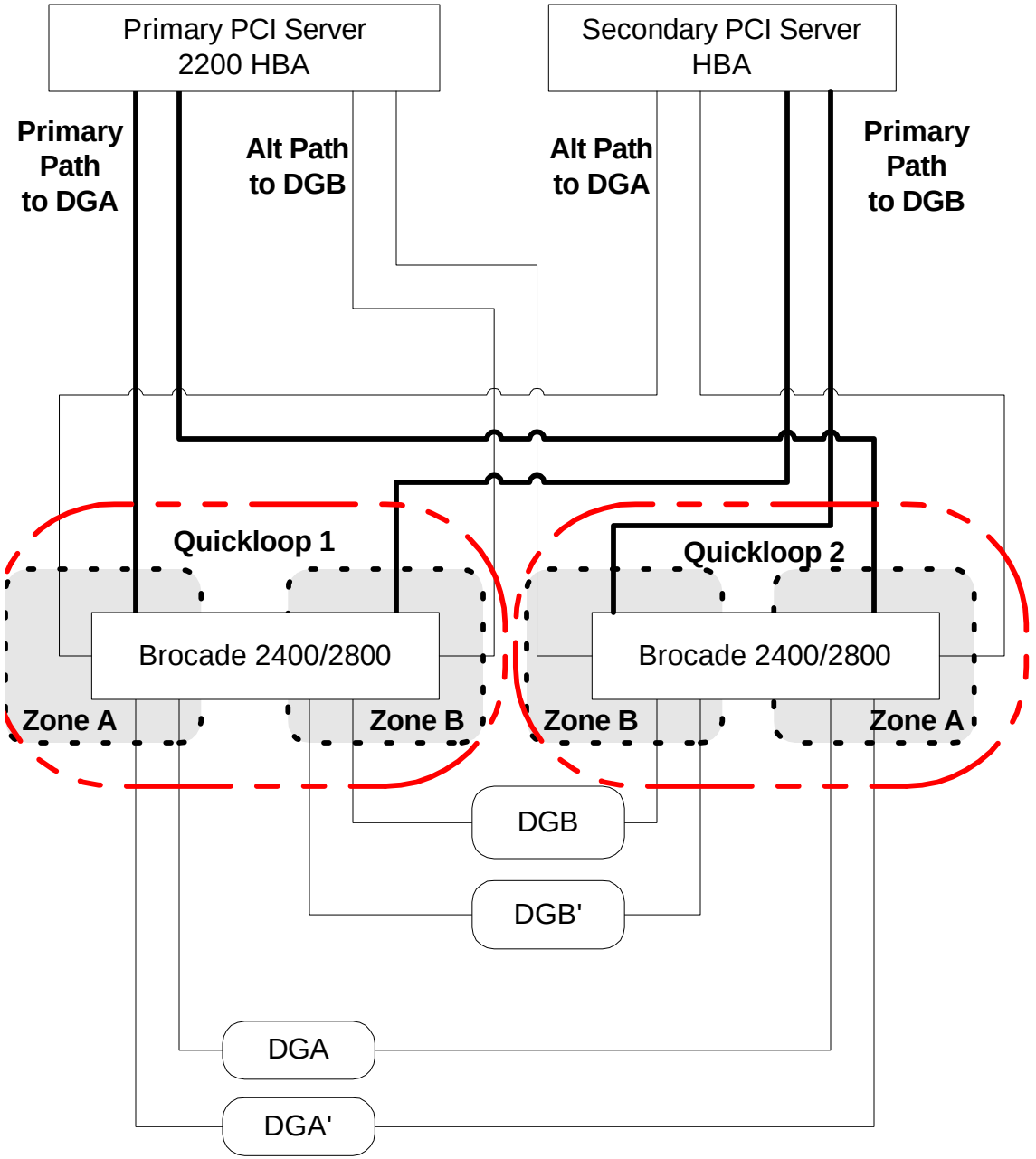


- Each line from the server equals 1 2200 HBA
- All Brocade switches **MUST** run Quickloop
- Each switch has 2 zones of 4 ports: 1 initiator and 3 targets.
- Each T3ES is configured as RAID 5 with 2 hot spares.
- Three T3ES's per Disk Group
- Disk Group A = DGA
- Disk Group B = DGB
- MIrroring of data must be done at the host level, and not through Cluster software.
- LUN failovers will be handled by the T3ES through the back FC connections.

- Statistics:
- RAID 5, two hot spares
- 108 spindles
- 1528GB with 18GB disks
- 3056GB with 36GB disks
- 6132GB with 73GB disks
- Footprint is 1.5 rack cabinets

- Note:
  The T3ES's are connected to the same server. This does not violate the multi-host

Config 9: Why T3ES cannot be in a server cluster environment



- In order to build a server tolerant SAN, each storage array must be accessible from both
- Because Sun does not allow for overlapping of ports, additional HBA's are required for
- Although the 2 initiators per zone rule is not violated, the T3ES cannot have two hosts connected simultaneously.
- In the event of the primary server failing, the following steps would occur:
  1. The secondary server's HBA's would need to be initialized. Most likely accomplished by rebooting the server.
     The T3ES will need to be rebooted because it still believes that the primary

     econdary server's HBAs will need
     new storage. (drvconfig).
  4. Then, the LUNs can be remapped and