



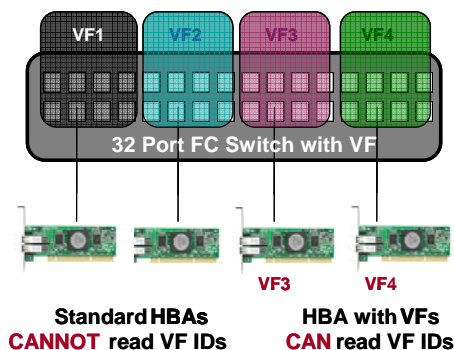
# Virtual Fabrics

## Extending Virtual Fabrics to HBAs

Virtual Fabric Tagged FC Frame



Each Virtual Fabric acts like a separate physical switch



Standard HBAs CANNOT read VF IDs  
HBA with VFs CAN read VF IDs

### Industry Challenge

In large enterprise SAN environments, several mission critical applications operate simultaneously, almost always sharing the same physical network infrastructure. Although complex fabric zoning algorithms create “minimal” network isolation, storage administrators require a more “flexible” method to ensure “complete” isolation of applications, storage devices, hardware components, and services in a SAN fabric.

### QLogic’s Virtual Fabric Solution

Virtual Fabrics (VFs) in the fabric provide the ability to create completely isolated network islands, each with its own set of fabric services (i.e. name server, zone server, login server). A switch supporting Virtual Fabric technology appends a special Virtual Fabric tag to each Fibre Channel (FC) frame, essentially dividing its ports into groups that function like separate physical switches. QLogic is the first FC HBA vendor to extend Virtual Fabric capabilities to the HBA level, thereby tagging each frame at the HBA port.

### User Benefits

- **Extended Virtualization** – Virtual Machines running on physical servers are assigned to their own virtual SAN, each with their own Quality of Service (QoS), security, and management policies
- **Lower Total Cost of Ownership** – Instead of purchasing dedicated HBA and switch ports for each Virtual Fabric, a single physical HBA port can participate in multiple Virtual Fabric domains
- **Increased Security** – Application based security and isolation based on Virtual Fabric IDs and WWPNs
- **Guaranteed QoS** – Incoming and outgoing IOs are prioritized by the HBA based on Virtual Fabric ID
- **Enhanced Traffic Management** – FC frames are routed end-to-end, depending on Virtual Fabric membership

### How QLogic’s Virtual Fabric Works

QLogic’s FC HBAs support VIRTUAL FABRIC tagging at the ASIC hardware level. This hardware-based frame tagging isolates all incoming and outgoing traffic as defined by the Virtual Fabric ID. The HBA port has the intelligence to read incoming and outgoing frames and append Virtual Fabric tags as necessary. Multiple frames can be tagged with different Virtual Fabric IDs. Once a frame is tagged by the HBA port, it will be routed appropriately to its destination within a specific Virtual Fabric.