BROCADE

HEWLETT PACKARD ENTERPRISE—
Storefabric B-Series Embedded switches for HPE Synergy

Why Dedicated FC Networks are better

1. **Dedicated FC Networks are better than Cisco UCS converged Networks**
   A. Why two dedicated switches (one FC and one IP) is better than a single converged-Switch?
      - Lower cost through less ports to transport the same total bandwidth
      - Each network can be scaled independently
      - Each network can be optimized independently
      - Each network can be refreshed/maintained independently
      - In the event that one network has an outage it doesn't impact the other
      - IP flows won't impact data flows & vice versa
      - Better Security
      - Better redundancy

   B. Why the performance of pure FC is better than FC through a converged Switch
      - Better throughputs and typically higher bandwidths
      - Low and deterministic latency vs. long and indeterminate latency
      - Less CPU utilizations
      - Better I/O Scalability

2. **FC is a MUST if customer want to derive maximum value from high I/O Flash Storage investments**
3. **FC is a MUST for the latest high-speed Intel servers**
4. **FC is a MUST for today's higher VM environments**
5. **Each generation of FC Speed helps reduce the I/O connectivity price per application**
   A. Reduced cabling (reduces CAPX and OPEX, increases reliability)
   B. Reduced Optical Connections (reduces CAPX and OPEX, increases reliability)
   C. Reduces total Ports (reduces CAPX and OPEX through managing simpler networks)
   D. Reduces total Switches (reduces CAPX and OPEX through managing simpler networks)
   E. Increases # of VMs (reduces CAPX) per I/O port

Why Recommend the HPE StoreFabric B-series full-featured embedded switch

1. **Expandable/Scalable: From 12 to 24 to 36 with 48 ports future ready w/QHBAs**
2. **Latest FOS v8.0.x feature support**
   A. New POD license features, no restrictions on how many and what order PODs can be added.
3. **Many options to choose from to fit your requirement**
   A. SKUs (12-port Entry, 24-port Mid-range, 24-port PowerPack) From 12-port Entry for a low price point and limited connectivity to 24-port PowerPack that takes full advantage of Gen 5 Fibre Channel's advanced features.

   B. Optics: Both 16Gb and 8Gb ports Brocade compatible optics are supported. Use the 16Gb optics to gain more diagnostic capabilities and to identify susceptible links/optics.
4. **Flexibility: Capable of dual function mode.**
   A. AG Mode
      - Interoperability: Take advantage of AG mode to integrate Synergy into any existing SAN and immediately take advantage of the benefits of Synergy Composable Infrastructure.
      - Scalability: Since AG devices don't take up any domain names it increases the scalability of the core SAN network by connecting more blade servers into the SAN.
      - Management Simplicity: Using AG mode the module is transparent to the SAN.

   B. Full Fabric Mode
      - Full access to Switching functionality:
        1. The Server I/O traffic can be switched to any uplink port depending on FC protocols (load balancing and shortest path algorithms, etc.). In AG mode server traffic will not bounce from port to port and only goes through user designated ports.
        2. In Full Fabric mode users also have full access to Fibre channel services (Name server services, Zoning, etc.). For example these services could be used to directly connect the module to a target device which is not possible when in AG mode.

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3. Direct connectivity to Storage devices

4. Local SAN (or SAN in a rack)
   - Provides full access to all the features of the Switch modules that may not be either applicable or available when using AG mode.
     1. Fabric Vision
     2. Extended distances

5. BNA/Webtools Support:
   - All B-series full-feature switch modules in your infrastructure can be monitored and managed by Brocade Network Advisor making it super easy to perform SAN wide management. All switches in the environment will be managed under Brocade Network Advisor management suite.

6. Full Access to FOS Roadmap and all FOS patches
   - Graphite modules are managed directly via FOS and run pure FOS functionality. Therefore users have ready access to the latest software patches.

7. Support and Serviceability:
   - Uses standard and familiar Brocade tools for serviceability (e.g. Switchshow, supportsave, etc.)

8. Multi-vendor End-to-End Fabric management features

Why Recommend the Virtual Connect SE 16Gb FC Module

A. The Virtual Connect SE 16Gb FC Module for Synergy is a pure Fibre Channel module within the HPE Virtual Connect (VC) portfolio. As such many of the advantages that are derived in dedicated networks vs converged/shared networks apply. (This is a competitive differentiator vs Flex Fabric since HPE's FF is a converged network protocol)

B. The new VC-FC Module is well integrated into HPE OneView management tool and is solely managed by OneView, giving server admins a single tool to manage all the components within the Synergy chassis.

C. Takes full advantage of all Server and fabric provisioning features of OneView while providing a high bandwidth connectivity option to existing FC SAN infrastructure

D. Brocade Trunking capability. The new VC FC module has built in Trunking capability that is compatible with Brocade F_port trunking. This allows Carbon to perform a single highly-resilient trunk port to Brocade SAN infrastructure.

   - Resilient to single or multi-link failures without disruptions to I/O traffic

   - Most efficient use of the full bandwidth of the trunk. Single, high-performance trunk of up to 128Gbps formed from up to (8) 16Gbps links.