

## HK758S: HP Virtual Connect

### Course Summary

#### Description

This course assists System Administrators to identify, manage, configure, and update the HP Virtual Connect Environment including modules, networks and profiles. An architectural overview ensures understanding of the Ethernet, FlexFabric, and Fibre Channel components and their function. Hands-on labs provide Domain and Profile configuration and a variety of network scenarios.

#### Objectives

By the end of this course, students will be able to:

- Identify the HP BladeSystem Virtual Connect Ethernet, Fibre Channel, and Flex-Fabric modules
- Access and manage the VC Manager through the CLI and GUI interfaces
- Configure a VC Domain (including profiles, networks, and storage connectivity)
- Plan and complete firmware updates

#### Topics

- Virtual Connect overview
- The Virtual Connect Manager
- HP Virtual Connect Ethernet
- HP Virtual Connect Fibre Channel
- The Virtual Connect FlexFabric Technology
- HP Virtual Connect vNets
- The Virtual Connect Profile
- HP Virtual Connect Manager Advanced Features
- Advanced Virtual Connect Networking for the System Administrator
- HP Firmware Best Practices

#### Audience

- System Administrators, engineers and consultants who will plan and manage the HP Virtual Connect environment.

#### Prerequisites

- Completion of HP BladeSystem Administration (HE646S)

#### Duration

Three days

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### Course Outline

- I. Virtual Connect overview**
  - A. Review recent Firmware releases
  - B. Access Virtual Connect documents and support
  - C. Introduce the current Virtual Connect modules
  - D. Outline Virtual Connect default behaviors
  - E. Review the c-Class management signal paths and stacking link requirements
  - F. Explain fundamental Virtual Connect technologies
  - G. Introduce Virtual Connect as a Layer2 bridge
  - H. Introduce common Virtual Connect terms
- II. The Virtual Connect Manager**
  - A. List basic requirements for accessing and managing Virtual Connect functionality
  - B. Configure Virtual Connect Manager Local User accounts
  - C. Explain Virtual Connect Logical Flow for an Initial Setup
  - D. Investigate Virtual Connect Failover and Configuration Backup
  - E. Review Administrator Password Recovery
- III. HP Virtual Connect Ethernet**
  - A. Investigate the current Virtual Connect Ethernet modules
  - B. Understand and identify primary/secondary module placement
  - C. Recognize uplink port status error conditions
  - D. Introduce the Ethernet concepts and protocols used with Virtual Connect
  - E. Introduce the concept of Physical Functions (FlexNICs)
  - F. Introduce VLAN tagging and addressing
  - G. Discuss Teaming and Bonding modes with Virtual Connect
  - H. An appendix addresses FlexFabric-20/40 F8 cabling and older hardware
- IV. HP Virtual Connect Fibre Channel**
  - A. Identify Virtual Connect Fibre Channel modules and function
  - B. Understand NPIV and why HP uses this technology
  - C. Review the Fibre Channel Logon sequence (FLOGI)
  - D. Investigate Virtual Connect Fibre Channel login distribution and re-distribution
- V. The Virtual Connect FlexFabric Technology**
  - A. Detail the FlexFabric modules, adapters, and FCoE capabilities
  - B. Describe VSAN support and configuration
  - C. Introduce Virtual Connect to 3PAR SAN connectivity
- VI. HP Virtual Connect vNets**
  - A. Outline the Virtual Connect ports
  - B. Investigate Virtual Connect Networking definitions and terminology
  - C. Configure vNets and VLANs
  - D. Investigate Advanced Virtual Connect VLAN tagging
  - E. Describe the Tunneling and Mapping Modes
  - F. Outline the Link Layer Discovery role in Virtual Connect
  - G. Introduce Link Aggregation Control Protocol
  - H. Demonstrate basic Virtual Connect Ethernet networks
  - I. Compare Active/Standby and Active/Active network designs

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### Course Outline (con't)

#### VII. The Virtual Connect Profile

- A. Outline Virtual Connect Flex-Port Assignments
- B. Explore Virtual Connect Bandwidth Allocation
- C. Investigate profile inheritance, and migration
- D. Manage and configure profiles
- E. Use the CLI Pool-Specified function to capture MAC and WWN addresses
- F. Implement the ProLiant Gen9 UEFI Boot Options

#### VIII. HP Virtual Connect Manager Advanced Features

- A. Build Multi-Enclosure Domains
- B. Investigate partially stacked Domains
- C. Configure Native VLANs
- D. Explain the role of SmartLink
- E. Monitor Virtual Connect from an external utility
- F. Introduce and configure the Federal Information Processing Standard 140-2
- G. Understand Network Loop Detection technologies embedded in Virtual Connect

#### IX. Advanced Virtual Connect Networking for the System Administrator

- A. Review LACP
- B. Implement Load Balancing
- C. Introduce Pause / Flood Protection
- D. Configure Flow Control
- E. Understand sFlow
- F. Deploy IPv6 Management Support
- G. Advanced Bandwidth Optimization
- H. Setup Priority Queue (QoS)
- I. Review TACACS+ / RADIUS configuration
- J. Implement Multicast Filtering
- K. Review SNMPv3 enhancements and MIB support

#### X. HP Firmware Best Practices

- A. Describe the recent Virtual Connect Firmware enhancements and dependencies
- B. Review the HP Service Pack for ProLiant and Smart Update Manager
- C. Deploy Virtual Connect Firmware with Smart Update Manager
- D. Use the Virtual Connect Support Utility
- E. Update Virtual Connect Firmware with Virtual Connect Enterprise Manager in place