



# HP Education Services Course Overview

HP BladeSystem Fast Track(H0DG8S)

This 5-day course provides instruction on HP BladeSystem administration and HP Virtual Connect. Discussion of the portfolio overview ensures an understanding of components, configurations, and solutions and helps students identify, manage, and configure HP Virtual Connect components. The course also Identify the distinctions between the G6, G7 and Gen8 servers.

## Audience

- System administrators, engineers and consultants who will manage and monitor the HP ProLiant BladeSystem c-Class environment
- New HP BladeSystem customers or past customers who purchased Gen 8 or earlier HP blade servers
- System Administrators, engineers and consultants who will plan and manage the HP Virtual Connect environment.

## Prerequisites

HP recommends that participants have attained the following credentials or levels of experience before taking this course:

- Introduction to HP ProLiant Servers (HE643S) or similar experience is recommended

## Course objectives

- Explore the functional architecture of the ProLiant BL c-Class environment, including management infrastructure (Insight Display, Onboard Administrator and iLO Management Engine), power and cooling and servers.
- Review the HP c-Class BladeSystem Portfolio and equipment capabilities.
- Introduce Virtual Connect (basic concepts)
- Identify the HP BladeSystem Virtual Connect Ethernet, Fibre Channel, and Flex-Fabric modules.
- Understand and configure Virtual Connect components.
- Access the VC Manager.
- Configure a VC Domain (including profiles, networks, and storage connectivity).
- Plan and complete firmware updates.

<b>Course title:</b>	HP BladeSystem Fast Track
<b>HP product number:</b>	H0DG8S
<b>Category/Subcategory:</b>	ProLiant
<b>Course length:</b>	5 days
<b>Level:</b>	Introductory
<b>Delivery language:</b>	English
<b>To order:</b>	You can register your interest for this course online at <a href="http://www.hp.com.au/education">http://www.hp.com.au/education</a> . At the site, select the course under ProLiant portfolio and you will see dates for the course. Register your interest for the date of your choice.

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## Detailed course outline

### Module 1: HP BladeSystem portfolio introduction (at a high level)

- Identify resources for information about the current HP c-Class BladeSystem portfolio
- Differentiate the two types of HP BladeSystem enclosures
- Identify HP BladeSystem ProLiant servers
- Identify HP Integrity server blades
- Describe other components in the c-Class portfolio:-HP BladeSystem adapters and mezzanines-HP BladeSystem interconnects-HP BladeSystem c-Class storage options
- Describe c-Class BladeSystem infrastructure management tools and solutions: -HP OneView management appliance-HP Smart Update solution-HP Smart Update Manager-HP Service Pack for ProLiant-HP Insight Control-HP Insight Online with Insight Remote Support
- Define the warranty and support options for HP BladeSystem solutions

### Module 2: HP BladeSystem c-Class enclosures

- Describe the HP BladeSystem c-Class enclosures
- Describe the c-Class enclosure structure
- Explain c-Class enclosure signal pathing for mezzanines and interconnects
- Define the enclosure numbering scheme
- Explain how to access the HP Onboard Administrator

### Module 3: HP BladeSystem c7000 enclosure and infrastructure configuration and management

- Describe the initial steps involved in setting up the c7000 enclosure using the:-HP Insight Display Initial Setup Wizard-HP Onboard Administrator (OA) First Time Setup Wizard
- Describe HP BladeSystem c-Class high availability features
- Describe the HP BladeSystem c-Class enclosure Onboard Administrator configuration options
- Describe configuration options with Onboard Administrator CLI

### Module 4: HP BladeSystem power and cooling

- Explain how to configure power for an HP BladeSystem c-Class enclosure
- Explain how to control/view power consumption in a c-Class enclosure
- Describe HP intelligent location and power discovery services
- Describe the structural cooling components and features

### Module 5: HP BladeSystem c-Class servers, storage, tape, and expansion blades

- Identify the distinctions between the HP ProLiant G7 and Gen8 servers
- Describe the technologies on the ProLiant system board:-Mezzanines-USB and SD cards-Embedded LOM and FlexibleLOM

- Identify c-Class Integrity servers and their requirements
- Describe server iLO interaction with the OA
- Manage certain options of your server blades from the OA GUI
- Describe the features and components of:-Storage blades-Tape blades-Expansion blades

### Module 6: HP BladeSystem c-Class connectivity options

- Describe the HP BladeSystem c-Class interconnect module architecture
- List the BladeSystem c-Class interconnect modules:-Ethernet-Fibre Channel-InfiniBand-SAS
- Describe the mezzanine cards and slots available in the BladeSystem c-Class server blades
- Describe HP BladeSystem c7000 and c3000 enclosure port mapping

### Module 7: HP Virtual Connect overview

- Define the benefits of HP BladeSystem solutions with HP Virtual Connect technology
- Describe Virtual Connect technology and its main components
- Identify ways to use Virtual Connect technology in a data center
- Describe the VC Flex technology
- Describe the VC FlexFabric Fibre Channel storage with 3PAR solution

### Module 8: HP BladeSystem c-Class firmware

- Determine what firmware is embedded in various components in the enclosure and how to update it
- Explain how to access the HP SPP download and documentation
- Describe how to update firmware for the HP OA using:-HP SUM-EFM
- Explain how to implement HP BladeSystem c-Class enclosure firmware
- Explain how to update firmware embedded in the OA for a blade enclosure

## HP Virtual Connect

### Module 1: Virtual Connect overview

- Review recent Firmware releases.
- Access Virtual Connect documents and support.
- Introduce the current Virtual Connect modules.
- Outline Virtual Connect default behaviors.
- Review the c-Class management signal paths and stacking link
- Explain fundamental Virtual Connect technologies.
- Introduce Virtual Connect as a Layer2 bridge.
- Introduce common Virtual Connect terms.

### Module 2: The Virtual Connect Manager

- List basic requirements for accessing and managing Virtual Connect functionality.
- Configure Virtual Connect Manager Local User accounts.
- Explain Virtual Connect Logical Flow for an Initial Setup.
- Investigate Virtual Connect Failover and Configuration Backup.
- Review Administrator Password Recovery.

### **Module 3: HP Virtual Connect Ethernet**

- Investigate the current Virtual Connect Ethernet modules.
- Understand and identify primary/secondary module placement.
- Recognize uplink port status error conditions.
- Introduce the Ethernet concepts and protocols used with Virtual Connect.
- Introduce the concept of Physical Functions (FlexNICs).
- Introduce VLAN tagging and addressing.
- Discuss Teaming and Bonding modes with Virtual Connect.
- An appendix addresses FlexFabric-20/40 F8 cabling and older hardware.

### **Module 4: HP Virtual Connect Fibre Channel**

- Identify Virtual Connect Fibre Channel modules and function.
- Understand NPIV and why HP uses this technology.
- Review the Fibre Channel Logon sequence (FLOGI).
- Investigate Virtual Connect Fibre Channel login distribution and re-distribution.

### **Module 5: The Virtual Connect FlexFabric Technology**

- Detail the FlexFabric modules, adapters, and FCoE capabilities.
- Describe VSAN support and configuration.
- Introduce 3PAR flat-SAN connectivity.

### **Module 6: HP Virtual Connect vNets**

- Outline the Virtual Connect ports.
- Investigate Virtual Connect Networking definitions and terminology.
- Configure vNets and VLANs.
- Investigate Advanced Virtual Connect VLAN tagging.
- Describe the Tunneling and Mapping Modes.
- Outline the Link Layer Discovery role in Virtual Connect.
- Introduce Link Aggregation Control Protocol
- Demonstrate basic Virtual Connect Ethernet networks.
- Compare Active/Standby and Active/Active network designs.

### **Module 7: The Virtual Connect Profile**

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

### **Module 8: Virtual Connect Manager Advanced Features**

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

### **Module 9: Advanced Virtual Connect Networking for the System Administrator**

- Review LACP.
- Implement Load Balancing.
- Introduce Pause / Flood Protection
- Configure Flow Control.
- Understand sFlow.
- Deploy IPv6 Management Support.
- Advanced Bandwidth Optimization.
- Setup Priority Queue (QoS).
- Review TACACS+ / RADIUS configuration.
- Implement Multicast Filtering.
- Review SNMPv3 enhancements and MIB support.

### **Module 10: Firmware Best Practices**

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

### **Lab 1: Access the Virtual Connect Manager and establish the Virtual Connect Domain**

### **Lab 2: Basic Virtual Connect Manager Setup**

### **Lab 3: Advanced VC Setup**

### **Lab 4: Using the Virtual Connect Manager CLI**

### **For more information**

To locate country contact information and to learn more about education services, please visit our worldwide web site at <http://www.hp.com.au/education> .

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