

# HPE BladeSystem Administration HE646S

This course provides instruction on HPE BladeSystem administration and management. Discussion of the portfolio overview ensures an understanding of components, configurations, and solutions.

<b>HPE course number</b>	HE646S
<b>Course length</b>	3 Days
<b>Delivery mode</b>	ILT, VILT
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## Why HPE Education Services?

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## Audience

System administrators, engineers and consultants who install, manage, and monitor the HPE BladeSystem c-Class environment

## Prerequisites

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

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

## Course objectives

- Explore the functional architecture of the HPE BladeSystem c-Class environment
- Identify the management infrastructure (Insight Display, Onboard Administrator)
- Review the HPE BladeSystem c-Class portfolio and equipment capabilities
- Review the power and cooling system
- Identify high-level functionalities of HPE ProLiant Generation 10 (Gen10) servers
- Describe the HPE BladeSystem c-Class interconnect module architecture
- Introduce the Virtual Connect management (Virtual Connect Manager, HPE OneView)
- Become familiar with HPE BladeSystem scripting
- Explain how to update the firmware on an HPE BladeSystem

## Detailed course outline

<b>Module 1: HPE BladeSystem portfolio introduction</b>	<ul style="list-style-type: none"> <li>Identify resources for information about the current HPE c-Class BladeSystem portfolio</li> <li>Differentiate the two types of HPE BladeSystem enclosures</li> <li>Identify HPE Server Blades</li> <li>Discuss enclosure connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Explain HPE OneView management appliance</li> <li>Differentiate HPE storage blades</li> <li>Explain HPE BladeSystem update tools</li> <li>Discuss HPE Infrastructure Management and Services</li> </ul>
<b>Module 2: HPE BladeSystem c-Class enclosures</b>	<ul style="list-style-type: none"> <li>Describe the HPE BladeSystem c-Class enclosures</li> <li>Describe the c-Class enclosure structure</li> <li>Explain c-Class enclosure signal midplane and power backplane</li> </ul>	<ul style="list-style-type: none"> <li>Explain how to access the Onboard Administrator</li> <li>Define the enclosure numbering scheme</li> </ul>
<b>Module 3: HPE BladeSystem enclosure management</b>	<ul style="list-style-type: none"> <li>List the initial steps involved in setting up the c7000 enclosure using the:             <ul style="list-style-type: none"> <li>HPE Insight Display Initial Setup Wizard</li> <li>HPE Onboard Administrator First Time Setup Wizard</li> </ul> </li> <li>Describe the OA enclosure high availability</li> </ul>	<ul style="list-style-type: none"> <li>Identify the OA configuration options</li> <li>Describe the OA command line interface</li> </ul>
<b>Module 4: HPE c-Class power and cooling</b>	<ul style="list-style-type: none"> <li>Explain how to configure power for an HPE BladeSystem c-Class enclosure</li> <li>Explain how to control and view power consumption in a c-Class enclosure to configure its efficiency</li> <li>Explain HPE BladeSystem c-Class power management</li> </ul>	<ul style="list-style-type: none"> <li>Describe HPE Intelligent Location and Power Discovery services</li> <li>Describe the structural cooling components and features of c-Class enclosures</li> </ul>
<b>Module 5: HPE BladeSystem c-Class Blade servers</b>	<ul style="list-style-type: none"> <li>Describe the HPE BladeSystem I/O technologies on the system board:             <ul style="list-style-type: none"> <li>FlexibleLOM</li> <li>Mezzanines</li> <li>USB and SD cards</li> </ul> </li> <li>Describe the features and components of: storage blades, tape blades, expansion blades</li> </ul>	<ul style="list-style-type: none"> <li>Identify c-Class Integrity servers and their requirements</li> <li>Manage certain options of your server blades from the OA GUI</li> <li>Describe the server iLO interaction with the OA</li> </ul>
<b>Module 6: HPE BladeSystem c-Class connectivity options</b>	<ul style="list-style-type: none"> <li>Describe the HPE BladeSystem c-Class interconnect module architecture</li> <li>List the BladeSystem c-Class interconnect modules             <ul style="list-style-type: none"> <li>Ethernet</li> <li>Fiber Channel</li> <li>InfiniBand</li> <li>SAS</li> </ul> </li> <li>Describe the mezzanine cards and slots available in the BladeSystem c-Class server blades</li> </ul>	<ul style="list-style-type: none"> <li>Explain the enclosure signal pathing</li> <li>Describe the port mapping for HPE BladeSystem enclosures             <ul style="list-style-type: none"> <li>c7000</li> <li>c3000</li> </ul> </li> <li>Explain the HPE Virtual Connect technology</li> <li>Explain the HPE OneView management appliance</li> </ul>

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<b>Module 7: HPE BladeSystem c-Class firmware</b>	<ul style="list-style-type: none"><li>• Determine what firmware is embedded in various components in the enclosure and how to update it</li><li>• Explain how to access the SPP, SUM and supporting documentation</li><li>• Define the interdependencies and update best practices for HPE enclosure components</li><li>• Describe how to update the firmware for the HPE OA</li></ul>	<ul style="list-style-type: none"><li>• Explain how to use SUM for enclosure-based firmware management and software updates</li><li>• Explain how to update the firmware on HPE Blade servers</li><li>• Explain how to update the firmware on Integrity servers</li><li>• Explain how to update the firmware on HPE OneView managed systems</li></ul>
<b>Module 8: Configuring the enclosure using scripting</b>	<ul style="list-style-type: none"><li>• Review the OA CLI access</li><li>• HPE iLO scripting via the Onboard Administrator (HPONCFG)</li><li>• Introduce PowerShell OA configuration commands</li></ul>	<ul style="list-style-type: none"><li>• Introduce PowerShell iLO configuration commands</li><li>• Introduce other iLO RESTful API libraries</li><li>• Discuss OA CLI scripting</li></ul>
<b>Module 9: Course closing</b>	<ul style="list-style-type: none"><li>• Closing the course</li><li>• Learning objectives<ul style="list-style-type: none"><li>– Participant learning goals</li></ul></li><li>• Training from HPE Education Services</li><li>• HPE Education Services</li><li>• HPE Certification and learning program</li><li>• Concepts</li></ul>	<ul style="list-style-type: none"><li>• HE646 Course objectives review</li><li>• Energizers<ul style="list-style-type: none"><li>– Conversations</li><li>– Eye on blades blog: Trends in infrastructure</li><li>– HPE Discover conference</li></ul></li><li>• Case studies<ul style="list-style-type: none"><li>– HPE server customer case studies</li></ul></li></ul>

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## Detailed lab guide

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Lab 1: Using the BladeSystem Insight Display

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Lab 2: Using the Onboard Administrator GUI

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Lab 3A: Using the Onboard Administrator CLI

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Lab 3B: Using the PowerShell cmdlets

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Lab 4A: Managing Power with the Onboard Administrator

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Lab 4B: Using the HPE Power Advisor

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Lab 5: Using HPE BladeSystem c-Class enclosure-based USB devices

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Lab 6: HPE BladeSystem c-Class c7000 port mapping

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Lab 7: Using the Service Pack for ProLiant

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Appendix Lab 1: Exploring HPE Virtual Connect Manager

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Appendix Lab 2: Using Enclosure Firmware Management

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