

# HP Education Services Course Description

Open System Services (OSS) HP NonStop Server Fundamentals (U5515S)



This two-day course provides an introduction to HP NonStop servers and to the system software that makes them reliable, scalable, open, and fast. It describes goals that have governed and are continuing to govern the evolution of these systems, and it reviews NonStop server application, database, and operations environments.

## Audience

- Application designers and developers
- System managers and network managers
- Data communications programmers
- Technical support personnel

## Prerequisites

- Knowledge of basic computer and IT concepts

## Course Objective

- Describe the unique capabilities of HP NonStop servers
- Describe the hardware and software architecture of NonStop S-Series and Integrity NonStop servers
- Describe concepts and facilities for application design and development, database design, operations, and system management
- Provide hands-on experience in selected areas

## Benefits to You

- Identify application areas in which NonStop servers are commonly used
- Understand design goals for NonStop servers
- Learn how NonStop server hardware and software components work together to deliver the highest levels of availability, data integrity, scalability, and flexibility
- Gain experience with the Open System Services (POSIX-based) and Guardian interfaces presented by the NonStop operating system to programmers and users
- Review core services that provide a foundation for application development: the NonStop operating system, NonStop Transaction Services/Massively Parallel (NonStop TS/MP), NonStop Transaction Management Facility (NonStop TMF), NonStop SQL/MP, NonStop SQL/MX, and Enscribe
- Review proprietary and industry-standard transaction monitors and application environments available on NonStop servers (Pathway/iTS, NonStop Tuxedo, NonStop CORBA, BEA WebLogic Server, iTP WebServer, and NonStop ODBC)
- Access manuals and support information in the NonStop Technical Library and elsewhere

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**Course Title:** Open System Services (OSS) HP NonStop Server Fundamentals

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**HP Product Number:** U5515S

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**Category/Subcategory:** NonStop/Application Design and Development

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**Course Length:** 2 Days

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**Level:** Beginning

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**Delivery Language:** English

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**To Order:** You can order this course online at <http://www.hp.com/learn>. At the site, select a country, then choose "registration" or "Book a course" and fill out the online registration form.

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**Next Steps:** Any beginning operations/ management, database, or programming course

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## Detailed Course Outline

### Lesson 1A: Design Goals for NonStop Servers

- Explain how a cluster differs from a symmetric multiprocessor (SMP)
- Describe the HP NonStop server's unique approach to clustering
- List major application areas in which NonStop servers are used
- Define NonStop server design goals and describe the extent to which they have been realized

### Lesson 1B: NonStop Technical Library (NTL)

- Access the NonStop Technical Library (NTL)
- Browse to find NTL documents and information
- Use search facilities to find NTL documents and information
- Lab exercise:  
Access NTL and browse to find documents  
Print selected pages from a document  
Perform simple and complex searches for information

### Lesson 2A: NonStop Server Architecture Basics

- Describe the HP NonStop server product line
- Explain in detail how the NonStop server architecture assures fault tolerance

### Lesson 2B: Guardian User Interface and File System

- Access and logon to the NonStop server
- Manage the Guardian user environment
- Manage Guardian files
- Lab exercises:
- Describe file and user security features offered by the NonStop operating system
- Log on and log off, establish and change your password
- Establish a default disk volume and subvolume for files, change from one subvolume to another, list files in a subvolume

- Obtain information on file characteristics, change the security of a file, give a file to someone else, rename and duplicate a file, view the contents of a file, print an EDIT file, purge a file
- Use the WHO command to explore your user environment, use the STATUS command to explore your process environment, use the HISTORY, !, and FC commands to view, reissue, and correct commands previously entered

### Lesson 3A: NonStop Operating System Basics

- Describe the basic characteristics and functions of the HP NonStop operating system
- Differentiate between a process and a program, and explain how the NonStop operating system manages processes
- Compare and contrast the capabilities of:
  - A message-based operating system such as the NonStop operating system
  - Operating systems that rely on shared memory or shared disks
- Describe major functions of the NonStop operating system file and message systems, and explain how they:
  - Create a single system image
  - Contribute to fault tolerance
  - Provide a foundation for scalability networking, and distributed processing
- Describe the role of process pairs in ensuring fault tolerance
- Explain what a NonStop operating system release, release version, and release version update consist of

### Lesson 3B: The OSS Environment

- Describe Open System Services (OSS), the POSIX-based user and programmatic interface to the NonStop operating system
- Lab exercise:
- Demonstrate the similarity between the OSS file system and shell and UNIX counterparts
- Demonstrate interoperability between the OSS file system and the Guardian file system

- Use basic POSIX.2 shell commands and utilities to manage files in the OSS environment

#### **Lesson 4A: The Requester-Server Model**

- Explain why modularity—specifically the requester-server concept—is important in the design of applications for HP NonStop servers
- Describe the Pathway transaction-processing environment

#### **Lesson 4B: The Pathway Application Environment**

- Describe the major components of the Pathway transaction-processing environment:
  - NonStop TS/MP
  - Pathway/iTS

#### **Lesson 4C: Application Servers/Transaction Processing Monitors**

- Describe the major transaction-processing environments available on NonStop servers
- List and describe core services for applications on the NonStop server:
  - NonStop TS/MP, NonStop TMF, NonStop RDF, NonStop SQL, other database services

#### **Lesson 4D: Database Management**

- Describe the database management system available on NonStop servers

#### **Lesson 4E: NonStop Transaction Management Facility (TMF) and RDF**

- Describe the ACID properties of online transactions
- Explain how the NonStop Transaction Management Facility (TMF) protects data integrity
- Describe criteria for placing transaction delimiters in application code
- Describe transaction backout, volume recovery, and file recovery under NonStop TMF
- Describe the Remote Database Facility (RDF)

#### **Lesson 4F: Application Development Environment**

- Describe the major components of the desktop application development environment for NonStop servers
- Lab exercise:
  - Use the Guardian Spooler to manage print job

#### **Lesson 5A: NonStop Server Manageability**

- Describe the HP NonStop server manageability strategy
- Define the following terms as they relate to the NonStop server operational environment:
  - Element management
  - Enterprise management
- Describe the functions of NonStop server element management tools

#### **Lesson 5B: NonStop Server System**

- Summarize basic NonStop server system management issues relating to:
  - Availability
  - Data integrity
  - Performance and scalability
  - Open interfaces
- Lab exercises:
  - Use the Disk Space Analysis Program (DSAP) to obtain information about disk space usage
  - Use the SYSINFO utility to obtain information about the current operating system release, the system number, and the network node number
  - Use the SYSTIMES command to obtain system information such as when the current operating system image (OSIMAGE) was created and when the system was loaded
  - Use the ViewSys tool to monitor system performance

## Onsite-Delivery Equipment Requirements

- Windows-based workstations providing each student with access to a NonStop server
- Student and instructor access to:
  - Internet
  - Basic Guardian utilities
  - The Guardian spooler
  - TACL and OSS
  - DSAP and ViewSys

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