

Open System Services (OSS) HPE NonStop for Guardian Developers U4159S

HPE course number	U4159S
Course length	4 days
Delivery mode	VILT
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This class provides the knowledge to use UNIX commands and utilities, and to develop applications in the Open System Services (OSS) environment on HPE NonStop servers. The lectures and labs focus on OSS basics, commands, utilities, and development tools. In addition, students are introduced to OSS application programming interface (API) usage and the OSS sockets interface.

In addition to becoming familiar with Open System Services (OSS) architecture, interfaces, and procedures, students gain the skills needed to optimize HPE NonStop systems so users experience smooth functioning IT operations. Students also gain valuable hands-on experience managing an Open System Services (OSS) environment. This course prepares students for advanced learning courses in the HPE NonStop curriculum.

Audience

This class targets Guardian knowledgeable application developers and system programmers who want to obtain a thorough grounding in the OSS environment.

Prerequisites

- Six months experience as a NonStop administrator
- Concepts and Facilities for HPE NonStop Systems (U4147S)

Course objectives

In addition to receiving an introduction to OSS, students will gain the following knowledge and skills:

- OSS file system basics
- OSS architecture, commands, and utilities
- OSS development environment
- OSS API usage and sockets basics

Detailed course outline

Module 1 - Introduction to OSS	<ul style="list-style-type: none"> • History of UNIX • The POSIX standard NonStop servers that use OSS 	<ul style="list-style-type: none"> • Guardian and OSS interface differences
Module 2 - OSS File System Basics	<ul style="list-style-type: none"> • Accessing OSS • The OSS file system • Permissions 	<ul style="list-style-type: none"> • File types • Typical directories
Module 3 - Basic Commands and Utilities	<ul style="list-style-type: none"> • Navigational and display commands • TACL/OSS command equivalents • Printing from OSS 	<ul style="list-style-type: none"> • Process management • Lab exercise: Basic commands and utilities
Module 4 - Advanced Commands and Utilities	<ul style="list-style-type: none"> • More advanced commands • Redirection and piping • Profile files environment variables 	<ul style="list-style-type: none"> • Command line editing • Miscellaneous commands such as grep and awk • Lab exercise: Advanced commands and utilities
Module 5 - OSS File Editing	<ul style="list-style-type: none"> • The vi or vim editor • Copying files between OSS and Guardian environments 	<ul style="list-style-type: none"> • Text file conversion between OSS and Guardian environments • Lab exercise: File editing
Module 6 - Command Scripting	<ul style="list-style-type: none"> • Command files • Use of TACL commands from OSS • Use of OSS commands from TACL • Variable usage • Aliases 	<ul style="list-style-type: none"> • Control structures • Functions • Argument processing • Tracing • Lab exercise: Command scripting
Module 7 - OSS Development	<ul style="list-style-type: none"> • Tools and utilities such as c89, c99, c11, ecobol or xcobol, tar, pax, eld or xld, and enoft or xnoft • Compiling and linking using make • Compiling and linking for SQL/MX • NonStop Development Environment for Eclipse 	<ul style="list-style-type: none"> • Debugging with Inspect • Debugging with Visual Inspect • Lab exercise: Development and Native Inspect
Module 8 - Porting Issues	<ul style="list-style-type: none"> • General porting considerations • Porting design issues • Interprocess communications features • Pipes and FIFOs • Performance considerations 	<ul style="list-style-type: none"> • \$RECEIVE handling • NonStop PathSockets • FLOSS - Freeware Look for OSS • Lab exercise: Porting
Module 9 - OSS Subsystem Architecture	<ul style="list-style-type: none"> • Subsystem processes • Subsystem files • OSS subsystem startup • OSS configuration overview 	<ul style="list-style-type: none"> • The gname and pname utilities • DEFINE usage • Lab exercise: Architecture

Module 10 - Application Programming Interface (API) Usage

- Accessing standard POSIX system calls
- Accessing NonStop server specific extensions to the system calls
- Accessing Guardian objects from POSIX system calls
- Differentiating between the different forms of process creation calls
- Accessing Guardian procedures from within an OSS program
- Lab exercise: API usage

Module 11 - OSS Sockets Basics

- What is a socket?
 - Client/server support
 - Protocols and addressing
 - Sockets function library
 - Library headers and data structures
 - OSS and Guardian sockets differences
 - Lab exercise: OSS sockets
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