

Course Description:

Red Hat Enterprise Linux Kernel Internals (RHD361) is a hands-on course providing experienced developers an intensive, low-level examination of the Linux kernel architecture. Topics include kernel compilation, debugging tools and techniques, and internal kernel APIs including synchronization, process management, and memory management. These topics provide a solid understanding of the kernel's architecture, providing a useful base from which more specialized topics such as device drivers or performance tuning can be addressed, such as those presented in Red Hat Enterprise System Monitoring and Performance Tuning (RH442) or Red Hat Enterprise Linux Kernel Device Drivers (RHD362).

Who Should Attend:

This class is for experienced developers who want to gain a thorough understanding of the Linux architecture, including the newest kernels.

Prerequisites:

Students should have experience in C programming. Knowledge of systems programming in a UNIX or Linux environment (register-level hardware programming knowledge is recommended but not required). Students should also have familiarity with basic tools, such as vi, Emacs, and file utilities and familiarity with Unix development tools such as gcc and make.

Benefits of Attendance:

Upon completion of this course, students will be able to:

- Understand and use more advanced performance tuning concepts.
- Understand how device drivers interact with the kernel.

Course Outline:

User and Kernel Mode

Kernel Compilation

Kernel Initialization

Kernel Modules

Introduction to Device Drivers

Kernel API Overview

Kernel Debugging

System Tap

Process Management

Scheduling

Real time and Red Hat Enterprise Linux RT

Kernel Threads

Timing

Interrupts

Synchronization

Memory

Working with the Linux Community