



VXWORKS 6.9 and Workbench Training

COURSE DESCRIPTION

This training course provides trainees with fast and cost effective way to acquire the skills necessary to design develop real-time applications with VxWorks and target hardware board.

COURSE FORMAT

- This is three-day instructor-led course consists of lecture and lab sessions
- Participants receives individual guidance from expert who has extensive experience with Wind River technologies

PREREQUISITE SKILLS

- One year of C programming
- Basic understanding of operating systems and debugging techniques

LOGISTICS REQUIREMENTS

- Participants need to use their license and development environment for hands-on lab

Course: VxWorks 6.9 and Workbench Training

Duration: Three Days

Format: Instructor-led lecture and hands-on labs

Hands on Lab: Customer license and installation setup is used for hands on labs

Content:

Day1: VxWorks Development Tools, Real Time Multi-tasking, VxWorks Scheduler

Day2: RTP, Inter-task Communications, Message Channels

Day3: Signal Interrupts and Timers, Error Detection and Reporting, System Analysis Tools



SYLLABUS

Day 1

VXWORKS DEVELOPMENT TOOLS

- Workbench Basic Concepts
- Host Target Connection
- VxWorks Shell
- VxWorks Image Project
- Kernel Configuration
- Downloadable Kernel Module
- Hands-on Lab:
 - ✓ Host-Target connection
 - ✓ VxWorks Image Project
 - ✓ Kernel Configuration
 - ✓ DKM
 - ✓ Debugging

REAL TIME MULTITASKING

- Multitasking Overview
- Task State Transitions
- Task Priorities
- Context Switching
- Task Control Routines
- Task Hooks
- Hands-on Lab:
 - ✓ Multitasking

VXWORKS SCHEDULER

- VxWorks Scheduling Algorithms
- Priority Inversion
- Priority Inheritance
- Hands-on Lab:
 - ✓ Priority Scheduling
 - ✓ Round Robin Scheduling

Day 2

REAL TIME PROCESSES & MEMORY MANAGEMENT

- Introduction
- RTPs and Tasks
- RTPs and Virtual Memory Management
- RTP Creation and Termination
- VxWorks RTP configuration
- Important RTP routines
- Shared Library Usage
- Design Considerations
- Hands-on Lab

INTER-TASK COMMUNICATIONS

- Inter-task communication Overview
- Shared memory
- Message queues
- Events
- Semaphores
- Hands-on Lab:
 - ✓ Message Queues
 - ✓ Semaphores

MESSAGE CHANNELS

- Introduction
- Connection Oriented Message Passing (COMP)
- Socket Application Libraries(SAL)
- Socket Name Service(SNS)
- Message Queues vs Message Channels



SYLLABUS

Day 3

SIGNAL INTERRUPTS AND TIMERS

- ISR Overview
- Writing ISRs
- ISR to Task communication
- Important Interrupt Routines
- Debugging ISR
- Vxworks Signals
- Hands-on Lab:
 - ✓ Signals

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ERROR DETECTION AND REPORTING

- Introduction
- Configuring EDR Facilities
- Error Records
- Fatal Error response modes
- Other Error handling options

SYSTEM ANALYSIS TOOLS

- Memory Analysis
- Performance Analysis
- System Viewer
- Hands-on Session
 - ✓ Memory Analyzer
 - ✓ Performance Analyzer
 - ✓ System Viewer