



VXWORKS 6.9 BSP and Device Drivers

COURSE DESCRIPTION

This training course provides trainees with fast and cost effective way to acquire the skills necessary to BSPs and Device Drivers on VxWorks 6.9 with new VxBus framework

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 BSP and Device Drivers**

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: Introduction VxWorks BSPs, Signal Interrupts and Timers, Pre-Kernel Initialization

Day2: Post-Kernel Initialization, Driver Development Strategies, Initialization Sequence

Day3: Services Available to Drivers, Driver Integration with VxWorks, VxWorks IO Interface



SYLLABUS

Day 1

INTRODUCTION TO VXWORKS BSPs

- BSP Development Flow
- BSP Files
- BSP Routines
- BSP Configuration Macros
- BSP Images

INTERRUPTS AND TIMERS

- VxWorks Interrupts
- Interrupt Service Routines
- Debugging ISRs
- VxWorks Timers and Clocks
- Hands-on Lab:
 - ✓ Interrupts

PRE-KERNEL INITIALIZATION

- Pre-Kernel Initialization Sequence
 - ✓ romInit()
 - ✓ romStart()
 - ✓ sysInit()
 - ✓ usrInit()
 - ✓ sysHwInit()
- Pre-Kernel Locad and Debug Options
- Hands-on Lab:
 - ✓ Pre-kernel Initialization

Day 2

POST-KERNEL INITIALIZATION

- Post-Kernel Initialization Sequence
 - ✓ usrKernInit()
 - ✓ kereInit()
 - ✓ usrRoot()
 - ✓ sysHwInit2()
- Hands-on Lab:
 - ✓ Post-kernel Initialization

VXWORKS DEVICE DRIVERS

INTRODUCTION

- Device Driver Overview
- Introduction to VxBus
- Class Specific Drivers
- Driver Templates

DRIVER DEVELOPMENT STRATEGIES

- Writing New VxBus Driver
- VxBus Show Routines
- Debugging
- Hands-on Lab:
 - ✓ Development Strategies



SYLLABUS

Day 3

DRIVER INITIALIZATION SEQUENCE

- Hardware Discovery and Registration
- Driver Probe/Match
- Phase1 Initialization
- Phase2 Initialization
- Phase3 Initialization
- Hands-on Lab:
 - ✓ Driver Initialization

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SERVICES AVAILABLE TO DRIVERS

- Device Configuration
- Memory Allocation
- NVRAM
- Interrupt Handling
- Hardware Access
- Hands-on Lab:
 - ✓ Services to Drivers

DRIVER INTEGRATION WITH VXWORKS

- Using Driver Methods
- Integration with VxWorks Source Tree and Build Environment
- Hands-on Lab
 - ✓ Driver Integration

VXWORKS IO INTERFACE

- IO System Overview
- Basic IO
- IO Routing
- Adding Devices
- Hands-on Lab
 - ✓ IO Interface