VxWorks® for VME

Wind River Education Services enables clients to unleash the power of Wind River’s tools by creating developers skilled in Wind River technology. For developers, Education Services provides the knowledge you need to meet your commitments and exceed your company’s expectations. With Wind River Education Services, you will develop, run, and manage your application software faster, better, at lower cost, and more reliably.

Course Description
The VxWorks® for VME Training Workshop provides engineers with a fast, cost-effective way to acquire the knowledge necessary to develop VxWorks applications and device drivers in a VME environment.

After taking this course, students will have the knowledge to:
• Take a requirement specification to a working application
• Design, develop, debug, build, and test real-time applications with Tornado and VxWorks
• Efficiently use the tools and functionality of Tornado and VxWorks

Products Supported
• Tornado 2.2 / VxWorks 5.5
• Tornado 2.0 / VxWorks 5.4

Who Should Attend
• Everyone who will receive Wind River products within 60 days
• Developers who work with Tornado and VxWorks
• New project members on teams already using Wind River products
• Senior engineers who want to evaluate VxWorks technology

Prerequisite Skills
• One year of C programming
• Basic understanding of operating systems and debugging techniques
• Functional knowledge of UNIX or Windows NT

Prerequisite Courses
• Introduction to Real-Time Programming

Related Courses
• Tornado® 2 Board Support Package
• Tornado® 2 Device Drivers

Course Format
• Our five-day instructor-led courses consist of lectures and lab sessions
• Students gain hands-on experience and receive personal guidance from expert Wind River instructors
• Students examine details of the Tornado environment, focusing on the most commonly used areas
• Specific questions are addressed
• Lab sessions allow hands-on application of course concepts

Global Reach of Wind River Education Services
• 4,000 students per year
• 400 classes delivered per year
• 36 instructors worldwide
• Access to 250 subject matter experts
• 24 training centers worldwide
• 25 active courses
• 20+ years of device software experience

On-site courses are conducted at your location and include the use of preconfigured laptops and target boards, plus shipping and travel costs. Visit education.windriver.com for registration and schedule information.
Topics

- Booting VxWorks
- Project Facility
- Integrated Simulator
- Tornado Shell
- Symbolic Debugging
- Source Debugging (CrossWind)
- Performance Monitoring Tools
- Preemptive Task Scheduling
- Semaphores
- Memory Management
- Intertask Communication
- Message Queues and Pipes
- Mutual Exclusion and Re-entrancy
- Writing Exception Handling Code
- Interrupt Handling
- Reconfiguring VxWorks
- VMEbus Addressing
- POSIX API
- VMEbus Interrupts

Agenda

Day 1
Getting Started
- Tornado Components
- Getting Help
- Booting VxWorks
- Target Server and Agent
- Launcher and Tornado
- Development Environment
Projects
- Bootable Projects and VxWorks Configuration
- Integrated Simulator
- downloadable Projects
- Build Specifications
Tornado Shell
- WindSh Commands and Usage

Day 2
CrossWind Debugger
- Starting a Debugging Session
- Basic Debugger Commands
- Customizing CrossWind
- System-Level Debugging
Real-Time Multitasking
- Task Scheduling
- Task Creation
- Task Management
- Additional Task Context
- System Tasks
Wind River System Viewer
- Configuring Wind River System Viewer Events

Day 3
Semaphores
- Binary Semaphores and Synchronization
- Mutual Exclusion Semaphores
Intertask Communication
- Shared Memory
- Message Queues
- Pipes