VXWORKS 5.X AND TORNADO ESSENTIALS

COURSE DESCRIPTION

The VxWorks® 5.x and Tornado Essentials course provides engineers with a fast, cost-effective way to acquire the skills to develop real-time applications with Tornado.

After this course, participants will be able to perform the following:

- Take a requirement specification to a working application
- Design, develop, debug, build, and test real-time applications with VxWorks
- Manage memory, inter-task communications, and exceptions effectively

PRODUCTS SUPPORTED

- VxWorks 5.5
- Tornado 2.2

COURSE FORMAT

- This four-day expert-led course consists of lectures and lab sessions.
- Attendees use VxWorks 5.5 and Tornado 2.2 to gain experience with the topics presented.
- Participants examine and exercise simulated network topologies in hands-on labs.
- Participants receive individual guidance from an expert engineer who has extensive experience with Wind River technologies.

AUDIENCE

- Developers who work with Tornado and VxWorks
- New project members on teams using Wind River® products

PREREQUISITE SKILLS

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

Course title:	**VxWorks 5.x and Tornado Essentials**
Duration:	Four days
Format:	Instructor-led lectures and hands-on lab sessions ; instructor-led Live Remote delivery available
Content:	**Day 1:** Getting Started; Projects; Tornado Shell
	Day 2: CrossWind Debugger; Real-Time Multitasking; Wind River System Viewer
	Day 3: Semaphores; Inter-task Communication; Memory; VxWorks Events
	Day 4: Exceptions Interrupts and Timers; Reconfiguring VxWorks

PREREQUISITE COURSES

- Real-Time Programming for Embedded Systems

RELATED COURSES

- VxWorks 5 Board Support Package
- VxWorks 5 Device Drivers

SYLLABUS

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

INTER-TASK COMMUNICATION

- Shared memory
- Message queues
- Pipes

MEMORY

- Memory allocation
- Memory partitions

VXWORKS EVENTS

- Event register
- Task synchronization

Day 4

EXCEPTIONS INTERRUPTS AND TIMERS

- Exception handling and signals
- ISR basics
- System clock and watchdog timers

RECONFIGURING VXWORKS

- Including/excluding VxWorks facilities
- VxWorks initialization code
- Linking application code with VxWorks

GLOBAL REACH OF WIND RIVER EDUCATION SERVICES

With more than 30 years of device software experience, Wind River provides education services in every region of the world. Our private classes can be tailored to your needs by adding or removing topics from multiple courses. If you have more specific project challenges, Wind River Mentoring provides coaching by experienced engineers to help you integrate Wind River solutions into your environment. And when you're too busy to attend a whole class, our On-Demand Learning options provide around-the-clock access to advanced and specialized topics. All of our education services are led by expert engineers who are closely connected to the Wind River technical community for access to specific expertise.

CONTACT US

For more information about Wind River Education Services, visit www.windriver.com/education/.

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