WIND RIVER INTELLIGENT DEVICE PLATFORM XT ESSENTIALS

COURSE DESCRIPTION
The Wind River® Intelligent Device Platform XT Essentials course provides engineers and system designers with a fast, cost-effective way to learn to use Wind River Helix™ Device Cloud to build high-performance, manageable, scalable, and secure Internet of Things (IoT) solutions for various market segments. The training describes how the Intel® IoT Gateway works with Wind River software. After taking this course, participants will be able to perform the following:

• Fully utilize the capabilities of target hardware to increase the security, manageability, and connectivity of applications software
• Configure, build, and deploy various Intelligent Device Platform XT software collections in a secure manner
• Create and deploy Intelligent Device Platform XT compatible software applications
• Securely store and manage data in the cloud

PRODUCTS SUPPORTED
• Wind River Intelligent Device Platform XT 3.x
• Wind River Helix Device Cloud 1.2
• Wind River Linux 7

HARDWARE SUPPORTED
• QEMU-KVM simulated target

COURSE FORMAT
• This two-day, expert-led course consists of lectures and lab sessions.
• Students receive personal guidance from expert Wind River instructors.
• Students use Intelligent Device Platform XT and Wind River Linux products to gain experience with the topics presented.
• Participants examine and exercise simulated targets in hands-on labs.
• Participants receive individual guidance from an expert engineer who has extensive experience with Wind River technologies.

AUDIENCE
• Developers involved in IoT on Intel general purpose processors
• System architects and system integrators involved with the design of devices that are part of IoT

PREREQUISITE SKILLS
• Intermediate knowledge of Linux platforms
• C or Java programming skills

PREREQUISITE COURSES
• Wind River Linux 7 and Workbench Essentials

RELATED COURSES
• None
SYLLABUS

Day 1

INTRODUCTION TO INTELLIGENT DEVICE PLATFORM XT

• What is Intelligent Device Platform XT?
• Why use Intelligent Device Platform XT?
• How does Intelligent Device Platform XT work with other products?
• Intelligent Device Platform XT workflow

INTELLIGENT DEVICE PLATFORM XT ARCHITECTURE

• Architecture
• Secure Remote Management (SRM) components
• Device management
• LAB: Getting Started with Intelligent Device Platform XT

INTRODUCTION TO IOT SECURITY

• Device security
• Cloud security
• Device-to-cloud security
• Cloud API security
• The security development cycle

VERIFIED AND SECURE BOOT

• Secure boot
• GRUB boot loader
• SPI flash
• Verified boot
• SRM signing tool

LINUX GRSECURITY

• Grsecurity®
• PaX and ASLR
• ACL/RBAC
• Grsecurity tools
• LAB: Using Grsecurity

SECURE REMOTE MANAGEMENT BASICS

• Public key cryptography
• Intelligent Device Platform XT personas
• Key management
• Trusted Software Stack
• SRM features using Trusted Platform Module
• LAB: Generating Keys for Intelligent Device Platform XT

Day 2

INTEGRITY MEASUREMENT

• What is integrity measurement (IM)?
• Role of IM tools
• Application integrity measurement (AIM)
• Maintaining IM
• Embedded Control
• LAB: Using the Tamper-proof File System
• LAB: Deploying Signed RPMs
• LAB: Using McAfee Embedded Control
• LAB: Configuring Encrypted Storage

MANAGING INTELLIGENT DEVICE PLATFORM XT TARGETS REMOTELY

• Wind River Helix Device Cloud
• TR-069
• OMA DM
• LuC
• LAB: Exploring LuC
• LAB: Configuring LuC

CONNECTIVITY

• Hardware connectivity options
• Software connectivity options
• Multiwan

INTELLIGENT DEVICE PLATFORM XT APPLICATION STACKS

• OpenJDK
• Lua/MQTT
• Python
• SQLite
• OSGi
• LAB: Working with Lua-MQTT Software
• LAB: Using OpenJDK
• LAB: Integrating Python Applications
• LAB: Integrating SQLite3 Applications
• LAB: Configuring the Device Cloud Agent

WIND RIVER HELIX DEVICE CLOUD

• LAB: Configuring the Device Cloud Agent
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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