SELINUX ESSENTIALS

COURSE DESCRIPTION

The SELinux Essentials course gives engineers the skills they need to develop complex policies for securing Linux-based devices using SELinux. Although Wind River® Linux is used as the reference distribution in the lab environment, the tools and techniques covered are not specific to Wind River Linux.

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

- Describe SELinux concepts and terminology
- Use command-line tools to manage SELinux configuration
- Create and manage SELinux policies
- Troubleshoot SELinux policies

PRODUCTS SUPPORTED

- Wind River Linux 6
- The following targets are available:
  - QEMU simulated target (Intel® x86-64)

COURSE FORMAT

- This two-day expert-led course consists of lectures and lab sessions.
- Attendees use a Wind River Linux 6 target 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 Linux technologies.

AUDIENCE

- Developers who want to learn more about securing Linux-based devices
- Customers who have recently purchased or are considering purchasing Wind River Linux

Course title:	**SELinux Essentials**
Duration:	Two days
Format:	Instructor-led lectures and hands-on lab sessions; instructor-led Live Remote delivery available
Content:	**Day 1:** Introduction; SELinux and MAC; SELinux Security Context; SELinux Security Policy
	Day 2: SELinux Identity and Roles; SELinux Configuration; Creating and Managing SELinux Policy; SELinux Troubleshooting

PREREQUISITE SKILLS

- Basic understanding of operating systems
- Familiarity with the Linux operating system
- One year of experience working with and/or administering a Linux/UNIX system

PREREQUISITE COURSES

- None

RELATED COURSES

- Software Security Essentials for Embedded Engineers
- Wind River Linux and Workbench Essentials

AGENTS OF CHANGE™

SYLLABUS

Day 1

INTRODUCTION

- SELinux background information
- SELinux in the Wind River Linux product line
- DAC, MAC, RBAC
- MAC implementations
- Linux security: DAC, MAC, LSM
- **LAB: Getting started with SELinux**

SELINUX AND MAC

- Type enforcement (TE) security model
- SELinux users and RBAC
- MLS and MCS security models
- **LAB: Using SELinux commands**

SELINUX SECURITY CONTEXT

- What's a security context?
- Policy and access control
- TE
- RBAC
- MLS
- Domain transitions
- **LAB: Understanding security contexts**

SELINUX SECURITY POLICY

- The reference policy
- SELinux booleans
- Policy versions
- Wind River Linux policy
- **LAB: Using boolean to customize security policies**

Day 2

SELINUX IDENTITY AND ROLES

- SELinux users and Linux users
- Default identities

- SELinux and PAM
- Role switching
- Granting sensitivity/category to users
- **LAB: Managing SELinux users**

SELINUX CONFIGURATION

- Configuration files
- Logging and the audit daemon
- Configuring the mode of SELinux
- **LAB: Configuring an SELinux system**

CREATING AND MANAGING SELINUX POLICY

- The policy development environment
- Policy configuration files
- SELinux policy language
- Compiling security modules
- Loading and testing security modules
- Creating policy sets
- Making changes persist across boots
- **LAB: Creating SELinux modules**

SELINUX TROUBLESHOOTING

- Root cause analysis
- Silent denials
- Solutions
- Using permissive modes and domains
- **LAB: Using audit tools for troubleshooting**

ADDITIONAL RESOURCES FROM WIND RIVER

- Wind River Support Network
- Wind River Customer Support
- Additional training classes
- Wind River On-Demand Learning
- Wind River Mentoring
- Your instructor
- Your field application engineer
- Wind River Professional Services telephone support

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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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