WIND RIVER SIMICS DEVICE MODELING

COURSE DESCRIPTION

The Wind River® Simics Device Modeling course provides engineers and system architects with the knowledge they need to use Wind River Simics Model Builder for device modeling. Wind River Simics Model Builder is an add-on to the Wind River Simics system simulator that lets you create your own device models to use in system components. The course explains how to use the Simics Device Modeling Language (DML) to describe hardware devices like counters, DMA engines, or interrupt controllers. Devices can then be used to assemble complete systems (covered in the Wind River Simics System Modeling course).

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

• Understand and follow the general device modeling process
• Create device models in DML
• Compile devices and test them for correct functionality

PRODUCTS SUPPORTED

• Wind River Simics Model Builder for Simics 5
• Wind River Simics Model Builder for Simics 4.8

COURSE FORMAT

• This two-day expert-led course consists of lectures and lab sessions.
• Attendees use Wind River Simics Model Builder for Simics to gain experience with the topics presented.
• Participants write, compile, and test DML code to model custom devices.
• Participants receive individual guidance from an expert engineer who has extensive experience with Wind River technologies.

Course title:	**Wind River Simics Device Modeling**
Duration:	Two days
Format:	Instructor-led lectures and hands-on lab sessions
Content:	**Day 1:** The Device Modeling Process; Simics Device Modeling Tools; DML Basics
	Day 2: Device Testing; Advanced Device Modeling Topics

AUDIENCE

• Software developers and testers

PREREQUISITE SKILLS

• Some experience with embedded software development
• C programming experience
• Basic understanding of simulation
• Python programming experience

PREREQUISITE COURSES

• Wind River Simics Essentials

RELATED COURSES

• Wind River Simics System Modeling

AGENTS OF CHANGE™

SYLLABUS

Day 1

THE DEVICE MODELING PROCESS

- What to model
- A quick discussion on abstraction
- The modeling process
- A note about performance

SIMICS DEVICE MODELING TOOLS

- The Workspace Setup tool
- The DMLC compiler
- The makefile
- Eclipse integration
- **LAB: Creating a Skeleton Device Model**

DML BASICS

- Introduction
- Fundamentals
- Parameters, methods, attributes, templates and local storage
- Banks, registers, fields, arrays, and groups
- Connects, interfaces, implements, ports
- **LAB: Preparing the Device Skeleton**
- **LAB: Adding Attributes, Constants, Templates, and Methods**
- **LAB: Adding Banks, Registers, and Simple Side Effects**
- **LAB: Adding Connections, Interfaces, and Ports**

Day 2

DEVICE TESTING

- Overview
- A test suite
- Creating devices within a Simics session
- Eclipse integration
- Hands-on
- **LAB: Testing Your Device**

ADVANCED DEVICE MODELING TOPICS

- Events
- Miscellaneous statements and expressions
- Interfacing to C
- Simics CLI commands
- **LAB: Handling Exceptions and Timed Events**
- **LAB: Implementing Device Commands**

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/.

Wind River World Headquarters

500 Wind River Way
Alameda, CA 94501
USA
Toll-free: 800-545-9463
Tel.: 510-748-4100
Fax: 510-749-2454

training@windriver.com

Wind River EMEA

Steinheilstrasse 10
85737 Ismaning
Germany
Tel.: +49 89 962 445 0
Fax: +49 89 962 445 999

emea-training@windriver.com