LabVIEW Performance

Overview
The LabVIEW Performance course teaches techniques for improving the performance of your LabVIEW applications. Given application requirements, you will learn how to design an application to avoid common performance issues. During the course, you will choose the appropriate tools to measure application performance. After identifying performance issues, you will learn to modify code to improve memory usage and/or execution speed.

Duration
Classroom: Two (2) Days
Online: Three (3) 4-hours sessions, plus homework

Audience
• LabVIEW and NI Developer Suite users who need to improve performance in LabVIEW applications

Prerequisites
• LabVIEW Core 2 or equivalent LabVIEW experience

NI Products Used During the Course
• LabVIEW Professional Development System
  Version 2010 or later
• VI Analyzer Toolkit
• Desktop Execution Trace Toolkit

After attending this course, you will be able to:
• Describe how software and hardware interact and contribute to performance
• Design applications for optimal performance based on application requirements
• Select the appropriate tools to monitor application performance
• Identify performance issues in an existing application
• Modify existing applications to improve memory usage
• Modify existing applications to improve execution speed

Registration
Register online at ni.com/training or call (800)433-3488 Fax: (512)683-9300
info@ni.com

Outside North America, contact your local NI Office.
Worldwide Contact Info: ni.com/global

Part Number
910790-xx
  -01 NI Corporate or Branch
  -11 Regional
  -21 Onsite (at your facility)
  -69 Online

Suggested Next Courses
• Managing Software Engineering in LabVIEW
• Advanced Architectures in LabVIEW
• LabVIEW Connectivity
• Object-Oriented Design and Programming in LabVIEW
LabVIEW Performance

Day 1
Defining Performance
This lesson introduces the basics of performance in relation to computer hardware and software. You also learn the basics of computer architecture and how system components affect performance. Topics include:
- Overview of Performance
- Computer Resources
- Resource Management

Designing Your Application
In the lesson, you learn how to design an application to avoid resource bottlenecks. Topics include:
- Managing CPU
- Managing Memory
- Managing Disk Memory
- Managing Threads
- Managing I/O

Measuring Performance
This lesson introduces various tools for measuring application and system performance. From these tools, you will be able to select the appropriate tool for measuring and identifying performance issues. Topics include:
- Identify the Bottleneck
- Tools for Measuring Performance
- VI Profiler
- Performance Benchmarking
- VI Analyzer Toolkit
- Desktop Execution Trace Toolkit

Day 2
Optimizing for Memory
In this lesson, you modify existing applications to improve memory usage. Topics include:
- Memory Buffers
- Inplaceness
- Memory Reallocation
- Memory Cleanup

Optimizing for Execution Speed
In this lesson, you modify existing applications to improve execution speed. Topics include:
- Updating the UI
- Event Structure and UI Events
- Parallel Code
- Simplifying Code