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## Custom Training Class Series

# HP Performance Center

**2013**

**Elite Partner**



**Software**

*Material contained in this document is priority to Northway Solutions Group.*

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# 101 - Performance Testing: Process, Methodology, and Best Practices

## COURSE OVERVIEW

The Northway Application Performance Testing course teaches performance testing using Business Technology optimization (BTO) as the engagement model for working on any testing project:



## INTENDED AUDIENCE

Performance Engineers, Quality Assurance Engineers, and Performance Center of Excellence Managers

## DURATION

Two Days

## PREREQUISITES

- ⇒ Working knowledge of Quality Assurance testing processes, the software development lifecycle, Windows and UNIX operating systems, and Microsoft Office products

## ***COURSE OBJECTIVES***

At the end of this course, students should be able to:

- ☑ Understand Business Technology Optimization and the BTO engagement model
- ☑ Understand the Performance Center of Excellence and PCoE maturity model
- ☑ Effectively plan a performance test based on measurable objectives
- ☑ Create realistic load tests based on industry best practices
- ☑ Implement a repeatable test execution methodology every time
- ☑ Report results effectively to technical and non-technical audiences
- ☑ Tie performance results back to business objectives

## ***COURSE OUTLINE***

The BTO engagement model includes the following stages:

### ***ASSESS/SCOPE***

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This includes proper procedures for planning a load test including what to document prior to testing and defining the scope of the test. Items to be covered include:

- Defining Measurable Goals
- Organizing Application and System Information
- Defining Team Roles and Responsibilities
- Creating “bullet proof” Planning Documentation
- Good and Bad Performance Requirements

### ***DESIGN***

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The Design portion of the class covers considerations for defining the business processes and addressing data and test environment issues that hinder good test design. Items include:

- Business Process Concepts
- What Should and Should Not Be Tested
- Prioritization and Filtering Business Processes

- Addressing User Concurrency
- Test Environment Considerations
- Data Considerations Before Testing

### ***IMPLEMENT***

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Best practices applying load and run-time behavior are discussed in this portion of the training. A repeatable process around performance testing is reviewed.

- Transaction Naming Conventions
- Creating a Transaction Definition Document
- Testing Lab Considerations
- Creating scenarios to achieve specific objectives
- Defining A Repeatable Test Execution Methodology
- Random Interval Pacing
- Best Practices For System Monitoring Under Load
- Providing Quick Test Results Between Test Cycles

### ***VALIDATE/REALIZE***

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Reporting the results of performance tests is a crucial step in the process. Information must be tied back to business imperatives. Students will learn how to provide timely, meaningful test results designed to communicate effectively to difference audiences, as well as how to show the value of performance testing to the organization. Items covered include:

- Providing Interim Test Results Between Test Cycles
- Providing Final Reports
- Aligning Performance Results With Business Objectives
- Creating Key Performance Indicators for ROI
- KPI Trending Over Time

## 200 Series Classes: HP's Performance Center™

### **COURSE NAMES**

The following courses are designed to be taken together to form the complete training on the Performance Center™ product

- 205 Performance Center™ Product Overview
- 206 Performance Center™ Test Configuration and Execution
- 203 Vugen™ Scripting
- 204 Test Results and Analysis

### **INTENDED AUDIENCE**

Performance Engineers, Quality Assurance Engineers, and Performance Center of Excellence Managers

### **DURATION**

Three Days

### **PREREQUISITES**

- ⇒ Intermediate in Quality Assurance Process
- ⇒ Intermediate in Software Development Lifecycle
- ⇒ Beginner to Intermediate in C programming
- ⇒ Intermediate to Advanced – Windows OS
- ⇒ Beginner to Intermediate – MS Office Products

### **COURSE OVERVIEWS AND OUTLINES**

#### ■ **205 Performance Center™ Product Overview**

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The Performance Center™ Product Overview course gives a higher level view of all major components of Performance Center™, including the Controller, Generator, VUGen and Analysis modules. Topics include:

- Setting Up A Performance Center™ Lab
- Where to Install Components

- Hardware and Network Requirements
- Performance Center™ 11 – What’s New (Features within Vugen, Controller, and Analysis)

At the end of the course, students should be able to:

- Understand the function of all Performance Center™ components
- Install and configure a Performance Center™ lab
- Learn about the latest features in Performance Center™ 11

### ■ **206 Performance Center™ Test Configuration and Execution**

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Performance Center™ configuration focuses on Scenario creation and all of the settings and options that go into making a load test realistic. Chapters include:

- Load Test Site Navigation
- Workload Types, Settings, and Options
- Scheduler – Real-World (Performance Center™ 11.x) and Basic
- Group Run-Time Settings
- Service Level Agreements
- Monitor Profiles
- Generators and Agents
- Troubleshooting Errors

At the end of the course, students should be able to:

- Design Realistic Test Scenarios in Performance Center™
- Understand the Run-Time Settings Used In Test Execution
- Configure Real-Time Monitoring Under Load

## ■ 203 Vugen™ Scripting

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Performance Center™ scripting covers navigating through the VUGen scripting product as well as techniques to make scripts emulate real users. A detailed look at example code will demonstrate the value of proper error logging, manual failure to combat false positives, and providing additional C-logic to make scripts more powerful and maintainable. Items in the training include:

- Global Options
- Tree View
- Script View
- Record/Playback
- Workflow Logic – Action Files
- Run-Time Settings
- Script Enhancement
  - Transaction Timings
  - Parameters
  - Correlation
  - Verification Check Points
  - Custom “C” Code – Examples
  - Script Debugging

At the end of this course, students should be able to:

- Understand the VUGen component of Performance Center™
- Navigate through VUGen Tree View and Script View
- Create scripts that generate and handle dynamic data
- Add custom debugging code to scripts



## ■ 204 Test Results and Analysis

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A detailed analysis of load test results are used to identify the causes behind the issues discovered during the test execution phase. Advanced techniques include overlay, alternate graphic views, global and local filtering, Auto-Correlation of results, and test run comparisons. Real World analysis covers actual bottlenecks detected in systems and their characteristics so students know what to look for in their own projects. Topics also include:

- Results and Analysis Sessions
- Filtering Techniques
- Advanced Displays
- Granularity Considerations
- Importing Data from External Sources
- Exporting Information
- Analysis of Service Level Agreements

At the end of this course, students should be able to:

- Creating Analysis Sessions
- Data Filtering Techniques
- Understand the Analysis component of Performance Center™
- Advanced Displays
- Importing/Exporting Session Data
- Tour of various bottlenecks with Analysis graphs