WebLogic (Oracle 11g) Advanced Server System Administration

Course Summary

Description

Students will learn to customize existing Weblogic server environments. Through this class they will take advantage of some of the more specialized features that Weblogic provides. WLST Scripting is emphasized as a viable alternative to console administration and will be explored in this class. We will discover the basics of MBeans as a administrative unit and manipulate properties several ways in this class. We will emulate load on a server and tune the server to enhance the performance. This is a hands-on learning experience, with each student having their own Weblogic Server to learn with.

Objectives

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

- Configure Weblogic advanced features
- Setup custom JMX Applications
- Create custom JMX Applications
- Explore WLDF
- Create WLST scripts
- Tune Weblogic JDBC applications
- Implement SSL for web applications
- Configure custom Weblogic Security components
- Build JMS Store and Forward applications

Topics

- Course Introduction
- WebLogic Management Services
- WebLogic JMX
- WebLogic Scripting Tool
- Weblogic Work Managers
- WebLogic Diagnostics Framework
- WebLogic Performance Tuning
- Weblogic SNMP
- Configuring Weblogic Security Providers
- WebLogic SSL
- Advanced WebLogic JMS
- WebLogic JMS Store and Forward

Audience

This course is intended for existing WebLogic administrators who need to administer a WebLogic Server platform.

Prerequisites

Students should have Java programming experience necessary to build custom management classes

Duration

Five days

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... to Your Success!"

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Course Outline

I. Course Introduction
- A. Course Objectives
- B. Course Overview
- C. Using the Workbook
- D. Suggested References

II. WebLogic Management Services
- A. Weblogic Console Management
- B. Management Tools
- C. JMX
- D. WLST
- E. SNMP
- F. Weblogic Diagnostics Framework
- G. Weblogic 10 Self Tuning Kernel
- H. Extending the Administration Console

III. WebLogic JMX
- A. JMX
- B. MBeans
- C. Hands-On Cont.
- D. WebLogic Server MBean Data Model
- E. MBean Lifecycle
- F. MBean Servers
- G. Walk-Through Cont.
- H. Walk-Through Cont.
- I. Using Local MBean Servers
- J. Using Remote MBean Servers
- K. Exploring MBeans
- L. MBean Methods/Properties
- M. Hands On
- N. Custom JMX Utilities

IV. WebLogic Scripting Tool
- A. Introduction
- B. Using WLST
- C. Jython Syntax
- D. Jython Conditionals
- E. Jython Loops
- F. Sample WLST
- G. Recording User Interactions in WLST
- H. Weblogic Management Objects
- I. Monitoring the invocations of a JSP
- J. Deploying in WLST
- K. Undeploying in WLST
- L. Server Monitoring in WLST
- M. JVM Monitoring in WLST

V. Weblogic Work Managers
- A. Work Manager Overview
- B. Using Weblogic 8.1 Thread Pools
- C. Using Work Managers
- D. Work Manager Components
- E. Request Classes
- F. Fair share request class
- G. Response-time goal request class
- H. Context-based request class
- I. Work Manager Constraints
- J. Stuck Thread Work Manager
- K. Using Work Managers
- L. Work Manager Scope
- M. Monitoring Work Managers

VI. WebLogic Diagnostics Framework
- A. What is WLDF?
- B. Diagnostics framework Components
- C. Configuring WLDF
- D. WLDF types of monitoring
- E. Collecting Data
- F. Gathering Data
- G. Data accessor
- H. Configuring Image Capture and Archive
- I. Diagnostic System Modules
- J. Diagnostic Modules Hands-On
- K. Configuring the Harvester
- L. Harvester Walk Through
- M. Configuring Watches and Notifications

VII. WebLogic Performance Tuning
- A. Introduction
- B. Performance Objectives
- C. Benchmarking
- D. Emulating Load on Weblogic
- E. JMeter
- F. HANDS-ON Load Emulating Weblogic
- G. Bottleneck Location
- H. Java Stack Traces
- I. CPU Utilization
- J. Memory Utilization
- K. Monitoring the JVM
- L. Sun JVM Performance Tools

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Course Outline (cont'd)

M. Starting JConsole
N. Tuning Sun JVM
O. Tuning Sun JVM Cont.
P. Switching the JVM
Q. JRockit JVM Performance Tools
R. JRockit Console
S. JRockit Runtime Analyzer (JRA)
T. JRockit Notifier
U. JRockit Method Profiler
V. JRockit Memory Leak Detector
W. Using Verbose GC
X. Database bottlenecks
Y. Tuning JDBC Applications
Z. Tuning JDBC Applications Cont.
AA. Tuning EJB Applications
BB. Tuning Session Beans
CC. Network bottleneck
DD. Weblogic Monitoring Tools
EE. Performance Tuning Summary

VIII. Weblogic SNMP
A. What is SNMP?
B. Agent-Manager Model
C. MIB for WebLogic Server
D. JMX vs SNMP
E. OID Numbers
F. SNMP Utilities
G. SNMP Communities
H. SNMP Events
I. SNMP Traps Hands-On Cont.
J. Automatic WebLogic SNMP Traps
K. Log Message Traps

IX. Configuring Weblogic Security Providers
A. WebLogic SSL
B. Security Architecture
C. Security Realms
D. Default LDAP Server
E. Exporting/Importing/Backing up LDAP
F. WebLogic Resources
G. HANDS ON (Embedded LDAP)
H. HANDS ON Cont. (Embedded LDAP)
I. LDAP log Files
J. Security Debugging in WebLogic 10
K. Default Security Configuration
L. Creating new Realms
M. Configuring RDBMS Authentication Providers

X. WebLogic SSL
A. SSL in Brief..
B. One-Way and Two-Way SSL
C. Host Name Verification
D. Keystores
E. Generating Keys
F. Storing Keys and Certificates
G. Keys and Certificates
H. SSL Debugging
I. SSL Hands On Walk-Through
J. Https Session Behavior

XI. Advanced WebLogic JMS
A. Overview
B. JMS for Administrators
C. JMS Hands-On Cont.
D. Building Weblogic JMS Components
E. Managing JMS destinations
F. Message Looping
G. JMS Logging
H. JMS Messaging Bridge
I. JMS Messaging Bridge Building

XII. WebLogic JMS Store and Forward
A. Overview
B. SAF Resources In a JMS Module
C. JMS Quality of Service
D. WebLogic persistent store
E. SAF Service Agents
F. When to Use the SAF Service
G. Configuring a Basic SAF Service Walk-Through

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