

WebSphere Application Server Administration

Description:

This course provides students with a comprehensive overview of the IBM WebSphere 5.0 Application Server Architecture. Participants will gain experience deploying applications that implement and utilize Enterprise Java Beans, Web Sever Plug-ins, Web Services and JMS in a WebSphere Application Server. Students will define deployment descriptors, troubleshoot deployment problems, manage security and understand workload using the command line interface and the WebSphere Administrator's Console. Exercises and lab sessions reinforce the learning objectives and provide participants the opportunity to gain practical hands-on experience

Course Objectives:

- Understand the WebSphere Product Family.
- Understand the J2EE 1.3 architecture and components.
- Understand Installation Requirements of WebSphere Application Server.
- Understand the foundations of WebSphere and its open framework
- Understand Servlet, JSP, EJB deployment and testing with WebSphere Application Server
- Understand the uses of EJBs and their respective types and practice debugging, configuration and deployment of EJBs to WebSphere Application Server.
- Understand the J2EE security model and practice use of it in the WebSphere environment.
- Understand WebSphere Application Server support for Web Services – UDDI, WSDL and SOAP.
- Understand WebSphere Application Server architecture and components and their uses.
- Configure and deploy J2EE applications to WebSphere using the WebSphere Admin Console
- Understand the Java Connection Architecture (JCA) and support provided by WebSphere Application Server
- Administer JMS within the WebSphere Application Server
- Troubleshoot / Tune Applications and Manage Workloads

Audience: Network Administrators, Database Administrators, System Administrators, Developers and/or Support Staff

Prerequisites: Administration Skills

Course Content:

Chapter 1 - Introduction to IBM WebSphere Application Server 5.0

- J2EE Architecture
- Software Packaging J2EE
- Web modules
- EJB Modules
- IBM WebSphere Product Family
- Studio Application Developer
- WebSphere Application Server
- IBM HTTP Server
- Portal Server
- MQ Series
- Trivoli Web Site Analyzer
- WebSphere 5.0 Application Server New Features
- WebSphere Application Server Product Packaging

Chapter 2 - IBM WebSphere Application Server 5.0 Installation

- Installable Components

- Installation Decisions
- Installing the Web Server
- Installing IBM HTTP Server
- Installing WebSphere Application Server
- Installation Verification Test (IVT)
- Troubleshooting
- Coexistence

Chapter 3 - IBM WebSphere 5.0 Architecture Details

Base vs. Network
 Application Server
 Node
 Cell
 Configuration Repository
 Cluster
 Virtual Host
 Web Container
 Topology Considerations
 Scaling
 Multiple instances

Chapter 4 - IBM WebSphere 5.0 Administration Essentials

Administrative Architecture
 Manage Nodes
 Start Network Deployment Environment
 Security
 Create an Application Server
 Configure HTTP Transport
 Configure JVM
 Configure a Virtual Host
 Configure a Web Container
 Configure Session Managements
 Configure the EJB Container
 Configure a JDBC Provider
 Configure a Data Source
 Configure URL Provider
 Configure JMS Providers
 Mail Providers and Web Server Plugin

Chapter 5 - IBM WebSphere 5.0 Advanced Administration

Standalone Application Server
 Deployment Manager
 Descriptors
 Additional Configuration files
 Application Repositories
 Distributed Configuration
 Layered JMX Architecture
 Administrative Agents
 Synchronization
 Node Maintenance
 Scripting with wsadmin
 Java Command Language (JACL)
 Installing an Application

Chapter 6 - IBM WebSphere 5.0 Application Deployment

- J2EE Application Assembly
- Application Modules
- Using AAT
- Add Web Components
- Creating Modules
- Class Loaders
- Administrative Console
- Application Topology
- Virtual Host Mapping
- JNDI Names
- Data Source
- Web Module Properties
- Reloading Classes

Chapter 7 - IBM WebSphere 5.0 Security

- Challenge Mechanism
- Authentication Mechanism
- User Registry
- LTPA/LDAP Architecture
- HTTP Single Sign ON (SSO)
- Delegation Policies
- Secure Socket Layer (SSL)
- Enable WebSphere Security
- Configuration Repertoire
- Obtain a Certificate
- Security Roles
- Protected Resources
- Unprotected Methods

Chapter 8 - IBM WebSphere 5.0 Worload Management

- Server State
- Session Persistence
- Server Separation
- Container Separation
- Multi-Server Environments
- Virtual Host Groups
- Server Clusters
- Server Affinity
- URI Groups
- Routes
- Replication
- Caching Options
- Replicator Security

Chapter 9 - IBM WebSphere 5.0 Web Services

- Motivation for Web Services
- SOAP
- UDDI Services Directory
- WSDL Document
- Web Services Invocation Framework
- Changes to Java 2 Security Policy
- Web Services Gateway
- Deploy New Channel
- Deploy New Web Service
- WebSphere UDDI Registry

Chapter 10 - IBM WebSphere 5.0 Administering JMS

- RMI/IIOP
- JMS
- JMS Interfaces
- Integrating JMS and EJB
- Load Balancing and Clustering
- Poison Messages
- JMS Providers
- Administering JMS
- Create Queue
- Create Topic
- JMS Servers
- Enabling Security
- Queue Permissions
- Moving to WebSphere MQ
- Deploying a JMS-enabled Application
- JMS Listener Port

Chapter 11 - IBM WebSphere 5.00 Application Tracing and Troubleshooting

- Access and Error Log
- JRAS Toolkit
- Java Stack Trace
- Collector Tool
- FFDC
- HTTP Session Monitoring
- Thread Analyzer
- Configure Trace
- Configure JVM Logs
- Viewing Transactions
- Preferences
- Update Symptom Database
- Remote Debugging

Chapter 12 - IBM WebSphere 5.0 Performance Monitoring and Tuning

- WebSphere Performance Monitoring
- Performance Monitoring Infrastructure (PMI)
- Key Performance Metrics
- Impact of Performance Monitoring
- Trivoli Performance Viewer
- Setting the Instrumentation Level
- View Performance Data
- WebSphere Tuning
- WebSphere Queue Network Tuning
- HTTP Server Tuning
- JVM Tuning
- Web Container Tuning
- Web Module Reloading
- EJB Container Tuning
- ORB Tuning
- Access Intent
- Security Tuning
- DB Connection Pool
- Session Management