WebSphere Application Server V9 Administration in a Federated Environment

WA599 (Classroom)

ZA599 (Self-paced)

Course description

This course teaches you the skills that are needed to administer IBM WebSphere Application Server V9 in a federated environment.

This release of IBM WebSphere Application Server provides enhanced support for standards (notably Java 7 EE), emerging technology, and a choice of development frameworks.

In this course, you learn how to configure and maintain IBM WebSphere Application Server V9 Network Deployment. You learn how to deploy and create a deployment manager and federate a cell. In addition, you learn how to create a cluster within the federated cell.

Throughout the course, hands-on exercises and demonstrations reinforce lecture content. You gain practical experience with WebSphere Application Server V9 by completing tasks such as creating a deployment manager, federating a stand-alone application server, creating a custom profile, and clustering an existing application server.

For information about other related courses, see the IBM Training website:

**ibm.com**/training

General information

Delivery method

Classroom or self-paced virtual classroom (SPVC)

Course level

ERC 1.0

Product and version

WebSphere Application Server version 9.0

Audience

This course is designed for WebSphere administrators who have experience with stand-alone application server environments, and want to learn about creating and managing a federated environment.

Learning objectives

After completing this course, you should be able to:

* Describe the architectural concepts that are related to WebSphere Application Server Network Deployment
* Create a deployment manager instance
* Federate an application server to a cell
* Add a stand-alone application server to a WebSphere Application Server cell
* Cluster an application server within a WebSphere Application Server cell
* Configure WebSphere Application Server SSL security settings
* Deploy applications in clustered environments
* Describe the features of Intelligent Management

Prerequisites

* Basic operational skills for the Linux operating system
* Administrative skills for a web server, such as IBM HTTP Server or Apache
* Basic understanding of cloud concepts, private, public and hybrid clouds, and specifically traditional on-premises environments
* Completion of course *WebSphere Application Server V9 Administration* (WA590G) or *WebSphere Application Server V9 Administration* (ZA590G), or experience with WebSphere Application Server in a stand-alone environment

Duration

1.5 days

Skill level

Intermediate

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| Classroom (ILT) setup requirements |
| Processor | Intel Pentium 2.6 GHz or faster |
| GB RAM | 8 |
| GB free disk space | 80 |
| Network requirements | LAN / Internet / Fixed IP |
| Other requirements | None |

Notes

The following unit and exercise durations are estimates, and might not reflect every class experience. If the course is customized or abbreviated, the duration of unchanged units will probably increase.

This course is an update of portions of the following previous courses:

* *WebSphere Application Server V8.5.5 Administration* (WA855G)

Course agenda

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| Course introductionDuration: 15 minutes |

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| Unit 1. WebSphere Application Server architecture: FederatedDuration: 1 hour |
| Overview | This unit describes the concepts and terminology of a federated environment. |
| Learning objectives | After completing this unit, you should be able to:* Describe the Network Deployment runtime flow
* Describe Network Deployment concepts and terminology, such as *cell*, *node*, *node agent*, and *deployment manager*
* Describe the Network Deployment administration flow
* Explain how to manage web servers from WebSphere Application Server
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| Unit 2. Federating a cellDuration: 1 hour |
| Overview | In this unit, you learn the process of federating a base profile into a cell and the administration of a multi-node distributed environment. You learn the process of creating a deployment manager and federating base profiles into a cell. You also learn how to add a node by using commands or the administrative console, and how to manage a web server with the administrative console. |
| Learning objectives | After completing this unit, you should be able to:* Describe WebSphere Application Server cell concepts
* Describe and create the deployment manager profile
* Describe and create other profile types
* Describe custom profiles and automatic federation
* Describe the directories and configuration files for profiles
* Add a node by using commands or the administrative console
* Compare the deployment manager administrative console with the base administrative console
* Compare managed and unmanaged nodes
* Manage a web server by using the administrative console
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| Exercise 1. Configuring the lab workstationDuration: 20 minutes |
| Overview | This exercise puts the lab workstation into the proper state to start the course exercises. |
| Learning objectives | After completing this exercise, you should be able to:* Configure the course lab workstation to start the exercises
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| Exercise 2. Creating a federated cellDuration: 1 hour and 30 minutes |
| Overview | In this lab exercise, you experience the process of creating a WebSphere cell through the generation of a deployment manager profile and by the federation of application server profiles. |
| Learning objectives | After completing this exercise, you should be able to:* Create a deployment manager profile
* Back up the deployment manager configuration
* Perform basic tasks by using the deployment manager administrative console
* Federate a node into the deployment manager cell
* Create a custom profile
* Create an unmanaged web server node
* Start and stop a web server by using the administrative console
* Map an application to a web server
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| Unit 3. Workload managementDuration: 1 hour and 30 minutes |
| Overview | In this unit, you learn workload management principles and how WebSphere Application Server can be configured to participate in workload management. |
| Learning objectives | After completing this unit, you should be able to:* Define workload management
* Create clusters and cluster members
* Compare clustered configurations
* Explain how weights are used in workload management
* Describe failover scenarios
* Describe the role of the HTTP plug-in in workload management
* Explain session management
* Configure distributed session management
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| Exercise 3. Clustering and workload managementDuration: 1 hour |
| Overview | This exercise covers the creation of a cluster. During the creation of the cluster, two cluster members are added. After the cluster is created, you configure the PlantsByWebSphere application to run in the cluster. You set up a replication domain to use the memory-to-memory replication mechanism. You then ensure that session failover works as expected by stopping one of the two servers in the cluster and watching the requests fail over to the remaining running server. |
| Learning objectives | After completing this exercise, you should be able to:* Create a cluster and add cluster members
* Map modules to clusters and web servers
* Test load balancing and failover between two cluster members
* Configure a data replication domain for session management
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| Unit 4. WebSphere security: SSLDuration: 1 hour and 30 minutes |
| Overview | In this unit, you learn basic security concepts and architecture that apply to WebSphere Application Server. You learn how to configure administrative security, application security, and Secure Sockets Layer (SSL). |
| Learning objectives | After completing this unit, you should be able to:* Describe the basic concepts of SSL
* Describe the purpose of certificates and certificate authorities
* Describe the role of SSL within a WebSphere cell
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| Exercise 4. Configuring SSL for WebSphere Duration: 1 hour |
| Overview | This exercise explores some of the features and configurations within the WebSphere SSL environment. You create a profile and then examine the certificates that are created specifically for the node within the profile. You explore some of the administration tasks that are required for managing the certificates within a cell. Finally, in an optional part of the exercise, you configure IBM HTTP Server to use a self-signed certificate to secure the communications between a browser and the web server. |
| Learning objectives | After completing this exercise, you should be able to:* Define the certificate life span of a profile
* Use the administrative console to find and view certificates within the cell
* Configure and run the certificate expiration service
* Propagate the generated plug-in keystore out to the plug-in
* Create a keystore for a web server
* Generate a self-signed key
* Configure IBM HTTP Server to load and use HTTPS
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| Unit 5. Overview of Intelligent ManagementDuration: 1 hour |
| Overview | This unit introduces the features of Intelligent Management.  |
| Learning objectives | After completing this unit, you should be able to:* Define Intelligent Management
* Describe virtualization and autonomic computing
* Define intelligent routing
* Describe dynamic workload management
* Describe the health management features of Intelligent Management
* Describe the application edition management features of Intelligent Management
* Describe the performance management features of Intelligent Management
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| Unit 6. Course summaryDuration: 15 minutes |
| Overview | This unit summarizes the course and provides information for future study. |
| Learning objectives | After completing this unit, you should be able to:* Explain how the course met its learning objectives
* Access the IBM Training website
* Identify other IBM Training courses that are related to this topic
* Locate appropriate resources for further study
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For more information

To learn more about this course and other related offerings, and to schedule training, see **ibm.com**/training

To learn more about validating your technical skills with IBM certification, see **ibm.com**/certify