**Design and Deploy Full-Stack Cloud Environments with IBM UrbanCode Deploy**

Description: 5300_IBMpos

**CQ401 (Classroom)**



Course description

IBM UrbanCode Deploy is a tool for standardizing and simplifying the process of deploying software components to each environment in your development cycle. When you use blueprints for OpenStack-based clouds, you can use a full-stack approach to simultaneously model the application and infrastructure layers of your deployment.

This is an intermediate course for users of IBM UrbanCode Deploy, such as administrators, performance testers, development teams, and operations leads. In this course, you learn how to administer the cloud through both the blueprint designer and the Horizon user interface. Hands-on labs use IBM UrbanCode Deploy in a cloud environment and cover integrations with an OpenStack back-end and IBM UrbanCode Deploy, modeling the cloud infrastructure and application layers, provisioning environments from blueprints, creating and using configuration files, updating a running environment, and using Git repositories to store and manage blueprints.

The lab image for course CQ401 is hosted on Skytap/IRLP. There is no image preparation required.

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

http://www.ibm.com/training

General information

Delivery method

Classroom

Course level

ERC 1.0

Product and version

UrbanCode Deploy All, UrbanCode Deploy with Patterns 6, UrbanCode Deploy 6 version 6.2

Audience

This course is designed for intermediate users of IBM UrbanCode Deploy, including administrators, performance testers, development teams, and operations leads.

Learning objectives

After completing this course, you should be able to:

* List the concepts and use cases of the IBM UrbanCode Deploy blueprint designer
* Configure the IBM UrbanCode Deploy blueprint designer for public and private cloud operation
* Model cloud landscapes in a graphical and text-based way
* Deploy simple and advanced cloud environments
* Use repositories for storing and managing blueprints

Prerequisites

Before taking this course, make sure that you have basic knowledge of private and public cloud computing; OpenStack, in particular the Heat project; IBM UrbanCode Deploy; and that you have taken the Essentials of IBM UrbanCode Deploy 6.2: DevOps course.

Duration

1 day

Skill level

Intermediate

Notes

The following unit and exercise durations are estimates, and might not reflect every class experience.

This course is a new course

Course agenda

|  |  |
| --- | --- |
| Unit 1. An introduction to modeling, provisioning, and deploying to cloud environments  Duration: 1 hour | |
| Overview | IBM UrbanCode Deploy blueprint designer is a full-stack environment manage- ment and deployment solution that enables you to design, deploy, and update full-stack environments for multiple clouds. Extending the benefits of IBM Urban-Code Deploy, this solution optimizes your continuous delivery throughput by auto- mating infrastructure in the cloud, which leverages open standards defined by OpenStack.  This unit has no student exercises. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the scenario of a Heat stack in software deployment * Describe how full-stack patterns work across cloud offerings * Explore the capabilities of the blueprint designer |

|  |  |
| --- | --- |
| Unit 2. Configuring the blueprint designer server integrations  Duration: 1 hour | |
| Overview | To use cloud compute resources, such as images, networks, and storage, you must connect the blueprint design server to a cloud system. To deploy applications to these resources, you must also connect to the IBM UrbanCode Deploy server.  In this lab, you view the connection between the blueprint design server and an OpenStack cloud, which provides the image, network, and storage resources for creating a cloud infrastructure in your blueprints. Then, you view the integration between the blueprint design server and the IBM UrbanCode Deploy server, which provides the components that you deploy to that cloud infrastructure. |
| Learning objectives | After completing this unit, you should be able to:   * Describe the configuration options in the blueprint designer * Configure access control for users, roles, and teams * Explore the available artifacts from the integrations in the blueprint designer |

|  |  |
| --- | --- |
| Unit 3. Modeling a Heat stack and provisioning a cloud infrastructure  Duration: 1 hour | |
| Overview | The IBM UrbanCode Deploy blueprint designer helps you to extend your cloud and virtualization technology and make that part of your complete DevOps delivery pipeline. As a designer, such as an IT specialist or an IT integrator, you can create the complete application stack by designing and iterating over the template. Then, a consumer, such as a developer, can go into IBM UrbanCode Deploy and create a complete environment with just a few clicks. Individual applications have network portability and can be designed to work in various cloud types, such as Amazon or Softlayer, as well as in your own internal cloud structures. The result gives you more flexibility in accelerating your entire delivery process from beginning to end.  In this lab, you create a document that describes the environment in a lan- guage that can be used to automate the provisioning of a full stack. You have the flexibility to delete seldom-used environments and recreate them at a later date when they are needed.. |
| Learning objectives | After completing this unit, you should be able to:   * Explore the options of the blueprint designer that relate to images, networks, and storage * Show how changes in the graphical editor manifest in the Heat Orchestration source code * Create and configure a simple blueprint that includes the OpenStack artifacts * Deploy a blueprint to a cloud environment and view the changes in OpenStack |

|  |  |
| --- | --- |
| Unit 4. Deploying applications to a cloud environment  Duration: 1 hour | |
| Overview | When you provision a cloud environment, you set aside resources on the specified cloud that you assigned through a blueprint. By using the blueprint designer, you can model a full-stack environment, including the infrastructure and application, in a single model and deploy it to the cloud in a single step.  When integrated with IBM UrbanCode Deploy, the blueprint can specify the application components to be installed. In these exercises, you build on the blueprint that you created in the previous lab by adding components from IBM UrbanCode Deploy to the blueprint. Then, you provision the environment to the cloud. |
| Learning objectives | After completing this unit, you should be able to:   * Review the application, component, and deployment processes in IBM UrbanCode Deploy * Explore the options of the blueprint designer that relate to application components * Modify the existing blueprint to include application components * Explain how the IBM UrbanCode Deploy processes are triggered in the source code * Deploy a blueprint to a cloud environment and view the changes in IBM UrbanCode Deploy and OpenStack |

|  |  |
| --- | --- |
| Unit 5. Modeling a two-server blueprint and provisioning from IBM UrbanCode Deploy  Duration: 1 hour | |
| Overview | Configuration files are lists of properties and values. You can use configuration files to provision the same blueprint on multiple cloud systems. Configuration files apply only to blueprints that you create in the blueprint designer, not blueprints that you create with the IBM UrbanCode Deploy server.  In these exercises, you create a blueprint with two servers, so you can assign each with separate security controls. You also create a configuration file that con- tains the parameters required to provision a new environment. Finally, you use that configuration file to provision an environment directly from IBM UrbanCode Deploy. |
| Learning objectives | After completing this unit, you should be able to:   * Create a configuration file that contains the initial values for the input properties for the blueprint * View the deployments in IBM UrbanCode Deploy and OpenStack * Provision a blueprint from IBM UrbanCode Deploy |

|  |  |
| --- | --- |
| Unit 6. Using repositories to store and manage blueprints  Duration: 1 hour | |
| Overview | When you work with blueprints, you can organize and share them by using the Git distributed version control system.  In these exercises, you explore the integration of the blueprint design server with Git to make versions of blueprints. |
| Learning objectives | After completing this unit, you should be able to:   * Review the three types of Git repositories * Copy a project to your local workspace * Push and fetch changes with local and remote repositories |

For more information

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

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

To stay informed about IBM training, visit the following sites:

IBM Training News: ibm.com/training/blog

YouTube: youtube.com/IBMTraining

Facebook: facebook.com/ibmtraining

Twitter: twitter.com/IBMCloudEdu