API Lifecycle Governance with IBM API Connect v2018

WD509 (Classroom)

ZD509 (Self-paced)

Course description

This course teaches you how to configure the gateway, portal, and analytics services in Cloud Manager that are used by the API Connect infrastructure through all phases of the API lifecycle. You manage all aspects of the provider organization in the API Manager user interface to create, publish, version, and retire API artifacts such as Products, plans and APIs themselves. You also learn how to manage consumer organizations who use the APIs that are made available on the Developer Portal. You learn how to add members to the consumer organization that provides access to the APIs on the Developer Portal. You learn how the layout of the Developer Portal can be customized. Finally, you call the APIs on the secure gateway and you view the graphs and metrics of API usage.

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 4.0

Product and version

IBM API Connect version 2018.4.1.6

Audience

This course is designed for API Connect cloud administrators, lifecycle administrators, and application developers.

Learning objectives

After completing this course, you should be able to:

* Configure services in Cloud Manager for an on-premises installation of API Connect V2018
* Identify the container runtime infrastructure that supports the API Connect services
* Create a catalog and Developer Portal
* Create a consumer organization
* Manage member roles and permissions in the Developer Portal
* Define APIs, Products, and plans in API Manager
* Identify the API lifecycle stages
* Stage, publish, version, migrate, deprecate, and retire Products and APIs
* Review and approve API lifecycle requests
* Customize the Developer Portal
* Create an application and subscribe to a plan
* Review API analytics in the Developer Portal
* Review analytics dashboards and visualizations in API Manager

Prerequisites

Conceptual knowledge of APIs; for more information, see the resources at https://developer.ibm.com/apiconnect/

Duration

2 days

Skill level

Intermediate

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| Classroom (ILT) setup requirements |
| Processor | Not specified |
| GB RAM | Not specified |
| GB free disk space | Not Specified |
| Network requirements | LAN / Internet / DHCP |
| Other requirements | Browser-based access to the Internet for accessing labs on the IBM Remote Lab Platform |

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 a companion course to:

* WD514: *Create, Secure, and Publish APIs with IBM API Connect V2018*

Course agenda

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| Course introductionDuration: 15 minutes |

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| Unit 1. Managing the API Connect cloud topologyDuration: 1 hour |
| Overview | When you install IBM API Connect, you must define an on-premises cloud. You define the topology of your on-premises cloud with the Cloud Manager web user interface. As the Cloud administrator, you configure the services that run in your cloud: the Analytics service, the Gateway service, and the Developer Portal service. In addition, you manage the membership of provider organizations by creating the owner for the organization that creates APIs. |
| Learning objectives | After completing this unit, you should be able to:* Explain the concept of the API Connect cloud
* Describe the purpose of the Cloud Manager user interface
* Explain the role of the Cloud administrator
* Review the topology of an API Connect cloud
* Identify the gateway service types
* Examine the configuration of gateway service
* Define an email server
* Describe the purpose of user registries
* Identify the types of supported user registries in Cloud Manager
* Describe the role of Transport Layer Security profiles
* Explain the concept of a provider organization
* Describe the API Connect user interfaces by function
* Identify deployment options for API Connect at installation
* Describe the function of the installation assist utility
* Identify the components of the runtime environment
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| Exercise 1. Configuring the cloud topologyDuration: 45 minutes |
| Overview | In the first part of the exercise, you test that you can access the internet and that your private domain name service is working. You review and validate the Kubernetes runtime environment and API Connect processes are running. In the next part, you sign on as the administrator to the Cloud Manager user interface. You register analytics, portal, and gateway services in the Cloud Manager. Review the provider organization that publishes the APIs. |
| Learning objectives | After completing this exercise, you should be able to:* Test the operation of the private DNS on the image
* Review the Kubernetes runtime components
* Ensure that the API Connect pods are operational
* Sign on to the Cloud Manager graphical interface
* Enable the email notification service for the cloud
* Register the analytics, portal, and gateway services in Cloud Manager
* Associate the analytics service with the gateway
* Review the provider organization in Cloud Manager
* Review the user registries in Cloud Manager
* Review the settings in Cloud Manager.
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| Unit 2. Managing catalogs and consumer organizationsDuration: 45 minutes |
| Overview | Users in consumer organizations subscribe to products, plans, and APIs that you create in API Connect. In this unit, you learn how to define a catalog and Developer Portal in API Manager. You see where the Developer Portal user registry is defined. You create a consumer organization in the API Manager. Review the Developer Portal user interface. |
| Learning objectives | After completing this unit, you should be able to:* Describe the interaction between organizations and catalogs
* Explain how to create a catalog and a Developer Portal
* Describe the use of spaces within a catalog
* Configure a Developer Portal for the catalog
* Identify the administration menu options in the Developer Portal
* Describe the relationship between the provider organization owner and the owner of the consumer organization
* Describe how to create a consumer organization
* Describe the management options that are available to the owner of a consumer organization in the Developer Portal
* Describe how to add a member in the Developer Portal
* Describe the consumer roles that are defined in API Manager
* Identify the roles that are defined in the Developer Portal
* Explain the password lockout criteria
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| Exercise 2. Managing catalogs and consumer organizationsDuration: 1 hour |
| Overview | This exercise shows you how to manage consumer organizations through the API Manager and Developer Portal web interfaces. You review the role of the provider organization owner in creating a consumer organization. You also learn how to manage members and configure member roles and permissions in the Developer Portal. |
| Learning objectives | After completing this exercise, you should be able to:* Create a catalog
* Configure settings for the Developer Portal
* Define a Developer Portal and user registry in API Manager
* Activate the admin user for the Developer Portal
* Configure modules in the Developer Portal
* Create a consumer organization in API Manager
* Add a member to the consumer organization
* Respond to the email message to activate the app developer member
* Manage member roles and permissions in the Developer Portal
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| Unit 3. Defining APIs in API ManagerDuration: 30 minutes |
| Overview | This unit describes the options for defining APIs in API Manager. You examine the Assemble feature that is used to tailor your API to include logic and policy constructs. You learn how to use the test feature of API Manager to test APIs. |
| Learning objectives | After completing this unit, you should be able to:* Describe the features in API Manager for defining APIs, Products, and plans
* Examine the OpenAPI definition file
* Describe the purpose of the Assemble view in API Manager
* Explain how to test API operations in API Manager
* Describe the use of a Product for grouping common APIs
* Describe the role of plans to manage API usage
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| Exercise 3. Defining an API and Product in API ManagerDuration: 45 minutes |
| Overview | In this exercise, you work with the API Manager web user interface. You sign in to the API Manager web interface in the role of the organization owner for the API Provider. You define an API interface by importing a set of API REST operations and data definitions in an OpenAPI (Swagger V2.0) document. You create a plan and a Product. You use the assembly feature in API Manager to define the operations that are made available on the gateway. You then test the assembly by publishing it to the Sandbox catalog. |
| Learning objectives | After completing this exercise, you should be able to:* Sign in to API Manager
* Create an API by importing an OpenAPI definition
* Modify the API definition in API Manager
* Create a Product and a plan in API Manager
* Assemble the API operations to control aspects of processing in the gateway server
* Specify the target URL for the operation
* Start the back-end NodeJS application
* Test the API in API Manager
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| Unit 4. The Product lifecycleDuration: 1 hour and 15 minutes |
| Overview | This unit explains the concept of the Product lifecycle. The lifecycle management feature controls the staging of a Product version to a catalog. Lifecycle management continues through publishing to make the Product version available to your application developers. The lifecycle governance eventually controls retiring and archiving of the Product and APIs. |
| Learning objectives | After completing this unit, you should be able to:* Describe provider organization roles and permissions
* Explain the Product lifecycle stages
* Describe how staging and publishing differ in development and production catalogs
* Describe how lifecycle events are managed in API Manager
* Explain the product availability and visibility settings
* Describe how to create versions of Products and APIs
* Explain the concept of replacing and superseding published Products
* Explain how to migrate application subscriptions to a new Product version and plan
* Explain how application subscriptions are created in API Manager
* Describe the state changes that occur when approvals are enabled
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| Exercise 4. Managing and approving API ProductsDuration: 1 hour |
| Overview | This exercise shows you how the Product lifecycle is managed in API Manager. You review Product and API availability and visibility settings, and create and plans. You configure lifecycle settings and approval settings for a catalog. You examine how to define a user for the provider organization. You manage Product and API versions. You publish artifacts to the Staging catalog, and then review and approve the lifecycle stage for a published Product. |
| Learning objectives | After completing this exercise, you should be able to:* Review product availability and visibility settings in API Manager
* Create and configure plans
* Review the roles and members of the provider organization
* Create a provider organization member with the developer role
* Sign in to API Manager with the owner role
* Configure lifecycle and approval settings
* Publish a Product and APIs to the Staging catalog
* Create a version of the API and Product
* Approve a published Product
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| Unit 5. Customizing the Developer PortalDuration: 45 minutes |
| Overview | As the administrator, you can change the appearance and layout of the Developer Portal. This unit describes the customization options that are available to you. You learn how to customize the Developer Portal through the administration menu, and examine the options for using themes and sub-themes on the Developer Portal. |
| Learning objectives | After completing this unit, you should be able to:* Briefly explain the purpose of the Developer Portal
* Explain the role of the Drupal open source project in the Developer Portal
* Explain the concept of modules and themes
* List the roles that are defined in the Developer Portal
* Describe the Drupal terminology that is used when administering the portal
* Describe the various ways to create a theme for the Developer Portal
* Describe the use of sub-themes for customizing the standard API Connect Developer Portal theme
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| Exercise 5. Customizing the Developer PortalDuration: 45 minutes |
| Overview | This exercise shows you the customization options in the Developer Portal. You sign in to the Developer Portal with a Portal administrator account, add and configure a Drupal sub-theme, and review some of the standard features of the Developer Portal. |
| Learning objectives | After completing this exercise, you should be able to:* Sign in to the Developer Portal as a Portal administrator
* Generate a Developer Portal sub-theme
* Review and customize the sub-theme
* Install the sub-theme on the Developer Portal
* Review the forum features in the Developer Portal
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| Unit 6. Creating an application and subscribing to a planDuration: 30 minutes |
| Overview | This unit covers the creation of an application and subscribing the application to a Product and plan on the Developer Portal. An application developer discovers APIs, plans, and Products that are published to the Developer Portal. The developer can review the details of the APIs and plans and can optionally test the API operations in the Developer Portal. To use APIs, an application developer creates an application in the Developer Portal, and then subscribes the application to a plan that is associated with the API and Product. |
| Learning objectives | After completing this unit, you should be able to:* Review the published Products in API Manager
* Review the visibility settings for published Products and APIs
* Discover Products, plans, and APIs in the Developer Portal
* Describe how to create an application in the Developer Portal
* Describe how to subscribe to a Product plan
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| Exercise 6. Creating an application and subscribing to a planDuration: 45 minutes |
| Overview | In this exercise, you learn how to create an application and subscribe to a plan in the Developer Portal. You see how an application is migrated from one version to another when the publisher supersedes the published Product on the Staging catalog. You also review the retire and archive actions in API Manager. |
| Learning objectives | After completing this exercise, you should be able to:* Sign on to the Developer Portal as a developer of the consumer organization
* Create an application that uses the published Product
* Subscribe to a plan
* Sign on to API Manager as the owner of the provider organization
* Stage a new version of the Product
* Supersede the published Product on the Staging catalog
* Review the results in the Developer Portal
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| Unit 7. API analyticsDuration: 45 minutes |
| Overview | This unit describes the API analytics features in IBM API Connect. API analytics is built on the Kibana open source analytics and visualization platform. You review some default dashboards and visualizations that are provided with the API Connect analytics service. |
| Learning objectives | After completing this unit, you should be able to:* Describe what is API Connect analytics
* Describe the role of the Kibana open source platform in the API Connect API analytics feature
* Describe where analytics are configured and captured
* Identify which user interfaces in API Connect provide access to analytical data
* Review analytics in the Developer Portal
* Describe the purpose of default dashboards
* Review the features of default visualizations
* Create a visualization
* Describe API events and event records
* Describe how to export analytics and API event data
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| Exercise 7. Calling an API on the gateway and monitoring API usageDuration: 1 hour |
| Overview | In this exercise, you test the operations for the APIs in Smart Product 2.0.0. The APIs that you test are the APIs for which you created an assembly in an earlier exercise. You use the test feature in the Developer Portal. The operations call to the API endpoint on the gateway and then forwards the request to the back-end service.You run a script to generate API calls and review the API analytics capabilities for both the consumer and provider organizations. |
| Learning objectives | After completing this exercise, you should be able to:* Run the test feature in the Developer Portal
* Identify the API endpoints in the gateway
* Run a script to generate multiple calls to the API gateway
* View the analytics dashboard for the catalog
* Change the time period filter for a visualization
* View API event data
* Export API event data
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| Unit 8. Course summaryDuration: 5 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 future 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

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

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