Lab 1

CloudHub Deployments
Overview

You have designed and implemented APIs using the API-led Connectivity approach. In this lab, you will reuse the "Omni Channel API" application you deployed to CloudHub in Module 2 to learn about managing applications on CloudHub.

In this lab, you will use Anypoint Runtime Manager to view existing applications on CloudHub and make changes to the configuration of a deployed application.

The lab will consist of two steps:

- **Step 1: View your Application**
- **Step 2: Manage your Application**

CloudHub Architecture

CloudHub has been built from the ground up to provide enterprises with a multi-tenant, secure, elastic, and highly available integration platform as a service (iPaaS). CloudHub is managed via the Runtime Manager console, in Anypoint Platform. On top of Runtime Manager, you can also deploy it directly from Anypoint Studio like we have done in other modules or using your favorite CI/CD tools leveraging the CloudHub API, or via the CloudHub Command Line Interface.

To understand CloudHub's approach to security and availability, it's important to understand the architecture behind CloudHub. It includes two major components: the platform services, and the worker cloud. These two components and the Runtime Manager console through which you access them work together to run your integration applications.

<table>
<thead>
<tr>
<th>Integration Applications</th>
<th>These are applications that you create and deploy to CloudHub to perform integration logic and provide APIs for your business.</th>
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</thead>
<tbody>
<tr>
<td>Runtime Manager Console</td>
<td>The Runtime Manager console is the face of CloudHub, allowing you to deploy and monitor integrations, and configure your account, among other things.</td>
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<tr>
<td>Platform Services</td>
<td>This set of shared CloudHub platform services and APIs includes CloudHub Insight, alerting, logging, account management, virtual private cloud/secure data gateway, load balancing, and others.</td>
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<tr>
<td>Global Worker Clouds</td>
<td>This is an elastic cloud of Mule instances that run integration applications.</td>
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</table>

**NOTE** You can view the live status and detailed service history for the Runtime Manager console, platform services, and the CloudHub worker cloud at trust.mulesoft.com.

A Mule application can host one or more APIs (or none.) When you deploy your application to CloudHub, it is provisioned to one or more CloudHub Workers. A Worker is an instance of an application, deployed to a Mule Runtime and hosted in the CloudHub Worker Cloud.

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**Step 1: View your Application**

In **Lab 3** of Module 2, you deployed the "Omni Channel API" application to CloudHub directly from Anypoint Studio. Now you can view that application's status with Anypoint Runtime Manager.

1. Open a browser window and navigate to [https://anypoint.mulesoft.com](https://anypoint.mulesoft.com)
2. Login if you are not already.
3. Click on the entry for Runtime Manager
4. The landing page for Runtime Manager will display your running Applications. Click on the name of your application (<yourname>-api-omni-channel-complete) to bring up the application’s Dashboard.

5. Here you are presented with your application’s Dashboard.
The Dashboard helps you answer questions about your applications, such as:

- When did peaks in usage occur?
- What impact do high traffic peaks have on response time?
- How well is the processing power behind my app coping with these peaks?
- What impact do high traffic peaks have on message fail rate?

You can also set up Alerts to notify you automatically whenever any of these metrics hits a critical value for a sustained period of time.

**Step 2: Manage your Application**

Now that you have viewed the status of your running application, it is time to begin managing it.

1. Navigate back to the **Applications** tab of **Runtime Manager**

2. Click on the `<yourname>-api-omni-channel` row (not on the name) and on the right you will see options to manage your application.

From here you can access a variety of management options directly. You can quickly restart, stop, or delete the application. You can also download the deployable zip file of the running application or upload/deploy a new version of the application.

3. Click **Manage Application** to view additional management options
You are now presented with the Settings tab for your Application.

The Worker size and Workers options let you scale your application vertically or horizontally with zero downtime.

Adding more than one worker to a CloudHub application will let you automatically take advantage of CloudHub Fabric to provide horizontal scalability and reliability. Trial accounts, however, are limited to one worker per application.

4. Click on the dropdown for **Worker size** and scale your worker vertically by increasing the compute size from "0.1 vCores 512MB Memory" to "2 vCores 1GB Memory"
5. Click **Apply Changes**

CloudHub supports updating your applications at runtime so end users of your HTTP APIs experience zero downtime. While your application update is deploying, CloudHub keeps the old version of your application running. Your domain points to the old version of your application until the newly uploaded version is fully started. This allows your API to keep servicing requests from your old application while the new version of your application is starting.

While your new worker is being instantiated, your old worker is still serving requests until the new .2 vCore worker is ready. During this time your application’s icon will change from a green dot to an animated blue circle, indicating that it is Deploying.

From the Settings tab you can also move your application to a different Region (limited in Trial accounts), change Logging levels, manage Properties, enable Insights, allocate static IPs, and upgrade your Runtime version.

**Summary**

In this lab, you learned about the CloudHub architecture and saw how easy it is to view and manage your applications. With Anypoint Runtime Manager, MuleSoft customers can monitor, troubleshoot, analyze and manage applications and APIs securely deployed in a public or private cloud or on-premises, in a sandbox, staging or production environment all in one place.

In this lab, we completed these steps:

- **Step 1: View your Application**
Step 2: Manage your Application

If you'd like to learn more

- See Developing Applications for CloudHub for more information
- See Deploying to CloudHub for more information
- See CloudHub Fabric for more information
- See Managing Deployed Applications for more information
- See Managing Applications on CloudHub for more information
- See Monitoring Dashboards for more information

Congratulations! You have completed Lab 1.

Please proceed to Lab 2

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