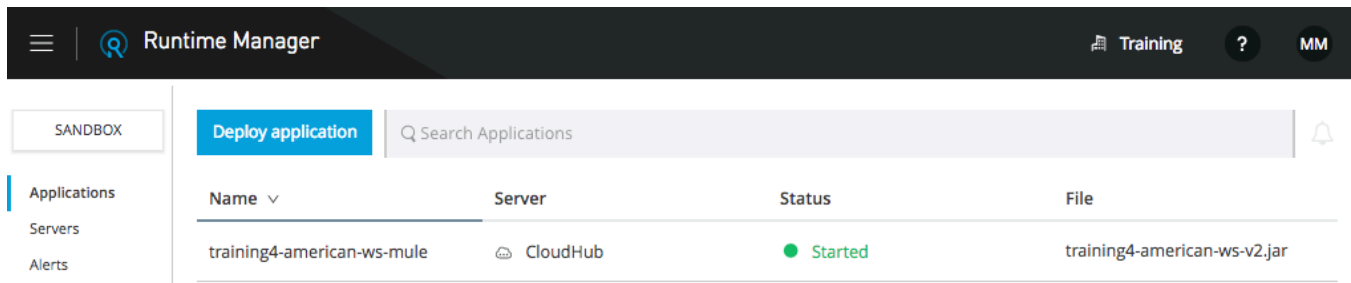


## Walkthrough 5-1: Deploy an application to CloudHub

In this walkthrough, you deploy and run your application on CloudHub. You will:

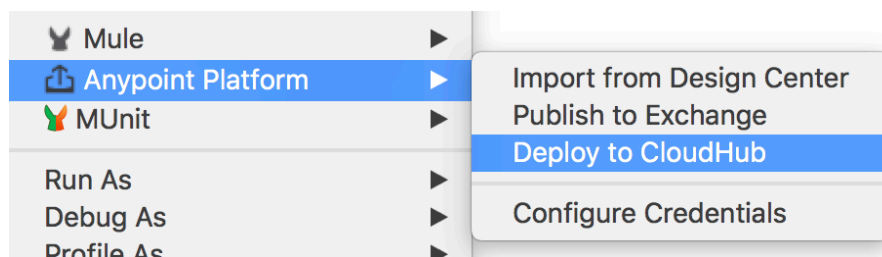
- Deploy an application from Anypoint Studio to CloudHub.
- Run the application on its new, hosted domain.
- Make calls to the web service.
- Update an API implementation deployed to CloudHub.



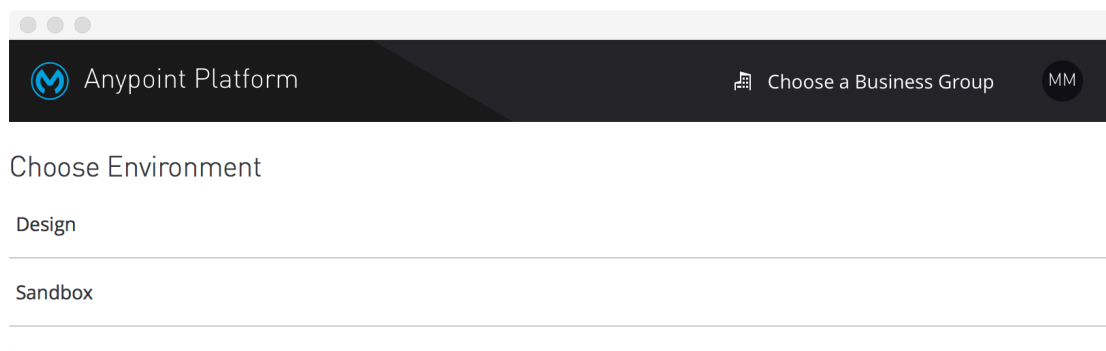
*Note: If you do not have a working application at this point, import the training4-american-ws-  
wt4-6.jar solution into Anypoint Studio and work with that project.*

### Deploy the application to CloudHub

1. Return to Anypoint Studio.
2. In the Package Explorer, right-click the project and select Anypoint Platform > Deploy to CloudHub.

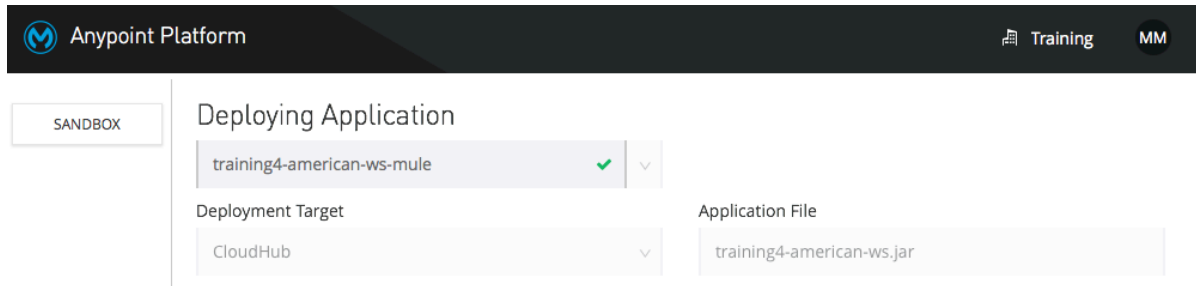


3. In the Choose Environment dialog box, select Sandbox.



- At the top of the Anypoint Platform dialog box, set the application name to `training4-american-ws-{your-lastname}` so it is a unique value.

*Note: This name will be part of the URL used to access the application on CloudHub. It must be unique across all applications on CloudHub. The availability of the domain is instantly checked and you will get a green check mark if it is available.*

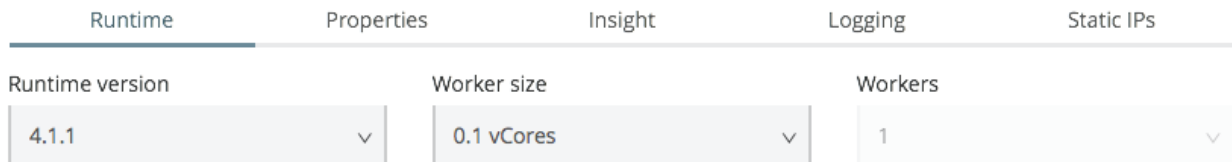


The screenshot shows the 'Deploying Application' dialog box in the Anypoint Platform. The application name is 'training4-american-ws-mule' with a green checkmark. The deployment target is 'CloudHub' and the application file is 'training4-american-ws.jar'. There is a 'SANDBOX' button on the left.

- Make sure the runtime version is set to the version your project is using.

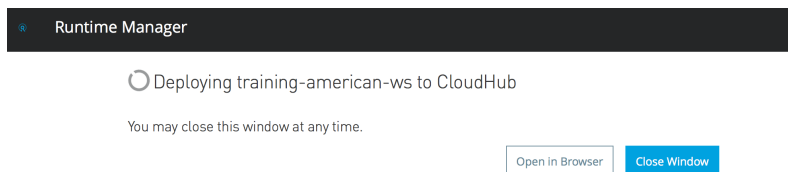
*Note: If you don't know what version it is using, look at the Package Explorer and find a library folder with the name of the server being used, like Mule Server 4.1.1 EE.*

- Make sure the worker size to 0.1 vCores.



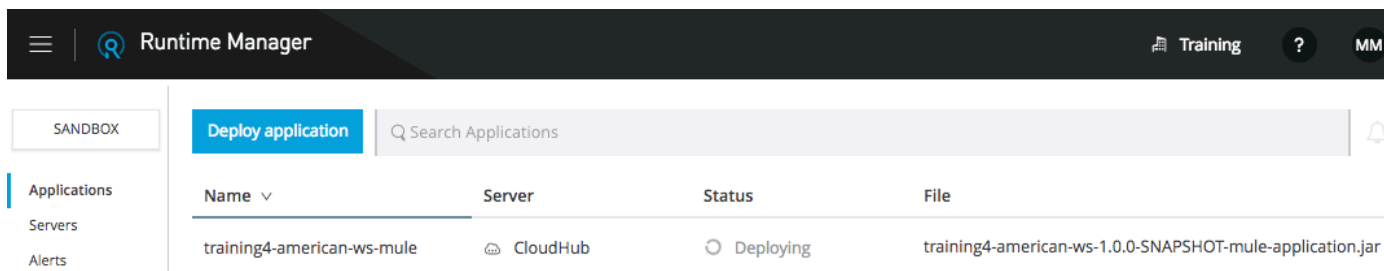
The screenshot shows the configuration tabs for the runtime: Runtime, Properties, Insight, Logging, and Static IPs. Under the 'Runtime' tab, there are three dropdown menus: 'Runtime version' set to '4.1.1', 'Worker size' set to '0.1 vCores', and 'Workers' set to '1'.

- Click the Deploy Application button.
- Click the Open in Browser button.



The screenshot shows a 'Runtime Manager' window titled 'Deploying training-american-ws to CloudHub'. It includes a progress indicator, a message 'You may close this window at any time.', and two buttons: 'Open in Browser' and 'Close Window'.

- In the Anypoint Platform browser window that opens, locate the status of your deployment in the Runtime Manager.



The screenshot shows the 'Runtime Manager' interface. It has a sidebar with 'Applications', 'Servers', and 'Alerts'. The main area has a 'Deploy application' button and a search bar. Below is a table with columns: Name, Server, Status, and File. The table shows one entry: 'training4-american-ws-mule' on 'CloudHub' with a status of 'Deploying' and a file name 'training4-american-ws-1.0.0-SNAPSHOT-mule-application.jar'.

Name	Server	Status	File
training4-american-ws-mule	CloudHub	Deploying	training4-american-ws-1.0.0-SNAPSHOT-mule-application.jar

## Watch the logs and wait for the application to start

- Click in the row of the application (not on its name); you should see information about the application appear on the right side of the window.

The screenshot shows the MuleSoft Runtime Manager interface. On the left is a sidebar with navigation links: SANDBOX, Applications, Servers, Alerts, VPCs, and Load Balancers. The main area has a 'Deploy application' button and a search bar. Below this is a table with columns: Name, Server, Status, and File. The table contains one entry: 'training4-american-ws-mu' on 'CloudHub' with a 'Started' status and file 'training4-american-ws-1.0.0-SNA'. On the right, a detailed view for 'training4-american-ws-mule' is shown, indicating it is 'Started' on 'CloudHub'. It includes a 'Choose file' button, 'Last Updated' timestamp (2018-04-18 1:48:21PM), 'App url' (training4-american-ws-mule.cloudhub.io), 'Runtime version' (4.1.1), 'Worker size' (0.1 vCores), and 'Workers' (1). At the bottom of this panel are buttons for 'Manage Application', 'Logs', and 'Insight', along with a link to 'View Associated Alerts'.

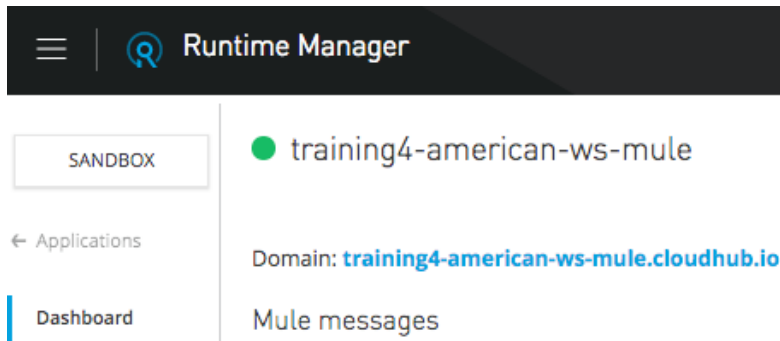
- Click the Logs button.
- Watch the logs as the application is deployed.
- Wait until the application starts (or fails to start).

This screenshot shows the 'Logs' view for the application 'training4-american-ws-mule'. The sidebar on the left now highlights 'Logs' under the 'Applications' section. The main area displays a 'Live Console' with a search bar and an 'Advanced' filter dropdown. The log entries show the application starting successfully. The first entry is 'Starting Bean: listener' at 13:48:21.870 on 04/18/2018 for Worker-0. The second entry, at 13:48:21.955, shows a 'Deployment' by 'system' with the message 'Worker(18.217.62.85): Your application has started successfully.' The third entry, at 13:48:22.622, shows another 'Deployment' by 'system' with the message 'Your application is started.' On the right, a 'Deployments' panel shows a list of deployments for 'Today', with the most recent one at 13:46 - Deployment, marked as successful. Below this is a 'System Log' section showing 'Worker-0'.

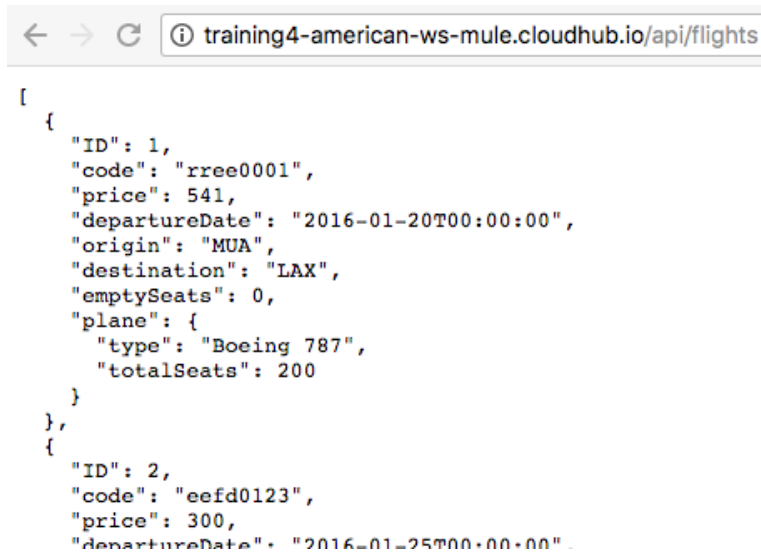
*Note: If your application did not successfully deploy, read the logs to help figure out why the application did not deploy. If you had errors when deploying, troubleshoot them, fix them, and then redeploy.*

## Test the application

14. In the left-side navigation, select Dashboard.
15. Locate the link for the application on its new domain:  
training4-american-ws-*{lastname}*.cloudhub.io.



16. Click the link; a request will be made to that URL in a new browser tab and you should get a message that there is no listener for that endpoint.
17. Modify the path to [http://training4-american-ws-\*{lastname}\*.cloudhub.io/api/flights](http://training4-american-ws-<i>{lastname}</i>.cloudhub.io/api/flights); you should see the flights data.



*Note: If you are using the local Derby database, your application will not return results when deployed to CloudHub. You will update the application with a version using the MySQL database in the next section, so it works.*

18. Add a query parameter called destination to the URL and set it equal to SFO.

19. Send the request; you should still get all the flights.

*Note: You did not add logic to the application to search for a particular destination. You will deploy an application with this additional functionality implemented next.*

```
← → ↻ ⓘ training4-american-ws-mule.cloudhub.io/api/flights?destinaton=SFO

[
  {
    "ID": 1,
    "code": "rree0001",
    "price": 541,
    "departureDate": "2016-01-20T00:00:00",
    "origin": "MUA",
    "destination": "LAX",
    "emptySeats": 0
  }
]
```

20. Leave this browser tab open.

## Update the API implementation deployed to CloudHub

21. Return to the browser tab with Runtime Manager.
22. In the left-side navigation, select Settings.
23. Click the Choose file button and select Upload file.
24. Browse to the jars folder in the course student files.
25. Select training4-american-ws-v2.jar and click Open.

*Note: This updated version of the application adds functionality to return results for a particular destination. You will learn to do this later in the Development Fundamentals courses.*

26. Click the Apply Changes button.

The screenshot shows the MuleSoft Runtime Manager interface. The top navigation bar includes a menu icon, the 'Runtime Manager' title, and links for 'Training', a help icon, and 'MM'. The left sidebar contains navigation links: 'Applications', 'Dashboard', 'Insight', 'Logs', 'Application Data', 'Queues', 'Schedules', and 'Settings' (which is currently selected). The main content area displays the configuration for the application 'training4-american-ws-mule'. It shows the 'Application File' as 'training4-american-ws-v2.jar' with buttons for 'Choose file' and 'Get from sandbox', and a 'Stop' button. The 'App url' is 'training4-american-ws-mule.cloudhub.io'. Below this is a tabbed interface with 'Runtime', 'Properties', 'Insight', 'Logging', and 'Static IPs'. The 'Runtime' tab is active, showing 'Runtime version' as '4.1.1', 'Worker size' as '0.1 vCores', and 'Workers' as '1'. A warning message states: 'Your current subscription allows only one worker per application'. There are checkboxes for 'Automatically restart application when not responding' (checked), 'Persistent queues' (unchecked), and 'Encrypt persistent queues' (unchecked). An 'Apply Changes' button is located at the bottom right of the configuration area.

27. Wait until the application is uploaded and then redeploys successfully.

*Note: Because this can take some time for trial accounts, your instructor may move on with the next topic and then come back to test this later.*

28. Close the browser tab with Runtime Manager.

## Test the updated application

29. Return to the browser tab with a request to the API implementation on CloudHub with a destination of SFO and refresh it; you should now get only flights to SFO.



```
[
  {
    "ID": 5,
    "code": "rree1093",
    "price": 142,
    "departureDate": "2016-02-11T00:00:00",
    "origin": "MUA",
    "destination": "SFO",
    "emptySeats": 1,
    "plane": {
      "type": "Boeing 737",
      "totalSeats": 150
    }
  },
  {
    "ID": 7,
    "code": "eefdl994",
    "price": 676,
    "departureDate": "2016-01-01T00:00:00",
    "origin": "MUA",
    "destination": "SFO",
    "emptySeats": 0
  }
]
```

30. Close this browser tab.