64. Choose Save Changes

Generate log data for the serverless API backend application

65. Copy the **Invoke URL** that is displayed at the top of the **Prod Stage Editor**.

66. In your AWS Cloud9 environment, run the below command, replacing *paste-your-endpoint-here* with your API endpoint:

```
ENDPOINT=paste-your-endpoint-here
```

67. Run the following curl command to send POST requests to the application endpoint. When you run the POST requests, API Gateway proxies them to the **putItemFunction** function, which writes them to the Amazon DynamoDB table called **SampleTable**.

```
curl -d '{"id":"1234ABCD", "name":"Apple Pie"}' -H "Content-Type: application/json" -X
POST $ENDPOINT
curl -d '{"id":"2234ABCD", "name":"Glazed Donut"}' -H "Content-Type: application/json"
-X POST $ENDPOINT
```

68. Run the following command to send a GET request to the endpoint to get a list of items:

```
curl $ENDPOINT
```

69. Run the following command to send a GET request with individual item IDs to get single items:

```
curl $ENDPOINT/1234ABCD
curl $ENDPOINT/2234ABCD
```

Try-it-out exercise: CloudWatch logs

70. Navigate to the **CloudWatch** console. Use the details below to follow your instructor.

Review API Gateway logs for your application

71. Find the log group for the serverless backend API associated with the serverless backend application that you created. It will have the words **API-Gateway-Execution-Logs** in its name and the unique API identifier that AWS generated for the API in API Gateway.

72. Select the latest log stream, and look at the information included in the logs.

Review Lambda logs for a function

73. Find the log group for the **getAllItemsFunction** associated with the serverless backend application that you created.

74. Select the latest log stream, and look at the most recent REPORT entry.

Run a query

75. With your Lambda log group selected, choose the option to **View in Logs Insights**.

76. Run the default query that is included in the query box.

Use a Lambda sample query

77. In the right navigation, choose the **Queries** option, and choose one of the Lambda sample queries. Apply the option, and run the query again.

Try-it-out exercise: X-Ray console

78. Navigate to the **X-Ray** console. Use the details below to follow your instructor.

Drill down to a trace

79. In X-Ray, choose **Service map** from the left navigation pane. Find and select the **error-processor-randomerror** node that says **AWS::Lambda::Function**.

80. In the **Service details** section, choose **View traces**.

81. Select one of the traces in the trace list, and review the kind of information that is available.

Segments and subsegments

82. Within the trace you've selected, scroll to the line that has **AWS::Lambda::Function** in the title, and choose the first item that is listed. This represents a segment. In the **Overview** tab, you'll find the segment ID.

83. Underneath the segment, choose the **Invocation** item. On the **Overview** tab, you'll find that the parent ID matches the segment ID of the top-level segment.

Review annotations

84. Using the same trace, choose the **annotations** item in the list under the Invocation. Choose the **Annotations** tab to view the annotations that have been created for this trace.

Try-it-out exercise: CloudWatch metrics

85. Navigate to the **Lambda** console. Use the details below to follow your instructor.

Lambda

86. On the Lambda console, choose the **error-processor-randomerror** function, and choose the **Monitor** tab. In the corner of the **Error count and success rate (%)** metric, choose the ellipsis (…), and then choose **View in metrics**.

API Gateway

87. Rest APIs have a metrics dashboard. In the **API Gateway** console, choose the serverless backend API in your account.

88. Choose the **Dashboard** option from the menu. Choose any of the graphs to view the graphed metrics in CloudWatch.

Add metric to dashboard

89. From the CloudWatch metrics console, choose the **Actions** dropdown for the graph, and then choose **Add to dashboard**.

Review Lambda Insights for a function

90. From the CloudWatch console menu, choose **Lambda Insights**. Choose **Multi-function** to review a summary of Lambda Insights for all functions.

91. Scroll to the **Function summary** section for quick stats on the number of invocations and cold starts.

92. Select the **error-processor-randomerror** function from the list to drill down into details about the function performance.

Try-it-out exercise: CloudWatch ServiceLens

Open ServiceLens

93. From within CloudWatch, in the left navigation menu, locate **Application Monitoring**, and choose **ServiceLens Map**.

Review data for one function

94. Choose the Lambda function representation for the **error-processor-randomerror** function that indicates errors.

Review details

95. The metrics are graphed below the service map, and you can choose **View logs**, **View traces**, **Analyze traces**, or **View dashboard** for the item you chose.

End lab

Follow these steps to close the console, end your lab, and evaluate your lab experience.

96. Return to the **AWS Management Console**.

97. At the upper-right corner of the page, choose **awsstudent@<AccountNumber>**, and then choose **Sign out**.

98. Choose End Lab.

99. Choose Submit.

100. (Optional):

- Select the applicable number of stars to rate your lab experience.
  - 1 star = Very dissatisfied
  - 2 stars = Dissatisfied
  - 3 stars = Neutral
  - 4 stars = Satisfied
  - 5 stars = Very satisfied
- Enter a comment.
- Choose **Submit**.

You can close the window if you don't want to provide feedback.

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