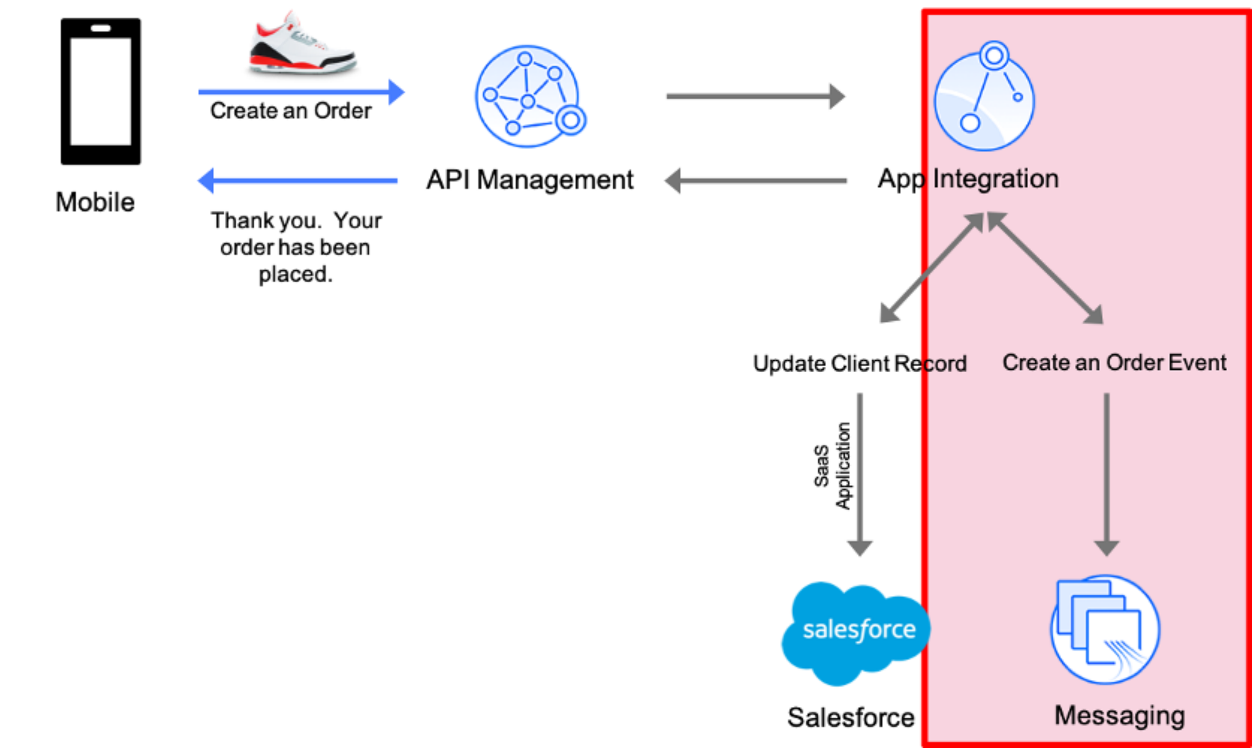
Implement enterprise grade messaging that is secure and reliable for any application across your backend integration architecture

Modern applications and APIs all **need** the ability to communicate data reliably between mission critical systems across internal/external data sources, networks, and regions. In mission critical environments your messaging infrastructure must be robust, reliable, and secure with the ability to integrate into your applications and APIs at pace and scale. In this tutorial, you create a message queue that receiving order data from an API call to a retail ordering system. The red box in the diagram shows what you are creating and where it fits in the overall architecture of a mobile retail buying application.



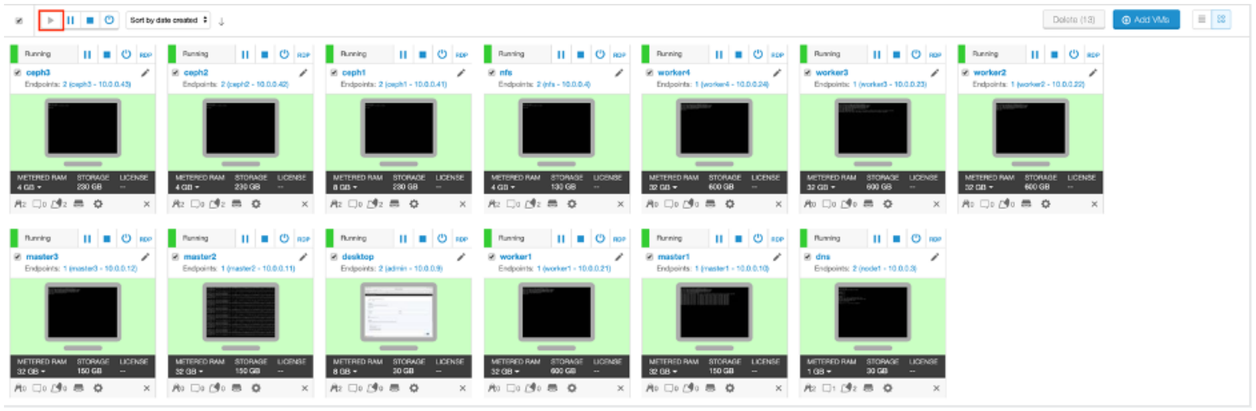
In this tutorial, you will explore the following key capabilities:

- Explore multiple integration capabilities within a single platform.
- Create an integration flow that connects to a message queue.
- Deploy the integration flow as a container in Kubernetes
- Check the message using MQ Web Console
- Check this message using Operational Dashboard (tracing)

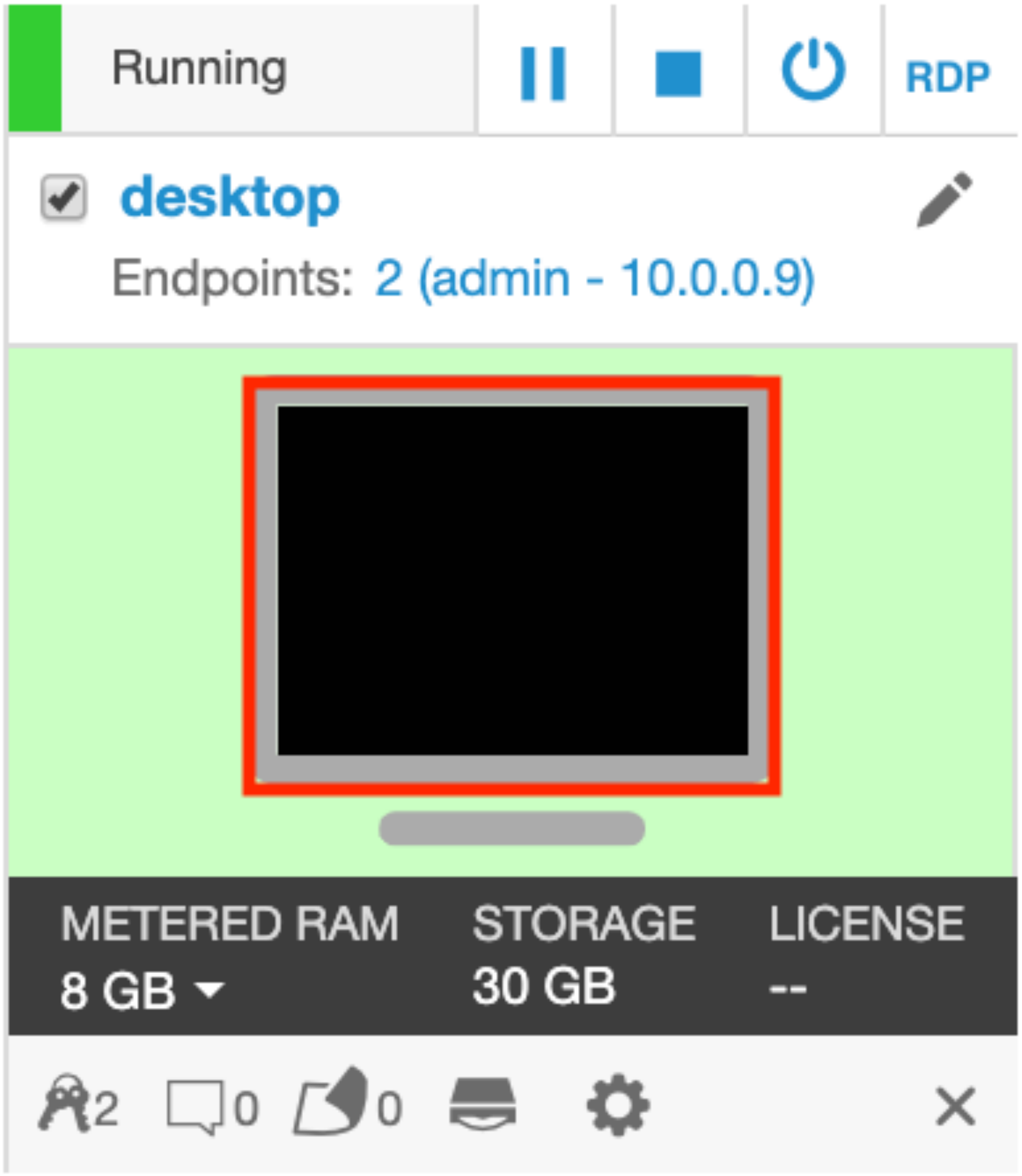
Task 1 - Start the Environment

As this is a new deployment of the IBM Cloud Pak for Integration, you must execute some steps to prepare the environment. Initial setup steps are only needed for a fresh installation of the platform. They do not need to be repeated.
IBM Cloud Pak for Integration offers a single, unified platform for all your enterprise integration needs. It deploys integration capabilities into the Red Hat OpenShift managed container environment and uses the monitoring, logging, and security systems of OpenShift to ensure consistency across all integration solutions
All work for this lab uses IBM Cloud Pak for Integration on OpenShift.
Open the **Developer Machine** VM by clicking the tile.

1. If the environment is already up and running when you open your reservation link, skip to step 3. If it is not running, continue to the next step.
2. Click the Run VM(s) button as shown below to start the virtual machine environment that is used for this lab.



3. Once the virtual machine starts, click the **Desktop** Machine tile to start your lab exercise.



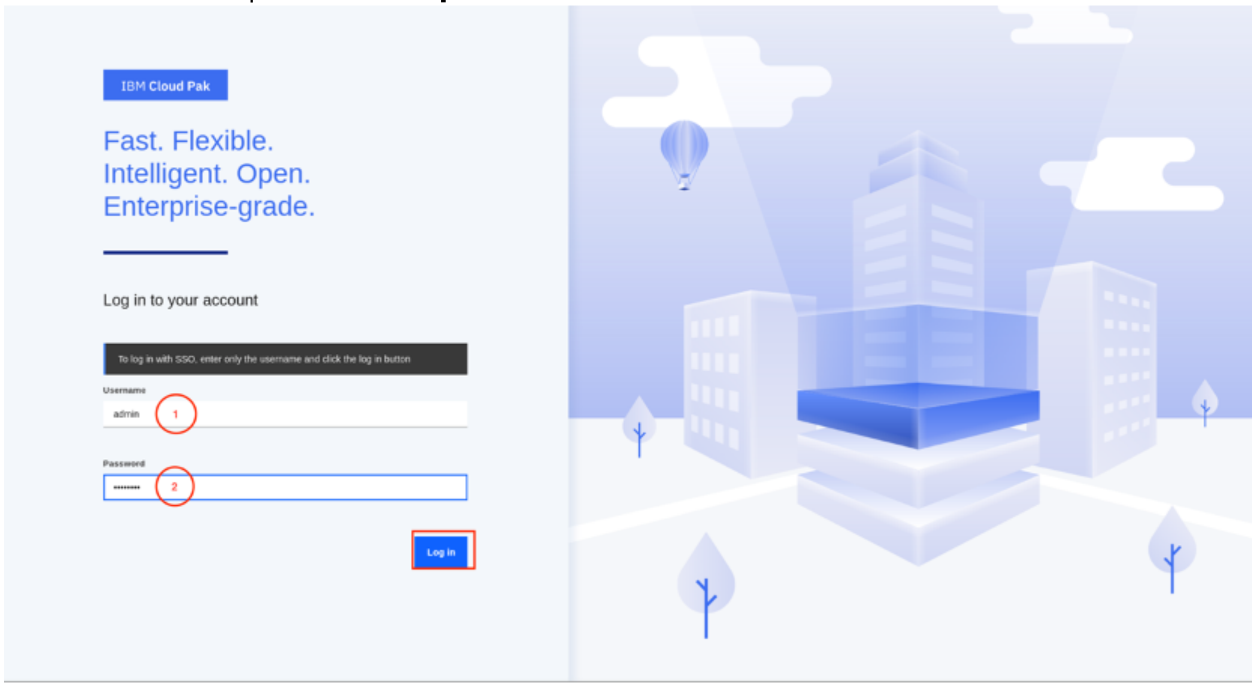
4. Log in to the Linux desktop with userid: **ibmuser** and password: **engageibm .**

Task 2 - Explore the platform capabilities

IBM Cloud Pak for Integration provides a single solution for all of your enterprise integration needs. The platform provides a comprehensive set of industry-leading capabilities. Combine powerful integration capabilities to create, manage, and monitor all of your integrations across applications, messaging, events, APIs, and more.

Unlock the power of your data and support the scale that is required to grow all of your integration and digital transformation initiatives

1. Open a browser and click the IBM Cloud Pak for Integration bookmark in the bookmarks bar at the top. You might receive a login screen. Type as user: **admin** and password: **passw0rd .**



Fast. Flexible. Intelligent. Open. Enterprise-grade.

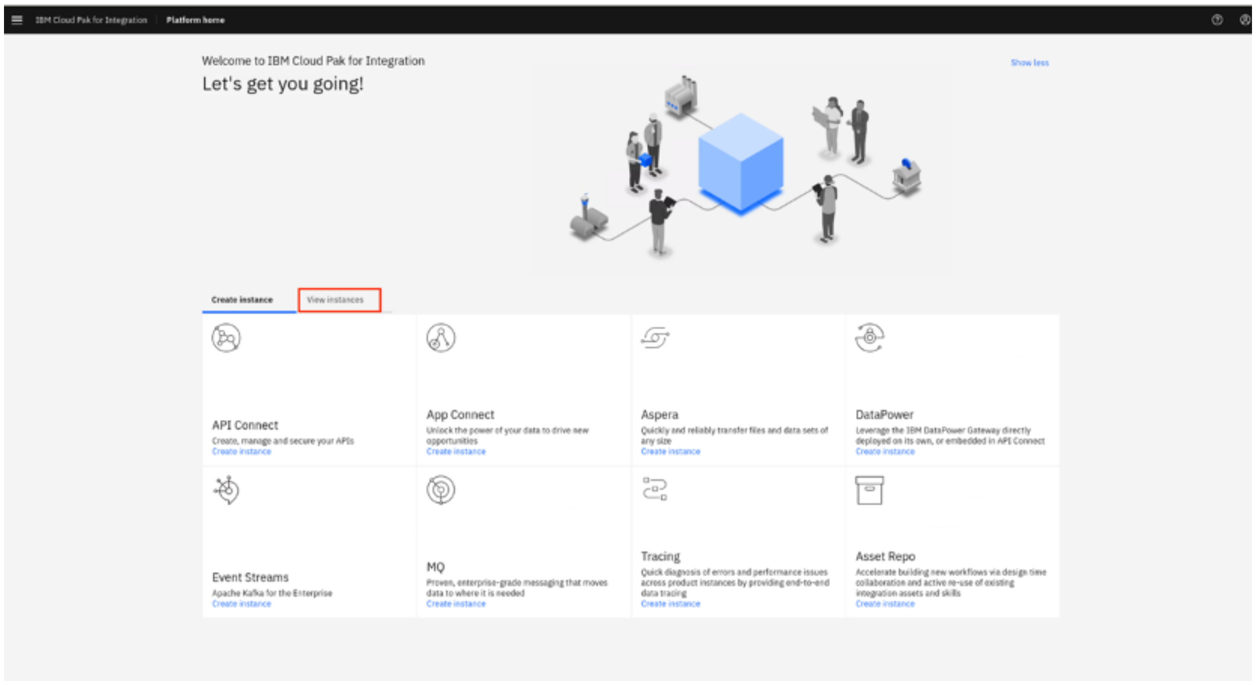
Log in to your account

To log in with SSO, enter only the username and click the log in button

Username: admin

Password: ••••••••

2. Click **View Instance** on the Cloud Pak for Integration Main Page. You can see the list of instances available.


IBM Cloud Pak for Integration | Platform home

Welcome to IBM Cloud Pak for Integration

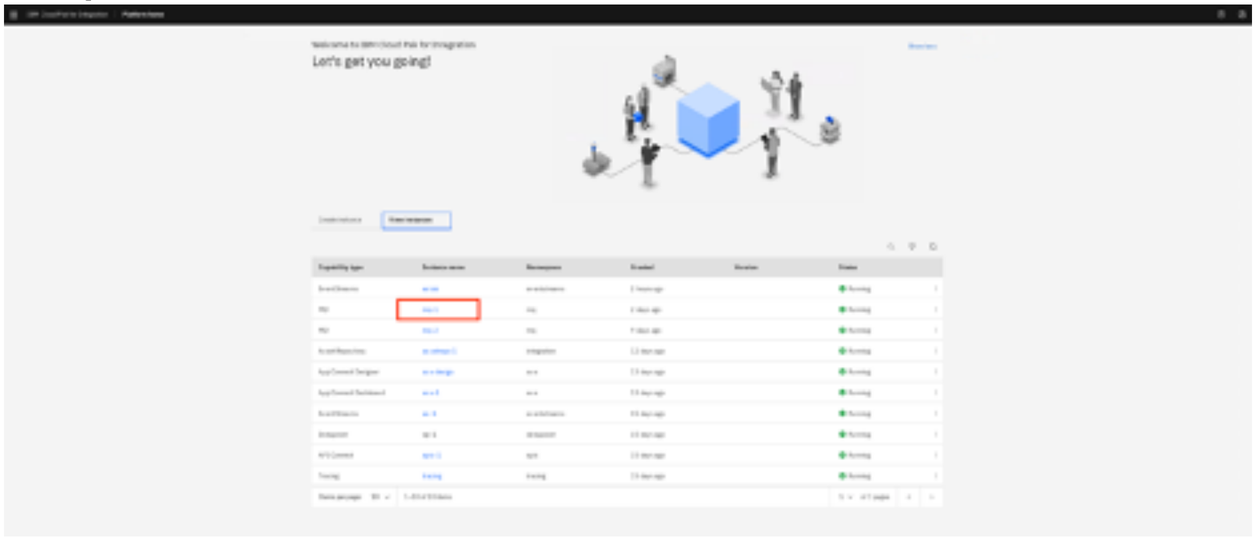
Let's get you going!

Show less

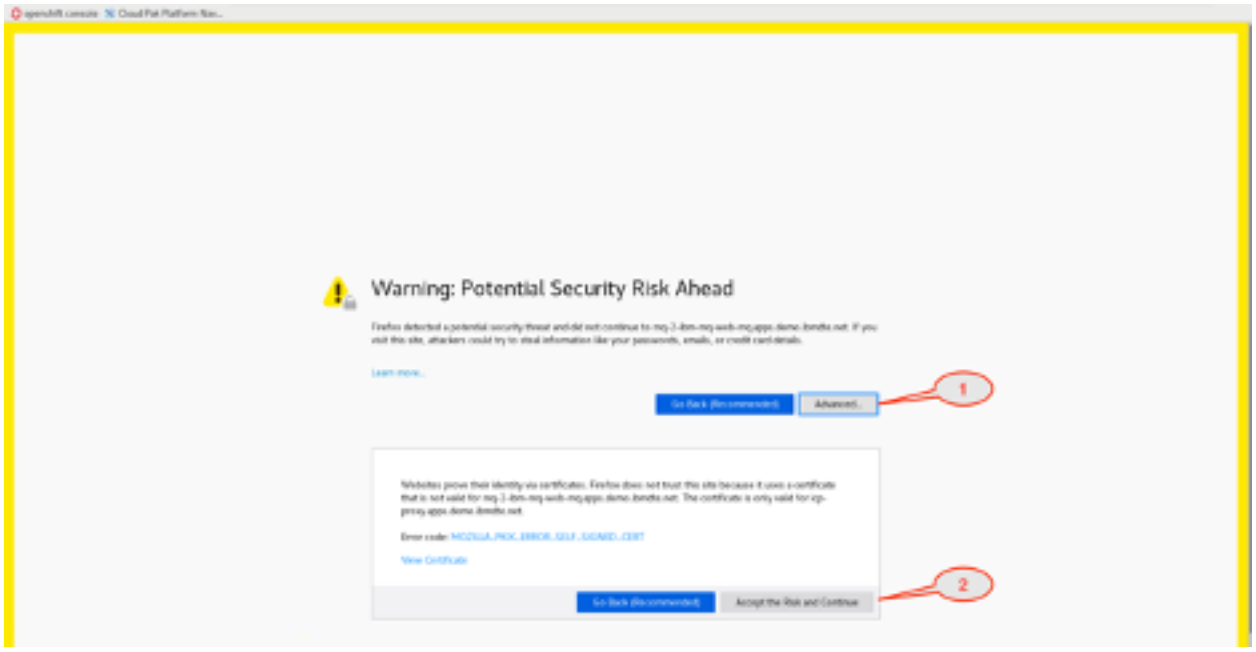
Create instance | View instances

API Connect Create, manage and secure your APIs Create instance	App Connect Unlock the power of your data to drive new opportunities Create instance	Aspera Quickly and reliably transfer files and data sets of any size Create instance	DataPower Leverage the IBM DataPower Gateway directly deployed on its own, or embedded in API Connect Create instance
Event Streams Apache Kafka for the Enterprise Create instance	MQ Proven, enterprise-grade messaging that moves data to where it is needed Create instance	Tracing Quick diagnosis of errors and performance issues across product instances by providing end-to-end data tracing Create instance	Asset Repo Accelerate building new workflows via design time collaboration and active re-use of existing integration assets and skills Create instance

3. The list of deployed instances is displayed. The list includes:API Connect, App Connect , ASPERA, Datapower Event Streams. Message Queues, Tracing and Asset Repository. For this lab, we work with IBM MQ, IBM App Connect, and Tracing (Operational Dashboard). Click **mq-1** to work with MQ.


Let's get you going!

You might see this warning (**Potential Security Risk Ahead**). Click **Advance.** And then Click the link, **Accept the Risk and Continue).** Don't worry there is no Risk for your workstation.|



Warning: Potential Security Risk Ahead

Firefox detected a potential security threat and did not continue to mq-3-ibm-mq-web-mq.apps.demo.ibmdte.net. If you visit this site, attackers could try to steal information like your passwords, emails, or credit card details.

Learn more...

Go Back (Recommended) Advanced...

Websites prove their identity via certificates. Firefox does not trust this site because it uses a certificate that is not valid for mq-3-ibm-mq-web-mq.apps.demo.ibmdte.net. The certificate is only valid for cp-proxy.apps.demo.ibmdte.net.

Error code: MOZILLA_PKIX_ERROR_SELF_SIGNED_CERT

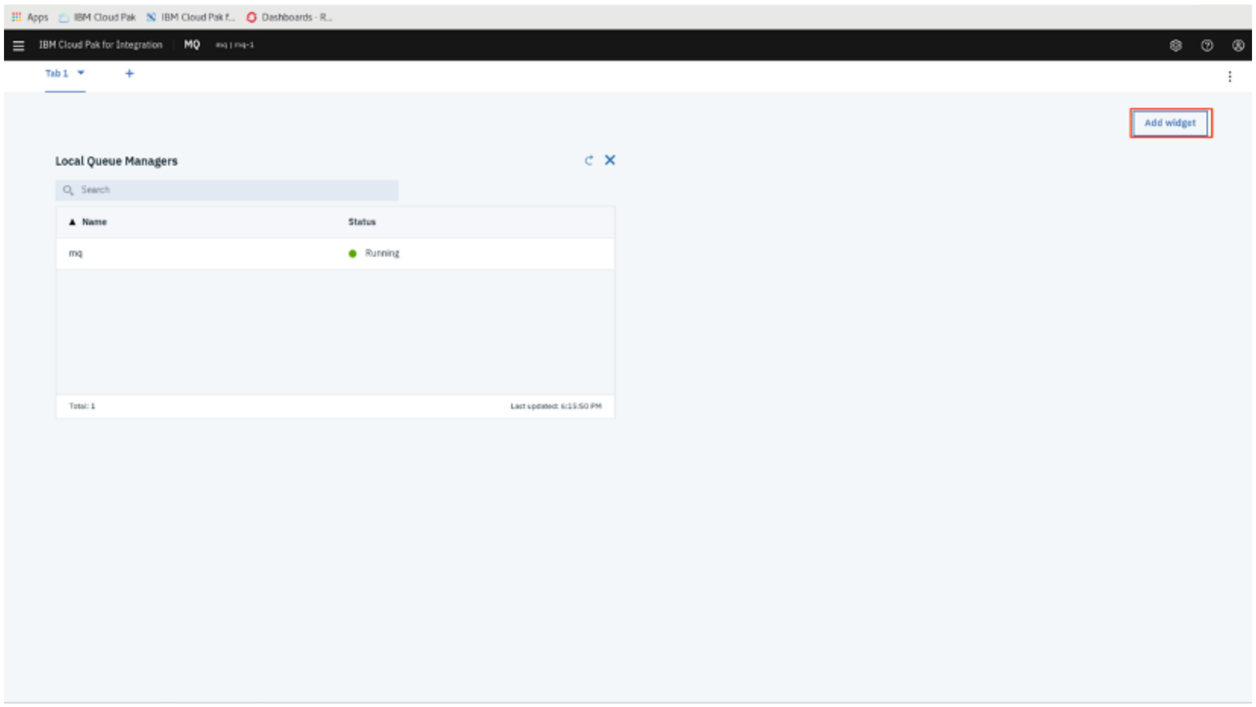
View Certificate

Go Back (Recommended) Accept the Risk and Continue

Task 3 – Create a message using MQ Console

In this task, you navigate to the MQ Console and check the MQ configuration. You create the queue which accepts the resulting data from the call to the **"NEWORDER"** API.

1. In the MQ Console page (**mq** is the name of queue manager), if you see **Queues on mq,** skip to step 3.Otherwise, click the **Add Widget** button.



Local Queue Managers

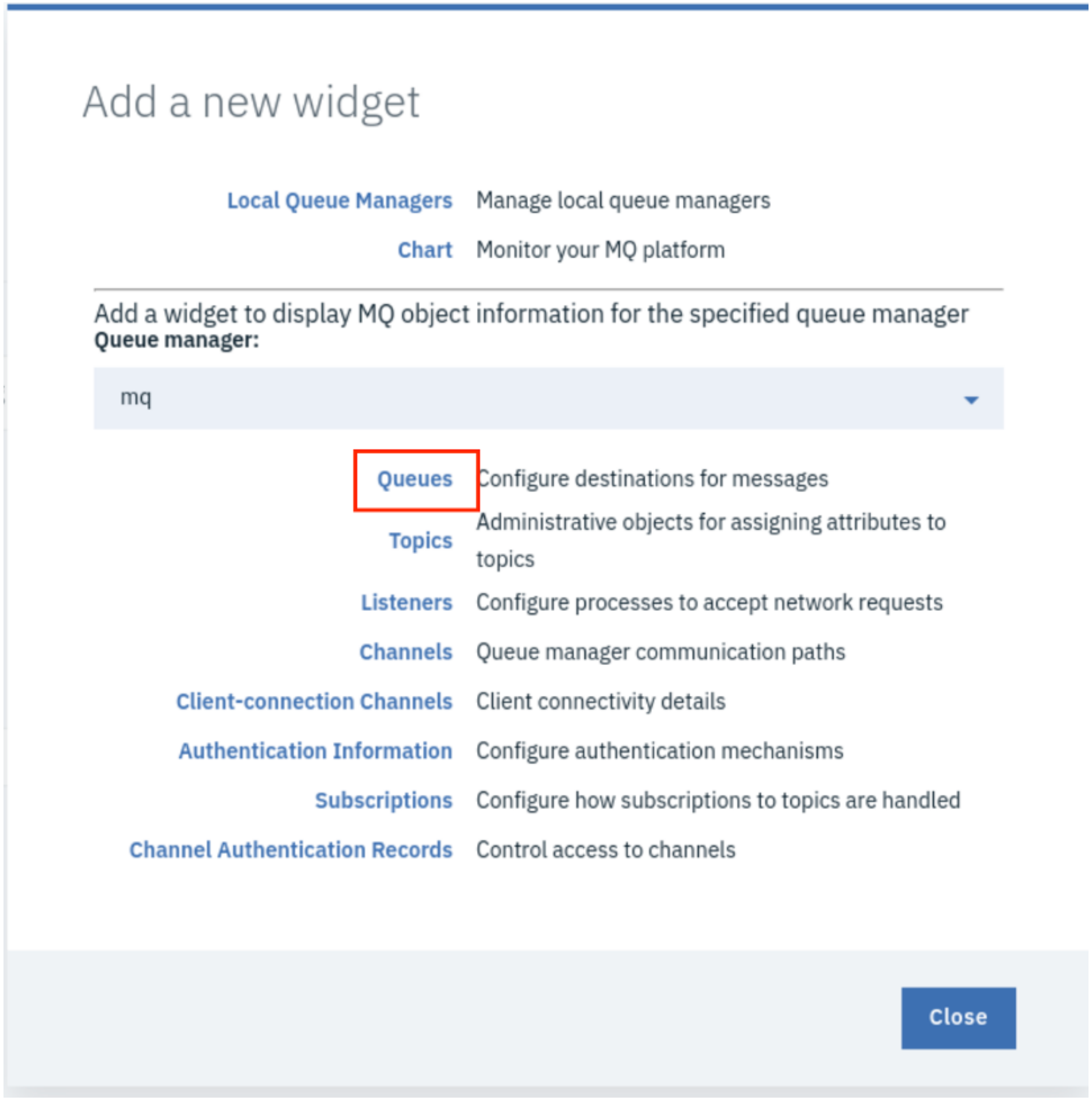
Search

▲ Name	Status
mq	● Running

Total: 1

Last updated: 6:15:50 PM

2. Click **Queues** to add the corresponding widget. You can add different widgets into MQ Console, including mq objects such as: charts, queues, topics, listeners, channels, etc. and make all necessary configurations.


Add a new widget

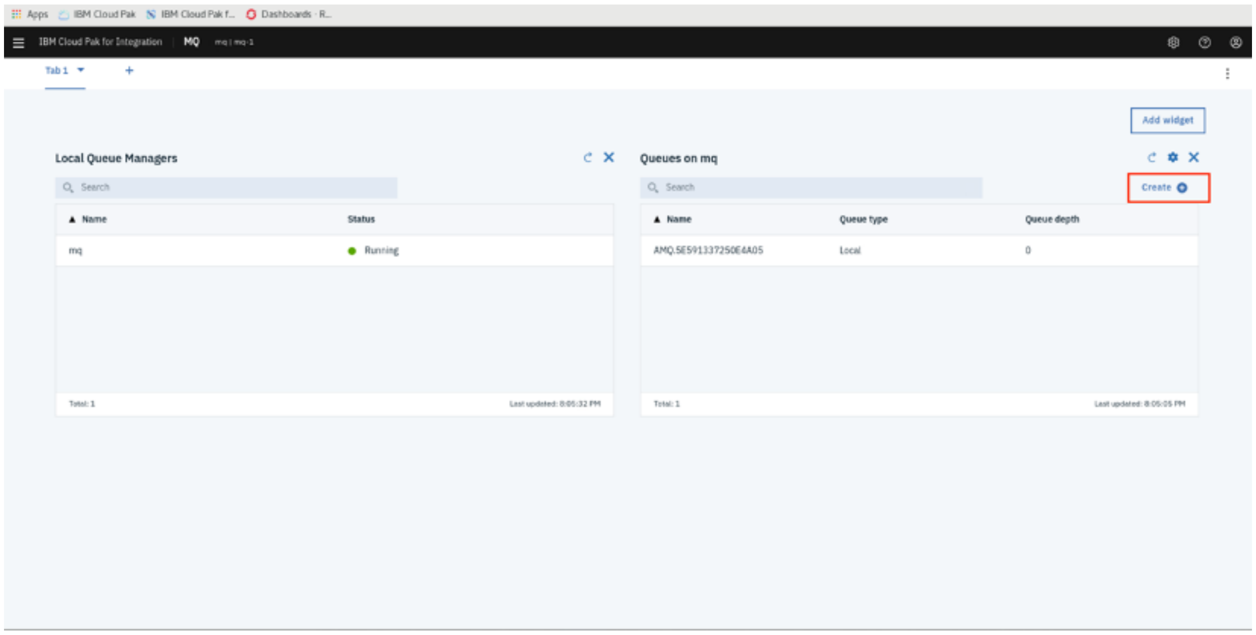
Local Queue Managers	Manage local queue managers
Chart	Monitor your MQ platform

Add a widget to display MQ object information for the specified queue manager
Queue manager:

mq

Queues	Configure destinations for messages
Topics	Administrative objects for assigning attributes to topics
Listeners	Configure processes to accept network requests
Channels	Queue manager communication paths
Client-connection Channels	Client connectivity details
Authentication Information	Configure authentication mechanisms
Subscriptions	Configure how subscriptions to topics are handled
Channel Authentication Records	Control access to channels

3. Take a moment and review the MQ Console, which is where you can administer the MQ server. On **Queues on mq** widget, click **Create(+)** to create a queue for **mq** queue manager.



Local Queue Managers

▲ Name	Status
mq	● Running

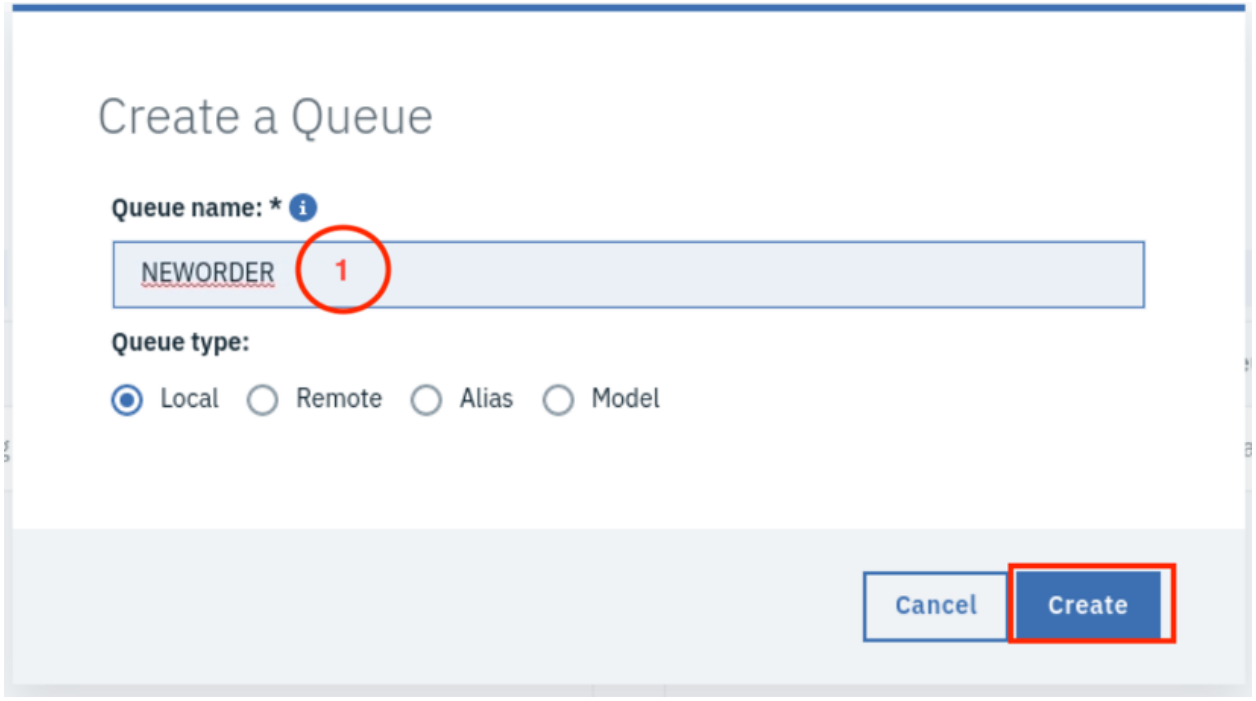
Total: 1 Last updated: 8:05:32 PM

Queues on mq

▲ Name	Queue type	Queue depth
AMQ.5E591337250E4A05	Local	0

Total: 1 Last updated: 8:05:05 PM

4. In the pop-up window shows up and type the local queue name **NEWORDER**. Click **Create** .

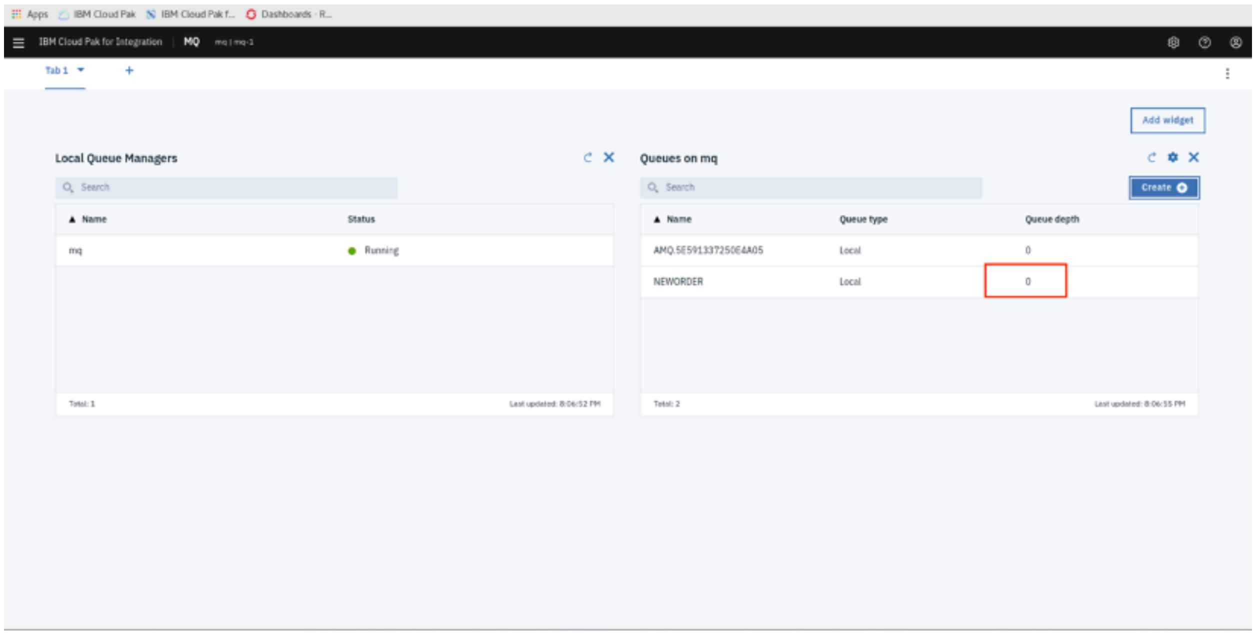


Create a Queue

Queue name: * NEWORDER

Queue type: [✓ Local] Remote Alias Model

5. You see the new queue (NEWORDER), take a look at Queue depth . Notice it should be **0**.



Local Queue Managers

Name	Status
mq	● Running

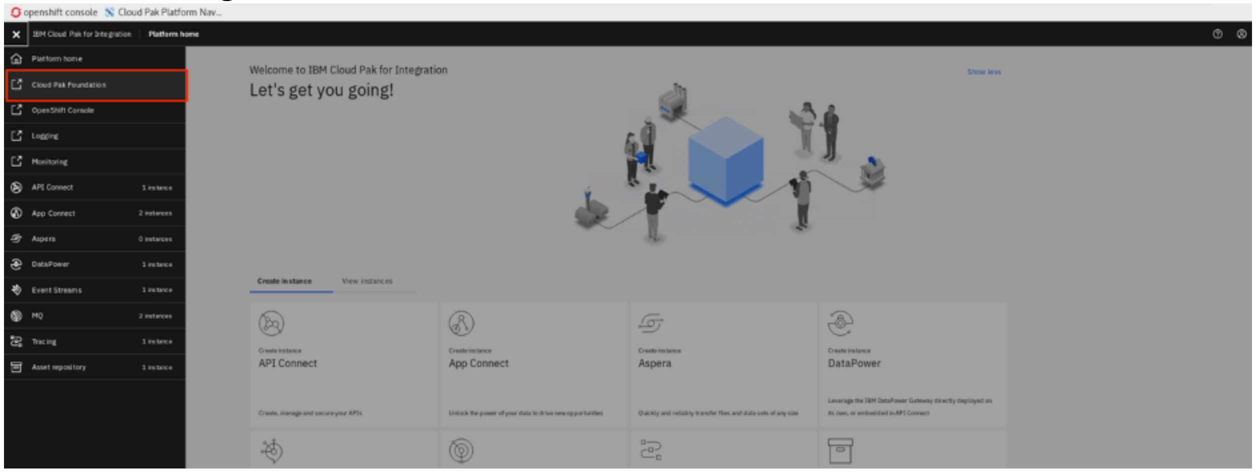
Total: 1 Last updated: 8:06:52 PM

Queues on mq

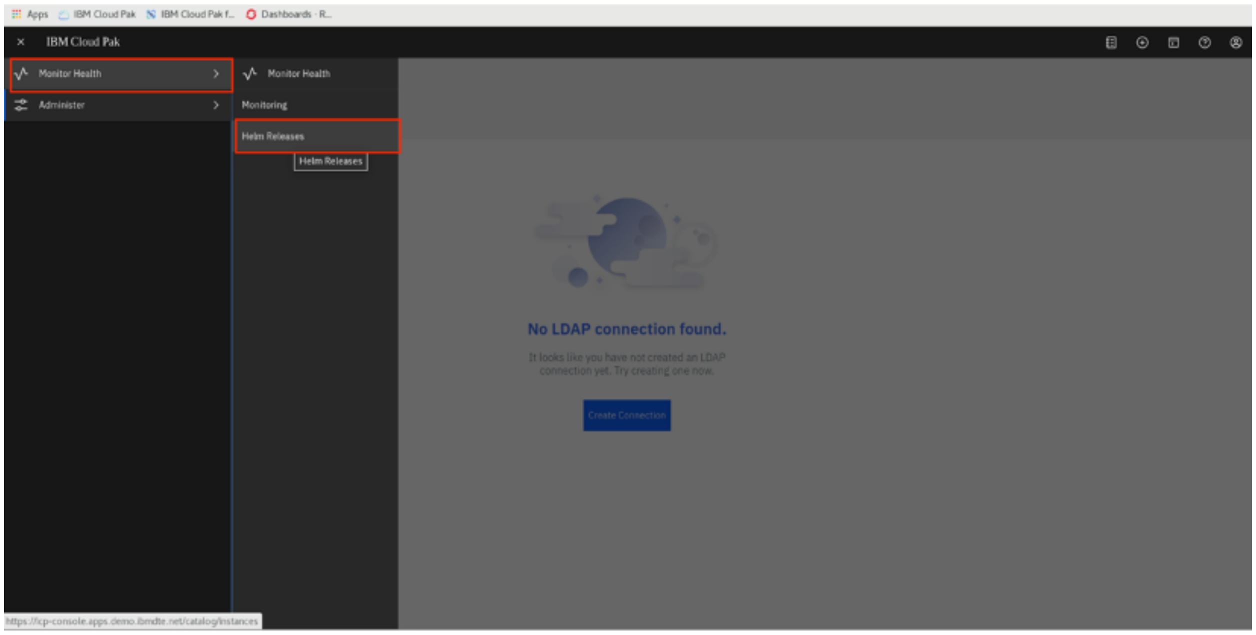
Name	Queue type	Queue depth
AMQ.5E591337250E4A05	Local	0
NEWORDER	Local	0

Total: 2 Last updated: 8:06:55 PM

6. You need some MQ information. MQ was installed as helm releases. You have to open Cloud Pak common services
1. Open a browser and select the Cloud Pak on bookmark bar and then select "**Hambuger**" Menu, **Cloud Pak Foundation .**



2. In the Cloud Pak Foundation Page. Click **Monitor Health** and then **Helm Releases**.

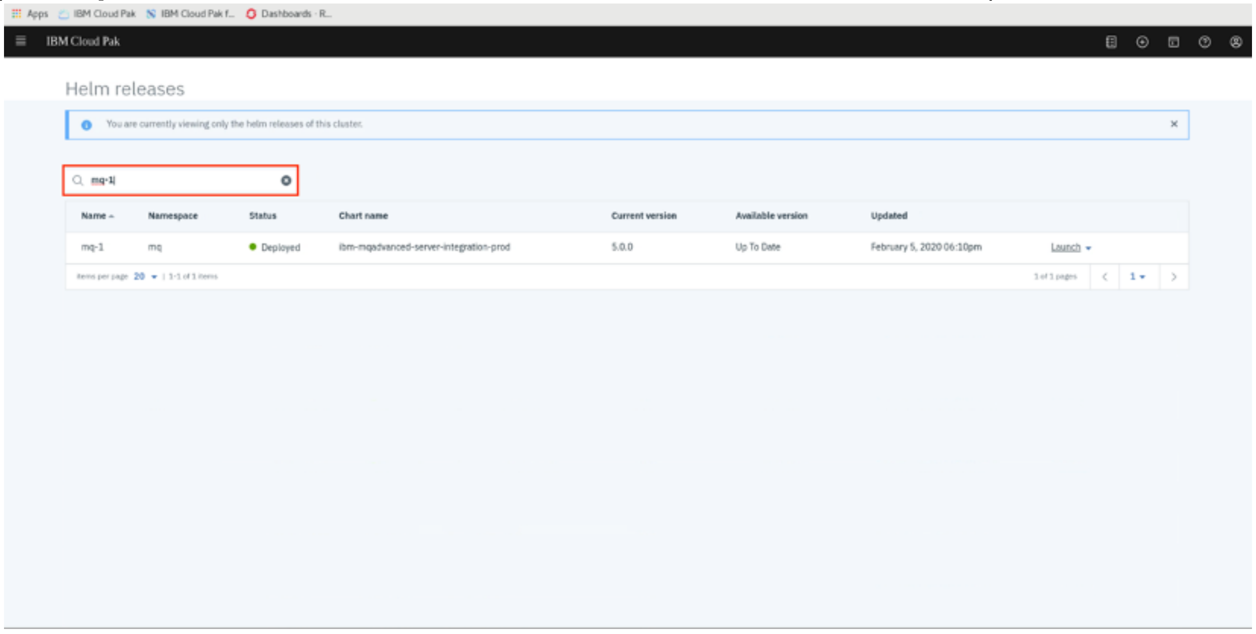


No LDAP connection found.

It looks like you have not created an LDAP connection yet. Try creating one now.

https://icp-console.apps.demo.ibmdte.net/catalog/instances

3. Type **mq-1** to search the MQ Helm release and click the mq-1 instance.



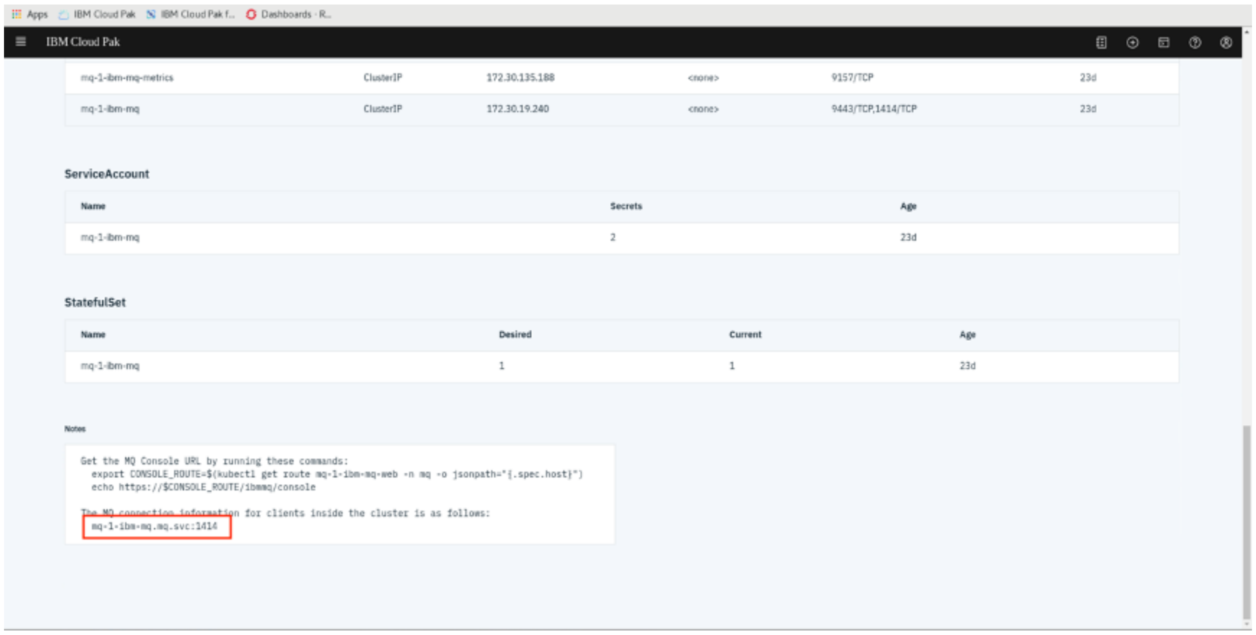
Helm releases

You are currently viewing only the helm releases of this cluster.

Name	Namespace	Status	Chart name	Current version	Available version	Updated	
mq-1	mq	● Deployed	ibm-mqadvanced-server-integration-prod	5.0.0	Up To Date	February 5, 2020 06:10pm	Launch

Items per page 20 | 1-1 of 1 items   1 of 1 pages 1

4. Scroll down to the bottom of page, make a note of the queue manager hostname and mq listener port.



mq-1-ibm-mq-metrics	ClusterIP	172.30.135.188	<none>	9157/TCP	23d
mq-1-ibm-mq	ClusterIP	172.30.19.240	<none>	9443/TCP,1414/TCP	23d

ServiceAccount

Name	Secrets	Age
mq-1-ibm-mq	2	23d

StatefulSet

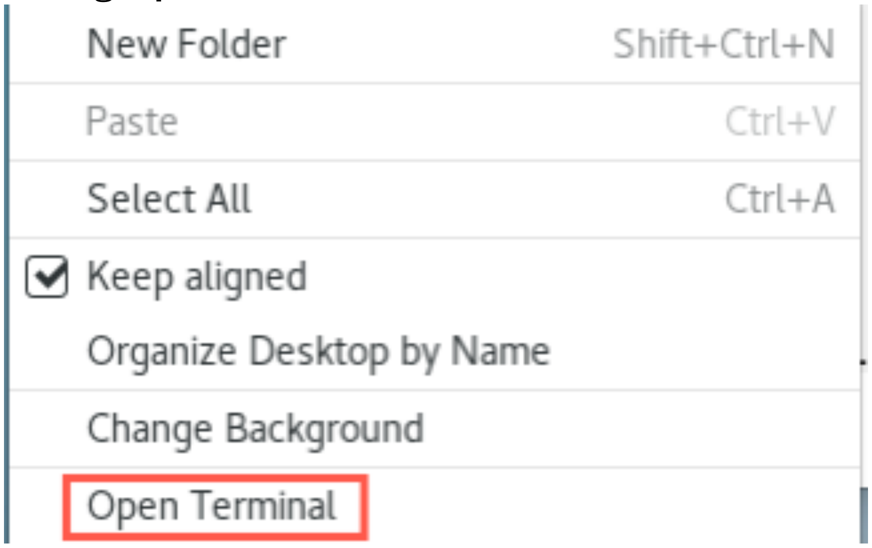
Name	Desired	Current	Age
mq-1-ibm-mq	1	1	23d

Notes

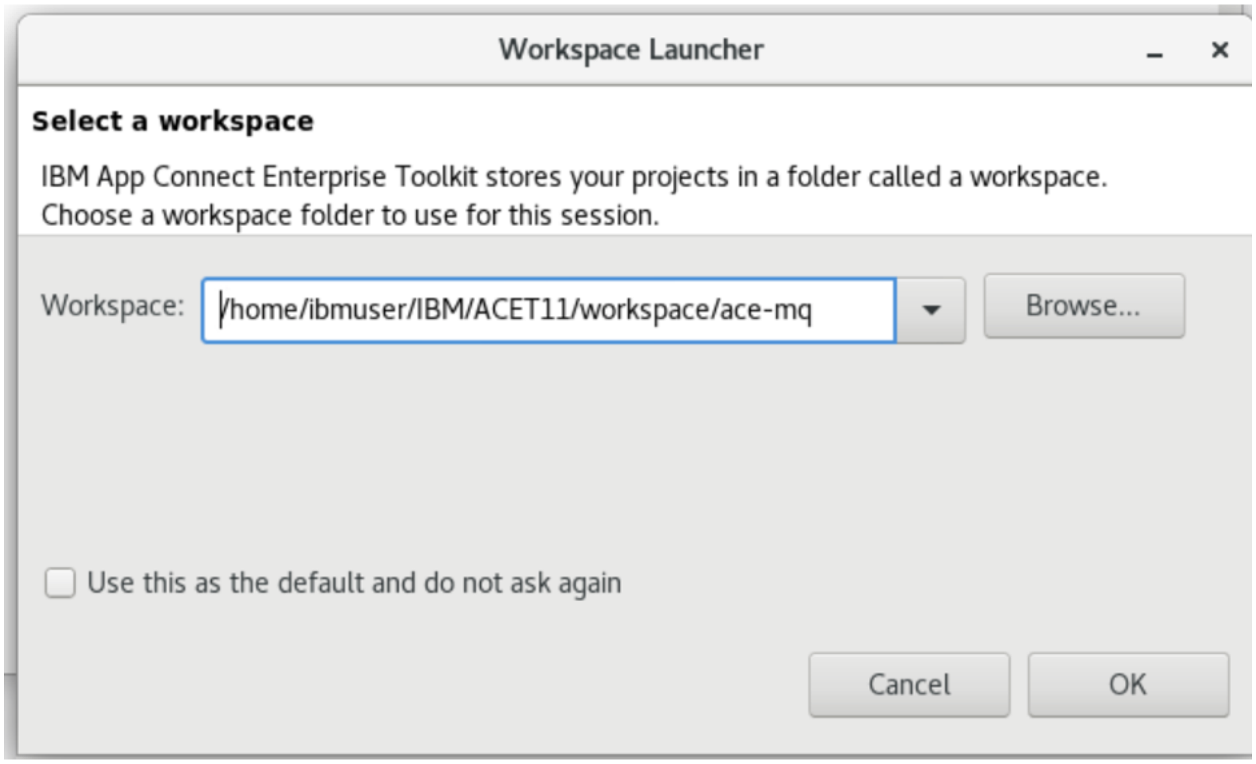
```
Get the MQ Console URL by running these commands:
  export CONSOLE_ROUTE=$(kubectl get route mq-1-ibm-mq-web -n mq -o jsonpath="{.spec.host}")
  echo https://$CONSOLE_ROUTE/ibmmq/console

The MQ connection information for clients inside the cluster is as follows:
  mq-1-ibm-mq.mq.svc:1414
```

Task 4 - Modify the Order App Connect Enterprise Flow (integration)
In this task take an existing integration flow in App Connect Enterprise and modify it to send only the payload data to the NEWORDER queue.

1. Open a terminal window by right-clicking on the desktop and selecting **Open Terminal**,



2. Enter **ace toolkit** to open the App Connect Enterprise Toolkit.
3. In the Workspace Launcher window, choose the workspace /home/ibmuser/IBM/ACET11/workspace/ace-mq**.** Click OK.



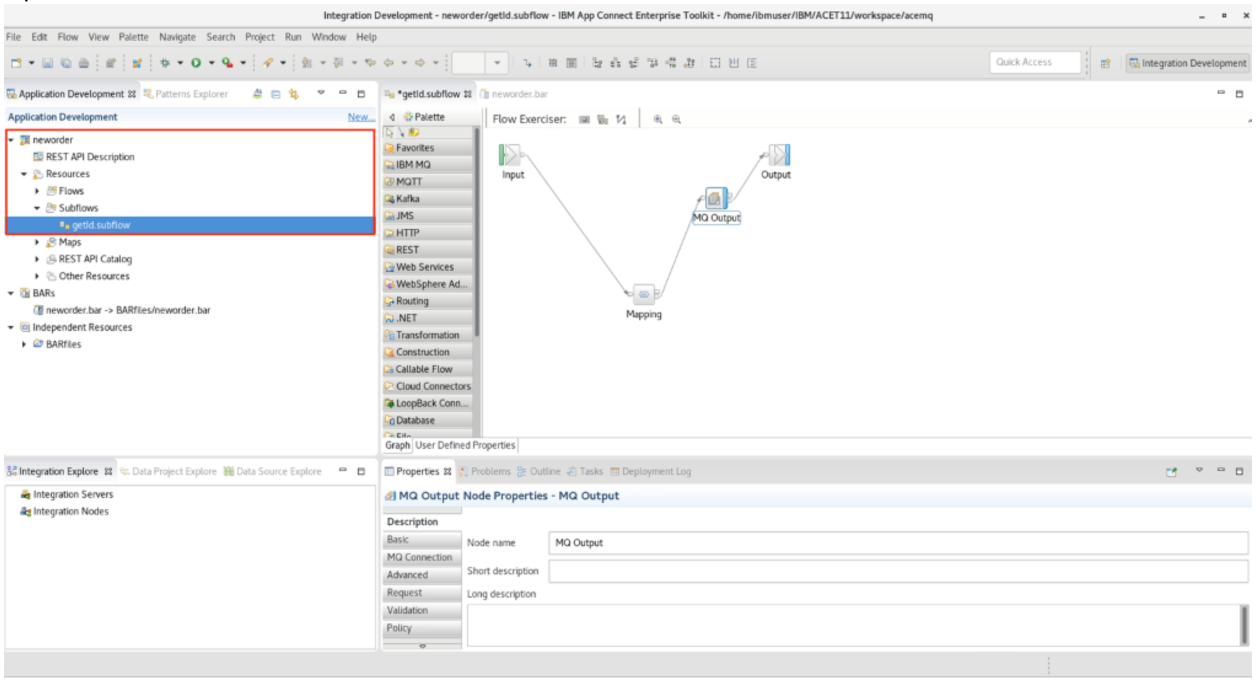
Workspace Launcher

Select a workspace

IBM App Connect Enterprise Toolkit stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.

Workspace: /home/ibmuser/IBM/ACET11/workspace/ace-mq

4. Double-click **neworder > Resources > Subflows > getId.subflow** on the left pane.



Integration Development - neworder/getId.subflow - IBM App Connect Enterprise Toolkit - /home/ibmuser/IBM/ACET11/workspace/acemq

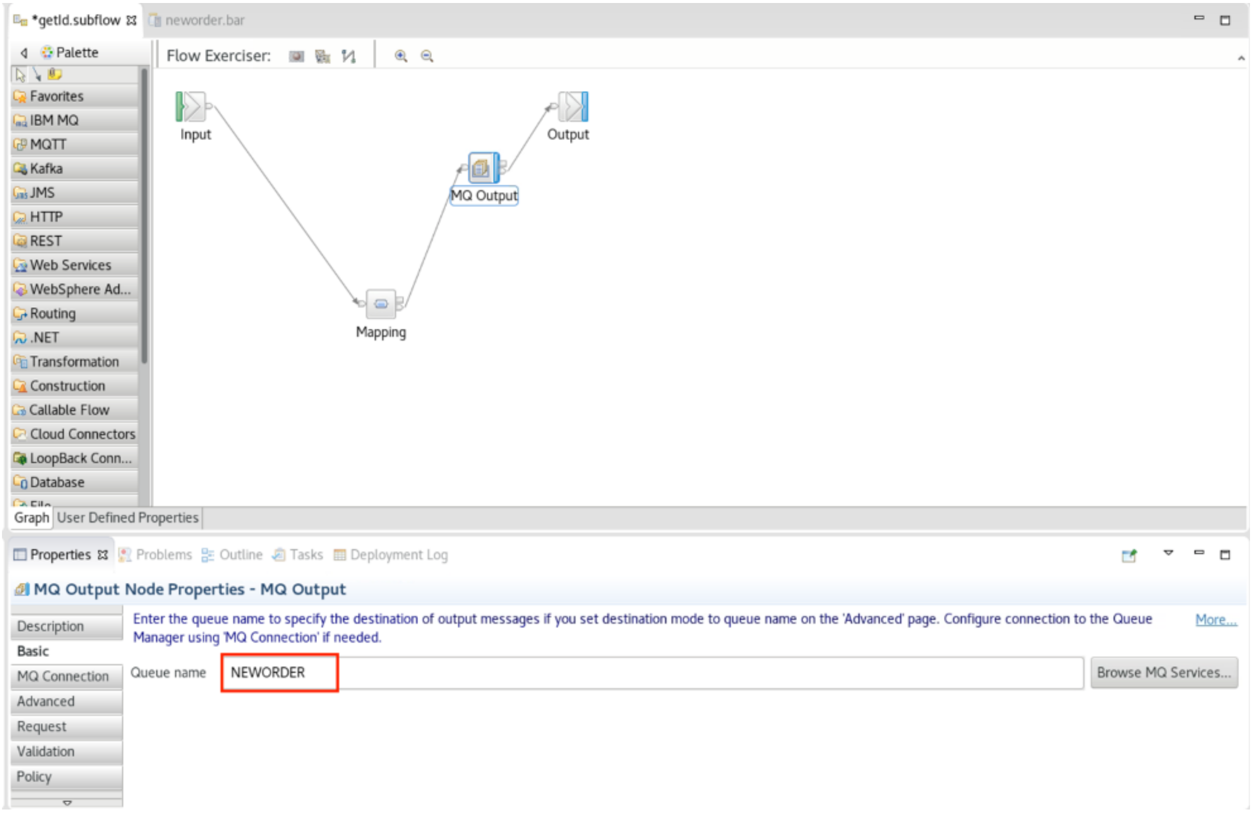
MQ Output Node Properties - MQ Output

Node name: MQ Output

Short description:

Long description:

5. Click the MQ Output tile. In the lower-right, open the Properties tab and click **Basic. Note** the queue name: **NEWORDER.**

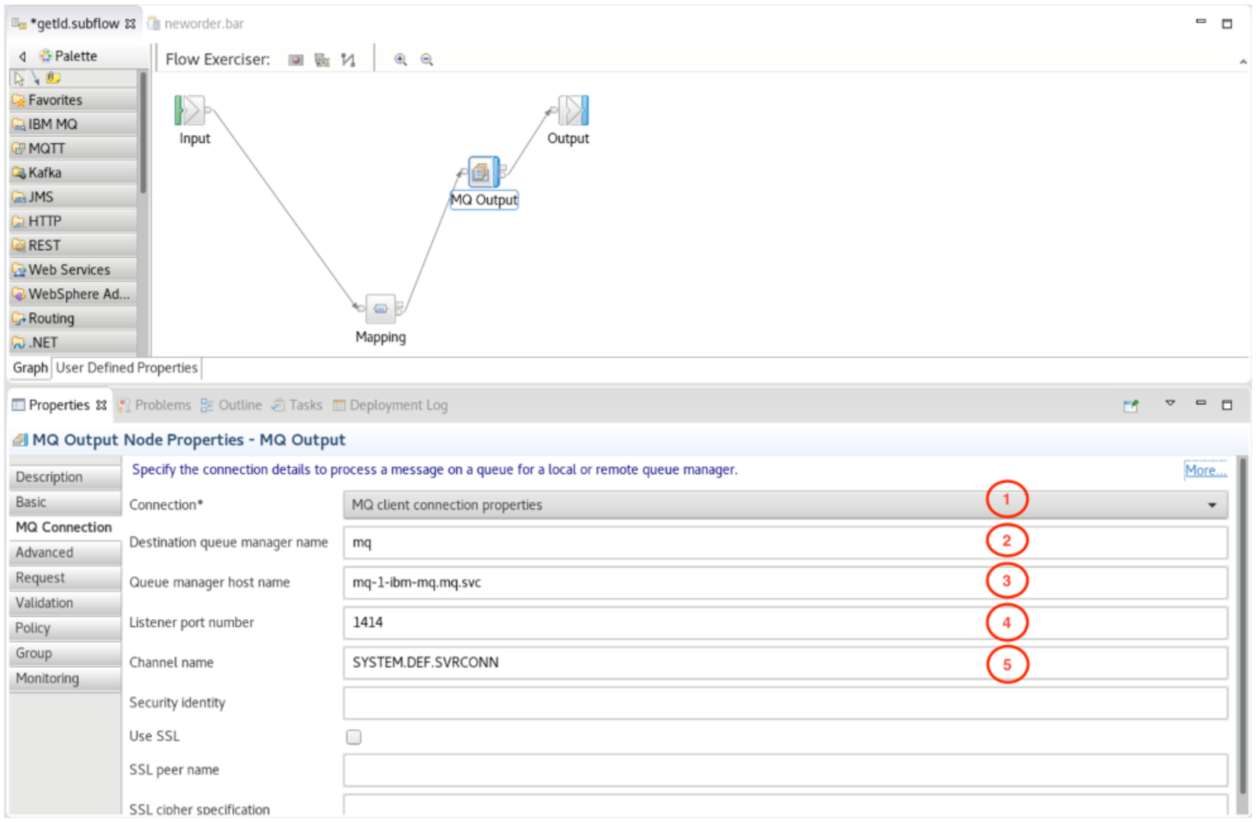


MQ Output Node Properties - MQ Output

Enter the queue name to specify the destination of output messages if you set destination mode to queue name on the 'Advanced' page. Configure connection to the Queue Manager using 'MQ Connection' if needed.

Queue name NEWORDER

6. **Click** the MQ Connection parameter and verify the following settings:
1. Connection*: Select **MQ client connection properties** from the drop-down.
2. Destination queue manager name: mq (case-sensitive).
3. Queue manager hostname: mq-1-ibm-mq.mq.svc
4. Listener: 1414
5. Channel name: **SYSTEM.DEF.SRVCONN** (Server Connection).

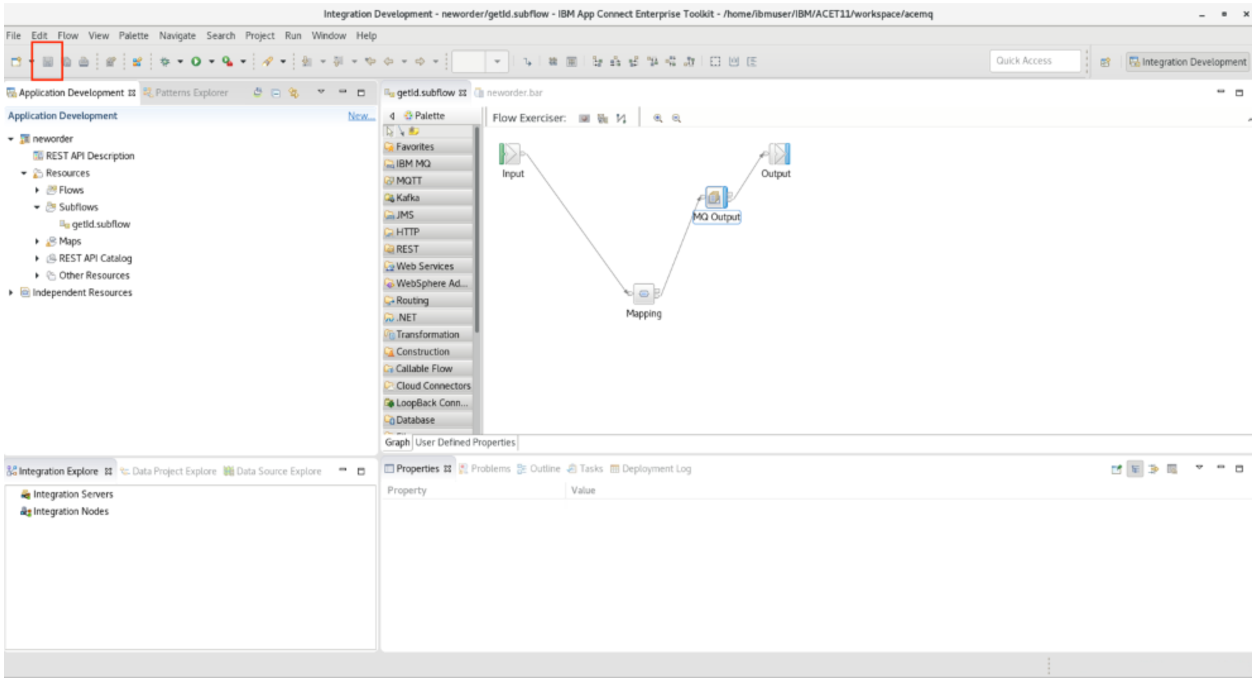


MQ Output Node Properties - MQ Output

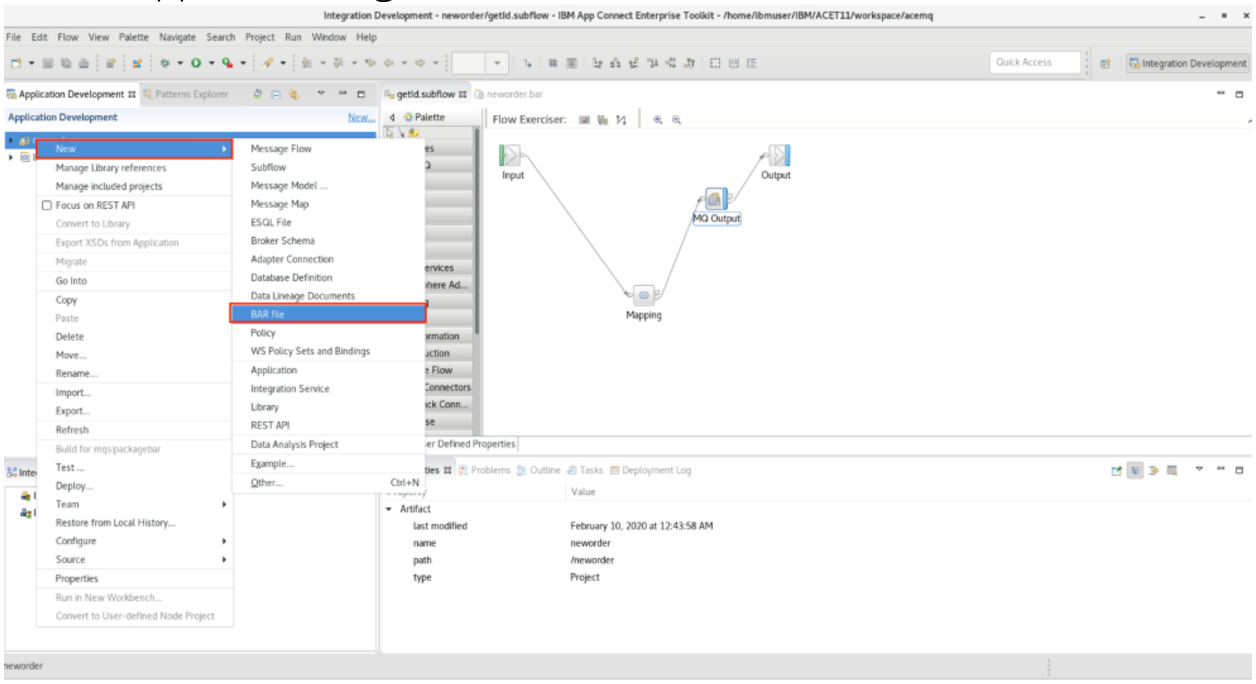
Specify the connection details to process a message on a queue for a local or remote queue manager.

Connection*	MQ client connection properties
Destination queue manager name	mq
Queue manager host name	mq-1-ibm-mq.mq.svc
Listener port number	1414
Channel name	SYSTEM.DEF.SVRCONN
Security identity	
Use SSL	☐
SSL peer name	
SSL cipher specification	

7. If you change any parameter in your flow. Save your flow. Click the save button.

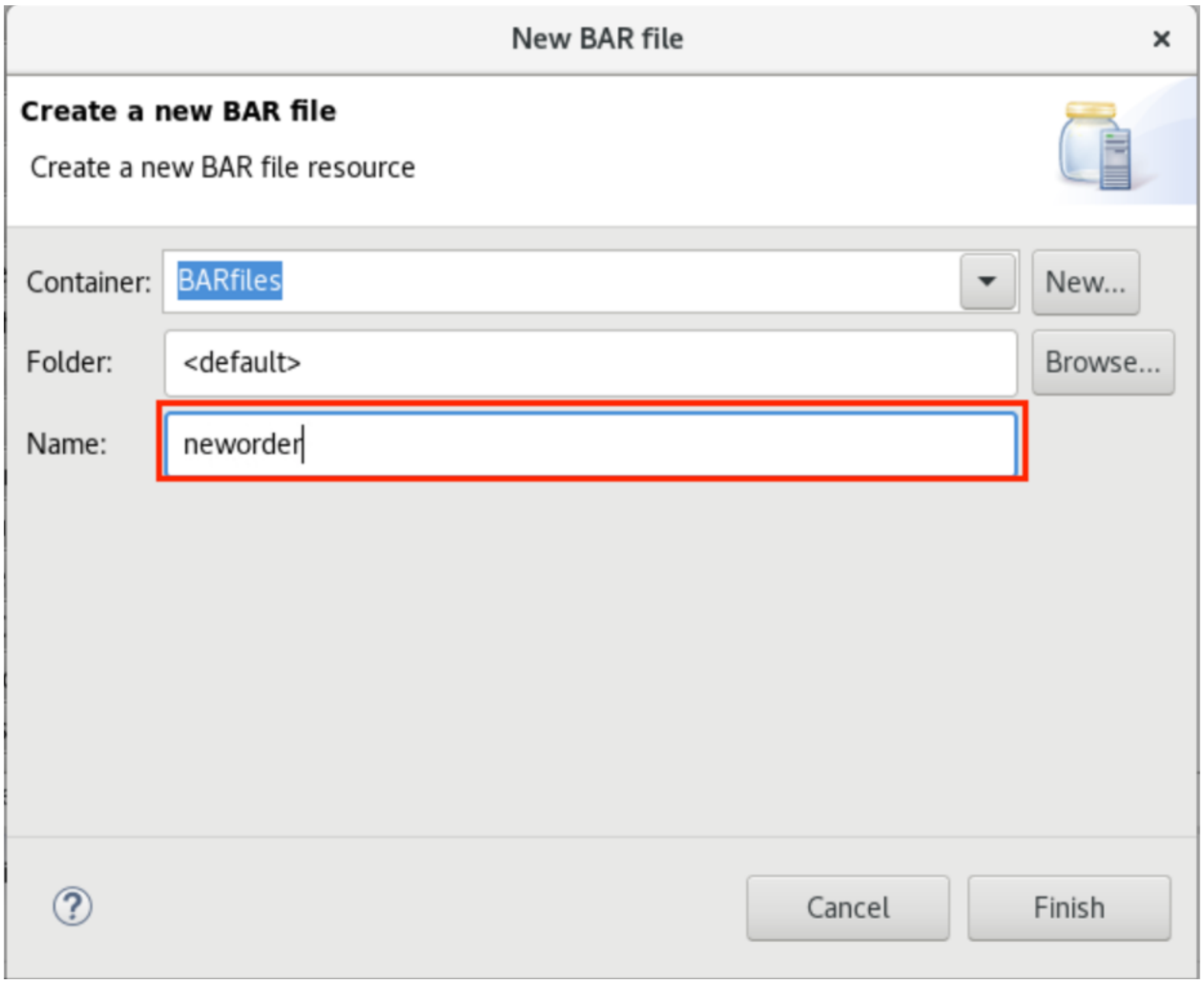


8. Now, you need to generate a bar (broker archive) file. The App Connect Enterprise server uses BAR (Broker Archive) files to save compiled message flows, libraries, etc. We have created a file neworder.bar for this lab. In the Application Development window in the upper-left, on neworder application, right-click and select **New** then **BAR File** .



Property	Value
Artifact	
last modified	February 10, 2020 at 12:43:58 AM
name	neworder
path	/neworder
type	Project

9. On the Window New Bar file, type the name of bar file: **neworder.**


New BAR file

Create a new BAR file

Create a new BAR file resource

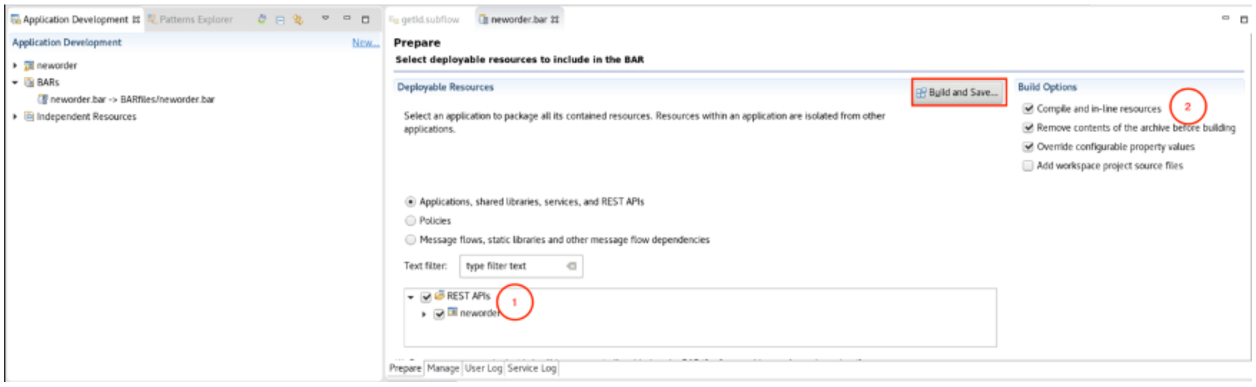
Container: BARfiles

Folder: <default>

Name: neworder

10. App Connect Enterprise opens a window: **Prepare window**

1. Check REST APIs
2. Check **Compile and inline** resources
3. Click **Build and Save**
4. A popup window will display "**Operation completed successfully.**"
5. Click **Ok** and exit out of the toolkit.
   ACE Toolkit saves and compile message flows, sub flows into a BAR file.



Prepare

Select deployable resources to include in the BAR

Deployable Resources

Select an application to package all its contained resources. Resources within an application are isolated from other applications.

(●) Applications, shared libraries, services, and REST APIs
( ) Policies
( ) Message flows, static libraries and other message flow dependencies

Text filter: type filter text

- [✓] REST APIs
  - [✓] neworder

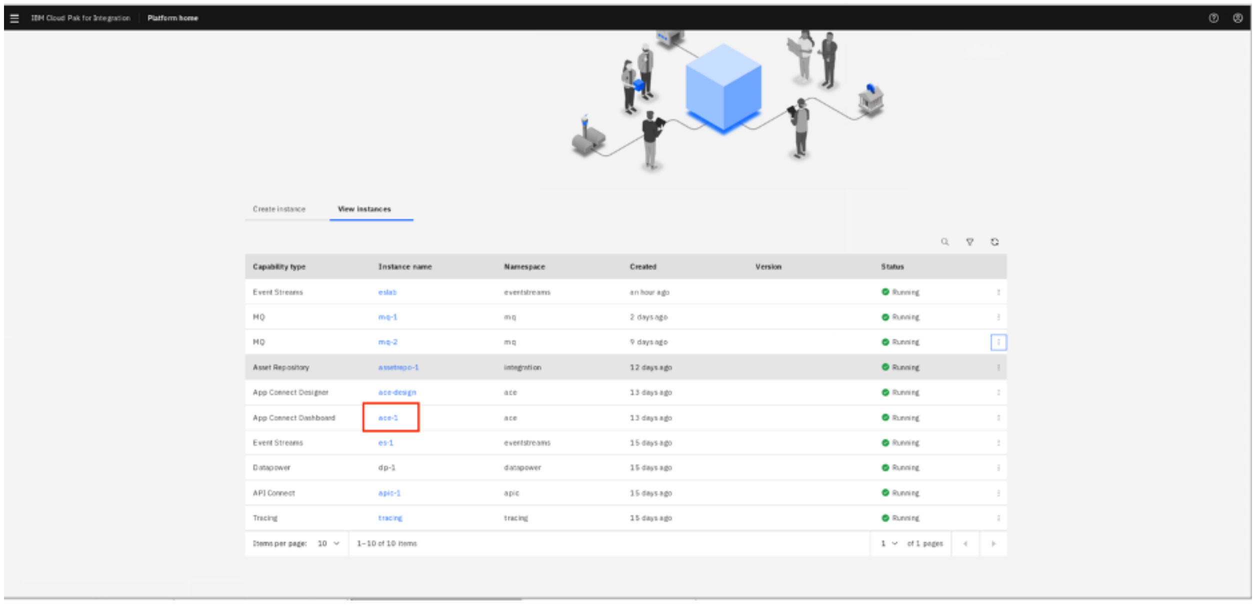
Build Options

- [✓] Compile and in-line resources
- [✓] Remove contents of the archive before building
- [✓] Override configurable property values
- [ ] Add workspace project source files

Task 5 - Deploy the neworder integration flow

In this task deploy the integration flow as App Connect Enterprise containers running in Kubernetes on the Cloud Pak for Integration. You then test the integration API by calling the API to create a neworder and confirm the response payload and data in the queue.

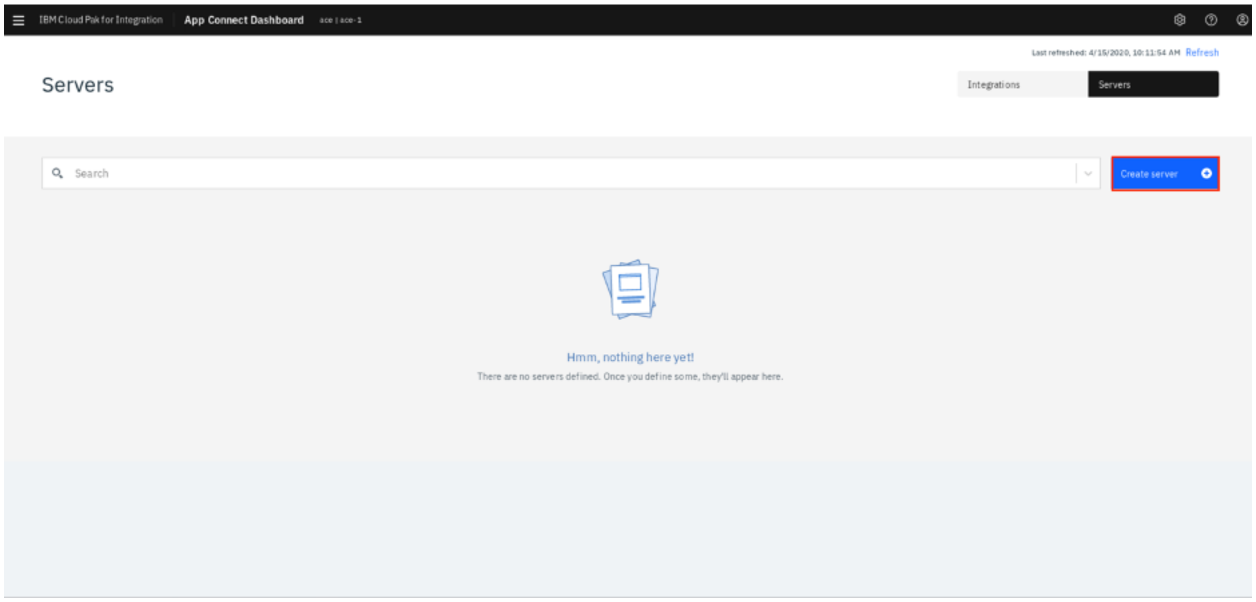
1. In your browser, **return** to the IBM Cloud Pak for Integration bookmark**.** Under **View Instances,** select the App Connect line and click **ace-1** instance.



Capability type	Instance name	Namespace	Created	Version	Status
Event Streams	eslab	eventstreams	an hour ago		Running
MQ	mq-1	mq	2 days ago		Running
MQ	mq-2	mq	9 days ago		Running
Asset Repository	assetrepo-1	integration	12 days ago		Running
App Connect Designer	ace-design	ace	13 days ago		Running
App Connect Dashboard	ace-1	ace	13 days ago		Running
Event Streams	es-1	eventstreams	15 days ago		Running
Datapower	dp-1	datapower	15 days ago		Running
API Connect	apic-1	apic	15 days ago		Running
Tracing	tracing	tracing	15 days ago		Running

Items per page: 10 1–10 of 10 items 1 of 1 pages

2. When you deploy a BAR file, you create a new instance of App Connect Enterprise. Click **Create Server**.

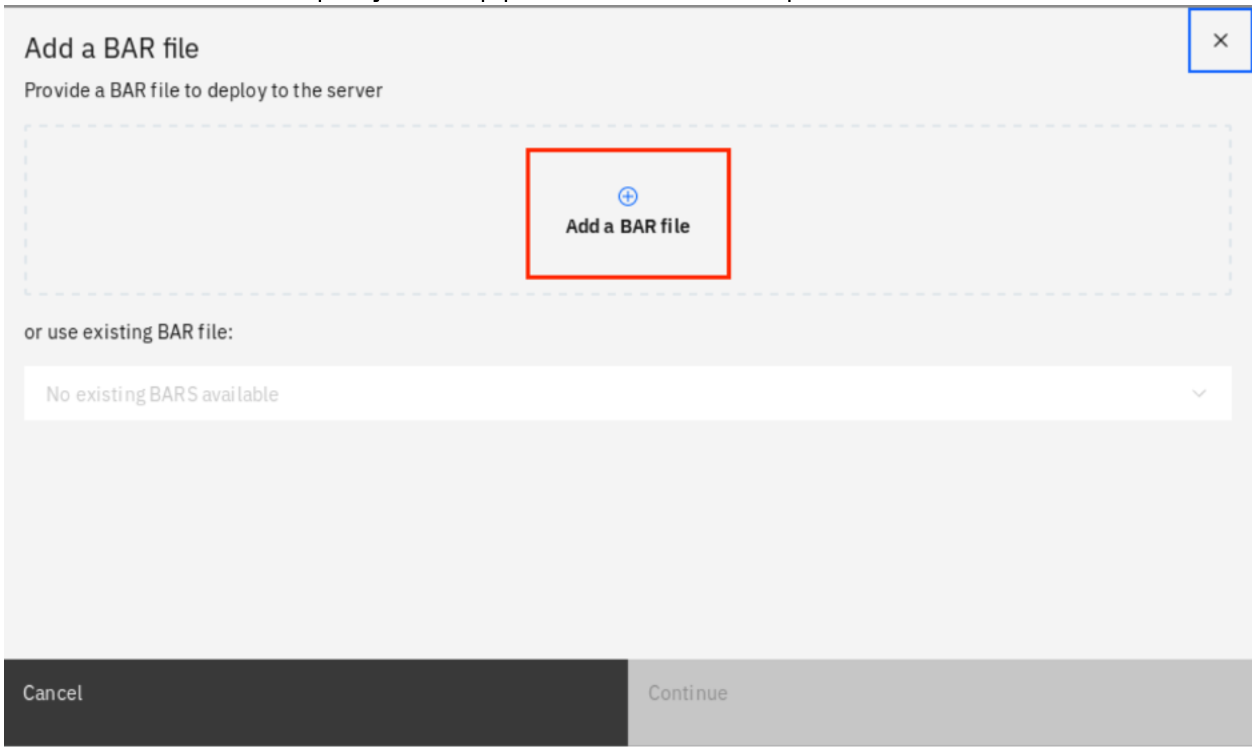


Last refreshed: 4/15/2020, 10:11:54 AM Refresh

Hmm, nothing here yet!

There are no servers defined. Once you define some, they'll appear here.

3. **Add a BAR** file to deploy on App Connect Enterprise Server.

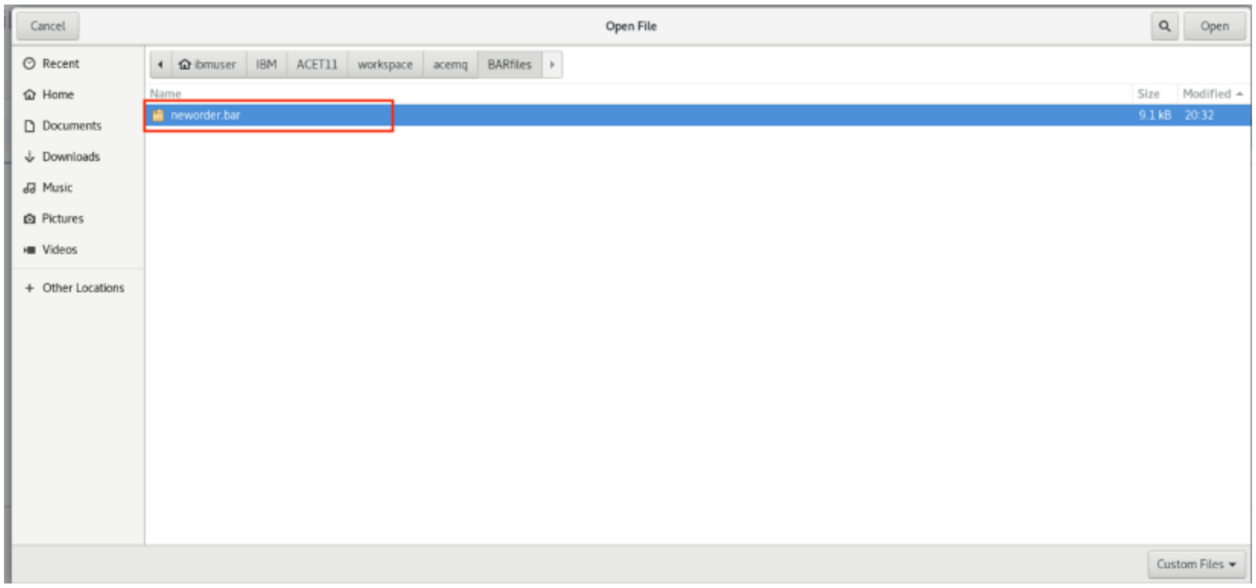


Provide a BAR file to deploy to the server

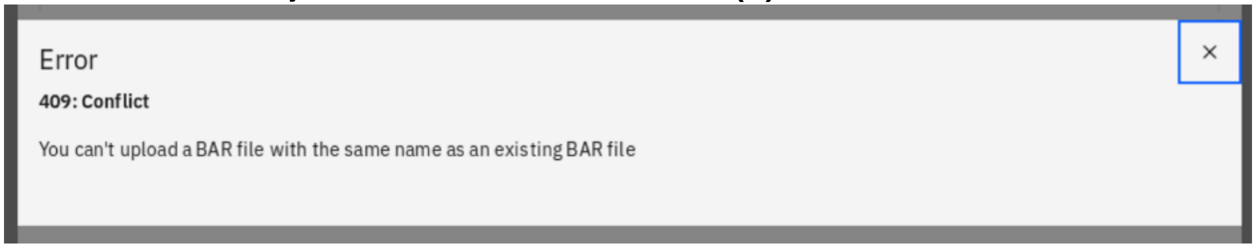
or use existing BAR file:

No existing BARS available

4. On **Open File,** select /home/ibmuser/IBM/ACET11/workspace/ace-mq/BARFiles and then select **neworder.bar**



5. You might receive error message (**409: Conflict**). If you do not see this message ignore this step and go the **Add Server** task (task 8). It means that there is already BAR file installed. Click **(x)** to close the window.

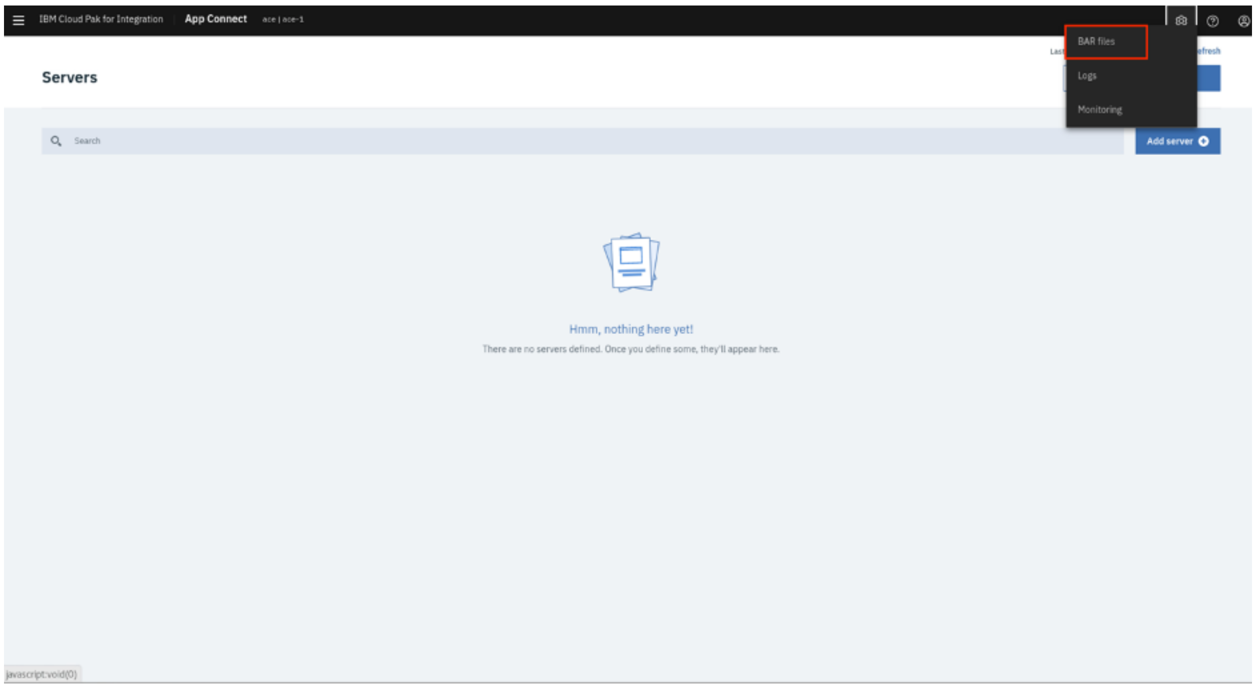


Error

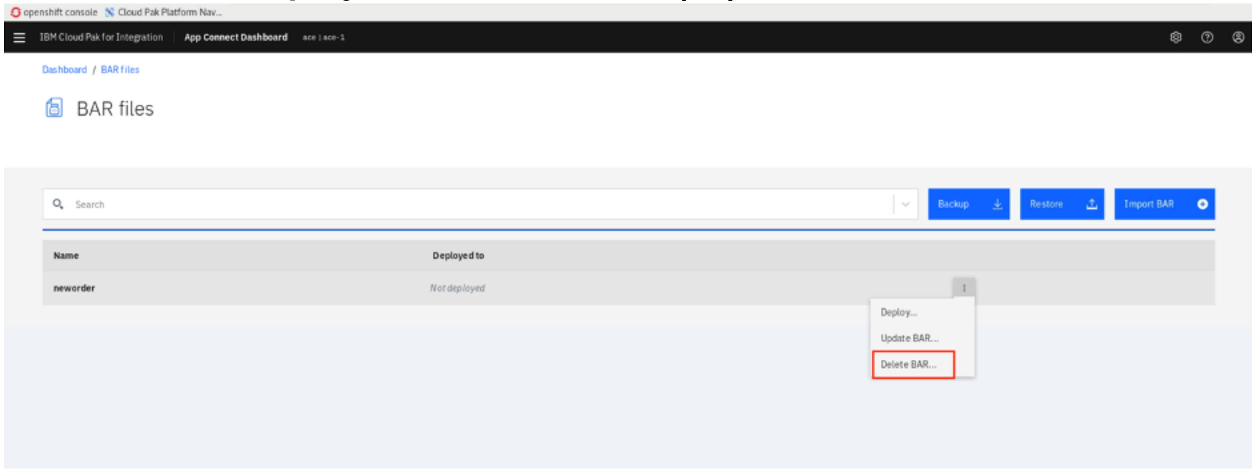
409: Conflict

You can't upload a BAR file with the same name as an existing BAR file

6. Click the settings icon on the top right and select **BAR files**.

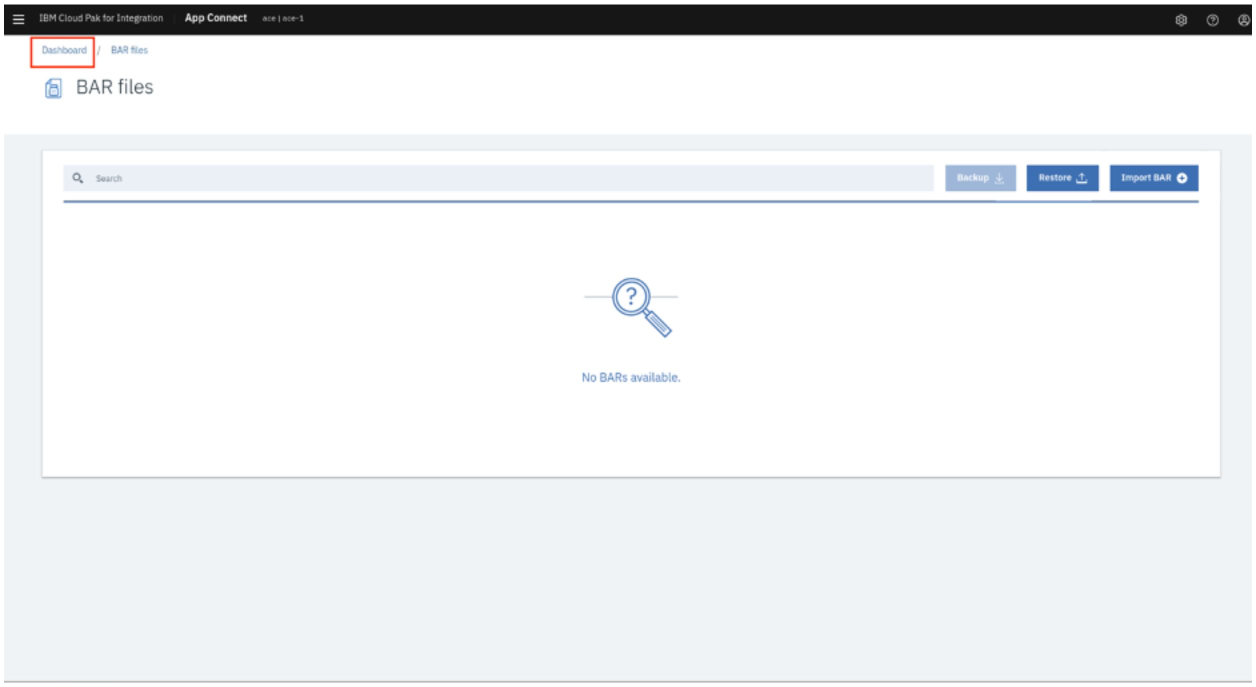


7. You see the **Not deployed BAR** file, click **(…)** and select **Delete BAR ..**

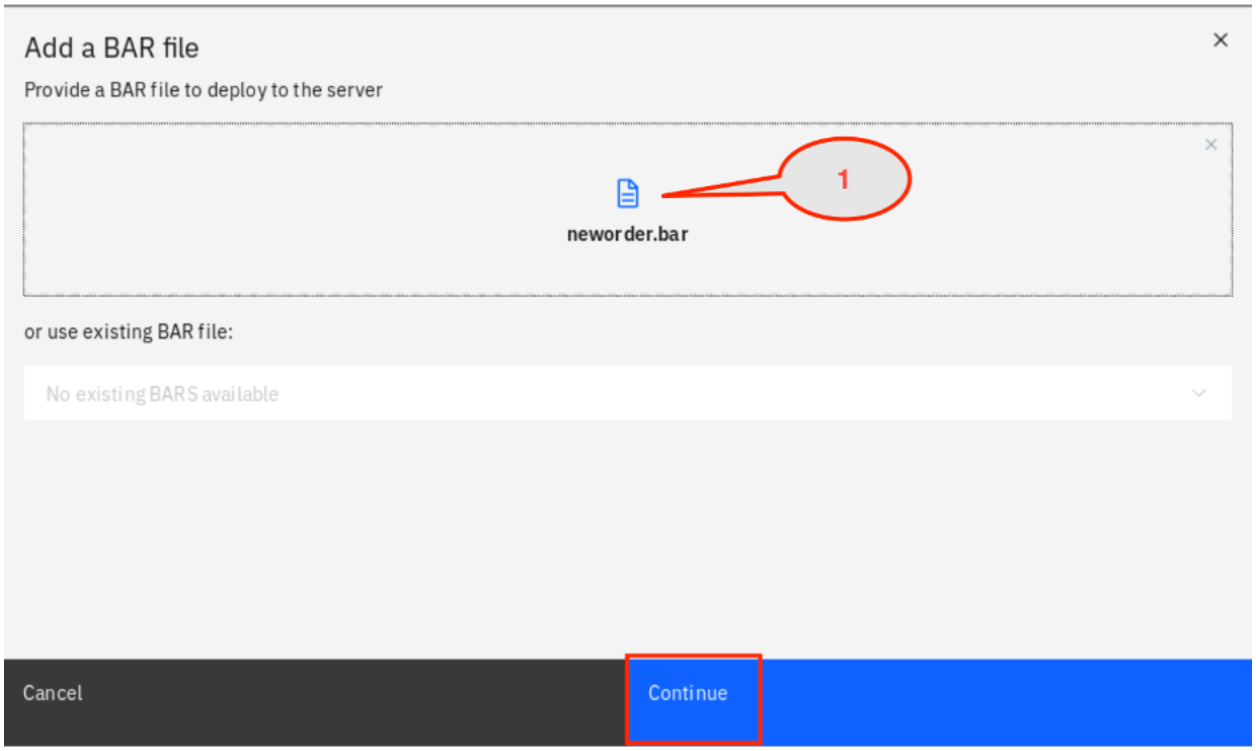


Name	Deployed to
neworder	Not deployed

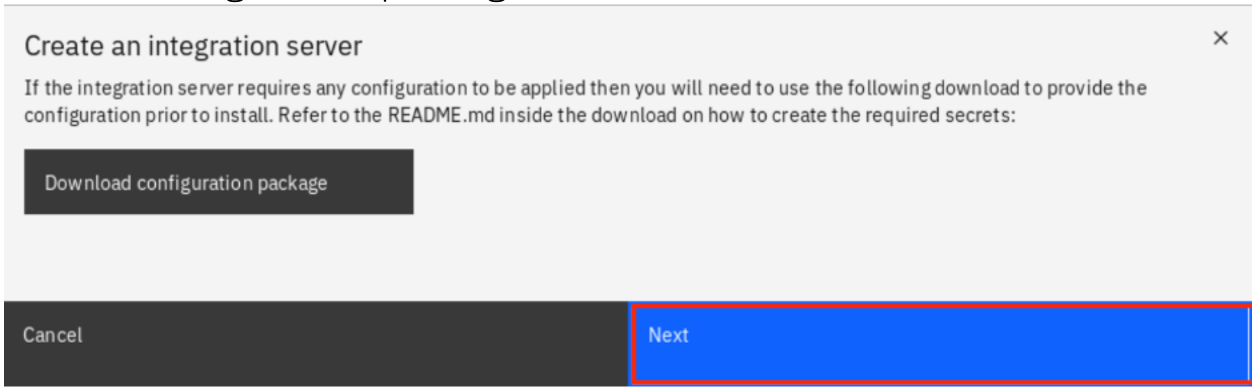
8. Click **Dashboard** link on the top of the page. To deploy the BAR file



9. **Repeat steps 3 and 4** and then**,** in the **Add a BAR File**. Check the BAR file name: **neworder.bar** and then click **Continue .**

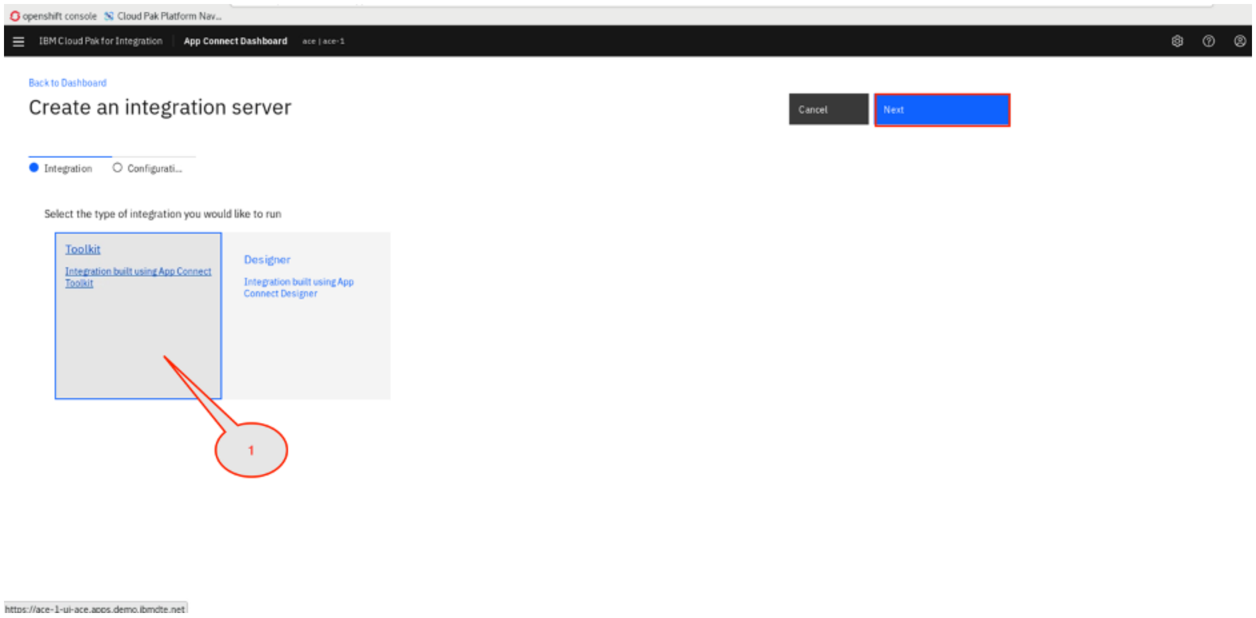

Add a BAR file
Provide a BAR file to deploy to the server
1
neworder.bar
or use existing BAR file:
No existing BARS available
Cancel
Continue

10. In Create an integration server, if you want to configure App Connect Enterprise for working with DB (using odbc, and jdbc), Event Streams (Kafka nodes) or any configurable services you need to download configuration package. For this lab, click **Next** .


Create an integration server

If the integration server requires any configuration to be applied then you will need to use the following download to provide the configuration prior to install. Refer to the README.md inside the download on how to create the required secrets:

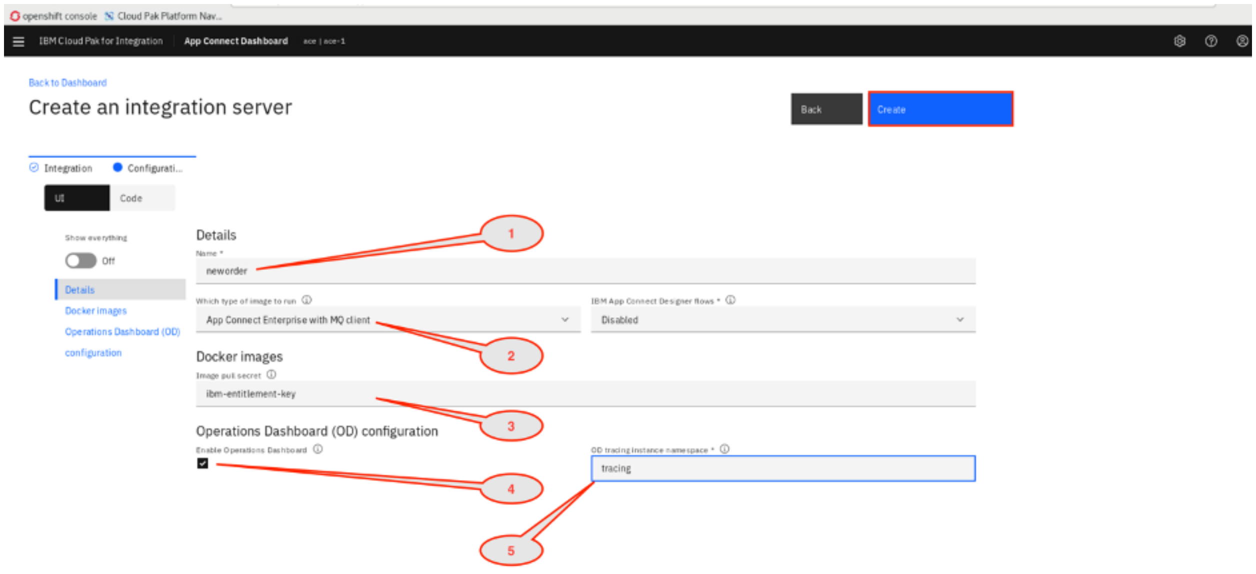
11. In the **Create an integration server** page. You have two option to deploy a BAR file. Deploy a BAR file from **App Connect Toolkit** or a BAR file from **App Connect Designer**. In this lab you deploy BAR file from App Connect Toolkit. Select **Toolkit** link and then click **NEXT** .


openshift console
Cloud Pak Platform Nav...
IBM Cloud Pak for Integration
App Connect Dashboard
ace | ace-1
Back to Dashboard
Create an integration server
Cancel
Next
Integration
Configurati...
Select the type of integration you would like to run
Toolkit
Integration built using App Connect Toolkit
Designer
Integration built using App Connect Designer
1
https://ace-1-ui-ace.apps.demo.ibmdte.net

12. To configure App Connect Integration Server:

1. Enter as Name: **neworder**

2. Which type of image to run" select "**App Connect Enterprise with MQ client**"
3. Enter Image pull secret: **ibm-entitlement-key**
4. Check **Enable Operations Dashboard**
5. Enter "**tracing**" in the OD tracing instance namespace to configure this property as shown below.
6. Click **Create**



Create an integration server

Details

Name *: neworder

Which type of image to run: App Connect Enterprise with MQ client

IBM App Connect Designer flows *: Disabled

Docker images

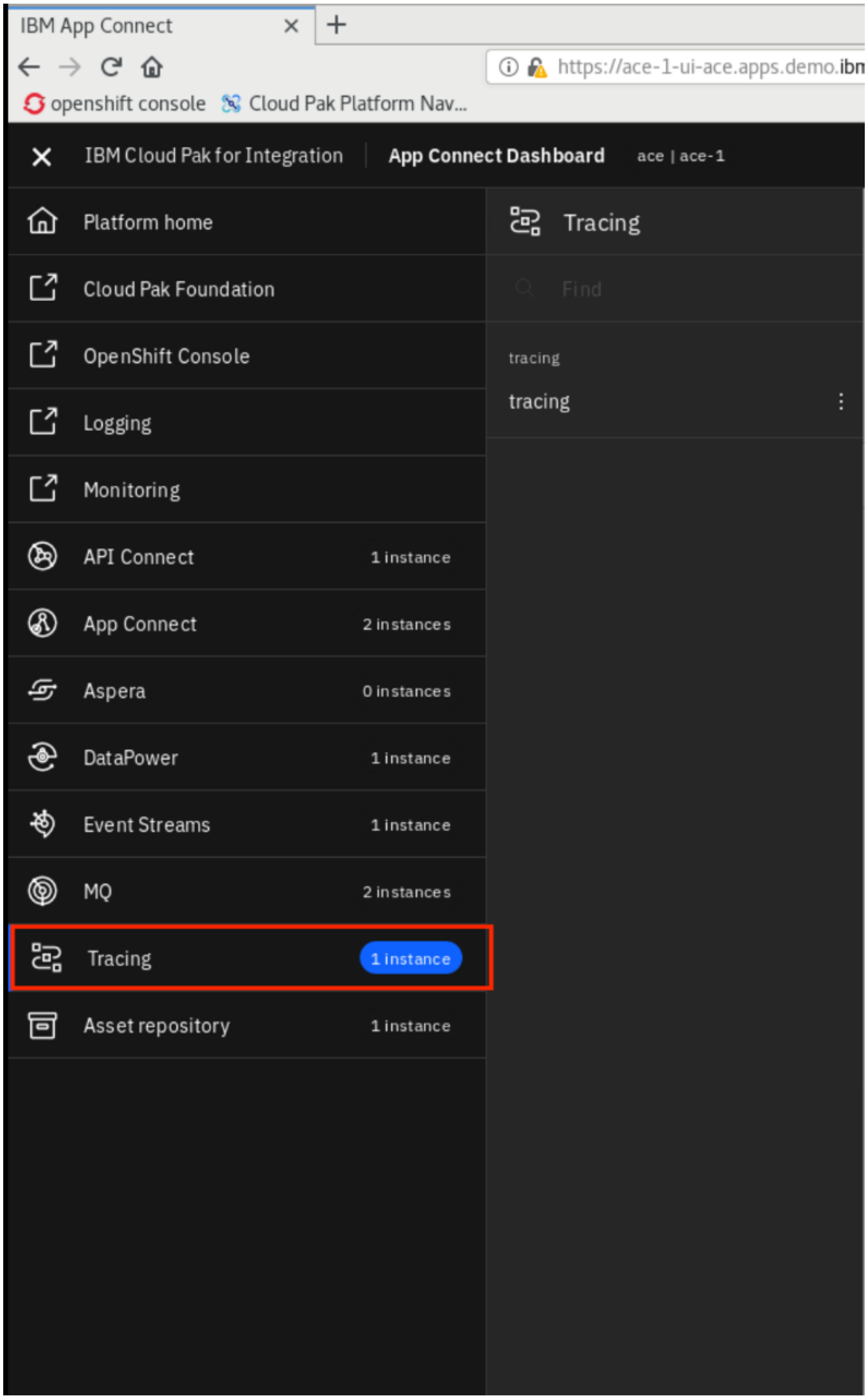
Image pull secret: ibm-entitlement-key

Operations Dashboard (OD) configuration

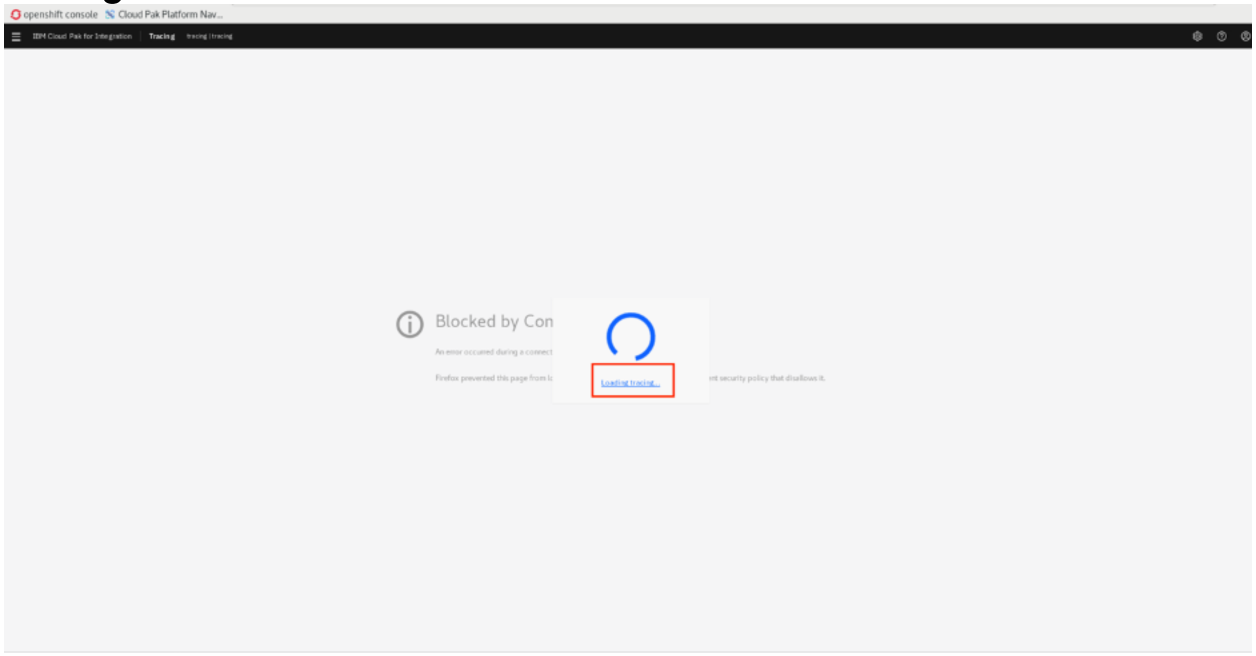
Enable Operations Dashboard: ✓

OD tracing instance namespace *: tracing

13. Let's navigate to the Operations Dashboard. Use the IBM Cloud Pak for Integration bookmark to get back to the Home Page. Click the **tracing** .


IBM App Connect
https://ace-1-ui-ace.apps.demo.ibm
openshift console
Cloud Pak Platform Nav...
IBM Cloud Pak for Integration
App Connect Dashboard
ace | ace-1
Platform home
Cloud Pak Foundation
OpenShift Console
Logging
Monitoring
API Connect 1 instance
App Connect 2 instances
Aspera 0 instances
DataPower 1 instance
Event Streams 1 instance
MQ 2 instances
Tracing 1 instance
Asset repository 1 instance
Tracing
Find
tracing
tracing

You might receive this page, when you click tracing, Click **loading tracing**



Blocked by Con

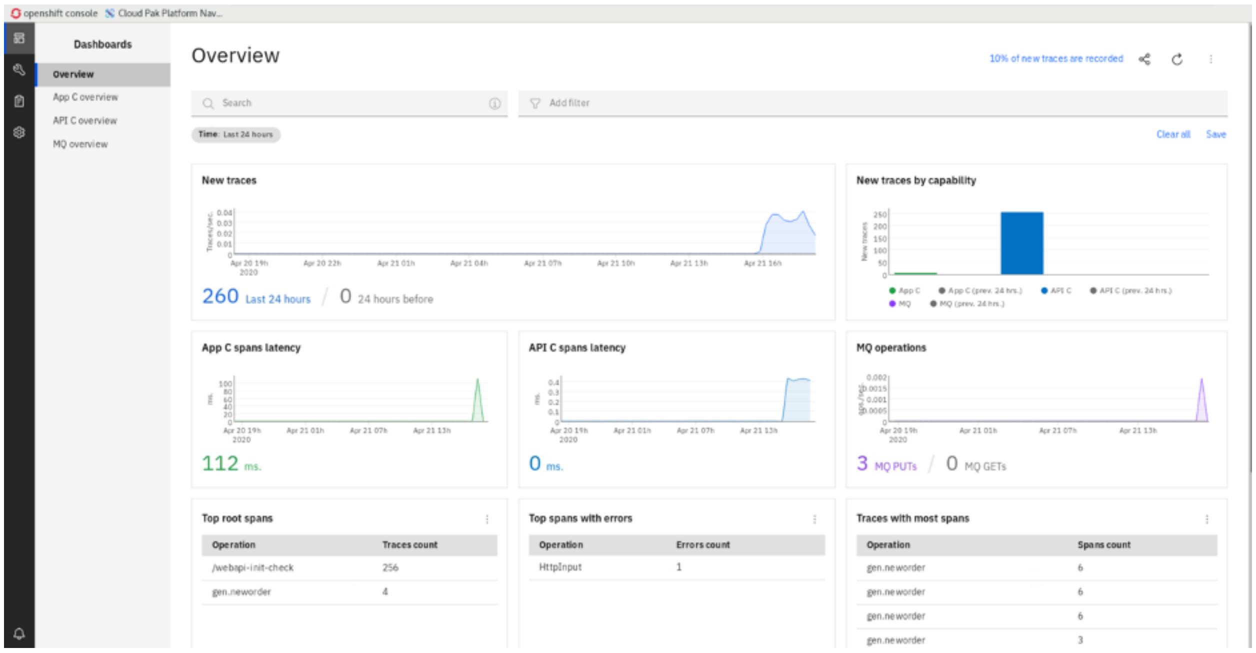
An error occurred during a connect

Firefox prevented this page from l ent security policy that disallows it.

14. The Operations Dashboard collects data from all the registered capabilities (such as MQ) in real time. By default, and for this lab, 10 percent of traffic is sampled.

    IBM Cloud Pak for Integration Operations Dashboard has adopted OpenTracing API specification for collecting tracing data. OpenTracing is comprised of an API specification for distributed tracing, frameworks and libraries that have implemented the specification and documentation.

1. **Trace:** The description of a transaction as it moves through IBM Cloud Pak for Integration platform.
2. **Span:** A named, timed operation representing a piece of the workflow (e.g. calling an API, invoking a message flow or placing a message in a queue or a topic).
3. **Span context:** Trace information that accompanies the distributed transaction, including when it passes the service to service over the network or through a message bus.



Top root spans

Operation	Traces count
/webapi-init-check	256
gen.neworder	4

Top spans with errors

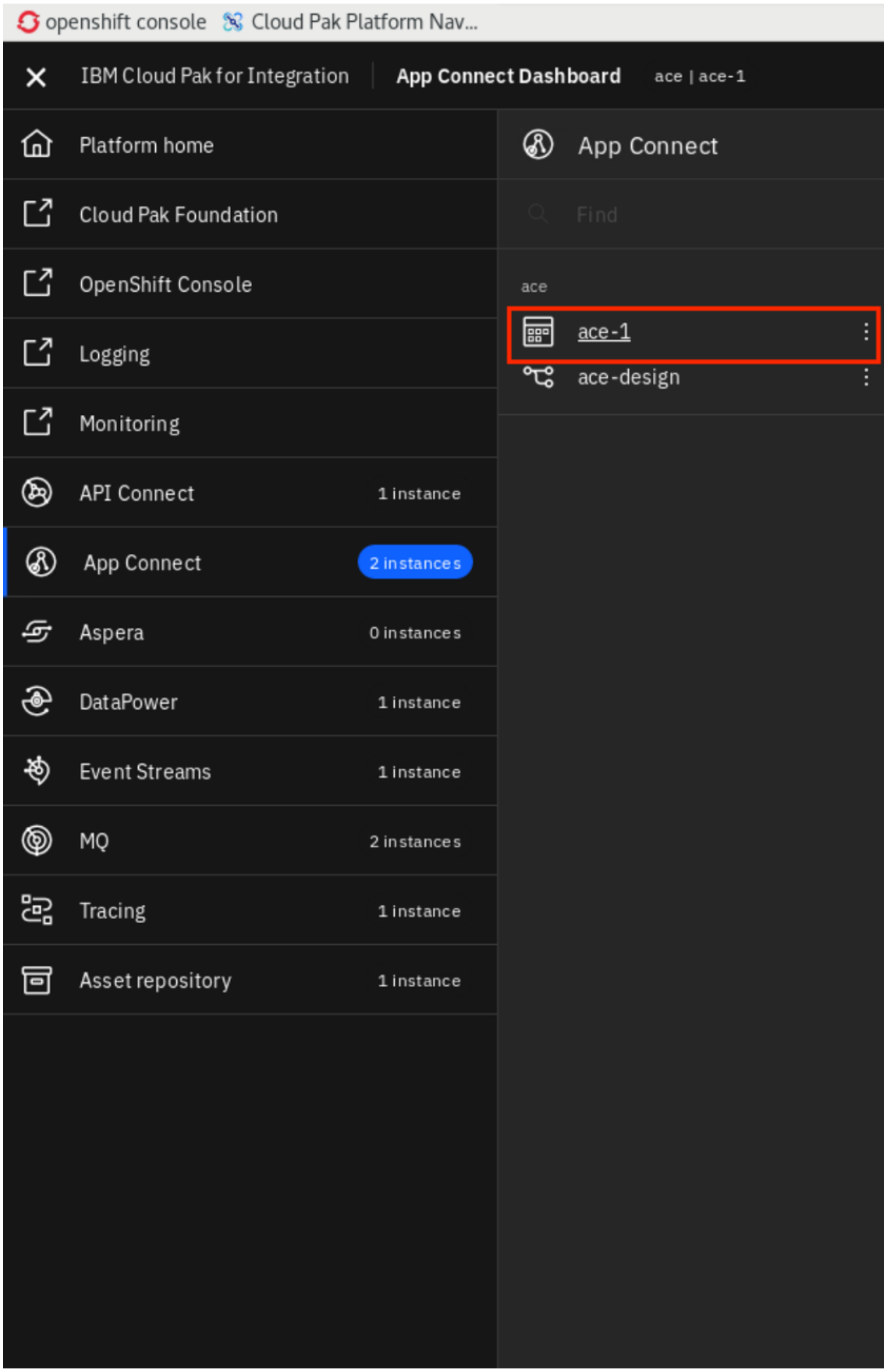
Operation	Errors count
HttpInput	1

Traces with most spans

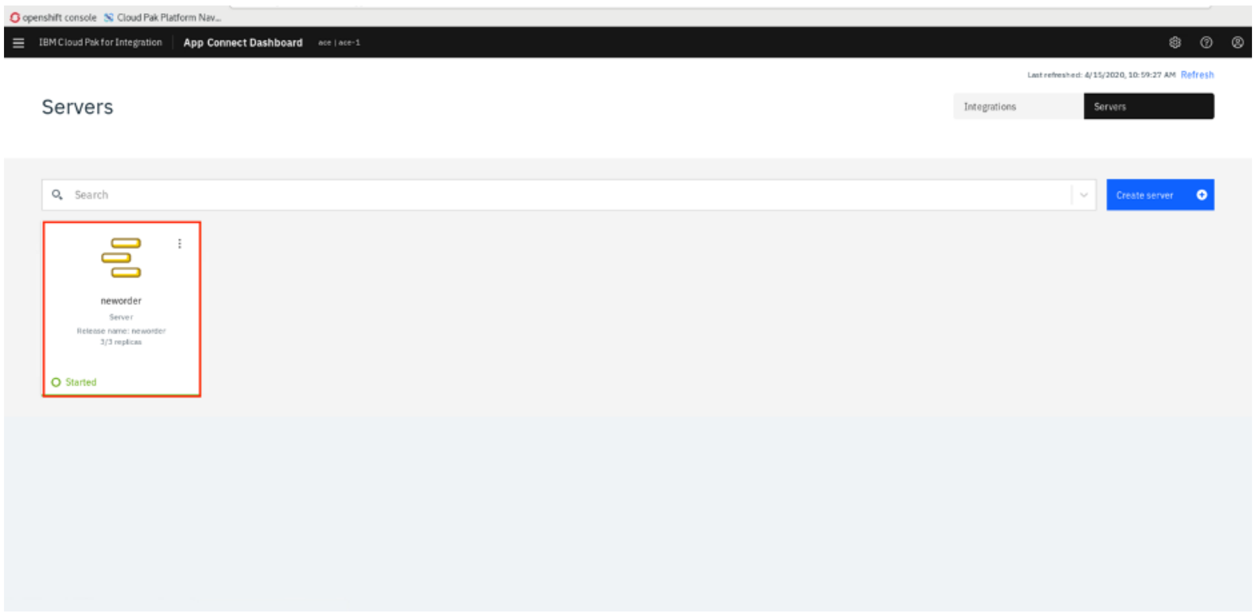
Operation	Spans count
gen.neworder	6
gen.neworder	6
gen.neworder	6
gen.neworder	3

15. Keep this browser opened as you use it later on. On the left, you see the Operations Dashboard menu. You see all options you can use in Operations Dashboard. (If you are interested in Operations Dashboard (tracing), you make an exercise for this).|

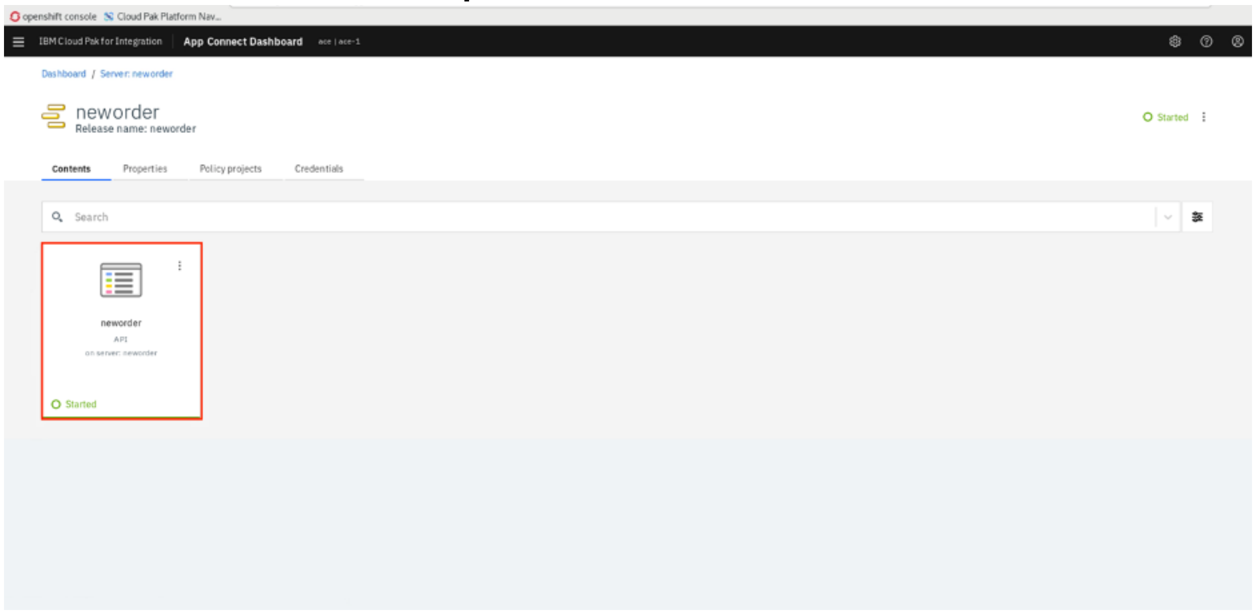
16. Select the IBM Cloud Pak for Integration bookmark bar under view instances, click the **ace-1** instance.


openshift console
Cloud Pak Platform Nav...
IBM Cloud Pak for Integration
App Connect Dashboard
ace | ace-1
Platform home
Cloud Pak Foundation
OpenShift Console
Logging
Monitoring
API Connect 1 instance
App Connect 2 instances
Aspera 0 instances
DataPower 1 instance
Event Streams 1 instance
MQ 2 instances
Tracing 1 instance
Asset repository 1 instance
App Connect
Find
ace
ace-1
ace-design

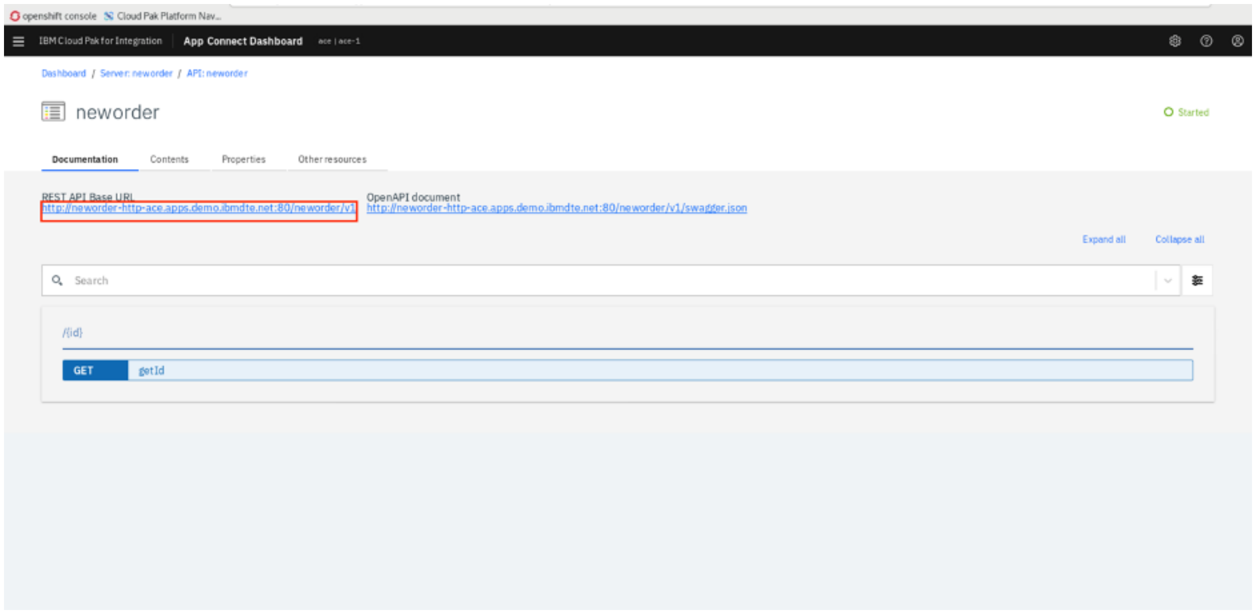
17. On Servers (App Connect Enterprise), you see the BAR file running as an application neworder (The deployment takes a ferw minutes, click **Refresh** in your browser). Check **Started** and then click the **neworder** icon .



18. Click the **neworder api** icon.



19. To start the App Connect Enterprise API, click the REST API Base URL link.



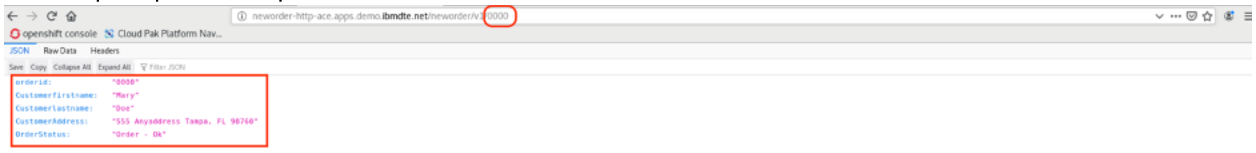
REST API Base URL
http://neworder-http-ace.apps.demo.ibmdte.net:80/neworder/v1

OpenAPI document
http://neworder-http-ace.apps.demo.ibmdte.net:80/neworder/v1/swagger.json

/{id}

.

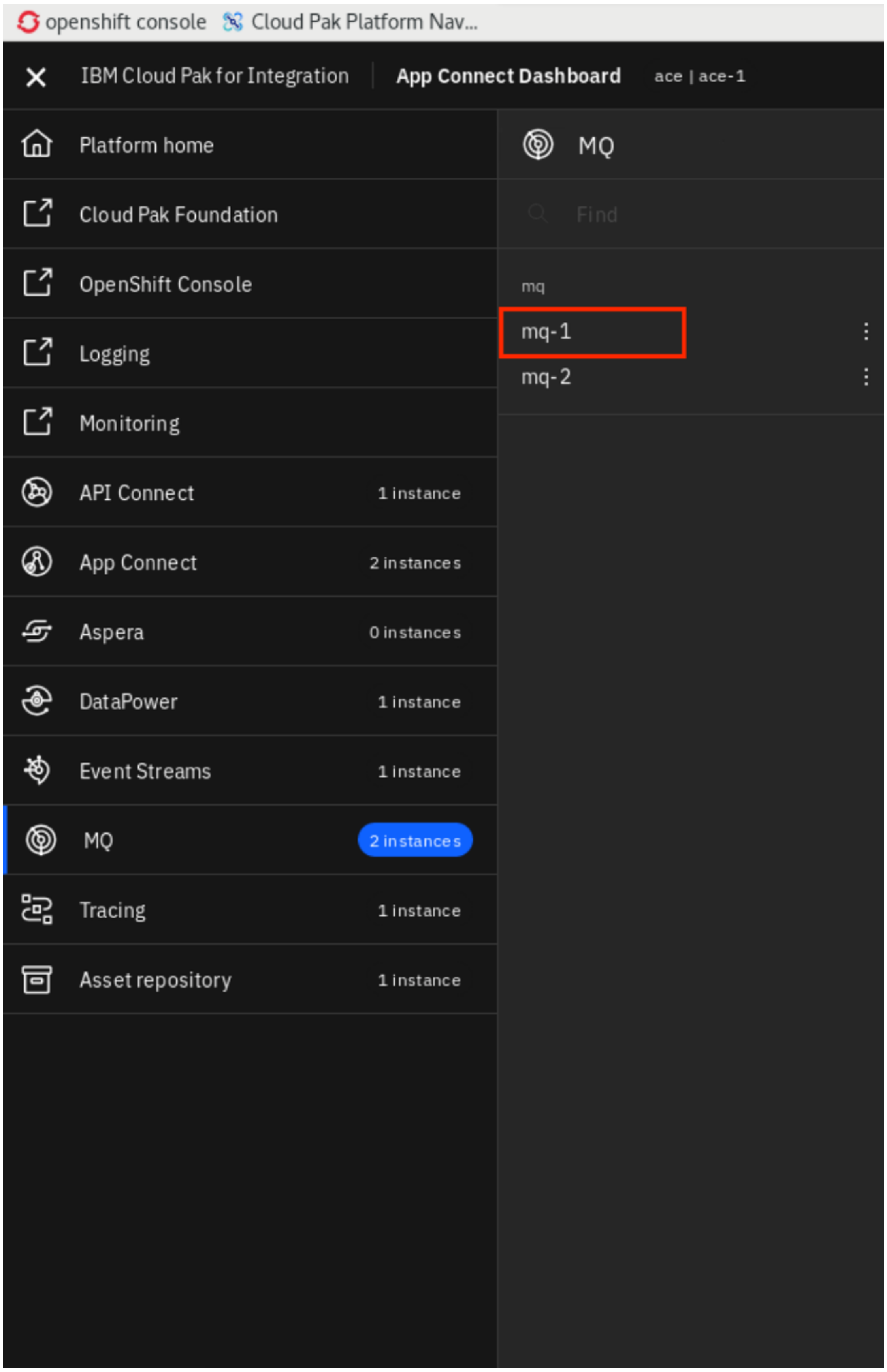
20. A browser window opens, displaying a 404 Not Found error. This is because the API requires an orderid variable in the URL. Modify the URL and add a random string, such as **0000**. After you press Enter, you see the proper response from the API call.



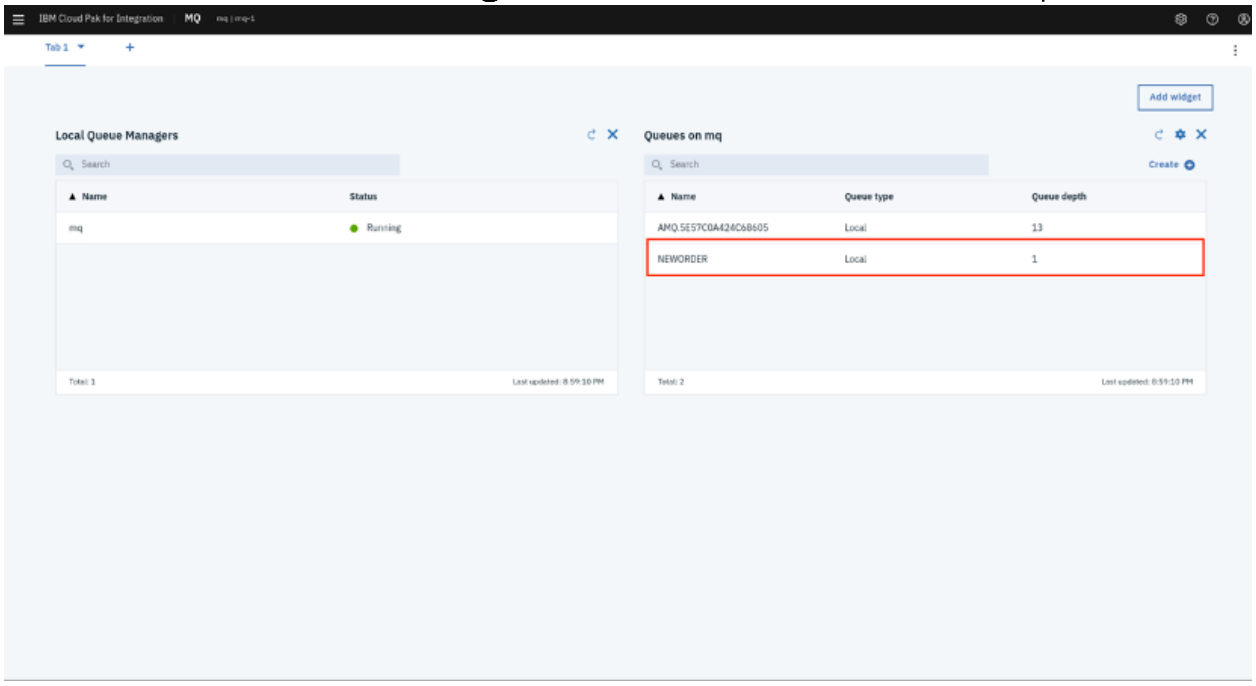
neworder-http-ace.apps.demo.ibmdte.net/neworder/v1/0000

```
orderid:            "0000"
Customerfirstname:  "Mary"
Customerlastname:   "Doe"
CustomerAddress:    "555 Anyaddress Tampa, FL 98760"
OrderStatus:        "Order - Ok"
```

21. Open a new browser window and select the IBM Cloud Pak for Integration bookmark bar. under **view instances** and click **mq-1** instance.


openshift console
Cloud Pak Platform Nav...
IBM Cloud Pak for Integration
App Connect Dashboard
ace | ace-1
Platform home
Cloud Pak Foundation
OpenShift Console
Logging
Monitoring
API Connect 1 instance
App Connect 2 instances
Aspera 0 instances
DataPower 1 instance
Event Streams 1 instance
MQ 2 instances
Tracing 1 instance
Asset repository 1 instance
MQ
Find
mq
mq-1
mq-2

22. You see a new message has arrived in **NEWORDER** queue.



Local Queue Managers

Name	Status
mq	● Running

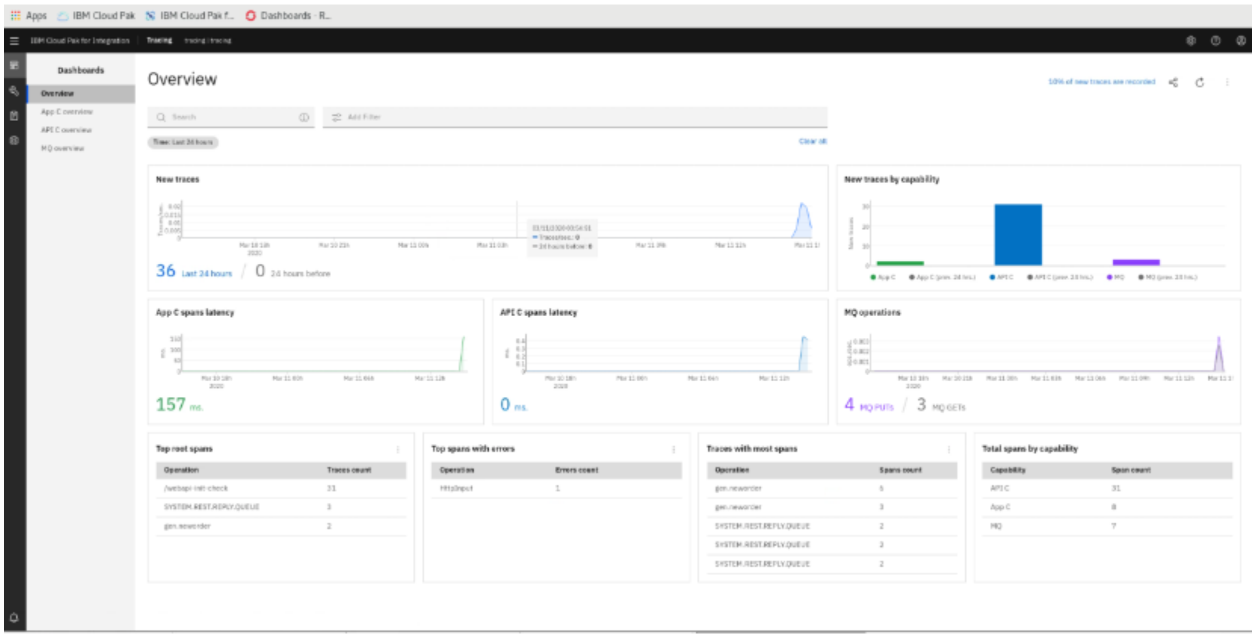
Total: 1 Last updated: 8:59:10 PM

Queues on mq

Name	Queue type	Queue depth
AMQ.5E57C0A424C68605	Local	13
NEWORDER	Local	1

Total: 2 Last updated: 8:59:10 PM

23. Back to the browser with Operations Dashboard opened.
Click the **Overview** option and you see all the tracing of **MQ, App Connect and APIC** (You see how to configure tracing in APIC lab). Operations Dashboard Add-on is based on Jaeger open source project and the OpenTracing standard to monitor and troubleshoot microservices-based distributed systems. Operations Dashboard can distinguish call paths and latencies. DevOps personnel, developers, and performance engineers now have one tool to visualize throughput and latency across integration components that run on Cloud Pak for Integration. Cloud Pak for Integration - Operations Dashboard Add-on is designed to help organizations that need to meet and ensure maximum service availability and react quickly to any variations in their systemsTo start the App Connect Enterprise API, **click** the REST API Base URL link.



Top root spans

Operation	Traces count
/webapi-init-check	31
SYSTEM.REST.REPLY.QUEUE	3
gen.neworder	2

Top spans with errors

Operation	Errors count
HttpInput	1

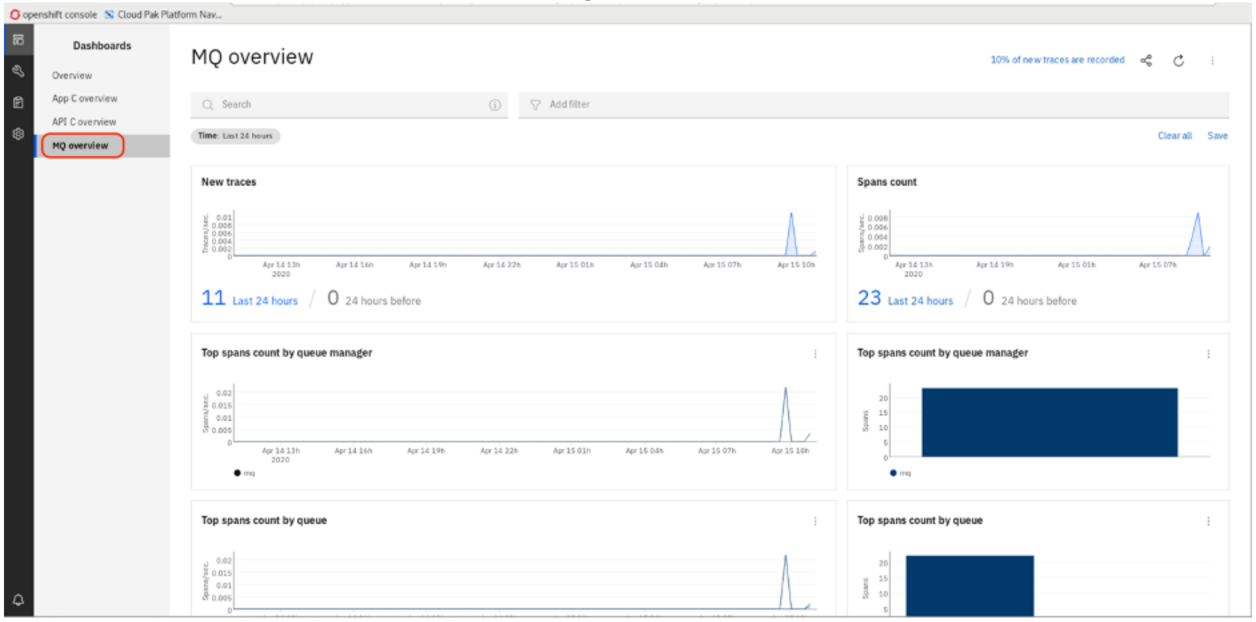
Traces with most spans

Operation	Spans count
gen.neworder	5
gen.neworder	3
SYSTEM.REST.REPLY.QUEUE	2
SYSTEM.REST.REPLY.QUEUE	2
SYSTEM.REST.REPLY.QUEUE	2

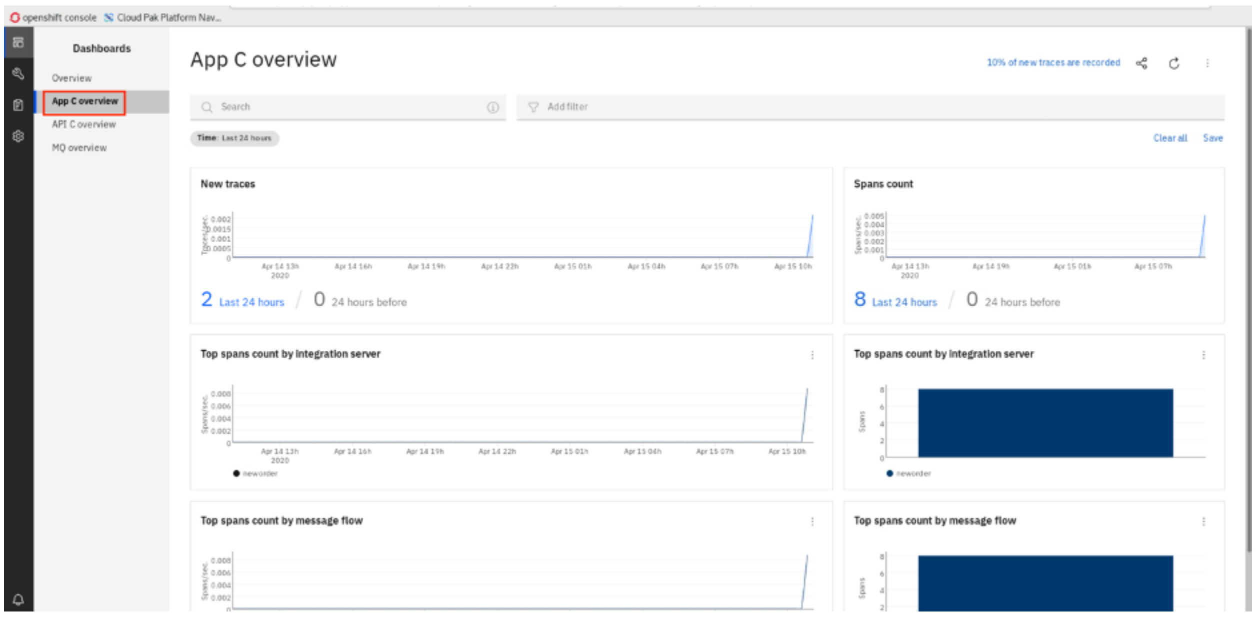
Total spans by capability

Capability	Span count
API C	31
App C	8
MQ	7

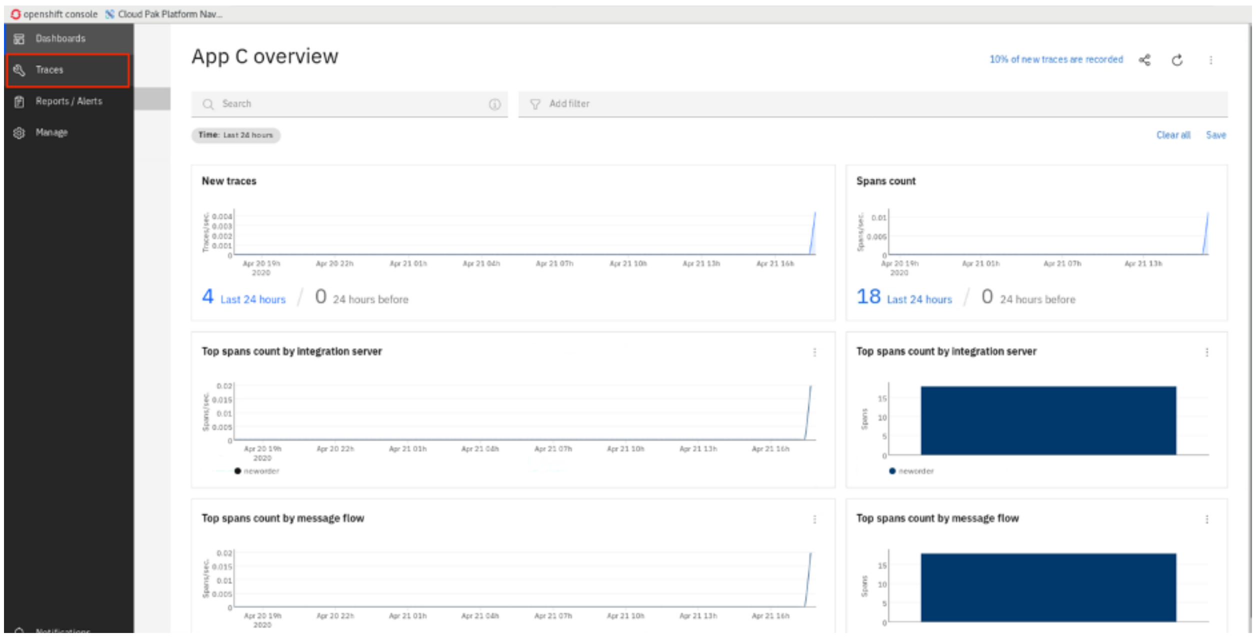
24. You can see also **MQ tracing**, click **MQ Overview Dashboard**.



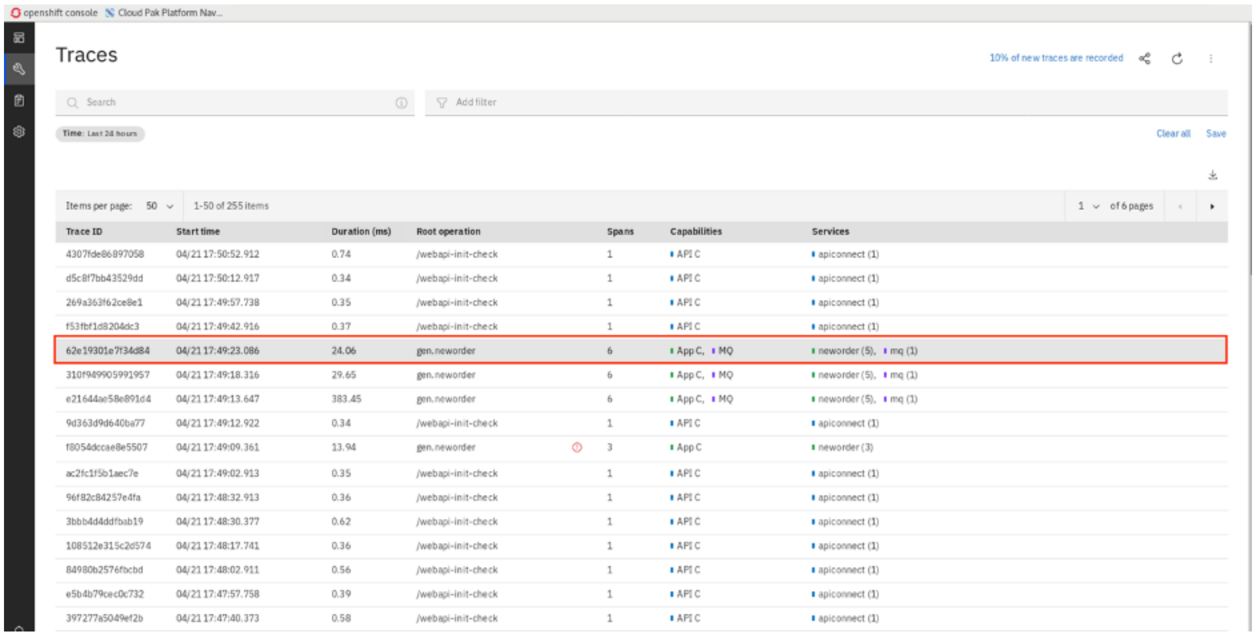
25. You can see App C tracing, click **App C Overview Dashboard.**


openshift console
Cloud Pak Platform Nav...
Dashboards
Overview
App C overview
API C overview
MQ overview
App C overview
10% of new traces are recorded
Search
Add filter
Time: Last 24 hours
Clear all
Save
New traces
2 Last 24 hours / 0 24 hours before
Spans count
8 Last 24 hours / 0 24 hours before
Top spans count by integration server
neworder
Top spans count by integration server
neworder
Top spans count by message flow
Top spans count by message flow

26. In the tracing page, select **traces icon** the menu on the left.


openshift console
Cloud Pak Platform Nav...
Dashboards
Traces
Reports / Alerts
Manage
App C overview
10% of new traces are recorded
Search
Add filter
Time: Last 24 hours
Clear all
Save
New traces
4 Last 24 hours / 0 24 hours before
Spans count
18 Last 24 hours / 0 24 hours before
Top spans count by integration server
neworder
Top spans count by integration server
neworder
Top spans count by message flow
Top spans count by message flow

27. Analyze the Tracing list generated. Select a line to analyze the trace of MQ and App Connect Enterprise.



openshift console · Cloud Pak Platform Nav...

Traces

10% of new traces are recorded

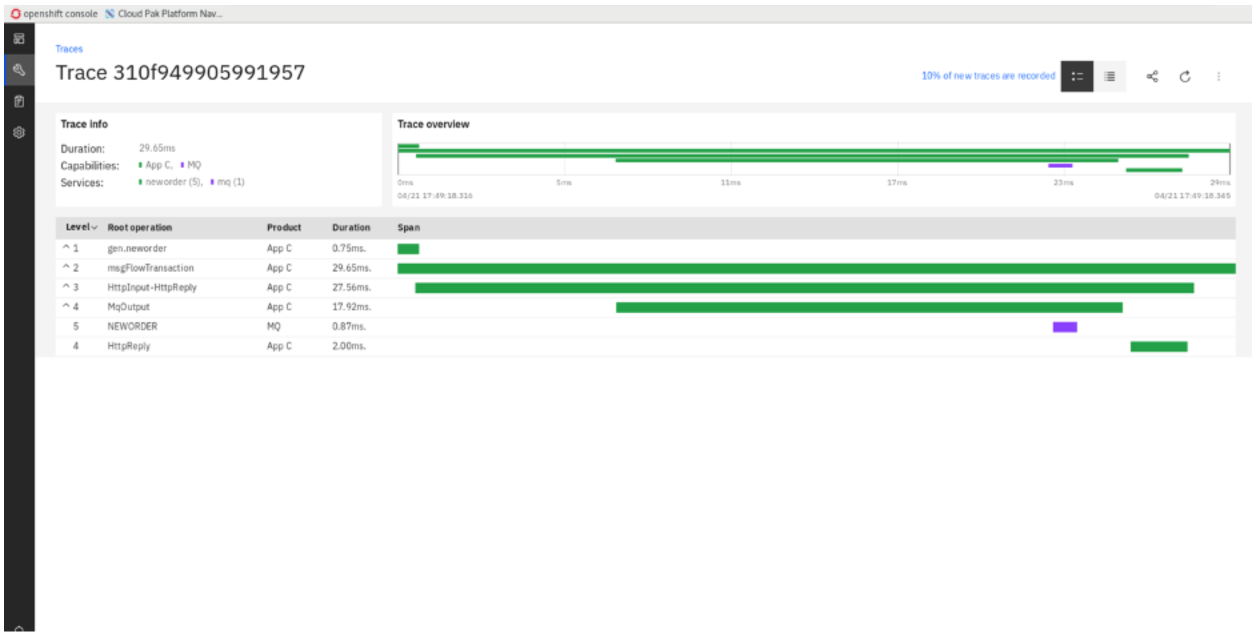
Search · Add filter

Time: Last 24 hours · Clear all · Save

Items per page: 50 · 1-50 of 255 items · 1 of 6 pages

Trace ID	Start time	Duration (ms)	Root operation		Spans	Capabilities	Services
4307fde86897058	04/21 17:50:52.912	0.74	/webapi-init-check		1	API C	apiconnect (1)
d5c8f7bb43529dd	04/21 17:50:12.917	0.34	/webapi-init-check		1	API C	apiconnect (1)
269a363f62ce8e1	04/21 17:49:57.738	0.35	/webapi-init-check		1	API C	apiconnect (1)
f53fbf1d8204dc3	04/21 17:49:42.916	0.37	/webapi-init-check		1	API C	apiconnect (1)
62e19301e7f34d84	04/21 17:49:23.086	24.06	gen.neworder		6	App C, MQ	neworder (5), mq (1)
310f949905991957	04/21 17:49:18.316	29.65	gen.neworder		6	App C, MQ	neworder (5), mq (1)
e21644ae58e891d4	04/21 17:49:13.647	383.45	gen.neworder		6	App C, MQ	neworder (5), mq (1)
9d363d9d640ba77	04/21 17:49:12.922	0.34	/webapi-init-check		1	API C	apiconnect (1)
f8054dccae8e5507	04/21 17:49:09.361	13.94	gen.neworder	ⓘ	3	App C	neworder (3)
ac2fc1f5b1aec7e	04/21 17:49:02.913	0.35	/webapi-init-check		1	API C	apiconnect (1)
96f82c84257e4fa	04/21 17:48:32.913	0.36	/webapi-init-check		1	API C	apiconnect (1)
3bbb4d4ddfbab19	04/21 17:48:30.377	0.62	/webapi-init-check		1	API C	apiconnect (1)
108512e315c2d574	04/21 17:48:17.741	0.36	/webapi-init-check		1	API C	apiconnect (1)
84980b2576fbcbd	04/21 17:48:02.911	0.56	/webapi-init-check		1	API C	apiconnect (1)
e5b4b79cec0c732	04/21 17:47:57.758	0.39	/webapi-init-check		1	API C	apiconnect (1)
397277a5049ef2b	04/21 17:47:40.373	0.58	/webapi-init-check		1	API C	apiconnect (1)

28. Observe the trace results.



openshift console · Cloud Pak Platform Nav...

Traces

Trace 310f949905991957

10% of new traces are recorded

Trace info

Duration: 29.65ms
Capabilities: App C, MQ
Services: neworder (5), mq (1)

Trace overview

Level	Root operation	Product	Duration
^ 1	gen.neworder	App C	0.75ms.
^ 2	msgFlowTransaction	App C	29.65ms.
^ 3	HttpInput-HttpReply	App C	27.56ms.
^ 4	MqOutput	App C	17.92ms.
5	NEWORDER	MQ	0.87ms.
4	HttpReply	App C	2.00ms.

Summary

You've completed this tutorial. In this lab you learned how to:

1. Increase efficiency by creating, testing, and debugging an integration flow with a message queue within a single, unified experience
2. Increase scale by deploying integration flows and message queues as containers on Kubernetes.

3. Use Helm, the industry standard for Kubernetes package manager, to deploy the integration.

   To try out more labs go to the Cloud Integration DTE. To try out more labs, go to Cloud Pak for Integration Demos. For more information about the Cloud Pak for Integration, go to https://www.ibm.com/cloud/cloud-pak-for-integration.