The banner features a dark teal background with abstract, glowing blue and white curved lines on the right side. The text 'World of Watson 2016' is in white on the left, with the hashtag '#ibmwow' below it and the IBM logo on the right.

World of Watson
2016

#ibmwow

IBM

Hands-on Lab Instructions

Session 3282

Integrating IBM Watson IoT Platform and IBM Blockchain

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Download Lab Instructions From

<http://ibm.biz/wowiotlab>

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Overview



Section 1 – Setup Bluemix

Signup for Bluemix – New User

- This lab requires a IBM Bluemix account. If you don't have access to IBM Bluemix already, you can register for a 30-day free trial at the following URL:

<https://console.ng.bluemix.net/registration>

- Fill all the details and then click on **Create Account** to complete the registration process. Check your email inbox to complete the registration as shown in figure below.

Note: Please check the Junk folder if you don't see email from **The Bluemix Team** in your email inbox.

Sign up for IBM Bluemix

Already signed up for Bluemix? [Log in](#)

Your 30-day trial is free, with no credit card required. You get access to 2 GB of runtime and container memory to run apps, unlimited IBM services and APIs, and complimentary support.

Email Address* rahulonline007@yahoo.com ✓	Phone Number* 4795318971 ✓
First Name* Rahul ✓	Password* •••••••• ✓
Last Name* Gupta ✓	Re-enter Password* •••••••• ✓
Company IBM	Security Question* City I Work ✓
Country or Region* UNITED STATES ▼	Security Answer* Austin ✓

Keep me informed of products, services, and offerings from IBM companies worldwide:
☐ By email ☐ By telephone

By clicking Create Account, I accept the [Bluemix privacy policy](#) and [Bluemix terms](#).

Create Account

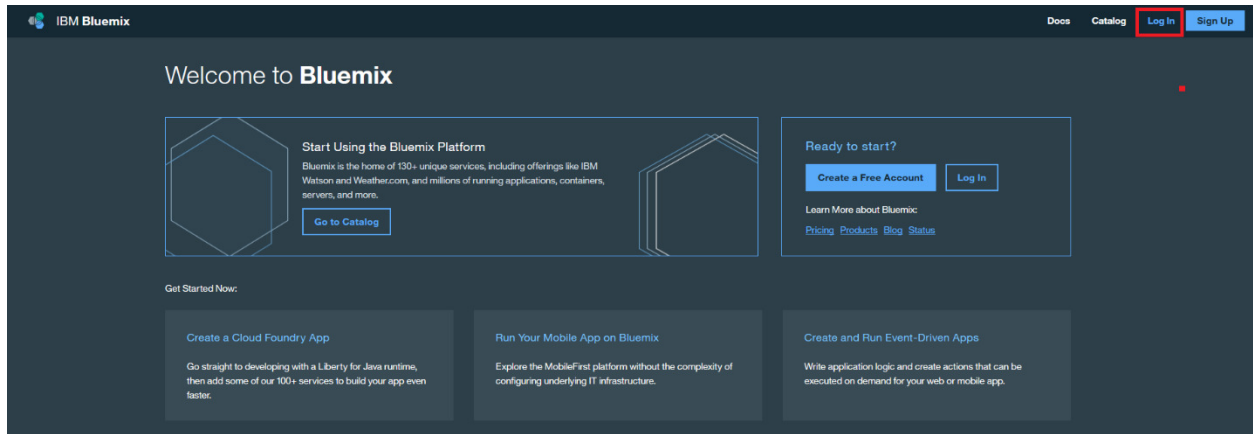
Log-In Bluemix – New User and Existing Users

- If you already have a IBM Bluemix account, you can directly login using the URL below:

<https://console.ng.bluemix.net/>

- Click on the Log-In button to login.

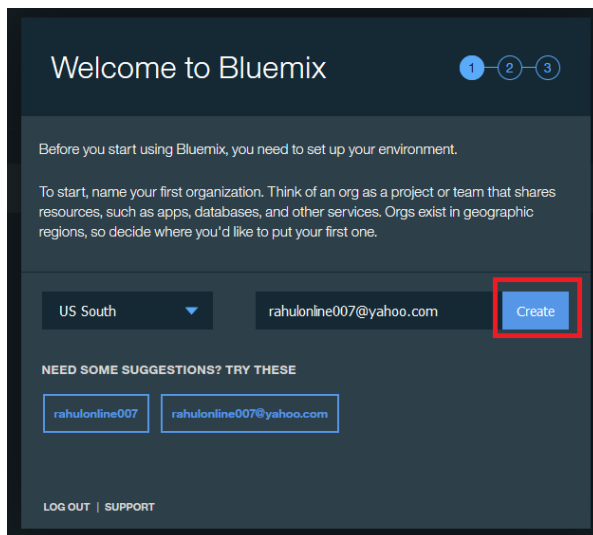




Create Bluemix organization – New User

- Once you have logged into IBM Bluemix create a Bluemix organization following the steps in the image below. Create an organization with your Bluemix account email id.

Note: Existing Bluemix users can ignore this step



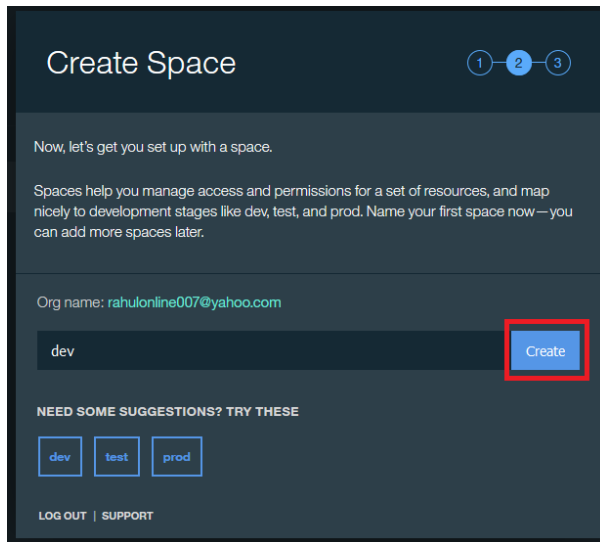
An organization is the highest concept. When you create an account you get your own "organization". You can invite others to your organization, can get invited to join other organizations or create organizations.



Create Bluemix space – New User

- Create a space with name **dev**

Note: Existing Bluemix users can ignore this step



Create Space

Now, let's get you set up with a space.

Spaces help you manage access and permissions for a set of resources, and map nicely to development stages like dev, test, and prod. Name your first space now—you can add more spaces later.

Org name: rahulonline007@yahoo.com

dev

Create

NEED SOME SUGGESTIONS? TRY THESE

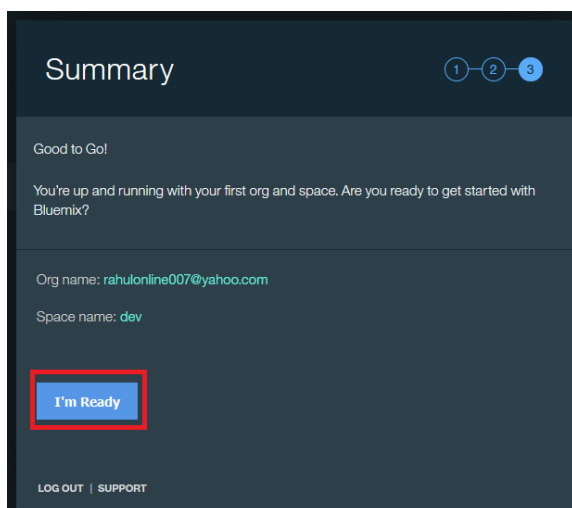
dev test prod

LOG OUT | SUPPORT

Spaces are used to group related applications and services together. There can be multiple spaces within an organization. When an application or service is created they are assigned a specific space.

Complete creation of organization and space– New User

- This step completes the setup of Bluemix organization and space. You can now proceed with creation of IBM Watson IoT Platform and IBM Blockchain services in the next step.



Summary

Good to Go!

You're up and running with your first org and space. Are you ready to get started with Bluemix?

Org name: rahulonline007@yahoo.com

Space name: dev

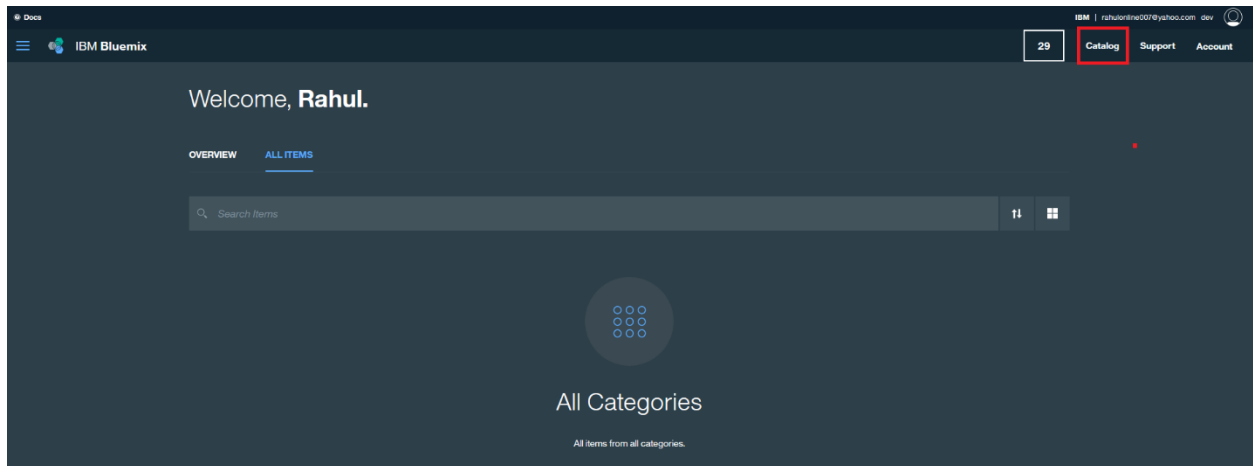
I'm Ready

LOG OUT | SUPPORT

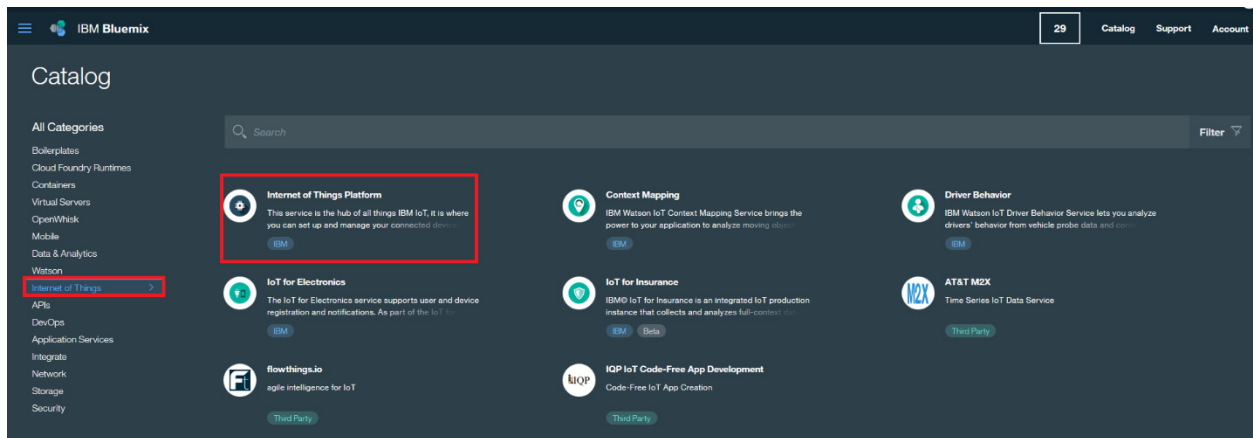


Create IBM Watson IoT Platform Organization

- Once you have logged in IBM Bluemix, click on the **Catalog** to browse the different services offered in IBM Bluemix platform.



- In the services catalog select **Internet of Things** in the left menu and then click on **Internet of Things Platform**



- To create the IBM Watson Internet of Things Platform, enter following details or something easier which could be remembered:
 - **Service Name:** iot-platform-service
 - **Credentials Name:** Credentials- iot-platform-service
 - **Pricing Plans** – Free
- Click on the **Create** button to create a new instance of IBM Watson IoT Platform service in IBM Bluemix.



IBM Bluemix Internet of Things Platform

The IBM Internet of Things service lets your apps communicate with and consume data collected by your connected devices, sensors, and gateways. Our recipes make it super easy to get devices connected to our Internet of Things cloud. Your apps can then use our real-time and REST APIs to communicate with your devices and consume the data you've set them up to collect.

Service name: **iot-platform-service**

Credential name: **Credential-iot-platform-service**

Connect to: **Leave unbound**

View Docs

AUTHOR: IBM
PUBLISHED: 09/14/2016
TYPE: Service
LOCATION: US South

Features

- **Connect your devices securely to the cloud**
Before your apps can get to work, you need to get your devices connected up! We have a set of verified instructions, or 'recipes', for connecting devices, sensors and gateways from a variety of partners and individuals.
- **Build an app that talks to your devices**
Communications between your devices and the cloud happen via the open, lightweight MQTT protocol. For example you might have a sensor that collects and sends humidity readings every minute. Our REST and real-time APIs allow you to quickly pull that device data into your apps for further analysis.

Images

Click an image to enlarge and view screen captures, slides, or videos. Screen caps show the user interface for the service after it has been provisioned.

Pricing Plans

Monthly prices shown are for country or region: **United States**

PLAN	FEATURES	PRICING
Standard	The Standard service plan for Internet of Things Platform includes your free tier of 100 MB each of data exchanged, data analyzed and edge data analyzed per month at no cost. Charge per MB of data exchanged (tiered by usage in MB) Charge per MB of data analyzed Charge per MB of edge data analyzed Multi-Tiered	Expand each section to view details
Free	Includes up to 20 registered devices, and a maximum of 100 MB of each data metric: Maximum of 20 registered devices Maximum of 10 application bindings Maximum of 100 MB of each of data exchanged, data analyzed and edge data analyzed	Free

The Free service plan for Internet of Things Platform includes up to 20 registered devices, and a maximum of 100 MB each of data exchanged, data analyzed, and edge data analyzed per month.

Terms

Need Help? [Contact Bluemix Sales](#)

Estimate Monthly Cost [Cost Calculator](#)

Create

- Once the service is created you can launch the IBM Watson IoT Platform dashboard by clicking the **launch dashboard** button.

IBM Bluemix Internet of Things

iot-platform-service Status: ● Service available

Manage Plan Connections

Hi! Welcome to Watson IoT Platform

Take a look at the steps below to get you going with your Internet of Things app

Connect your devices

Use our [recipes](#) to find out how to add your devices. We work with partners and have sample connection recipes for many devices.

Launch the Watson IoT Platform dashboard and add your devices by clicking the 'Add Device' button under the 'Devices' tab.

Launch dashboard

Analyze your data

Use the newly integrated triggers and alerts to monitor real-time conditions and take action on emerging situations. See our [recipes](#) site to find tutorials on how you can make the most of our new capabilities.

Find out more

Learn how to extend your app

Use other Bluemix services to extend your app to start creating a great Internet of Things app.

Here are some of the services you could use:

- [Twitter Third Party](#)
- [Cloudant NoSQL DB](#)
- [Dash DB](#)
- [Geospatial Analytics](#)
- [Time Series Database](#)
- [IBM Analytics for Hadoop](#)

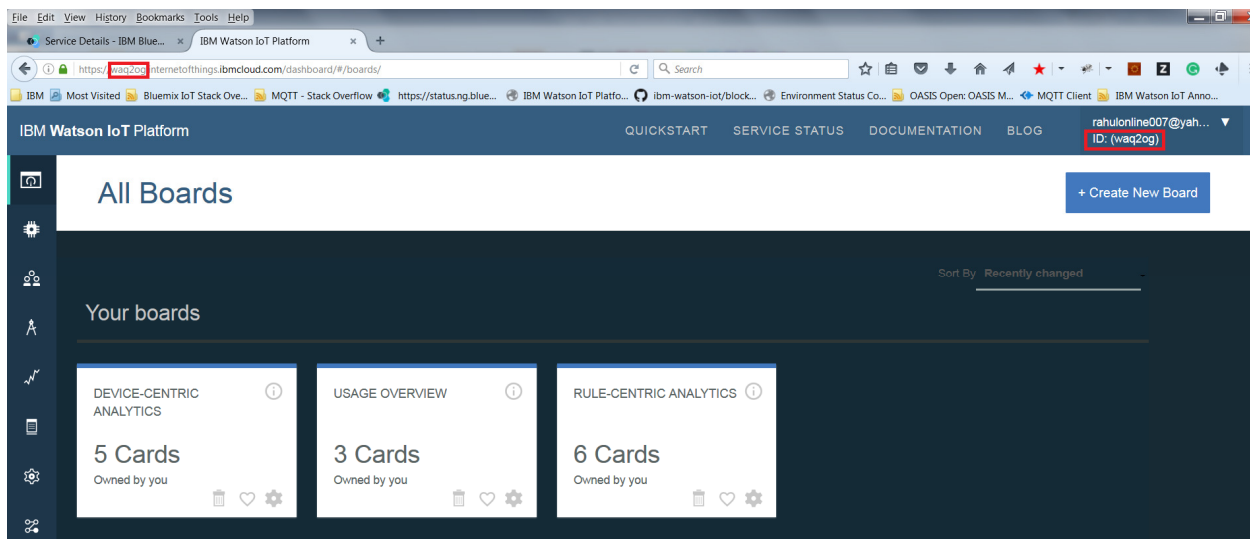


- Watson IoT Dashboard will be opened in a new browser tab. Familiarize yourself with the dashboard and specially the IoT Platform organization ID.

Note: The Watson IoT Platform organization ID is different from the IBM Bluemix organization ID

- Copy the Organization ID in a notepad.

Note: In the image below the organization ID is highlighted in the rectangular box, every IoT Platform service has a unique organization ID.

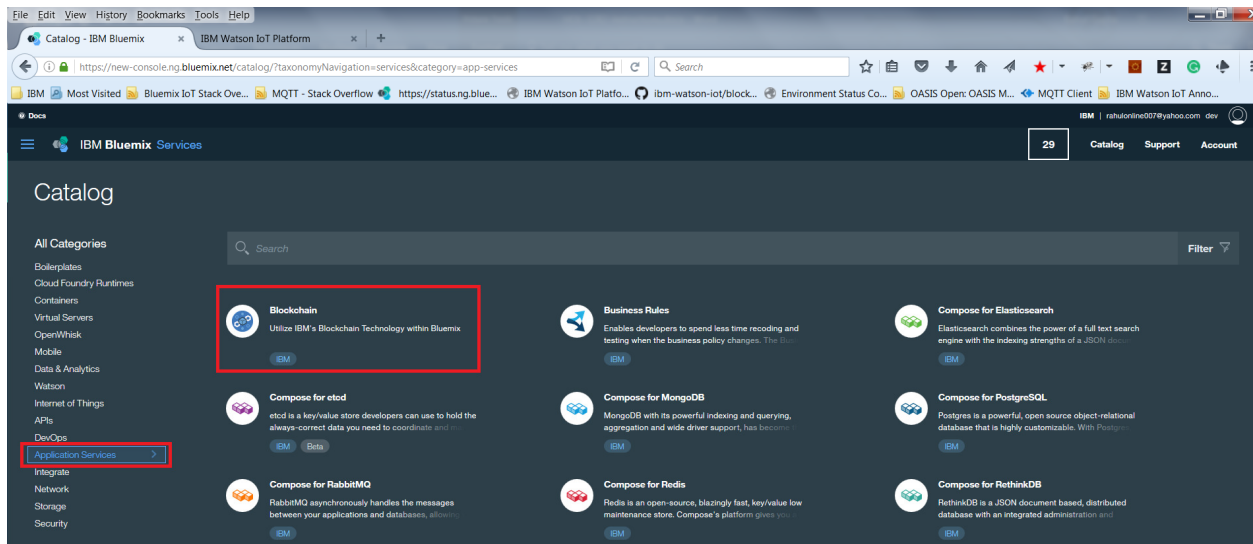


- This completes the creation of IBM Watson IoT Platform service and we can now proceed with creation of IBM Blockchain service.

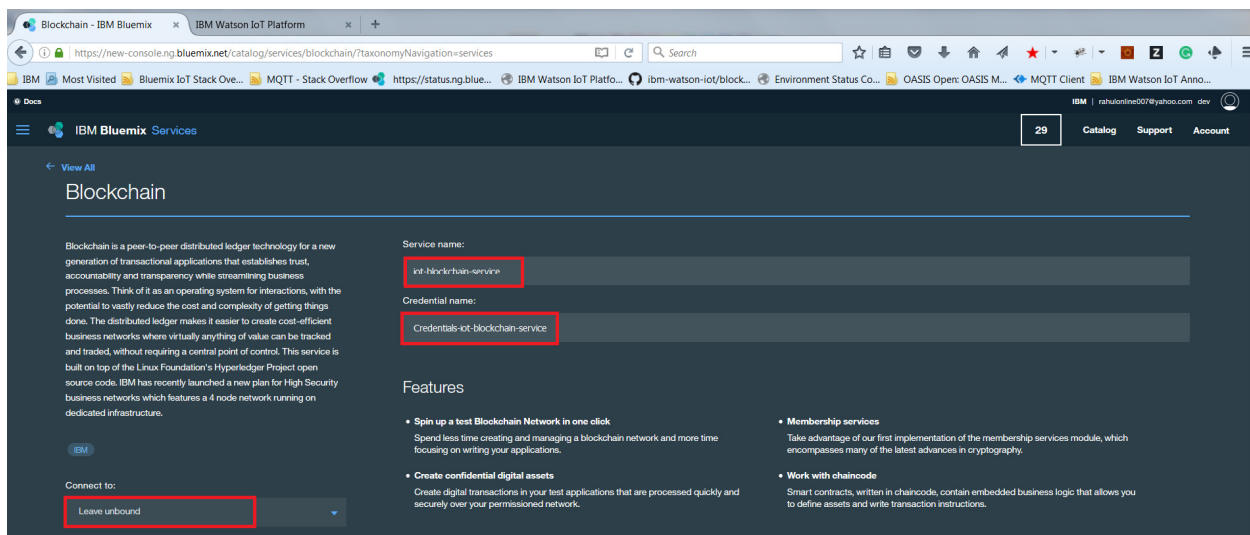
Create IBM Watson IoT Blockchain Service

- To create IBM Blockchain service, get back the IBM Bluemix **catalog**
- Click on the **Application Service** in the catalog menu
- Select **IBM Blockchain** as shown in the image on next page.



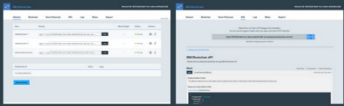


- To create the IBM Blockchain service, enter following details or something easier which could be remembered:
- **Service Name:** `iot-blockchain-service`
 - **Credentials Name:** `Credentials- iot-blockchain-service`
 - **Pricing Plans** – Starter Developer Plan (Beta)



AUTHOR IBM
PUBLISHED 10/20/2016
TYPE Service
LOCATION US South

Click an image to enlarge and view screen captures, slides, or videos. Screen caps show the user interface for the service after it has been provisioned.



Pricing Plans

Monthly prices shown are for country or region: [United States](#)

PLAN	FEATURES	PRICING
✓ Starter Developer plan (Beta)	<ul style="list-style-type: none"> 4 peers and a Cert Authority Deploy and test chaincode Dashboard with logs, controls, and APIs Sample apps with source code 	Free
High Security Business Network plan	<ul style="list-style-type: none"> 4 peers and a Cert Authority on IBM LinuxOne™ All of the capabilities in Starter Isolated environment on dedicated compute Optimized performance and high speed network Advanced Security: HSM, Secure Service Container and more 	\$10,000.00 USD/MONTHLY

Get started using IBM Blockchain! Monitor your network and view health status. Leverage the REST API to deploy and invoke chaincode transactions.

[Terms](#)

Need Help? [Contact Bluemix Sales](#)
Estimate Monthly Cost [Cost Calculator](#)

[Create](#)

- Once the IBM Blockchain service is created, click on the Launch Button and that will launch the IBM Blockchain service dashboard in a new browser Tab window.

Docs

IBM Bluemix Services

← Application Services

iot-blockchain-service Status: ● Service available

[Manage](#) [Service Credentials](#) [Connections](#)

Welcome to the Starter Developer Network on IBM Blockchain!

Welcome, rahulonline007@yahoo.com!


This service is intended for developers who consider themselves early adopters and want to get involved with IBM's approach to business networks that maintain, secure and share a replicated ledger using blockchain technology.

What it IS good for today:











- Deploying and invoking transactions to test out IBM's approach to blockchain technology
- Using non-sensitive information and processes.
- Learning and testing out IBM's novel contributions to the blockchain open source community, including the concept of confidential transactions and containerized code execution.



- IBM Blockchain service is now instantiated and ready to be used.
- This service is provisioned with four validating peer and one membership CA (certificate authority) server.


IBM Blockchain
Network ID: d25478abf00f4bb689b946a3ee17627e

Network
Blockchain
Demo Chaincode
APIs
Logs
Status
Support
Getting started

Peer	Routes	Block Height	Status	Actions
Membership Services	<div>HTTP</div> <div>https://d25478abf00f4bb689b946a3ee17627e-ca.us.blockch...</div> <div>Copy</div>	-	Running	 
Validating Peer 0	<div>HTTP</div> <div>https://d25478abf00f4bb689b946a3ee17627e-vp0.us.blockc...</div> <div>Copy</div>	1	Running	 
Validating Peer 1	<div>HTTP</div> <div>https://d25478abf00f4bb689b946a3ee17627e-vp1.us.blockc...</div> <div>Copy</div>	1	Running	 
Validating Peer 2	<div>HTTP</div> <div>https://d25478abf00f4bb689b946a3ee17627e-vp2.us.blockc...</div> <div>Copy</div>	1	Running	 
Validating Peer 3	<div>HTTP</div> <div>https://d25478abf00f4bb689b946a3ee17627e-vp3.us.blockc...</div> <div>Copy</div>	1	Running	 

We have now created the IBM Bluemix service for the new users and later created the IBM Watson IoT Platform and IBM Blockchain service in Bluemix.

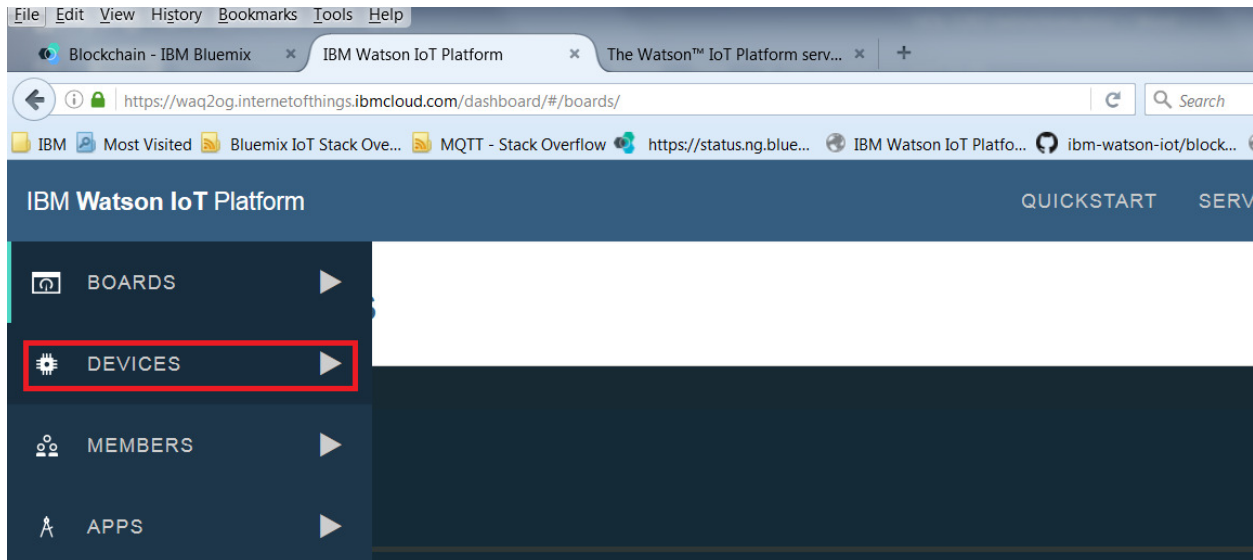
Note – Please don't close the browser tabs for IBM Watson IoT Platform dashboard and IBM Blockchain dashboard.



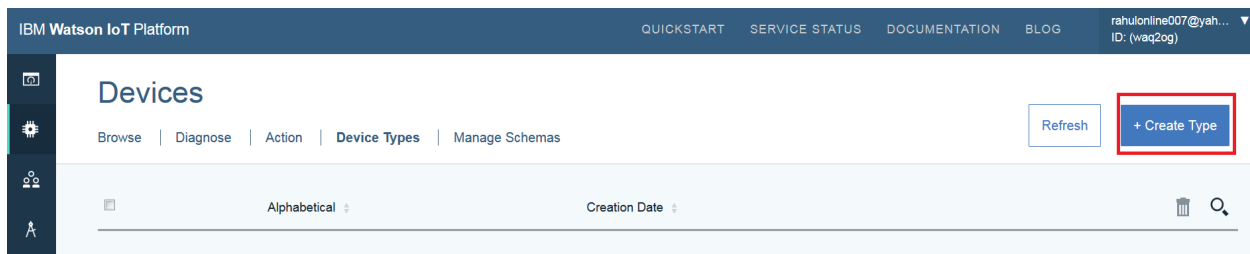
Section 2 – Configure IBM Watson IoT Platform devices and access

Create ELEVATOR device type

- Go to the IBM Watson IoT Platform dashboard tab in the browser window
- Click on **Devices**



- Click on **Device Types** tab and then click **Create Type** button



- Create Device Type, Provide device name as **ELEVATOR** and description as **ELEVATOR DEVICES**

Create Device Type

General Information

Name

ELEVATOR

The device type name is used to identify the device type uniquely, using a restricted set of characters to make it suitable for API use.

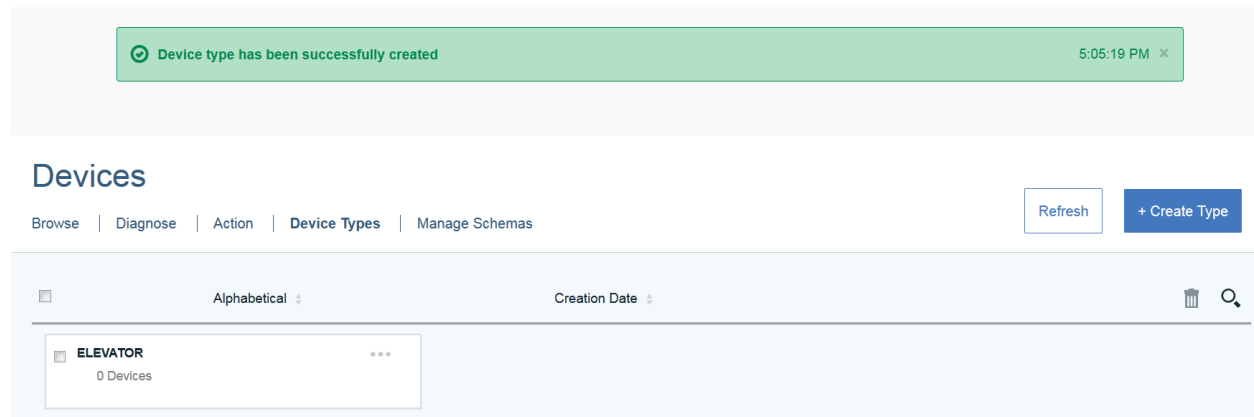
Description

ELEVATOR DEVICES

The device type description can be used for a more descriptive way of identifying the device type.



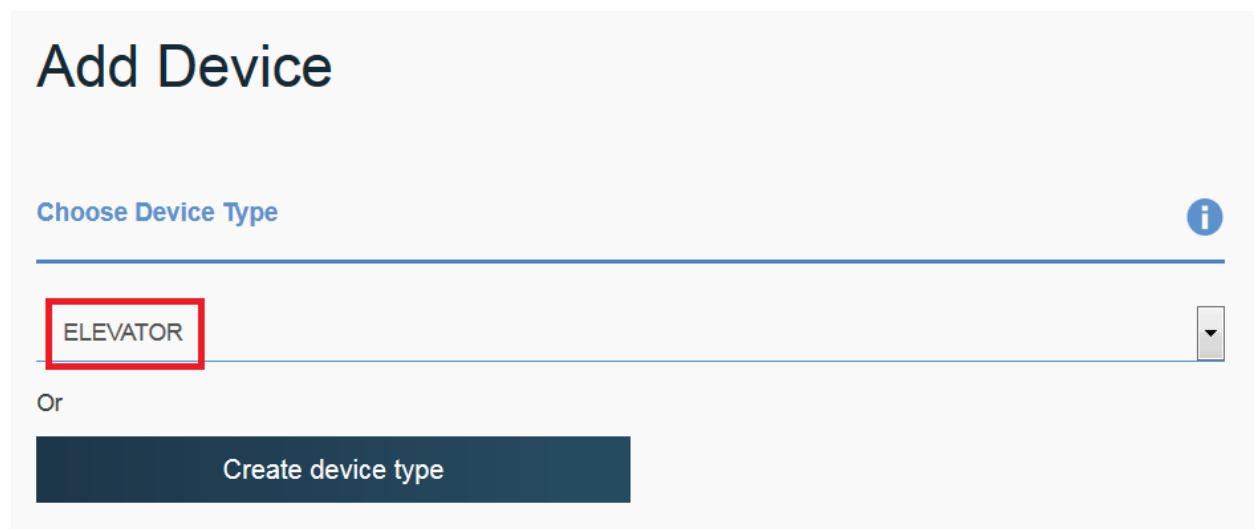
- Click on **Next** button
- Click **Next** on templates without selecting anything
- Click **Next** button in Submit Information
- Click Create button to create the **ELEVATOR** device type
- If device type ELEVATOR is successfully created, you will see a device type ELEVATOR in the dashboard



A green notification bar at the top states: "Device type has been successfully created" with a timestamp of "5:05:19 PM". Below this is the "Devices" section header. Under the header are tabs: "Browse", "Diagnose", "Action", "Device Types" (which is selected), and "Manage Schemas". To the right of the tabs are "Refresh" and "+ Create Type" buttons. Below the tabs is a list of device types. One device type is listed: "ELEVATOR" with "0 Devices" underneath it. The list is sorted by "Alphabetical" and "Creation Date".

Create a device IOT-ELEVATOR-001 of device type ELEVATOR

- Go to the IBM Watson IoT Platform dashboard
- Click on **Devices**
- Click on **Browse** tab and then click on **Add Device** button
- To add a device, select the device type previously created: **ELEVATOR**



The "Add Device" form has a section titled "Choose Device Type" with an information icon. Below this is a dropdown menu where "ELEVATOR" is selected and highlighted with a red rectangle. Below the dropdown is the text "Or" and a dark blue button labeled "Create device type".

- Click **Next**
- Enter Device ID as: **IOT-ELEVATOR-001**



Add Device

Device Info

Device ID is the only required information, however other fields are populated according to the attributes set in the selected device type. These values can be overridden, and attributes not set in the device type can be added.

Device ID

IOT-ELEVATOR-001

- Click **Next** on the Device Info page
- Click **Next** on the Metadata page
- Click **Next** on the Security page
- Click **Next** on the Summary page
- Copy Organization ID, Device Type, Device ID into a notepad

Organization ID

Device Type

Device ID

Authentication Method

Authentication Token

waq2og

ELEVATOR

IOT-ELEVATOR-001


token

Tw)!9eea(Gceoi0nTM

- IOT-ELEVATOR-001 device of device type ELEVATOR is now created. Close the device creation page and this device will now be visible in the dashboard.

Devices

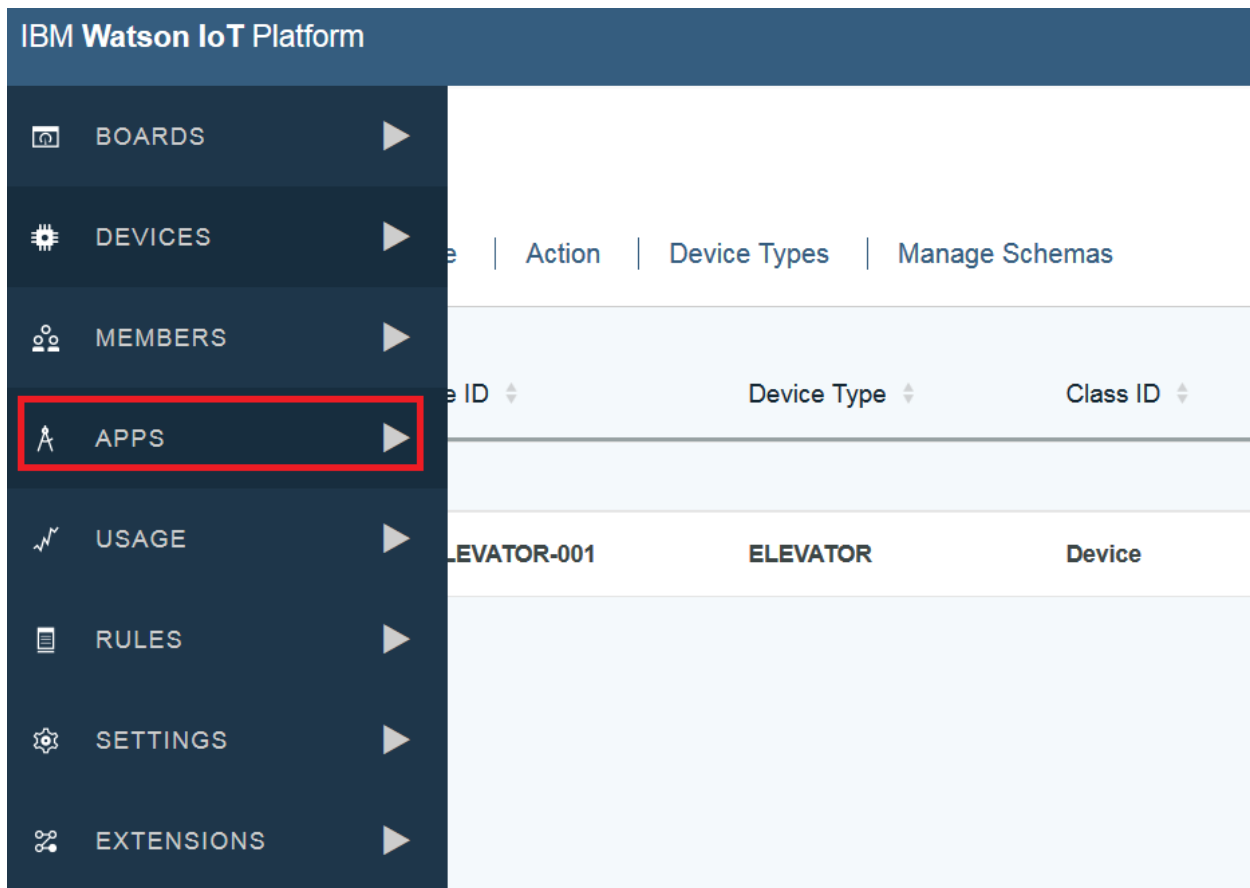
[Browse](#) | [Diagnose](#) | [Action](#) | [Device Types](#) | [Manage Schemas](#)

	Device ID ▾	Device Type ▾	Class ID ▾
Results 1-1 of 1			
<input type="checkbox"/>	 IOT-ELEVATOR-001	ELEVATOR	Device



Create API Keys to access this device from Elevator simulator

- Application credentials created in this step will be used by the simulator
- Go to the IBM IoT Watson Platform dashboard and click on APPS



The screenshot shows the IBM Watson IoT Platform dashboard. On the left, a dark blue sidebar contains a menu with icons and labels: BOARDS, DEVICES, MEMBERS, APPS (highlighted with a red rectangle), USAGE, RULES, SETTINGS, and EXTENSIONS. The main area on the right is white and displays a table with columns: Device ID, Device Type, and Class ID. A single row is visible with the values: ELEVATOR-001, ELEVATOR, and Device.

Device ID	Device Type	Class ID
ELEVATOR-001	ELEVATOR	Device

- Click on Generate API Key
- Select Standard Application and add comments for the keys
- Before clicking **Generate**, copy the API Keys and Authentication Token in a notepad. These credentials will be used later in the elevator simulator



Generate API Key

Copy the credentials in Notepad

API Key	a-waq2og-nis3fvygdl
Authentication Token	rpQu5*Uiel44BJ)?0H

Authentication tokens are non-recoverable. If you misplace this token, you will need to re-register the API key to generate a new authentication token.

Select API Role(s)

Standard Application

+ Add another role

Comment

IoT Elevator Keys

Set API key expiry

10/26/2016

Cancel Generate

This completes the basic configuration on IBM Watson IoT Platform. We will revisit the Blockchain specific configurations after deploying the smart contract and completing the Blockchain configuration in next section.



Section 3: Register Blockchain users and Deploy smart contract

Blockchain Peer assignment and roles

- Go to the IBM Blockchain tab open previously in the browser
- In the network tab, you will see five peers in the network tab

Network

Blockchain

Demo Chaincode

APIs

Logs

Status

Support

GetInfo

Peer	Routes	Block Height	Status	Actions
Membership Services	<div>HTTP</div> <div>https://435279c334a5491bbb30a549e48956ca-ca.us.blockch...</div> <div>Copy</div>	-	Running	<div></div> <div></div>
Validating Peer 0	<div>HTTP</div> <div>https://435279c334a5491bbb30a549e48956ca-vp0.us.blockc...</div> <div>Copy</div>	1	Running	<div></div> <div></div>
Validating Peer 1	<div>HTTP</div> <div>https://435279c334a5491bbb30a549e48956ca-vp1.us.blockc...</div> <div>Copy</div>	1	Running	<div></div> <div></div>
Validating Peer 2	<div>HTTP</div> <div>https://435279c334a5491bbb30a549e48956ca-vp2.us.blockc...</div> <div>Copy</div>	1	Running	<div></div> <div></div>
Validating Peer 3	<div>HTTP</div> <div>https://435279c334a5491bbb30a549e48956ca-vp3.us.blockc...</div> <div>Copy</div>	1	Running	<div></div> <div></div>

In this lab, we will use three validating peers for three virtual business organizations:

Validating Peers	Business Organizations
Validating Peer 0	This peer will be used by the elevator company to have access to the data transmitted by the elevator to capture any anomalies and compliance
Validating Peer 1	This peer will be used by the customer who has purchased an elevator from the Elevator Company
Validating Peer 2	This peer will be used by the government agency who has the audit the elevators for safety and compliance

Note: The IoT Blockchain Service and IoT Watson IoT Platform service is created on behalf of the elevator company

Register users from different organization with validating pees.

Note: IBM Blockchain service provides REST API for user registration, but in this lab, we will use a user interface for user registration.

- In a new browser tab open this URL <https://ibm.biz/wowsimulator>
- Click on Register Users and Deploy Contract



Register a user from the government organization

- Go to the Networks tab in IBM Blockchain Dashboard and copy the URL for Validation Peer 2

Network	Blockchain	Demo Chaincode	APIs	Logs	Status	Support
Peer	Routes					
Membership Services	HTTP	https://435279c334a5491bbb30a549e48956ca-ca.us.blockch...				Copy
Validating Peer 0	HTTP	https://435279c334a5491bbb30a549e48956ca-vp0.us.blockc...				Copy
Validating Peer 1	HTTP	https://435279c334a5491bbb30a549e48956ca-vp1.us.blockc...				Copy
Validating Peer 2	HTTP	https://435279c334a5491bbb30a549e48956ca-vp2.us.blockc...				Copy
Validating Peer 3	HTTP	https://435279c334a5491bbb30a549e48956ca-vp3.us.blockc...				Copy

- At the right bottom of Network tab right click and open service credentials in a new tab
- Find the secret of user **"user_type1_2"**. This secret will be needed for user registration with Validating Peer 2 of Blockchain
- Go back to the Register Users and Deploy Contract page on simulator application
- Enter the URL for Validating Peer 2 in Block Chain Peer URL text field
- Enter the username in Enroll ID text field
- Enter the secret in Enroll Secret text field

Register Blockchain User:

Blockchain Peer URL	https://435279c334a5491bbb30a549e48956ca-vp2.us.blockchain.ibm.com:444
Enroll ID	user_type1_2
Enroll Secret	975d361743

Register

- Once the user is registered you will see the message as shown in image on next page



Register Blockchain User:

Blockchain Peer URL	<code>https://435279c334a5491bbb30a549e48956ca-vp2.us.blockchain.ibm.com:444</code>
Enroll ID	<code>user_type1_2</code>
Enroll Secret	<code>975d361743</code>
<input type="button" value="Register"/>	

Deploy Elevator Contract:

Contract Path	<code>https://github.com/WorldOfWatson2016/lab3282/elevator_contract_simple</code>
<input type="button" value="Deploy"/>	

```
{"OK": "Login successful for user 'user_type1_2'."}
```

Register a user from the customer organization who purchased an Elevator

- Go to the Networks tab in IBM Blockchain Dashboard and copy the URL for Validation Peer 1
- At the right bottom of Network tab right click and open service credentials in a new tab
- Find the secret of user **"user_type1_1"**. This secret will be needed for user registration with Validating Peer 1 of Blockchain
- Go back to the Register Users and Deploy Contract page on simulator application
- Enter the URL for Validating Peer 1 in Block Chain Peer URL text field
- Enter the username in Enroll ID text field
- Enter the secret in Enroll Secret text field
- Once the user is registered you will see the message as shown in image on next page



Register Blockchain User:

Blockchain Peer URL	<code>https://435279c334a5491bbb30a549e48956ca-vp1.us.blockchain.ibm.com:444</code>
Enroll ID	<code>user_type1_1</code>
Enroll Secret	<code>8693299861</code>
<input type="button" value="Register"/>	

Deploy Elevator Contract:

Contract Path	<code>https://github.com/WorldOfWatson2016/lab3282/elevator_contract_simple</code>
<input type="button" value="Deploy"/>	

```
{"OK": "Login successful for user 'user_type1_1'."}
```

Register a user from Elevator manufacturing company

- Go to the Networks tab in IBM Blockchain Dashboard and copy the URL for Validation Peer 0
- At the right bottom of Network tab right click and open service credentials in a new tab
- Find the secret of user **"user_type1_0"**. This secret will be needed for user registration with Validating Peer 0 of Blockchain
- Go back to the Register Users and Deploy Contract page on simulator application
- Enter the URL for Validating Peer 0 in Block Chain Peer URL text field
- Enter the username in Enroll ID text field
- Enter the secret in Enroll Secret text field
- Once the user is registered you will see the message as shown in image on next page



Register Blockchain User:

Blockchain Peer URL	<code>https://435279c334a5491bbb30a549e48956ca-vp0.us.blockchain.ibm.com:444</code>
Enroll ID	<code>user_type1_0</code>
Enroll Secret	<code>b981e02eae</code>
<input type="button" value="Register"/>	

Deploy Elevator Contract:

Contract Path	<code>https://github.com/WorldOfWatson2016/lab3282/elevator_contract_simple</code>
<input type="button" value="Deploy"/>	

```
{"OK": "Login successful for user 'user_type1_0'."}
```

Deploy the Elevator Contract

In this lab as the Blockchain network is owned by the Elevator manufacturing company, we will deploy the smart contract to the Validating Peer 0. The Smart Contract or often called as chaincode and will be deployed to each validating peer in this network.

Elevator contract is already created and hosted in a public GitHub repository for you to have a look later: https://github.com/WorldOfWatson2016/lab3282/tree/master/elevator_contract_simple

- Go to the Networks tab in IBM Blockchain Dashboard and copy the URL for Validation Peer 0
- At the right bottom of Network tab right click and open service credentials in a new tab
- Find the secret of user **"user_type1_0"**. This secret will be needed for user registration with Validating Peer 0 of Blockchain
- Go back to the Register Users and Deploy Contract page on simulator application
- Enter the URL for Validating Peer 0 in Block Chain Peer URL text field
- Enter the username in Enroll ID text field
- Enter the secret in Enroll Secret text field
- Click on the deploy Button

Note: The REST API to deploy the contract is asynchronous and the deployed contract may take three – four minutes to complete the deployment in all the four validating peers.



Deploy Elevator Contract:

Contract Path

https://github.com/WorldOfWatson2016/lab3282/elevator_contract_simple

Deploy

```
{
  "jsonrpc": "2.0",
  "result": {
    "status": "OK",
    "message": "597271598cd4239802eeab1e88b604f13ad206919ced35670122322862fe7552c58807cea530e8a3e9e28aad195fe71f1237724884da28cb8758ea7d88201f01",
    "id": 101010
  }
}
```

The response message contains the Chaincode ID. Every deployed chaincode gets a unique chaincode id in the Blockchain network. This Chaincode ID will be needed for integration with Watson IoT Platform but we can get this from Blockchain dashboard.

- In the Networks tab of Blockchain dashboard, observe the deployed chaincode on all the four validating peers in this Blockchain network.

Peer	Routes	Block Height	Status	Actions
Membership Services	<div>HTTP https://435279c334a5491bbb30a549e48956ca-ca.us.blockch... Copy</div>	-	Running	
Validating Peer 0	<div>HTTP https://435279c334a5491bbb30a549e48956ca-vp0.us.blockc... Copy</div>	2	Running	
Validating Peer 1	<div>HTTP https://435279c334a5491bbb30a549e48956ca-vp1.us.blockc... Copy</div>	2	Running	
Validating Peer 2	<div>HTTP https://435279c334a5491bbb30a549e48956ca-vp2.us.blockc... Copy</div>	2	Running	
Validating Peer 3	<div>HTTP https://435279c334a5491bbb30a549e48956ca-vp3.us.blockc... Copy</div>	2	Running	

ChainCode ID	Peers	Logs
<div>597271598cd4239802eeab1e88b604f13ad206919ced35670122322862fe75... Copy</div>	4	<div>VPO running</div>

- The ChainCode ID could be copied when needed from the Copy button of the deployed contract

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