



Watson Discovery v2.1.3 on Managed OpenShift w/CP4D 3.0.1 in IBM Cloud

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Yoshinori Tahara

Watson Discovery Development



Overview

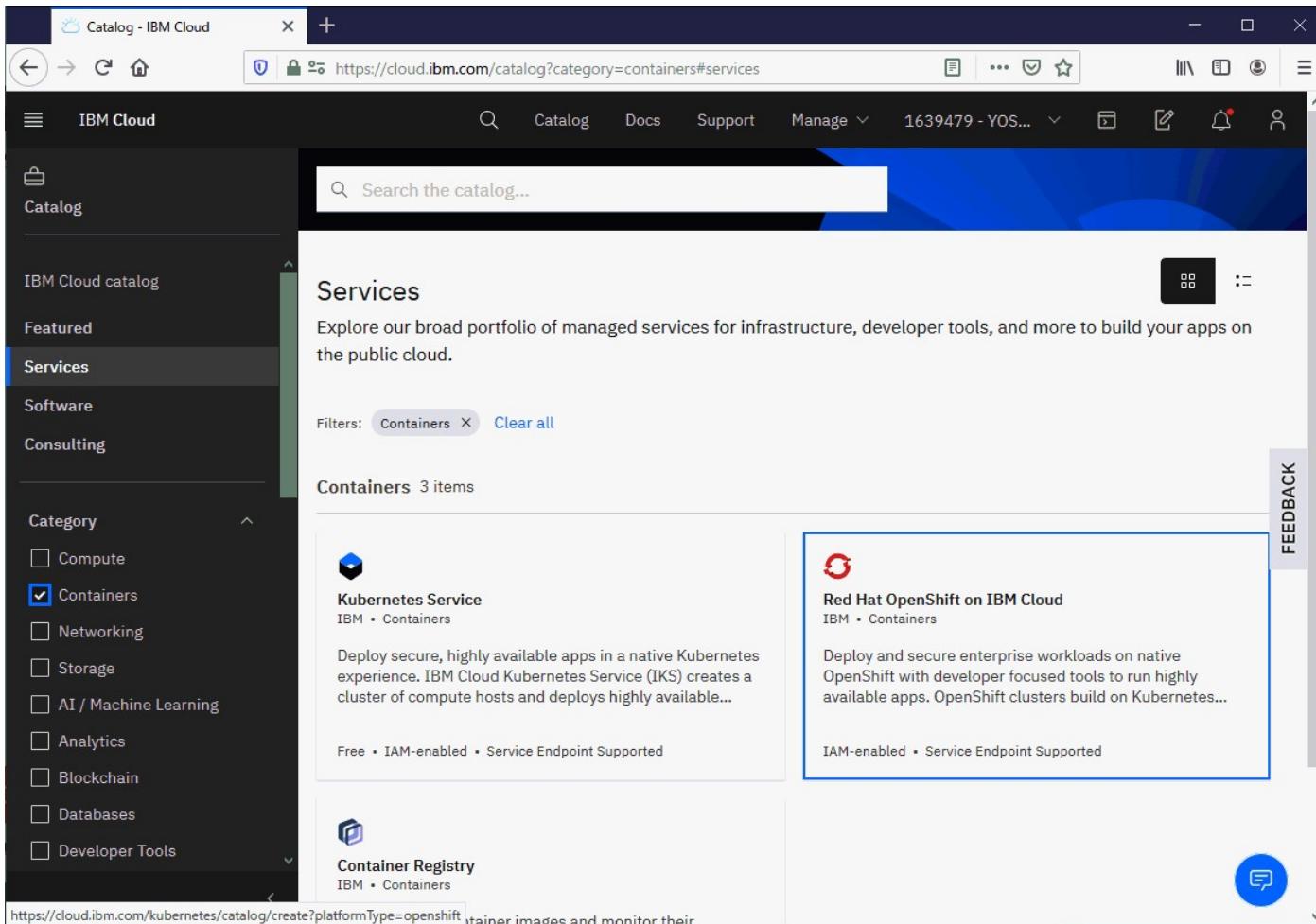
- Introduction of deployment procedure of Watson Discovery on managed OpenShift v4.3 with Cloud Pak for Data v3.0.1 in IBM Cloud
- Watson Discovery version is v2.1.3 (2020 June GA)

NOTE: This is currently only for evaluation in IBM

Deployment Steps

1. Create Managed OpenShift v4.3 cluster
2. Deploy CP4D v3.0.1
3. Create File Storage for Watson Discovery
4. Gather parameter values
5. Configure OpenShift v4.3
6. Create NFS storage class and provisioner
7. Prepare Watson Discovery v2.1.3 installation files
8. Deploy Watson Discovery v2.1.3
9. Launch Watson Discovery

Select OpenShift in Catalog



The screenshot shows the IBM Cloud Catalog interface. On the left, a sidebar menu includes 'Catalog' under 'IBM Cloud catalog', 'Services' (which is selected and highlighted in blue), 'Software', and 'Consulting'. Below this, a 'Category' section lists various service types with checkboxes: Compute, Containers (which is checked), Networking, Storage, AI / Machine Learning, Analytics, Blockchain, Databases, and Developer Tools. The main content area is titled 'Services' and contains a search bar. A filter bar at the top says 'Containers' with a 'Clear all' button. Below this, a section titled 'Containers 3 items' lists three services: 'Kubernetes Service' (selected by a checkbox), 'Red Hat OpenShift on IBM Cloud' (which is highlighted with a blue border), and 'Container Registry'. The 'Red Hat OpenShift on IBM Cloud' card includes a description, a 'Free' status, and tags like 'IAM-enabled' and 'Service Endpoint Supported'. At the bottom of the page, there is a URL: <https://cloud.ibm.com/kubernetes/catalog/create?platformType=openshift>.

1. Login to IBM Cloud
2. Click Catalog and find OpenShift
3. Click “Red Hat OpenShift on IBM Cloud” tile

Create OpenShift cluster (1 of 5)

The screenshot shows the 'Red Hat OpenShift Cluster' creation page on the IBM Cloud platform. The top navigation bar includes 'Catalog', 'Docs', 'Support', and 'Manage'. The main content area is titled 'Red Hat OpenShift Cluster' with tabs for 'Create' and 'About'. Under 'Orchestration service', it shows 'OpenShift' selected (with a checked checkbox) and '4.3.23 (Latest, Default)' listed. In the 'OCP entitlement' section, there is a dropdown menu with 'Apply my Cloud Pak OCP entitlement to this' selected. The right side displays a 'Summary' table with the following details:

OpenShift cluster	
9 Worker nodes	\$2.42 / hr b3c.4x16 - 4 vCPUs 16GB RAM
1 Multizone load balancer	\$0.02 / hr Multizone clusters require a cross-zone load balancer.
IP allocation	
9 OCP license fee	\$3,600.00 / month This fee is not prorated, and is charged in 30-day increments per 4 vCPU. The worker pool can reuse the license of its deleted worker nodes, but deleted clusters incur the cost of the entire monthly.
Total monthly cost* \$1,757.52 / month estimated	

Below the summary, there is a note about bandwidth charges and a link to learn more. A note also states that actual monthly total will vary with tiered pricing for hourly worker nodes and the 30-day fixed OCP license fee. At the bottom are 'Create' and 'Add to estimate' buttons.

1. Select OpenShift 4.3.23 (or newer 4.3.x)
2. Select OCP entitlement

Create OpenShift cluster (2 of 5)

The screenshot shows the IBM Cloud Kubernetes Catalog interface for creating an OpenShift cluster. The left sidebar lists "Infrastructure" options: "Classic" (selected) and "VPC". The main panel is titled "Location" and shows configuration for "Resource group" (set to "default"), "Geography" (set to "North America"), "Availability" (set to "Single zone"), and "Worker zone" (set to "San Jose 03"). The right panel displays the "Summary" of the cluster configuration, including:

- OpenShift cluster**:
 - 3 Worker nodes: b3c.4x16 - 4 vCPUs 16GB RAM
 - IP allocation
- OCP license fee**: \$1,200.00 / month

A note states: "This fee is not prorated, and is charged in 30-day increments per 4 vCPU. The worker pool can reuse the license of its deleted worker nodes, but deleted clusters incur the cost of the entire monthly license."

The total monthly cost is listed as \$1,781.04 / month (estimated). A note at the bottom indicates: "Additional charges for bandwidth might apply. Learn more." and "Actual monthly total will vary with tiered pricing for the hourly worker nodes and the 30-day fixed OCP license fee."

At the bottom are two buttons: "Create" (in blue) and "Add to estimate".

1. Select “Classic” in Infrastructure
2. Select preferred geo in “Geography”
3. Select “Single Zone” in “Availability”
4. Select preffred zone in “Worker zone”

NOTE: You will need to select same zone in same Geography for CP4D and File Storage.

You may be able to choose “VPC” instead of “Classic”. (I have not tried yet.)

Create OpenShift cluster (3 of 5)

The screenshot shows the IBM Cloud catalog interface for creating an OpenShift cluster. On the left, a sidebar displays options for 'Worker pool', 'Infrastructure per node', and 'Resource details'. The 'Worker pool' section is expanded, showing three available flavors:

- 16 vCPUs 32GB RAM**: Virtual - shared, c3c.16x32, RHEL, 25GB SSD primary disk, 100GB SSD secondary disk, 1Gbps network speed, \$0.72 / hr.
- 16 vCPUs 16GB RAM**: Virtual - dedicated, c3c.16x16, RHEL, 25GB SSD primary disk, 100GB SSD secondary disk, 1Gbps network speed, \$0.77 / hr.
- 16 vCPUs 64GB RAM**: Virtual - shared, b3c.16x64, RHEL, 25GB SSD primary disk, 100GB SSD secondary disk, 1Gbps network speed, \$0.88 / hr.

The third flavor, '16 vCPUs 64GB RAM', is highlighted with a blue border and a checked checkbox icon. At the bottom of the catalog, there is a 'Show remaining (10)' link and a 'Done' button.

1. Click “Change flavor” in Worker pool
2. Select “16 vCPUs 64GB RAM Virtual – shared”
3. Click “Done” blue button

Create OpenShift cluster (4 of 5)

Red Hat OpenShift Cluster

IBM Cloud

Worker pool

Set up a worker pool with the flavor and number of worker nodes that you want to run your first workload. At any time later, you can add more worker pools with different flavors, or resize your worker pools to fit the resource needs of your workloads.

Virtual - shared, RHEL

16 vCPUs 64 GB Memory \$0.95 / hr Cost

Worker nodes per data center: 3
x 1 zone = 3 workers total

Change flavor

Encrypt local disk: Off

Infrastructure permissions checker: Permission requirements and suggestions satisfied

Resource details: Cluster name mycluster-sjc03-b3c.16x64

Summary

OpenShift cluster

3 Worker nodes \$2.85 / hr
b3c.16x64 - 16 vCPUs 64GB RAM

IP allocation

12 OCP license fee \$4,800.00 / month

This fee is not prorated, and is charged in 30-day increments per 4 vCPU. The worker pool can reuse the license of its deleted worker nodes, but deleted clusters incur the cost of the entire monthly license.

Total monthly cost* \$6,852.00 / month estimated

Additional charges for bandwidth might apply.
[Learn more.](#)

*Actual monthly total will vary with [tiered pricing](#) for the hourly worker nodes and the 30-day fixed OCP license fee.

Create

Add to estimate

1. (Optional) Set “Encrypt local disk” off
2. Set number of “Worker nodes”. “3 nodes” is default.

NOTE: If you deploy only Watson Discovery ad “Development” deployment, 3 worker node is OK. If you are going to install additional CP4D services and/or Watson services, you may need more worker nodes.

Create OpenShift cluster (5 of 5)

The screenshot shows the IBM Cloud interface for creating an OpenShift cluster. On the left, there's a summary of resources: 16 vCPUs, 64 GB Memory, and a cost of \$0.95 / hr. Below this, there's an option to 'Change flavor' and a toggle for 'Encrypt local disk' which is set to 'Off'. Under 'Infrastructure permissions checker', it says 'Permission requirements and suggestions satisfied'. In the 'Resource details' section, the 'Cluster name' is set to 'mycluster'. There are also 'Tags' and an 'Examples' field containing 'env:dev, version-1'. On the right, the 'Summary' panel provides detailed information: 3 Worker nodes at \$2.85 / hr, b3c.16x64 - 16 vCPUs 64GB RAM, IP allocation, and an OCP license fee of \$4,800.00 / month. It notes that this fee is not prorated and is charged in 30-day increments per 4 vCPU. The total monthly cost is estimated at \$6,852.00 / month. At the bottom, there are 'Create' and 'Add to estimate' buttons.

1. Set preferred name in “Cluster name”
2. Click “Create” button at right-bottom.

OpenShift cluster creation has started

The screenshot shows the IBM Cloud interface for creating an OpenShift cluster named 'mycluster'. The status bar at the top indicates 'Preparing master, workers...'. The main content area is titled 'Access' and contains instructions for setting up CLI tools. It includes a PowerShell command to download and install tools, and a link to download the OpenShift CLI (oc). Below this, there are instructions for gaining access after deployment, including a 'OpenShift web console' button and a terminal window showing the command 'oc version'. A note at the bottom suggests other login methods like the CLI or automation.

mycluster Cluster - IBM Cloud X +

Clusters / mycluster Preparing master, workers... Add tags ↗

OpenShift web console Actions...

Access Overview Worker Nodes Worker Pools Add-ons DevOps New

Before your cluster provisions, set up your CLI tools

- Run this command with your PowerShell to download and install a few CLI tools and plugins.

```
Set-ExecutionPolicy Unrestricted; iex(New-Object Net.WebClient).DownloadString('https://mirror.openshift.com/pub/openshift-v4/clients/ocp/latest/install.ps1')
```
- Download the OpenShift CLI (oc) that matches your local operating system and cluster version. For information about how to install the CLI, [see the docs](#).

After your cluster provisions, gain access

- When your cluster is fully deployed, log in to it with your IBMid by using one of the following methods:
 - Browse to the OpenShift console by using the button below. From the dropdown menu in the upper right of the page, click Copy Login Command. Paste the copied command in your local terminal.
 - Browse to the [oauth token request page](#). Follow the instructions on the page.
- Verify you can communicate with your cluster.
oc version

For other ways to log in to the cluster, such as from the CLI or for automation purposes, [see the docs](#).

1. Wait until creation completes

OpenShift cluster is now ready for use

The screenshot shows the IBM Cloud interface for managing clusters. The top navigation bar includes links for Catalog, Docs, Support, Manage, and Actions. The main content area displays information for the 'mycluster' cluster, which is currently in a 'Normal' state. A large blue button labeled 'OpenShift web console' is prominently displayed. Below this, there are two sections: 'Access' and 'After your cluster provisions, gain access'. The 'Access' section contains instructions for setting up CLI tools, including a PowerShell command to download and install them. The 'After your cluster provisions, gain access' section provides instructions for logging in using an IBMid or the OpenShift web console, and includes a terminal command 'oc version'.

1. After cluster is ready ("Normal"), launch OpenShift web console. Click "OpenShift web console" blue button.

NOTE: You may need to wait for a while prior to push "OpenShift web console" button.

OpenShift web console

Dashboards - Red Hat OpenShift Container Platform

https://console-openshift-console.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaf9fc

Administrator

Home

Dashboards

Projects

Search

Explore

Events

Operators

Workloads

Networking

Storage

Builds

Monitoring

Alerting

Metrics

in a timely fashion when important failures occur. Check the OpenShift documentation to learn how to configure notifications with Alertmanager.

Cluster Utilization

1Hour

17:05 17:10 17:15 17:20

CPU

46.83 available 1.17 of 48

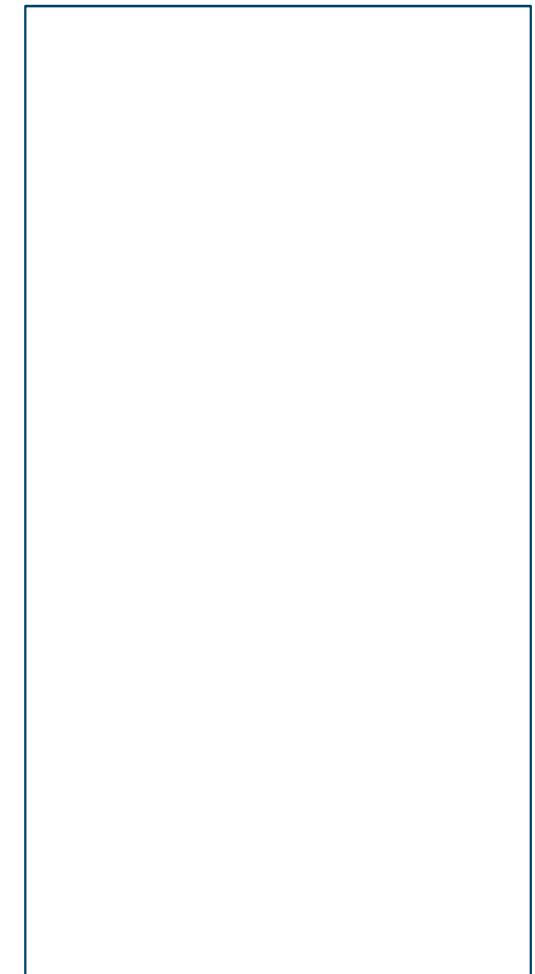
Memory

177.3 GiB available 10.88 GiB of 188.2 GiB

Filesystem

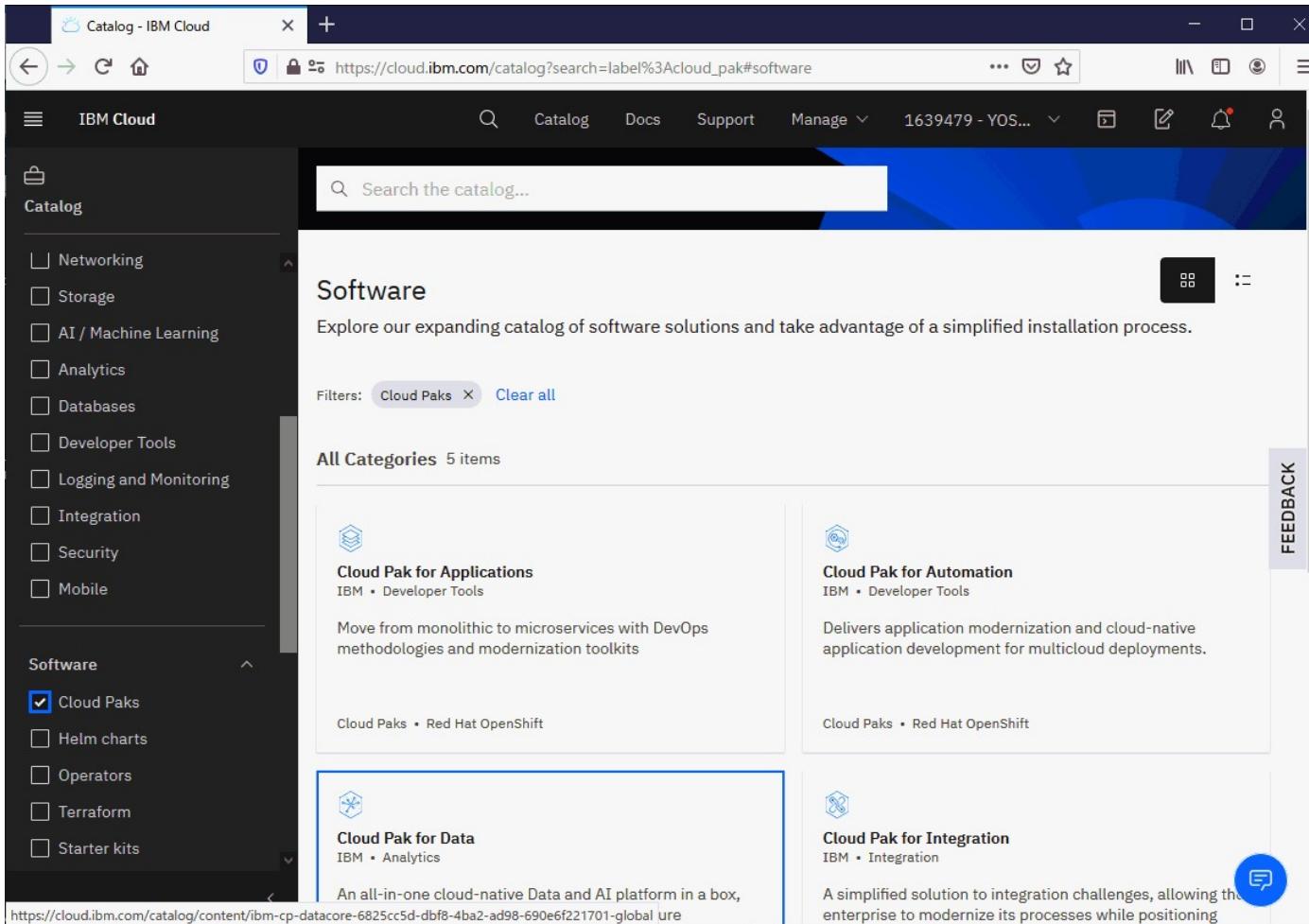
1.15 TiB available 62.99 GiB of 1.21 TiB

The screenshot shows the Red Hat OpenShift Container Platform web console interface. The left sidebar contains navigation links for Home, Dashboards, Projects, Search, Explore, Events, Operators, Workloads, Networking, Storage, Builds, Monitoring, Alerting, and Metrics. The main content area displays a "Cluster Utilization" dashboard with four cards: CPU, Memory, and Filesystem, each showing current usage and total capacity. A top banner provides instructions for configuring notifications with Alertmanager. The URL in the browser bar is https://console-openshift-console.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaf9fc.



2. Deploy CP4D v3.0.1

Deploy Cloud Pak for Data (1 of 5)



1. Click “Catalog”
2. Click “Software” in left menu
3. Check on “Cloud Paks” in “Software”
4. Find “Cloud Pak for Data” Tile and click it

Deploy Cloud Pak for Data (2 of 5)

The screenshot shows the IBM Cloud Catalog interface. The URL in the address bar is <https://cloud.ibm.com/catalog/content/ibm-cp-datacore-6825cc5d-dbf8-4ba2-ad98-1639479-YOS...>. The main page displays the "Cloud Pak for Data" product details. The "Summary" section includes the following information:

- Cloud Pak for Data**
- Installation environment: Red Hat OpenShift
- Red Hat OpenShift cluster: mycluster-sjc04-b3c.16x64 (us-south)
- Project: zen
- Workspace: ibm-cp-datacore-07-03-2020
- Resource group: default

The "IBM Passport Advantage" section provides details about the license:

- Name: IBM Cloud Pak for Data Enterprise Edition per Virtual Processor Core License + SW Subscription & Support 12 Months
- Owner ID: IBMid-060000HVYV
- Part number: D1YGZLL
- Effective dates: 03/22/2020 - 12/31/9999

A yellow warning box states: "Preinstallation required: You must run the preinstallation script on mycluster-sjc04-". Below it is a checkbox for accepting license agreements:

I have read and agree to the following license agreements:
Apache 2.0
Cloud Pak for Data License

A large blue "Install" button is at the bottom right.

1. Confirm your created managed OpenShift cluster is shown as “Red Hat OpenShift cluster”
2. Type “zen” in “Project”

NOTE: You can type preferred project name as CP4D namespace. However, in this slide document, “zen” is assumed as namespace for CP4D and Watson Discovery. In case if you change “zen” to other, you can replace all other “zen” in this slide document.

Deploy Cloud Pak for Data (3 of 5)

The screenshot shows the IBM Cloud Catalog interface for deploying Cloud Pak for Data. The URL is https://cloud.ibm.com/catalog/content/ibm-cp-datacore-6825cc5d-dbf8-4ba2-ad98-
The main area displays a command-line interface (CLI) command: `oc create sa cpdinstall -n kube-system`. Below this, a yellow warning box states: "Preinstallation required: You must run the preinstallation script on mycluster-sjc04-b3c.16x64 (us-south) or [refresh](#) to check the preinstallation script status." Two buttons are visible: "Share link" and "Run script".

On the right side, there is a "Summary" panel containing the following information:

- Cloud Pak for Data**
 - Installation environment: Red Hat OpenShift
 - Red Hat OpenShift cluster: mycluster-sjc04-b3c.16x64 (us-south)
 - Project: zen
 - Workspace: ibm-cp-datacore-07-03-2020
 - Resource group: default
- IBM Passport Advantage**
 - Name: IBM Cloud Pak for Data Enterprise Edition per Virtual Processor Core License + SW Subscription & Support 12 Months
 - Owner ID: IBMid-060000HVY
 - Part number: D1YGZLL
 - Effective dates: 03/22/2020 - 12/31/9999

A yellow warning box at the bottom left of the summary panel states: "Preinstallation required: You must run the preinstallation script on mycluster-sjc04-b3c.16x64 (us-south) or [refresh](#) to check the preinstallation script status." A checkbox labeled "I have read and agree to the following license agreements:" is present, with links to "Apache 2.0" and "Cloud Pak for Data License". A large "Install" button is at the bottom.

1. Select preferred storageclass in "Value". Here, "ibmc-file-gold-gid" is selected
2. Click "Run script" button to expand your created OpenShift cluster resources.

Deploy Cloud Pak for Data (4 of 5)

Cloud Pak for Data - IBM Cloud X +

IBM Cloud Catalog Docs Support Manage 1639479 - YOS... 🔍 ⚙️ 🎯

oc create sa cpdinstall -n kube-system

Show more ▾

i Preinstallation in progress: The script is running on mycluster-sjc04-b3c.16x64 (us-south). View the [logs](#) to verify that the script is running successfully.

Share link Running script...

Set the deployment values

Parameters without default values
Enter the required value for each parameter.

Parameter	Description	Value
storageclass	Choose ibmc-file-retain-gold-gid storage class if you want to retain the data, ibmc-file-gold-gid storage class if you do not want to retain data.	ibmc-file-gold-gid ▾

Feedback

Cloud Pak for Data

Installation environment: Red Hat OpenShift
Red Hat OpenShift cluster: mycluster-sjc04-b3c.16x64 (us-south)
Project: zen
Workspace: ibm-cp-datacore-07-03-2020
Resource group: default

IBM Passport Advantage

Name: IBM Cloud Pak for Data Enterprise Edition per Virtual Processor Core License + SW Subscription & Support 12 Months
Owner ID: IBMid-060000HVYV
Part number: D1YGZLL
Effective dates: 03/22/2020 - 12/31/9999

i Preinstallation in progress: The script is running on mycluster-sjc04-b3c.16x64 (us-south).

I have read and agree to the following license agreements:
Apache 2.0 ▾
Cloud Pak for Data License ▾

Install

Wait until Running Script completes.

Deploy Cloud Pak for Data (5 of 5)

The screenshot shows the IBM Cloud Catalog interface for deploying Cloud Pak for Data. The summary panel on the right provides deployment details:

- Cloud Pak for Data
- Installation environment: Red Hat OpenShift
- Red Hat OpenShift cluster: mycluster-sjc04-b3c.16x64 (us-south)
- Project: zen
- Workspace: ibm-cp-datacore-07-03-2020
- Resource group: default

The IBM Passport Advantage section includes:

- Name: IBM Cloud Pak for Data Enterprise Edition per Virtual Processor Core License + SW Subscription & Support 12 Months
- Owner ID: IBMid-060000HVY
- Part number: D1YGZLL
- Effective dates: 03/22/2020 - 12/31/9999

The parameters section shows:

Parameter	Description	Value
storageclass	Choose ibmc-file-retain-gold-gid storage class if you want to retain the data, ibmc-file-gold-gid storage class if you do not want to retain data.	ibmc-file-gold-gid

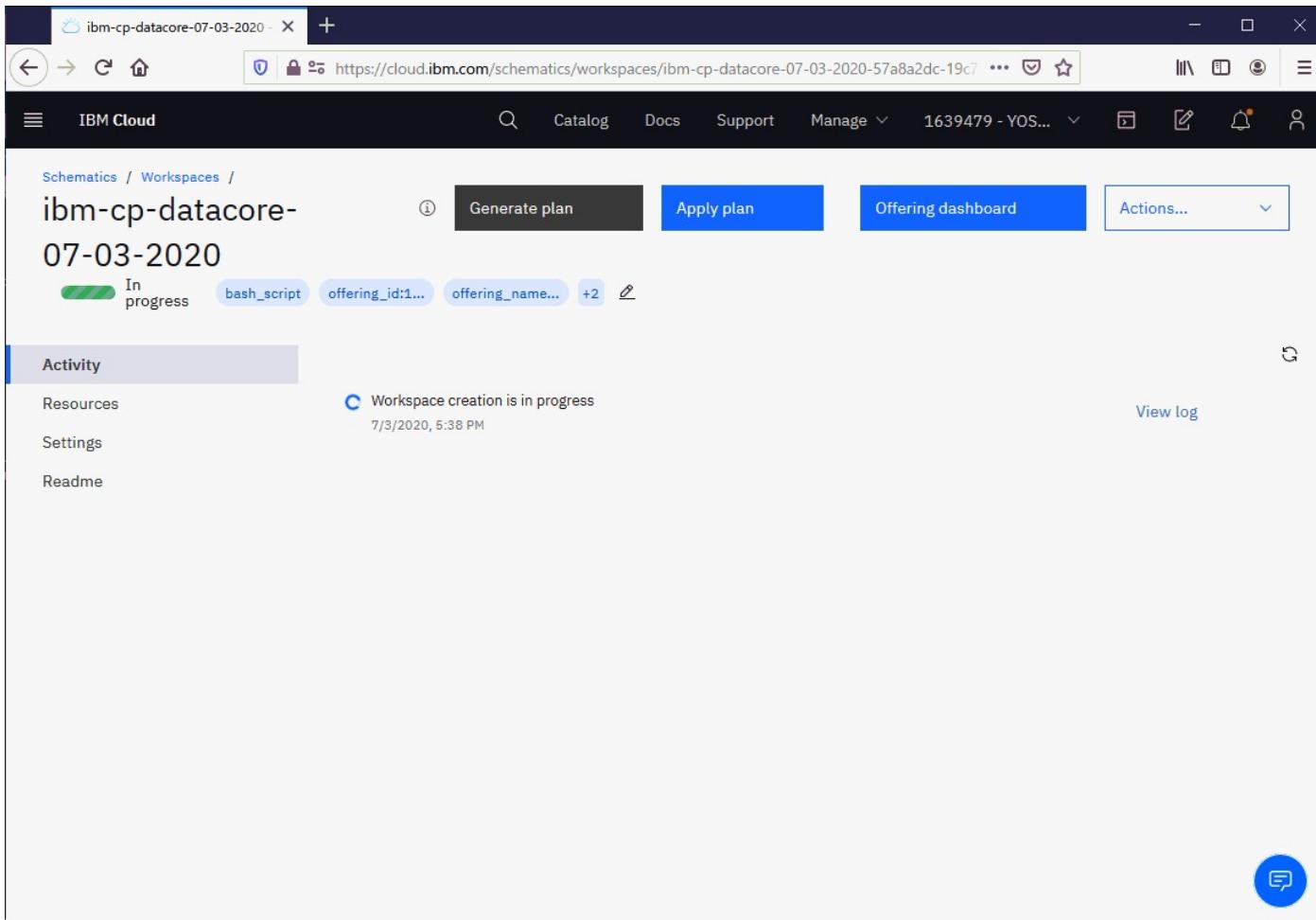
The parameters with default values section shows:

Parameter	Description	Value
aiopenscale	Deploy Watson Open Scale. the default value is false.	false

A blue 'Install' button is located at the bottom right of the summary panel.

1. After completion of “Run Script”, you can see “Preinstallation complete”.
2. (Optional) Select additional CP4D services to be deployed with CP4D control plane. Leave “false” if only control plane (lite) is needed. (More cluster resources may be required for adding the services)
3. Check “I have read and agree to the....” check box.
4. Click “Install” blue button at right-bottom.

CP4D deployment has started

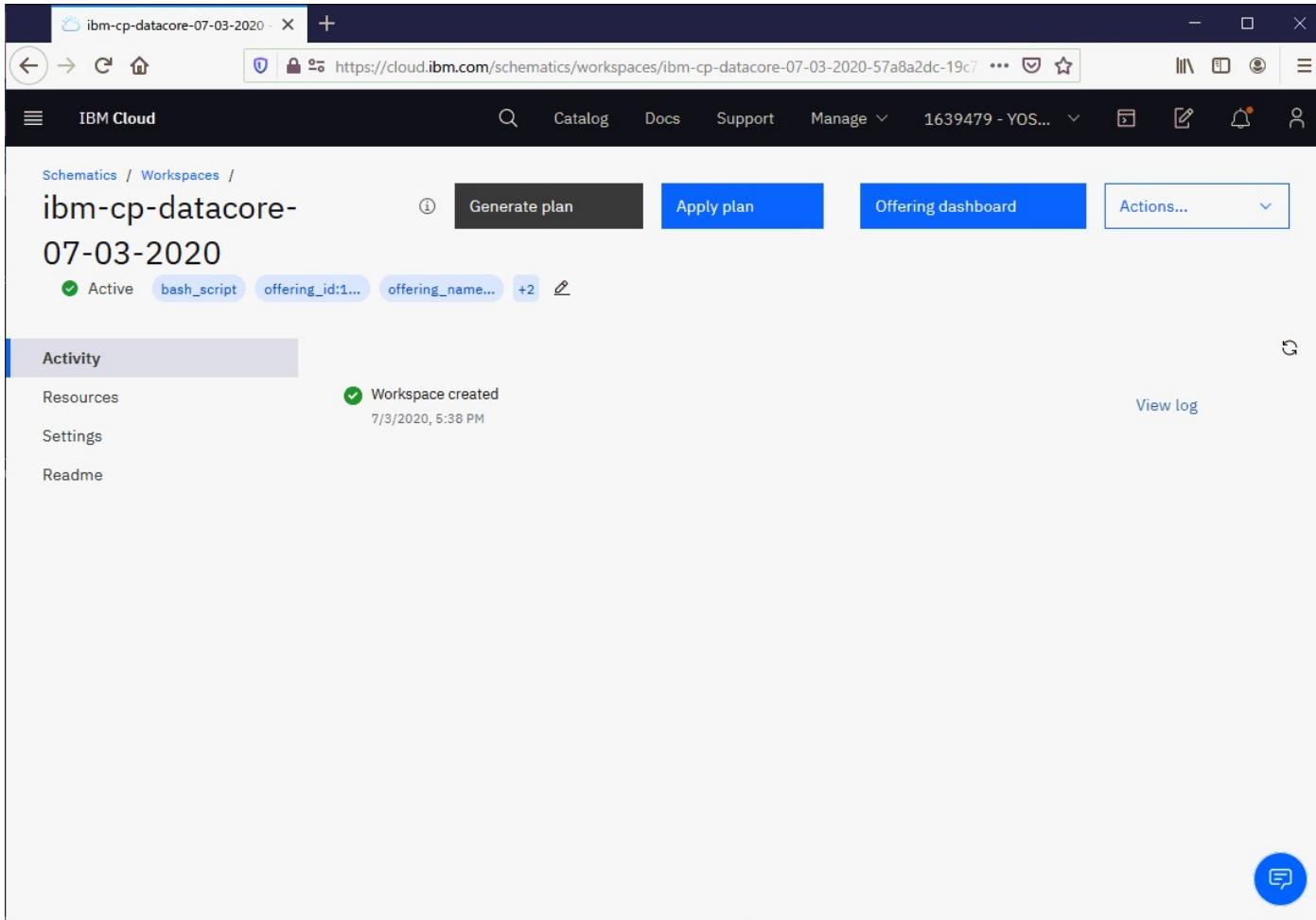


1. Wait until “In progress” becomes “Active”.

NOTE: By some unknown reason, this deployment sometimes fails. If failed, try to re-run the plan by clicking “Apply plan” blue button.

However, if you will still see problems to deploy CP4D, you may need to open a ticket to resolve deployment issue.

CP4D is now ready for use

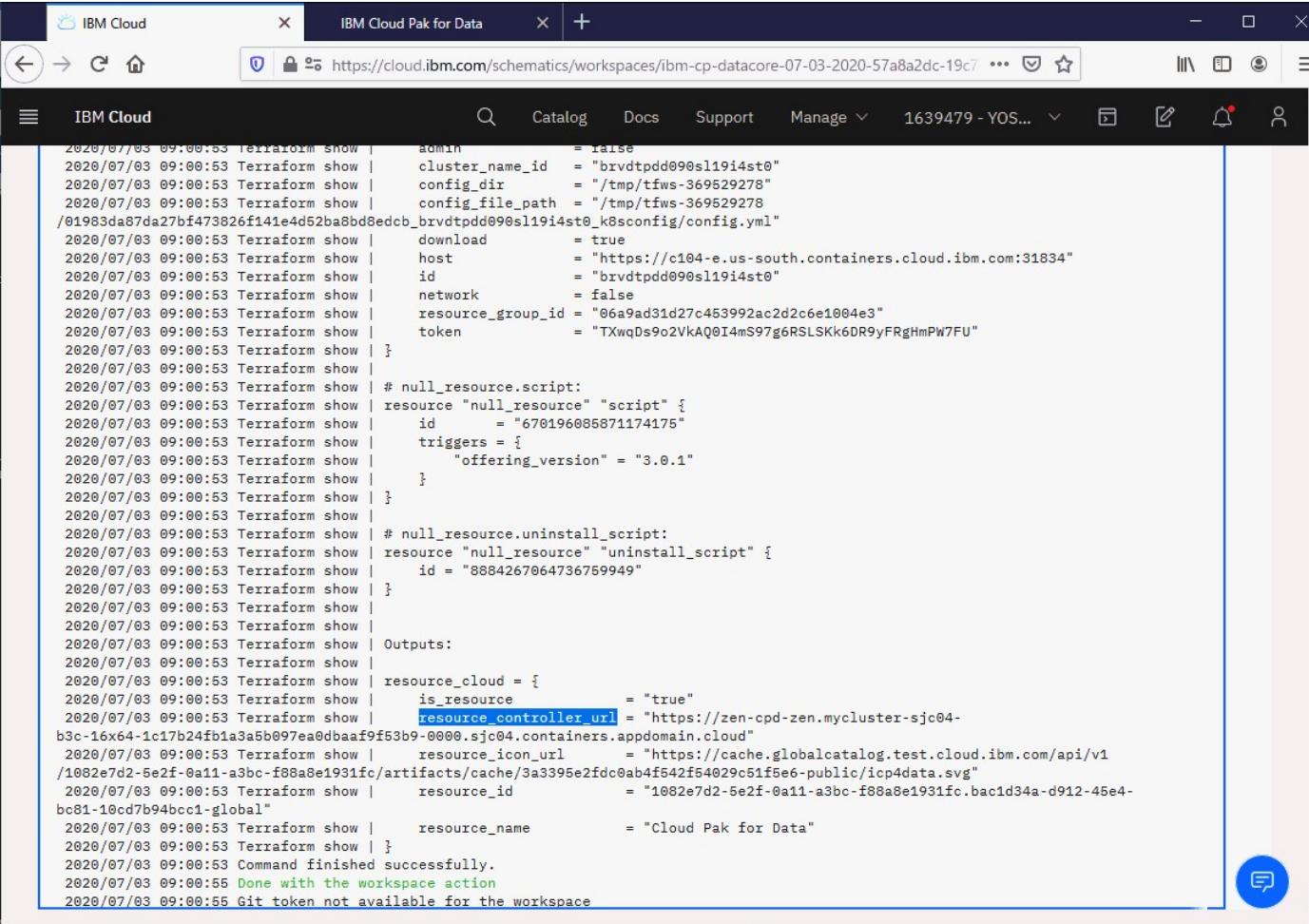


NOTE: Highly recommend to check final status in “View log” link in left middle of screen.

Check “0020-core module is “Ready” status in the log.

If not, you may need to rerun by clicking “Apply Plan” blue button. With luck, rerun may succeed to deploy CP4D.

Launch CP4D web console



IBM Cloud IBM Cloud Pak for Data +

https://cloud.ibm.com/schemas/workspaces/ibm-cp-datacore-07-03-2020-57a8a2dc-19c7

IBM Cloud Catalog Docs Support Manage 1639479 - YOS...

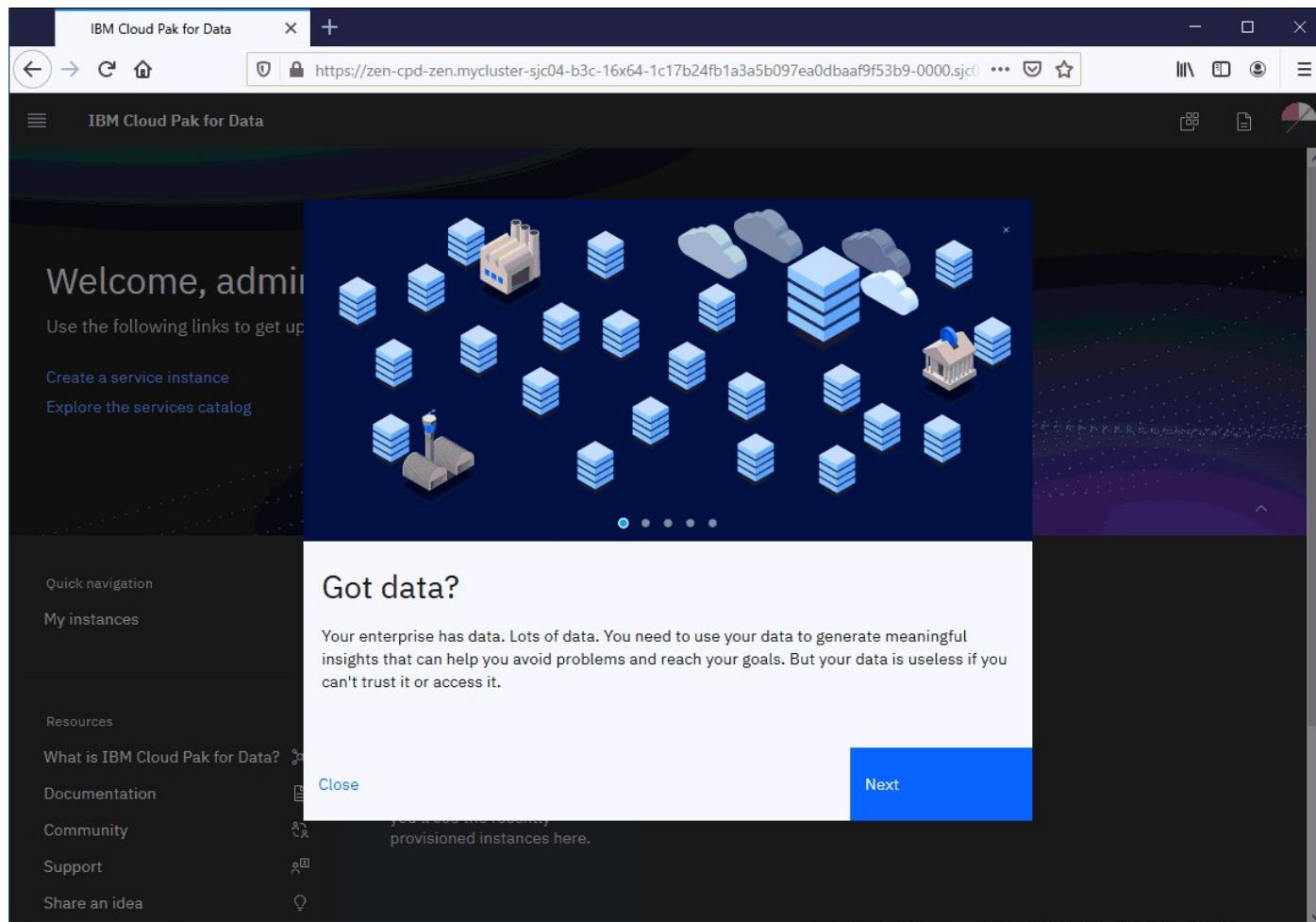
```
2020/07/03 09:00:53 Terraform show | admin = false
2020/07/03 09:00:53 Terraform show | cluster_name_id = "brvdtppd090s19i4st0"
2020/07/03 09:00:53 Terraform show | config_dir = "/tmp/tfws-369529278"
2020/07/03 09:00:53 Terraform show | config_file_path = "/tmp/tfws-369529278
/01983da87da27bf473826f141e4d52ba8bd8edcb_brvdtppd090s19i4st0_k8sconfig/config.yml"
2020/07/03 09:00:53 Terraform show | download = true
2020/07/03 09:00:53 Terraform show | host = "https://c104-e.us-south.containers.cloud.ibm.com:31834"
2020/07/03 09:00:53 Terraform show | id = "brvdtppd090s19i4st0"
2020/07/03 09:00:53 Terraform show | network = false
2020/07/03 09:00:53 Terraform show | resource_group_id = "06a9ad31d27c453992ac2d2c6e1004e3"
2020/07/03 09:00:53 Terraform show | token = "TXwqDs9o2VkJQ0I4mS97g6RSLSKk6DR9yFRgHmPW7FU"
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show | # null_resource.script:
2020/07/03 09:00:53 Terraform show | resource "null_resource" "script" {
2020/07/03 09:00:53 Terraform show |   id = "670196085871174175"
2020/07/03 09:00:53 Terraform show |   triggers = {
2020/07/03 09:00:53 Terraform show |     "offering_version" = "3.0.1"
2020/07/03 09:00:53 Terraform show |   }
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show | # null_resource.uninstall_script:
2020/07/03 09:00:53 Terraform show | resource "null_resource" "uninstall_script" {
2020/07/03 09:00:53 Terraform show |   id = "8884267064736759949"
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show | Outputs:
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Terraform show | resource_cloud = {
2020/07/03 09:00:53 Terraform show |   is_resource = "true"
2020/07/03 09:00:53 Terraform show |   resource_controller_url = "https://zen-cpd-zen.mycluster-sjc04-
b3c-16x4-1c17b24fb1a3a5b097ea0dbaa9ff53b9-0000.sjc04.containers.appdomain.cloud"
2020/07/03 09:00:53 Terraform show |   resource_icon_url = "https://cache.globalcatalog.test.cloud.ibm.com/api/v1/
1082e7d2-5e2f-0a11-a3bc-f88a8e1931fc/artifacts/cache/3a3395e2fdc0ab4f542f54029c51f5e6-public/icp4data.svg"
2020/07/03 09:00:53 Terraform show |   resource_id = "1082e7d2-5e2f-0a11-a3bc-f88a8e1931fc.bac1d34a-d912-45e4-
bc81-10cd7b94bcc1-global"
2020/07/03 09:00:53 Terraform show |   resource_name = "Cloud Pak for Data"
2020/07/03 09:00:53 Terraform show |
2020/07/03 09:00:53 Command finished successfully.
2020/07/03 09:00:55 Done with the workspace action
2020/07/03 09:00:55 Git token not available for the workspace
```

NOTE: If CP4D is installed correctly, the Workspace must show URL of CP4D web console. However, as of July 3, 2020, the URL is not shown in "Resources".

In the case, you can get the URL from log.

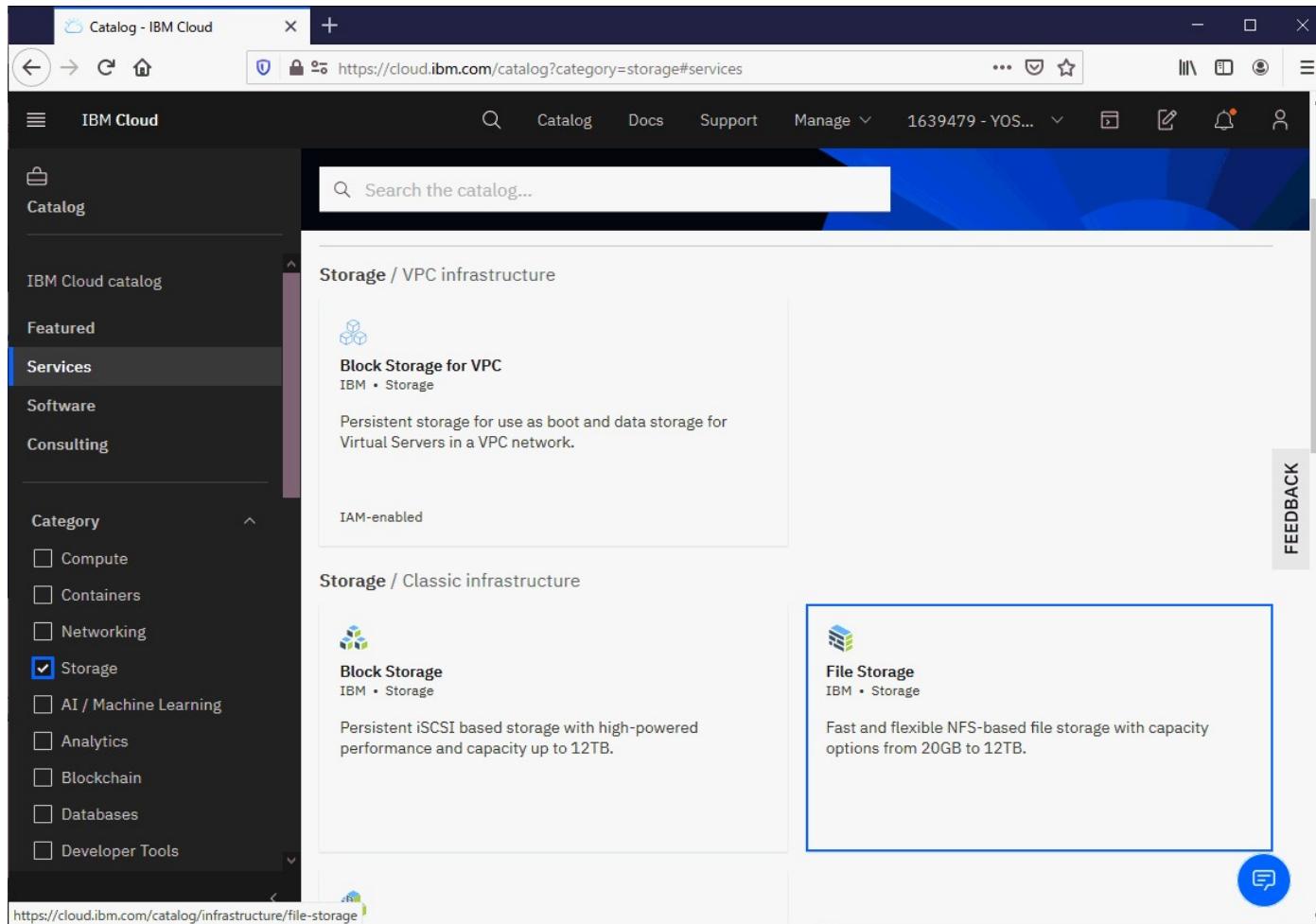
In the View log, scroll down the log to end, and find "resource_controller_url". The URL string starting from https://zen-cpd-zen.* is your CP4D web console URL.

CP4D v3.0.1 welcome page



3. Create File Storage for Watson Discovery

Create File Storage (1 of 5)



NOTE: There may be many ways to add storages for managed OpenShift cluster. This section introduces how you can add File Storage in IBM Cloud as one of example.

1. Click “Catalog” and click “Storage” in Services menu.
2. Find “File Storage” tile and click it

Create File Storage (2 of 5)

The screenshot shows the IBM Cloud Catalog interface. The top navigation bar includes 'File Storage - IBM Cloud' and a search bar with the URL <https://cloud.ibm.com/catalog/infrastructure/file-storage>. The main content area displays the 'File Storage' service details. On the left, there's a sidebar with service metadata: Type (Infrastructure), Provider (IBM), Category (Storage), and Related links (Docs, Terms). The main panel has a 'Summary' section with a large text block about NFS-based storage and flexible options. Below it is a 'Features' section with 'Flexible customization' and 'Durability' subsections. A blue 'Create' button is located at the bottom right of the summary section. A small circular icon with a speech bubble is positioned near the bottom center.

1. Click “Create” blue button at right-bottom.

Create File Storage (3 of 5)

The screenshot shows the 'Order File Storage' interface on the IBM Cloud platform. The top navigation bar includes 'Order File Storage', 'IBM Cloud', and various management links. The main page displays a 'File Storage' section with tabs for 'Create' and 'About'. A large 'Location' section asks to select a location in the same city as the organization's data center for connectivity. It shows dropdowns for Region ('US West'), Location ('San Jose'), and Zone ('SJC03 *'). A note states: '* Denotes updated data center with [improved capabilities](#)'. Below this is a 'Details' section with a 'Billing Method' dropdown set to 'Hourly' and a 'Size' field. On the right, a 'Summary' panel shows a single file storage volume with a cost of \$0.0026 per hour. The summary table includes:

File storage volume	\$0.0026
Location: SJC03 - San Jose	N/A
Storage space: 20 GB	\$0.0026
IOPS: 2 IOPS/GB	\$0.00
Snapshot space: 0 GB	\$0.00
	N/A

The summary also lists 'Total hourly cost*' as \$0.0026 (estimated), noting that price does not include tax. It includes terms and conditions links for the Master Service Agreement and General Data Protection Regulation, and features 'Create' and 'Add to estimate' buttons.

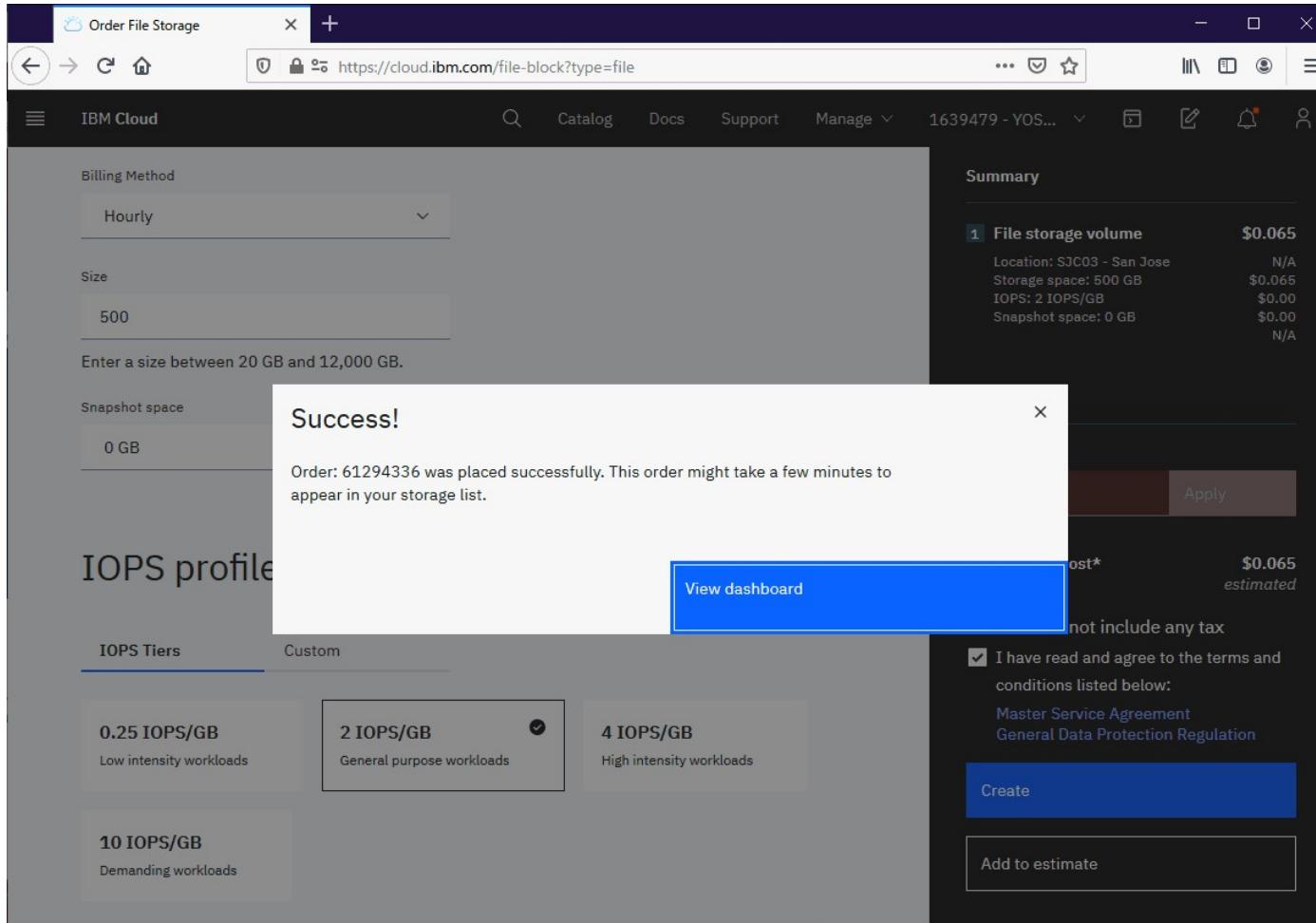
1. Select “Location”. Highly recommend creating File Storage at the same cluster zone where OpenShift cluster for CP4D is deployed.
2. (Optional) Select “Billing Method”.

Create File Storage (4 of 5)

The screenshot shows the 'Order File Storage' interface on the IBM Cloud platform. On the left, there's a sidebar with 'IBM Cloud' navigation and a 'Billing Method' dropdown set to 'Hourly'. Below it, 'Size' is set to '500 GB' with a note: 'Enter a size between 20 GB and 12,000 GB.' Under 'Snapshot space', it's set to '0 GB'. On the right, the 'Summary' section details a 'File storage volume' of 500 GB at a cost of \$0.065 per hour. It includes breakdowns for location, storage space, IOPS, and snapshot space. An 'Apply a code' field with an 'Apply' button is present. Below the summary, the 'Total hourly cost*' is listed as '\$0.065 estimated'. A note states: '* Price does not include any tax'. A checked checkbox says: 'I have read and agree to the terms and conditions listed below: Master Service Agreement General Data Protection Regulation'. At the bottom are 'Create' and 'Add to estimate' buttons.

1. Set Size as GB
2. (Optional) Select "Performance (Custom IOPs)" if you need better performance. (2 IOPS/GB is default.)
3. Check "I have read and agree to the" check box.
4. Click "Create" blue button

Create File Storage (5 of 5)



1. Order is placed. (But, the storage is not ready yet)
2. Click “View dashboard” button.

Authorize hosts for File Storage (1 of 3)

IBM Cloud

https://cloud.ibm.com/classic/storage/file/152839386#/

IBM Cloud

Classic infrastructure / File Storage /

IBM02SEV1639479_23 • Active

Details ▾ Actions ▾

Overview	Share details	Associated shares
Snapshots	Name: IBM02SEV1639479_23	Name: IBM02SEV1639479_23
Authorized hosts	Type: Endurance	Share type: Primary
	IOPS: 1000 IOPS	Status: Active
	Status: Active	
	Encryption: Yes	
	Capacity: 500 GB	
	Usage: 0% 	
	Location: San Jose 3	
	Host name: fsf-sjc0301f-fz.service.softlayer.com	
	Mount point: fsf-sjc0301f-fz.service.softlayer.com:/IBM02SEV1	

1. Select the newly created File Storage in File Storage dashboard. (You may need to wait until the File Storage becomes Active after order.)

Authorize hosts for File Storage (2 of 3)

The screenshot shows the 'Authorize hosts' dialog box from the IBM Cloud interface. The dialog has two main sections: 'Available Hosts for IBM02SEV1639479_24' and 'Selected hosts'. In the 'Available Hosts' section, there is a note: 'Select a host type and then choose a host from the dropdown that is available for the volume.' Below this, there are three radio buttons: 'Devices' (selected), 'Subnets', and 'IP Address'. Under 'Device Type', a dropdown menu is set to 'Virtual Server'. The 'Virtual Guest' section contains a list with three items: 'kube-brvdtppd090sl19i4st0-myclustersj-default-000001d4.iks.ibm', 'kube-brvdtppd090sl19i4st0-myclustersj-default-000002ef.iks.ibm', and 'kube-brvdtppd090sl19i4st0-myclustersj-default-000003fd.iks.ibm'. A red box highlights the 'Remove Selected' button. At the bottom are 'Close' and 'Save' buttons.

1. Click “Actions” pull down menu at right-top, and select “Authorize hosts”
2. Select “Devices” radio button.
3. Select “Virtual Server” in “Device Type” list box
4. Select servers in created managed OpenShift cluster in “Virtual Guest” list box.
All servers (Devices) of your managed OpenShift have to be authorized.

Authorize hosts for File Storage (3 of 3)

The screenshot shows the 'Authorize hosts' dialog box from the IBM Cloud File Storage interface. The URL in the browser is <https://cloud.ibm.com/classic/storage/file/152842558#/>. The dialog has two main sections: 'Available Hosts for IBM02SEV1639479_24' and 'Selected hosts'. Under 'Available Hosts', there is a note: 'Select a host type and then choose a host from the dropdown that is available for the volume.' Below this are radio buttons for 'Devices' (selected), 'Subnets', and 'IP Address'. A 'Device Type' dropdown is set to 'Virtual Server'. Under 'Virtual Guest', there is a 'Click to Select' button. The 'Selected hosts' section contains a list of three hosts: 'kube-brvdtppd090sl19i4st0-myclustersj-default', 'kube-brvdtppd090sl19i4st0-myclustersj-default', and 'kube-brvdtppd090sl19i4st0-myclustersj-default'. A 'Remove Selected' button is located below the list. At the bottom right of the dialog are 'Close' and 'Save' buttons.

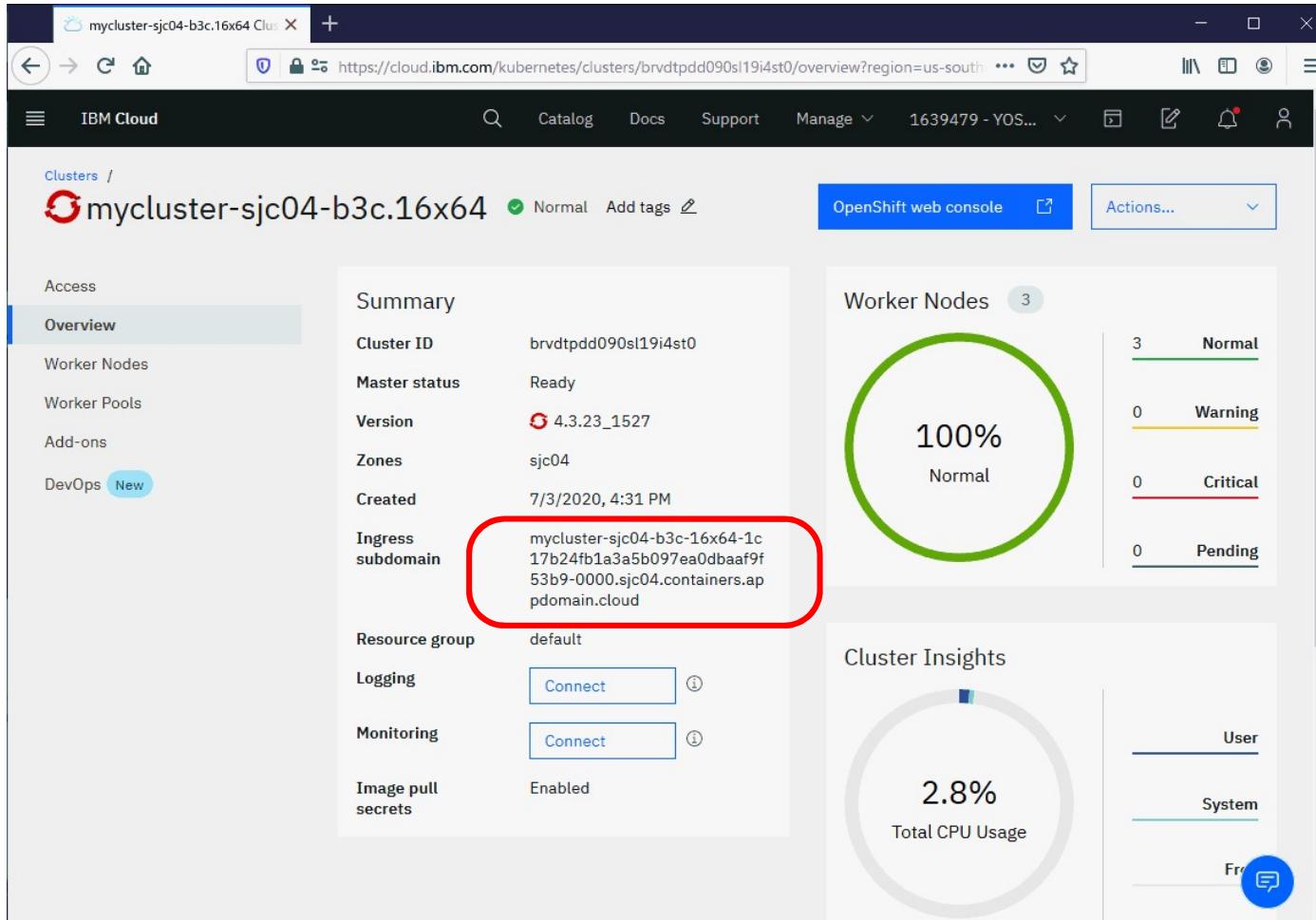
1. Push “Save” blue button at right-bottom.

4. Gather Parameter values

Required Parameters

- CLUSTER_HOST
- IMAGE_REGISTRY
- NFS_HOST & NFS_PATH
- OC_LOGIN
- CPD_KEY

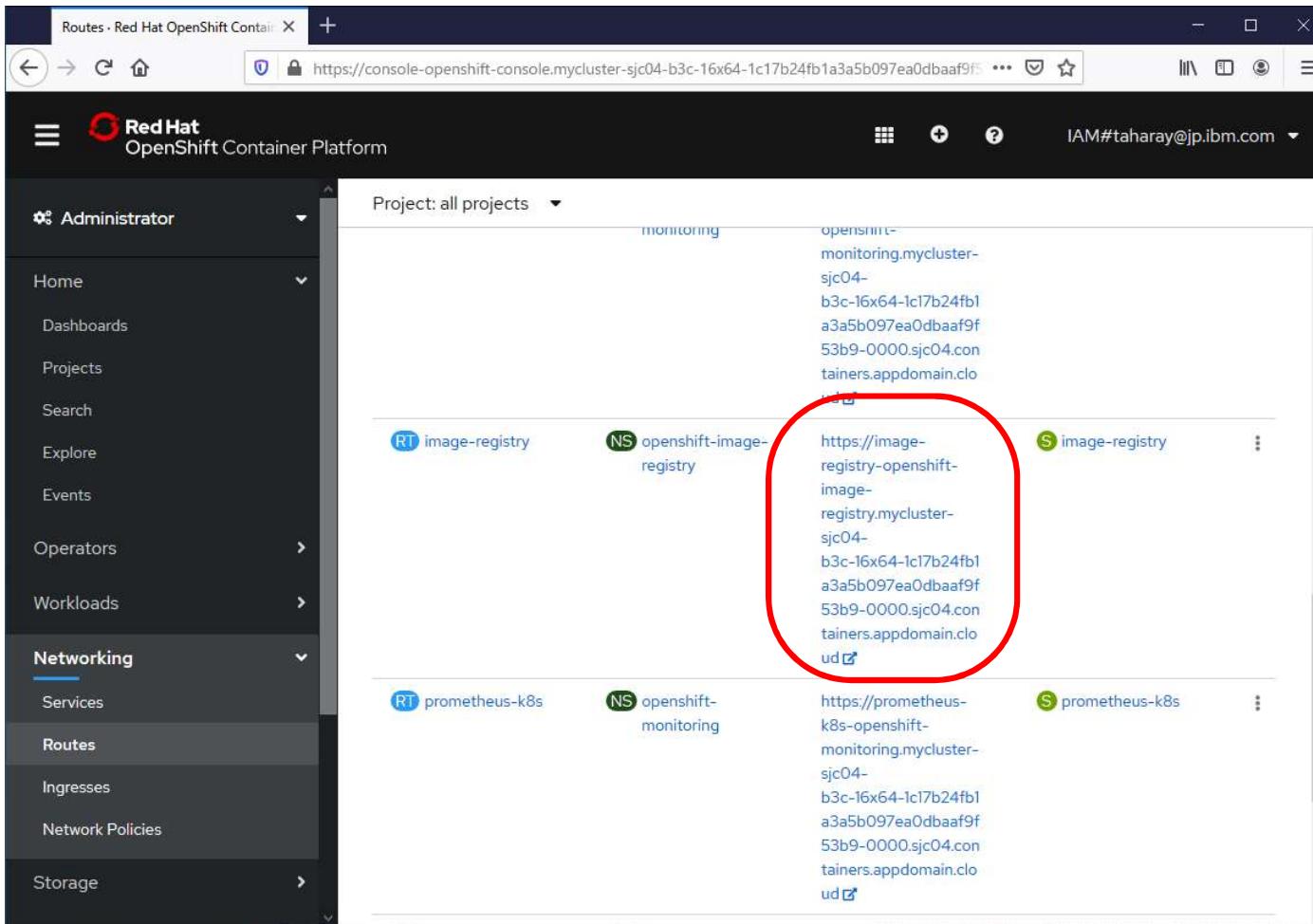
Parameter: CLUSTER_HOST



The screenshot shows the IBM Cloud Kubernetes cluster overview page for a cluster named "mycluster-sjc04-b3c.16x64". The "Overview" tab is selected. A red box highlights the "Ingress subdomain" field, which contains the value "mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaf9f53b9-0000.sjc04.containers.appdomain.cloud". Other fields visible include Cluster ID, Master status, Version, Zones, Created, Resource group, Logging, Monitoring, and Image pull secrets.

1. Value for “Ingress subdomain” is copied as CLUSTER_HOST parameter value

Parameter: IMAGE_REGISTRY (1 of 2)



The screenshot shows the Red Hat OpenShift Container Platform web console. The left sidebar is titled "Administrator" and includes links for Home, Dashboards, Projects, Search, Explore, Events, Operators, Workloads, Networking (which is selected), Services, Routes (which is highlighted in blue), Ingresses, Network Policies, and Storage. The main content area is titled "Project: all projects" and shows a list of routes. One route, "image-registry", is circled in red. The route details are as follows:

Route	Namespace	Location
image-registry	openshift-image-registry	https://image-registry-openshift-image-registry.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaaf9f53b9-0000.sjc04.conainers.appdomain.cloud
prometheus-k8s	openshift-monitoring	https://prometheus-k8s-openshift-monitoring.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaaf9f53b9-0000.sjc04.conainers.appdomain.cloud

1. Open OpenShift web console
2. Click “Networking” menu, and click “Routes” sub menu.
3. Select “all projects” in Project drop down list
4. Find “image-registry”
5. Get the value of “Location” for the “image-registry” route. Remove **“https://”** from the value and set the remained string as IMAGE_REGISTRY

Parameter: NFS_HOST and NFS_PATH

The screenshot shows the 'File Storage' overview for a specific share named 'IBM02SEV1639479_24'. The 'Share details' section includes the following information:

Name	Type	IOPS	Status	Encryption	Capacity	Usage	Location	Host name	Mount point
IBM02SEV1639479_24	Endurance	1000 IOPS	Active	Yes	500 GB	0%	San Jose 4	fsf-sjc0401e-fz.adn.networklayer.com	fsf-sjc0401e-fz.adn.networklayer.com:/IBM02SEV1639479_24/data01

The 'Associated shares' section lists one primary share with the same details.

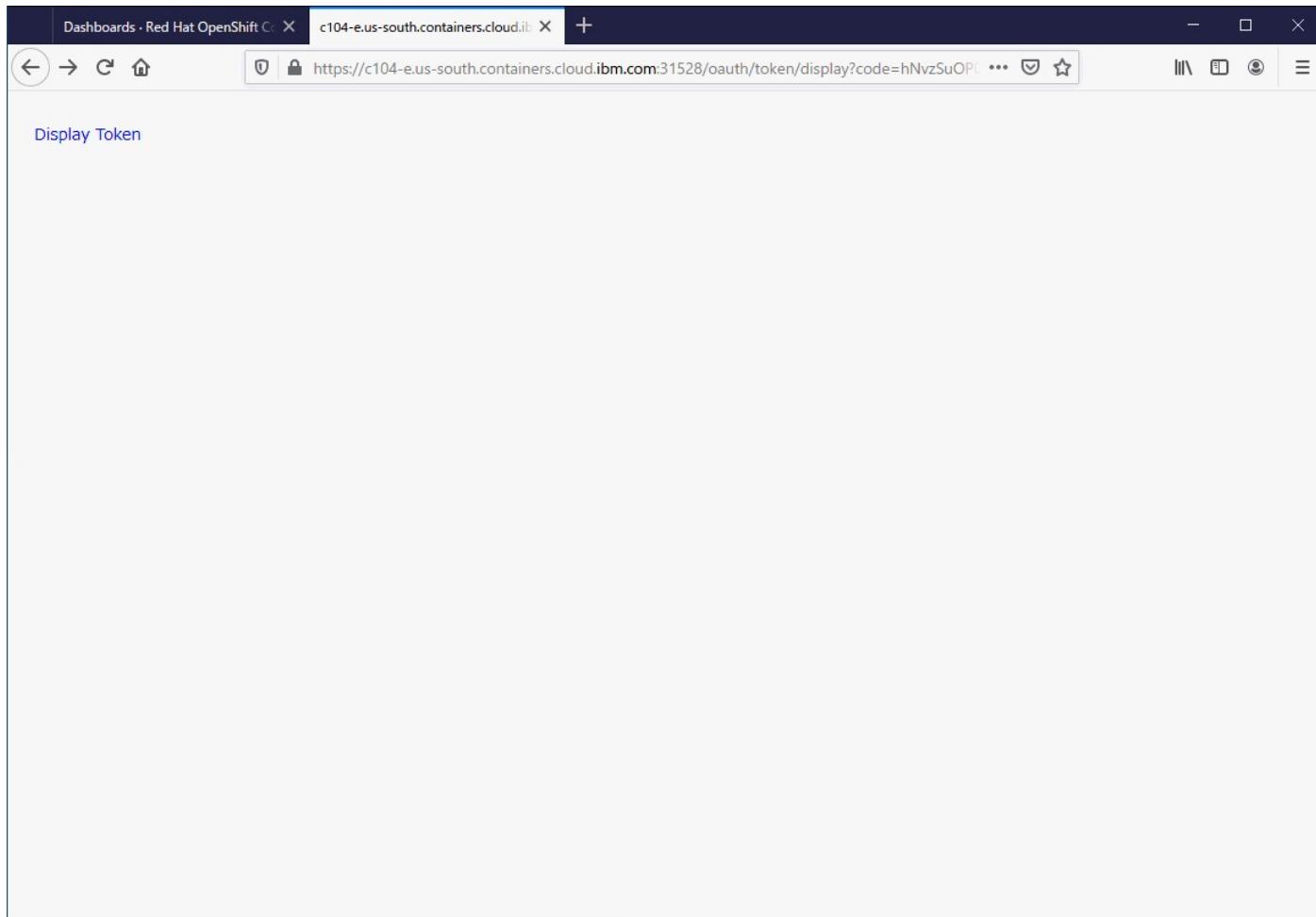
1. Find your create File Storage and open "Overview"
2. Split "Mount point" value for hostname and path.
In the left example, "fsf-sjc...networklayer.com" should be set to **NFS_HOST**, and "/IBM02SEV1639479_24/data01" should be set to **NFS_PATH**

Parameter: OC_LOGIN (1 of 3)

The screenshot shows the Red Hat OpenShift Container Platform web console interface. On the left is a dark sidebar with navigation links like Home, Projects, Search, Explore, Events, Operators, Workloads, Networking, Storage, Builds, Monitoring, and Compute. The main area is titled "Dashboards" and "Overview". At the top right, there is a user account dropdown menu. A red circle highlights the "Copy Login Command" option in this menu.

1. Open OpenShift web console, and click your account at right-top, and pull down menu
2. Select “Copy Login Command”

Parameter: OC_LOGIN (2 of 3)



1. Click “Display Token” to show login command

Parameter: OC_LOGIN (3 of 3)

The screenshot shows a web browser window with the URL <https://c104-e.us-south.containers.cloud.ibm.com:31528/oauth/token/display>. The page displays an API token and provides instructions on how to use it.

Your API token is
[REDACTED]
Log in with this token

```
oc login --token=[REDACTED] --server=https://c104-e.us-south.containers.cloud.ibm.com:31834
```

Use this token directly against the API

```
curl -H "Authorization: Bearer [REDACTED]" "https://c104-e.us-south.containers.cloud.ibm.com:31834/apis/user.openshift.io/v1/users/~"
```

[Request another token](#)

1. Set a string in “Log in with this token” into OC_LOGIN
(OC_LOGIN value must starts from “oc login https://” with hostname and login token for your IBM Cloud account.)

Parameter: CPD_KEY (1 of 2)

The screenshot shows the IBM My IBM dashboard at <https://myibm.ibm.com/dashboard/>. The top navigation bar includes 'My IBM' (selected), 'Profile', and 'Billing'. The right side shows the IBMID: TAHARAY@jp.ibm.com. A 'View catalog' button is visible. The main content area is titled 'Software' and shows '1 Offering'. A tile for 'Container software library' is present, featuring a cloud icon and a 'View library' button. At the bottom, there are links for 'Contact IBM', 'Privacy', 'Terms of use', 'Accessibility', 'Cookie preferences', and a language selector for 'United States - English'. A 'Let's talk' button is also visible.

NOTE: This is for IBM employee only. **Not for customer.**
Licensed customer must have the key for Discovery.

1. Go to <https://myibm.ibm.com> and login by w3 intra userid and password.
2. Find “Container software library” Tile and click “View library”

Parameter: CPD_KEY (2 of 2)

The screenshot shows a web browser window titled "My IBM" with the URL <https://myibm.ibm.com/products-services/containerlibrary>. The page displays a sidebar on the left with options like "Container software library", "Get entitlement key", and "View library". The main content area is titled "Access your container software" and contains a section for "Entitlement key" with the issued date "March 31, 2020". A large text box contains a long token string:

```
eyJhbGciOiJSUzI1NiD9.eyJpc3MiOiJJQk0gTWFya2V0cGxhY2UiLCj0YXQIOjE1ODU2NjQ0MDUsImp0aSI6IjQ0NTMyNzNaMDZlYjRmNzE4YjI3MWNNbzNzNzMu8iYzZm5n0.7D8YnYkgfE3QfVmQKWW9dmnPJA3lr53ADrrt-K4RCgZI
```

. Below this are "Copy key" and "Get new key" buttons. At the bottom, there's a note about adding applications to clusters without Internet connectivity and a "Let's talk" button.

1. Set a token string in "Entitlement key" into CPD_KEY

5. Configure OpenShift v4.3

Set enable defaultRoute for image-registry

```
# You need to login to some Linux server where you can run oc cli and some command remotely
export OCLOGIN=${OC_LOGIN}

${OCLOGIN}
oc patch configs.imageregistry.operator.openshift.io/cluster --type merge -p '{"spec":{"defaultRoute":true}}'
```

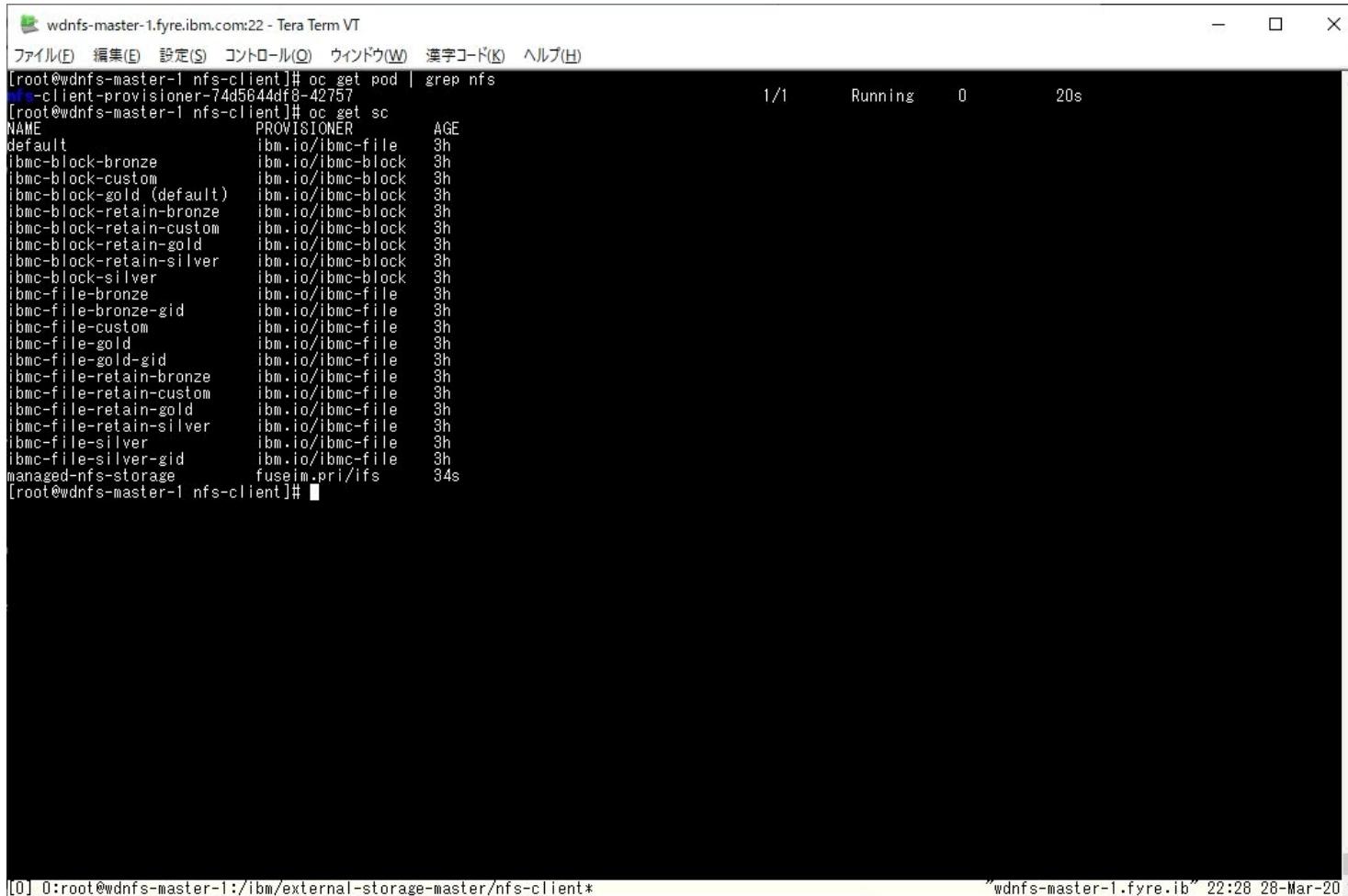
6. Create NFS storage class and provisioner

Create NFS storage class and provisioner

Reference: <https://medium.com/faun/openshift-dynamic-nfs-persistent-volume-using-nfs-client-provisioner-fcbb8c9344e>

```
# You need to login to some Linux server where you can run oc cli and some command remotely
export NFSNS=zen
export NFSHOST=${NFS_HOST}
export NFSPATH=${NFS_PATH}
export OCLOGIN=${OC_LOGIN}
mkdir ~/wd213
cd ~/wd213
curl -L -o kubernetes-incubator.zip https://github.com/kubernetes-incubator/external-storage/archive/master.zip
unzip kubernetes-incubator.zip
cd ~/wd213/external-storage-master/nfs-client
sed -i"" "s/namespace:.*/namespace: $NFSNS/g" ./deploy/rbac.yaml
sed -i"" "s/namespace:.*/namespace: $NFSNS/g" ./deploy/deployment.yaml
sed -i"" "s/value: 10.10.10.60/value: $NFSHOST/g" ./deploy/deployment.yaml
sed -i"" "s/server: 10.10.10.60/server: $NFSHOST/g" ./deploy/deployment.yaml
sed -i"" "s|value: /ifs/kubernetes|value: $NFSPATH|g" ./deploy/deployment.yaml
sed -i"" "s|path: /ifs/kubernetes|path: $NFSPATH|g" ./deploy/deployment.yaml
${OCLOGIN}
oc new-project $NFSNS
oc create -f ./deploy/rbac.yaml
oc adm policy add-scc-to-user hostmount-anyuid system:serviceaccount:$NFSNS:nfs-client-provisioner
oc create -f ./deploy/class.yaml
oc create -f ./deploy/deployment.yaml
```

Confirm NFS storage class and provisioner



The screenshot shows a terminal window titled "wdnfs-master-1.fyre.ibm.com:22 - Tera Term VT". The window displays two command outputs from a root shell:

```
[root@wdnfs-master-1 nfs-client]# oc get pod | grep nfs
nfs-client-provisioner-74d5b44df8-42757
[root@wdnfs-master-1 nfs-client]# oc get sc
NAME           PROVISIONER          AGE
default        ibm.io/ibmc-file   3h
ibmc-block-bronze ibm.io/ibmc-block 3h
ibmc-block-custom ibm.io/ibmc-block 3h
ibmc-block-gold (default) ibm.io/ibmc-block 3h
ibmc-block-retain-bronze ibm.io/ibmc-block 3h
ibmc-block-retain-custom ibm.io/ibmc-block 3h
ibmc-block-retain-gold ibm.io/ibmc-block 3h
ibmc-block-retain-silver ibm.io/ibmc-block 3h
ibmc-block-silver ibm.io/ibmc-block 3h
ibmc-file-bronze ibm.io/ibmc-file 3h
ibmc-file-bronze-gid ibm.io/ibmc-file 3h
ibmc-file-custom ibm.io/ibmc-file 3h
ibmc-file-gold ibm.io/ibmc-file 3h
ibmc-file-gold-gid ibm.io/ibmc-file 3h
ibmc-file-retain-bronze ibm.io/ibmc-file 3h
ibmc-file-retain-custom ibm.io/ibmc-file 3h
ibmc-file-retain-gold ibm.io/ibmc-file 3h
ibmc-file-retain-silver ibm.io/ibmc-file 3h
ibmc-file-silver ibm.io/ibmc-file 3h
ibmc-file-silver-gid ibm.io/ibmc-file 3h
managed-nfs-storage fuseim.pri/ifs 34s
[root@wdnfs-master-1 nfs-client]#
```

The terminal window has a dark background and light-colored text. It includes standard window controls (minimize, maximize, close) at the top right. At the bottom, it shows the session identifier [0], the current directory (0:/root@wdnfs-master-1:/ibm/external-storage-master/nfs-client*), and the timestamp ("wdnfs-master-1.fyre.ib" 22:28 28-Mar-20).

7. Prepare Watson Discovery installation files

Download files

Installation procedure is exactly same as deployment into On-premise servers but all operations have to be done remotely

```
# You need to login to some Linux server where you can run oc cli and docker command remotely.  
export CPDKEY=${CPD_KEY}  
  
# install podman  
yum -y install podman  
  
# download cpd-linux as CP4D installer  
cd ~/wd213  
mkdir ~/wd213/bin  
wget -O ~/wd213/bin/cpd-linux http://icpfs1.svl.ibm.com/zen/cp4d-builds/3.0.1/promoted/installer/latest/cpd-linux  
chmod +x ~/wd213/bin/cpd-linux  
  
# download repo.yaml & override.yaml for Discovery  
wget -O ~/wd213/repo.cp4d301_wd213.yaml http://icpfs1.svl.ibm.com/zen/cp4d-builds/3.0.1/local/components/watson-discovery/2.1.3/repo.yaml  
wget -O ~/wd213/override.wd213.tmpl http://icpfs1.svl.ibm.com/zen/cp4d-builds/3.0.1/local/components/watson-discovery/2.1.3/override.tmpl  
  
sed -i "s/##CPD_USER##/cp/g" ~/wd213/repo.cp4d301_wd213.yaml  
sed -i "s/##CPD_KEY##/$CPDKEY/g" ~/wd213/repo.cp4d301_wd213.yaml
```

8. Deploy Watson Discovery v2.1.3

Deploy Watson Discovery (1 of 4)

Installation procedure is exactly same as deployment into On-premise servers but all operations have to be done remotely

```
# You need to login to some Linux server where you can run oc cli and docker command remotely.  
export OCLOGIN=${OC_LOGIN}  
export IMAGEREGISTRY=${IMAGE_REGISTRY}  
  
cd ~/wd213  
${OCLOGIN}  
podman login -u $(oc whoami) -p $(oc whoami -t) --tls-verify=false ${IMAGEREGISTRY}  
bin/cpd-linux adm --repo ~/wd213/repo.cp4d301_wd213.yaml -a watson-discovery -n zen --apply
```

Deploy Watson Discovery (2 of 4)

Installation procedure is exactly same as deployment into On-premise servers but all operations have to be done remotely

```
# You need to login to some Linux server where you can run oc cli and docker command remotely.  
export API_HOST=${CLUSTER_HOST}  
export API_IP=`oc get node | grep master | awk '{ print $1 }' | head -n 1`  
export PULLSECRET=`oc get secrets --namespace zen --output=jsonpath='{ range .items[*] }{@.metadata.name}{\"\\n\"}{end}' | grep -e "^.+sa-dockercfg"`  
  
sed -i "s/##DEPLOYMENT_TYPE##/Development/g" ~wd213/override.wd213.tmpl  
sed -i "s/##STORAGE_CLASS##/managed-nfs-storage/g" ~wd213/override.wd213.tmpl  
sed -i "s/##API_HOST##/$API_HOST/g" ~wd213/override.wd213.tmpl  
sed -i "s/##API_IP##/$API_IP/g" ~wd213/override.wd213.tmpl  
sed -i "s/##PULL_SECRET##/$PULLSECRET/g" ~wd213/override.wd213.tmpl
```

Deploy Watson Discovery (3 of 4)

Installation procedure is exactly same as deployment into On-premise servers but all operations have to be done remotely

```
# You need to login to some Linux server where you can run oc cli and docker command remotely.
cd ~/wd213
cat >override.disable_networkpolicy.yaml <<EOF
crust:
  networkPolicy:
    create: false
mantle:
  networkPolicy:
    create: false
networkPolicy:
  create: false
EOF
#
$cp -f override.wd213.tmpl override.wd213.yaml
cat override.disable_networkpolicy.yaml >>override.wd213.yaml
```

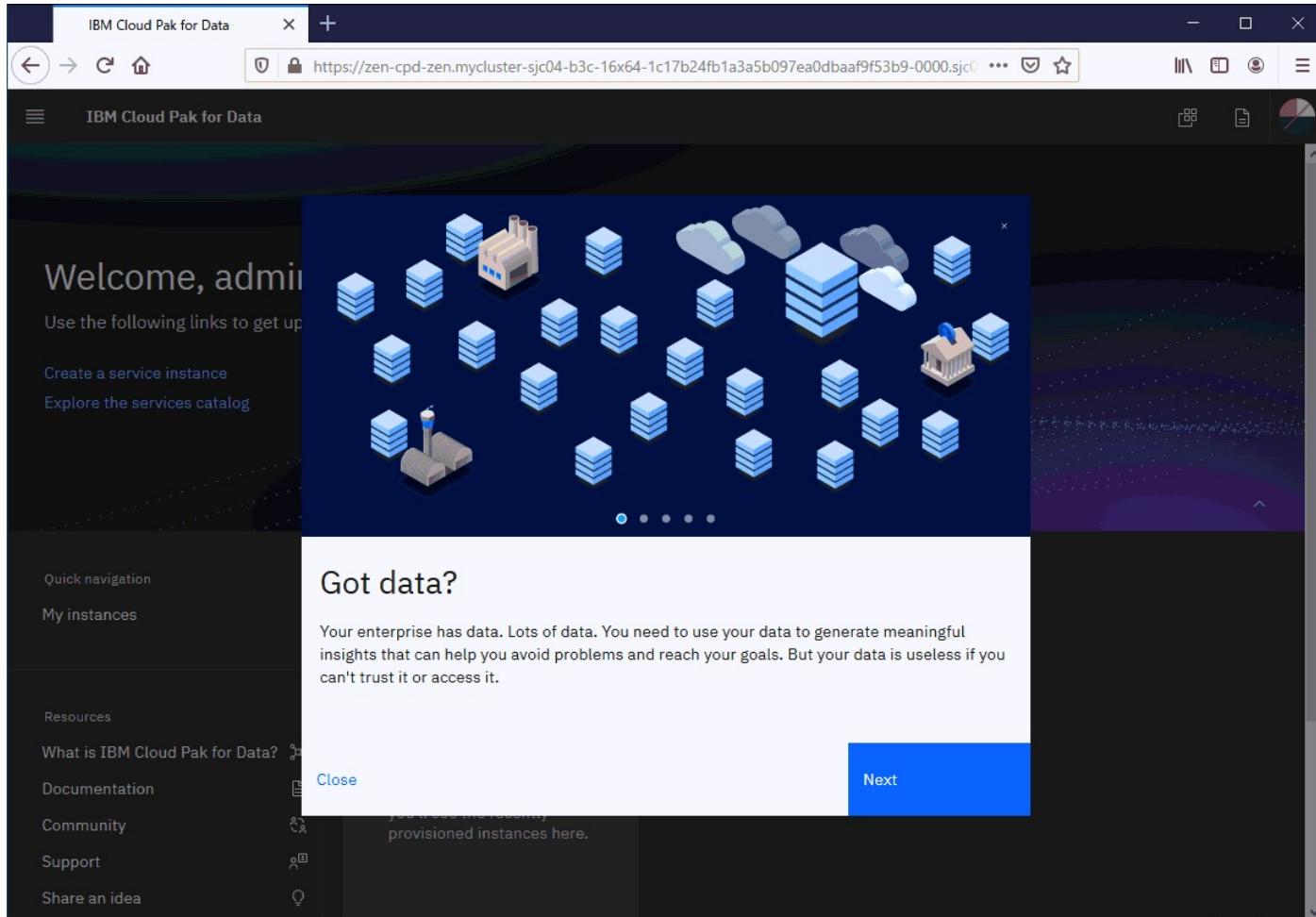
Deploy Watson Discovery (4 of 4)

Installation procedure is exactly same as deployment into On-premise servers but all operations have to be done remotely

```
# You need to login to some Linux server where you can run oc cli and docker command remotely.  
export OCLOGIN=${OC_LOGIN}  
export IMAGEREGISTRY=${IMAGE_REGISTRY}  
  
cd ~/wd213  
${OCLOGIN}  
podman login -u $(oc whoami) -p $(oc whoami -t) --tls-verify=false ${IMAGEREGISTRY}  
  
bin/cpd-linux --repo ~/wd213/repo.cp4d301_wd213.yaml --assembly watson-discovery --namespace zen ¶  
--override ~/wd213/override.wd213.yaml --cluster-pull-prefix "$(oc registry info)/zen" ¶  
--transfer-image-to "$(oc get routes default-route -n openshift-image-registry -o=template={{.spec.host}})/zen" ¶  
--target-registry-password "$(oc whoami -t)" --target-registry-username "$(oc whoami)" -c managed-nfs-storage --insecure-skip-tls-verify  
  
# watch "oc get pod -l 'release in (admin,crust,mantle,core)'"
```

9. Launch Watson Discovery

Launch Watson Discovery



1. Open CP4D Web console.
URL can be gotten in
“View log” (see Step of
CP4D deployment) or get
endpoint by “oc get route
zen-cpd”.
Usually, URL starts from
“https://zen-cpd-
zen.<your_cluster_name>
-”, and ends with
“*.containers.appdomain.c
loud”.
 2. (After complete or skip
Getting Started) Click
“Services” icon at the
right-top of window.



Provision Watson Discovery instance (1 of 3)

The screenshot shows the 'Services catalog' page of the IBM Cloud Pak for Data interface. On the left, there is a sidebar with filters for 'Category', 'Pricing', 'Source', and 'Status'. Below this is a section titled 'Industry accelerators' with a brief description. The main area is titled 'AI' and contains several service tiles:

- Watson AIOps**: Icon shows two speech bubbles with question marks. Status: IBM Premium. Description: Automate how you detect, diagnose, and respond to IT incidents in real time.
- Watson Assistant**: Icon shows two speech bubbles with dots. Status: IBM Premium. Description: Build conversational interfaces into any app, device, or channel.
- Watson Discovery**: Icon shows a magnifying glass over a document. Status: IBM Available. Description: Find answers and uncover insights in your domain.
- Watson Knowledge Studio**: Icon shows a document with a chart. Status: IBM Premium. Description: Teach Watson the language of your domain.

1. Find “Watson Discovery” tile and Click it.

Provision Watson Discovery instance (2 of 3)

The screenshot shows the IBM Cloud Pak for Data Services catalog interface. At the top, there's a navigation bar with a back arrow, forward arrow, refresh icon, and a search bar containing the URL. Below the navigation is a header bar with the title "IBM Cloud Pak for Data" and a user profile icon. The main content area is titled "Services catalog / Watson Discovery". On the left, there's a sidebar with a magnifying glass icon and the text "Watson Discovery". Below this are three colored buttons: "IBM" (blue), "Available" (green with a circular arrow icon), and "Premium" (purple). The main panel displays a "Version" section with "2.1.3" and a "Description" section. The description text is as follows:

The IBM Watson Discovery add-on is an AI-powered search and content analytics engine that enables you to find answers and uncover insights that hide in your complex business content. With the Smart Document Understanding training interface, Watson Discovery can learn where answers live in your content based on a visual understanding of your documents.

Below the description, there's a section titled "Want to do more? These Watson add-ons can help:" with two bullet points:

- Enhance Watson Discovery's ability to understand domain-specific language with Watson Knowledge Studio.
- Surface answers to users through a conversational dialog driven by Watson Assistant.

At the bottom of the main panel, there's a "About the developer" section with the word "IBM".

1. Click “Provision instance” blue button.

Provision Watson Discovery instance (3 of 3)

The screenshot shows a web browser window titled "IBM Cloud Pak for Data". The URL in the address bar is <https://zen-cpd-zen.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaf9f53b9-0000.sjc04.az.acloud.gov>. The page is titled "Create service instance". It has fields for "Instance name" (containing "discovery-0c86"), "Description (optional)" (with placeholder "Enter a description for the instance"), and "Deployment" (set to "core"). At the bottom are "Cancel" and "Create" buttons, with "Create" being blue.

1. Type preferred “Instance name” and click “Create” blue button.
(default instance name is OK if you have no preference)

Launch Discovery Web Tool

The screenshot shows the IBM Cloud Pak for Data web interface. The title bar says "IBM Cloud Pak for Data". The URL in the address bar is <https://zen-cpd-zen.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaf9f53b9-0000.sjc04.contrailers.appdomain.cloud/discovery/core/instances/159>. The main content area displays the "discovery-0c86" instance details:

- About this instance**: Includes a "Launch tool" button.
- Documentation**: [Learn how to use this service](#).
- Service version**: 2.1.3
- Instance owner**: user999
- Provisioned**: 2020-07-03
- Service deployment ID**: core
- Access information**: Includes a "Download" button and a URL:
https://zen-cpd-zen.mycluster-sjc04-b3c-16x64-1c17b24fb1a3a5b097ea0dbaaf9f53b9-0000.sjc04.contrailers.appdomain.cloud/discovery/core/instances/159
3786841396/api
- Bearer token**: (redacted)

1. Click “Launch tool” blue button.

Watson Discovery

