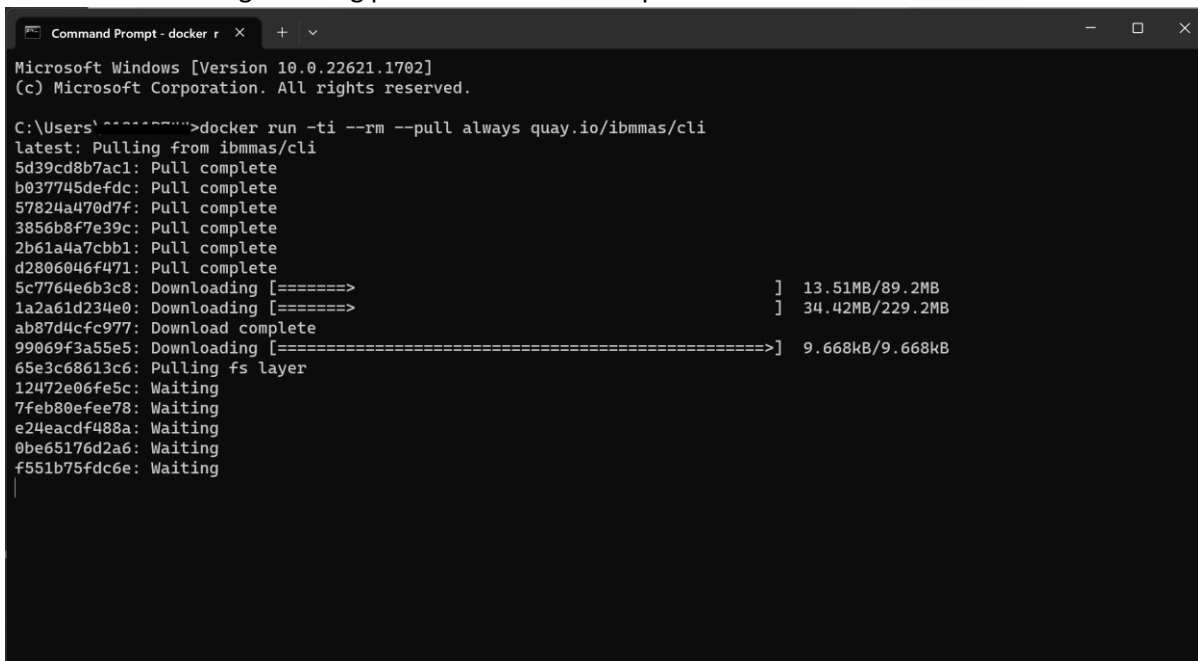


Maximo Application Suite Installation Guide (MASCLI/Pipeline Approach)

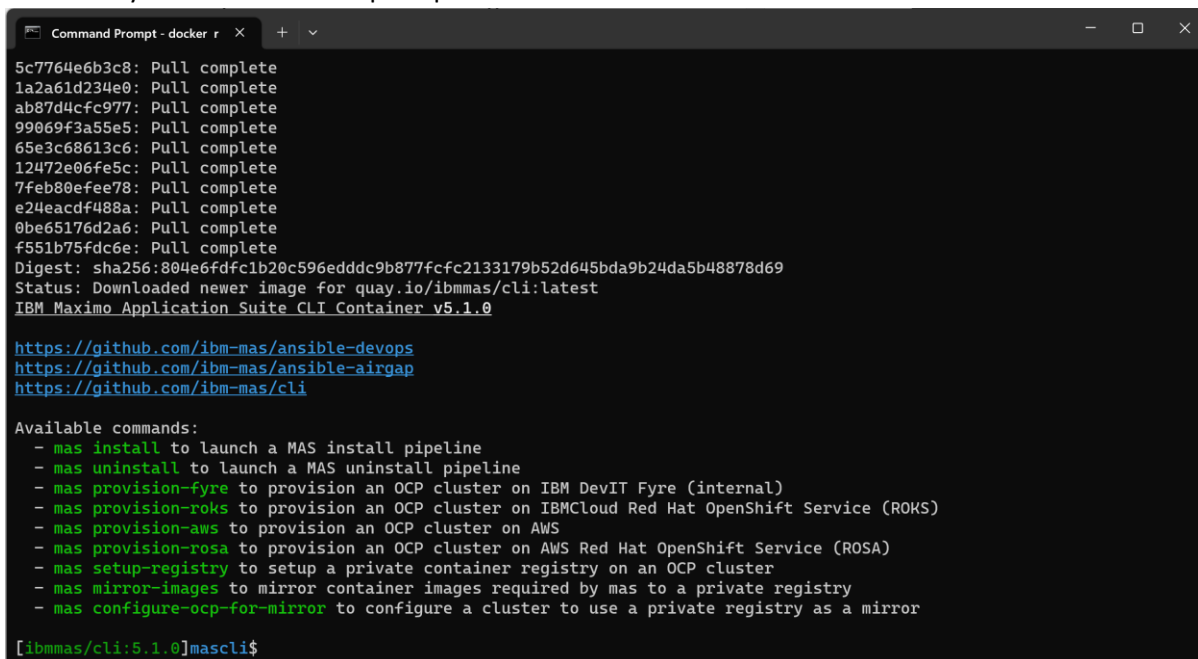
1. Before we start ensure that you have your IBM Entitlement Key and the license file to install MAS.
2. Start the docker service on your system.
3. Run the following command from your command line terminal to initiate the MASCLI container.
`docker run -ti --rm --pull always quay.io/ibmmas/cli`
4. Notice how the image is being pulled from the IBM repos.



```
Microsoft Windows [Version 10.0.22621.1702]
(c) Microsoft Corporation. All rights reserved.

C:\Users\*****>docker run -ti --rm --pull always quay.io/ibmmas/cli
latest: Pulling from ibmmas/cli
5d39cd8b7ac1: Pull complete
b037745defdc: Pull complete
57824a470d7f: Pull complete
3856b8f7e39c: Pull complete
2b61a4a7cbb1: Pull complete
d2806046f471: Pull complete
5c7764e6b3c8: Downloading [=====>] 13.51MB/89.2MB
1a2a61d234e0: Downloading [=====>] 34.42MB/229.2MB
ab87d4cfc977: Download complete
99069f3a55e5: Downloading [=====>] 9.668kB/9.668kB
65e3c68613c6: Pulling fs layer
12472e06fe5c: Waiting
7feb80efee78: Waiting
e24eacd488a: Waiting
0be65176d2a6: Waiting
f551b75fdc6e: Waiting
```

5. Wait until you see the MASCLI prompt as follows -



```
5c7764e6b3c8: Pull complete
1a2a61d234e0: Pull complete
ab87d4cfc977: Pull complete
99069f3a55e5: Pull complete
65e3c68613c6: Pull complete
12472e06fe5c: Pull complete
7feb80efee78: Pull complete
e24eacd488a: Pull complete
0be65176d2a6: Pull complete
f551b75fdc6e: Pull complete
Digest: sha256:804e6fdcf1b20c596eddc9b877fcfc2133179b52d645bda9b24da5b48878d69
Status: Downloaded newer image for quay.io/ibmmas/cli:latest
IBM Maximo Application Suite CLI Container v5.1.0

https://github.com/ibm-mas/ansible-devops
https://github.com/ibm-mas/ansible-airgap
https://github.com/ibm-mas/cli

Available commands:
- mas install to launch a MAS install pipeline
- mas uninstall to launch a MAS uninstall pipeline
- mas provision-fyre to provision an OCP cluster on IBM DevIT Fyre (internal)
- mas provision-roks to provision an OCP cluster on IBMCloud Red Hat OpenShift Service (ROKS)
- mas provision-aws to provision an OCP cluster on AWS
- mas provision-rosa to provision an OCP cluster on AWS Red Hat OpenShift Service (ROSA)
- mas setup-registry to setup a private container registry on an OCP cluster
- mas mirror-images to mirror container images required by mas to a private registry
- mas configure-ocp-for-mirror to configure a cluster to use a private registry as a mirror

[ibmmas/cli:5.1.0]mascli$
```

6. Type “mas install” to launch the installation pipeline.

```
Command Prompt - docker r x + v
f551b75fdc6e: Pull complete
Digest: sha256:804e6fdcf1b20c596eddc9b877fcfc2133179b52d645bda9b24da5b48878d69
Status: Downloaded newer image for quay.io/ibmmas/cli:latest
IBM Maximo Application Suite CLI Container v5.1.0

https://github.com/ibm-mas/ansible-devops
https://github.com/ibm-mas/ansible-airgap
https://github.com/ibm-mas/cli

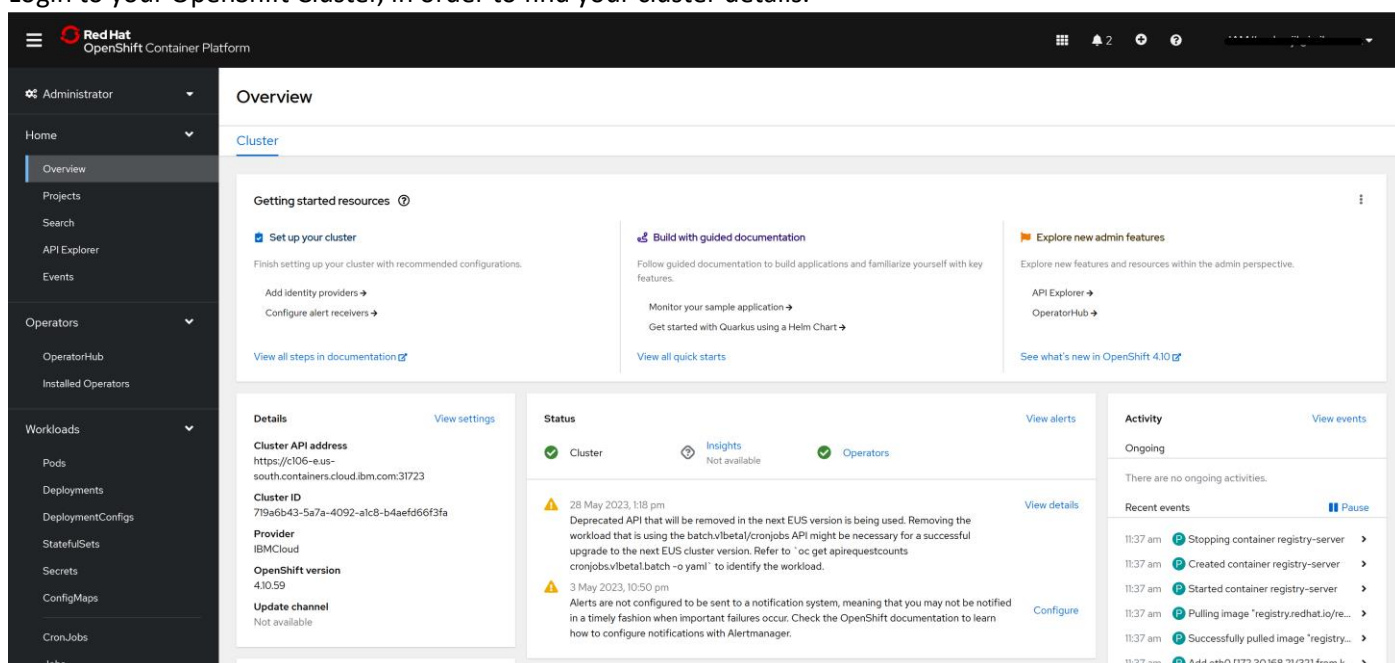
Available commands:
- mas install to launch a MAS install pipeline
- mas uninstall to launch a MAS uninstall pipeline
- mas provision-fyre to provision an OCP cluster on IBM DevIT Fyre (internal)
- mas provision-roks to provision an OCP cluster on IBMCloud Red Hat OpenShift Service (ROKS)
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- mas provision-rosa to provision an OCP cluster on AWS Red Hat OpenShift Service (ROSA)
- mas setup-registry to setup a private container registry on an OCP cluster
- mas mirror-images to mirror container images required by mas to a private registry
- mas configure-ocp-for-mirror to configure a cluster to use a private registry as a mirror

[ibmmas/cli:5.1.0]mascli$ mas install
IBM Maximo Application Suite Installer (v5.1.0)
Powered by https://github.com/ibm-mas/ansible-devops/ and https://tekton.dev/

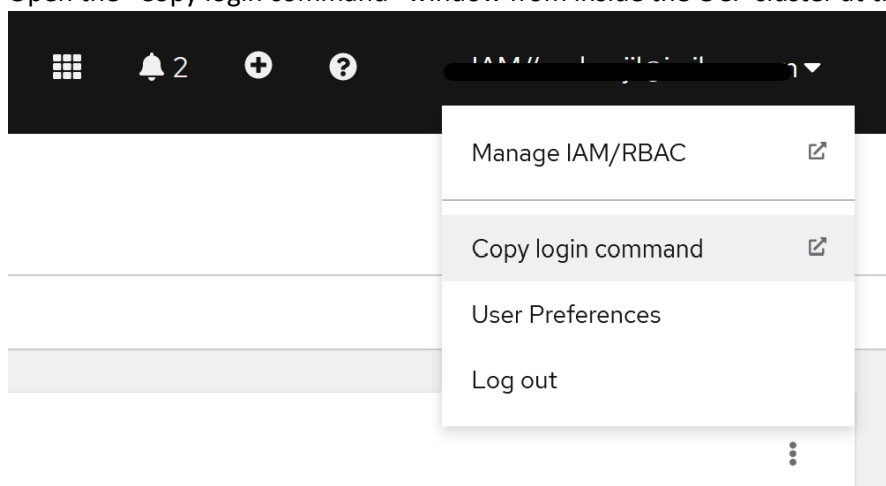
Current Limitations
1. Support for airgap installation is limited to Core with IoT, Manage, Optimizer at present

1. Set Target OpenShift Cluster
Server URL >
```

7. Login to your OpenShift Cluster, in order to find your cluster details.



8. Open the “Copy login command” window from inside the OCP cluster at the top-right corner of screen.



9. Copy the cluster URL and the login token and paste the corresponding values on the MASCLI terminal.

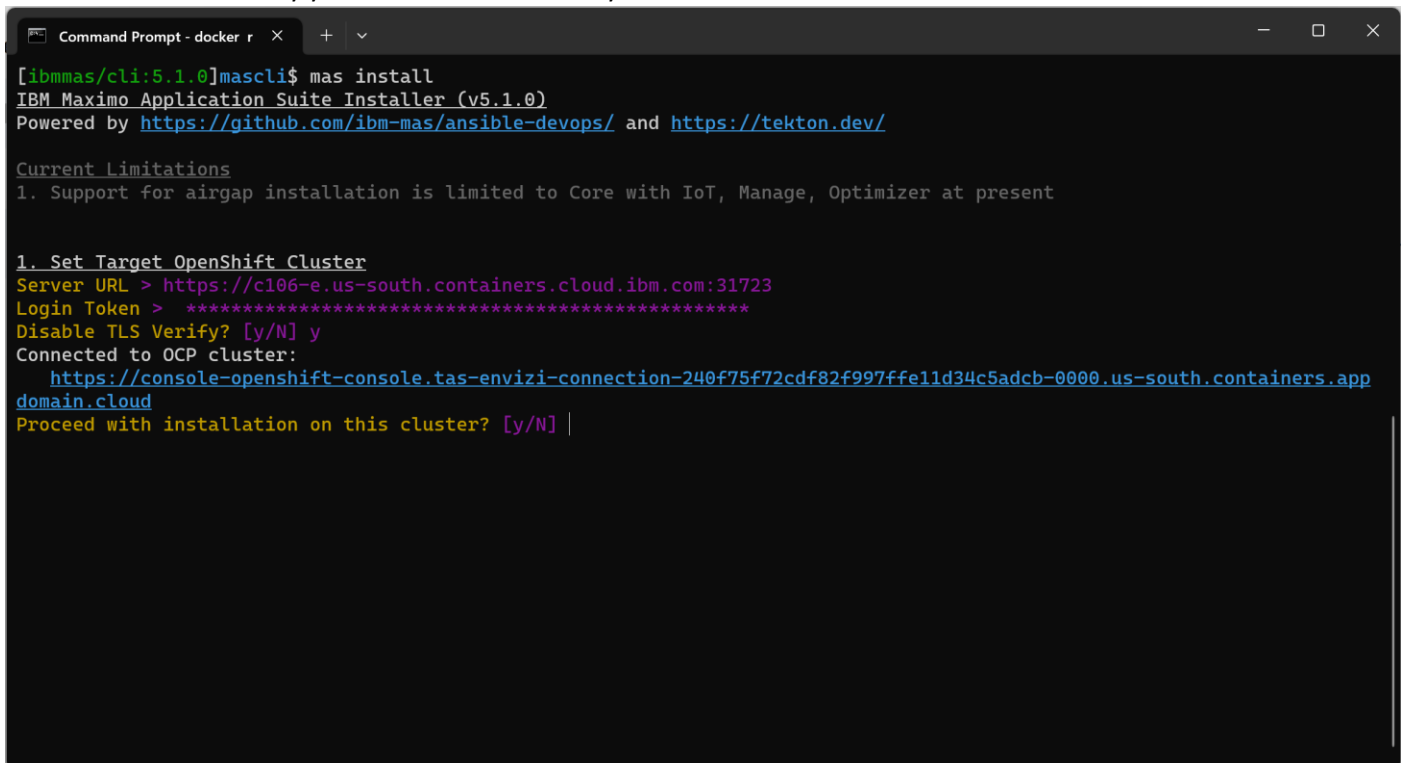
Your API token is

sha256~VdV0SBGKIXdDKgdZCu_0LzR-LZR-f8zUhMeV-bRkiMQ

Log in with this token

```
oc login --token=sha256~VdV0SBGKIXdDKgdZCu_0LzR-LZR-f8zUhMeV-bRkiMQ --server=https://c106-e.us-south.containers.cloud.ibm.com:31723
```

10. The terminal will identify your cluster and wait for your confirmation to continue.

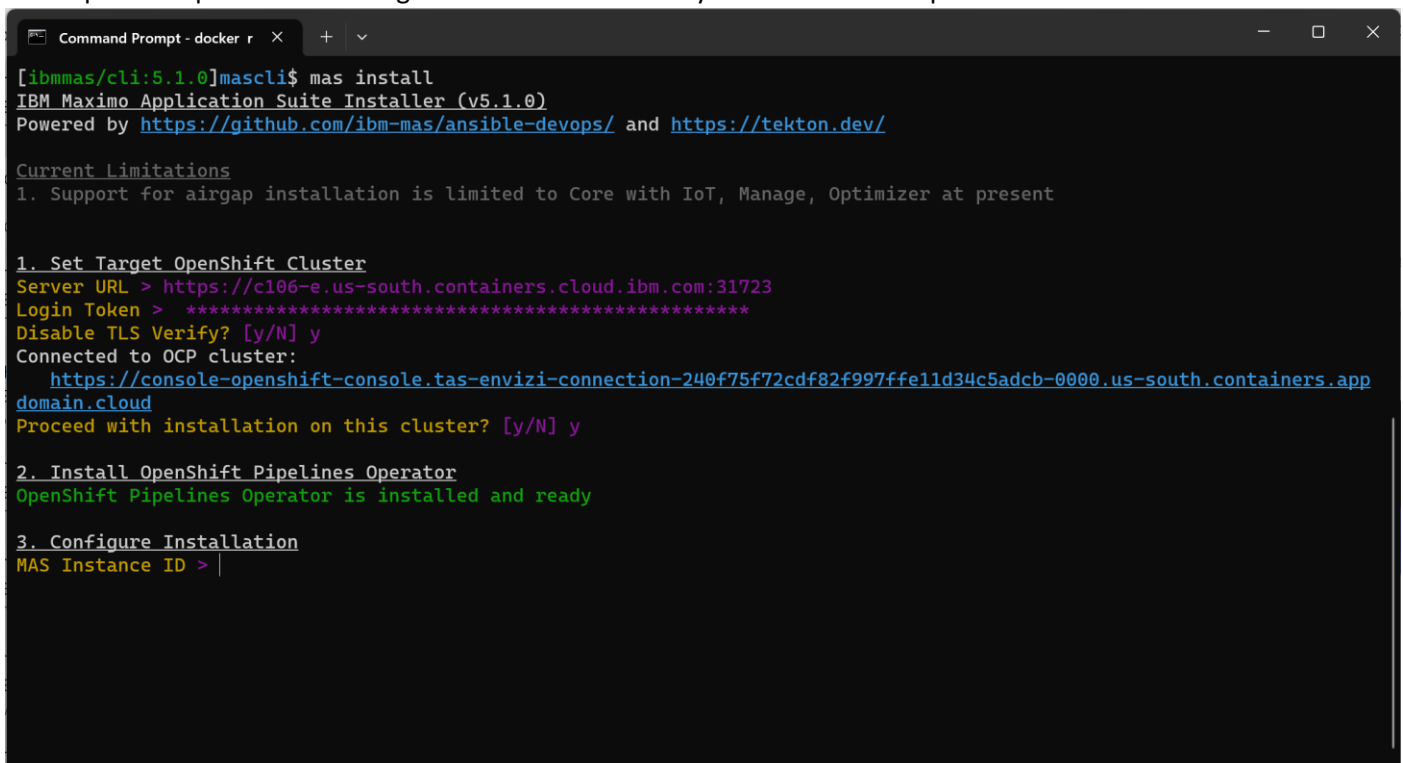


```
[ibmmas/cli:5.1.0]mascli$ mas install
IBM Maximo Application Suite Installer (v5.1.0)
Powered by https://github.com/ibm-mas/ansible-devops/ and https://tekton.dev/

Current Limitations
1. Support for airgap installation is limited to Core with IoT, Manage, Optimizer at present

1. Set Target OpenShift Cluster
Server URL > https://c106-e.us-south.containers.cloud.ibm.com:31723
Login Token > ****
Disable TLS Verify? [y/N] y
Connected to OCP cluster:
https://console-openshift-console.tas-envizi-connection-240f75f72cdf82f997ffe11d34c5adcb-0000.us-south.containers.appdomain.cloud
Proceed with installation on this cluster? [y/N] |
```

11. OCP Pipelines Operator will now get installed automatically. Wait for it to complete.



```
[ibmmas/cli:5.1.0]mascli$ mas install
IBM Maximo Application Suite Installer (v5.1.0)
Powered by https://github.com/ibm-mas/ansible-devops/ and https://tekton.dev/

Current Limitations
1. Support for airgap installation is limited to Core with IoT, Manage, Optimizer at present






1. Set Target OpenShift Cluster
Server URL > https://c106-e.us-south.containers.cloud.ibm.com:31723
Login Token > ****
Disable TLS Verify? [y/N] y
Connected to OCP cluster:
https://console-openshift-console.tas-envizi-connection-240f75f72cdf82f997ffe11d34c5adcb-0000.us-south.containers.appdomain.cloud
Proceed with installation on this cluster? [y/N] y

2. Install OpenShift Pipelines Operator
OpenShift Pipelines Operator is installed and ready

3. Configure Installation
MAS Instance ID > |
```

12. Now we need to provide appropriate details for our MAS Installation. Before we proceed, we need to copy our license file from our local system to the container that is currently running the mascli. You can use docker

commands to get the name of the running container or if you're using docker desktop, we can get the name from the docker window directly.

<input type="checkbox"/>	Name	Image	Status	Port(s)	Last started	Actions
<input type="checkbox"/>	 youthful_einstein 977f7263c64e 	quay.io/ibmmas/cli	Running		23 minutes ago	  

13. Open a new CMD/terminal window and run the following command to copy the license file from your local system to the container identified above. Note – the name of your container might be different.

```
docker cp <source file path>/entitlement.lic <container name>:<destination file path>/entitlement.lic
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\01311P744> cd .\Downloads\GSILabs\Ansible\
PS C:\Users\01311P744\Downloads\GSILabs\Ansible> dir

Directory: C:\Users\01311P744\Downloads\GSILabs\Ansible

Mode                LastWriteTime         Length Name
----                -
d-----          08-03-2023   19:44             masconfig
-a----          02-09-2022   14:28           6148 .DS_Store
-a----          08-03-2023   18:23           8926 entitlement.lic
-a----          23-07-2022    03:23        179340 MAS-ansible-setup2207.log
-a----          14-12-2022   19:57           1752 MAS_Ansible_credentials.properties

PS C:\Users\01311P744\Downloads\GSILabs\Ansible> docker cp .\entitlement.lic youthful_einstein:/mascli/entitlement.lic
PS C:\Users\01311P744\Downloads\GSILabs\Ansible>
```

14. Provide your desired environment details as per the prompt on the screen

```
OpenShift Pipelines Operator is installed and ready

3. Configure Installation
MAS Instance ID > vestmas8
MAS Workspace ID > maximo
MAS Workspace Display Name > maximo
Use online catalog? [y/N] y
MAS Version:
  1. 8.10
  2. 8.9
Select Subscription Channel > 1

4. License Terms
For information about your license, see https://ibm.biz/MAS810-License To continue with the installation, you must accept the license terms.
Do you accept the license terms? [y/N] y

5. Configure Operation Mode
Maximo Application Suite can be installed in a non-production mode for internal development and testing, this setting cannot be changed after installation:
- All applications, add-ons, and solutions have 0 (zero) installation AppPoints in non-production installations.
- These specifications are also visible in the metrics that are shared with IBM® and on the product UI.
Use non-production mode? [y/N] y

6. Configure Domain & Certificate Management
Configure Custom Domain [y/N] N

7. Application Selection
Install IoT [y/N]
```

15. Choose your MAS components to be installed. Note – Every component requires a minimum resource to be installed, so ensure that the cluster has got sufficient resources to install the components that you'll be selecting from here. Here's a sample of a selected combination, your selection can be different based on your requirement.

```
Command Prompt - docker r X Windows PowerShell X + v
- All applications, add-ons, and solutions have 0 (zero) installation AppPoints in non-production installations.
- These specifications are also visible in the metrics that are shared with IBM® and on the product UI.

Use non-production mode? [y/N] y

6. Configure Domain & Certificate Management
Configure Custom Domain [y/N] N

7. Application Selection
Install IoT [y/N] y
Install Monitor [y/N] y
Install Manage [y/N] y
+ Create demo data [Y/n] Y
+ Configure JMS [y/N] Y
+ Customize database settings [y/N] N
Install Optimizer [y/N] y
+ Plan [full/limited] > full
Install Visual Inspection [y/N] N
Install Predict [y/N] y
+ Install SPSS (Optional Cloud Pak for Data service) [y/N] N
Install Assist [y/N] y
COS Provider [ibm/ocs] > ibm
IBM Cloud API Key > *****
IBM Cloud Resource Group > Default

8. Configure Db2
The installer can setup one or more IBM Db2 instances in your OpenShift cluster for the use of applications that require
a JDBC datasource (IoT, Manage, Monitor, & Predict) or you may choose to configure MAS to use an existing database.

Install Db2 using the IBM Db2 Universal Operator? [Y/n] Y
```

16. The CLI will provide prompts based on your selected modules. Select the desired configuration for your setup.

```
Command Prompt - docker r X Windows PowerShell X + v

8. Configure Db2
The installer can setup one or more IBM Db2 instances in your OpenShift cluster for the use of applications that require
a JDBC datasource (IoT, Manage, Monitor, & Predict) or you may choose to configure MAS to use an existing database.

Install Db2 using the IBM Db2 Universal Operator? [Y/n] Y

9.1. Db2 for IoT
Maximo IoT requires a shared system-scope Db2 instance because others application in the suite require access to the sam
e database source.

IoT Db2 instance will be created

9.2. Db2 for Manage
Maximo Manage can be configured to share the system Db2 instance or use it's own dedicated database:
- Use of a shared instance has a significant footprint reduction but is only recommended for development/test/demo inst
alls
- In most production systems you will want to use a dedicated database

Install Dedicated Db2 instance for Manage application? [Y/n] Y
Dedicated Manage Db2 instance will be created in addition to the shared IoT Db2 instance

9.3. Database CPU & Memory
Note that the same settings are applied to both the IoT and Manage Db2 instances, it will be possible to set these indep
endently in a future update.

CPU Request: 4000m
CPU Limit: 6000m
```

```
Command Prompt - docker r X Windows PowerShell X + v

9.4. Database Storage Capacity
Note that the same settings are applied to both the IoT and Manage Db2 instances, it will be possible to set these indep
endently in a future update.

- Meta: 20Gi
- Data: 100Gi
- Backup: 100Gi
- Temp: 100Gi
- Transaction Logs: 100Gi

Customize storage capacity? [y/N] N

9. Additional Configuration
Additional resource definitions can be applied to the OpenShift Cluster during the MAS configuration step.
The primary purpose of this is to apply configuration for Maximo Application Suite itself, but you can use this to deplo
y ANY additional resource into your cluster.

Use additional configurations? [y/N] N

10. Configure Storage Class Usage
Maximo Application Suite and it's dependencies require storage classes that support ReadWriteOnce (RWO) and ReadWriteMan
y (RWX) access modes:
- ReadWriteOnce volumes can be mounted as read-write by multiple pods on a single node.
- ReadWriteMany volumes can be mounted as read-write by multiple pods across many nodes.

Storage provider auto-detected: IBMCloud ROKS
- Storage class (ReadWriteOnce): ibmc-block-gold
- Storage class (ReadWriteMany): ibmc-file-gold

Choose your own storage classes anyway? [y/N] N

11. Advanced Settings
Configure Advanced Settings (optional)? [y/N] N

12. Configure IBM Container Registry
IBM Entitlement Key > *****
*****

13. Configure Product License
License ID > 0242ac110002
License File > /mascli/entitlement.lic

14. Configure UDS
UDS Contact Email > abc@xyz.com
UDS Contact First Name > ABC
UDS Contact Last Name > XYZ
```

17. Now, the pipeline will get created based on the inputs given.

```
Command Prompt - docker r X Windows PowerShell X + v

15. Prepare Installation

Namespace 'mas-vestmas8-pipelines' is ready

16. Installed Task Definitions
mas-devops-appconnect quay.io/ibmmas/cli:5.1.0
mas-devops-cert-manager quay.io/ibmmas/cli:5.1.0
mas-devops-cluster-monitoring quay.io/ibmmas/cli:5.1.0
mas-devops-common-services quay.io/ibmmas/cli:5.1.0
mas-devops-cos quay.io/ibmmas/cli:5.1.0
mas-devops-cp4d quay.io/ibmmas/cli:5.1.0
mas-devops-cp4d-service quay.io/ibmmas/cli:5.1.0
mas-devops-db2 quay.io/ibmmas/cli:5.1.0
mas-devops-gencfg-workspace quay.io/ibmmas/cli:5.1.0
mas-devops-ibm-catalogs quay.io/ibmmas/cli:5.1.0
mas-devops-kafka quay.io/ibmmas/cli:5.1.0
mas-devops-mongodb quay.io/ibmmas/cli:5.1.0
mas-devops-must-gather quay.io/ibmmas/cli:5.1.0
mas-devops-nvidia-gpu quay.io/ibmmas/cli:5.1.0
mas-devops-sls quay.io/ibmmas/cli:5.1.0
mas-devops-suite-app-config quay.io/ibmmas/cli:5.1.0
mas-devops-suite-app-install quay.io/ibmmas/cli:5.1.0
mas-devops-suite-app-upgrade quay.io/ibmmas/cli:5.1.0
mas-devops-suite-certs quay.io/ibmmas/cli:5.1.0
mas-devops-suite-config quay.io/ibmmas/cli:5.1.0
mas-devops-suite-db2-setup-for-manage quay.io/ibmmas/cli:5.1.0
mas-devops-suite-dns quay.io/ibmmas/cli:5.1.0
mas-devops-suite-install quay.io/ibmmas/cli:5.1.0
mas-devops-suite-uninstall quay.io/ibmmas/cli:5.1.0
mas-devops-suite-upgrade quay.io/ibmmas/cli:5.1.0
mas-devops-suite-verify quay.io/ibmmas/cli:5.1.0
mas-devops-uds quay.io/ibmmas/cli:5.1.0

17. Installed Pipeline Definitions
NAME AGE
mas-db2 26s
mas-install 24s
mas-uninstall 21s
mas-update 19s
mas-upgrade 18s

quay.io/ibmmas/cli:5.1.0 is available from the target OCP cluster
```



```
Command Prompt - docker r X Windows PowerShell X + v

IBM Maximo Application Suite
Instance ID ..... vestmas8
Workspace ID ..... maximo
Workspace Name ..... maximo
Operation Mode ..... Non-production
Subscription Channel ..... 8.10.x
IBM Entitled Registry ..... cp.icr.io/cp
IBM Open Registry ..... icr.io/cpopen
IBM Entitlement Key ..... eyJ0eXAi<snip>

IBM Maximo Application Suite Applications
IoT ..... 8.7.x
- Monitor ..... 8.10.x
Manage ..... 8.6.x (workspace-application JDBC Config)
- Predict ..... 8.8.x
Optimizer ..... 8.4.x (full)
Assist ..... 8.7.x
MVI ..... Skip Installation

IBM Suite License Service
License ID ..... 0242ac110002
License File ..... /mascli/entitlement.lic
IBM Entitled Registry ..... cp.icr.io/cp
IBM Open Registry ..... icr.io/cpopen

IBM User Data Services
Contact Email ..... abc@xyz.com
First Name ..... ABC
Last Name ..... XYZ

IBM Db2
Subscription Channel ..... v110508.0
System Instance ..... install
Dedicated Manage Instance . install
CPU Request ..... 4000m
CPU Limit ..... 6000m
Memory Request ..... 8Gi
Memory Limit ..... 12Gi
Meta Storage ..... 20Gi
Data Storage ..... 100Gi
Backup Storage ..... 100Gi
Temp Storage ..... 100Gi
Transaction Logs Storage .. 100Gi

Storage Class Configuration
Storage Class Provider ... ibmc

Proceed with these settings [y/N]
```

18. Proceed with your installation, and the pipelines will kick-off the MAS setup.

```
Command Prompt - docker r X Windows PowerShell X + v

Meta Storage ..... 20Gi
Data Storage ..... 100Gi
Backup Storage ..... 100Gi
Temp Storage ..... 100Gi
Transaction Logs Storage .. 100Gi

Storage Class Configuration
Storage Class Provider ... ibmc

Proceed with these settings [y/N] y

18. Launch Installation
Installation started successfully

View progress:
https://console-openshift-console.tas-envizi-connection-240f75f72cdf82f997ffe11d34c5adcb-0000.us-south.containers.appdomain.cloud/pipelines/ns/mas-vestmas8-pipelines

[ibmmas/cli:5.1.0]mascli$ |
```

19. Notice the pipelines created and running to install all selected MAS components.

