

Assignment-3

Dockers and Kubernets

(Containerize application and Deployment in Kubernets)

| | |
|---------------|---------------------------|
| Date | 21 October 2022 |
| Team Id | PNT2022TMID36493 |
| Project Name | Smart Fashion Recommender |
| Maximum Marks | 2 Marks |

Containers

Images

Volumes

Dev Environments

Extensions

Add Extensions

Containers

A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another.

Showing 23 items

Command Prompt

API version: 1.41 (minimum version 1.12)
Go version: go1.17.11
Git commit: a89b842
Built: Mon Jun 6 23:01:23 2022
OS/Arch: linux/amd64
Experimental: false
containerd:
Version: 1.6.8
GitCommit: 9cd3357b7fd7218e4aec3eae239db1f68a5a6ec6
runc:
Version: 1.1.4
GitCommit: v1.1.4-0-g5fd4c4d
docker-init:
Version: 0.19.0
GitCommit: de40ad0

C:\Users\Admin>docker container run alpine echo "hello world"
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
213ec9aee27d: Pull complete
Digest: sha256:bc41182d7ef5ffc53a40b044e725193bc10142a1243f395ee852a8d9730fc2ad
Status: Downloaded newer image for alpine:latest
hello world

C:\Users\Admin>docker container run alpine echo "hello world"
hello world

C:\Users\Admin>

| | STATUS | PORT(S) | STARTED | ACTIONS |
|--------------------------|---|---------|----------------|---------|
| | Running | - | 57 minutes ago | |
| | Running | - | 57 minutes ago | |
| | Running | - | 57 minutes ago | |
| | Running | - | 57 minutes ago | |
| | Exited (1) | - | | |
| | Running | - | 57 minutes ago | |
| | Running | - | 56 minutes ago | |
| | Exited (2) | - | | |
| <input type="checkbox"/> | k8s_vpnkit-controller_vpnkit-controller_kube-syst | | 4 minutes ago | |
| <input type="checkbox"/> | objective_cray | | | |

RAM 3.09GB CPU 3.06% Connected to Hub

Containers

Images

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Extensions

Add Extensions

Images on disk

Last refresh: 1 minute ago 13 Images 1.3 GB total size 761.2 MB / 1.3 GB in use

Clean up

Images

LOCAL

REMOTE REPOSITORIES

| | | | | |
|---------------------------------|---------------------------|--------------|------------------------|-----------|
| alpine | latest | 9c6f07244728 | 3 months ago | 5.54 MB |
| docker/desktop-storage-prov... | IN USE v2.0 | 99f89471f470 | over 1 year ago | 41.85 MB |
| docker/desktop-vpnkit-contr... | IN USE v2.0 | 8c2c38aa676e | over 1 year ago | 21.03 MB |
| docker/getting-started | latest | cb90f98fd791 | 7 months ago | 28.78 MB |
| hubproxy.docker.internal:50... | kubernetes-v1.25.0-cni... | 2042e761d17a | 2 months ago | 363.3 MB |
| k8s.gcr.io/coredns | IN USE v1.9.3 | 5185b96f0bec | 5 months ago | 48.8 MB |
| k8s.gcr.io/etcd | IN USE 3.5.4-0 | a8a176a5d5d6 | 5 months ago | 299.52 MB |
| k8s.gcr.io/kube-apiserver | IN USE v1.25.0 | 4d2edfd10d3e | 2 months ago | 127.71 MB |
| k8s.gcr.io/kube-controller-m... | IN USE v1.25.0 | 1a54c86c03a6 | 2 months ago | 117.1 MB |
| k8s.gcr.io/kube-proxy | IN USE v1.25.0 | 58a9a0c6d96f | 2 months ago | 61.68 MB |
| k8s.gcr.io/kube-scheduler | IN USE v1.25.0 | bef2cf311509 | 2 months ago | 50.58 MB |
| k8s.gcr.io/pause | IN USE 3.8 | 4873874c08ef | 5 months ago | 711.18 KB |
| sampleflaskapp | latest | ea36fb11c5d8 | less than a minute ago | 141.63 MB |

Containers

Images

Volumes

Dev Environments BETA

Extensions BETA



















































Add Extensions

Containers Give Feedback

A container packages up code and its dependencies so the application runs quickly and reliably from one computing environment to another. [Learn more](#)

Showing 21 items

Search

| | NAME | IMAGE | STATUS | PORT(S) | STARTED | ACTIONS |
|--------------------------|---|---|------------|---------|---------------|---|
| <input type="checkbox"/> |  k8s_POD_kube-proxy-sgk2k_kube-system_4fb6b811446ffc1aecc  | k8s.gcr.io/pause:3.8 | Running | - | 24 minutes ag |    |
| <input type="checkbox"/> |  k8s_POD_vpnkit-controller_kube-system_819c5dc76257e5f8845  | k8s.gcr.io/pause:3.8 | Running | - | 24 minutes ag |    |
| <input type="checkbox"/> |  k8s_kube-proxy_kube-proxy-sgk2k_kube-system_69aca3e49373  | k8s.gcr.io/kube-proxy:v1.25.0 | Running | - | 24 minutes ag |    |
| <input type="checkbox"/> |  k8s_coredns_coredns-95db45d46-s6kmv_kube-sys5256d16328ea  | k8s.gcr.io/coredns:v1.9.3 | Running | - | 24 minutes ag |    |
| <input type="checkbox"/> |  k8s_coredns_coredns-95db45d46-qzbxw_kube-sysc672f26f1e9a  | k8s.gcr.io/coredns:v1.9.3 | Running | - | 24 minutes ag |    |
| <input type="checkbox"/> |  k8s_storage-provisioner_storage-provisioner_kub381a16c7e470  | docker/desktop-storage-provisioner:v2.0 | Exited (1) | - | |    |
| <input type="checkbox"/> |  k8s_vpnkit-controller_vpnkit-controller_kube-syst3ed255d59eb0  | docker/desktop-vpnkit-controller:v2.0 | Exited (2) | - | |    |
| <input type="checkbox"/> |  k8s_storage-provisioner_storage-provisioner_kub69d431bdeec7  | docker/desktop-storage-provisioner:v2.0 | Running | - | 23 minutes ag |    |
| <input type="checkbox"/> |  k8s_vpnkit-controller_vpnkit-controller_kube-systbb7898f5dfcd  | docker/desktop-vpnkit-controller:v2.0 | Running | - | 5 minutes agc |    |
| <input type="checkbox"/> |  sleepy_jepsen 81e774e2c08c  | sampleflaskapp:latest | Exited (1) | - | |    |

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↺

🕒 127.0.0.1:5000

Hello World!

Command Prompt - python -m flask run

```
"MacAddress": "02:42:ac:11:00:02",
"Networks": {
  "bridge": {
    "IPAMConfig": null,
    "Links": null,
    "Aliases": null,
    "NetworkID": "e0c9dde68057e82756133fda57f65f287a31bcb227de57624bd6cd2076838fa6",
    "EndpointID": "4a422abbeab2b62add1d465e8ff0c925d211387e76da034a663bb3147948f56c",
    "Gateway": "172.17.0.1",
    "IPAddress": "172.17.0.2",
    "IPPrefixLen": 16,
    "IPv6Gateway": "",
    "GlobalIPv6Address": "",
    "GlobalIPv6PrefixLen": 0,
    "MacAddress": "02:42:ac:11:00:02",
    "DriverOpts": null
  }
}
}
}
]

C:\Users\Admin\PycharmProjects\flaskProject3>python -m flask run
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
```

Hello World!

IBM Cloud

Command Prompt

```
Plug-in 'container-registry[cr] 1.0.2' found in repository 'IBM Cloud'
Attempting to download the binary file...
11.90 MiB / 11.90 MiB [=====] 100.00% 3s
12476416 bytes downloaded
Installing binary...
OK
Plug-in 'container-registry 1.0.2' was successfully installed into C:\Users\Admin\.bluemix\plugins\container-registry. Use 'ibmcloud plugin show container-registry' to show its details.

C:\Users\Admin\PycharmProjects\flaskProject3>ibmcloud plugin install observe-service
Looking up 'observe-service' from repository 'IBM Cloud'...
Plug-in 'observe-service 1.0.82' found in repository 'IBM Cloud'
Attempting to download the binary file...
13.38 MiB / 13.38 MiB [=====] 100.00% 3s
14024704 bytes downloaded
Installing binary...
OK
Plug-in 'observe-service 1.0.82' was successfully installed into C:\Users\Admin\.bluemix\plugins\observe-service. Use 'ibmcloud plugin show observe-service' to show its details.

C:\Users\Admin\PycharmProjects\flaskProject3>ibmcloud plugin list
Listing installed plug-ins...

Plugin Name          Version  Status  Private endpoints supported
container-registry    1.0.2    true
container-service[kubernetes-service/ks]  1.0.459  false
observe-service[ob]   1.0.82   false

C:\Users\Admin\PycharmProjects\flaskProject3>
```

Example output

```
IBM Command Prompt
3. jp-osa
4. jp-tok
5. kr-seo
6. eu-de
7. eu-gb
8. ca-tor
9. us-south
10. us-east
11. br-sao
Enter a number>

API endpoint: https://cloud.ibm.com
Region:
User: 112419106301@smartinternz.com
Account: moni shankari's Account (c809469b5dc943aabc5228a286d15e66)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\Admin>ibmcloud cr region-set ap-north
The region is set to 'ap-north', the registry is 'jp.icr.io'.

OK

C:\Users\Admin>ibmcloud cr namespace-add <helloworld>
The syntax of the command is incorrect.

C:\Users\Admin>ibmcloud cr namespace-add helloworld
```

```
IBM Command Prompt
Enter a number>

API endpoint: https://cloud.ibm.com
Region:
User: 112419106301@smartinternz.com
Account: moni shankari's Account (c809469b5dc943aabc5228a286d15e66)
Resource group: No resource group targeted, use 'ibmcloud target -g RESOURCE_GROUP'
CF API endpoint:
Org:
Space:

C:\Users\Admin>ibmcloud cr region-set ap-north
The region is set to 'ap-north', the registry is 'jp.icr.io'.

OK

C:\Users\Admin>ibmcloud cr namespace-add <helloworld>
The syntax of the command is incorrect.

C:\Users\Admin>ibmcloud cr namespace-add helloworld
No resource group is targeted. Therefore, the default resource group for the account ('Default') is targeted.

Adding namespace 'helloworld' in resource group 'Default' for account moni shankari's Account in registry jp.icr.io...

Successfully added namespace 'helloworld'

OK

C:\Users\Admin>
```

IBM Cloud

Search resources and products...

CatalogManage moni shankari's Account

Container Registry

Quick start

Namespaces1

Repositories0

Images0

Trash0

Settings

Namespaces

LocationTokyo

Resource group: Filter...Search

Create

| | Name | Resource group | Repository count | Image count | Retention policy |
|--|------------|----------------|------------------|-------------|-------------------|
| | helloworld | Default | 0 | 0 | Retain all images |

Items per page: 251-1 of 1 item

Command Prompt

OK

C:\Users\Admin>ibmcloud cr login
Logging 'docker' in to 'jp.icr.io'...
Logged in to 'jp.icr.io'.

OK

C:\Users\Admin>docker pull myimage
Using default tag: latest
Error response from daemon: pull access denied for myimage, repository does not exist or may require 'docker login': denied: requested access to the resource is denied

C:\Users\Admin>docker pull python
Using default tag: latest
latest: Pulling from library/python
17c9e6141fdb: Pull complete
de4a4c6caea8: Pull complete
4edced8587e6: Pull complete
a7969cffbf46: Pull complete
74fbfde6af91: Pull complete
16fe51aed899: Pull complete
e9ee507bb0de: Pull complete
4d9dbb46d211: Pull complete
3b9b3c4e849c: Pull complete
Digest: sha256:fc809ada71c087cec7e2d2244bcb9fba137638978a669f2aaf6267db43e89fdf
Status: Downloaded newer image for python:latest
docker.io/library/python:latest

C:\Users\Admin>

Maintained by:

Command Prompt

```
alpine          9c6f07244728  2 months ago  5.54MB  latest
k8s.gcr.io/pause 4873874c08ef  4 months ago  711kB   3.8
k8s.gcr.io/etcd   a8a176a5d5d6  5 months ago  300MB   3.5.4-0
k8s.gcr.io/coredns 5185b96f0bec  5 months ago  48.8MB  v1.9.3
docker/getting-started cb90f98fd791  6 months ago  28.8MB  latest
docker/desktop-vpnkit-controller 8c2c38aa676e  18 months ago  21MB    v2.0
docker/desktop-storage-provisioner 99f89471f470  18 months ago  41.9MB  v2.0

C:\Users\Admin>docker push monishaibm01/monishaibm
Using default tag: latest
The push refers to repository [docker.io/monishaibm01/monishaibm]
ea8d3b163dad: Pushed
9d509ae36ce5: Pushed
e74d2d2318e0: Pushed
843402027782: Pushed
32f073886096: Pushed
5f098248d753: Mounted from library/python
3dd34a0dd0d7: Mounted from library/python
a8f9e3c1138b: Mounted from library/python
74f8a626d86f: Mounted from library/python
latest: digest: sha256:381f10dea050afbb5311d16f01765d51a3302744f6aea0e661499edb1fa462ee size: 2206

C:\Users\Admin>
```

IBM Cloud

Search resources and products...

CatalogManage▼moni shankari's Account

Container Registry

Quick start

Namespaces1

Repositories1

Images1

Trash0

Settings

Repositories

Location

Tokyo

Search

Create +

| | Name | Image count | Namespace | Last updated |
|---|--|-------------|------------|--------------|
| ▼ | monishaibm jp.icr.io/helloworld/monishaibm | 1 | helloworld | 9 days ago |

Items per page: 25 ▼1-1 of 1 item

1 ▼1 of 1 page◀▶

IBM Cloud

Search resources and products...

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Container Registry

Quick start

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Repositories1

Images1

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Images

Location

Tokyo

View by: Digest ▼

Search

Create +

| | Repository@digest | Tags | Manifest type | Created | Size | Security status |
|--|--|--------|---------------|-------------|------|-----------------|
| | helloworld/monishaibm@sha256:1304f1745573... | latest | Docker | 87 days ago | 3 MB | ✔ No issues |

Items per page: 25 ▼1-1 of 1 item

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IBM Cloud

Container Registry

Quick start

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Search resources and products...

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Namespaces

Location

Tokyo

Resource group: Filter...

Search

Create +

| <input type="checkbox"/> | Name | Resource group | Repository count | Image count | Retention policy |
|-------------------------------------|------------|----------------|------------------|-------------|-------------------|
| <input checked="" type="checkbox"/> | helloworld | Default | 1 | 1 | Retain all images |

Items per page: 25 1-1 of 1 item

1 1 of 1 page

README.txt.pdfShow all

Registry / Images /

monishaibm@sha256:1304f1745573...jp.icr.io/helloworld/monishaibm@sha256:1304f174557314a7ed9eddb4eab12fed12cb0cd9809e4c28f29af865

Image details

Issues by type

Tags

latest

Digest

1304f1745573...

Size

3 MB

Created

87 days ago

Security status

No issues

Image inspect data

```
{  "Id": "sha256:9c6f0724472873bb50a2ae67a9e7adcb57673a183cea8b06eb778dca859181b5",  "Parent": "",  "Comment": "",  "Created": "2022-08-09T17:19:53.47374331Z",  "Container": "0c4b20968eb1d804460f8612bc52be4f5a8e65eb14190b5ae30fec94d2fb4f50",  "ContainerConfig": {    "Hostname": "0c4b20968eb1",    "Domainname": "",    "User": "",    "AttachStdin": false,    "AttachStdout": false,    "AttachStderr": false,    "Tty": false,    "OpenStdin": false,    "StdinOnce": false,    "Env": [      "PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin"    ],    "Cmd": [      "/bin/sh",      "-c",      "#(nop) ",      "CMD [\"/bin/sh\"]"    ]  },  "Image": "sha256:c0261ca8a4a79627f3e658c0c2b1e3166f56713a58e1411b1e3ab1e370962e75",  "Volumes": {}}
```