Push Helm charts to an Azure container registry

Overview

Platform:	Azure
Owner of this SOP:	Fully Managed
Cloud Services:	Fully Managed POD B
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Reviewer	

Pre-requisites

- Azure container registry - Create a container registry. Cloud Factory provides dedicated component to create Azure container registry.
- Helm client version 3.7 or later
- Azure CLI version 2.0.71 or later
- Kubernetes cluster where you will install a Helm chart.
- Proper Privileges to authenticate to the registry.

Procedure

Create a test chart

Step:1

Create a test chart using the following commands:

```
[root@MAUE10ETP0D764 ~]# hel
[root@MAUE10ETP0D764 ~]# mkdir helmchart
[root@MAUE10ETP0D764 ~]# cd helmchart/
[root@MAUE10ETP0D764 helmchart]# helm create initialchart
Creating initialchart
[root@MAUE10ETP0D764 helmchart]# ls
initialchart
```

Step:2

For better understanding, change directory to the `templates` folder and delete the contents

```
[root@MAUE10ETP0D764 helmchart]# cd initialchart/templates/
[root@MAUE10ETP0D764 templates]# ls
deployment.yaml  _helpers.tpl  hpa.yaml  ingress.yaml  NOTES.txt  serviceaccount.yaml  service.yaml  tests
[root@MAUE10ETP0D764 templates]# rm -rf *
```

Step:3

In the `templates` folder, create a configmap with sample configuration. Following is an example

```
vim configmap.yaml
apiVersion: v1
kind: ConfigMap
metadata:
  name: hello-world-configmap
data:
  myvalue: "Hello World"
```

Save chart to local archive

Change directory to "initalchart" subdirectory. Then, run `helm package` to save the chart to a local archive.

```
[root@MAUE10ETP0D764 helmchart]# cd initialchart/
[root@MAUE10ETP0D764 initialchart]# helm package .
Successfully packaged chart and saved it to: /root/helmchart/initialchart/initialchart-0.1.0.tgz
[root@MAUE10ETP0D764 initialchart]# ls
charts  Chart.yaml  initialchart-0.1.0.tgz  templates  values.yaml
```
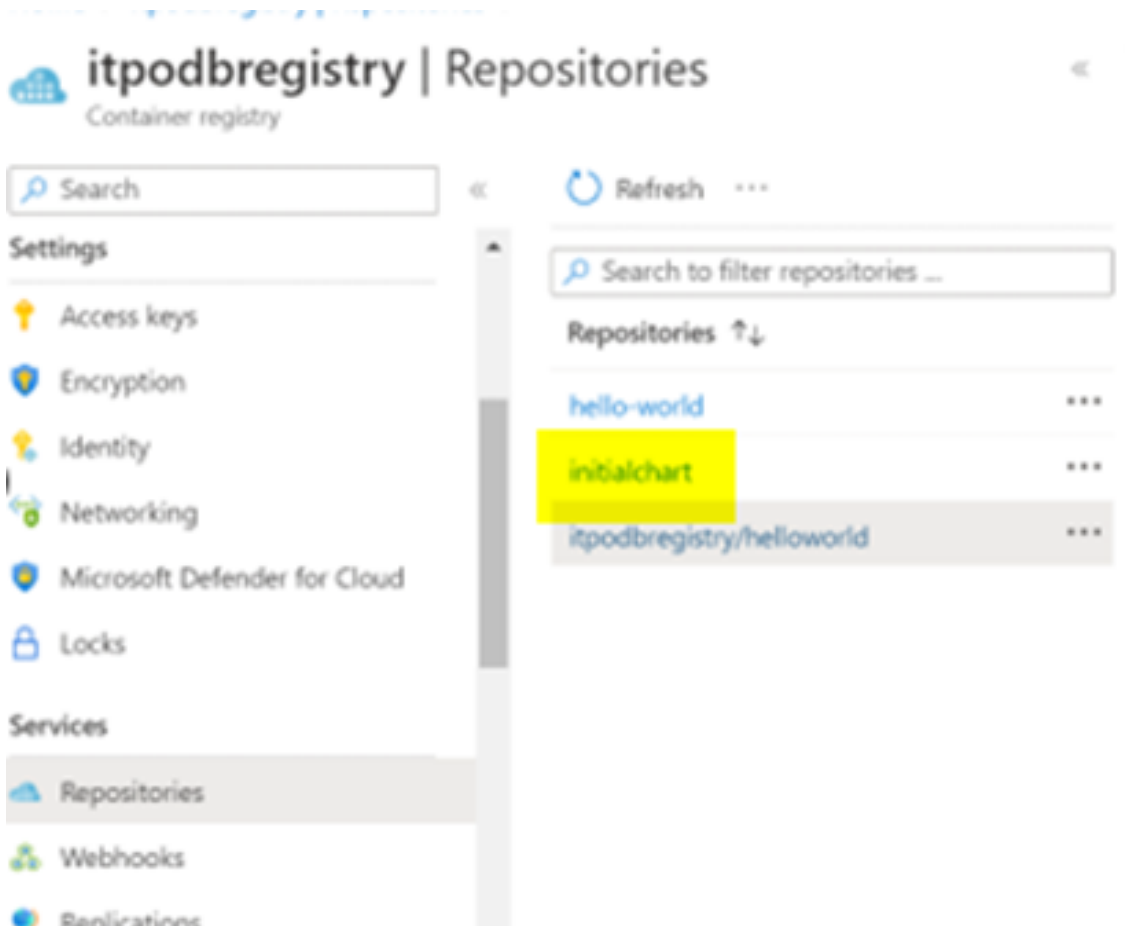
Push chart to registry as OCI artifact

Run `helm registry login` to authenticate with the registry. You may use appropriate authentication method for your scenario, such as service principal credentials, user identity.

Run the `helm push` command to push the chart archive to the fully qualified target repository.

```
helm push initialchart-0.1.0.tgz oci://itpodbregistry.azurecr.io
```

Related articles

- https://learn.microsoft.com/en-us/azure/container-registry/container-registry-authentication?tabs=azure-cli
- Helm
- Helm | Docs