Lesson 08 Demo 04

Accessing a Kubernetes Deployment with a Service

Objective: To understand how to interact with a Kubernetes cluster via Azure Cloud Shell and access a deployed application using a service

Tools required: Azure management tools

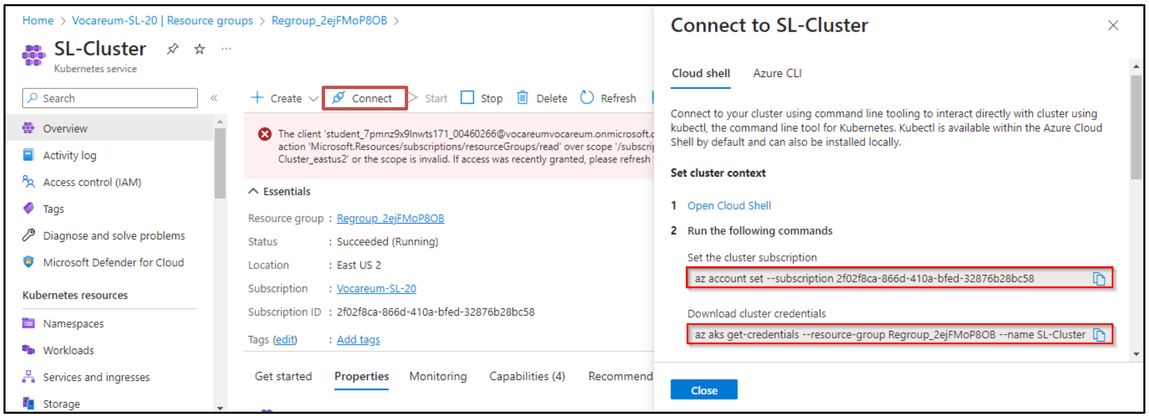
Prerequisites: An AKS cluster should already be set up (refer to the steps provided in Lesson 08, Demo 01 for guidance).

Steps to be followed:

1. Connect Azure Cloud Shell to the Kubernetes cluster
2. Create a deployment as a service

Step 1: Connect Azure Cloud Shell to the Kubernetes cluster

1.1 Navigate to the **SL-Cluster**. Click on **Connect**, and copy the cluster context and paste it into Cloud Shell



The client 'student_7pmnz9x9lnwts171_00460266@vocareumvocareum.onmicrosoft.c
action 'Microsoft.Resources/subscriptions/resourceGroups/read' over scope '/subscri
Cluster_eastus2' or the scope is invalid. If access was recently granted, please refresh

Resource group : Regroup_2ejFMoP8OB
Status : Succeeded (Running)
Location : East US 2
Subscription : Vocareum-SL-20
Subscription ID : 2f02f8ca-866d-410a-bfed-32876b28bc58
Tags (edit) : Add tags

Connect to your cluster using command line tooling to interact directly with cluster using kubectl, the command line tool for Kubernetes. Kubectl is available within the Azure Cloud Shell by default and can also be installed locally.

Set cluster context

1 Open Cloud Shell

2 **Run the following commands**

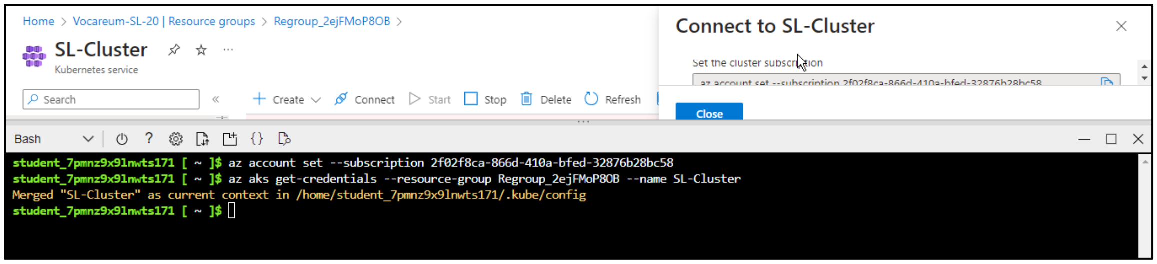
Set the cluster subscription

```
az account set --subscription 2f02f8ca-866d-410a-bfed-32876b28bc58
```

Download cluster credentials

```
az aks get-credentials --resource-group Regroup_2ejFMoP8OB --name SL-Cluster
```

Note: To establish a connection between the SL-Cluster and Cloud Shell, follow steps **3.6** to **3.8** from Lesson 08, Demo 03.



```
student_7pmnz9x9lnwts171 [ ~ ]$ az account set --subscription 2f02f8ca-866d-410a-bfed-32876b28bc58
student_7pmnz9x9lnwts171 [ ~ ]$ az aks get-credentials --resource-group Regroup_2ejFMoP8OB --name SL-Cluster
Merged "SL-Cluster" as current context in /home/student_7pmnz9x9lnwts171/.kube/config
student_7pmnz9x9lnwts171 [ ~ ]$ 
```

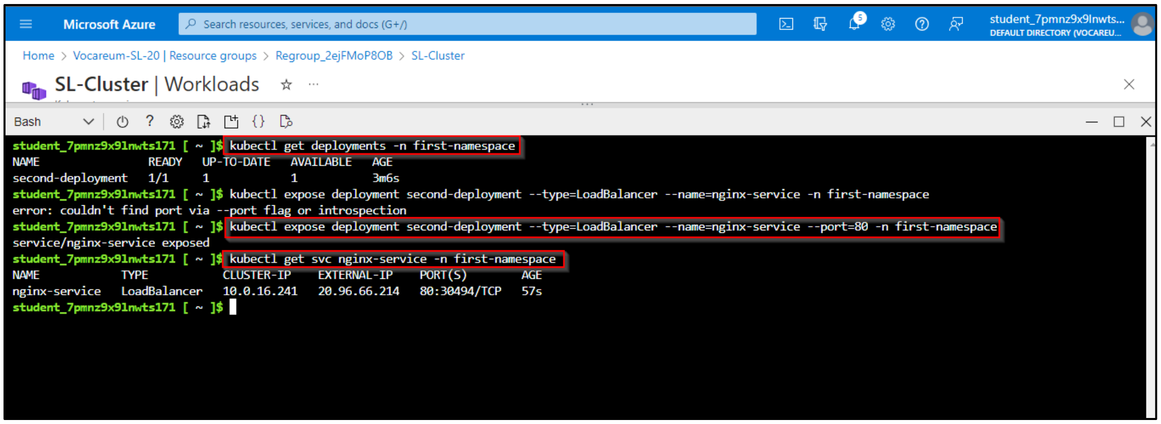
Successfully connected to the **SL-Cluster**.

Step 2: Create a deployment as a service

2.1 To expose the **second-deployment** as a service, run the following commands:

kubectl get deployments -n first-namespace

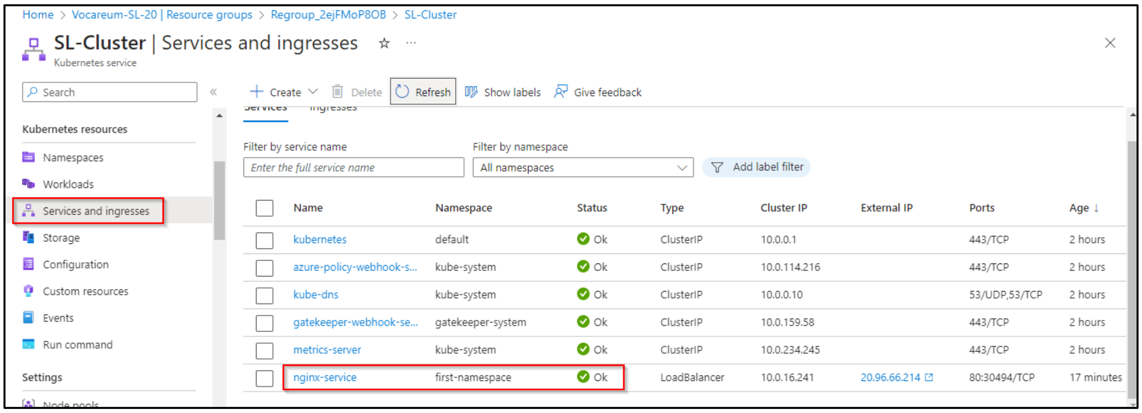
kubectl expose deployment second-deployment --type=LoadBalancer --name=nginx-service --port=80 -n first-namespace
kubectl get svc nginx-service -n first-namespace


Microsoft Azure
Search resources, services, and docs (G+/)
student_7pmnz9x9lnwts...
DEFAULT DIRECTORY (VOCAREU...
Home > Vocareum-SL-20 | Resource groups > Regroup_2ejFMoP8OB > SL-Cluster
SL-Cluster | Workloads
Bash

```
student_7pmnz9x9lnwts171 [ ~ ]$ kubectl get deployments -n first-namespace
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
second-deployment   1/1     1            1           3m6s
student_7pmnz9x9lnwts171 [ ~ ]$ kubectl expose deployment second-deployment --type=LoadBalancer --name=nginx-service -n first-namespace
error: couldn't find port via --port flag or introspection
student_7pmnz9x9lnwts171 [ ~ ]$ kubectl expose deployment second-deployment --type=LoadBalancer --name=nginx-service --port=80 -n first-namespace
service/nginx-service exposed
student_7pmnz9x9lnwts171 [ ~ ]$ kubectl get svc nginx-service -n first-namespace
NAME            TYPE           CLUSTER-IP    EXTERNAL-IP    PORT(S)        AGE
nginx-service   LoadBalancer   10.0.16.241   20.96.66.214   80:30494/TCP   57s
student_7pmnz9x9lnwts171 [ ~ ]$ 
```

Note: Refer to Lesson 08, Demo 03 for more details on these commands.

2.2 Navigate to the **services and ingresses** section within the SL-Cluster. Click on the refresh icon to view the recently created **nginx-service.**



Home > Vocareum-SL-20 | Resource groups > Regroup_2ejFMoP8OB > SL-Cluster

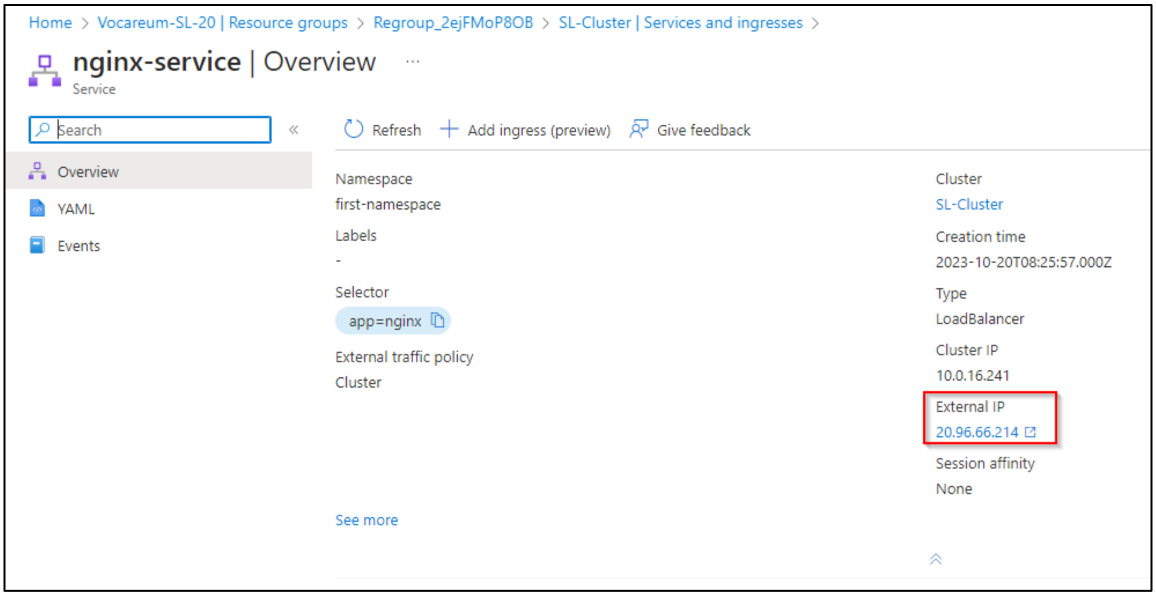
SL-Cluster | Services and ingresses
Kubernetes service

Filter by service name: Enter the full service name

Filter by namespace: All namespaces

	Name	Namespace	Status	Type	Cluster IP	External IP	Ports	Age ↓
□	kubernetes	default	✓ Ok	ClusterIP	10.0.0.1		443/TCP	2 hours
□	azure-policy-webhook-s...	kube-system	✓ Ok	ClusterIP	10.0.114.216		443/TCP	2 hours
□	kube-dns	kube-system	✓ Ok	ClusterIP	10.0.0.10		53/UDP,53/TCP	2 hours
□	gatekeeper-webhook-se...	gatekeeper-system	✓ Ok	ClusterIP	10.0.159.58		443/TCP	2 hours
□	metrics-server	kube-system	✓ Ok	ClusterIP	10.0.234.245		443/TCP	2 hours
□	nginx-service	first-namespace	✓ Ok	LoadBalancer	10.0.16.241	20.96.66.214	80:30494/TCP	17 minutes

2.3 Click on the **nginx-service** > **overview** and click on the **External IP** of the service to access the Nginx application



Home > Vocareum-SL-20 | Resource groups > Regroup_2ejFMoP8OB > SL-Cluster | Services and ingresses >

nginx-service | Overview
Service

Namespace
first-namespace

Labels
-

Selector
app=nginx

External traffic policy
Cluster

Cluster
SL-Cluster

Creation time
2023-10-20T08:25:57.000Z

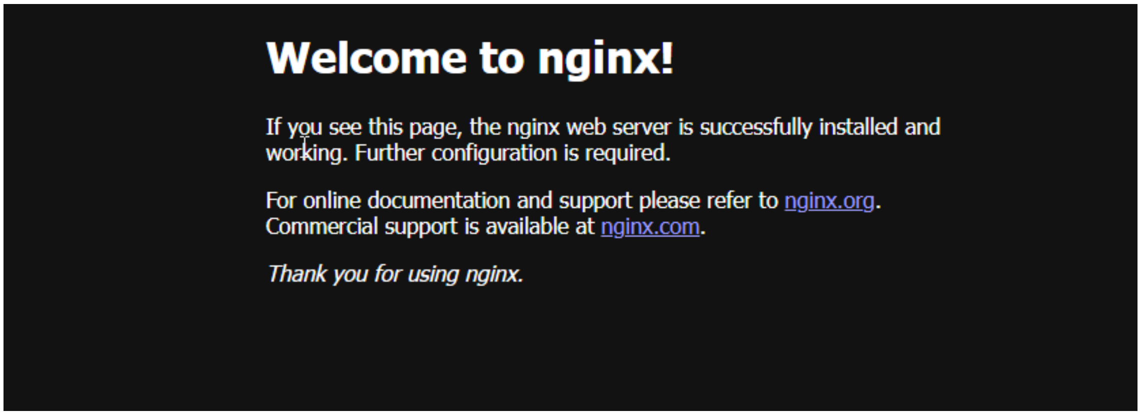
Type
LoadBalancer

Cluster IP
10.0.16.241

External IP
20.96.66.214

Session affinity
None

.



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

By following these steps, you have successfully connected to an Azure Kubernetes cluster and accessed a deployed application through a service.