KUBERNETES (ENGLISH)

4. forduló

A kategória támogatója: Nokia

Ismertető a feladatlaphoz

Közeleg az 5. forduló, figyelj az időpontokra!

Használd a naptárat:

Vagy figyeld kategóriánként az időpontokat (íme egy MINTA, hol találod):

Amennyiben olyan kategóriában játszol, ahol van csatolmány, de hibába ütközöl a letöltésnél, ott valószínűleg a vírusirtó korlátoz, annak ideiglenes kikapcsolása megoldhatja a problémát. (Körülbelül minden 3000. letöltésnél fordul ez elő.)

Jó versenyzést kívánunk!

Kubernetes Services:

A Kubernetes Service is an abstraction layer that groups together a set of pods with a common purpose and provides a single access point to interact with them. It acts as an mediator between the application's client and the backend pods, ensuring seamless communication regardless of pod rescheduling or scaling events.

Before you start, please read the following hint:

KDiff3 is a free and open-source diff and merge tool that can be helpful during the solution of coding-related exercises.
Download link: https://sourceforge.net/projects/kdiff3/files/

1. feladat 1 pont

We have two Geo redundant kubernetes cluster and each cluster has 3 nodes.

A web application is running inside a pod and it is getting its label from the deployment.yaml which is "Nokia-App".

The container port is 80 and the we'd like to expose our service on port 9376 between the two cluster via TCP.

Please select the right answer.

Válasz

```
apiVersion: v1
kind: Service
metadata:
  type: ClusterIP
  name: Nokia-service
spec:
  selector:
    app.kubernetes.io/name: Nokia-App
  ports:
    - protocol: TCP
      port: 80
      targetPort: 9376
```

```
apiVersion: v1
kind: Service
metadata:
  type: ClusterIP
  name: Nokia-service-cluster-wide
spec:
  selector:
    app.kubernetes.io/name: Nokia-App
  ports:
    - protocol: TCP
      port: 80
      targetPort: 9376
```

```
apiVersion: v1
kind: Service
metadata:
  name: Nokia-service
spec:
  selector:
    app.kubernetes.io/name: Nokia-App
  ports:
```

```
    - protocol: TCP
      port: 80
      targetPort: 8375
```

```
apiVersion: v1
kind: Service
metadata:
  type: ClusterIP
  name: Nokia-service
spec:
  clusterIP: 10.96.0.10
  selector:
    name: Nokia-App
  ports:
    - protocol: TCP
      port: 80
      targetPort: 9376
```

```
apiVersion: v1
kind: Service
metadata:
  type: ClusterIP
  name: Nokia-service
spec:
  selector:
    name: Nokia-App
  ports:
    - protocol: UDP
      port: 80
      targetPort: 9376
```

None of the definitions can meet the described requirement.

2. feladat 2 pont

The following Nodeport service is running in our node in a kubernetes cluster. The node IP address is 10.90.122.34 and our webserver only accept GET requests.

```
kubectl get svc -n ithon
NAME                     TYPE       CLUSTER-IP      EXTERNAL-IP   PORT(S)        A
nokia-nodeport-service   NodePort   10.254.139.40   <none>        8443:30090/TCP
```

How can you check to get 200-OK https replies through this service?

Please select the valid answer which do the checking inside and outside of the cluster.

Válasz

- ```
  curl --request GET -vk https://nokia-nodeport-service.ithon.svc.cluster.local:
  curl --request GET -vk https://10.90.122.34:30090
  ```

- ```
  curl --request GET -X POST -vk https://nokia-nodeport-service.ithon.svc.cluste
  curl --request GET -vk https://10.90.122.34:30090
  ```

- ```
  curl -X GET -vk https://nokia-nodeport-service.ithon.svc.cluster.local:30090
  curl -X GET -vk https://10.90.122.34:8443
  ```

- ```
  netstat -tulnp | grep 8443
  netstat -tulnp | grep 30090
  ```

- ```
  telnet nokia-nodeport-service.ithon.svc.cluster.local 8443
  telnet 10.90.122.34 30090
  ```

- ```
  ping nokia-nodeport-service.ithon.svc.cluster.local 8443
  ping 10.90.122.34 30090
  ```

3. feladat 3 pont

The following deployment is implementing a webserver:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nokia-app-deployment
  namespace: ithon
  labels:
    app: nokia-web-app
spec:
  replicas: 1
  selector:
    matchLabels:
      app: nokia-web-app
  template:
    metadata:
      labels:
        app: nokia-web-app
    spec:
      containers:
        - name: nokia-container
          image: nokia-registry:5000/nokia-container-image:1.0.0
          ports:
            - containerPort: 8080
```

Please select the right Nodeport definition which match to the deployment above and configured to these ports.

The static port on each node to access the service from outside the cluster: 30090

Port on the pods where your application is running: 8080

Port to access the service internally in the cluster: 80

Válasz

```
apiVersion: v1
kind: Service
metadata:
  name: nokia-nodeport-service
  namespace: ithon
spec:
  type: NodePort
  selector:
    app: nokia-app-deployment
  ports:
    - protocol: TCP
      port: 80
```

```
      targetPort: 30090
      nodePort: 8080
```

```
apiVersion: v1
kind: Service
metadata:
  name: nokia-nodeport-service
  namespace: ithon
spec:
  type: NodePort
  selector:
    app: nokia-web-app
  ports:
    - protocol: TCP
      port: 80
      targetPort: 30090
      nodePort: 8080
```

```
apiVersion: v1
kind: Service
metadata:
  name: nokia-nodeport-service
  namespace: ithon
spec:
  type: NodePort
  selector:
    app: nokia-container
  ports:
    - protocol: TCP
      port: 30090
      targetPort: 8080
      nodePort: 80
```

```
apiVersion: v1
kind: Service
metadata:
  name: nokia-nodeport-service
spec:
  type: NodePort
  selector:
    app: nokia-container
  ports:
    - protocol: TCP
```

```
      port: 8080
      targetPort: 30090
      nodePort: 80
```

```
apiVersion: v1
kind: Service
metadata:
  name: nokia-nodeport-service
  namespace: ithon
spec:
  type: NodePort
  selector:
    app: nokia-web-app
  ports:
    - protocol: TCP
      port: 80
      targetPort: 8080
      nodePort: 30090
```

```
apiVersion: v1
kind: Service
metadata:
  name: nokia-nodeport-service
  namespace: ithon
spec:
  type: NodePort
  selector:
    app: nokia-web-application
  ports:
    - protocol: http
      port: 30090
      targetPort: 8080
      nodePort: 80
```

Megoldások beküldése