

# 그림으로 배우는 쿠버네티스 (Kubernetes)

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- CCIE DC, CKA&D, VCIX-NV6, RHCE, GCPx4

 <https://github.com/SysNet4Admin>

 <https://app.vagrantup.com/SysNet4Admin>



kubernetes

**더 다양한 조건을 제공한다는게  
어떤 의미인가요?**



# 노드 어피니티(affinity)란?



gpupool=nvidia  
accelerator=tesla-a100



diskint=nvme  
inmemory=redis

# 노드 어피니티(affinity) 조건



## 배포 조건

**required**   DuringScheduling   **Ignored**   DuringExecution

**preferred**   DuringScheduling   **Ignored**   DuringExecution

**required**   DuringScheduling   **Required**   DuringExecution   > 나중에 지원

**preferred**   DuringScheduling   **Required**   DuringExecution   > 나중에 지원

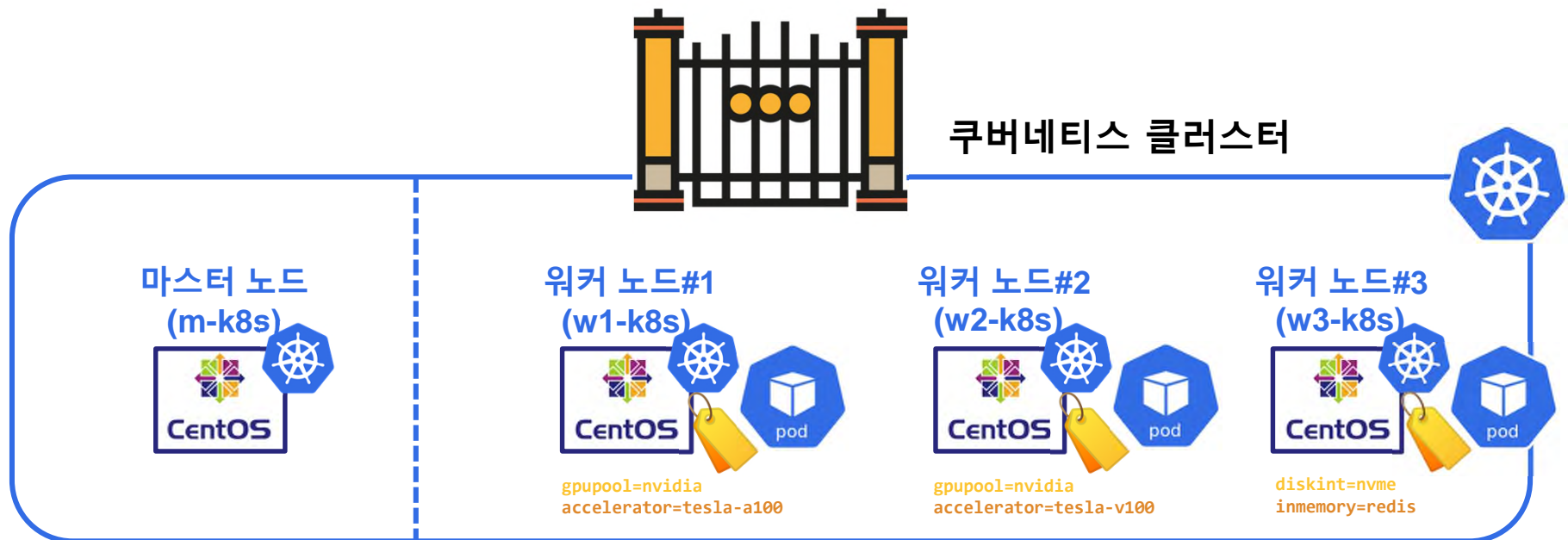
## 연산자(operator)

In            NotIn            > 키 값을 체크

Exists    DoesNotExist    > 키의 존재 여부를 체크

Gt           Lt            > 키 값이 크고 작음을 체크

# 현재 노드의 레이블 상태



# nodeAffinity.yaml

```
1  apiVersion: v1
2  kind: Pod
3  metadata:
4    name: nodeaffinity
5  spec:
6    affinity:
7      nodeAffinity:
8        requiredDuringSchedulingIgnoredDuringExecution:
9          nodeSelectorTerms:
10           - matchExpressions:
11             - key: inmemory
12               operator: In
13             - values:
14               - redis
15   containers:
16   - name: nginx
17     image: nginx
```



노드셀렉터  
(nodeSelector)

워커 노드#3  
(w3-k8s)



diskint=nvme  
inmemory=redis

# nodeAffinity-preferred.yaml

```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    labels:
5      app: nodeaffinity-preferred
6      name: nodeaffinity-preferred
7  spec:
8    replicas: 3
9    selector:
10     matchLabels:
11       app: nodeaffinity-preferred
12   template:
13     metadata:
14       labels:
15         app: nodeaffinity-preferred
16
17   spec:
18     containers:
19       - image: nginx
20         name: nginx
```

워커 노드#1  
(w1-k8s)



gpupool=nvidia  
accelerator=tesla-a100

워커 노드#2  
(w2-k8s)



gpupool=nvidia  
accelerator=tesla-v100

```
20  affinity:
21    nodeAffinity:
22      requiredDuringSchedulingIgnoredDuringExecution:
23        nodeSelectorTerms:
24          - matchExpressions:
25            key: gpupool
26            operator: In
27            values:
28              - nvidia
29
30  preferredDuringSchedulingIgnoredDuringExecution:
31    - weight: 1
32      preference:
33        matchExpressions:
34          key: accelerator
35          operator: In
36          values:
37            - tesla-a100
```

# anti-nodeAffinity.yaml



```
1  apiVersion: apps/v1
2  kind: Deployment
3  metadata:
4    labels:
5      app: anti-nodeaffinity
6      name: anti-nodeaffinity
7  spec:
8    replicas: 3
9    selector:
10     matchLabels:
11       app: anti-nodeaffinity
12   template:
13     metadata:
14       labels:
15         app: anti-nodeaffinity
16
17   spec:
18     containers:
19       - image: nginx
20         name: nginx
```

워커 노드#1  
(w1-k8s)



gpupool=nvidia  
accelerator=tesla-a100

워커 노드#2  
(w2-k8s)



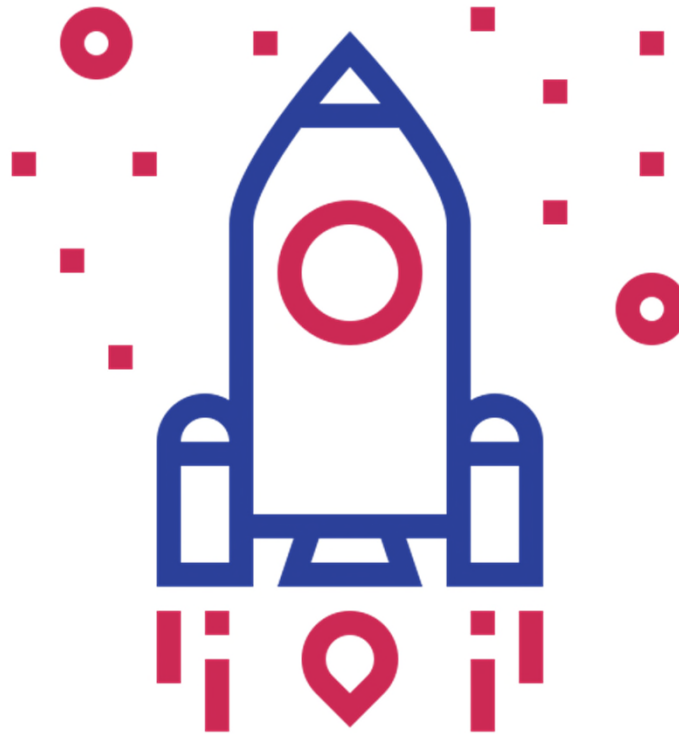
gpupool=nvidia  
accelerator=tesla-v100

```
20  affinity:
21    nodeAffinity:
22      requiredDuringSchedulingIgnoredDuringExecution:
23        nodeSelectorTerms:
24          - matchExpressions:
25            key: gpupool
26            operator: In
27            values:
28              - nvidia
```

```
29  preferredDuringSchedulingIgnoredDuringExecution:
30    - weight: 1
31      preference:
32        matchExpressions:
33          key: accelerator
34          operator: NotIn
35          values:
36            - tesla-a100
```



## 노드 어피니티 동작 확인



## 다음 강좌에는...



1. 노드 보호를 중심으로 신중하게 배포하고 싶다면?

- 테인트(Taints)
- 톨러레이션(Tolerations)



# kubernetes