

DEVCONF.cz

Self service cluster deployment using MCE

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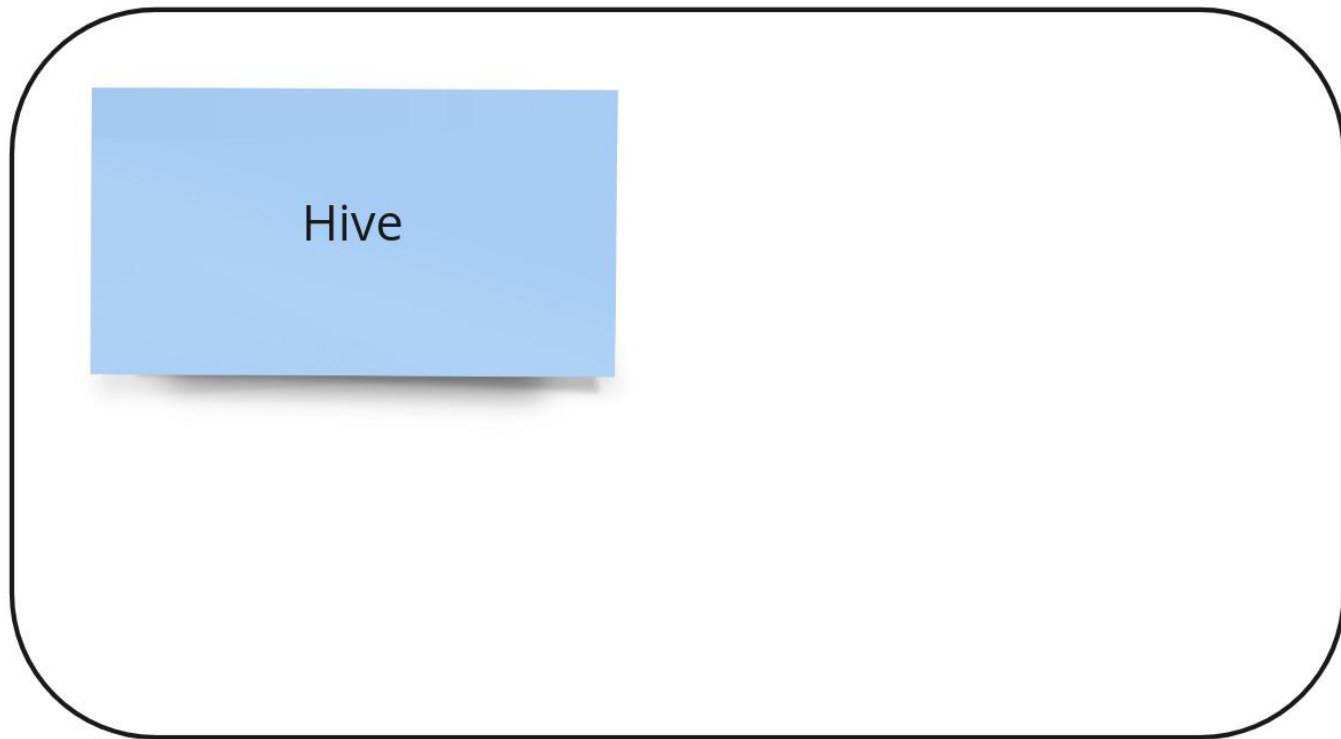


Cluster deployment using MCE - Hive

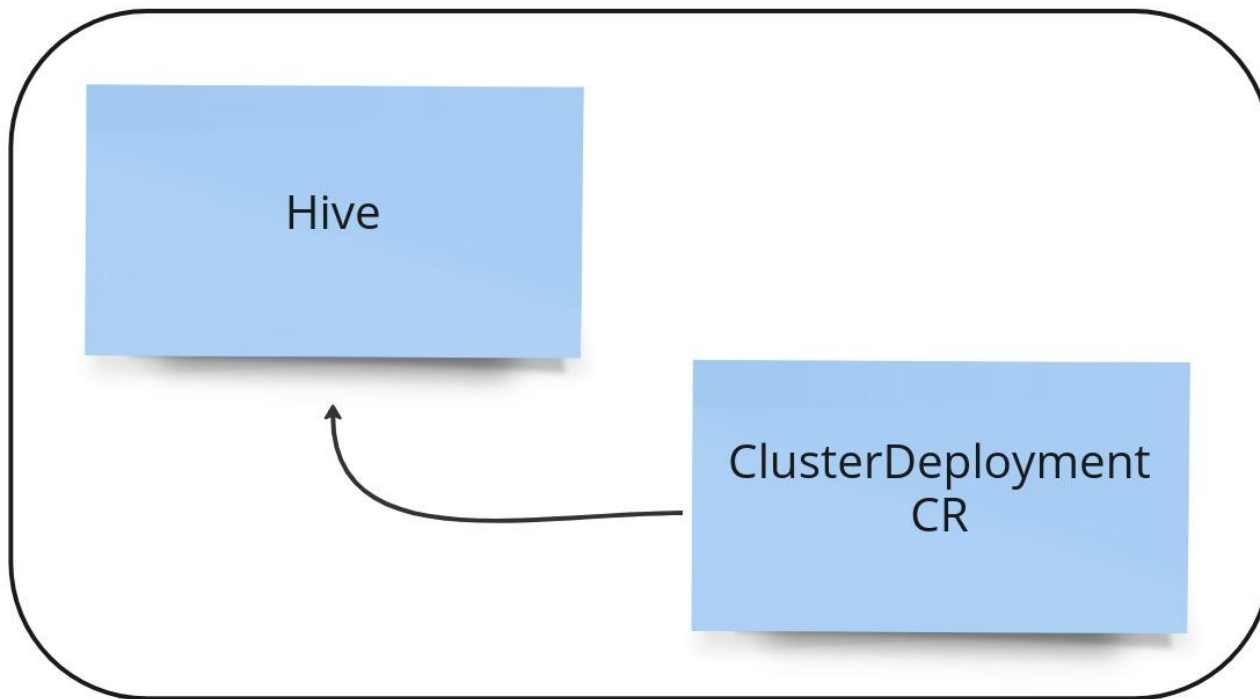
Hive

API driven OpenShift 4 cluster provisioning and management. Hive is an operator which runs as a service on top of Kubernetes/OpenShift. The Hive service can be used to provision and perform initial configuration of OpenShift clusters.

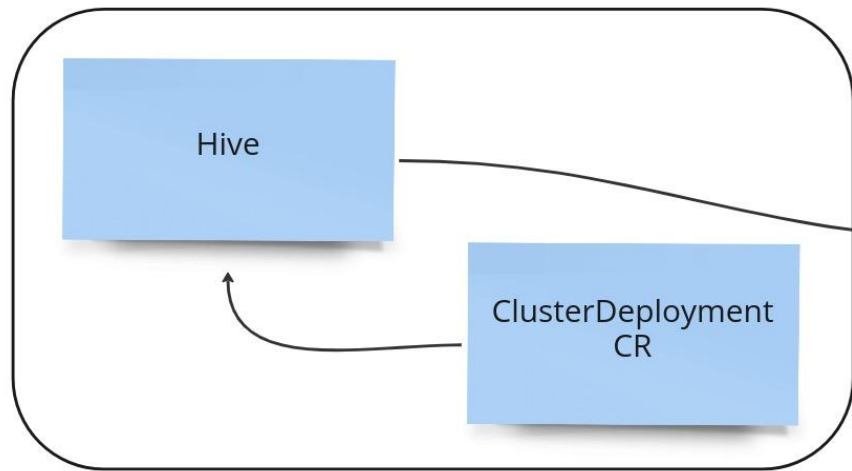
Hub Cluster



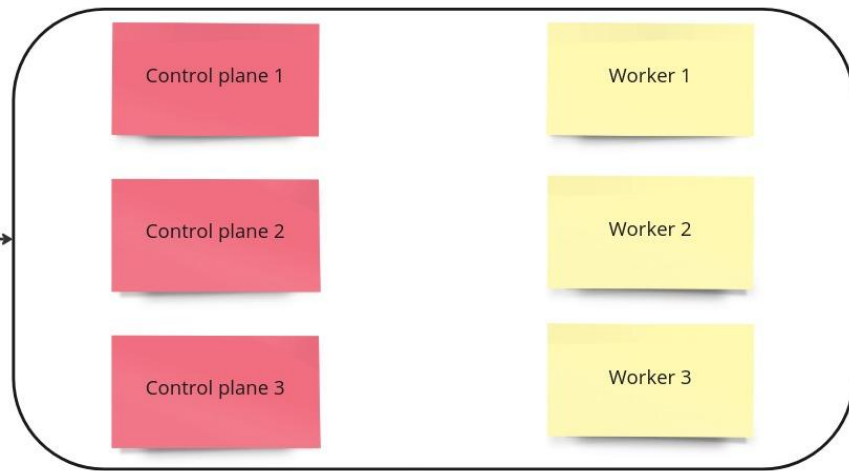
Hub Cluster



Hub cluster



New cluster



The background is a solid light purple color. Overlaid on this are several geometric shapes in different shades of purple. A large, dark purple circle is positioned on the left side. A medium-sized, medium-purple circle is on the right side. In the center, there is a square of a slightly darker purple shade. The text is centered horizontally and vertically within the square area.

Hive API ClusterDeployment CR

```
1  apiVersion: hive.openshift.io/v1
2  kind: ClusterDeployment
3  metadata:
4    name: mycluster
5    namespace: devusersns
6  spec:
7    baseDomain: foo.com
8    clusterInstallRef:
9      group: extensions.hive.openshift.io
10     kind: AgentClusterInstall
11     name: mycluster
12     version: v1beta1
13   clusterName: mycluster
14   platform:
15     agentBareMetal:
16       agentSelector:
17         matchLabels:
18           infraenvs.agent-install.openshift.io: bm-infra
19   pullSecretRef:
20     name: pullsecret
```



```
1  apiVersion: extensions.hive.openshift.io/v1beta1
2  kind: AgentClusterInstall
3  metadata:
4    name: mycluster
5    namespace: devusersns
6  spec:
7    clusterDeploymentRef:
8      name: mycluster
9    provisionRequirements:
10      controlPlaneAgents: 3
11      workerAgents: 3
12    imageSetRef:
13      name: 411-imageset
14    networking:
15      clusterNetwork:
16        - cidr: 10.128.0.0/14
17          hostPrefix: 23
18      serviceNetwork:
19        - 172.30.0.0/16
20    apiVIP: 192.168.122.10
21    ingressVIP: 192.168.122.23
```

- Admin oriented flow

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- Permission to create ClusterDeployment CR gives ability to create any kind of cluster

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Cluster deployment using MCE - Hypershift

Hypershift

HyperShift is a middleware for hosting OpenShift control planes at scale that solves for cost and time to provision, as well as portability cross cloud with strong separation of concerns between management and workloads.



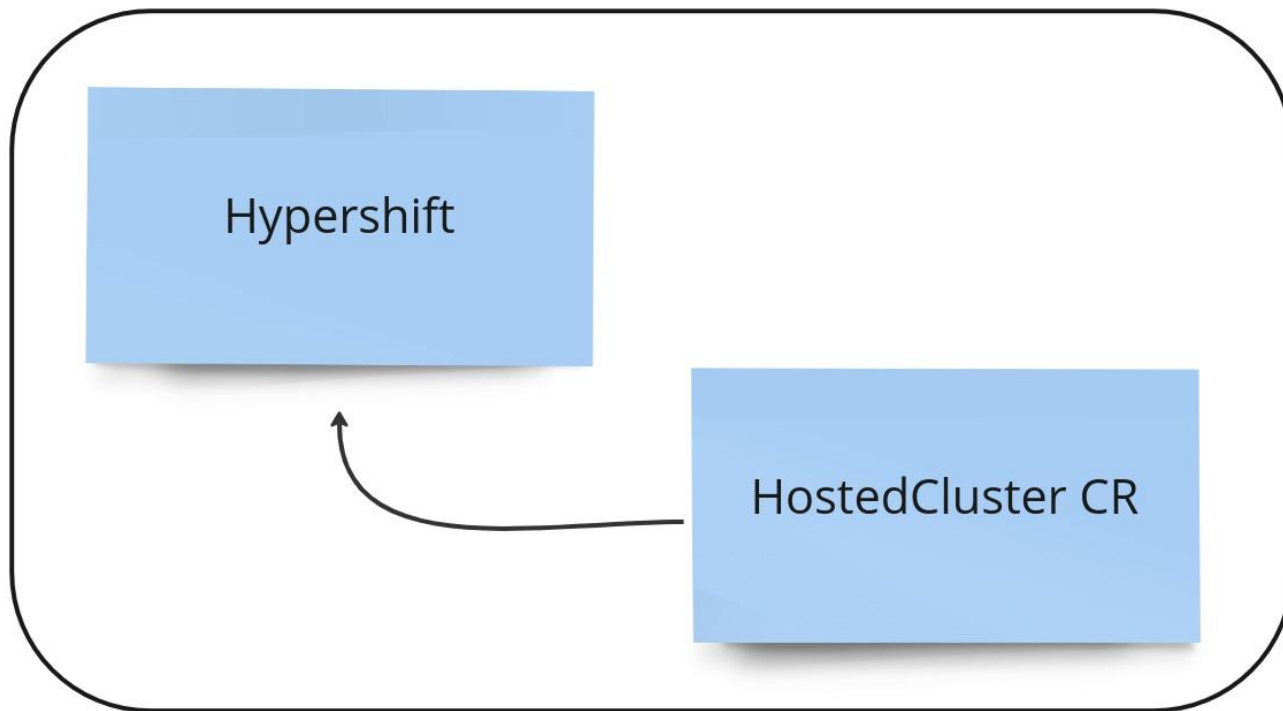
Hub cluster



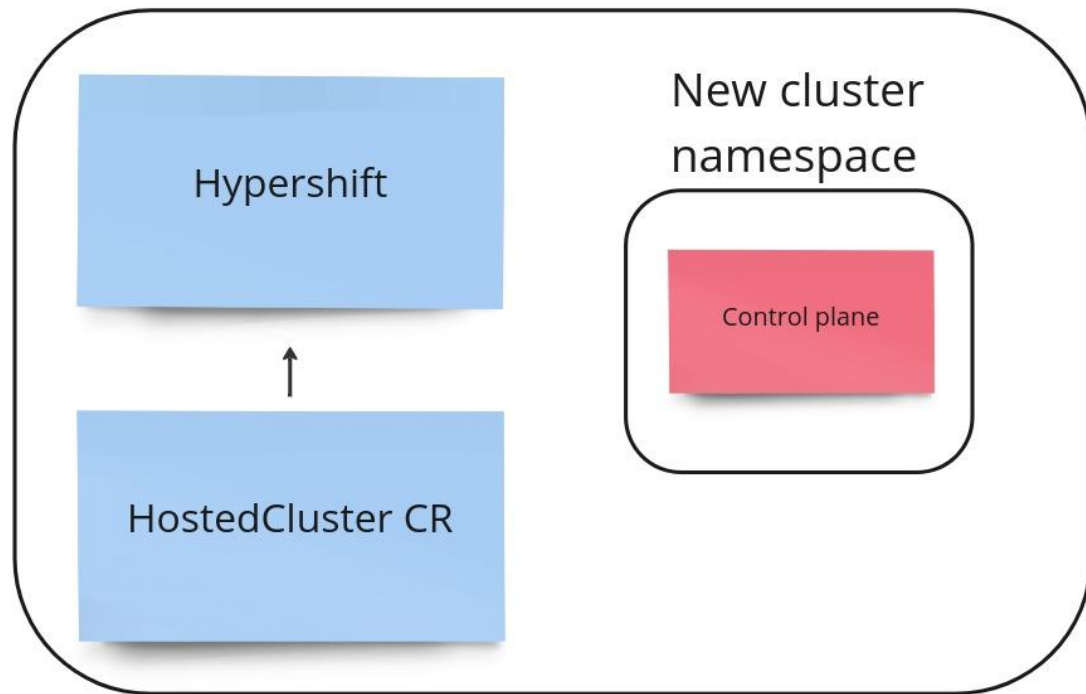
A diagram showing a large, light gray rounded rectangle representing a 'Hub cluster'. Inside the top-left corner of this rectangle is a smaller, solid blue rounded rectangle. The word 'Hypershift' is written in black text in the center of the blue rectangle.

Hypershift

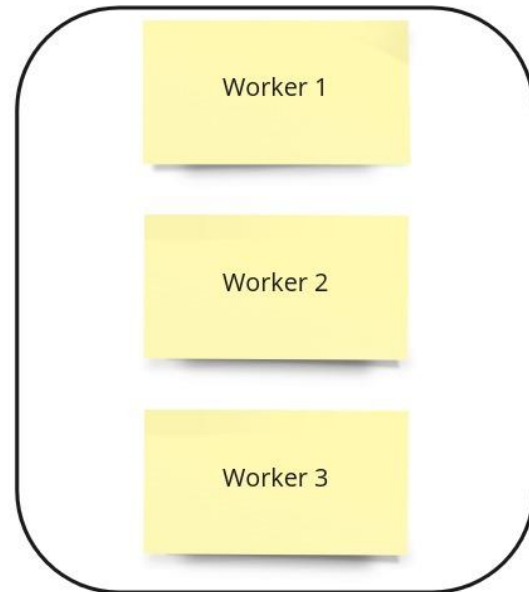
Hub cluster



Hub cluster



New cluster



Hypershift API HostedCluster CR

```
1  apiVersion: hypershift.openshift.io/v1alpha1
2  kind: HostedCluster
3  metadata:
4    name: mycluster
5    namespace: devusersns
6  spec:
7    release:
8      image: quay.io/openshift-release-dev/ocp-release:4.11.9-multi-x86_64
9    pullSecret:
10     name: pullsecret
11    sshKey:
12     name: sshkey
13    networking:
14     podCIDR: 10.132.0.0/14
15     serviceCIDR: 172.31.0.0/16
16     machineCIDR: 192.168.122.0/24
17     networkType: OVNKubernetes
18    platform:
19     type: Agent
20     agent:
21       agentNamespace: bm-infra
22    infraID: mycluster
23    dns:
24     baseDomain: foo.com
25    ...
```

```
1  apiVersion: hypershift.openshift.io/v1alpha1
2  kind: NodePool
3  metadata:
4    name: nodepool-mycluster
5    namespace: devusersns
6  spec:
7    clusterName: mycluster
8    replicas: 3
9    management:
10     autoRepair: false
11     upgradeType: InPlace
12   platform:
13     type: Agent
14     agent:
15       agentLabelSelector:
16         matchLabels: {}
17   release:
18     image: quay.io/openshift-release-dev/ocp-release:4.11.9-multi-x86_64
```

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**Dev users can not
deploy their own
clusters via
current set of
APIs**



Cluster as a service operator

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- Adds guard-rails to existing cluster deployment solutions - Hive and Hypershift

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Cluster as a service operator

- Adds guard-rails to existing cluster provisioning solutions - Hive and Hypershift
 - Clusters are defined as templates
 - Cluster quota similar to k8s resource quota
- Enables any kind of post-installation cluster setup

The background is a solid light purple color. Overlaid on this are several large, overlapping circles in various shades of purple, ranging from a very light lavender to a deep, dark indigo. The circles are arranged in a way that they partially obscure each other, creating a layered effect. In the center-right area, the word "Demo" is written in a clean, white, sans-serif font. The overall aesthetic is modern and minimalist, with a focus on color and geometric shapes.

Demo

Cluster as a service operator repository

<https://github.com/stolostron/cluster-templates-operator>

