



kubernetes

Kubernetes: Pod Presets

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- **Pod Presets** can inject Information into Pods at Creation Time or into Running Pods.
- Pod Presets can push secrets, volumes, volume mounts, and environment variables into the Pods.
- When Injecting some Information into Pods, Pod preset will apply the changes on **all Container running** in the Pods.
- User use **label selectors** to specify the Pods to which a given Pod Preset applies.
- Using a Pod Preset allows pod template authors to not have to explicitly provide all information for every pod.

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- **Admission Control:** *Admission control* is how Kubernetes applies Pod Presets to incoming pod creation requests.
- When a pod creation request occurs, the system does the following:
 1. Retrieve all **PodPresets** available for use.
 2. Match the **label selector** of the **PodPreset** to the pod being created.
 3. Attempt to merge the various defined resources for the **PodPreset** into the **Pod being created**.
 4. **On error**, throw an event documenting the **merge error on the pod**, and create the pod without any injected resources from the PodPreset.

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➤ **Pod Preset Behaviour:**

- When a PodPreset is applied to one or more Pods, Kubernetes modifies the **pod spec**.
- Kubernetes **annotates** the resulting **modified pod spec** to show that it was modified by a PodPreset.

The annotation is of the form

`podpreset.admission.kubernetes.io/<pod-preset name>":
"<resource version>"`

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- **Enable Pod Preset:**
- User needs to Enable API Type Service on Kubernetes API Server.
- This can be done by including `settings.k8s.io/v1alpha1=true` in the `--runtime-config` option for the API server.
- In minikube add this flag `--extra-config=apiserver.runtime-config=settings.k8s.io/v1alpha1=true` while starting the cluster.

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- **Enable Admission Controller:**
- User needs to Enable **Admission Controller** on Kubernetes API Server.
- This can be done by including **--enable-admission-plugins** option value in the API server Specification.
- In minikube add this flag **—extra-config=apiserver.enable-admission-plugins=NamespaceLifecycle,LimitRanger,ServiceAccount,DefaultStorageClass,DefaultTolerationSeconds,NodeRestriction,MutatingAdmissionWebhook,ValidatingAdmissionWebhook,ResourceQuota,PodPreset** while starting the cluster.

Will see you in Next Lecture...

Thank you!

A close-up photograph of a hand holding a black marker, writing the words 'Thank you!' in a cursive script on a white surface. The hand is positioned on the right side of the frame, with the marker tip touching the paper. The background is plain white.

See you in next lecture ...