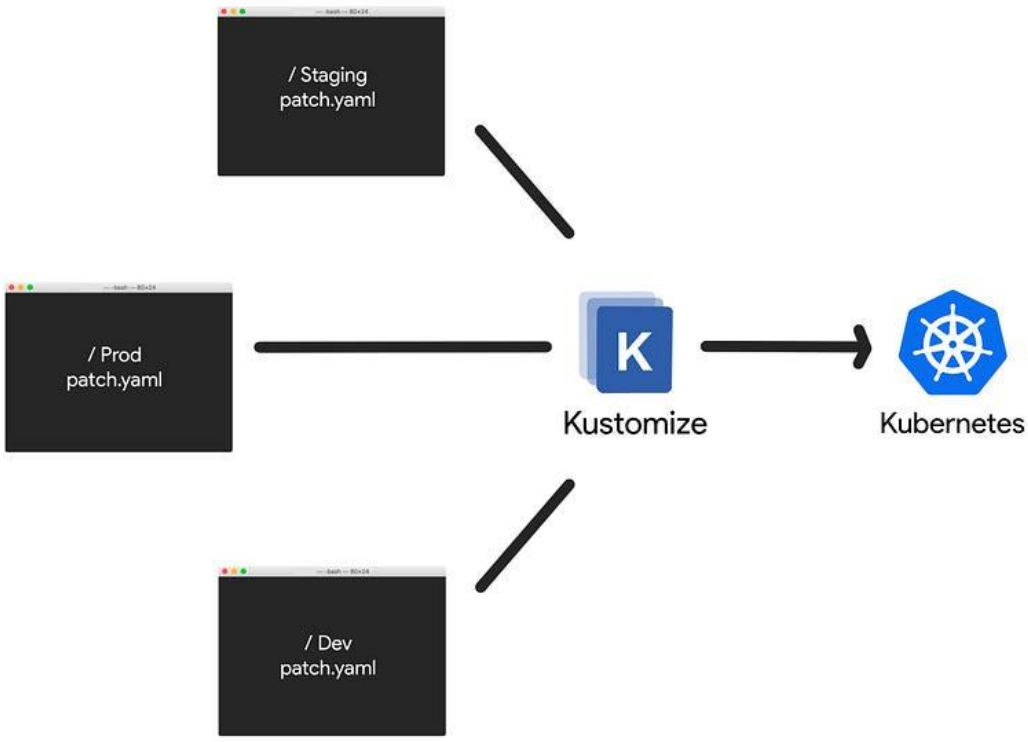
Overlays in Kustomize



Kustomize is a tool for managing and customizing configurations for applications deployed on Kubernetes. It offers a declarative approach, meaning you define what you want to achieve rather than how.

Kustomize focuses on overlays and patches, allowing you to customise existing YAML manifests without directly editing them. This keeps your original files clean and reusable.

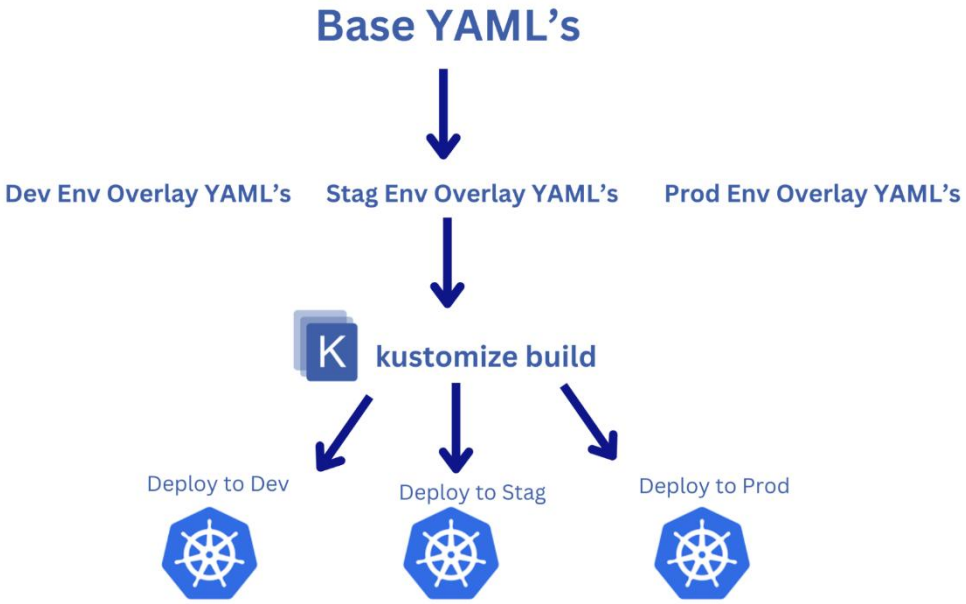
Benefits of Kustomize for Kubernetes Configuration Management

Improved organization: Layered approach keeps configurations organized and maintainable.

Reduced complexity: Declarative approach simplifies configuration management.

Increased efficiency: Reusability and environment-specific customization streamline deployments.

Enhanced collaboration: Easier to share and understand plain YAML files compared to templated configurations.



What is Kubectl

The Kubectl is a command line interface software that allows you to run commands in the Kubernetes cluster. It acts as a communication bridge between users/clients and the Kubernetes cluster. It uses the Kubernetes API Server to authenticate with the

Kubernetes Master Node to interact within the Kubernetes Cluster. The communication of API requests in the Kubernetes Cluster using kubectl to deploy the resources will be done with 2 approaches. The following are the 2 approaches used in Kubernetes deployment:

1. Imperative way (Manual approach)
2. Declarative way (Dynamic Approach)

Structure a real kuctl project:

kuctl-project/

├── .kuctl-project.yml
├── environments/
│ ├── dev/
│ │ └── values.yml
│ ├── staging/
│ │ └── values.yml
│ └── prod/
│ └── values.yml
├── deployments/
│ ├── base/
│ │ ├── kustomization.yml
│ │ └── ...

```
|   ├── app/
|   |   ├── kustomization.yml
|   |   ├── deployment.yml
|   |   └── service.yml
|   ├── ingress/
|   |   ├── kustomization.yml
|   |   └── ingress.yml
|   └── secrets/
|       ├── kustomization.yml
|       └── secrets.yml
├── templates/
|   └── common-vars.yml
├──.gitignore
└── README.md
```

Apply changes: kuctl deploy

kuctl deploy is typically used in the context of Kubernetes deployments with tools like kuctl, which helps manage and apply changes to Kubernetes clusters. Here's a concise explanation of how to apply changes using kuctl deploy:

Ensure Configuration: Make sure your kustomization.yaml or other configuration files are properly set up with the desired changes.

Run the Command: command to apply the changes to your Kubernetes cluster:

kuctl deploy -c <context> -e <environment>

Replace <context> with your Kubernetes context (e.g., prod, dev).

Replace <environment> with the environment you want to deploy to.

Verify Deployment: After running the command, verify that the changes have been applied successfully by checking the status of your resources:

kubectl get all

encounter any issues, ensure your kuctl version is up-to-date and that you have the necessary permissions to deploy to the cluster.