Kubectl

**🔹 What is kubectl?**

* kubectl (Kube Control) is the **command-line interface (CLI)** for interacting with a **Kubernetes cluster**.
* It allows users to manage Kubernetes resources like pods, deployments, services, namespaces, and more.
* It's like the bridge between you and the **Kubernetes API server**.

**🔹 How kubectl Works (Under the Hood)**

1. When you run a kubectl command, it reads your Kubernetes configuration file (default: ~/.kube/config) to determine:
   * Which cluster to connect to
   * The user credentials
   * The namespace context
2. It sends REST API calls to the **Kubernetes API server**.
3. The API server then processes the request and performs the action or returns data.

**🔹 Common kubectl Commands**

**▶️ Get Information**

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▶️ Describe Resources

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▶️ Create or Apply Config

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▶️ Delete Resources

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▶️ Logs and Debugging

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▶️ Namespaces

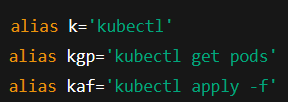
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🔹 Shortcuts & Aliases

| **Full Command** | **Short Alias** |
| --- | --- |
| kubectl get pods | kubectl get po |
| kubectl get deployments | kubectl get deploy |
| kubectl get services | kubectl get svc |
| kubectl get namespaces | kubectl get ns |

You can also create shell aliases:



**✅ Dry-run**

Simulate what a command would do without applying changes:



✅ Output Formatting

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🔹 Useful Tips

Use kubectl explain to understand resource schema:



Use kubectl diff to preview changes:

