🌈 Argo CD Installation & Grafana Setup Guide

🎯 Purpose

This document helps beginners understand how to install Argo CD, deploy applications, and set up Grafana using the Argo CD UI.

🧱 1. Prerequisites

Before starting, make sure you have:

1. *A Kubernetes cluster running (GKE.)*
2. `kubectl` *installed and configured.*
3. `argocd` *CLI installed (optional but helpful).*
4. *Internet access to pull images from Docker Hub.*

🚀 2. Install Argo CD

Step 2.1: Create a Namespace

kubectl create namespace argocd

Step 2.2: Install Argo CD

kubectl apply -n argocd -f https://raw.githubusercontent.com/argoproj/argo-cd/stable/manifests/install.yaml

*This will install all Argo CD components: **argocd-server, repo-server, application-controller, and dex-server**.*

Step 2.3: Expose Argo CD UI

*Instead of using port-forward, access Argo CD via **Ingress**:*

kubectl apply -f argocd-ingress.yaml

Then open in your browser: https://argocd.mettalex.ai

🔐 3. Login to Argo CD

Step 3.1: Get Initial Password

kubectl get secret argocd-initial-admin-secret -n argocd -o jsonpath="{.data.password}" | base64 -d

Step 3.2: Login via UI

1. *Open: `https://argocd.mettalex.ai`*
2. *Username: **admin***
3. *Password: **use the secret from Step 3.1***

📦 *4. Deploy Grafana Using Argo CD*

Step 4.1: Add Git Repository

1. *In Argo CD UI → **Settings** → **Repositories** → **Connect Repo***
2. *Add a Git repository containing **Grafana deployment manifests** or **Helm chart**.*

Step 4.2: Create a New Application

1. *Click **+ New App** in Argo CD UI.*
2. *Fill in the details:*
    - ***Application Name:** grafana*
    - ***Project:** default*
    - ***Sync Policy:** Automatic*
    - ***Repository URL:** git@github.com:fetchai/mettalexv2-devops.git*
    - ***Path:** folder name - grafana*
    - ***Destination Cluster:** your Kubernetes cluster*
    - ***Namespace:** monitoring (or any namespace you like)*
3. *Click **Create**.*

Step 4.3: Sync the Application

1. *Open the new application → Click **SYNC** → **Synchronize**.*

2. *Wait until all pods and services are **Healthy** and **Synced**.*

📊 5. Access Grafana

Step 5.1: Forward Grafana Service

*Instead of using port-forward, access grafana via **Ingress**:*

kubectl apply -f grafana-ingress.yaml

Step 5.2: Login to Grafana UI

1. *Open browser:* `https://grafana.mettalex.ai`
2. *Default credentials:*
    - ***Username:** admin*
    - ***Password:** admin (or as defined in manifest)*
3. *Change the password after first login.*

📈 6. Verify Grafana Dashboards

1. *Open Grafana → **Dashboards***
2. *Add a new dashboard or import pre-built dashboards.*

3. *Connect data sources like **Prometheus** if required.*

📝 *7. Tips & Notes*

- *Argo CD continuously monitors the Git repo; any changes are automatically synced if auto-sync is enabled.*
- *Always check pod logs if the application fails:*

kubectl logs <pod-name> -n <namespace>

- *Use namespaces to separate Grafana from other apps.*

🎉 *Congratulations!*

You have successfully installed Argo CD and deployed Grafana using the Argo CD UI.