Docker Compose for Prometheus, Grafana, and an Exporter Agent

Here's a complete docker-compose.yml file that sets up Prometheus, Grafana, and a Node Exporter agent for monitoring:

yaml

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version: '3.8'

services:

*# Prometheus monitoring system*

prometheus:

image: prom/prometheus:latest

container\_name: prometheus

restart: unless-stopped

volumes:

- ./prometheus/prometheus.yml:/etc/prometheus/prometheus.yml

- prometheus\_data:/prometheus

command:

- '--config.file=/etc/prometheus/prometheus.yml'

- '--storage.tsdb.path=/prometheus'

- '--web.console.libraries=/usr/share/prometheus/console\_libraries'

- '--web.console.templates=/usr/share/prometheus/consoles'

ports:

- "9090:9090"

networks:

- monitoring

depends\_on:

- node-exporter

*# Node Exporter for host metrics*

node-exporter:

image: prom/node-exporter:latest

container\_name: node-exporter

restart: unless-stopped

volumes:

- /proc:/host/proc:ro

- /sys:/host/sys:ro

- /:/rootfs:ro

command:

- '--path.procfs=/host/proc'

- '--path.sysfs=/host/sys'

- '--collector.filesystem.ignored-mount-points=^/(sys|proc|dev|host|etc)($$|/)'

ports:

- "9100:9100"

networks:

- monitoring

*# Grafana for visualization*

grafana:

image: grafana/grafana:latest

container\_name: grafana

restart: unless-stopped

volumes:

- grafana\_data:/var/lib/grafana

- ./grafana/provisioning:/etc/grafana/provisioning

environment:

- GF\_SECURITY\_ADMIN\_USER=admin

- GF\_SECURITY\_ADMIN\_PASSWORD=admin

- GF\_USERS\_ALLOW\_SIGN\_UP=false

ports:

- "3000:3000"

networks:

- monitoring

depends\_on:

- prometheus

*# Docker networks*

networks:

monitoring:

driver: bridge

*# Volumes for persistent data*

volumes:

prometheus\_data:

driver: local

grafana\_data:

driver: local

Additional Configuration Files

1. **Prometheus Configuration** (prometheus/prometheus.yml):

yaml

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global:

scrape\_interval: 15s

evaluation\_interval: 15s

scrape\_configs:

- job\_name: 'prometheus'

static\_configs:

- targets: ['localhost:9090']

- job\_name: 'node-exporter'

static\_configs:

- targets: ['node-exporter:9100']

1. **Grafana Provisioning** (optional, in grafana/provisioning/datasources/datasource.yml):

yaml

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apiVersion: 1

datasources:

- name: Prometheus

type: prometheus

access: proxy

url: http://prometheus:9090

isDefault: true

How to Use

1. Create the required directories:

bash

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mkdir -p prometheus grafana/provisioning/datasources

1. Create the configuration files as shown above
2. Start the services:

bash

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docker-compose up -d

1. Access the services:

* Grafana: [http://localhost:3000](http://localhost:3000/) (admin/admin)
* Prometheus: [http://localhost:9090](http://localhost:9090/)
* Node Exporter metrics: <http://localhost:9100/metrics>

Adding Dashboards

After logging into Grafana:

1. Go to Configuration > Data Sources and verify Prometheus is configured
2. Import Node Exporter dashboard (ID: 1860) or other dashboards from Grafana's dashboard repository

Alternative Exporters

You can replace or add other exporters depending on what you want to monitor:

* prom/mysqld-exporter for MySQL
* prom/redis-exporter for Redis
* google/cadvisor for container metrics
* prom/blackbox-exporter for blackbox probing

Just add them as additional services in the compose file and update the Prometheus configuration to scrape them.