



Monitoring & Observability Stack for OCI OKE

Oracle Cloud Infrastructure (OCI) Kubernetes Engine (OKE) is a powerful platform, but managing observability and monitoring can be challenging. This presentation explores a robust stack to address these needs effectively.

Challenges

1

Lack of Managed Solutions

OCI does not provide managed Grafana, Prometheus, or Alertmanager services, requiring custom deployment and configuration.

2

OKE -V Limitations

OKE has limitations around certain features Such as Daemon set, cAdvisor , Node port, persistent storage, csi driver.

3

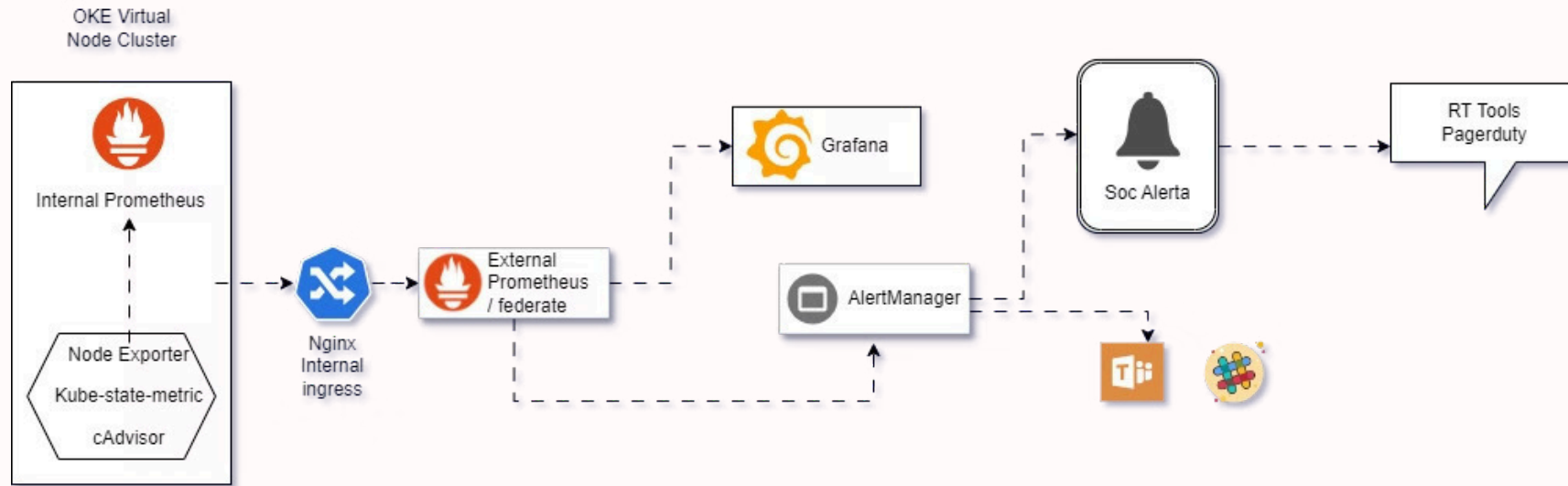
Complex Setup

Deploying and integrating the observability stack can be complex.

Demo with Tools

Leverage OKE and Terraform to provision the Kubernetes cluster and associated infrastructure as code. Deploy an observability stack including Grafana, Prometheus (federated), Alertmanager, node exporter, cAdvisor, kube-state-metrics, and Ingress Nginx controller. Utilize Ansible playbooks to automate the deployment and configuration of the observability tools.

Monitoring Stack





Cost Optimization

Zero Cost Model

Leverage open-source tools to create a cost-effective observability stack without licensing fees.

Efficient Resource Utilization

Optimize resource usage by tailoring the stack to your specific needs and scaling as required.

Value Proposition/Unique Selling Points (USP)

Infrastructure as Code

Provision the entire observability stack using Infrastructure as Code (IaC) for consistent, scalable, and repeatable deployments.

End-to-End Visibility

Gain comprehensive visibility into your OKE environment, from infrastructure to application-level metrics and logs.

Customizable and Extensible

Tailor the observability stack to your specific needs and easily integrate additional tools and data sources and webhook plugins as required such email, slack, team, socalerta, sns etc.

Improvements

1 Automated Provisioning

Further enhance the deployment process by incorporating advanced automation and CI/CD pipelines.

3 Longer Time Series Database

The federated Prometheus can integrate with Multiple Prometheus instances from Multiple cluster

2 Intergration with Multiple K8s orchestration platforms

This stack can be integrated with EKS, AKS, OKE Managed Node cluster etc.

```
scrape_configs:
  - job_name: 'federate'
    scrape_interval: 15s

    honor_labels: true
    metrics_path: '/federate'

    params:
      'match[]':
        - '{job="prometheus"}'
        - '{__name__=~"job:.*"}'

static_configs:
  - targets:
    - 'source-prometheus-1:9090'
    - 'source-prometheus-2:9090'
    - 'source-prometheus-3:9090'
```



Thank You