Amazon EKS Seminar - 1 Hour Presentation Script & Notes

Slide 1: Title Slide

Title: Introduction to Kubernetes & Amazon EKS

Subtitle: Simplifying Container Orchestration on AWS

Presented by: Ajith Kumar

Slide 2: Agenda

- What is Kubernetes?
- Why Kubernetes?
- Core Kubernetes Concepts
- Introduction to Amazon EKS
- How EKS Works
- EKS Architecture
- Sample Deployment / Use Case
- Q&A

Slide 3: What is Kubernetes?

- Open-source container orchestration platform
- Automates deployment, scaling, and management of containerized applications

- Originally developed by Google, now maintained by CNCF

Speaker Note: Think of Kubernetes as an operating system for your data center or cloud resources.

Slide 4: Why Kubernetes?

- Manages containers at scale
- Ensures high availability
- Enables auto-scaling
- Supports rolling updates & rollbacks
- Runs anywhere (cloud/on-premise)

Slide 5: Core Concepts

- Pod: Smallest unit, one or more containers
- Deployment: Ensures pods are running as desired
- Service: Exposes pods internally or externally
- Node: Virtual or physical machine
- Cluster: Group of nodes managed by Kubernetes

Slide 6: Kubernetes Architecture Diagram

(Visual of Master Node, Worker Nodes, Pods, API Server, etc.)

Speaker Note: Show how the master node manages the cluster and handles scheduling, networking, and scaling.

Slide 7: YAML File Example

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  replicas: 2
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx:latest
        ports:
        - containerPort: 80
```

Speaker Note: This is how you define what to deploy. YAML is the config language for Kubernetes.

Slide 8: What is Amazon EKS?

- Managed Kubernetes service by AWS
- Automates cluster control plane management
- Runs Kubernetes in a scalable and secure way
- Integrates with AWS IAM, VPC, CloudWatch

Slide 9: Why Use EKS?

- No need to install/manage Kubernetes control plane
- Built-in security and compliance
- Integrated with AWS networking and IAM
- Supports hybrid and multi-cloud setups

Slide 10: EKS Architecture

- Control Plane: Managed by AWS
- Worker Nodes: EC2 or Fargate
- VPC & Networking: Fully integrated

(Include a diagram showing the Control Plane, Node Groups, VPC, Load Balancer)

Slide 11: Tools to Manage EKS

- kubectl: CLI to interact with Kubernetes clusters

- eksctl: CLI tool to set up and manage EKS clusters

- AWS CLI: For IAM, VPC, etc.

Slide 12: Sample Use Case / Demo (Explain Verbally)

- Deploy a sample Nginx app using a Deployment YAML

- Access it via a Load Balancer

- Show kubectl get pods, kubectl get svc

Optional: Live demo or video walkthrough if possible

Slide 13: Summary

- Kubernetes = Container Orchestration

- EKS = Managed Kubernetes on AWS

- Benefits = Less management, more scalability

- Use Tools = kubectl, eksctl, AWS CLI

Slide 14: Q&A

Open the floor for questions.

Slide 15: Thank You

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