

AWS ECS & EKS

What is ECS (Elastic Container Services)

3

- ❑ Amazon Elastic Container Service (Amazon ECS) is a highly scalable, fast, container management service that makes it easy to run, stop, and manage Docker containers on a cluster.
- ❑ Host your cluster on a serverless infrastructure that is managed by Amazon ECS by launching your services or tasks using the Fargate or EC2 launch type.
- ❑ Launch and Stop containers easily , allows to get state of cluster and gives access to many EC2 features.

Getting Started with Amazon Elastic Container Service (Amazon ECS) using Fargate

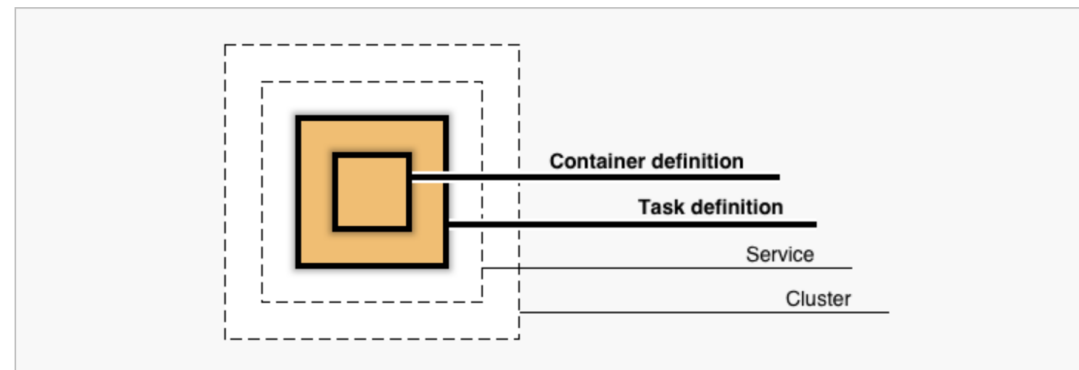
Step 1: Container and Task

Step 2: Service

Step 3: Cluster

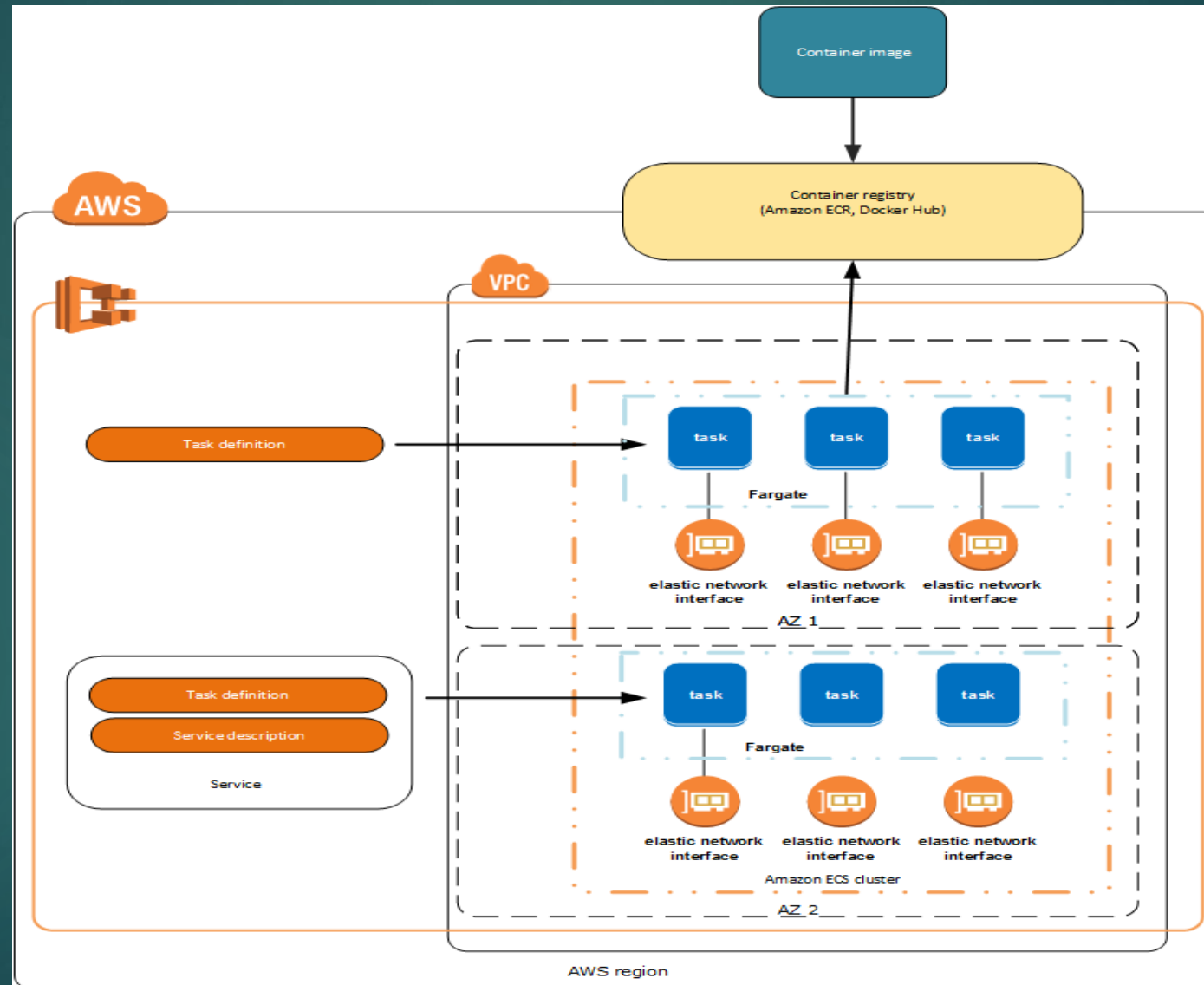
Step 4: Review

Diagram of ECS objects and how they relate



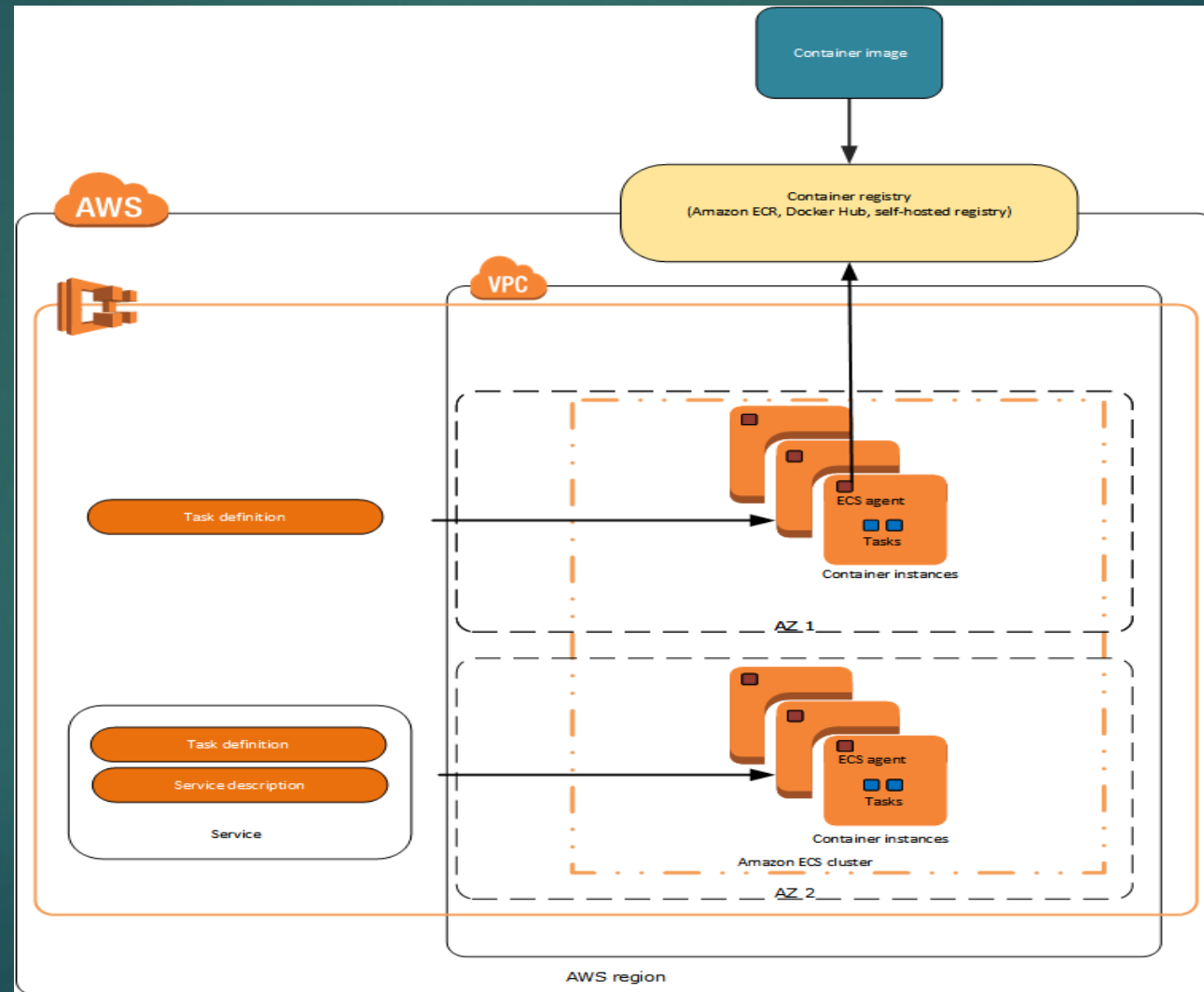
Fargate Launch Type

3



EC2 Launch Type

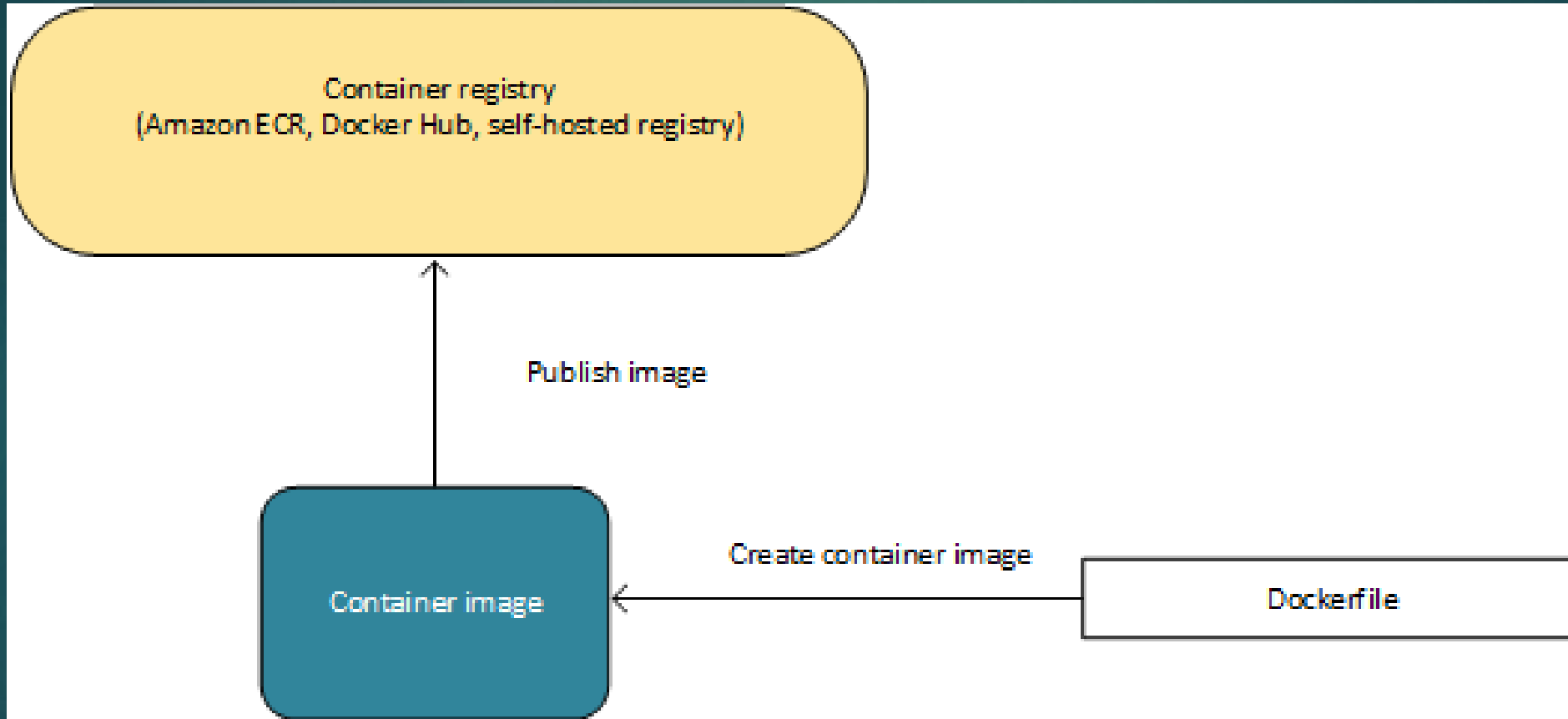
4



Containers and Images

5

@2018-CHAITANYA R GAJULA - ALL RIGHTS RESERVED



Task Definitions

- ▶ It is a blueprint for your application
- ▶ The task definition is a text file, in JSON format, that describes one or more containers, up to a maximum of ten, that form your application.
- ▶ Task definitions specify various parameters for your application. Examples of task definition parameters are which containers to use, which launch type to use, which ports should be opened for your application, and what data volumes should be used with the containers in the task.

Task Definitions

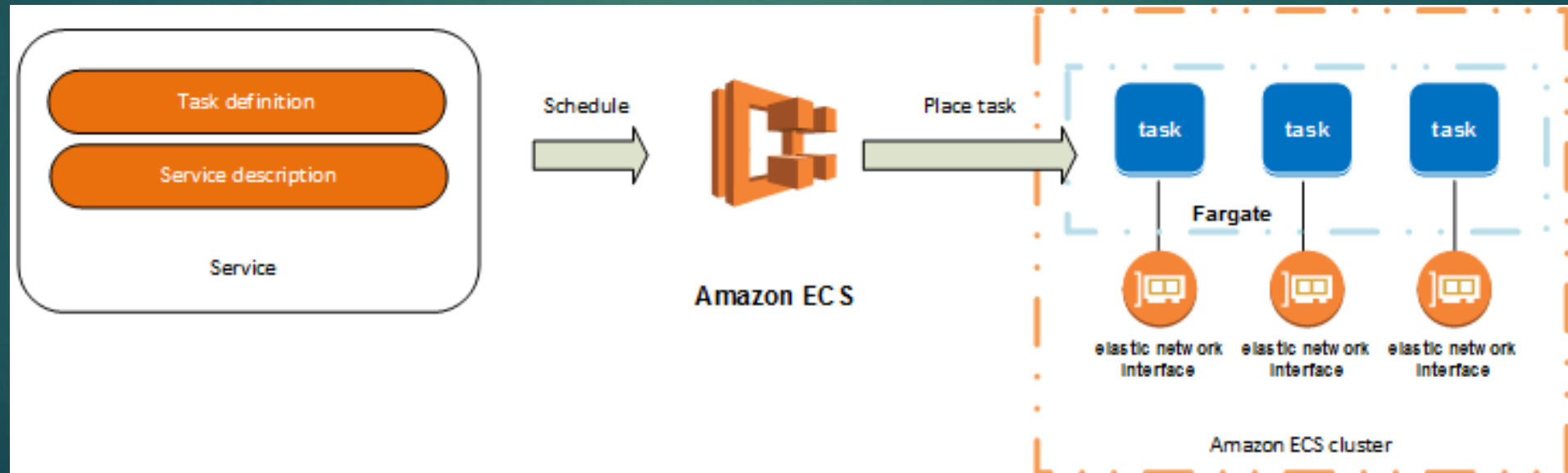
The following is an example of a task definition containing a single container that runs an NGINX web server using the Fargate launch type

```
{
  "family": "webserver",
  "containerDefinitions": [
    {
      "name": "web",
      "image": "nginx",
      "memory": "100",
      "cpu": "99"
    },
  ],
  "requiresCompatibilities": [
    "FARGATE"
  ],
  "networkMode": "awsvpc",
  "memory": "512",
  "cpu": "256",
}
```

Tasks & Scheduling

8

- ❑ A task is the instantiation of a task definition within a cluster.
- ❑ Each task that uses the Fargate launch type has its own isolation boundary and does not share the underlying kernel, CPU resources, memory resources, or elastic network interface with another task.
- ❑ Amazon ECS task scheduler is responsible for placing tasks within your cluster.

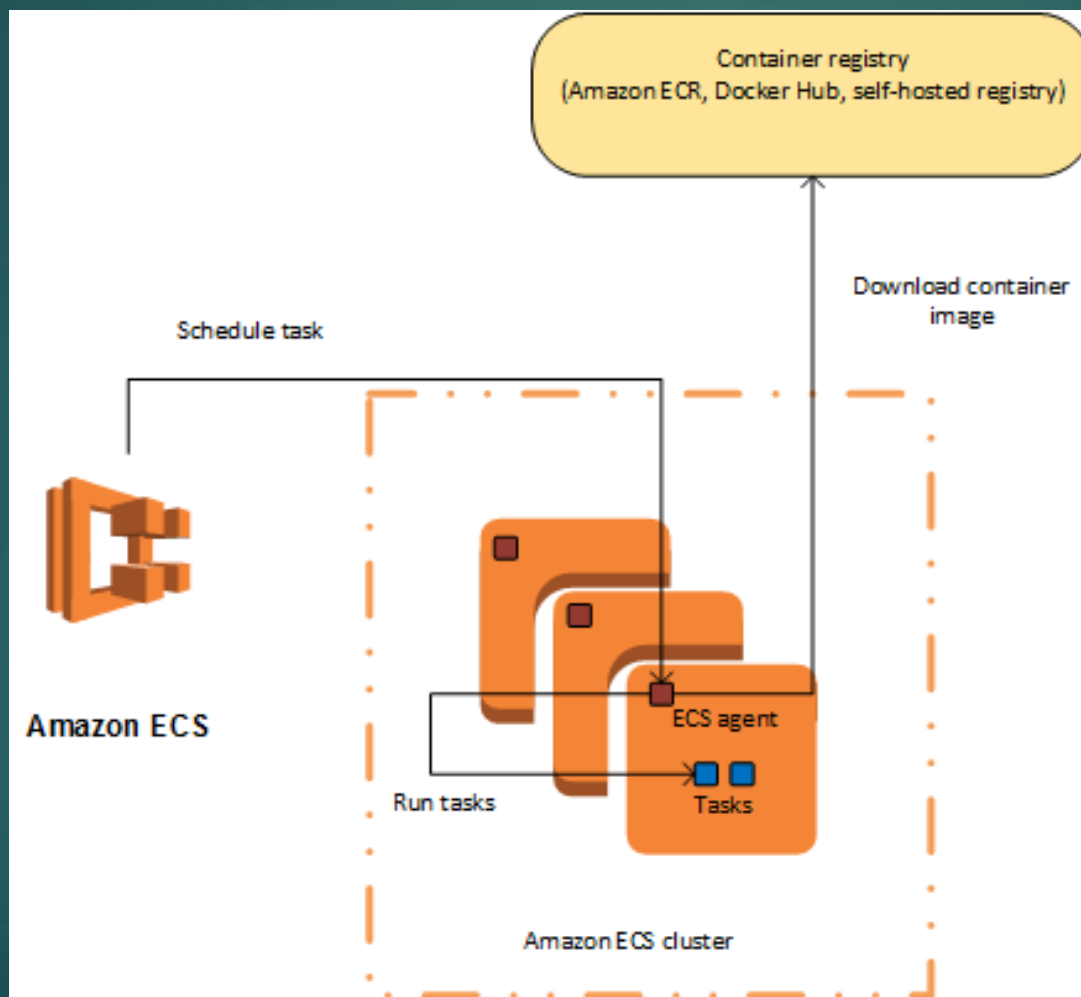


Clusters & Container Agent

- ▶ Tasks are run using a cluster - logical grouping of resources.
- ▶ When using the Fargate launch type with tasks within your cluster, Amazon ECS manages your cluster resources.
- ▶ When using the EC2 launch type, then your clusters are a group of container instances you manage.
- ▶ An Amazon ECS container instance is an Amazon EC2 instance that is running the Amazon ECS container agent
- ▶ Amazon ECS downloads your container images from a registry that you specify, and runs those images within your cluster.

Clusters & Container Agent

10



Accessing AWS ECS

11

- ▶ AWS Management Console
- ▶ AWS Command line tools
- ▶ Amazon ECS CLI
- ▶ AWS SDKs

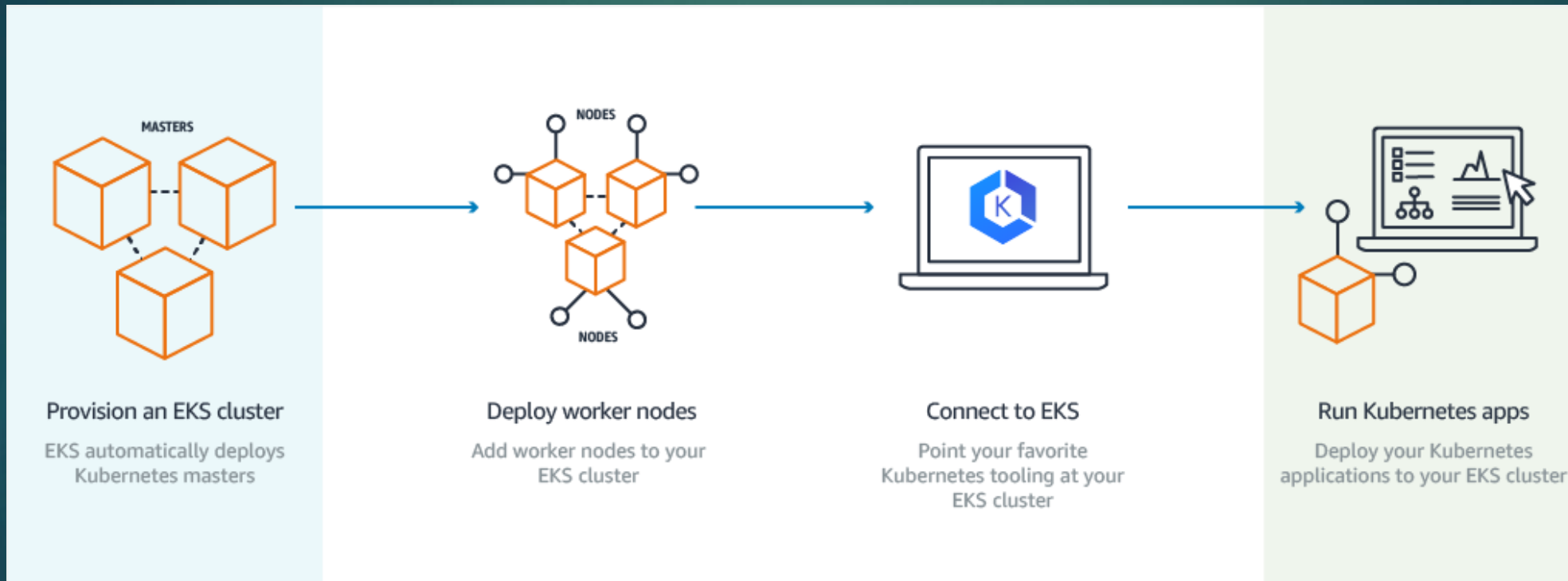
Overview of Amazon EKS

12

- ▶ Amazon Elastic Container Service for Kubernetes (Amazon EKS) is a managed service that makes it easy for you to run Kubernetes on AWS without needing to stand up or maintain your own Kubernetes control plane.
- ▶ Amazon EKS runs Kubernetes control plane instances across multiple Availability Zones to ensure high availability.
- ▶ Amazon EKS automatically detects and replaces unhealthy control plane instances, and it provides automated version upgrades and patching for them.
- ▶ Amazon EKS is also integrated with many AWS services to provide scalability and security for your applications, including the following:
 - Elastic Load Balancing for load distribution
 - IAM for authentication
 - Amazon VPC for isolation

Working of EKS

13



THANK YOU