

AWS –

ECS - Elastic Container Service

ECR – Elastic Container Registry

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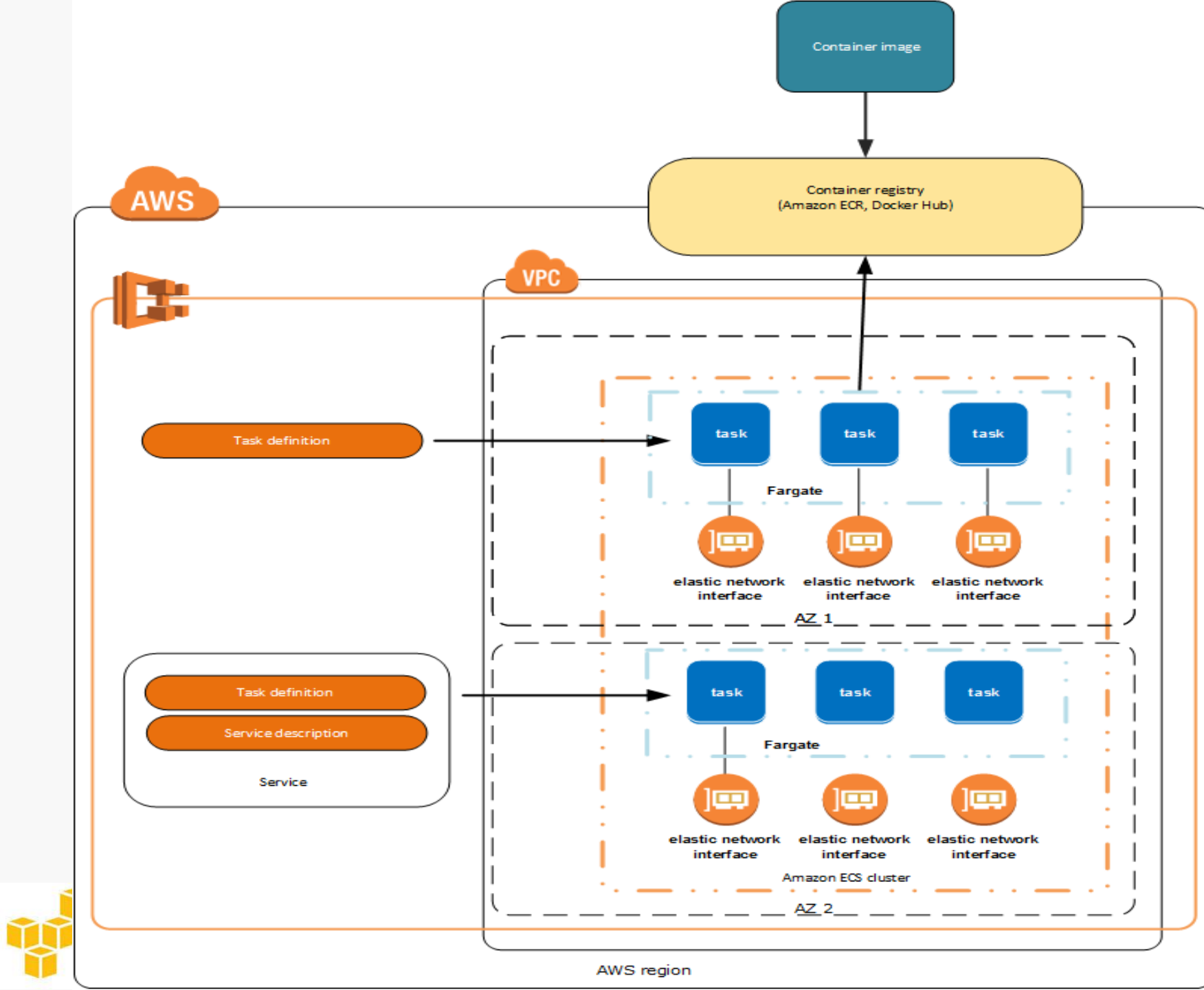
Challenges of Using Docker on the EC2

- Cluster Management
- Scaling
- Configuration Management
- Availability
- Security
- Scheduling

What is Amazon EC2 Container Service

- Building block service
- Manage Containers
- Schedule Containers
- Performance at scale
- Your Container , Your Instances → NO SHARING WITH OTHER CUSTOMERS
- Create in your VPC
- Extensible

Features of Amazon ECS



Key Components

Tasks

Containers

Clusters

Container Instance

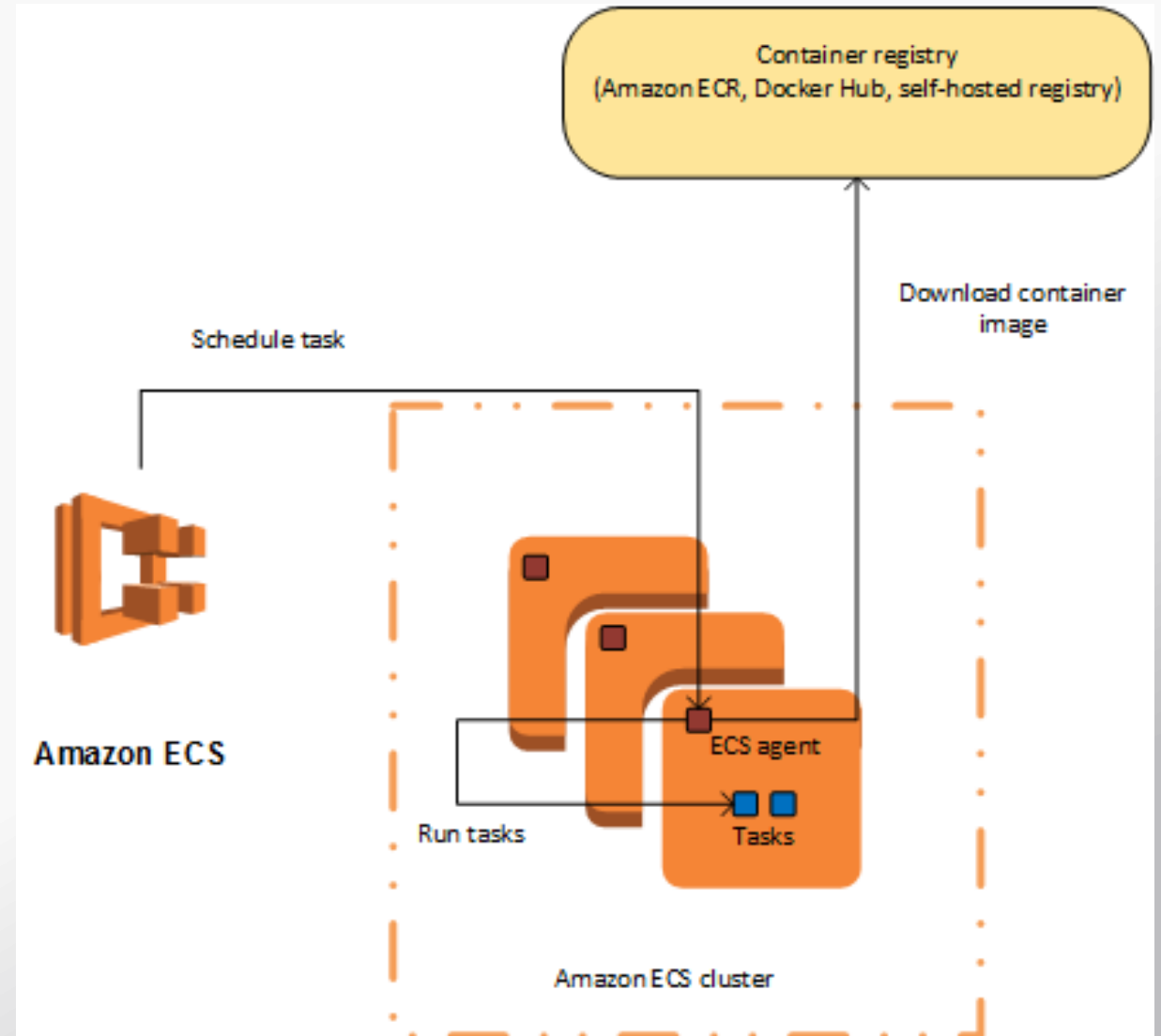
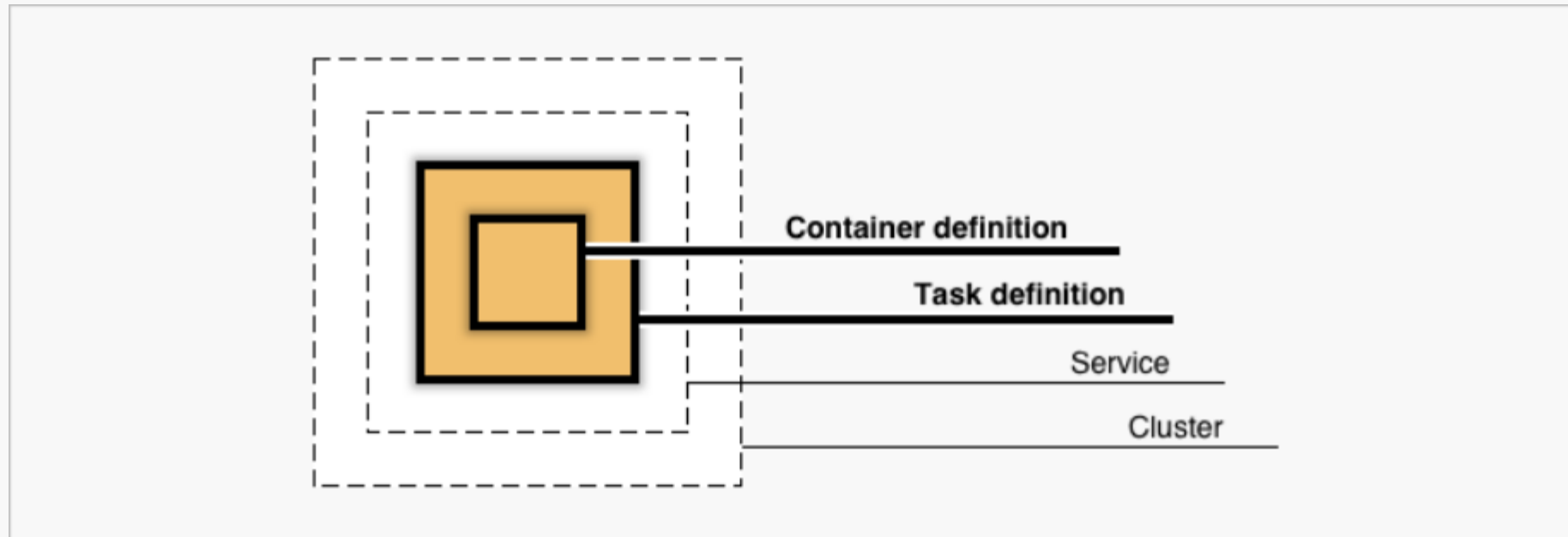


Diagram of ECS objects and how they relate



Key Components: Container Instances

- Amazon EC2 Instances
- Docker daemon
- Amazon ECS Agent

Key Components: Clusters

- Regional
- Resource Pool
- Grouping of Container Instances
- Start empty, dynamically Scalable

Key Components: Tasks

- Unit of Work
- Grouping of related Containers
- Run on Container instances

Tasks are defined via Tasks Definitions

```
[
  {
    "image": "tutum/wordpress-stackable",
    "name": "wordpress",
    "cpu": 10,
    "memory": 500,
    "essential": true,
    "links": [
      "db"
    ],
    "entryPoint": [
      "/bin/sh",
      "-c"
    ],
    "environment": [
      ""
    ],
    "portMappings": [
      {
        "containerPort": 80,
        "hostPort": 80
      }
    ]
  },
]
```

```
[
  {
    "image": "mysql",
    "name": "db",
    "cpu": 10,
    "memory": 500,
    "essential": true,
    "entryPoint": [
      "/entrypoint.sh"
    ],
    "environment": [
      {
        "name": "MYSQL_ROOT_PASSWORD",
        "value": "pass"
      }
    ],
    "portMappings": []
  }
]
```

Amazon ECS Service Limits

Resource	Default Limit
Number of clusters per Region, per account	2000
Number of container instances per cluster	2000
Number of services per cluster	1000
Number of tasks per service (the desired count)	1000
Number of tasks using the Fargate launch type, per Region, per account	50
Number of public IP addresses for tasks using the Fargate launch type	50

Amazon ECS Service Limits Continue..



Resource	Limit
Number of load balancers per service	1
Number of tasks launched (count) per run-task	10
Number of container instances per start-task	10
Throttle on container instance registration rate	1 per second / 60 max per minute
Number of revisions per task definition family	1,000,000
Task definition size limit	32 KiB
Task definition max containers	10
Throttle on task definition registration rate	1 per second / 60 max per minute
Number of subnets specified in <code>awsvpcConfiguration</code>	16
Number of security groups specified in <code>awsvpcConfiguration</code>	5
Maximum layer size of an image used by a task using the Fargate launch type	4 GB
Maximum size of a shared volume used by multiple containers within a task using the Fargate launch type	4 GB
Maximum container storage for tasks using the Fargate launch type	10 GB
Maximum number of tags per resource (tasks, services, task definitions, clusters, and container instances)	50

ECS Pricing?



ECR - Elastic Container Registry

Components of Amazon ECR

Registry - An Amazon ECR registry is provided to each AWS account; you can create image repositories in your registry and store images in them.

Authorization token -- Your Docker client must authenticate to Amazon ECR registries as an AWS user before it can push and pull images

Repository -- An Amazon ECR image repository contains your Docker images

Repository Policy -- You can control access to your repositories and the images within them with repository policies

Image -- You can push and pull Docker images to your repositories



Reference Links

<https://docs.aws.amazon.com/AmazonECS/latest/developerguide/Welcome.html>

<https://docs.aws.amazon.com/AmazonECS/latest/developerguide/troubleshooting.html>

