Week2

"Provisioning is the process of setting up IT infrastructure. Provisioning is not the same thing as configuration. Once something has been provisioned, the next step is configuration.

A cloud service consumer is Software programs or applications that programmatically interface with a cloud service’s through API. Any app that uses cloud service

Cloud administrator: provision IT resources. responsible foradministering a cloud-based IT resource. It can be clous consumer, cloud provider or any 3rd party

Resilient/replication: Redundant resources within the same cloud, but in different physical locations (e.g. ASW or Multiple clouds (e.g. AWS and azure)

A cluster is a collection of desktop computers or servers connected together by a local area network to act as a single larger computer  
A Warehouse Scale Computer (WSC) is a cluster comprised of tens of thousands of servers  
WSCs form the backbone of cloud infrastructure Contains 50,000 – 100,000 processors  
• A hierarchy of network connects, servers, racks and  
cells/arrays  
• A "rack" consists of ~48 servers connected to an ethernet  
switch, the switch connects to a cell  
• A cell/array consists of several racks, the racks in a cell are  
connected by an array switch

Cloud providers invest heavily in software development to automate their data centers. Ex-provisioning of resources, replication and fault recovery.

Network-Attached Storage (NAS) is a dedicated device or storage server that is connected to a computer network/cells/arrays. designed to provide centralized data storage, file sharing,

A screenshot of a computer screen

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Artifact Registry is the recommended service for container image storage and management on Google Cloud. Artifact Registry provides the same container management features as Container Registry and includes additional features and benefits. As a fully-managed service with support for both container images and non-container artifacts, Artifact Registry extends the capabilities of Container Registry.

K8s better because it gives flexibility to add containers in different nodes unlike docker compose.

**Week 5**

Why K8s

Load balancing: automatically route the user request to different nodes when demand is high

scaling

Storage orchestration: manage thousands of containers

Self healing: when pod dies it automatically generate new

Secret mngmt: allows to store secret and config in cluster

Kubernetes objects are persistent entities in the Kubernetes system. Kubernetes uses these entities to represent the state of your cluster. Specifically, they can describe: What containerized applications are running (and on which nodes) and resources available (desired state and its current state)

A diagram of a state

Description automatically generated

Week 6

Kubectl converts commands into api calls that goes to api server. It manipulates object like deleting and view

A screenshot of a computer

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Current config: kubectl config view.

CrashLoopBackOff is a Kubernetes state representing a restart loop that is happening in a Pod: a container in the Pod is started, but crashes and is then restarted, over and over again

A screenshot of a computer

Description automatically generated

You can scale the Deployment manually

kubectl scale deployment [DEPLOYMENT\_NAME] --replicas=5

auto-sacle

kubectl autoscale deployment [DEPLOYMENT\_NAME] --min=5 --max=1

Session affinity ensures that all client requests are sent to the same Pod