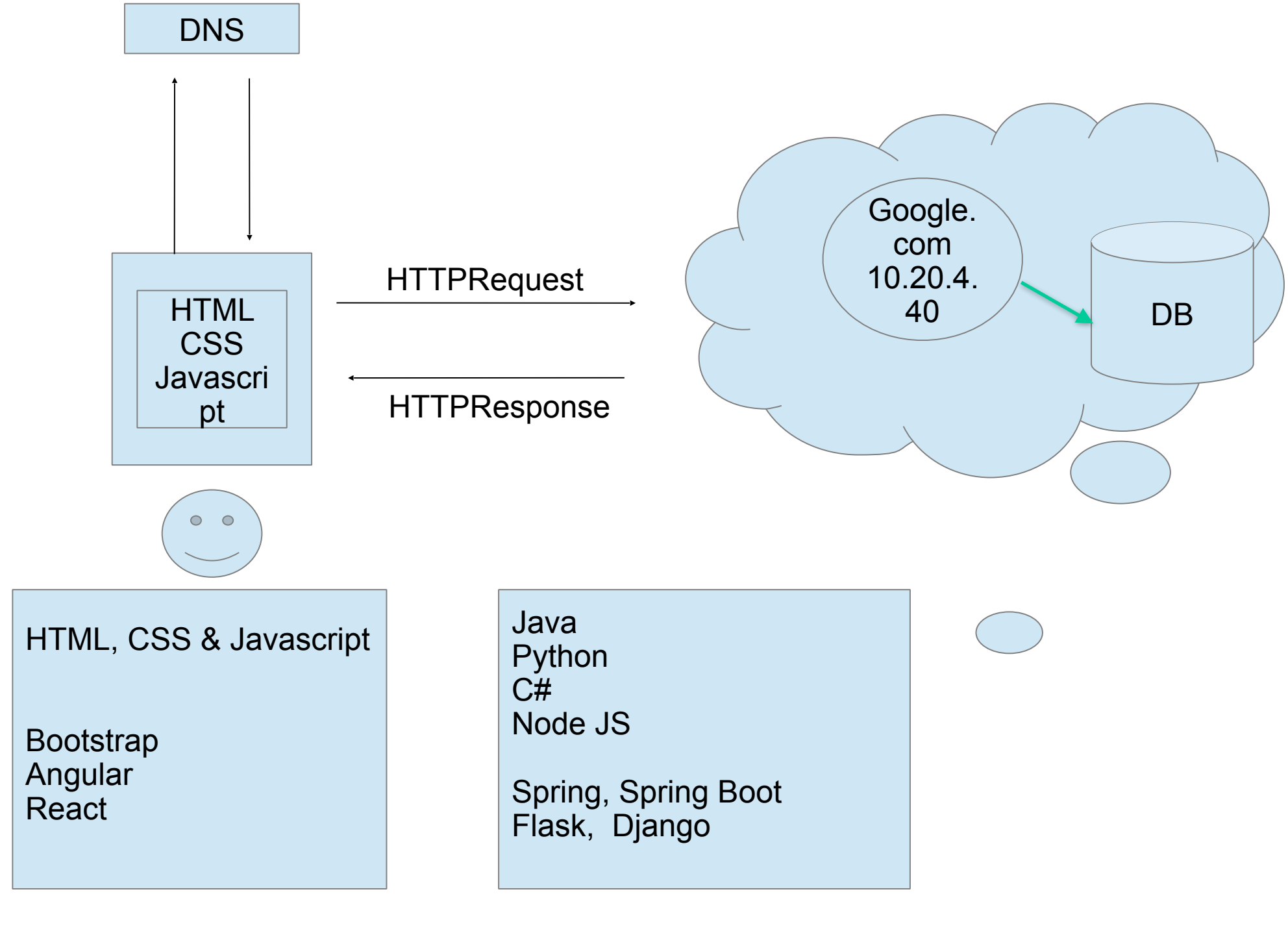
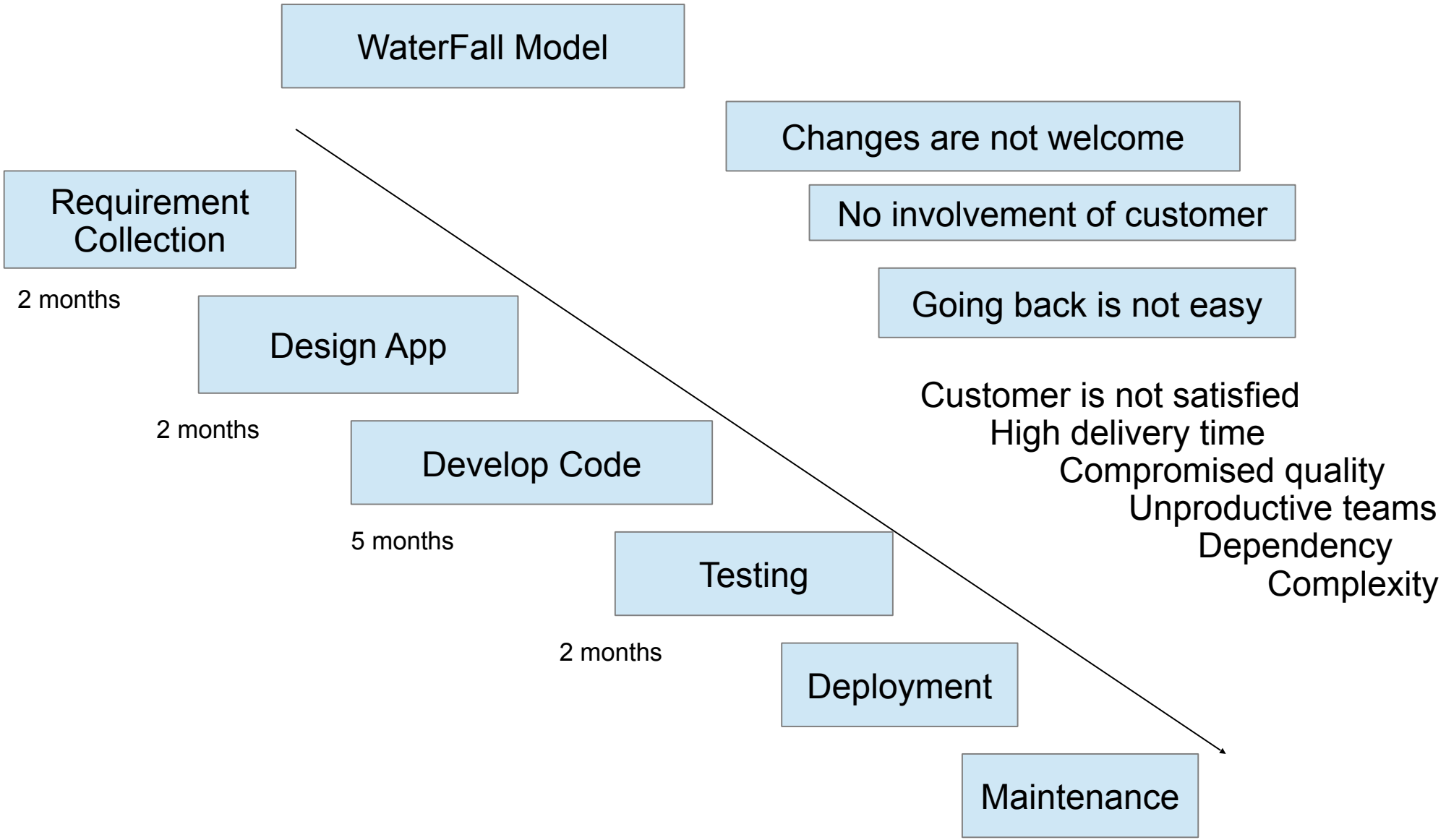

DNS
HTML
CSS
Javascri
pt
HTTPRequest
HTTPResponse
Google.
com
10.20.4.
40
DB
HTML, CSS & Javascript
Bootstrap
Angular
React
Java
Python
C#
Node JS
Spring, Spring Boot
Flask, Django

SDLC – Software Development Life Cycle



Agile methodology

It is a set of 12 principles and 4 values as per agile manifesto.

Instead of developing the whole project at once, Lets break it down into small s Components and focus on those small components at a time.

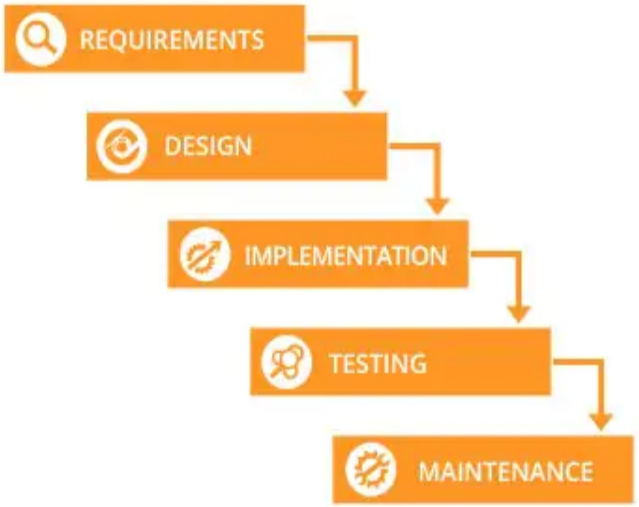
Lets do the iterative development in short short cycles
2 weeks – 2 months - Sprints

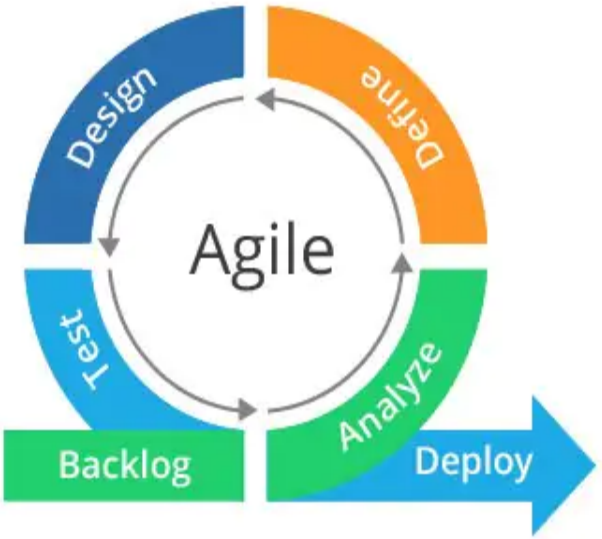
Agile Team : 7 +/- 2

Involve customer at every step

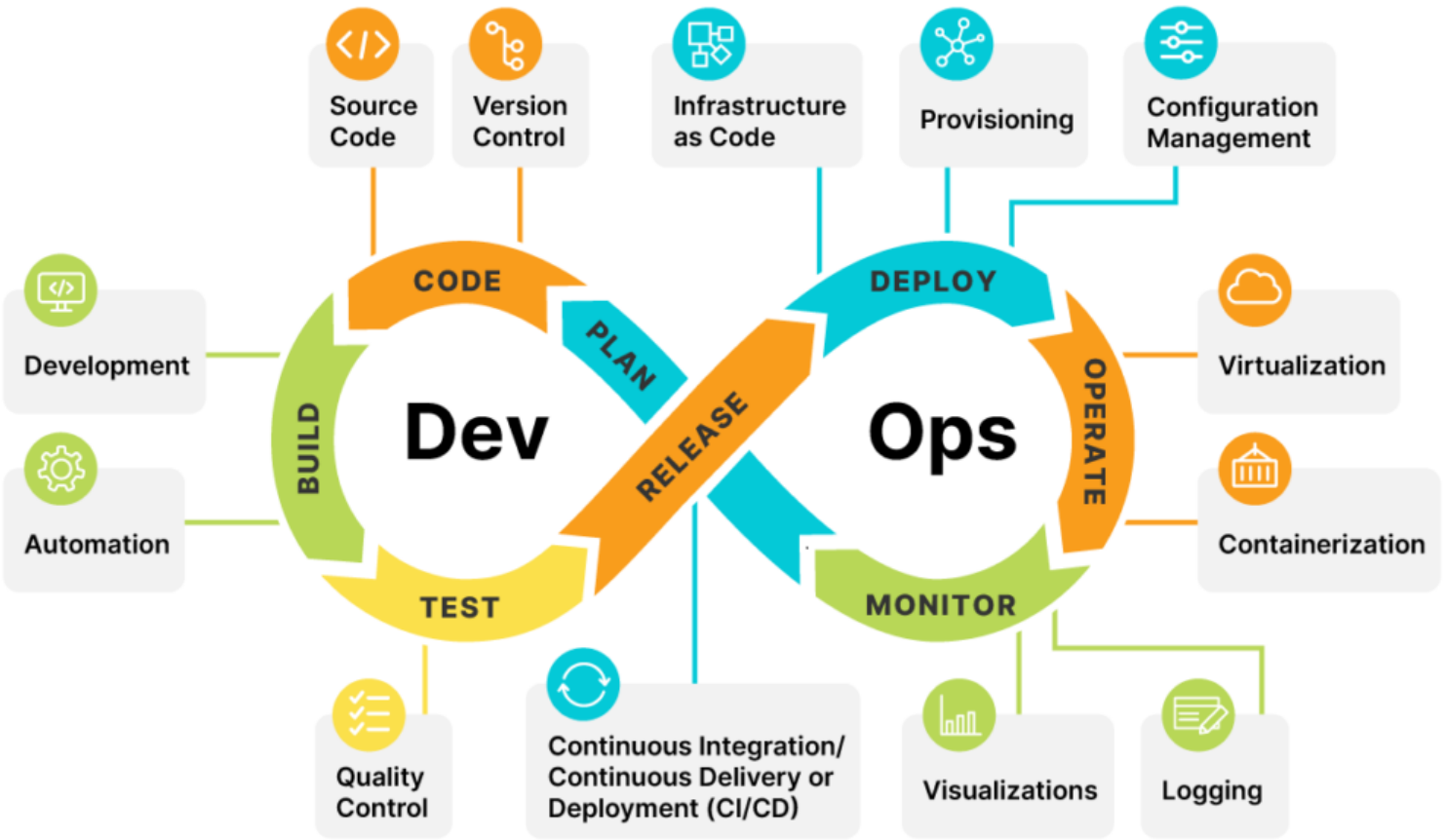
Welcome Changing requirements.

Waterfall vs. Agile






Dev
Speed of Development
Ops
Stability of the Environment


Source Code
Version Control
Infrastructure as Code
Provisioning
Configuration Management
Development
Automation
CODE
PLAN
BUILD
Dev
RELEASE
Ops
DEPLOY
OPERATE
TEST
MONITOR
Virtualization
Containerization
Quality Control
Continuous Integration/ Continuous Delivery or Deployment (CI/CD)
Visualizations
Logging

Planning : Jira, Kanbans..

Coding : Java, Python, Eclipse, VS Code, Git

Building : Maven, Gradle (java based apps)

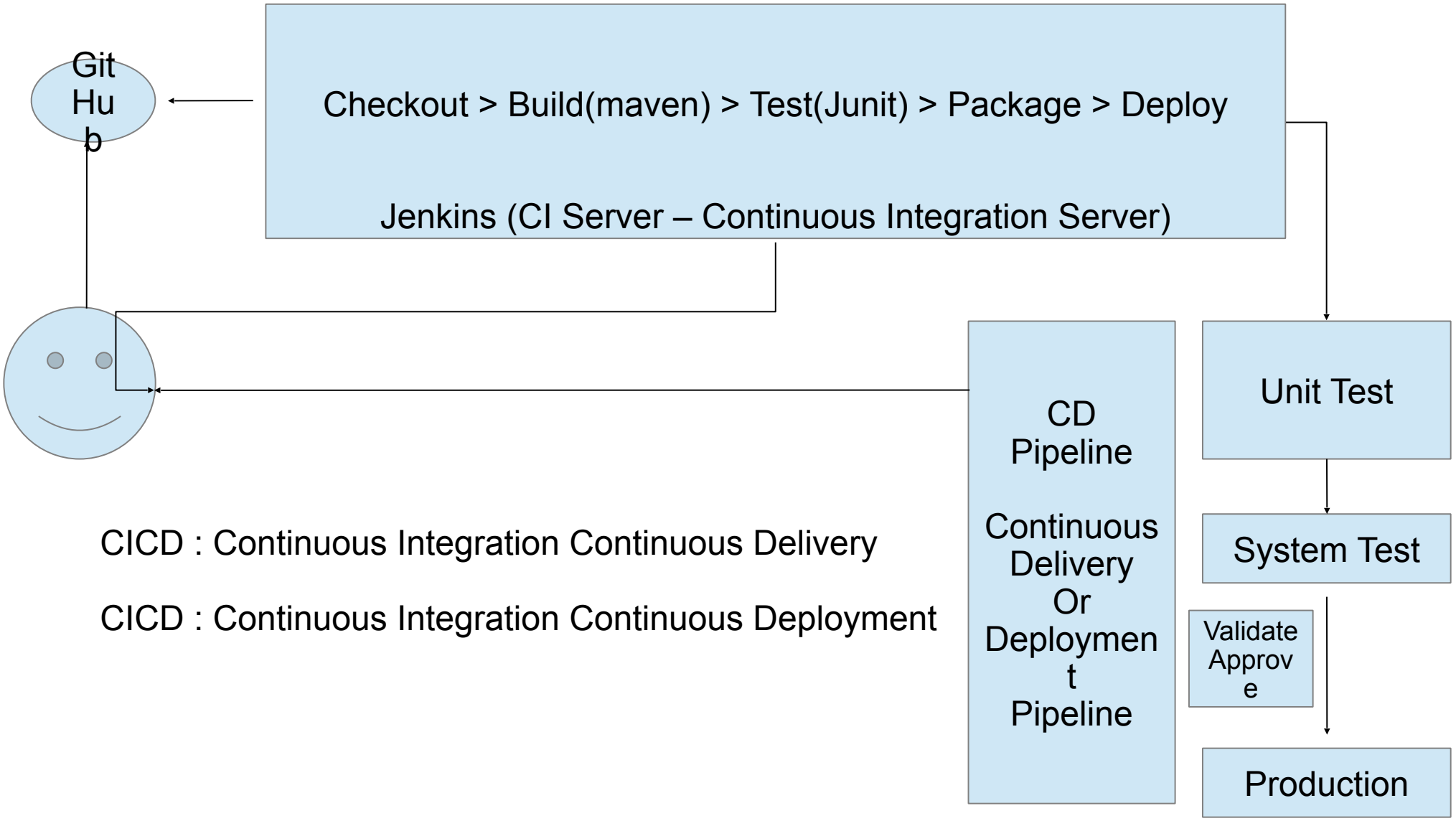
Testing : Junit, Selenium.

Releasing : Jenkins,NexusRepo, Docker Registry

Deployment : Ansible, Docker, Kubernetes

Operate : Ansible, Docker, Kubernetes, Terraform

Monitor : Prometheus, Grafana, Splunk,
App Dynamics etc.



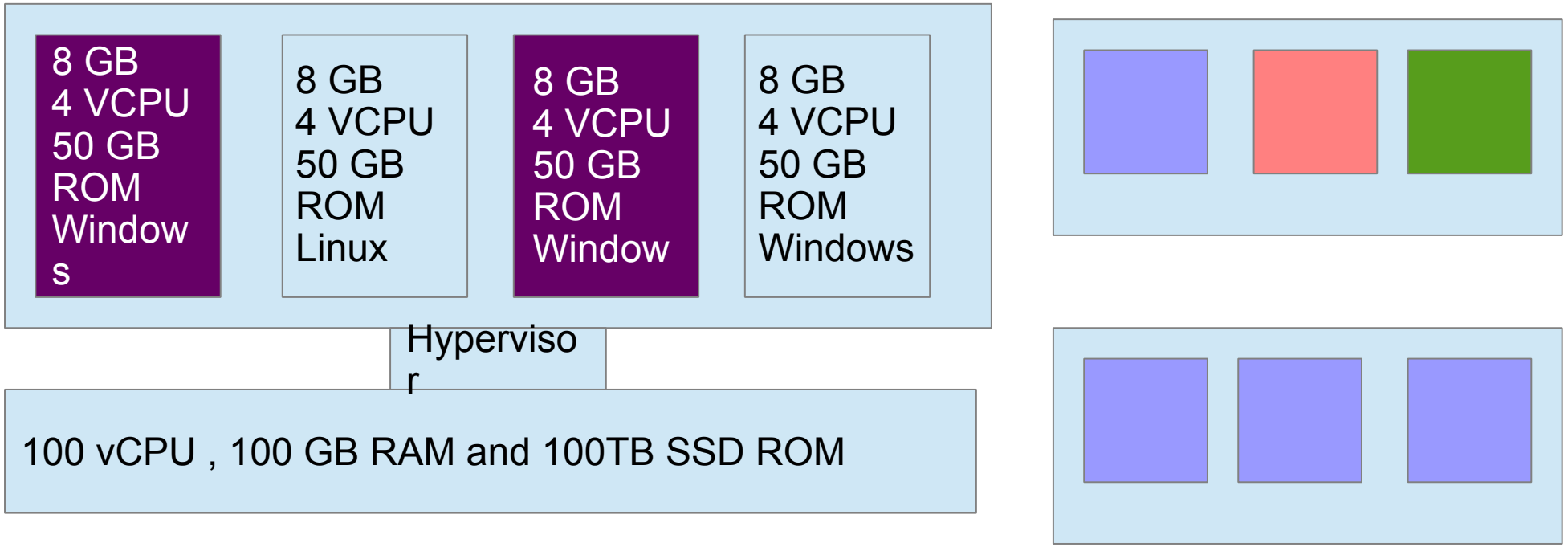
CICD : Continuous Integration Continuous Delivery

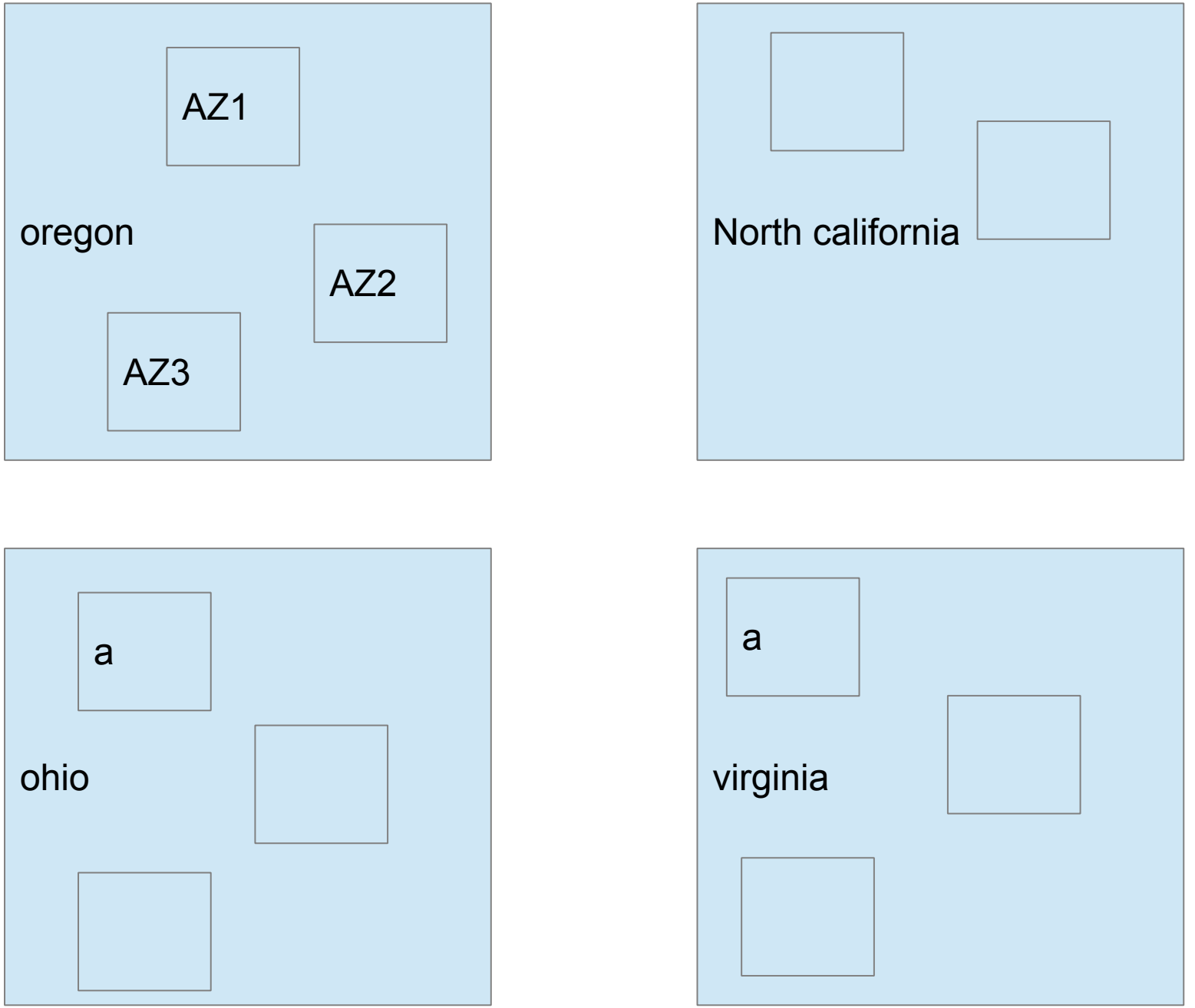
CICD : Continuous Integration Continuous Deployment

Public Cloud

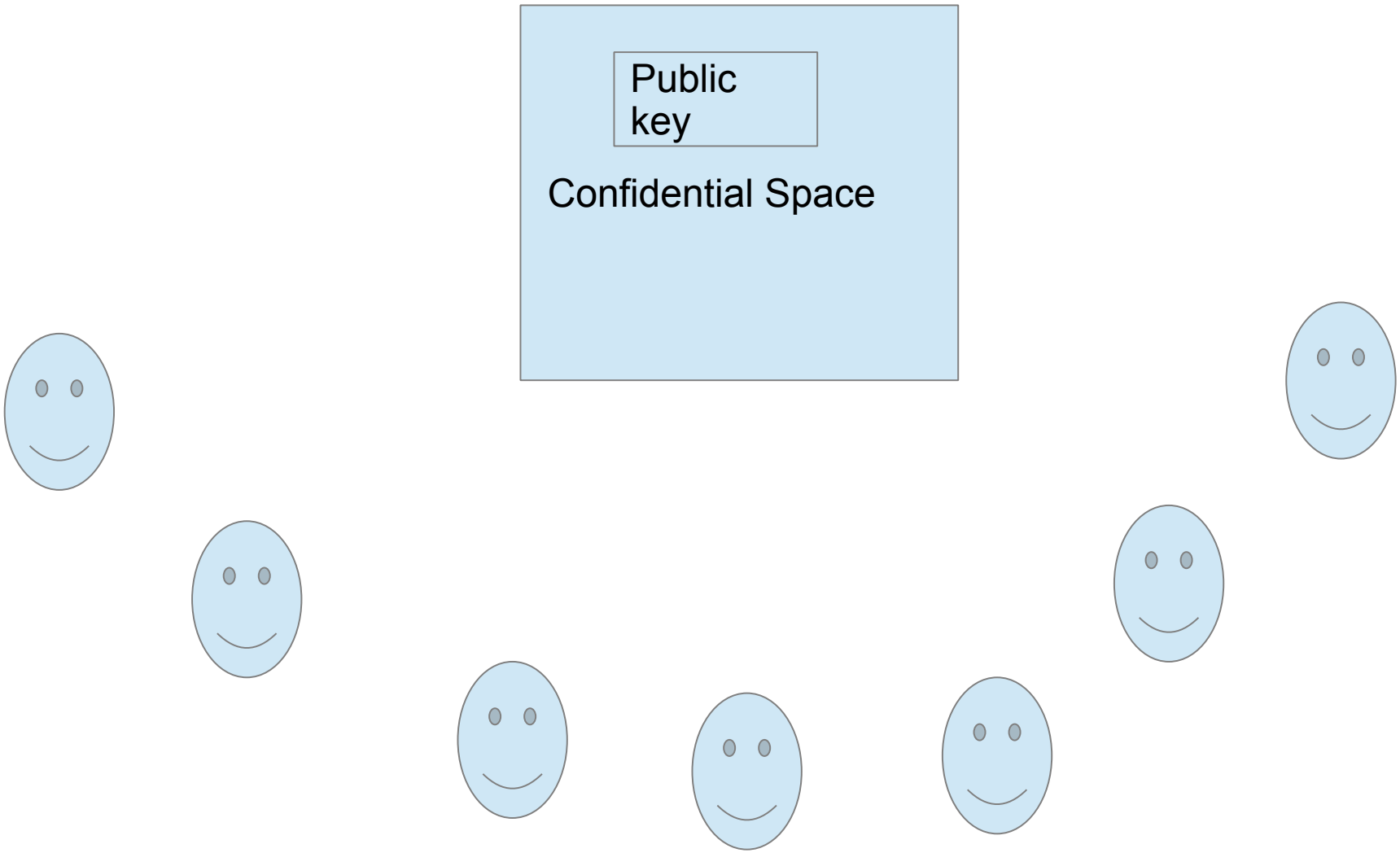
Private Cloud

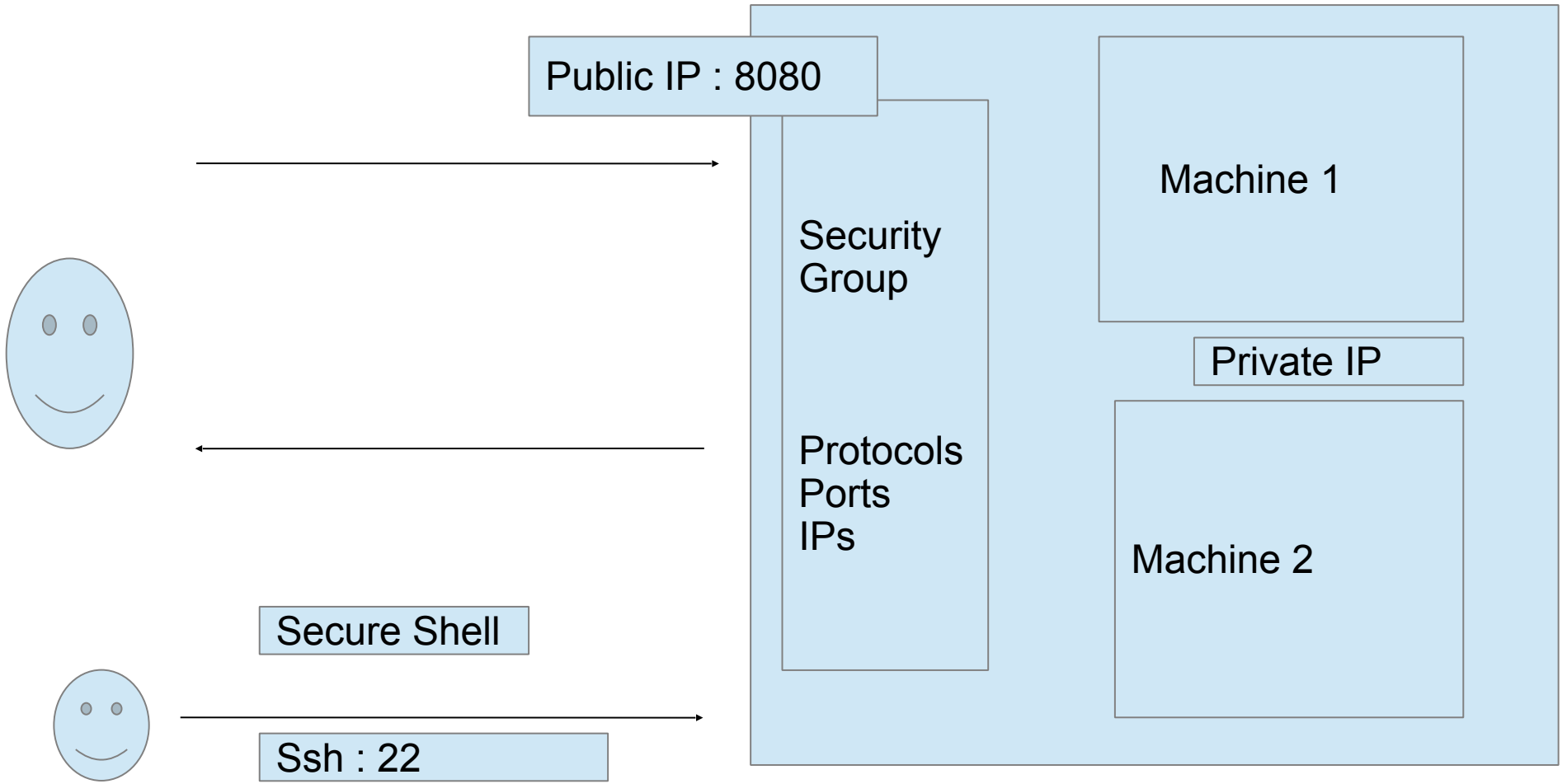
Hybrid Cloud




AZ1
oregon
AZ2
AZ3
North california
a
ohio
a
virginia

IAM – Identify & Access Management




Public IP : 8080
Security Group
Protocols
Ports
IPs
Machine 1
Private IP
Machine 2
Secure Shell
Ssh : 22

EC2 Server – Elastic Compute Cloud

1. Machines with Hardware and Operating System

IAAS PAAS and SAAS

Infrastructure as a service - EC2

Platform as a service - RDS

Software as a service – gmail. Office 365

(Server... (windows. Mac.. unix...)

Instance type : t2.micro (1 vcpu and 1 gb ram)

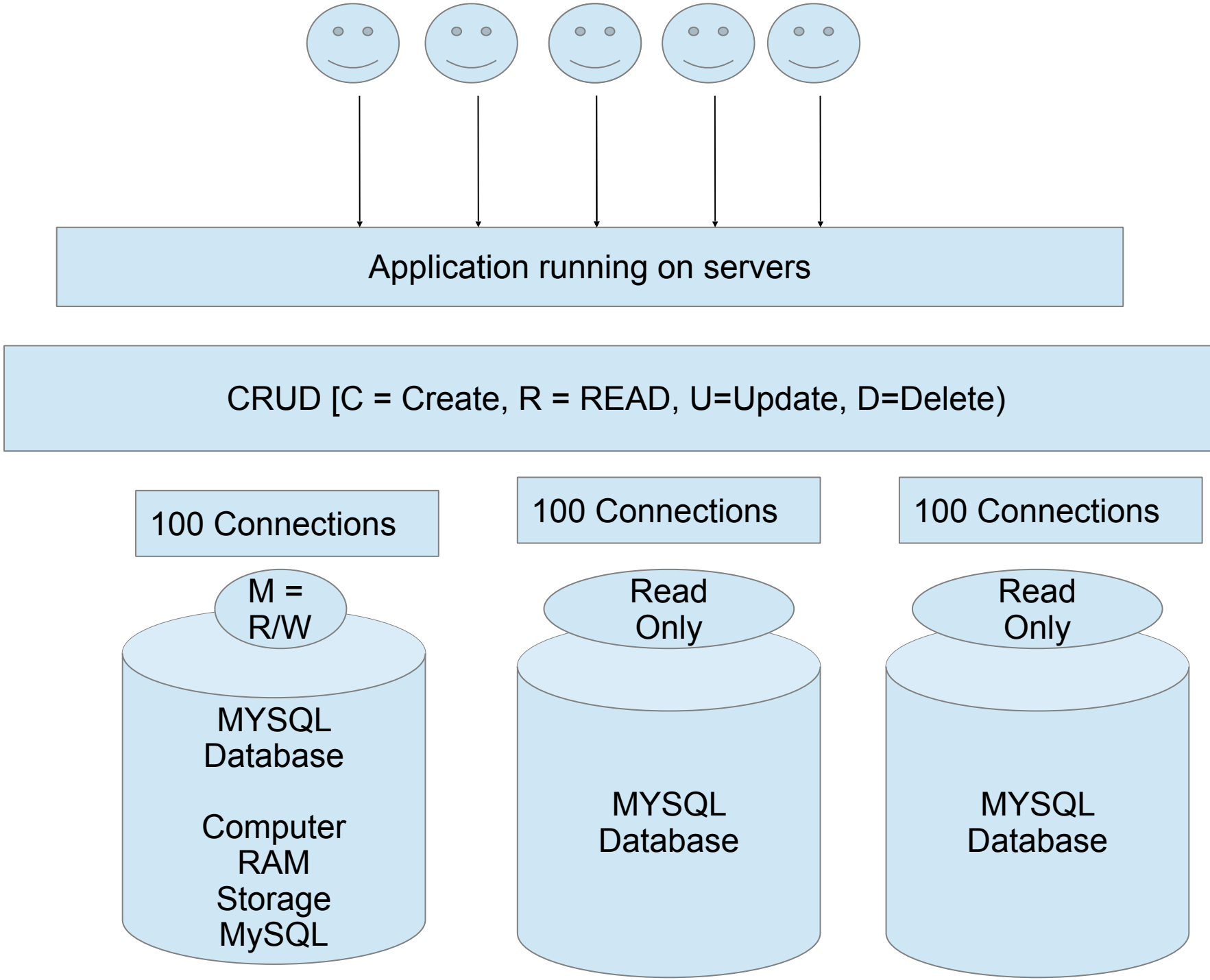
RDS – Relational Database Service

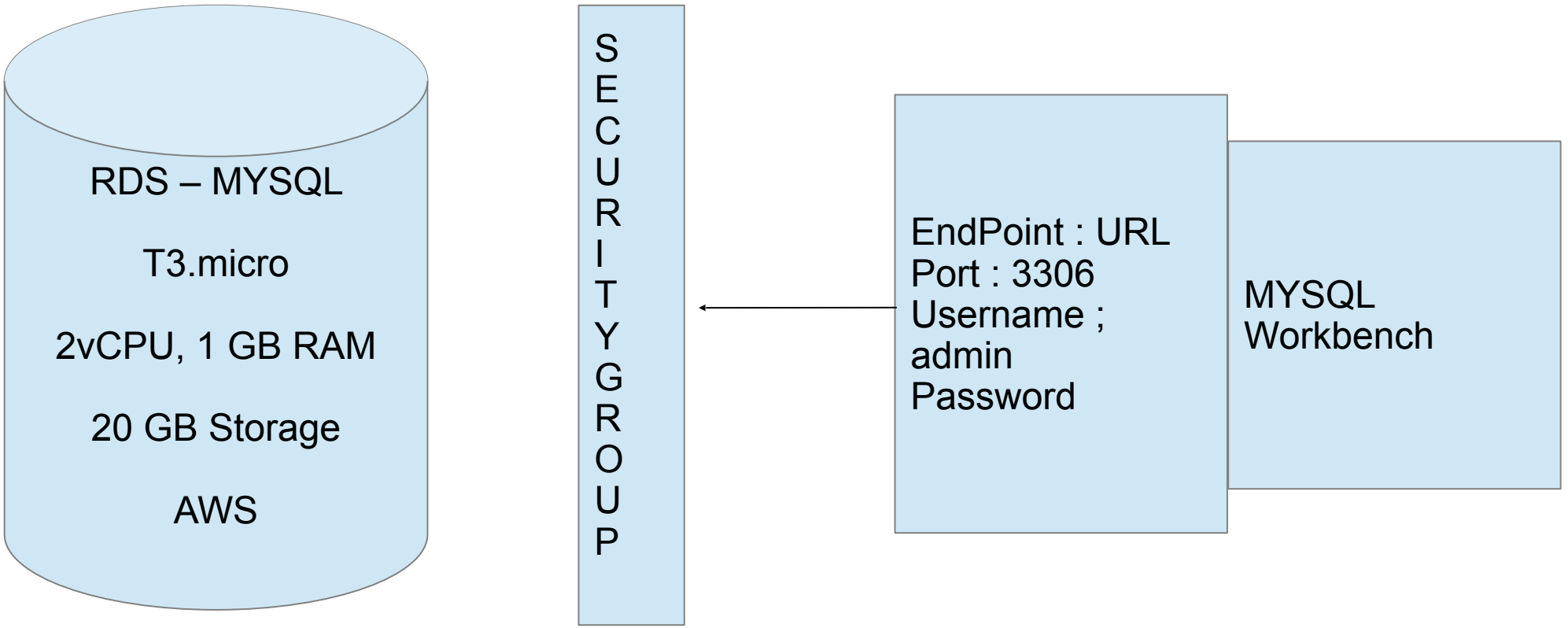
1. Relational Database or SQL dB - Structured
2. Non Relational or NO SQL - Unstructured

SQL : Structured Query Language

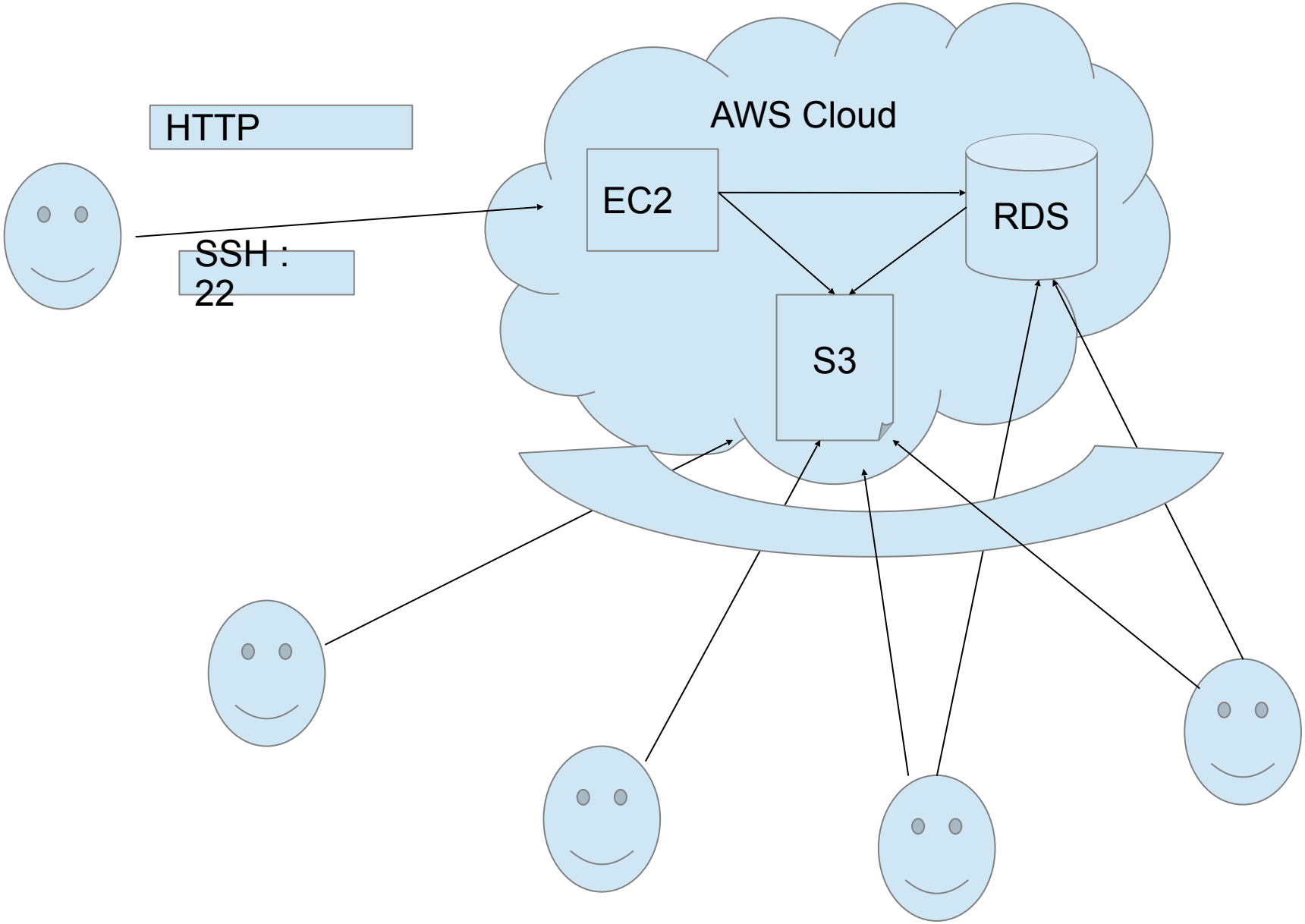
RDBMS : Relational Database Management System.

1. MYSQL
2. ORACLE
3. POSTGRES
4. DB2
5. MSSQL


Application running on servers
CRUD [C = Create, R = READ, U=Update, D=Delete)
100 Connections
M = R/W
MYSQL Database
Computer RAM Storage MySQL
100 Connections
Read Only
MYSQL Database
100 Connections
Read Only
MYSQL Database

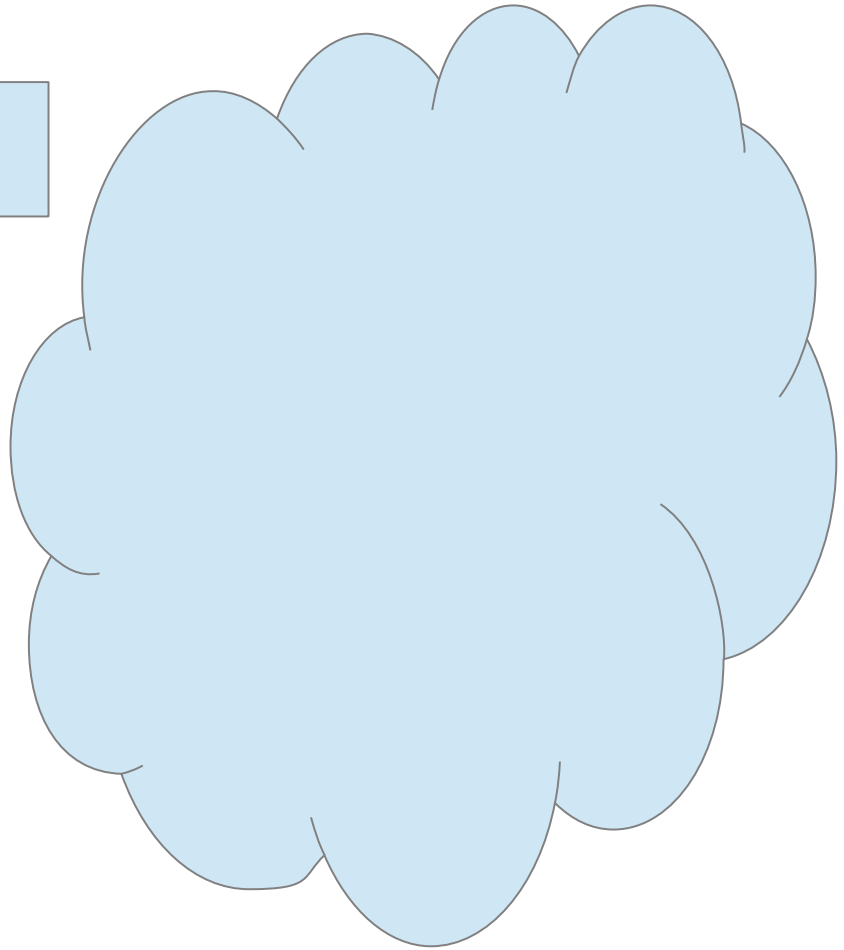

RDS – MYSQL
T3.micro
2vCPU, 1 GB RAM
20 GB Storage
AWS
SECURITYGROUP
EndPoint : URL
Port : 3306
Username ;
admin
Password
MYSQL
Workbench

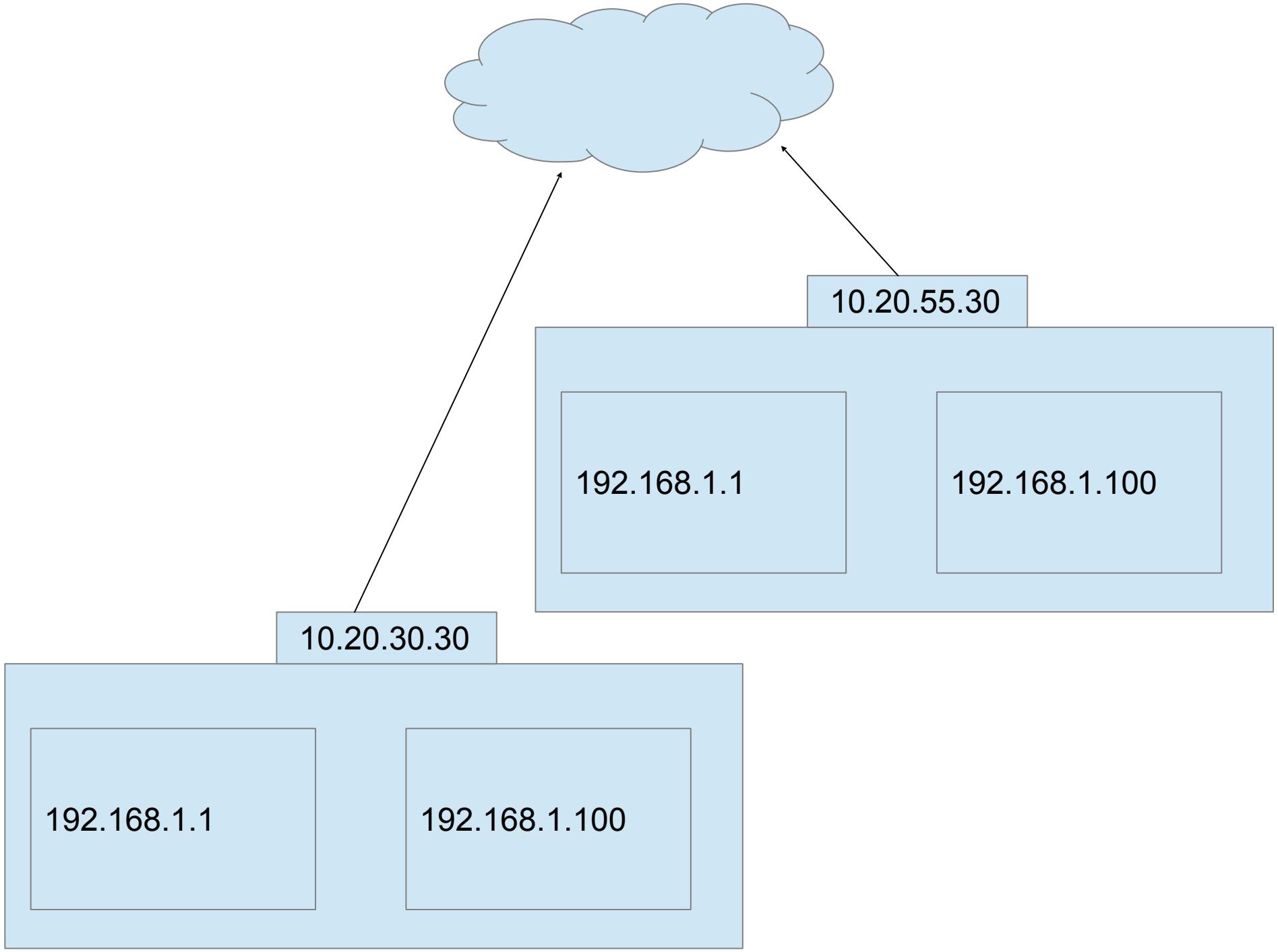
S3 – Simple Storage Service

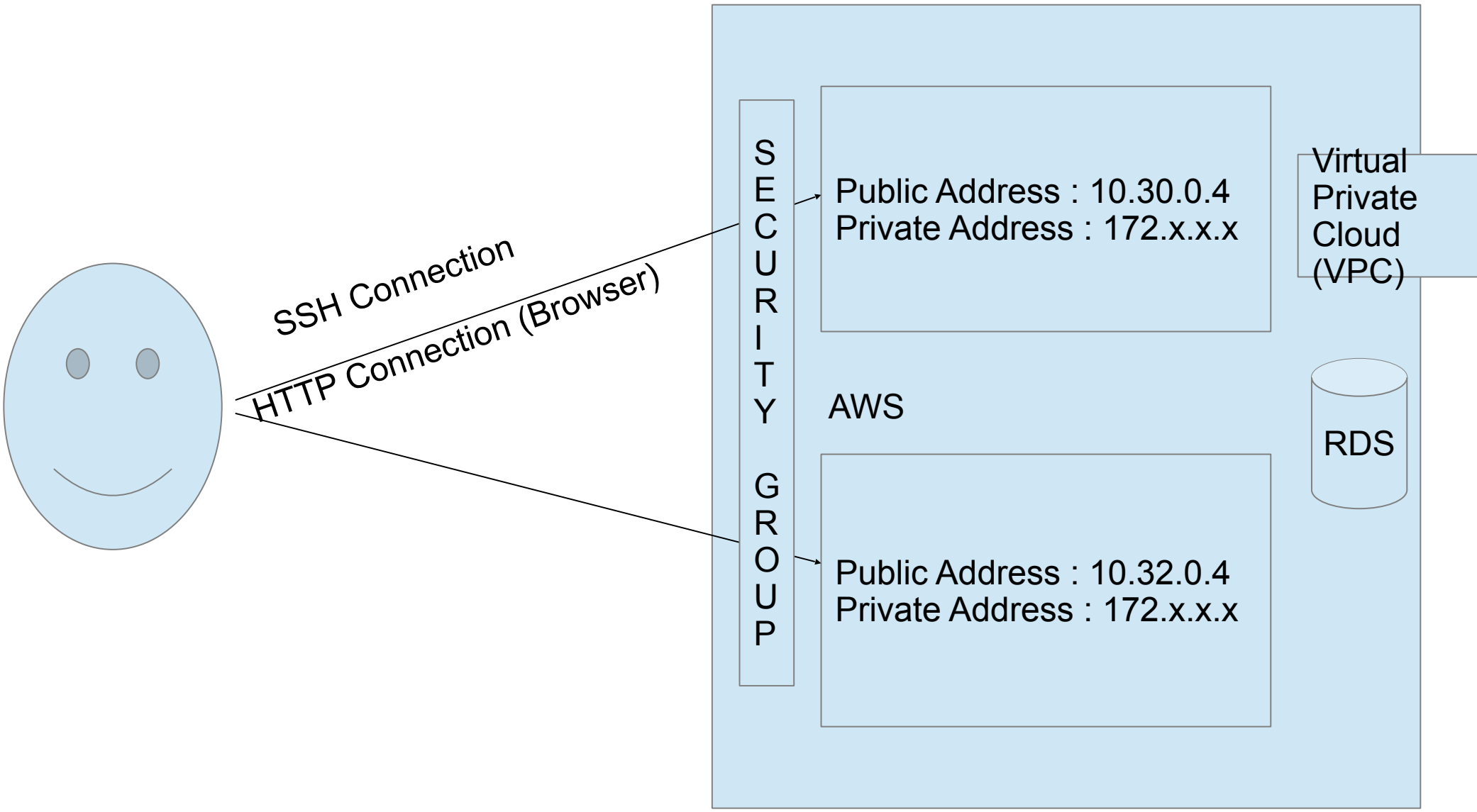


Public vs Private IP

Public IP Ipv4 or IPv6




10.20.55.30
192.168.1.1
192.168.1.100
10.20.30.30
192.168.1.1
192.168.1.100


SSH Connection
HTTP Connection (Browser)
SECURITY GROUP
Public Address : 10.30.0.4
Private Address : 172.x.x.x
Virtual Private Cloud (VPC)
AWS
RDS
Public Address : 10.32.0.4
Private Address : 172.x.x.x

1 byte = 8 bits

00000000 – 11111111

0 – 255 numbers

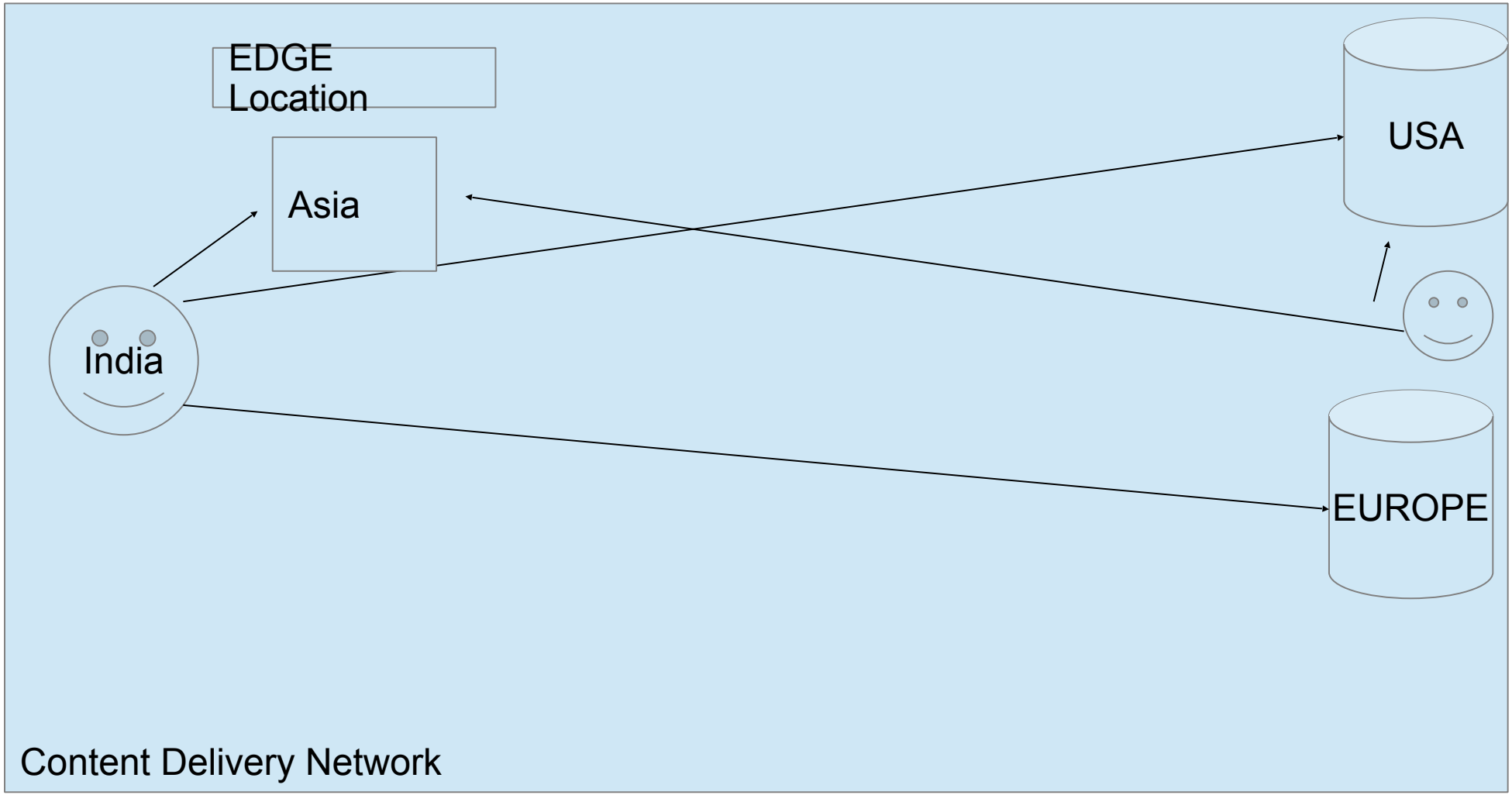
1 byte = 8 bits
1 kilobyte = 1024 bytes
1 megabyte = 1024 kb
1 gigabyte = 1024 mb
1 terabyte = 1024 gb

0.0.0.0

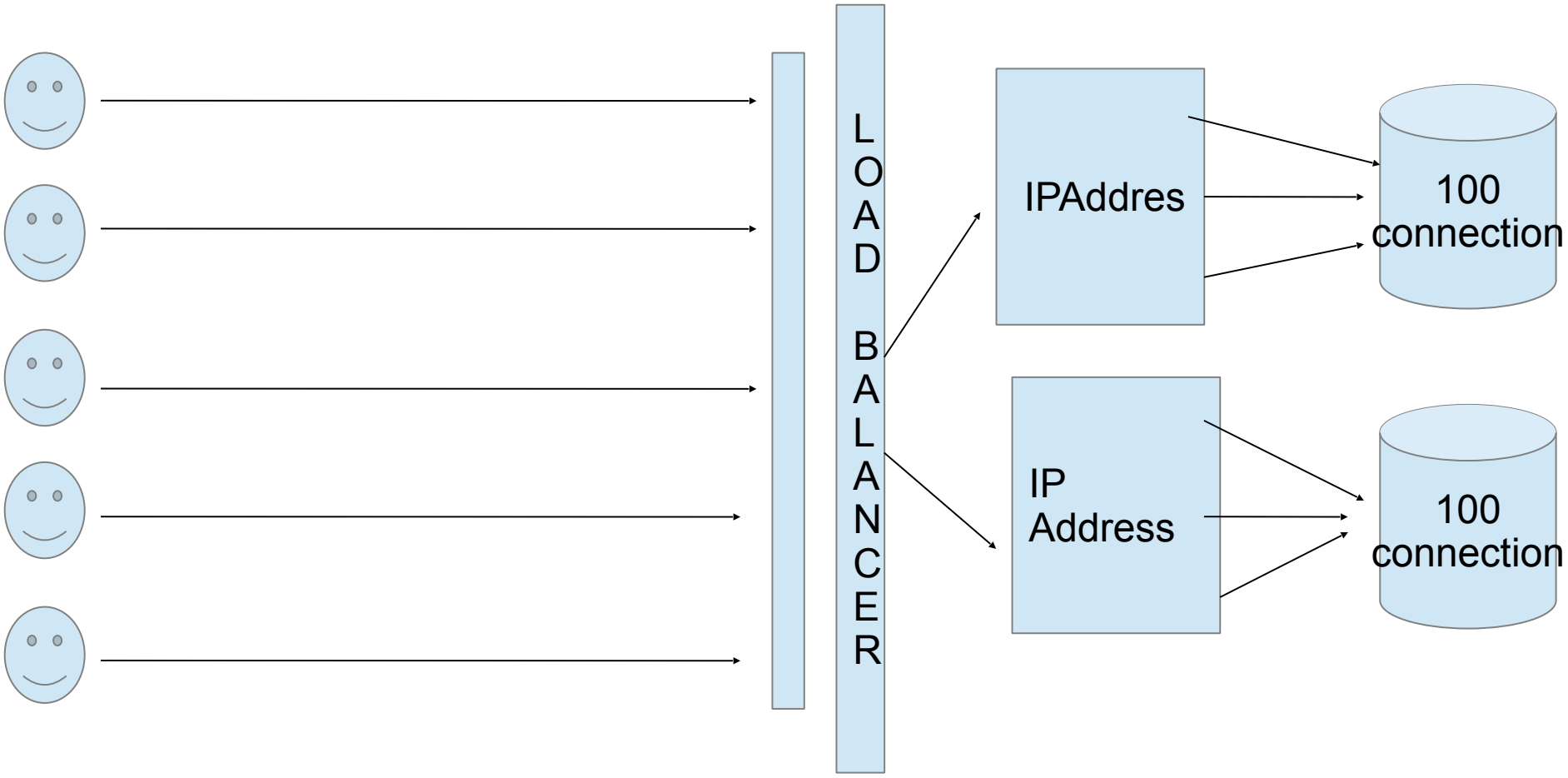
255.255.255.255

32 bits

Cloud Front – CDN Service from AWS



Load Balancer



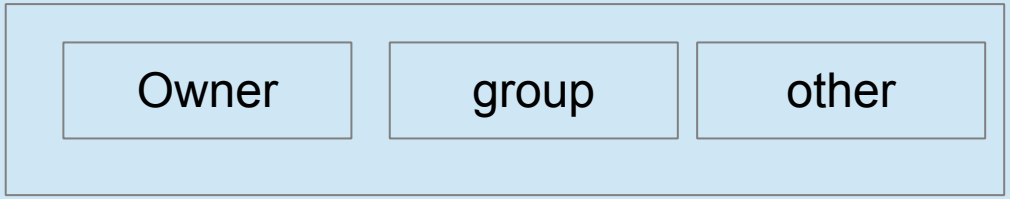
Elastic Load Balancer - AWS

ECR and EKS

ECR = Elastic Container Registry : Docker

EKS = Elastic Kubernetes Service : Kubernetes

Linux Fundamentals

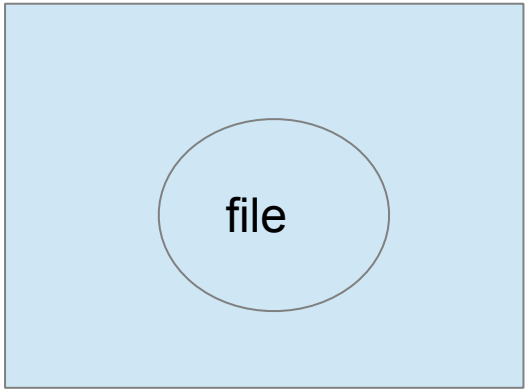


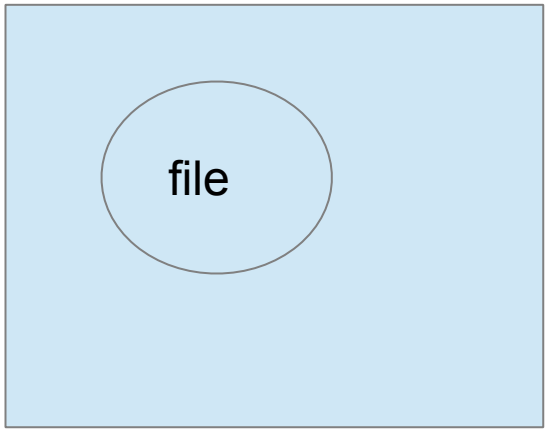
D/- _ (R_ W_ X_) (_R _W X_) (R_ W_ X_)

R = 4
W = 2
X = 1

400

0 = No permission
1 = Execute
2 = Write
3 = Write & Execute
4 = ReadOnly
5 = Read & Execute
6 = Read + Write
7 = Read + Write + Execute


file


file

OOPS - Object Oriented Programming System/Language

1. Class
2. Objects
3. Inheritance
4. Polymorphism (sum(a, b) , sum(a, b, c),
5. Abstraction
6. Encapsulation