INTRODUCTION
THE CLOUD COMPUTING

Prepared By:

Amir Ali

Assistant Professor KU

Head of Cloud CoE

M.Sc. from KU

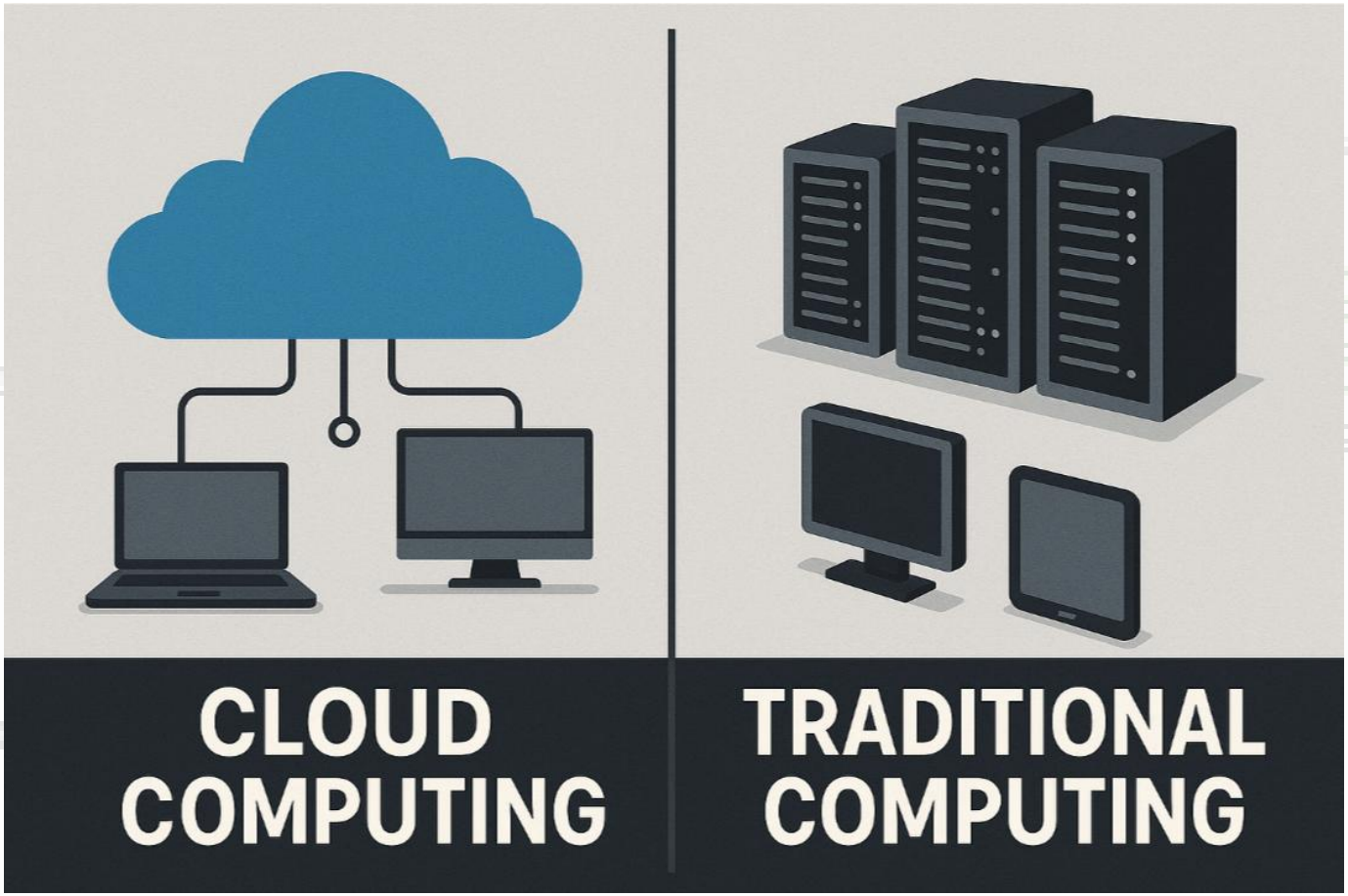
MS in Technology. Mgmt. USA

M.B.A. USA

About Me

- Holding Master Degree in TM and MBA from Stevens Institute Tech. USA
- Graduated in Applied Physics specialization Electronics
- 20+ years working as IT Professional in USA
- Head of Cloud of CoE (Leading Bank in KSA)
- Joined AT&T R&D Labs in 2006
- Data Center Virtualization, Software Defined Network
- Service Excellence on Light speed Global Network
- Recognition Award on Cyber Security
- Certified trainer with having passion to share knowledge

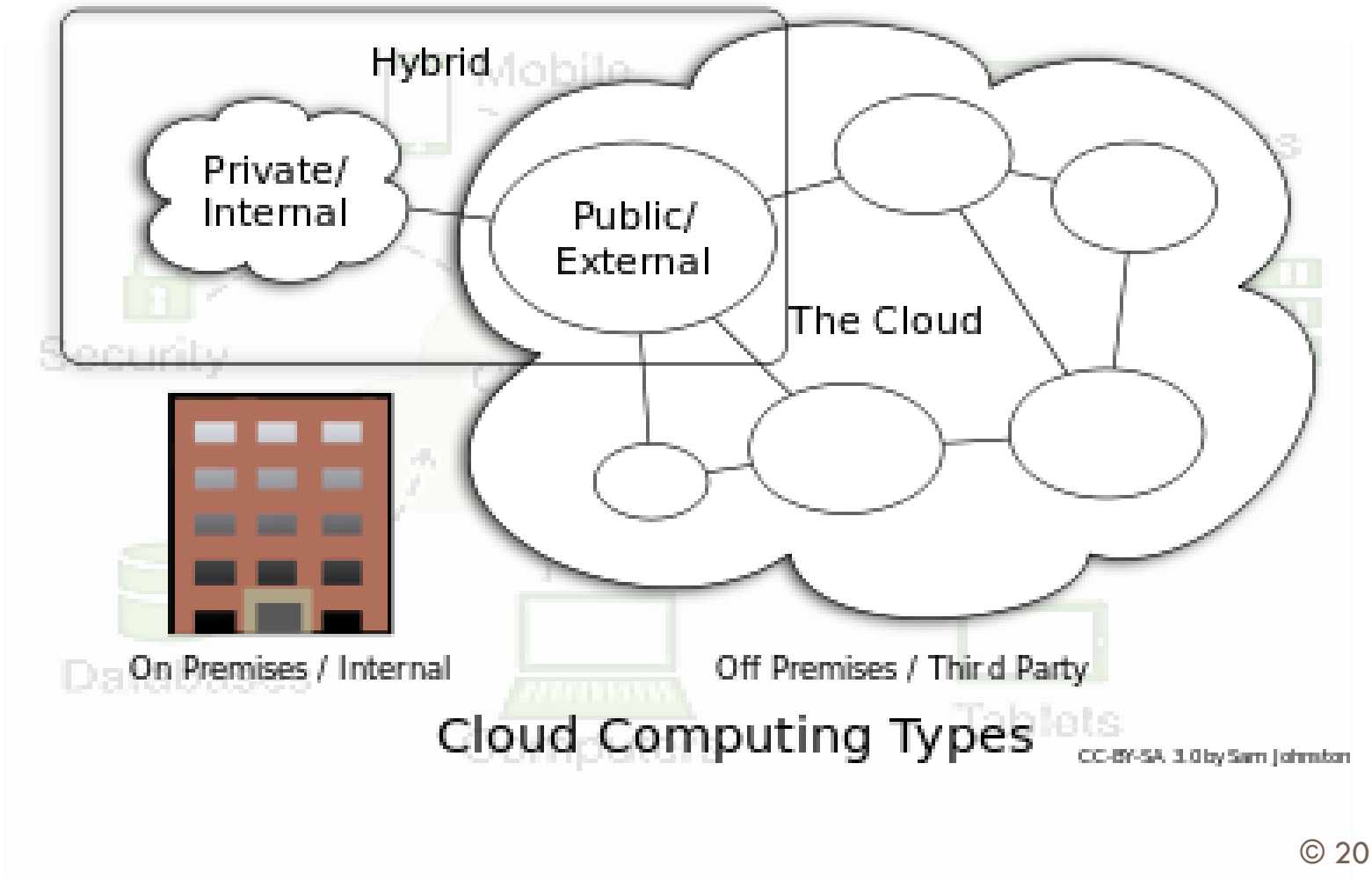
Why Cloud



Cloud Computing

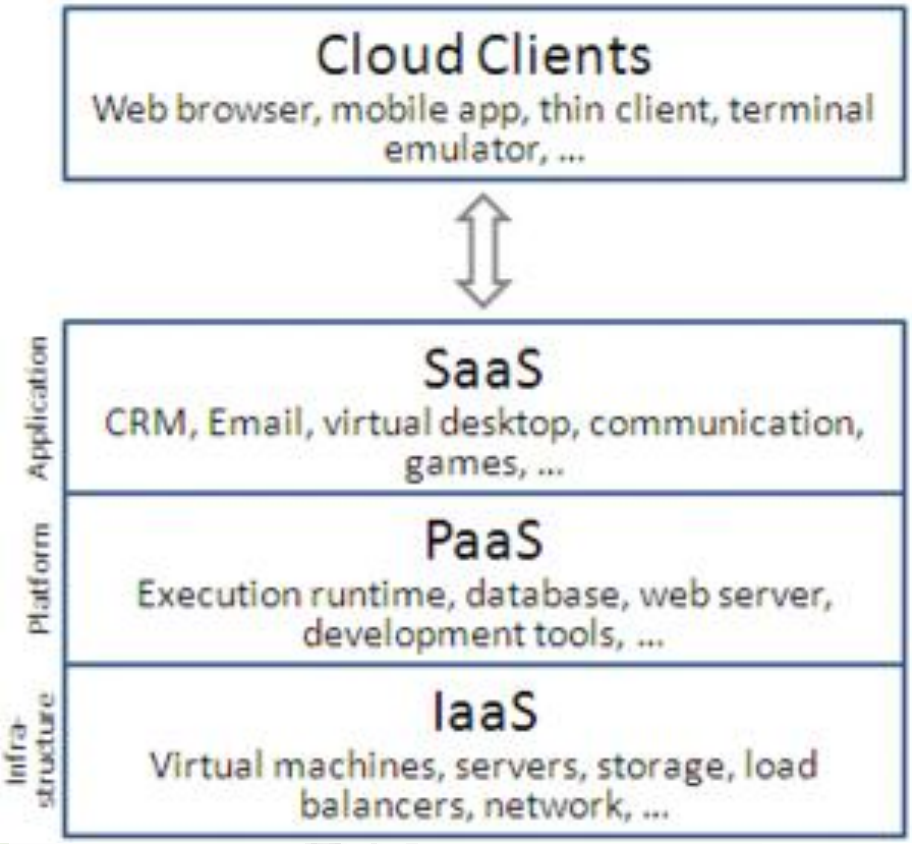
- On-demand Internet Based Computing
- Inception in 2000, 08 first Open Source Cloud
- Converge infrastructure and shared resources
- Network, Servers, Storage, Apps & Services
- Paradigm shift from CAPEX to OPEX (Pay-as-Go)
- Private, Public and Hybrid Cloud
- Hyperscale CSPs, Azure, AWS, GCP, OCI, AliBaba
- Multi Tenancy

Public vs Private Cloud



Cloud Service Layers

- **Cloud Clients:** Web browser, mobile app
- **SaaS:** On-demand software, pay per use or subscription fees
- **PaaS:** Development environment for Apps, developers,
- **IaaS:** Hypervisor runs for virtual machine as Guests



Core Technologies for Cloud Infrastructure

- **Hypervisor:** ESXi, KVM, HyperV
- **Host OS:** Hypervisor runs virtual machine as Guests, ESXi and Ubuntu are the host examples
- **Guest OS:** OS runs on virtual machine, Win2K, Linux, Cisco, Juniper, Palo Alto etc
- **Storage:** Keep all image files of Host and Guest OS, and all the application data in storage cluster
- **Network:** Connect all virtual machines internally and to the gateways

Cloud Service Provider Availability Zone

- **AWS**

  Availability Zone: Isolated Location within region,

  AZ1: us-east-1a, EC2 instance A in us-east-1a

  AZ2: us-east-1b, EC2 instance A in us-east-1b

  Region: two or more isolated location (AZ) Independent infra. resources

  Region: **us-east-1**

  us-east-1a

  us-east-1b

Cloud Service Provider Availability Zone

- **Azure**

  Availability Zone: Isolated Location within region,

  Zone1: Data Center A

  Zone2: Data Center B

  Region: In Azure region has 3 or more Zones

  Region: **East US2**

  Zone1: Data Center A

  Zone2: Data Center B

  Zone3: Data Center C

Cloud Service Provider Availability Zone

- **GCP**

  Zone: Isolated Location within region,

  Zone1: Data Center A

  Zone2: Data Center B

  Region: In GCP region has 2 - 4 Zones

  Region: **us-centrail1**

  Zone1: us-central1-a

  Zone2: us-central1-b

  Zone3: us-central1-c

  Zone3: us-central1-f

Cloud Service Provider Availability Domain

- **OCI**

Availability Domain: Isolated Location within region,

AD1: Data Center A

AD2: Data Center B

Region: In GCP region may have 1, 2 or 3 ADs

Region: **us-ashburn-1**

AD-1

AD-2

AD-3

Cloud Service Provider Availability zone

- **Alibaba**

  Zone: Isolated Location within region,

  Zone1: Data Center A

  Zone2: Data Center B

  Region: In GCP region has 2 – 3 or more Zones

  Region: **cn-hangzhou**

  Zone1: cn-hangzhou-a

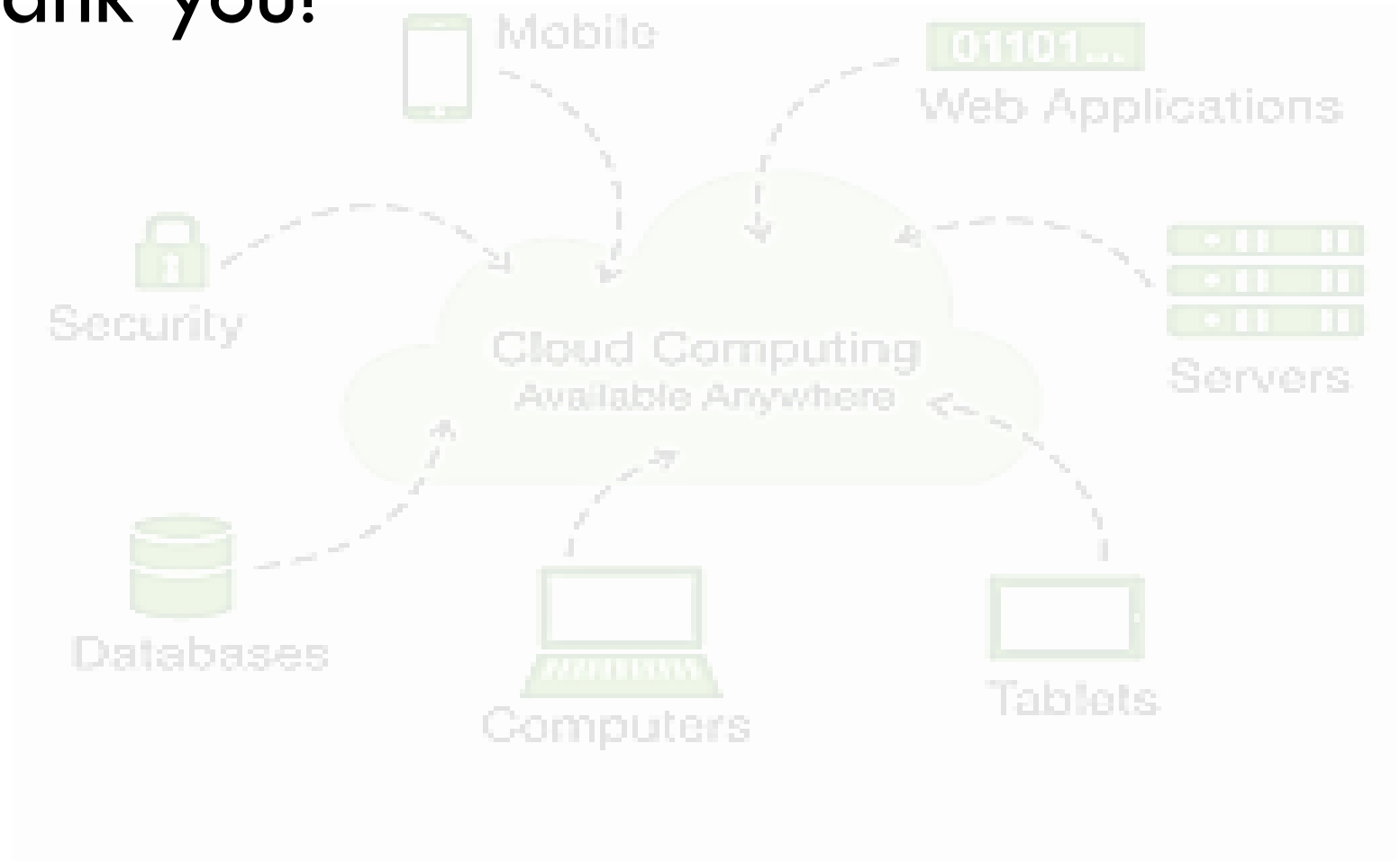
  Zone2: cn-hangzhou-b

  Zone3: cn-hangzhou-c

  Zone3: cn-hangzhou-d

Q&A

Thank you!


Mobile
01101...
Web Applications
Security
Cloud Computing
Available Anywhere
Servers
Databases
Computers
Tablets