

INTRODUCTION TO CLOUD COMPUTING

Outline

- ▶ What is Cloud Computing?
- ▶ Cloud Computing Characteristics
- ▶ Evolution of Cloud Computing
- ▶ Cloud Computing Architecture
- ▶ Cloud Computing Models
- ▶ Pros and Cons
- ▶ Cloud Service Providers

What is Cloud Computing?

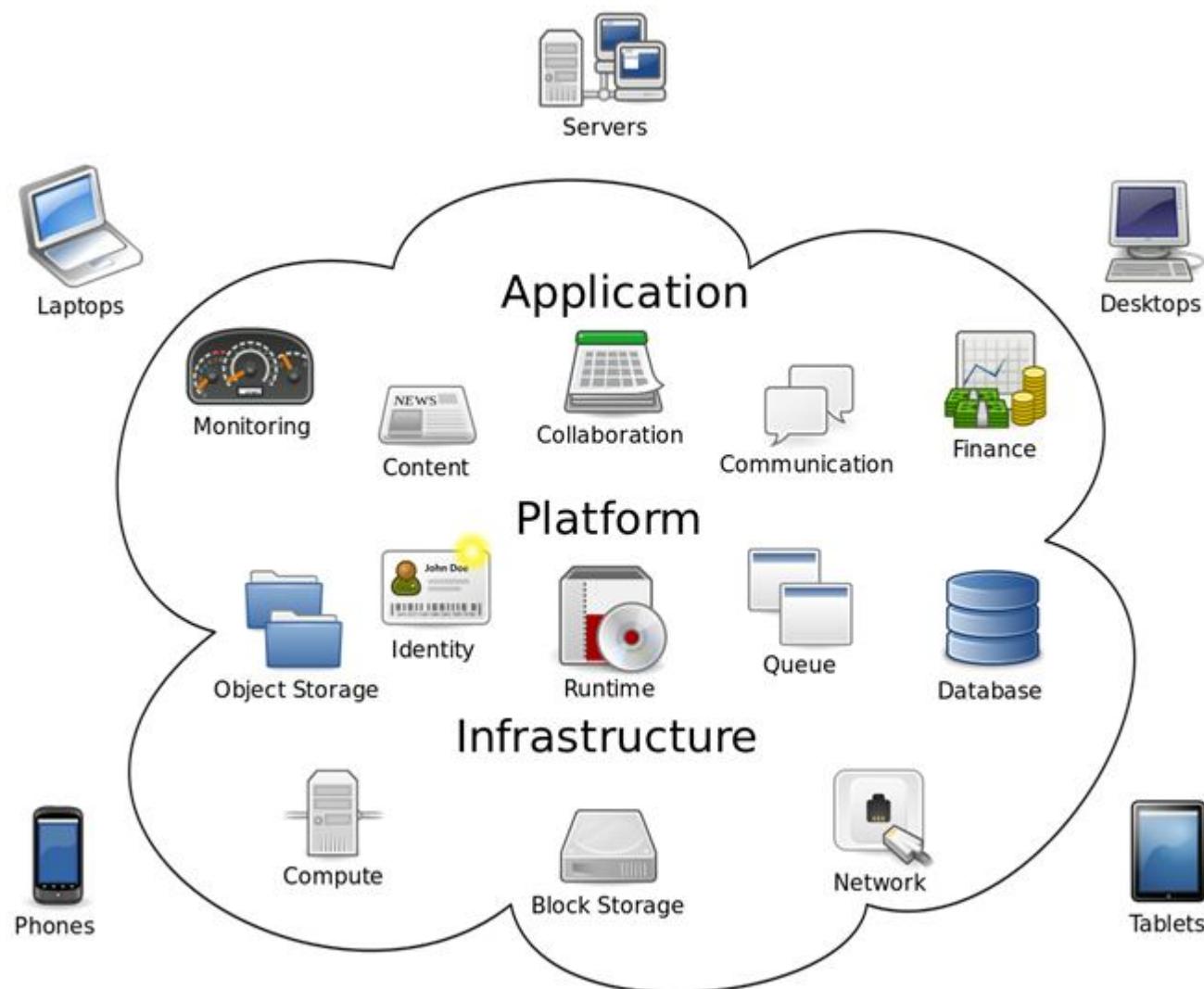
Cloud computing is on-demand delivery of IT resources and applications via the Internet with pay-as-you-go pricing.



Cloud computing is an information technology (IT) paradigm, a model for enabling ubiquitous access to shared pools of configurable resources (such as computer networks, servers, storage, applications and services), which can be rapidly provisioned with minimal management effort, often over the Internet. *Source: Wikipedia*

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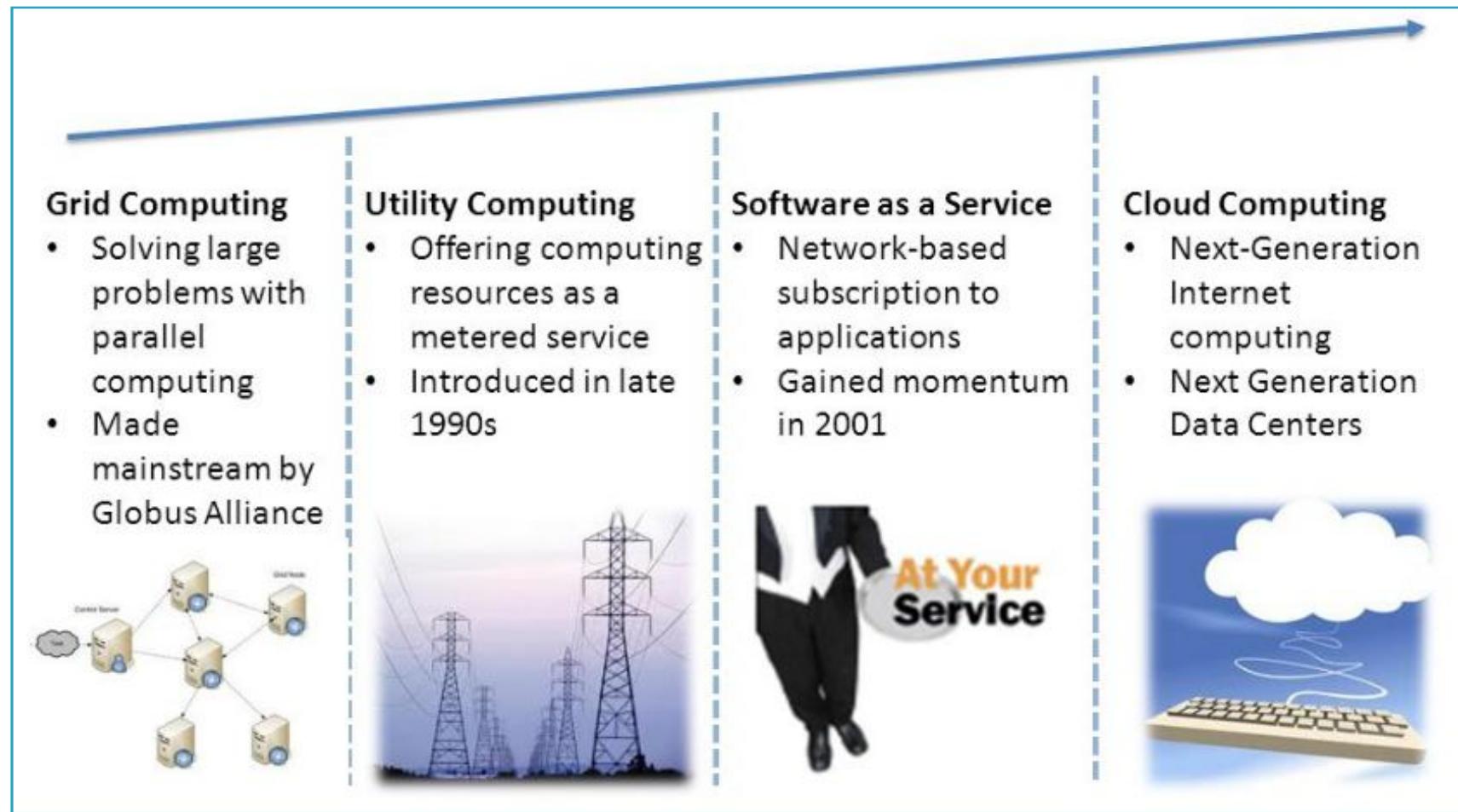
Cloud Computing Overview



Cloud Computing – Characteristics



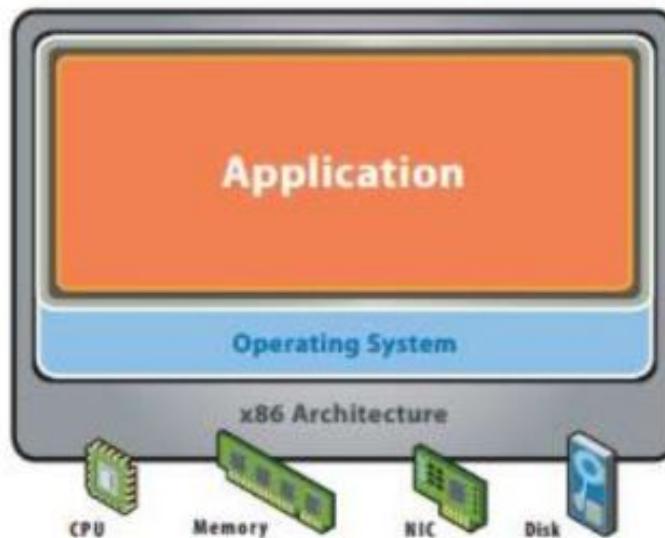
Evolution of Cloud Computing



Supporting Factors for Cloud Computing

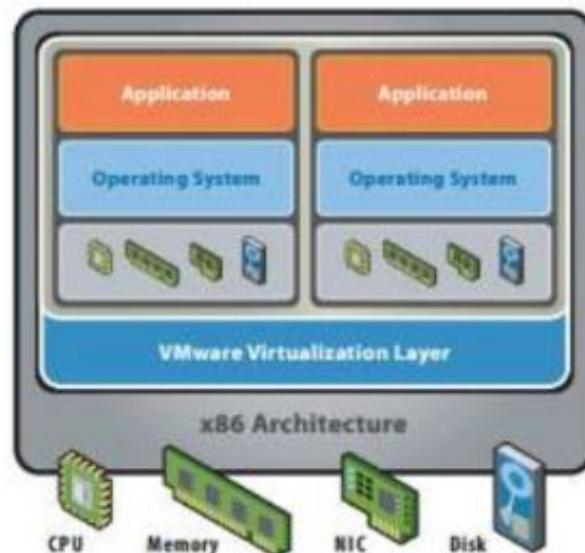
- Advancement in processors
- Virtualization technology
- Distributed Storage
- Automated Management
- Broadband internet Access
- Fast and Inexpensive Servers

Virtualization Overview



Before Virtualization:

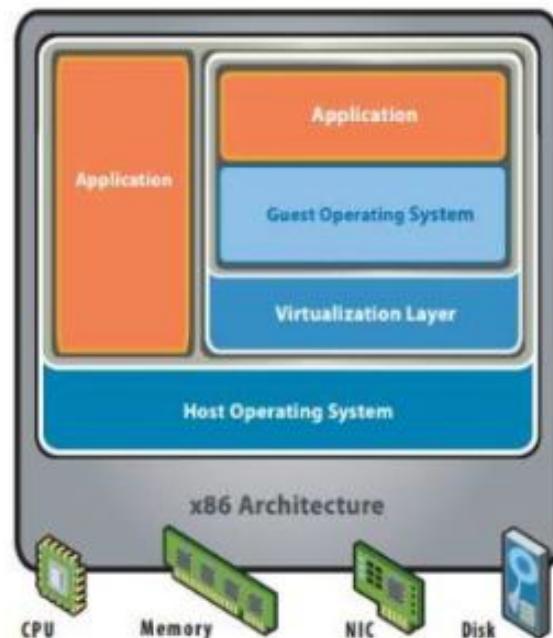
- Single OS image per machine
- Software and hardware tightly coupled
- Running multiple applications on same machine often creates conflict
- Underutilized resources
- Inflexible and costly infrastructure



After Virtualization:

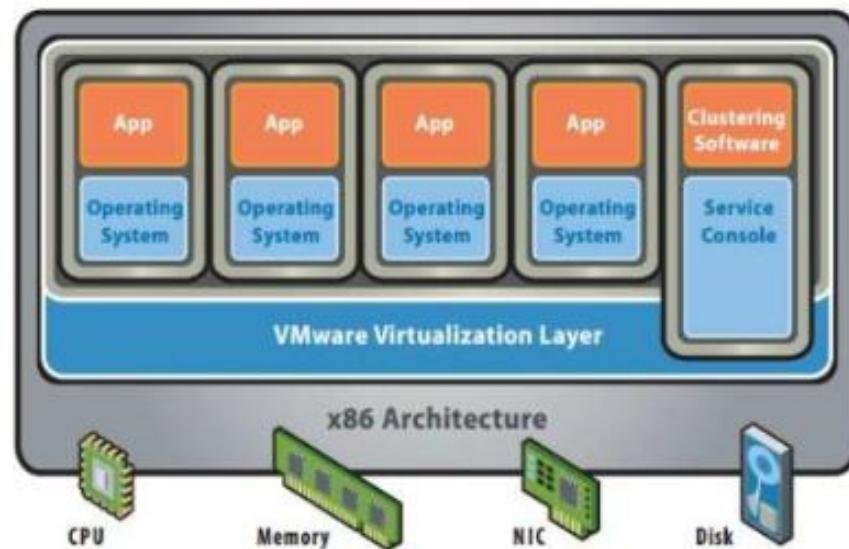
- Hardware-independence of operating system and applications
- Virtual machines can be provisioned to any system
- Can manage OS and application as a single unit by encapsulating them into virtual machines

Virtualization Approaches



Hosted Architecture

- Installs and runs as an application
- Relies on host OS for device support and physical resource management

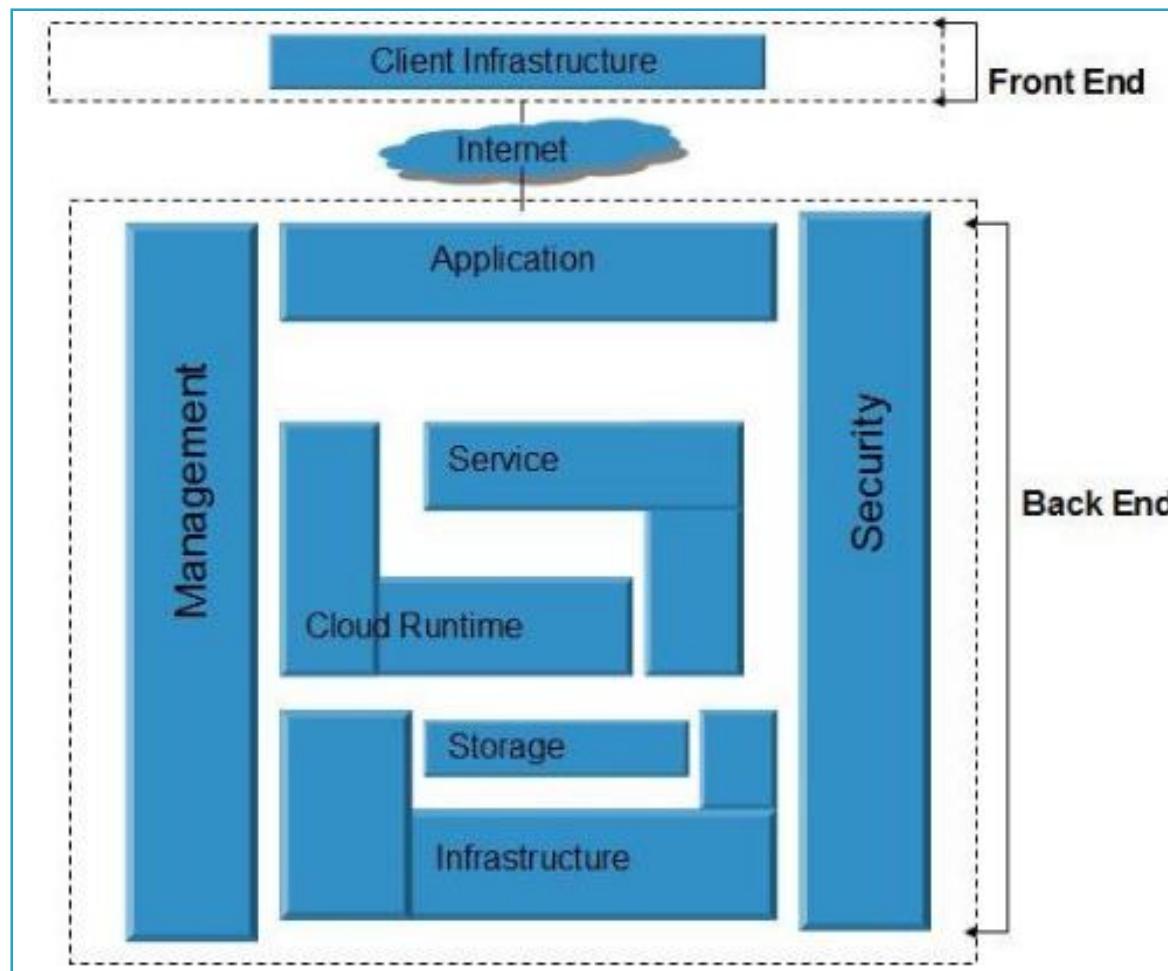


Bare-Metal (Hypervisor) Architecture

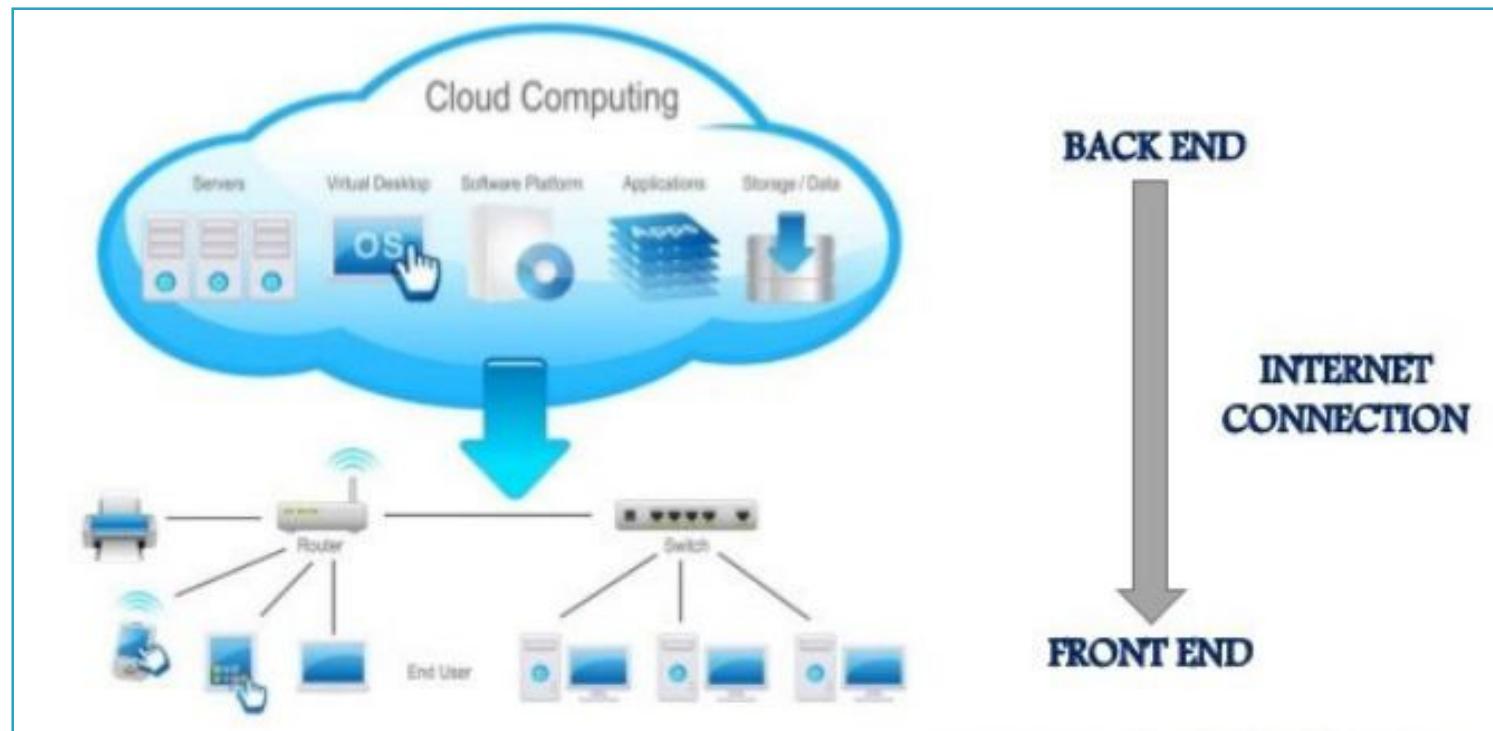
- Lean virtualization-centric kernel
- Service Console for agents and helper applications

Cloud Computing Architecture

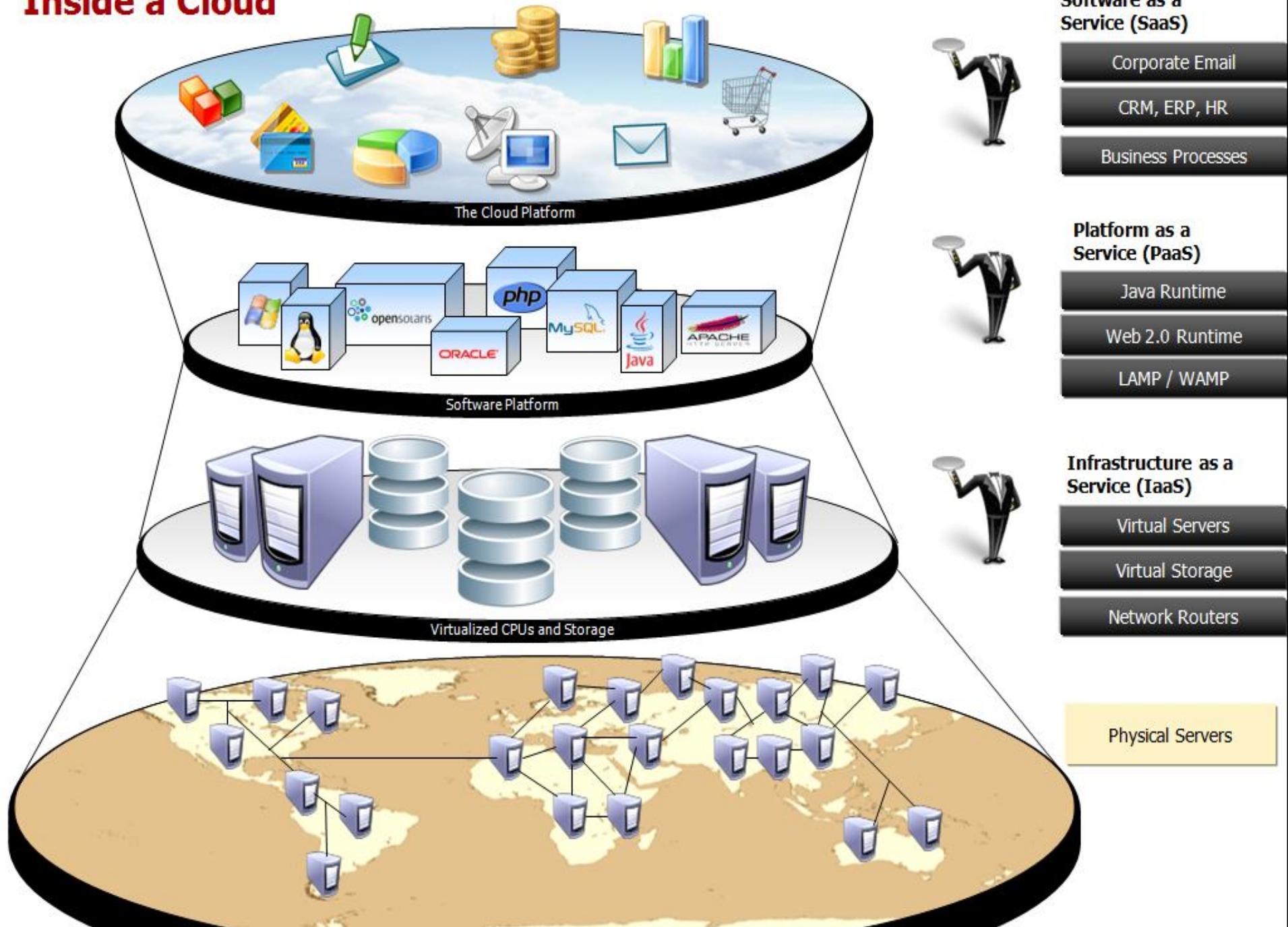
Cloud computing architecture refers to the components and subcomponents required for cloud computing. These components typically consist of a front end platform (fat client, thin client, mobile device), back end platforms (servers, storage), a cloud based delivery, and a network (Internet, Intranet, Intercloud).



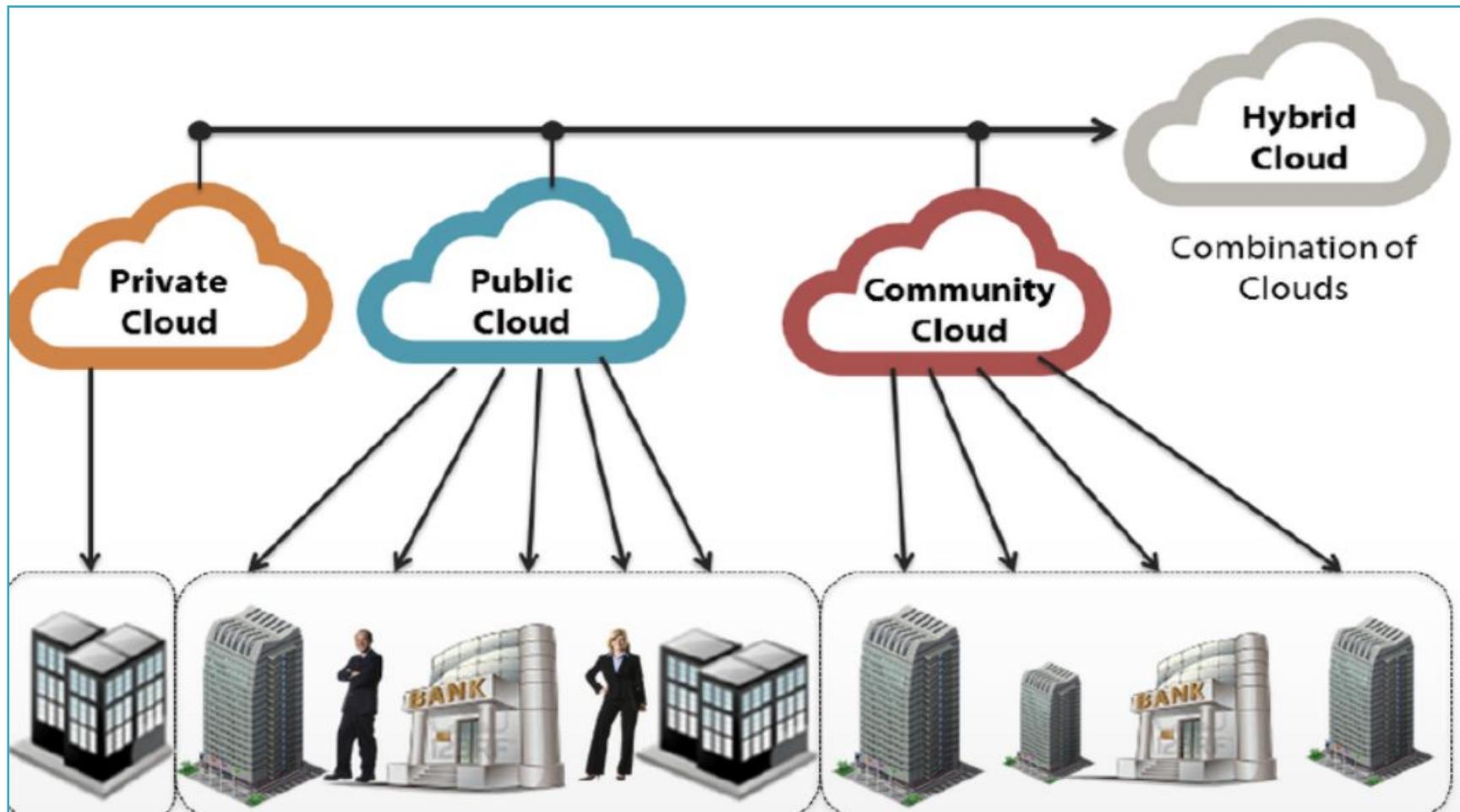
Cloud Computing Architecture (contd.)



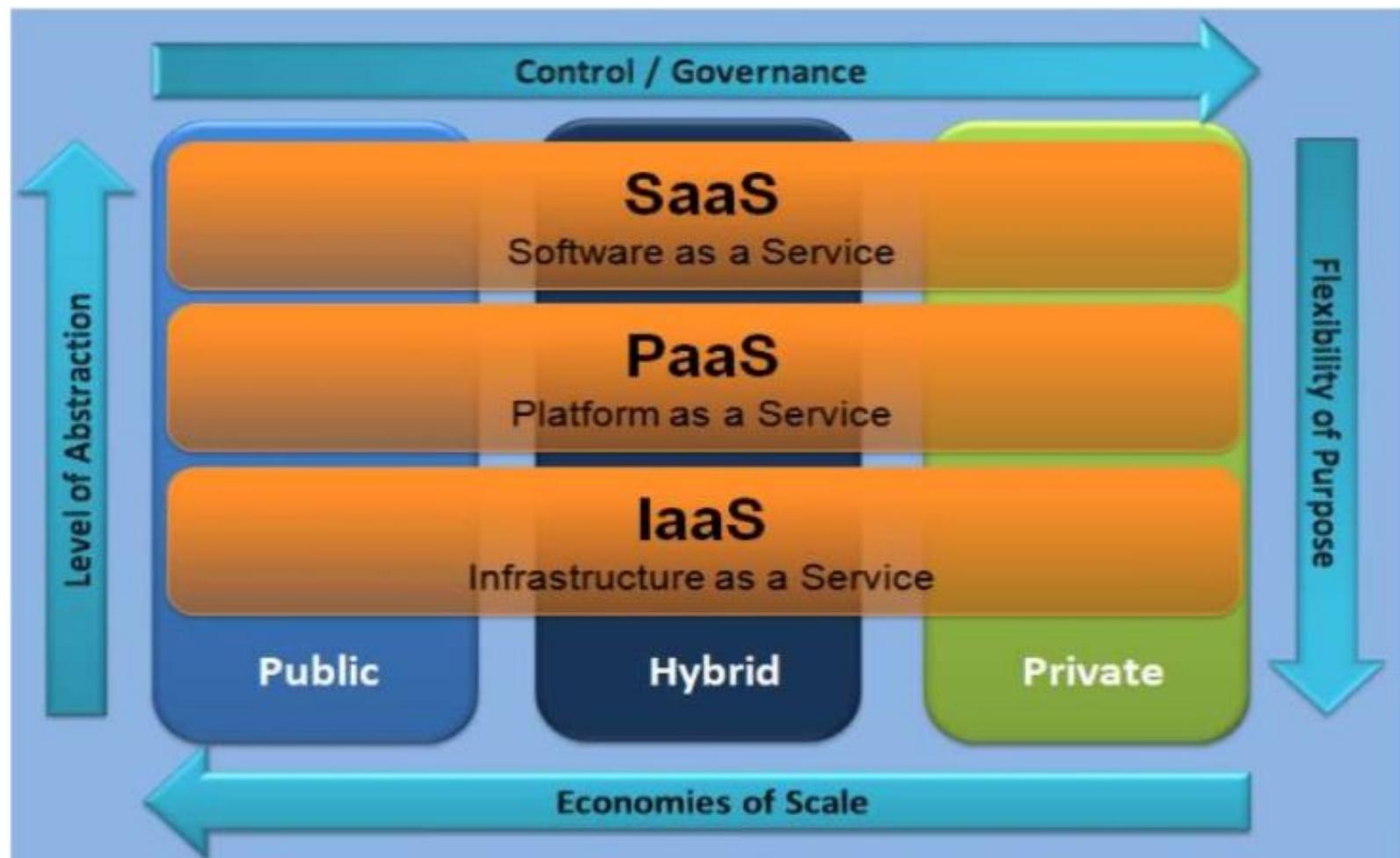
Inside a Cloud



Cloud Deployment Models



Cloud Computing Service Model



Pros and Cons of Cloud Computing



Cloud Providers – A Birds Eye View

Infrastructure
as a Service



Windows Azure



Google Cloud Platform

IBM Cloud

ORACLE
Cloud

Platform
as a Service

force.com™
platform as a service



CLOUD FOUNDRY

Google
App Engine



AWS Elastic Beanstalk

heroku

Software
as a Service

salesforce.com
Success. Not Software.®



Microsoft
Office Live



Adobe®
Creative Cloud™

Thank You!