Cloud Computing

Unwrapping the Cloud

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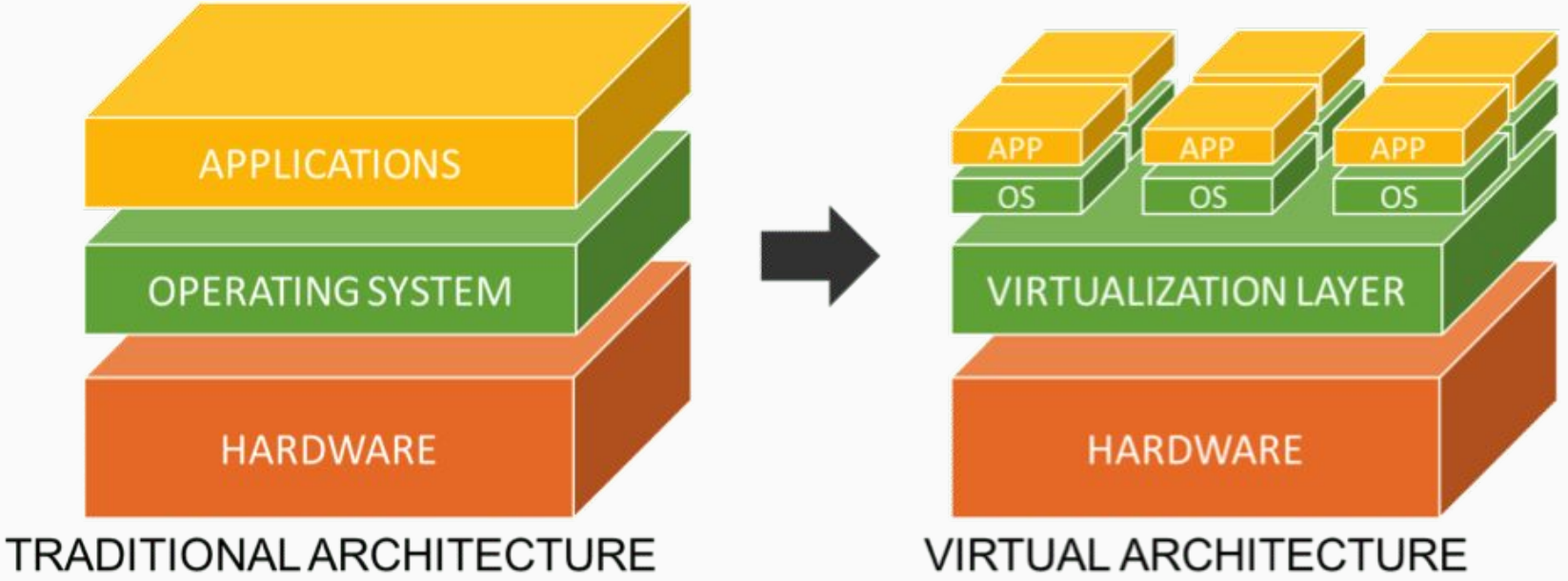
Agenda

- Legacy Infrastructure
- Understanding Virtualization
- Types of Hypervisor
- What is Cloud Computing?
- On Premise vs Cloud Computing
- Deployment Model and Service Model
- Vendors and use cases
- Containerization
- Network Virtualization, VPN, SDN

Traditional Vs Virtual



Challenges in Traditional Approach

- Takes forever to deploy new applications
- Difficult to migrate
- Expensive
- Downtime (H/w failure, power supply)
- Inefficient use of resources
- Difficult to manage

Benefits of Virtualization over Traditional

- Optimal use of resources → cost effective
- Centralized management → Reduce maintenance cost
- Easy to migrate → Auto migration
- Reduces number of physical servers → Saves DC space
- Reduces Downtime

What is Cloud Computing?

-Cloud Computing is the use of a network of remote servers hosted on the internet to store, manage and process data rather than a local store

-Pay for what you use

-In simple terms, it means storing or accessing your data over the internet

-It is the delivery of computing services (servers, databases, networking, software etc.) over the internet.

On-premise vs Cloud Computing

On-premise	Cloud Computing
-Higher Pay, less scalability and flexible	-Pay for what you use, highly scalable and flexible
-Allot huge space for servers	-No server space required.
-Appoint a team for h/w and s/w maintenance	-No experts required for h/w and s/w maintenance
-Takes longer implementation time	--Rapid implementation
-No automatic updates	-Automatic software updates

Types of Cloud Computing

Deployment Model

-Public Cloud

-Private Cloud

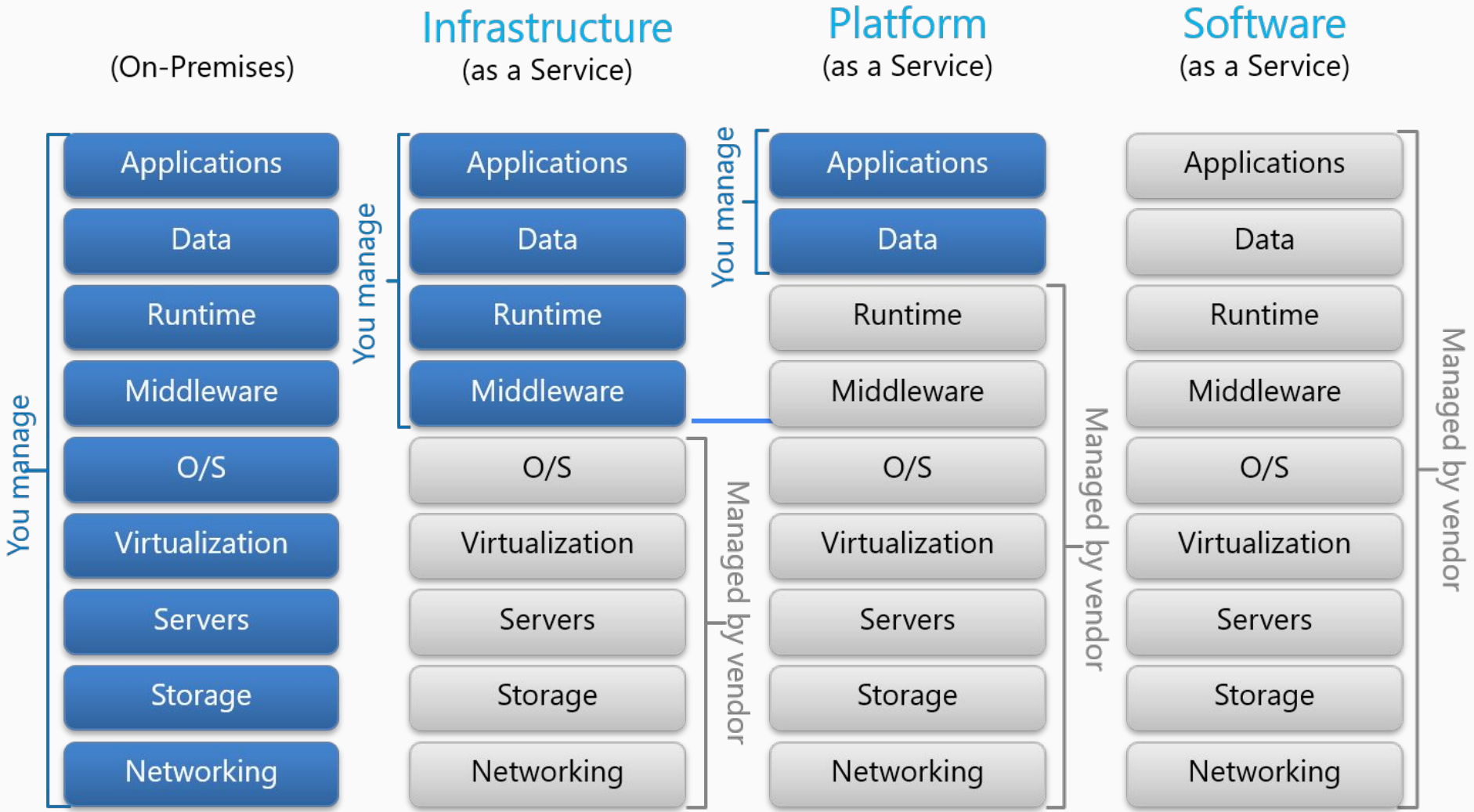
-Hybrid Cloud

Service Model

-Infrastructure as a Service

-Platform as a Service

-Software as a Service

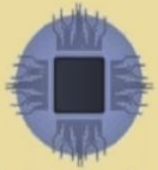

(On-Premises)
Infrastructure
(as a Service)
Platform
(as a Service)
Software
(as a Service)
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
You manage
You manage
You manage
Managed by vendor
Managed by vendor
Managed by vendor

Use cases

Manufacturing Organization

Expand Business

Architecture Consulting



Compute Rendering For Prototyping

Media Company

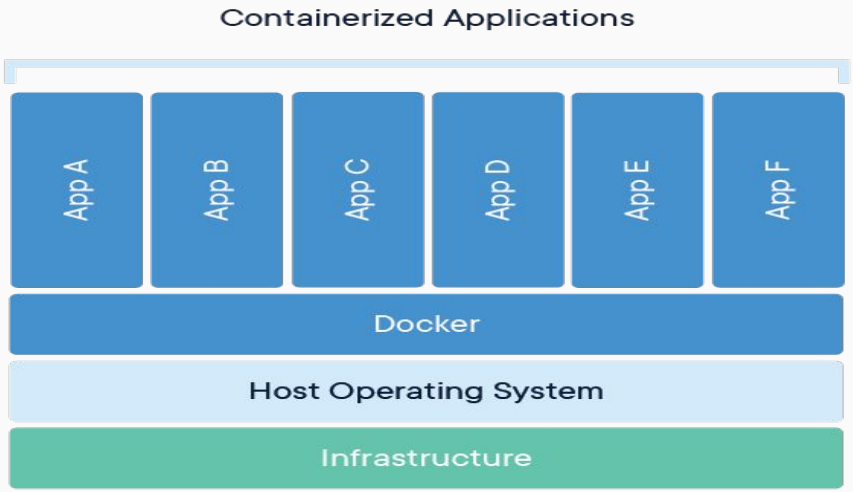
Expand Business

Large Enterprise

Deliver training

What are containers?

A **container** is a standard unit of software that packages up code and all its dependencies so the application runs quickly and reliably from one computing environment to another.

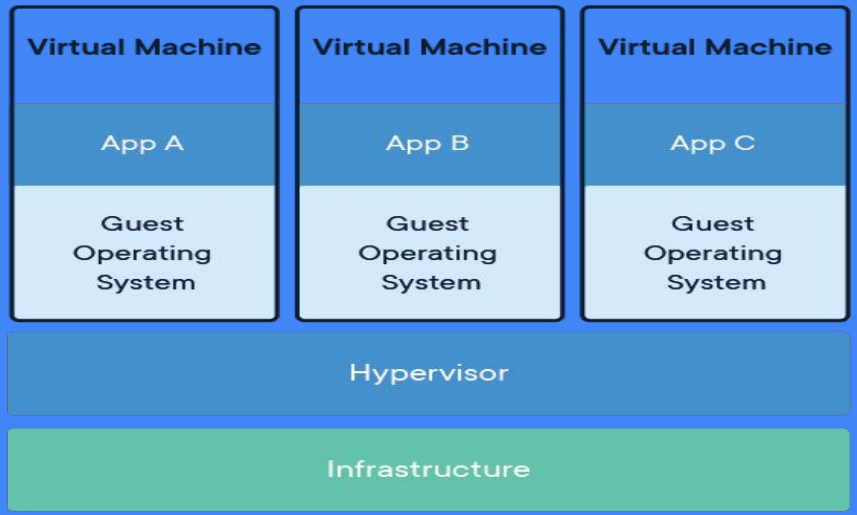


Benefits of Containers

-Less Overhead

-Less system resources

-Portable



Network Virtualization

- It is a service that is now being provided by major cloud players.

- We are supposed to pay for it.

- The service connects computers all over the world.

- The heart of Networking As A Service is VPN.

- The more layered we can make a network, the more secure it gets.

- We do security and build infrastructure with a life expectancy.

- Putting networking equipment to segregate the network.

- Have put limitations on migration of viruses.

Virtual Private Network

- Understanding LAN and VPN.

- Why VPN is used till date.

- No man-in-the-middle attacks.

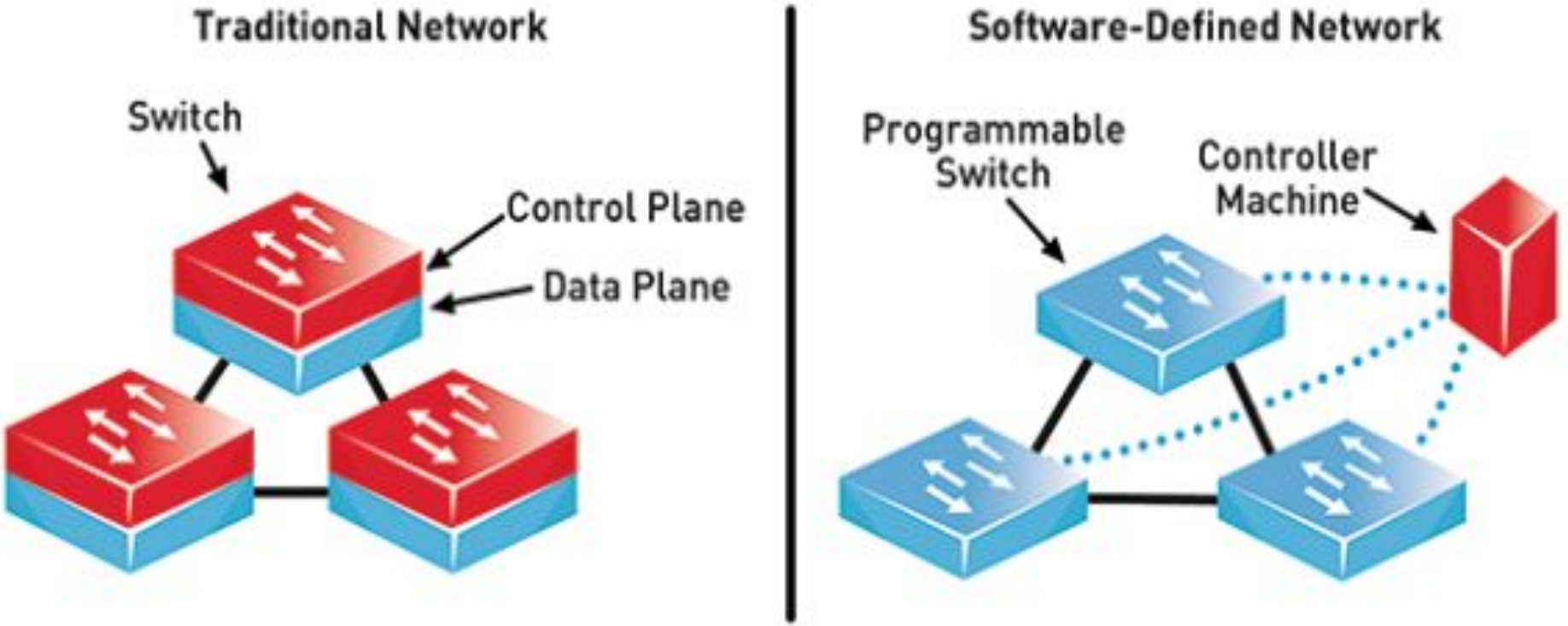
Software Defined Networking

- **Definition of SDN by Martin Casado :**

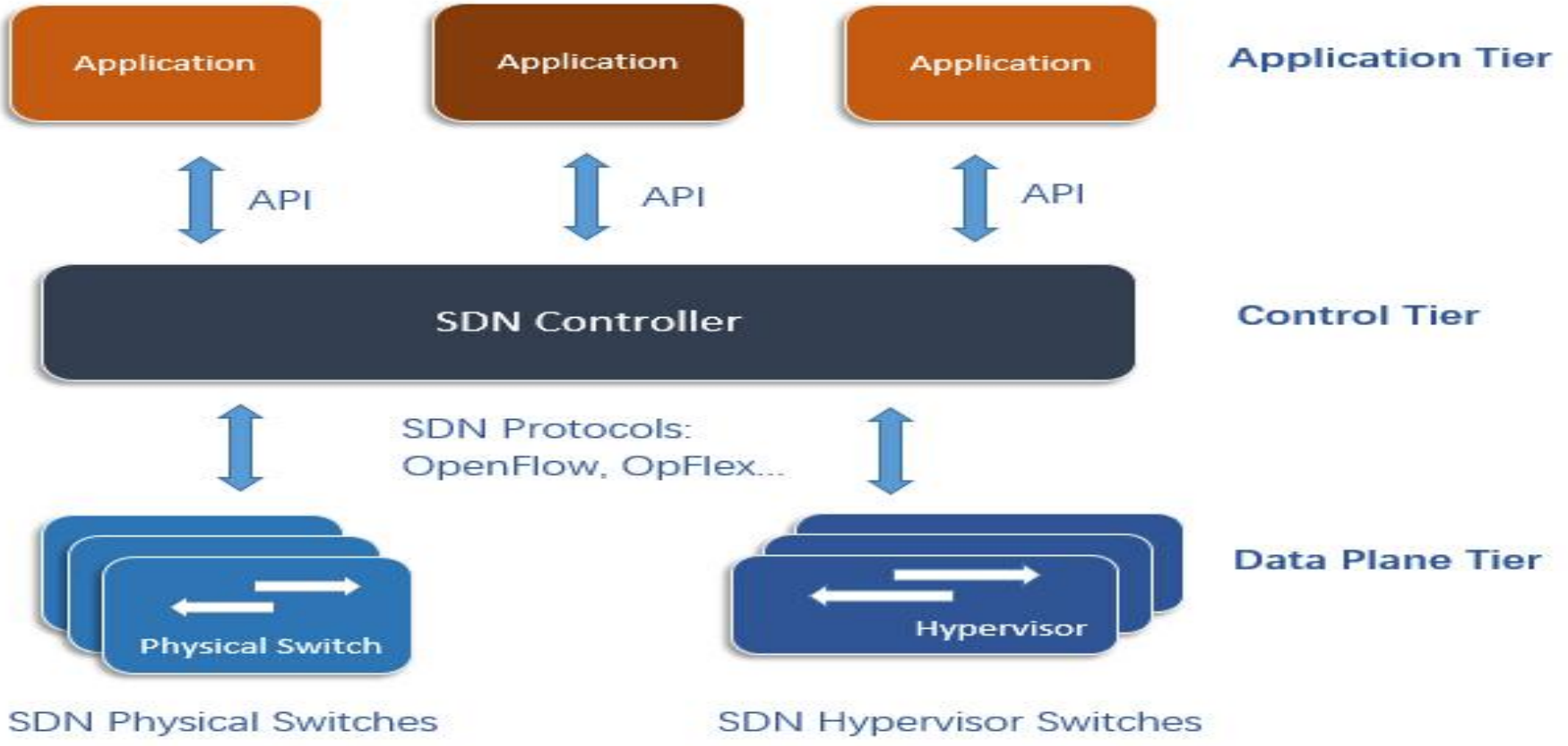
  SDN is a kind of umbrella term, for various ways to use software, to manage and manipulate the network.

- **SDN Enables :**
  - Centralised Management of networking devices
  - Scope of development / Innovation

SDN


Traditional Network
Switch
Control Plane
Data Plane
Software-Defined Network
Programmable Switch
Controller Machine

SDN


Application
Application
Application
Application Tier
API
API
API
SDN Controller
Control Tier
SDN Protocols:
OpenFlow, OpFlex...
Physical Switch
Hypervisor
Data Plane Tier
SDN Physical Switches
SDN Hypervisor Switches

Bonus :p

QA?

Thanks!