Agenda

Module 1: Introduction to Azure & Azure DevOps

Module 2: What is DevOps?

Module 3: Deploy and Configure Standardized Environments

Module 4: Azure Automation

Module 5: Build and Deploy Automatically to Production

Module 6: Containerization

Module 7: Azure Container Services

Module 8: Testing Overview

Module 9: Application Monitoring

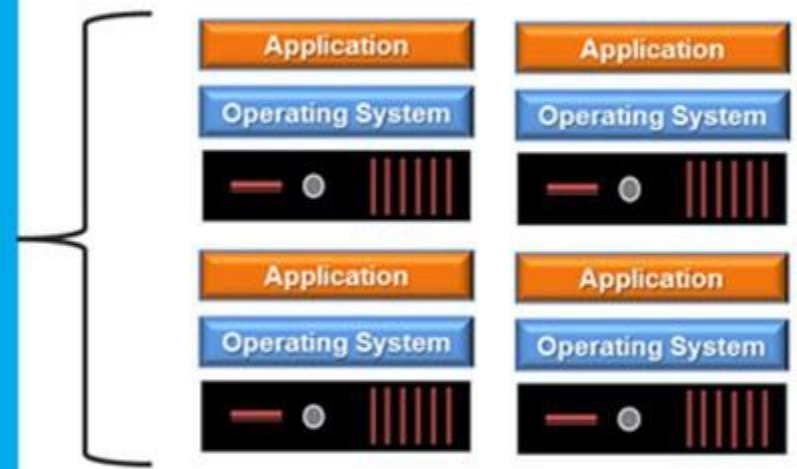
Introduction to Cloud Computing

Traditional Computing Model

Host (HP, DELL, etc.) – Hardware Server made up of CPU, Memory, Network and Disk Subsystem

Operating System (Windows, Linux, etc.) – Provides the Basic Access to the Hardware and allows for Security, File Systems Management, Databases and Application Programing Interfaces.

Applications (Office, SQL , Apache) – Applications are then installed on top of the Operating Systems ranging from User applications, Web Servers, DBMS and APIs for other Servers.



Issues with the traditional model

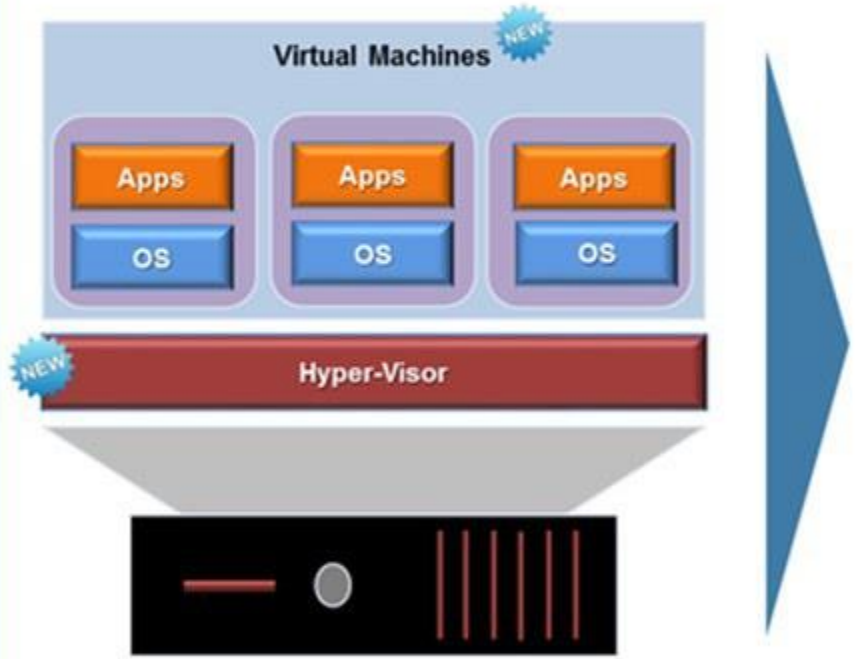
- Not Energy Efficient
- Server Sprawl
- Slow Provisioning of Servers
- Single Point of Failure
- Difficult for Disaster Recovery
- Under Utilized Servers

Virtualization Computing Model

Virtualization Software allows for the Hardware and Operating System to be Separated and Multiple Installations of an OS on the same Hardware

Hypervisor (VMware ESX, Hyper-V) – is Software which runs directly on the Host and allows for Resource Allocation and Manages Virtual Machines

Virtual Machine (VMWare) – Container that is a software based "Server" and is provided hardware resources via the Hypervisor



Enabling Technology for Optimal Use of Hardware Investments

Consolidation of Hardware (Shared Workloads)

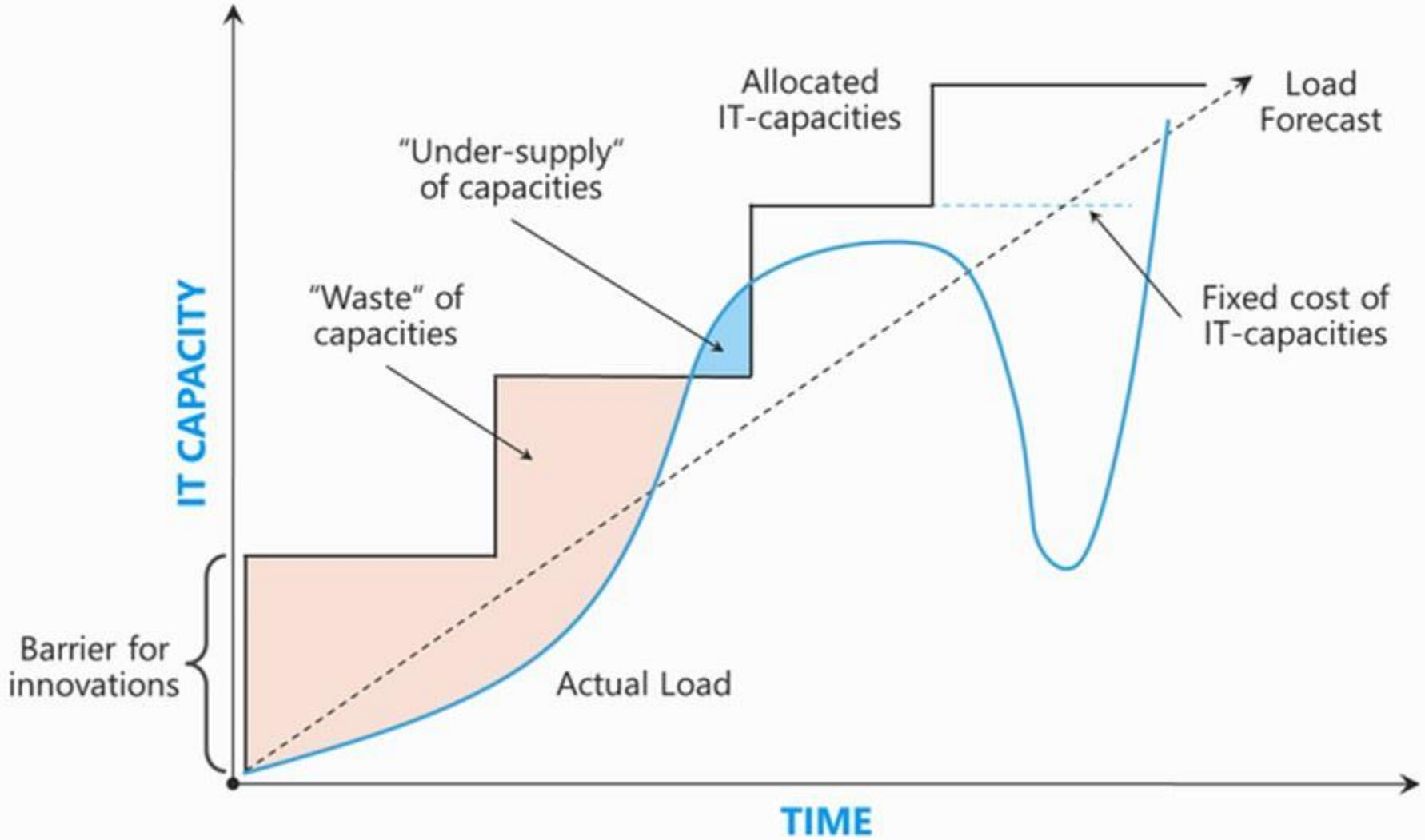
High Availability

Reliability with Real-time Failover

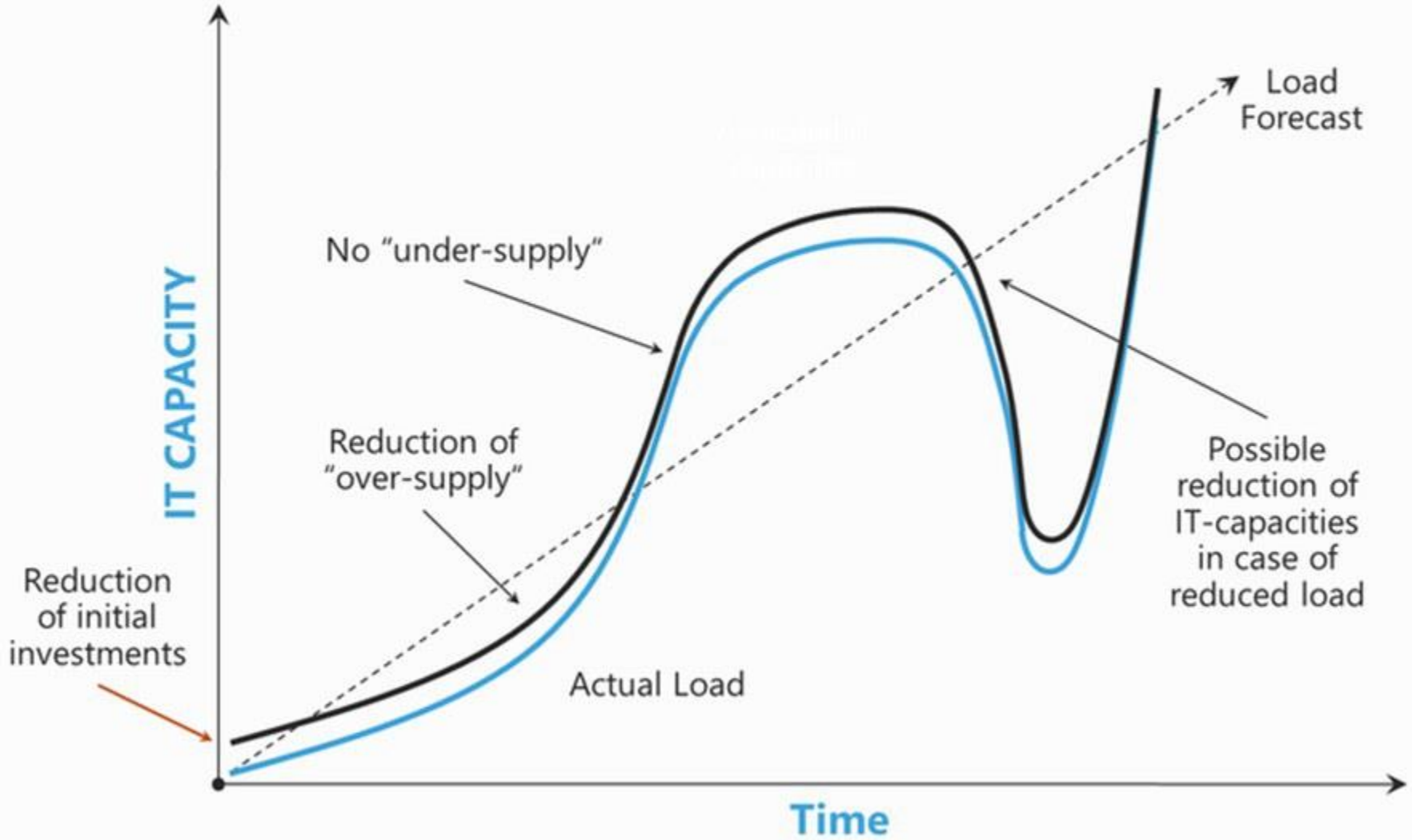
Disaster Recovery

Ease of Management

Inefficiencies with these models



In a cloud world



Cloud Computing Terminology

IaaS

Infrastructure-as-a-Service

PaaS

Platform-as-a-Service

SaaS

Software-as-a-Service

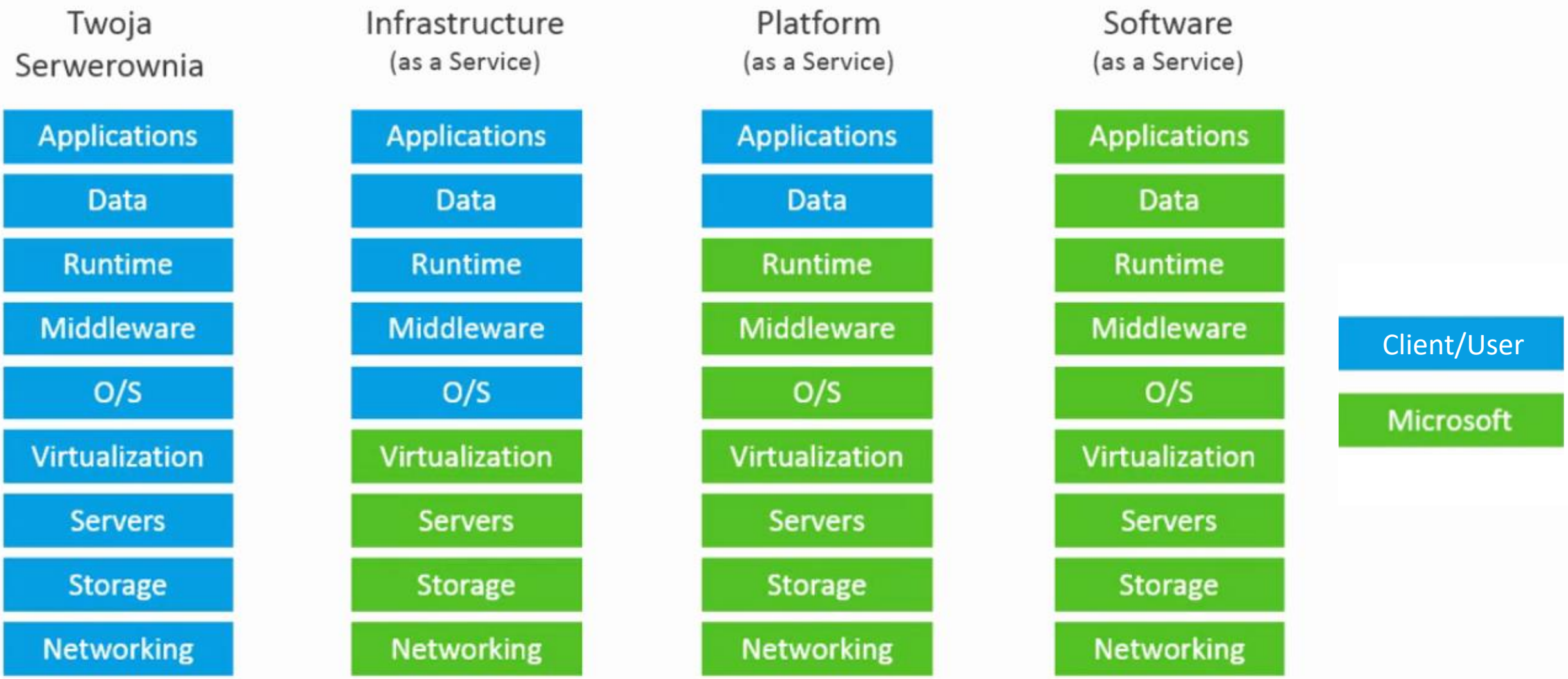
host | **build** | **consume**

Microsoft Azure

Office 365

Microsoft Dynamics

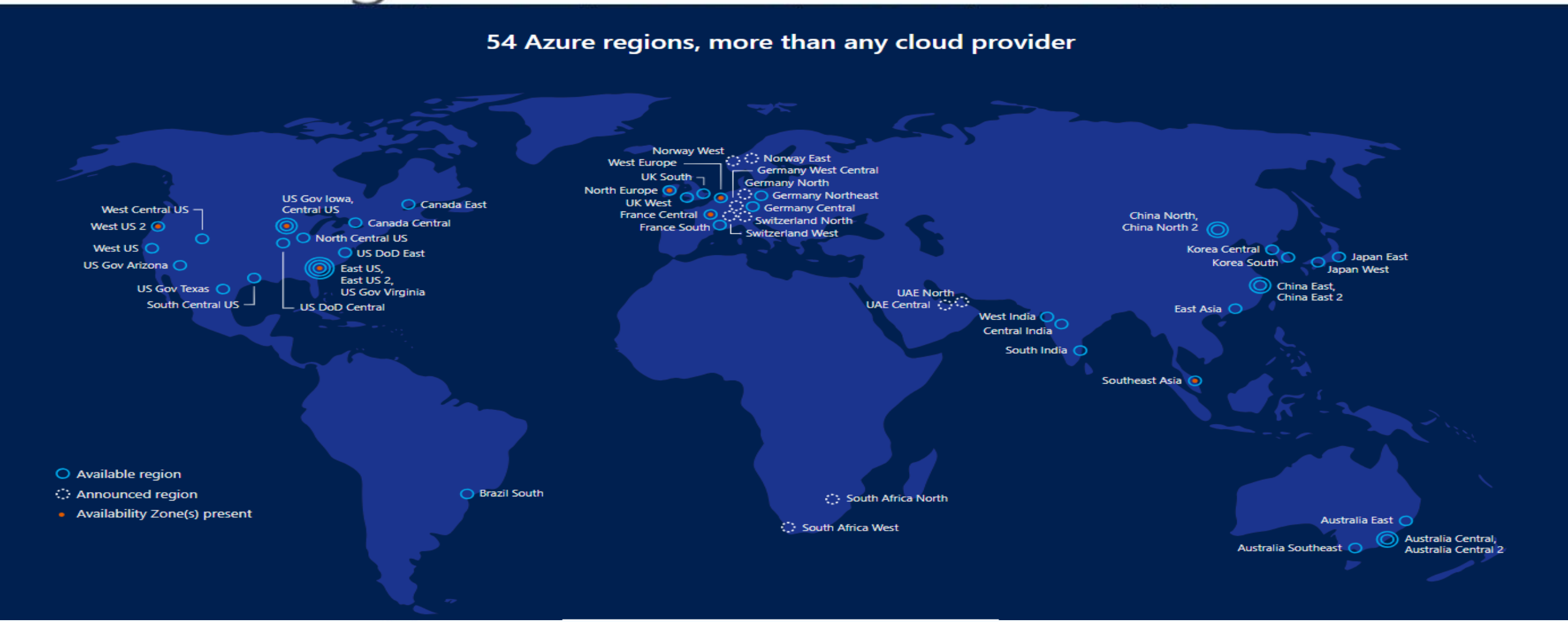
Cloud Service Models



Microsoft

Getting Started with Microsoft Azure

Azure Regions



- 100+ datacenters
- Top 3 networks in the world
- Second Largest Dark Fiber Network
- China Operated by 21Vianet
- Germany Operated by Deutsche Telekom
- 2.5x AWS, 7x Google DC Regions

- Operational
- Announced/Not Operational

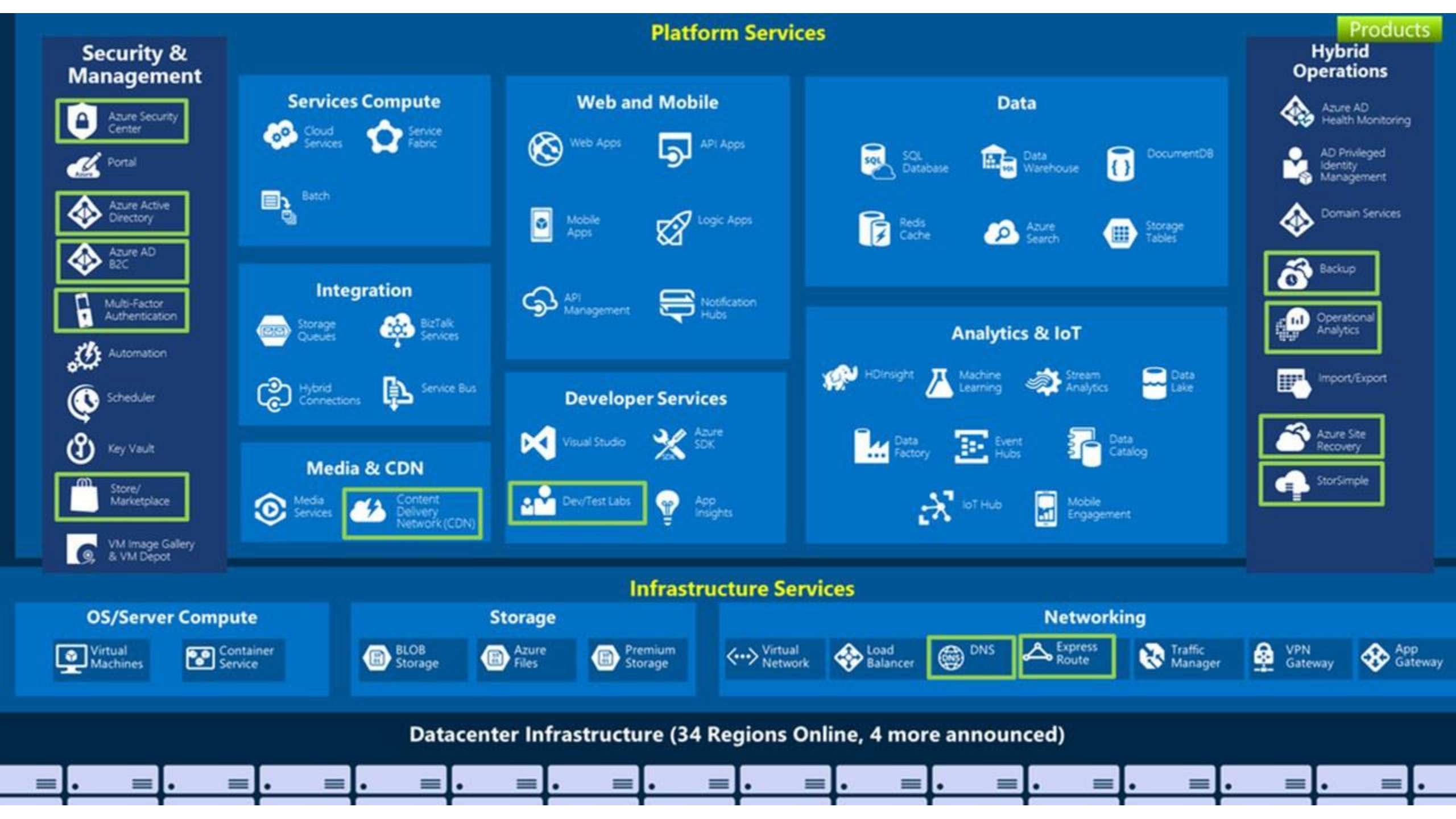
Azure Regions

Americas

Region	Location
East US	Virginia
East US 2	Virginia
Central US	Iowa
North Central US	Illinois
South Central US	Texas
West Central US	Wyoming
West US	California
West US 2	Washington
Canada East	Quebec City
Canada Central	Toronto
Brazil South	Sao Paulo State

Asia Pacific

Region	Location
Southeast Asia	Singapore
East Asia	Hong Kong SAR
Australia East	New South Wales
Australia Southeast	Victoria
Australia Central	Canberra
Australia Central 2	Canberra
China East	Shanghai
China North	Beijing
China East 2	Shanghai
China North 2	Beijing
Central India	Pune
West India	Mumbai
South India	Chennai
Japan East	Tokyo, Saitama
Japan West	Osaka
Korea Central	Seoul
Korea	Busan


Platform Services
Products
Security & Management
Azure Security Center
Portal
Azure Active Directory
Azure AD B2C
Multi-Factor Authentication
Automation
Scheduler
Key Vault
Store/ Marketplace
VM Image Gallery & VM Depot
Services Compute
Cloud Services
Service Fabric
Batch
Integration
Storage Queues
BizTalk Services
Hybrid Connections
Service Bus
Media & CDN
Media Services
Content Delivery Network (CDN)
Web and Mobile
Web Apps
API Apps
Mobile Apps
Logic Apps
API Management
Notification Hubs
Developer Services
Visual Studio
Azure SDK
Dev/Test Labs
App Insights
Data
SQL Database
Data Warehouse
DocumentDB
Redis Cache
Azure Search
Storage Tables
Analytics & IoT
HDInsight
Machine Learning
Stream Analytics
Data Lake
Data Factory
Event Hubs
Data Catalog
IoT Hub
Mobile Engagement
Hybrid Operations
Azure AD Health Monitoring
AD Privileged Identity Management
Domain Services
Backup
Operational Analytics
Import/Export
Azure Site Recovery
StorSimple
Infrastructure Services
OS/Server Compute
Virtual Machines
Container Service
Storage
BLOB Storage
Azure Files
Premium Storage
Networking
Virtual Network
Load Balancer
DNS
Express Route
Traffic Manager
VPN Gateway
App Gateway
Datacenter Infrastructure (34 Regions Online, 4 more announced)

Management Portal

Create resources

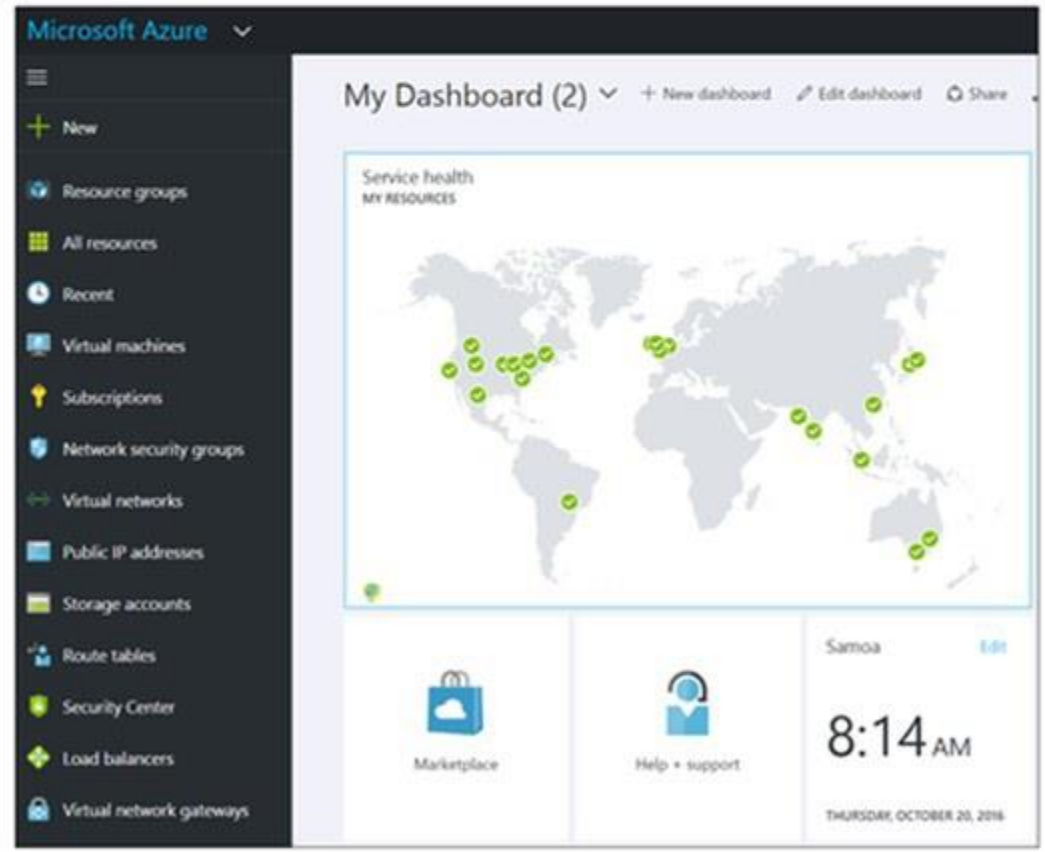
Web Apps, Virtual Machines, etc..

Manage and monitor

View your bill

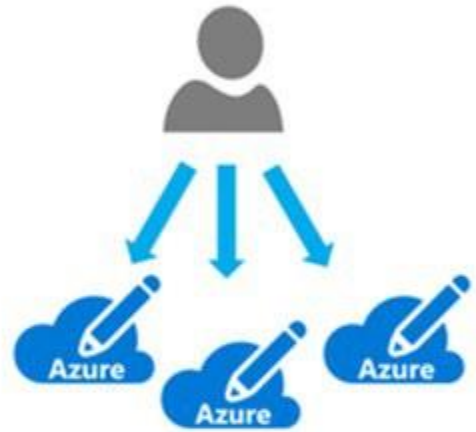
Control Access

https://portal.azure.com



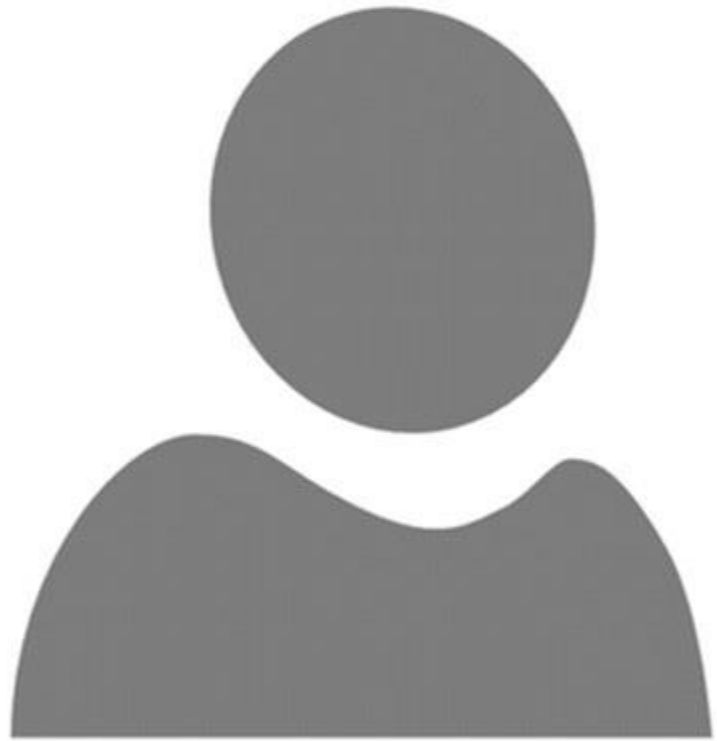
Azure Subscriptions

- Subscriptions
  - Organize access to cloud service resources. They also help you control how resource usage is reported, billed, and paid for.
- How to get a subscription
  - Trial, MSDN, Pay as you go, Reseller, Enterprise
- Free Trial
  - 30 days with $200 in credit
  - http://azure.microsoft.com – click Free Trial



Azure Subscription Roles

- Account Administrator (1 per Account)
  - Authorized to access the Account Center (create subscriptions, cancel subscriptions, change billing for a subscription, change Service Administrator, and more).
- Service Administrator (1 per Subscription)
  - Authorized to administrator the subscription but cannot see billing details. By default, same as the Account Administrator when a subscription is created.
- Role Based Access Control
  - Grant access to specific resources to specific users or groups within your organization.
- Roles
  - Owner, Contributor, Read Only
  - Many more!



Identities

- Organization Accounts
  - Work or School
  - Link subscription to an Azure Active Directory or Office 365 tenant (they are the same behind the scenes)
  - Manage access to Azure with existing identities
- Microsoft Accounts
  - Account that is created and linked to your existing email

Enterprise Agreement (EA) Portal

http://ea.azure.com

DEMO – Azure Portal