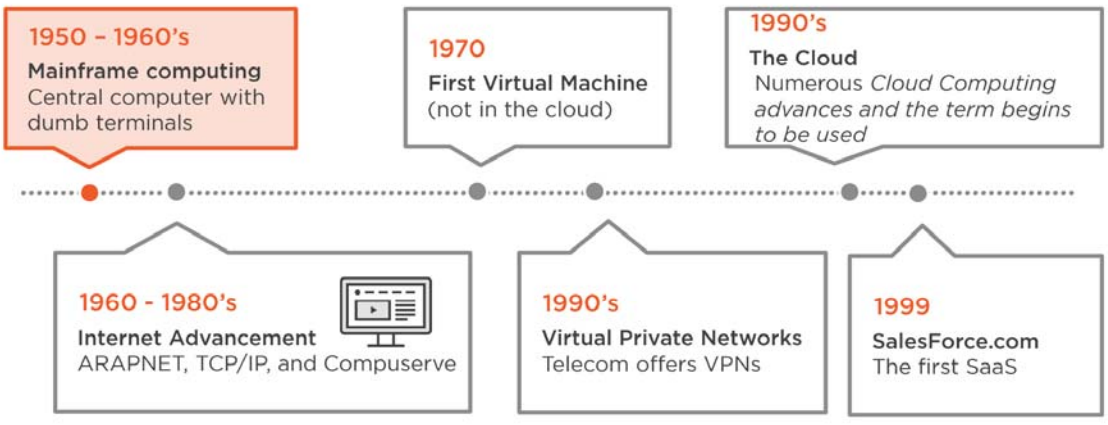
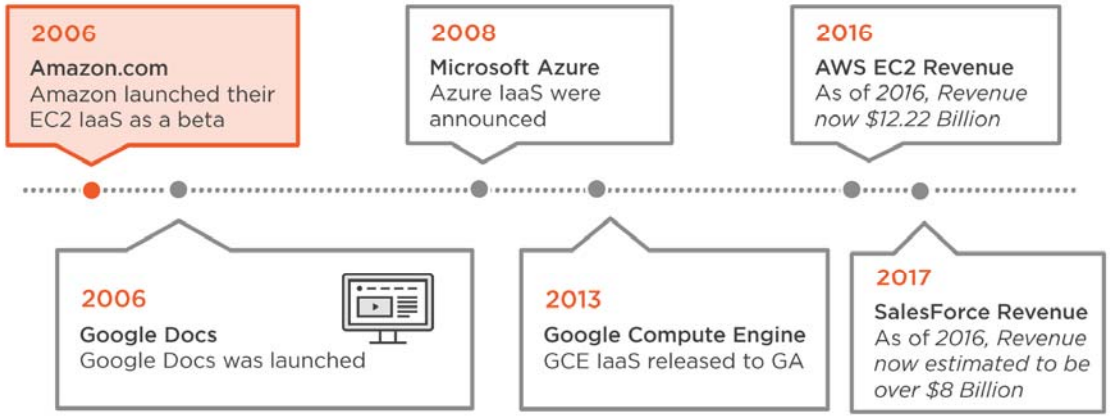
Cloud Computing: Seeing the Big Picture

INTRODUCTION

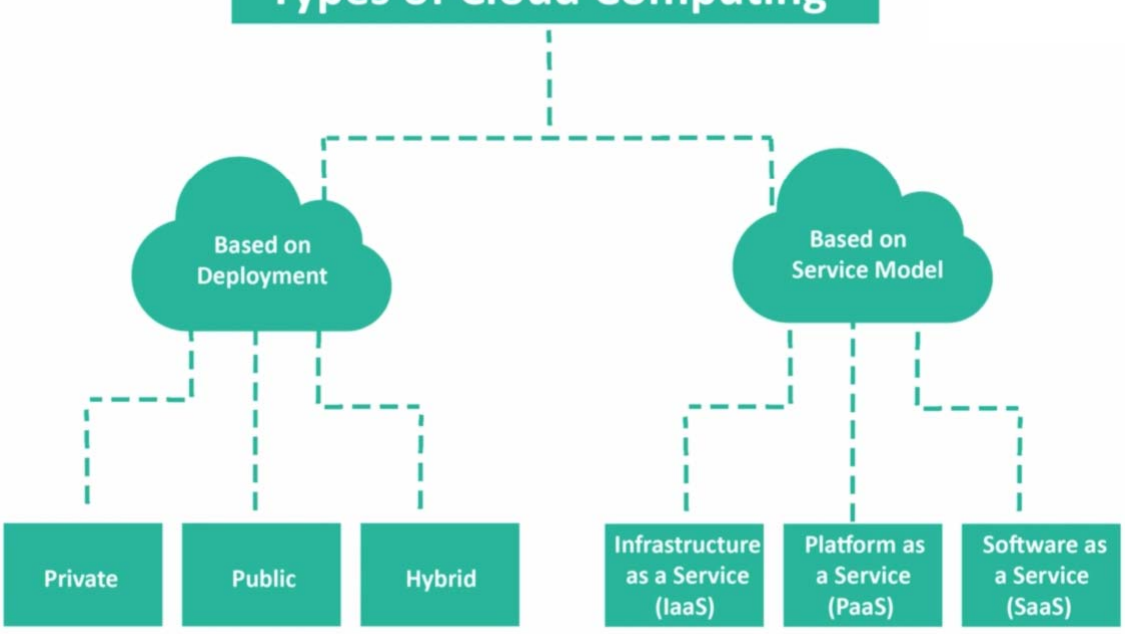
History of Cloud Computing



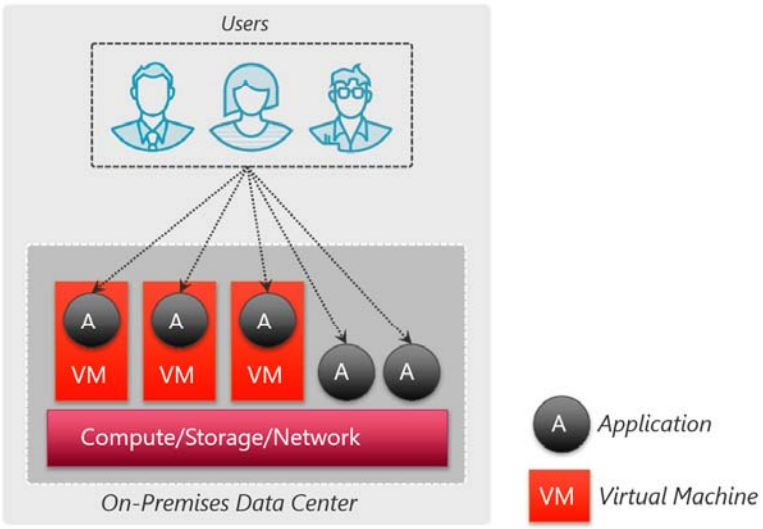
History of Cloud Computing



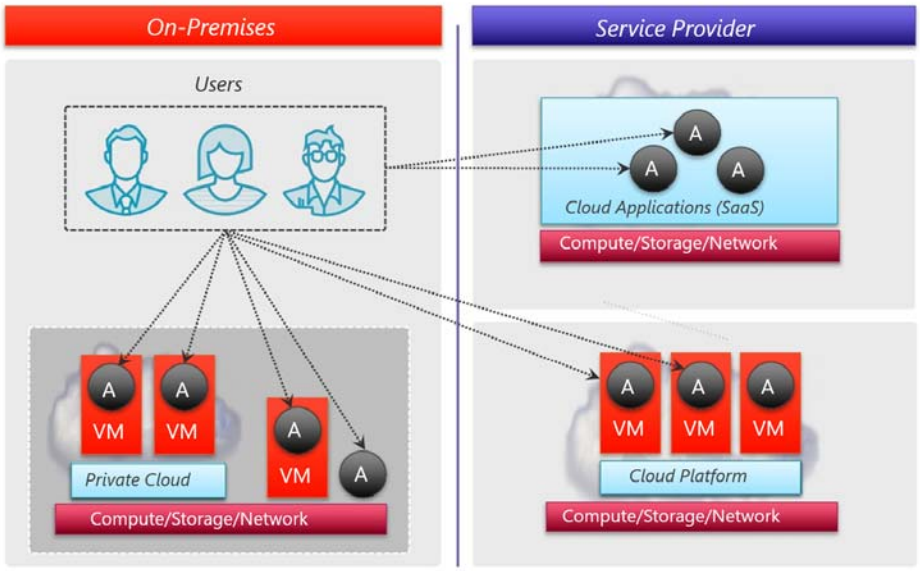
Types of Cloud Computing

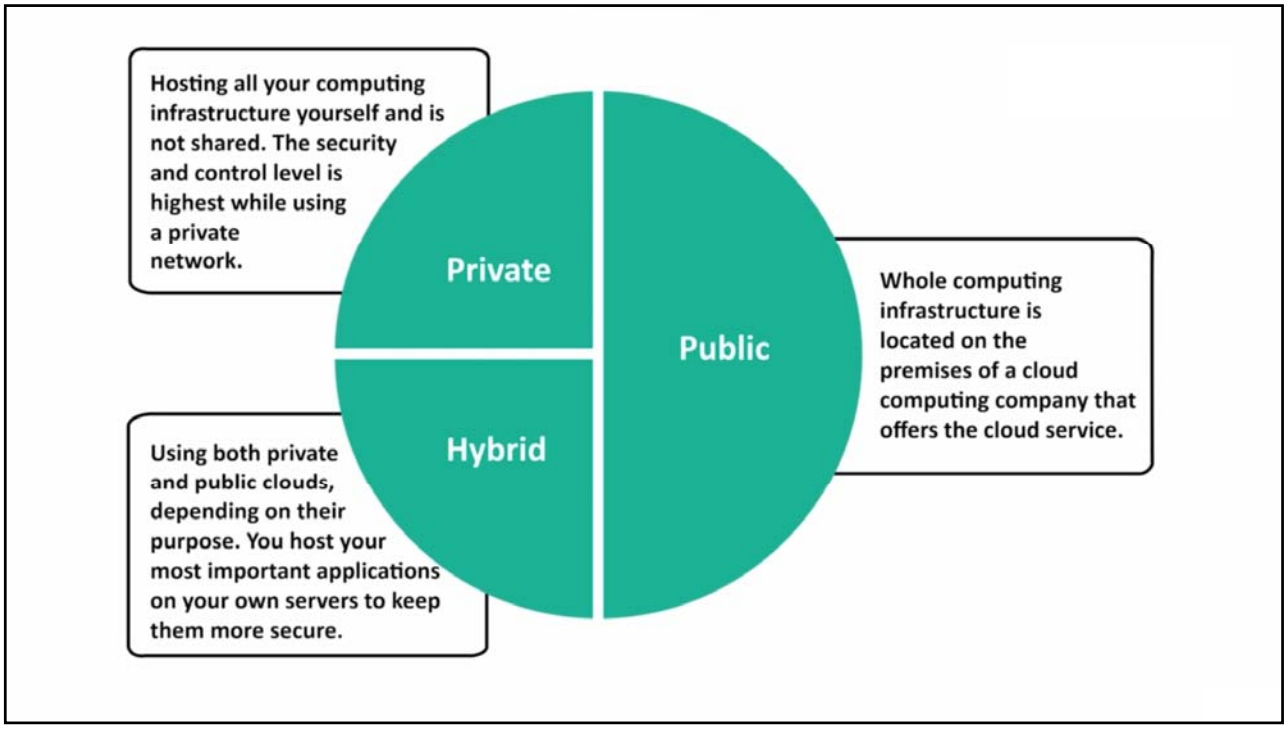


An Organization without Cloud Computing

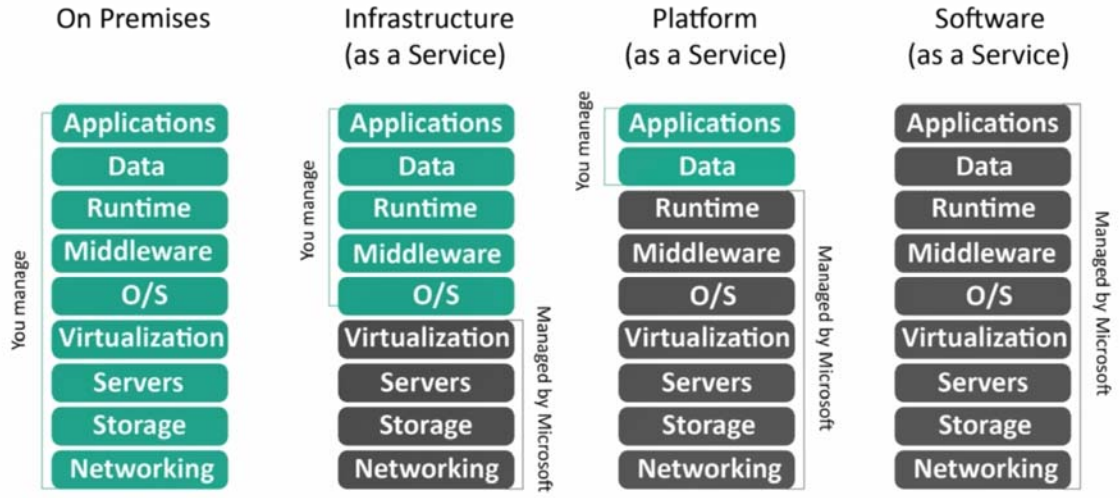


An Organization using Cloud Computing



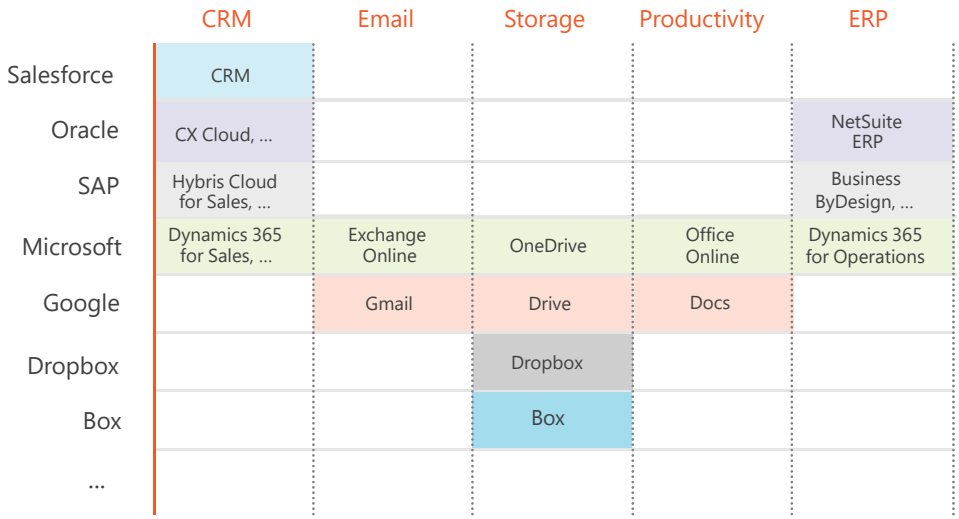


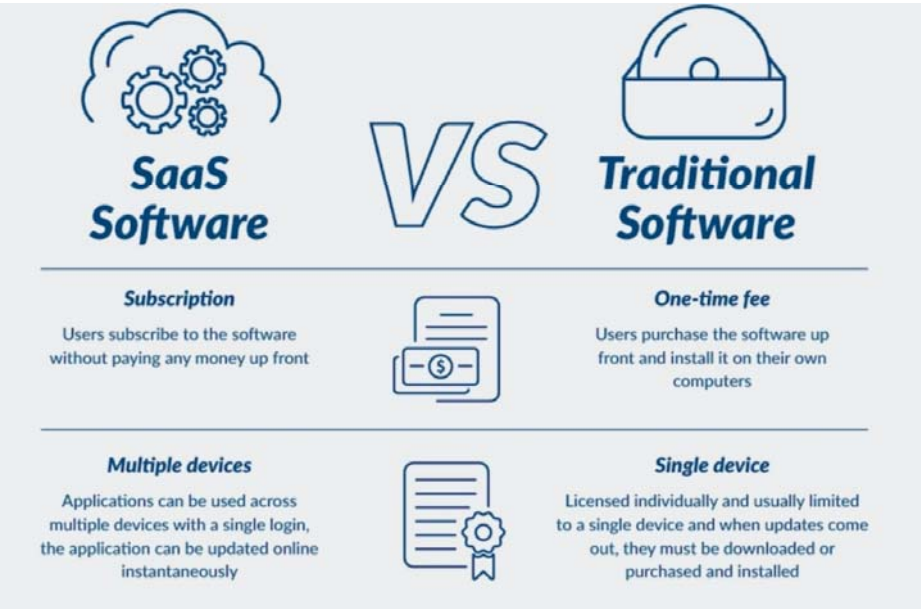
Cloud Models



Cloud Applications: Software as a Service

Illustrating SaaS: Some Examples





Evaluating SaaS

Benefits

Faster deployment
because no local installation is required

Usage-based pricing
letting you pay only for what you use

Less financial risk
with lower up-front cost and free trials

Reduced need for on-premises resources
such as servers and IT staff

Easier upgrades
with no on-premises software to update

Risks

Requires trusting a SaaS provider
for availability and security

Can raise legal/regulatory concerns
with storing data outside customer premises

Can limit customization
if customers share a multi-tenant application

Can be harder to integrate
with on-premises applications

Can have lower performance
than on-premises applications

The Main Points

SaaS brings big changes

- To software users
- To software vendors

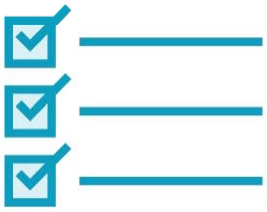
SaaS has pros and cons

- But the pros outweigh the cons in a majority of situations

SaaS is remaking the software industry

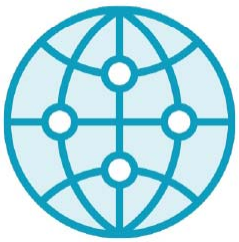
Cloud Platforms

What Cloud Platforms Offer Over Traditional Hosting



Immediate Access to More Services

Usage-based Pricing



Global Scale

Evaluating Cloud Platforms

Benefits

Faster deployment
because there's no wait for computing resources

Usage-based pricing
letting you pay only for what you use

Less financial risk
with lower up-front investment in hardware and software

Reduced need for on-premises resources
such as servers and IT staff

Easier upgrades
with no on-premises software to update

Risks

Requires trusting a cloud platform provider
for availability and data security

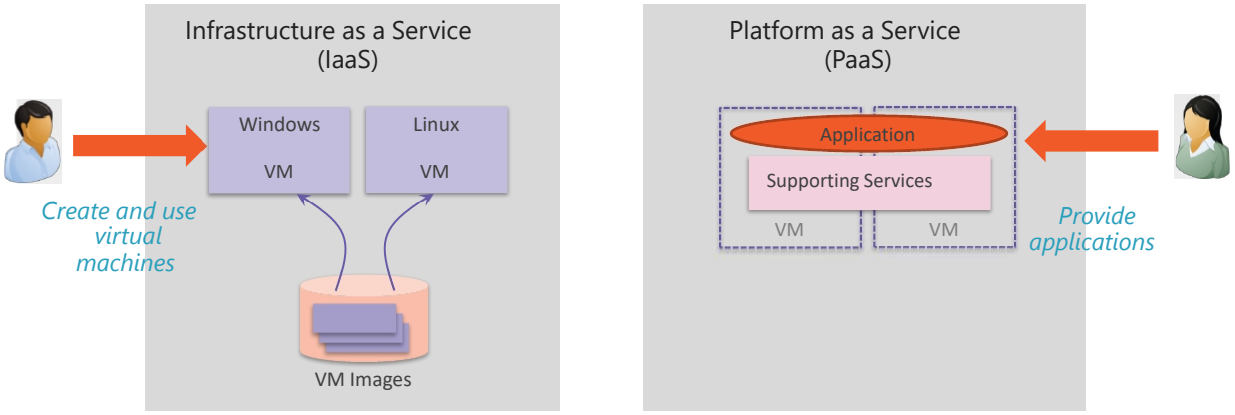
Can raise legal/regulatory concerns
with storing data outside customer premises

Can be harder to integrate
with on-premises software

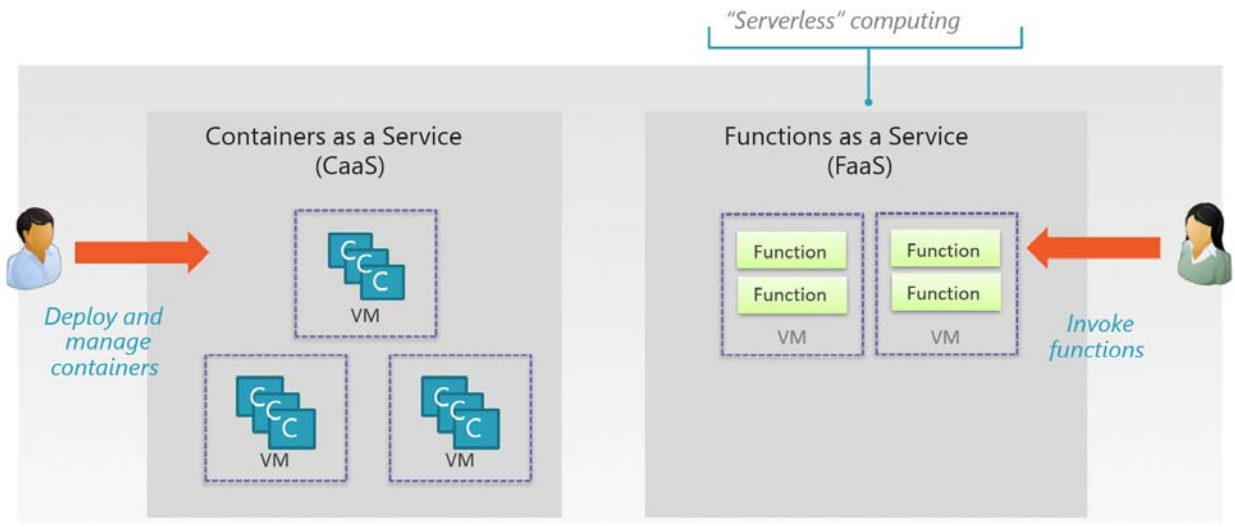
Can have lower performance
than on-premises platforms

Can give developers less control
than on-premises platforms

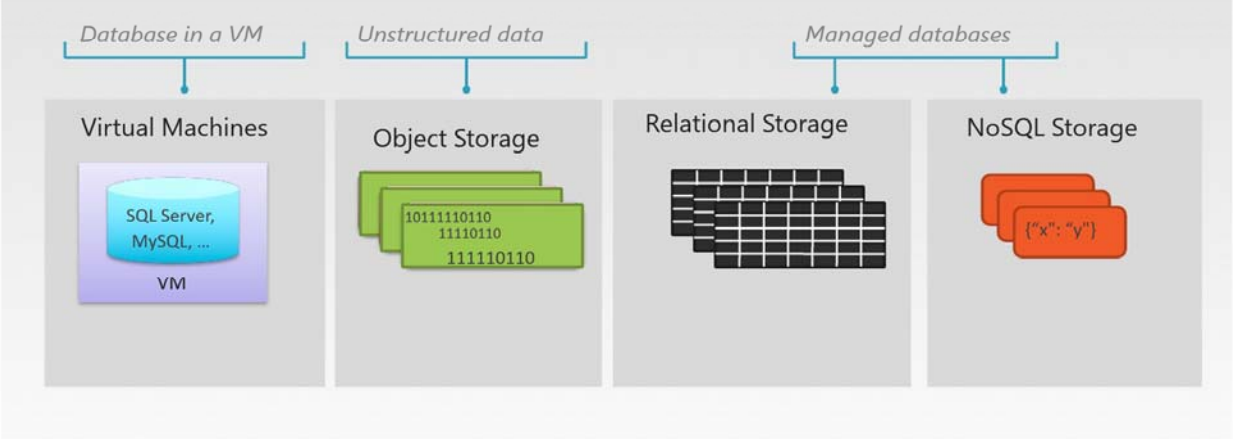
Cloud Platform Technologies: Compute (1)



Cloud Platform Technologies: Compute (2)



Cloud Platform Technologies: Data



Technologies and Major Vendors

	Compute				Data		
	IaaS	PaaS	CaaS	FaaS	Object Storage	Relational	NoSQL
Amazon Web Services							
Microsoft Azure							
Google Cloud Platform							
Salesforce Force.com							

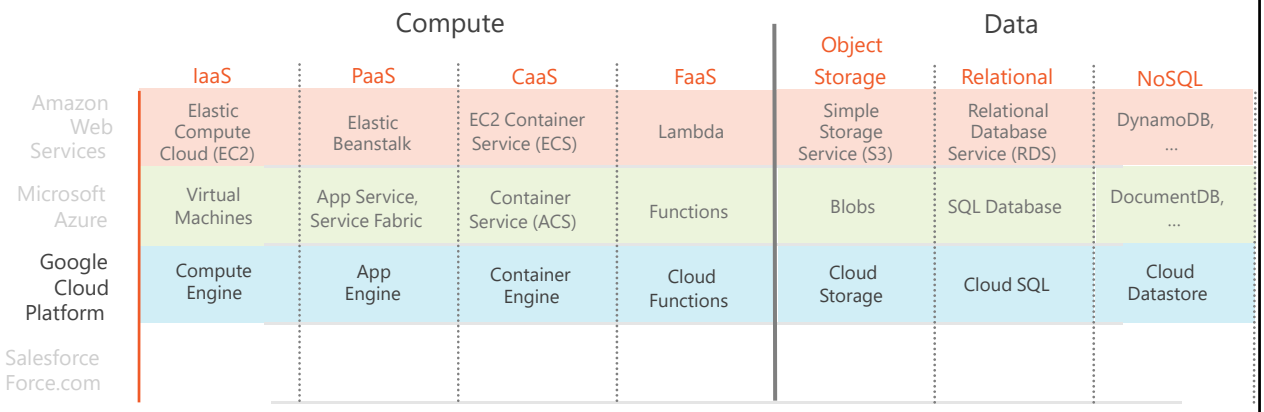
Amazon Web Services: Technologies

	Compute				Data		
	IaaS	PaaS	CaaS	FaaS	Object Storage	Relational	NoSQL
Amazon Web Services	Elastic Compute Cloud (EC2)	Elastic Beanstalk	EC2 Container Service (ECS)	Lambda	Simple Storage Service (S3)	Relational Database Service (RDS)	DynamoDB, ...
Microsoft Azure							
Google Cloud Platform							
Salesforce Force.com							

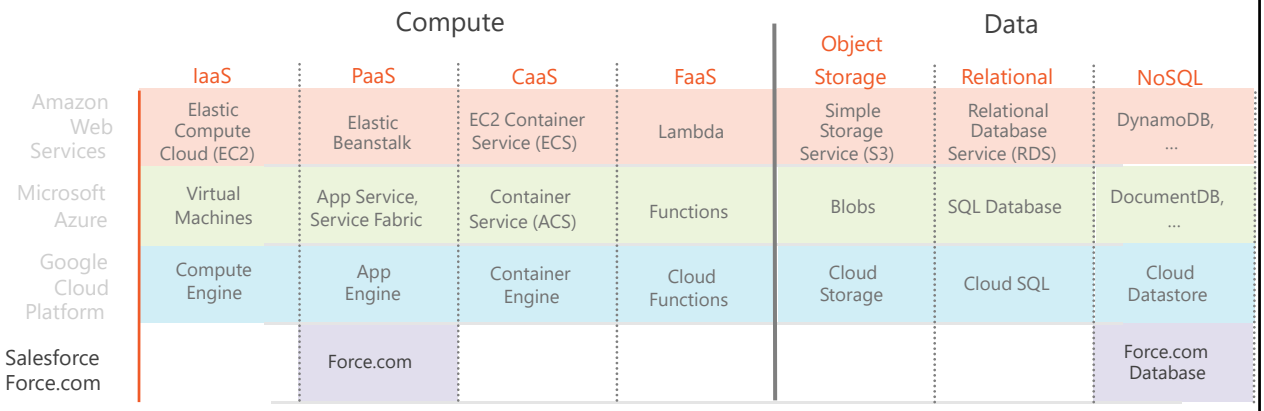
Microsoft Azure: Technologies

	Compute				Data		
	IaaS	PaaS	CaaS	FaaS	Object Storage	Relational	NoSQL
Amazon Web Services	Elastic Compute Cloud (EC2)	Elastic Beanstalk	EC2 Container Service (ECS)	Lambda	Simple Storage Service (S3)	Relational Database Service (RDS)	DynamoDB, ...
Microsoft Azure	Virtual Machines	App Service, Service Fabric	Azure Container Service (ACS)	Azure Functions	Blobs	SQL Database	DocumentDB, ...
Google Cloud Platform							
Salesforce Force.com							

Google Cloud Platform: Technologies



Salesforce Force.com: Technologies



Other Cloud Platform Technologies: Examples

Hadoop/ Spark

AWS Elastic Map Reduce (EMR)

Azure HDInsight

Google Cloud Dataproc

Machine Learning

Amazon ML

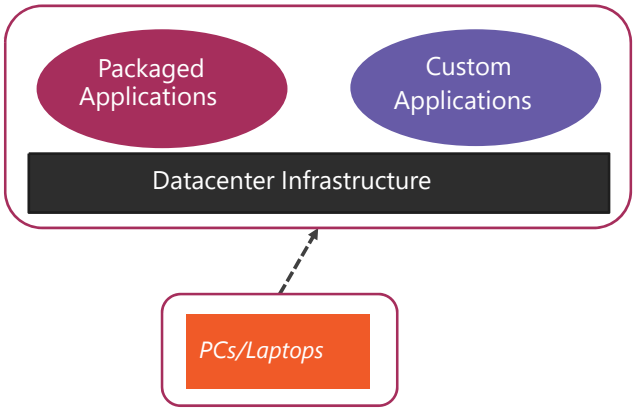
Azure ML

Google Cloud ML

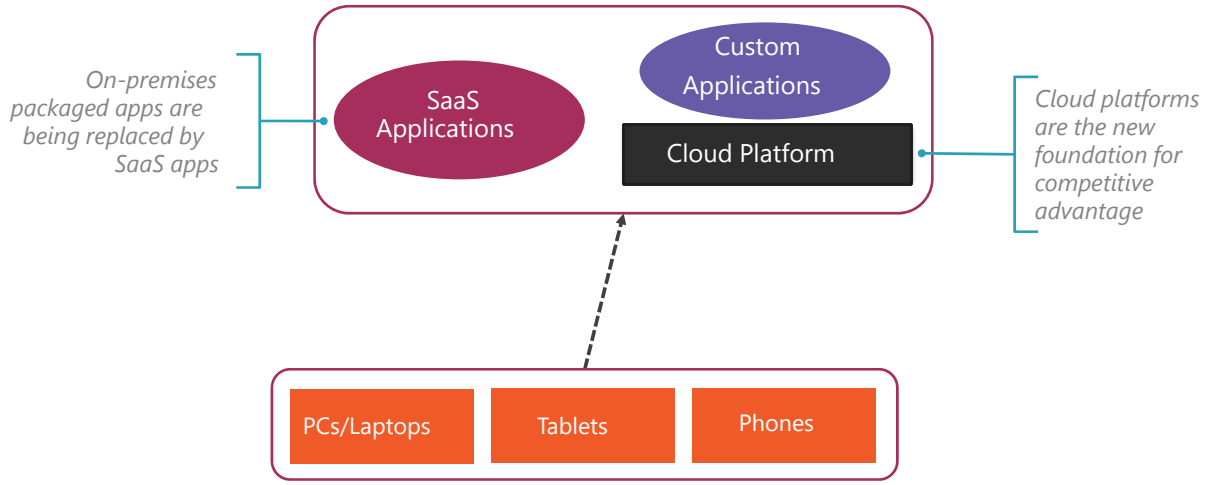
Lots More

The three leading platforms all offer dozens of services

Enterprise IT: The Traditional World



Enterprise IT: The New Default



The Main Points

Cloud platforms have pros and cons

- In a majority of situations, expect the pros to outweigh the cons

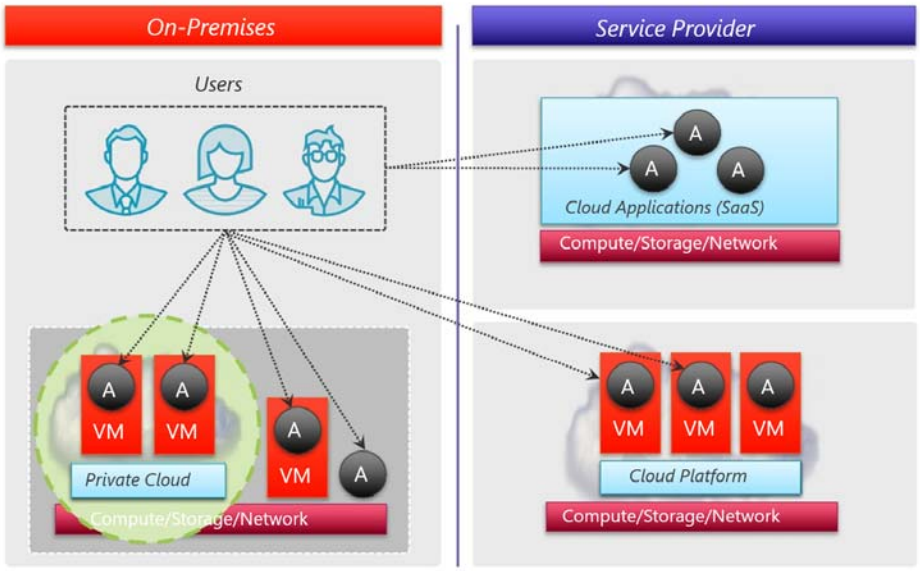
The leaders in this market are clear:

- Amazon
- Google
- Microsoft

Cloud platforms are becoming the default for new custom applications

Private Clouds

Using Cloud Computing: Private Cloud



Some Approaches to Private Cloud

Microsoft

openstack™

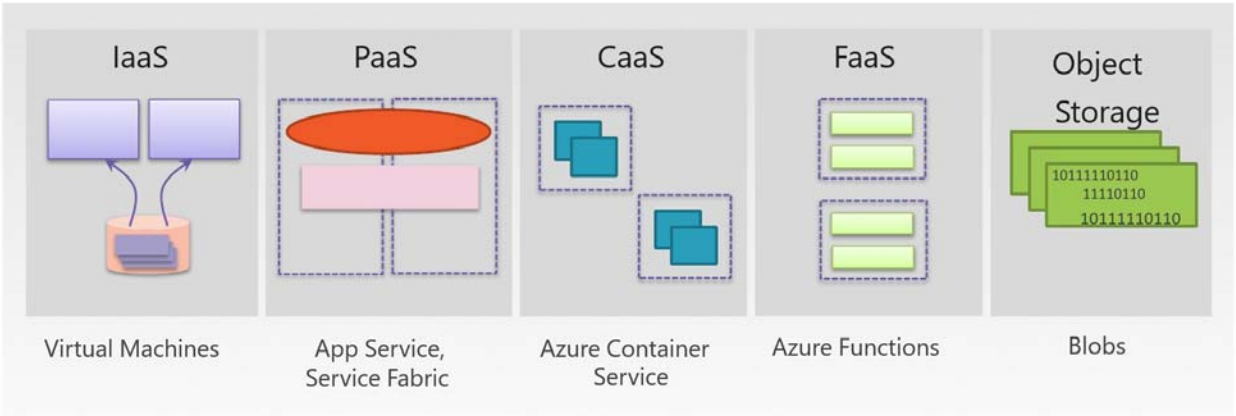
Azure Stack

Public cloud technology for on-premises servers

OpenStack

Open source software for on-premises servers

Example Azure Stack Services



Azure Stack: Things to Know

It's Really Azure

Uses a subset of Microsoft Azure's code

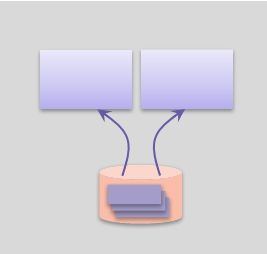
Sold as an Appliance

Packaged as hardware and software together

Changes Organizations

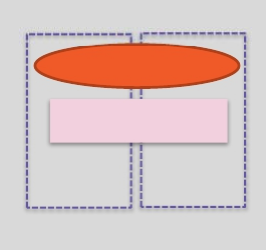
Management differs from conventional servers

Example OpenStack Services



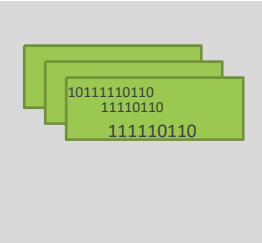
IaaS

Nova



PaaS

Cloud Foundry



Storage

Swift

Summary

Cloud computing is here

All three aspects are worth understanding:

- Cloud applications
- Cloud platforms
- Private clouds

A new world is unfolding

- It's a great time to work in IT