

Conceitos básicos de Cloud Computing

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O que é



O que é

NIST definition of cloud computing *Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.*

Para que serve?

On-premise Computing

- Infraestrutura mantida pelo dono da Aplicação
- Manutenção de Recursos
 - Energia Elétrica
 - Hardwares
 - Softwares
- Localização dos servidores
- Alto custo inicial
- Custo fixo

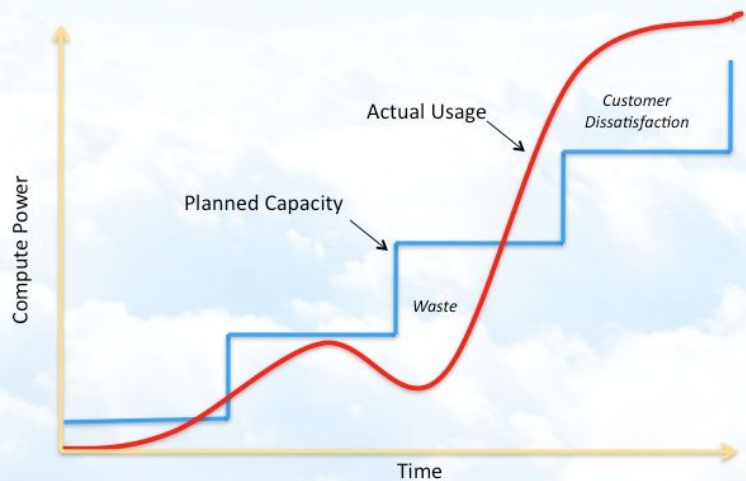
Para que serve?

Cloud Computing

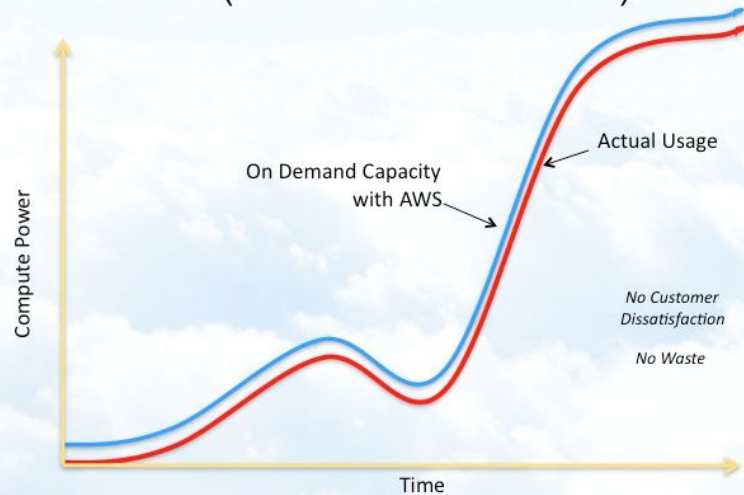
- Pay as you go
- Foco no modelo de negócio
- Facilita validação de novas ideias
- Custo dinâmico
- Conceito de elasticidade

Elasticidade

Capacity vs. Usage
(Traditional Data Center)



Capacity vs. Usage
(Amazon Web Services)



Tipos de computação em nuvem

- **IaaS** - Infrastructure as a Service
- **PaaS** - Platform as a Service
- **SaaS** - Software as a Service

On-Premises

Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking

Infrastructure as a Service

Applications
Data
Runtime
Middleware
O/S
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Platform as a Service

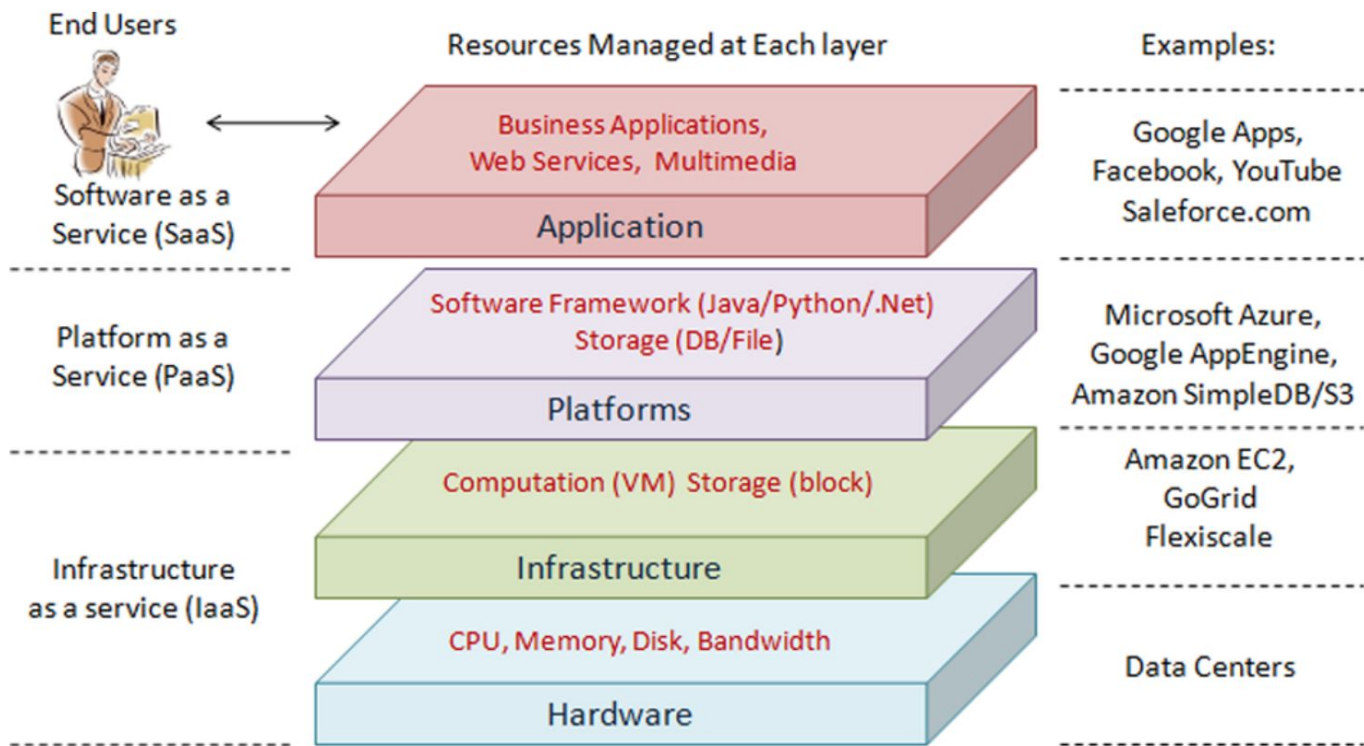
Applications
Data
Runtime
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Software as a Service

Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
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You Manage

Other Manages



Exemplos - IaaS



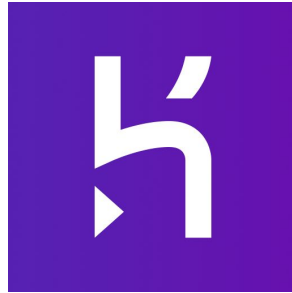
Google
Compute
Engine



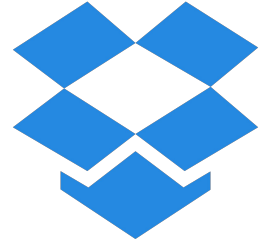
Exemplos - PaaS



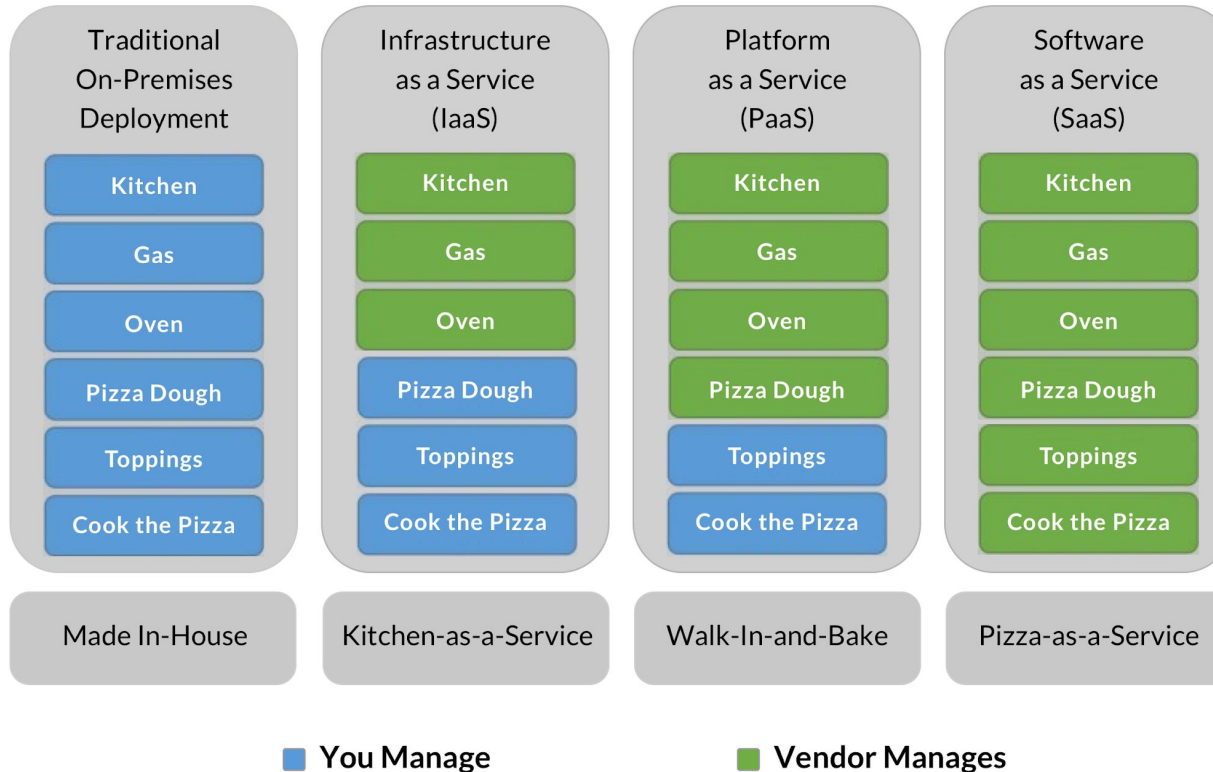
App Engine



Exemplos - SaaS



New Pizza as a Service



Características e Design

- **Multi-tenancy**

- Services owned by multiple providers are co-located in a single data center.

- **Shared resource pooling**

- The infrastructure provider offers a pool of computing resources that can be dynamically assigned to multiple resource consumers.

- **Geo-distribution and ubiquitous network access**

- To achieve high network performance and localization, many of today's clouds consist of data centers located at many locations around the globe.

- **Service oriented**

- Cloud computing adopts a service-driven operating model.

Características e Design

- **Dynamic resource provisioning**

- Allows service providers to acquire resources based on the current demand and can be obtained and released on the fly.

- **Self-organizing**

- The automated resource management feature yields high agility that enables service providers to respond quickly to rapid changes in service demand such as the flash crowd effect

- **Utility-based pricing**

- Utility-based pricing lowers service operating cost as it charges customers on a per-use basis.

Tipos de Nuvem

- Pública
- Privada
- Híbrida
- Compartilhada

Produtos Comerciais

- Amazon EC2
 - IaaS
- Microsoft Azure
 - .Net & Windows
- Google App Engine - GAE
 - Java, Python, PHP, Go, and Node.js.
- Heroku
 - Ruby, Java, PHP, Python, Node, Go, Scala and Clojure.
- Etc

Desafios

- Segurança
- Billing
- Migração
- Acesso a Internet
- LGPD pode tornar nuvem mais complexa?
 - Finalidade, Portabilidade, Consentimento, Transparência

Dúvidas?



Questão

Cite e comente duas tecnologias utilizadas para gerenciar Sistemas de Arquivos Distribuídos sobre Nuvem

<https://jisajournal.springeropen.com/articles/10.1007/s13174-010-0007-6>

Fontes

- <https://jisajournal.springeropen.com/articles/10.1007/s13174-010-0007-6>
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