Cloud Computing

Topics covered:

- Introduction to cloud service models
- Introduction to cloud deployment models

Cloud Computing

Introduction to Cloud Service Models

Introduction to Cloud Service Models

- Service Models according to NIST definition:
  - Software as a Service (SaaS)
  - Platform as a Service (PaaS)
  - Infrastructure as a Service (IaaS)

Introduction to Cloud Service Models

- Software as a Service (SaaS):
  - The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. A cloud infrastructure is the collection of hardware and software that enables the five essential characteristics of cloud computing.

Introduction to Cloud Service Models

- Platform as a Service (PaaS):
  - The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider.

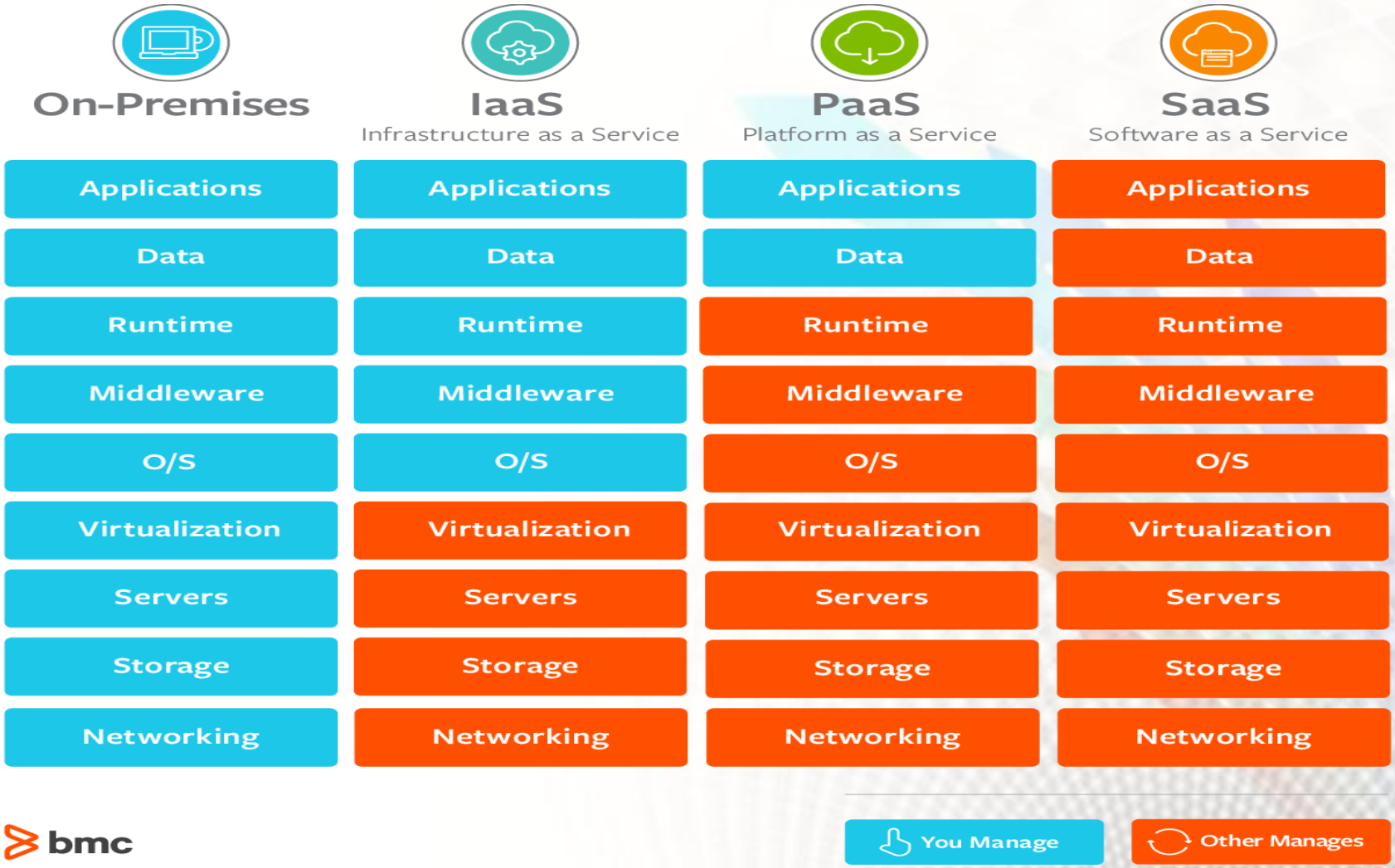
Introduction to Cloud Service Models

- Infrastructure as a Service (IaaS):
  - The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications.

Introduction to Cloud Service Models

- Infrastructure as a Service (IaaS):
  - The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of selected networking components (e.g., host firewalls).

Comparing SaaS – PaaS – IaaS



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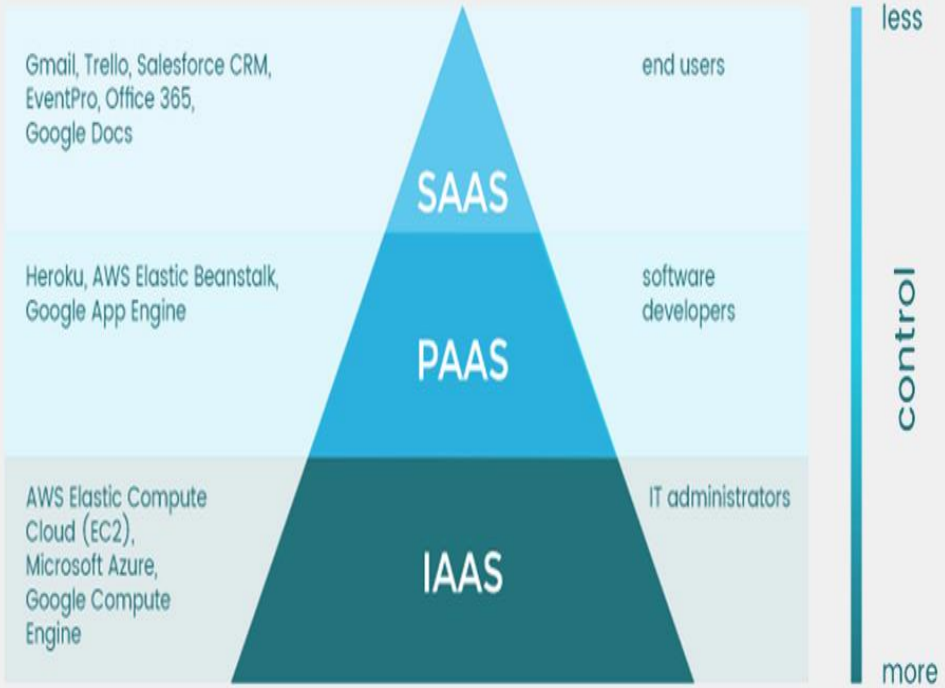
Gmail, Trello, Salesforce CRM, EventPro, Office 365, Google Docs
end users
SAAS
Heroku, AWS Elastic Beanstalk, Google App Engine
software developers
PAAS
AWS Elastic Compute Cloud (EC2), Microsoft Azure, Google Compute Engine
IT administrators
IAAS
less
control
more

Cloud Computing

Introduction to Cloud Deployment Models

Intro. to Cloud Deployment Models

- Cloud Deployment Models according to NIST definition:
  - Private cloud
  - Community cloud
  - Public cloud
  - Hybrid cloud

Intro. to Cloud Deployment Models

- Private cloud: The cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

Intro. to Cloud Deployment Models

- Community cloud: The cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be owned, managed, and operated by one or more of the organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

Intro. to Cloud Deployment Models

- Public cloud: The cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.

Intro. to Cloud Deployment Models

- Hybrid cloud: The cloud infrastructure is a composition of two or more distinct cloud infrastructures (private, community, or public).