A Review of the Technology of Cloud Computing

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Abstract

This poster illustrates the basic concepts of cloud computing, including its delivery and deployment models. Furthermore , the impacts of delivery and deployment models on the practical environments.

Introduction

According to the National Institute of Standards and Technology (NIST) Cloud Computing is :

- A model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., net-works, servers, storage, applications, and services).
- These resources can be rapidly provisioned and released with minimal management effort or service provider interaction.

The area of cloud computing was emerging three main subsets of systems (Called Delivery Models) :

- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)
- Software as a Service (SaaS)

Methodology

IaaS:

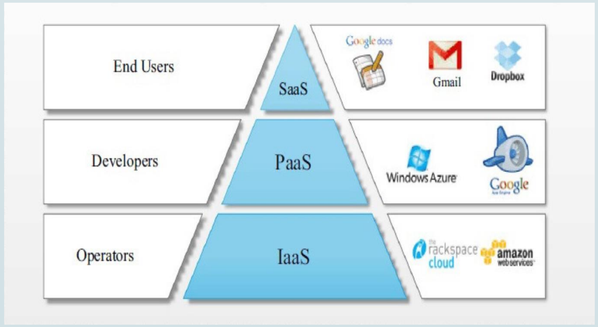
- Self-contained IT environment comprised of infrastructure centric IT resources and can include hardware, network, connectivity, operating systems, and other "raw" IT resources.
- Granted a higher level of control.

PaaS:

- Represents a pre-defined "ready-to-use" environment typically comprised of already deployed and configured IT resources.
- Relies on ready-made environment that establishes a set of pre-packaged products and tools used to support delivery of custom applications.
- Granted a lower level of control.

SaaS:

- A software program positioned as a shared cloud service and made available as a "product".
- SaaS is typically used to make a reusable cloud service widely available to cloud consumers.



Results

There are four common cloud deployment models based on the previously mentioned methodologies:

Public Cloud:

- publicly accessible cloud environment owned by a third-party cloud provider.
- IT resources provisioned via the previously described cloud delivery models.

Community Cloud:

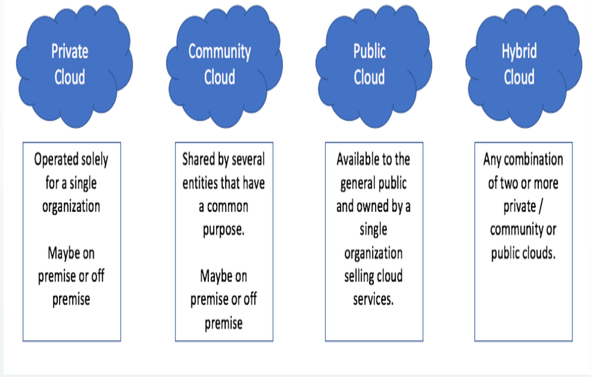
- Similar to a public cloud except that its access is limited to a specific community of cloud consumers.
- May be owned by the community members or by a third-party cloud provider that provisions a public cloud with limited access.

Private Cloud:

- Is owned by a single organization.
- Enables an organization to use cloud computing technology as a means of centralizing access to IT resources by different parts, locations, or departments of the organization with a private cloud.

Hybrid Cloud:

- Comprised of two or more different cloud deployment models.
- Can be complex and challenging to create.



Conclusion

Benefits:

- Reduced investment and proportional costs.
- Increased scalability.
- Increased availability and reliability.

Risks:

- Increased security vulnerabilities.
- Reduced operational governance control.
- Limited portability between cloud providers.
- Multi-regional compliance and legal issues.

References

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