CLOUD COMPUTING NEW TECHNOLOGIES

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Abstract:-

Cloud computing is sharing the resources and plays model that dramatically simplifies infrastructure plan. Two keys of advantages 1) use effectiveness 2) cost-effectiveness Cloud computing aim is of introducing aspects they are

1)   Risks and Realities the model
2)   Components in the model
3)   Characteristics and Usage of the model.

1. INTRODUCTION

Cloud computing is a computing arrangement, where a systems are connected with large pools in private or public networks, to provide all infrastructure for

Application, data and file storage. With this technology, computation cost , applications hosting, storage content and delivery is reduced significantly. Cloud computing is a practical approach to experience direct cost benefits and it has the potential to transform a data center from a capital-intensive set up to a variable priced environment. It is based on a idea of fundamental principal of reusability of IT capabilities.

The difference that cloud computing brings compared to traditional concepts of "grid computing", "distributed computing", "utility computing", or "autonomic computing" is to broaden horizons across organizational boundaries.

2. MODELS CLOUD PROVIDERS OFFER SERVICES GROUPED INTO THREE CATEGORIES

- **Software as a Service (SaaS)**

This model is a complete application is provided to the customer, as a service on demand. A single instance of the service runs on the cloud & multiple end users are serviced. On the customers" side, there is no need for upfront investment in servers or software licenses, while for the provider, the costs are lowered, since only a single application needs to be hosted &

maintained. Examples such as Google, Salesforce, Microsoft, Zoho, etc.

- **Platform as a Service (Paas)**
In platform as a service a layer of software or development environment is encapsulated & offered as a service, where other higher levels of service can be built. The customer has the freedom to build his own applications, which run on the customer's infrastructure. To meet manageability and scalability requirements of the applications, the providers offer a predefined combination of Operating system and application servers. Example : linux

- **Infrastructure as a Service (Iaas)**
This model provides basic storage and computing capabilities services over the network. Servers, storage systems, networking equipment, data centre space etc. available to handle workloads. The customer may typically deploy his own software on the surroundings. Examples are Amazon, 3 Tera, etc.

3. UNDERSTANDING PUBLIC AND PRIVATE CLOUDS

Enterprises can choose to deploy applications on Public, Private or Hybrid clouds. Cloud Integrators play a vital part in determining the right cloud path for each organization.
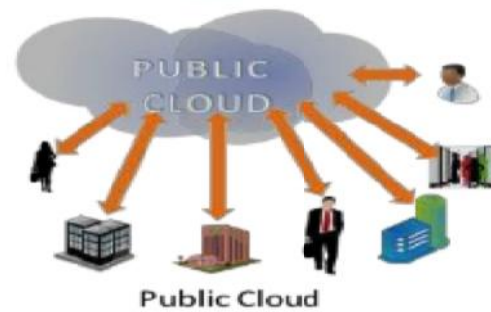
1) Private

2) Public

3) Hybrid

Public Cloud
Public clouds are owned and operated by third parties and they deliver superior economies of scale to customers. The infrastructure costs are spread among a mixed of users, low-cost according to customer, "Pay-as-you-go" model. All customers share the same infrastructure pool

with limited configuration, security protections, and availability variations


Public Cloud

These public clouds are managed and supported by the cloud provider. Advantages of a Public cloud is they may be larger than an enterprises cloud, thus providing the ability to scale seamlessly, on demand.

Private Cloud
Private clouds are built exclusively for a single enterprise. They aim to address concerns on data security and offer greater control, which is typically lacking in a public cloud.

2 variations for a private cloud
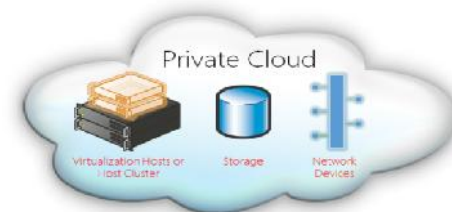

1) On-premise Private Cloud:

On-premise private clouds are also known as internal clouds are hosted within ones own data center. This model provides a more standardized process and security, but is limited in size and scale. IT departments would also need to incur the capital and operational costs for the physical resources. This suits for applications which require complete control and configurability of the infrastructure and protection.

2) Externally hosted Private Cloud:

External host of private cloud is hosted externally with a cloud provider, where the provider facilitates an exclusive cloud environment with full guarantee of privacy. This is best suited for enterprises that do not prefer a public cloud due to sharing of resources physically.

Hybrid Cloud

Hybrid Clouds combine both public and private cloud models. Hybrid Cloud, service providers utilize 3rd party Cloud Providers in a full or half manner by increasing the flexibility of computing. The Hybrid cloud environment is capable of providing on-demand, externally provisioned scale. The ability to augment a private cloud with the resources of a public Cloud can be used to manage any unexpected surges in workloads.
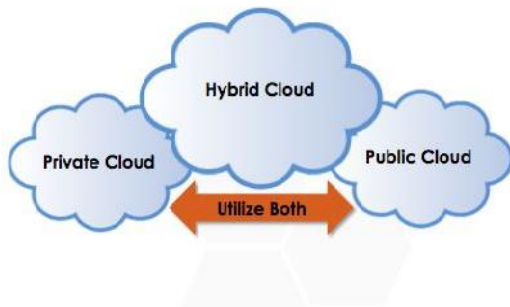
4. CLOUD COMPUTING BENEFITS

Enterprise need to align their applications, so as to exploit the architecture models that Cloud Computing offers. Benefits are

1. Reduced Cost

There are a number of reasons to attribute Cloud technology with lower costs. The billing model is pay as per usage; the infrastructure is not purchased thus lowering maintenance. Initial expense and recurring expenses are much lower than traditional computing.

2. Increased Storage

With the massive Infrastructure which is offered by Cloud providers today, storage & maintenance of large volumes of data is a reality. Sudden workload spikes are also managed effectively & efficiently,and the cloud can scale dynamically.

3. Flexibility

Flexibility is an extremely important characteristics. With enterprises having to adapt, even more rapidly, to changing business conditions, speed to deliver is critical. Cloud computing stresses on getting applications to market very quickly, by using the most appropriate building blocks necessary for deployment.

5. CLOUD COMPUTING CHALLENGES

Despite its growing influence, concerns regarding cloud computing still remain. In our opinion, the benefits outweigh the drawbacks and the model is worth exploring. Some common challenges are:

Data Protection

Data Security is a crucial element that warrants scrutiny. Enterprises are reluctant to buy an assurance of business data security from vendors. They fear losing data to competition and the data confidentiality of consumers. In many instances, the actual storage location is not disclosed, adding onto the security concerns of enterprises.In the existing models, firewalls across data centers protect this sensitive information.

In the cloud model, Service providers are responsible for maintaining data security and enterprises would have to rely on them.

6. DATA RECOVERY AND AVAILABILITY

All business applications have Service level agreements that are stringently followed. Operational teams play a key role in management of service level agreements and runtime governance of applications. In production environments, operational teams support Appropriate clustering and Fail over

Data Replication System monitoring (Transactions monitoring, logs monitoring and others) Maintenance (Runtime Governance) Disaster recovery Capacity and performance management

1. Management Capabilities

Despite there being multiple cloud providers, the management of platform and infrastructure is still in its infancy. Features like „Auto-scaling" for example, are a crucial requirement for many enterprises. There is huge potential to improve on the scalability and load balancing features provided today.

2. Regulatory and Compliance Restrictions

In some of the European countries, Government regulations do not allow customer's personal information and other sensitive information to be physically located outside the state or country. In order

to meet such requirements, cloud providers need to setup a data center or a storage site exclusively within the country to comply with regulations.Having an infrastructure like that may not always be feasible and is a big challenge for cloud providers. With cloud computing, the action moves to the interface — that is to the interface between service suppliers and multiple groups of service consumers. Cloud services will demand expertise in distributed services, procurement, risk assessment and service negotiation — areas that many enterprises are only modestly equipped to handle

7. NEW TECHNOLOGY USED IN CLOUD COMPUTING
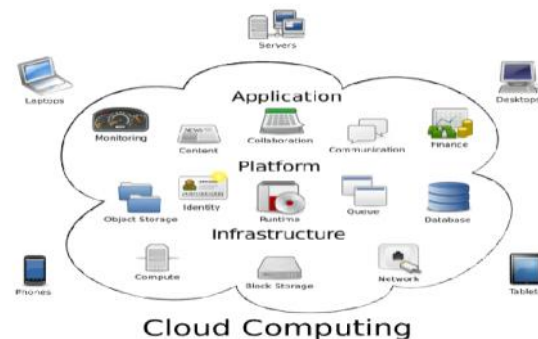
1. BYOD

Since the vast majority of consumer electronics in the world are mobile devices, "bring your own device" is more relevant than ever in the world of cloud computing. End users are using their mobile devices to put more and more of their own data into personal cloud services for streaming, storage, and syncing. This means that IT departments must find the means to integrate personal cloud services for their employees in a BYOD environment with tools such as Mobile Device Management.

2. Big data analytics

It is similar to the public and private cloud model debate; many organizations are realizing that it may be much simpler and more beneficial to combine big data

analytics with cloud computing than to choose one over the other.

3. Graphics as a service

Typically, running high-end graphics applications requires substantial hardware infrastructure investment. However, cloud computing is changing this reality. There are a number of new cloud-based graphics technologies from prominent graphics companies, including NVIDIA and AMD that allow end users to run high-end graphic design applications with a simple HTML5 web browser.

4. Identity management and protection

Security has always been a major concern with cloud computing. As more businesses move more information and data into cloud servers, this concern is more important than ever. It is anticipated that over the next year, there will be identity management solutions based on new cloud based security paradigms.

5. Web-powered apps

As efficiency and scalability are among the primary benefits of cloud computing, then it only makes sense to start developing cloud-based applications that are compatible with multiple platforms.

With cutting edge initiatives such as famo.us bringing new life to HTML via JavaScript, it will not be long before the Internet becomes the main platform for these applications.

CONCLUSION

So, while cloud computing is really really great and you're probably already using it, either for business of for personal. Cloud computing is a really cheap way for companies to have all the resources they need in once place. It's a much better way to spread your resources, and it becomes easier to access things from longer distances. However, if an application has peak/non-peak load variation, then it could dramatically reduce the running costs compared to paying for a fully dedicated server all the time. Thought Break's own internal systems and managed application solutions fully exploit Cloud technologies.

REFERENCES

[1].searchcloudcomputing.techtarget.com/definition/cloud-computing
[2].https://en.wikipedia.org/wiki/Cloud_computing
[3]. https://aws.amazon.com/types-of-cloud-computing
[4].www.circleid.com/.../20140303_7_major_current_trends_in_cloud_com...