

PROFESSIONAL TRAINING REPORT

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(Deemed to be University)

Submitted in partial fulfillment of the requirements for the award
of Bachelor of Engineering Degree in Information Technology

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DEPARTMENT OF INFORMATION TECHNOLOGY

SCHOOL OF COMPUTING

**SATHYABAMA INSTITUTE OF SCIENCE AND
TECHNOLOGY**

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **SHAM VENKAT.S(Reg. No: 39120107)** who carried out the project entitled “**Explain about community and hybrid cloud their pros and cons and also comparsion bet all 4 cloud models**” under my supervision from June 2021 to November 2021.

Internal Guide
Dr. R.Subhashini,
Head of the Department

Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner

DECLARATION

I, **SHAM VENKAT.S** hereby declare that the project report entitled “**Explain about community and hybrid cloud their pros and cons and also comparsion bet all 4 cloud models**” done by me under the guidance of **DR. R.Subhashini** is submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering Degree in Information Technology .

DATE:

PLACE:

SIGNATURE OF THE CANDIDATE

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ABSTRACT

Cloud computing can be used in various sector like healthcare, education, financial, production etc. cloud computing has a potential to serve users of all kinds like individual users, institutions, industry at large. Community cloud is a solution that is more secure than public cloud and less costly than private cloud. Infrastructure is shared between several organizations from specific community with common concern. community cloud used to identify and analyse business demands better. The biggest concern regarding community cloud are cloud security consideration and trust. Every participant in the community cloud has authorized access to the data .Hybrid cloud refers to mixed computing, storage and service. Hybrid cloud solutions enable organizations to retain the private cloud for deploying sensitive or highly regulated workloads, while using public cloud services for less-sensitive workloads. The cloud models are deployed as public, private, community and hybrid cloud. Each of the these models have their own advantage and disadvantage.

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WHAT IS CLOUD COMPUTING:

Cloud computing is the delivery of computing services including servers, storage, database, networking, software, analytics and intelligence over the internet to offer faster innovation, flexible resources and economics. you typically pay only for cloud services you use ,helping lower your operating costs ,run your infrastructure more efficiently and scale as your business needs change.

CLOUD DEPLOYMENT MODELS:

There are four cloud deployment models,

- Public cloud
- Private cloud
- Community cloud
- Hybrid cloud

WHAT IS COMMUNITY CLOUD?

A community cloud is a collaborative effort in which infrastructure is shared between Several organizations from specific community with common concern .Whether managed internally or by a third party.



WHY COMMUNITY CLOUD?

Community Cloud computing facilitates its users to identify and analyze their business demands better. Community Cloud may be hosted in a data center, owned by one of the tenants, or by a third-party cloud services provider and can be either on-site or off-site.

COMMUNITY CLOUD CHALLENGES:

The biggest concerns regarding Community Cloud are cloud security considerations and trust. No standard cloud model exists for defining best practices and identifying security liabilities of the data and applications which would reside on these servers. Since this type of cloud is relatively new and still evolving, users may hesitate to go into the whole dilemma of abandoning the current approach.

SECURITY CONSIDERATIONS:

Multiple organizations will access and control the infrastructure in a Community Cloud, requiring specialized security configurations:

- Every participant in the community has authorized access to the data. Therefore, organizations must make sure they do not share restricted data.
- Rules and regulations related to compliance within a Community Cloud can be confusing. The systems of one organization may have to adhere to the rules and regulations of other organizations involved in the community as well.
- Agreements among the member organizations in a Community Cloud are vital. For example, just because all the organizations have shared access to audit logs does not mean that every organization has to go through them. Having an agreement on who performs such tasks will not only save time and workforce needs but also help to avoid ambiguity.

The security concerns regarding Community Clouds are not unique to them but apply to any other type of Public Cloud as well. As such, it is safe to say that Community Cloud solutions offer a unique opportunity to organizations that wish to work on joint projects.

PROS OF COMMUNITY CLOUD



SCALABLE AND FLEXIBLE:

- A community cloud is compatible with every user and is flexible and scalable.
- It lets users modify the documents according to their needs and requirement.

AVAILABILITY AND RELIABILITY:

Community clouds secure data as any other cloud service as it replicates data and application to multiple secure locations and protects them from any damage or harm. It offers availability and reliability that are critical concerns for any cloud solution.

SECURITY AND COMPLIANCE:

community cloud is less secure than a private cloud but more secure than a public cloud. Users can configure various levels of security for their data.

CONVENIENCE AND CONTROL

As community cloud is a shared resource there are no conflicts to convenience and control. It offers the facility to share and own infrastructure to the tenants who can make decisions together. It lets tenants have their data closer to them whilst avoiding complexities related to a private cloud.

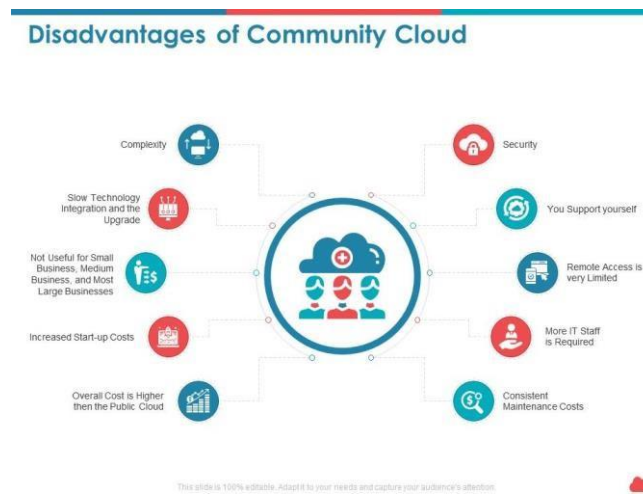
SHARING INFRASTRUCTURE:

Community cloud lets users share infrastructure, resources and other aspects within various organizations. Community clouds are open systems that remove the dependency organizations have on cloud service providers. With shared infrastructure, organizations can avoid the advantages and disadvantages of private and public clouds.

COST EFFECTIVE:

It is cost-effective as it is used and shared between several organizations and the community.

CONS OF COMMUNITY COMPUTING



SHARING:

It is difficult to share responsibilities within a community cloud among organizations.

SECURITY CONSIDERATION:

With multiple organizations accessing and controlling the infrastructure in a Community Cloud, it requires specialized security configurations.

NOT CUSTOMIZED TO ALL ORGANIZATION:

Community cloud may not be a good choice for all organizations, especially because of confidentiality issues.

ADAPTING OF DATA:

Community cloud adapts to data very slowly making it a time-consuming process.

LIMITED AMOUNT OF STORAGE:

With a fixed and limited amount of data storage and bandwidth, it becomes difficult for many organizations to use it.

WHAT IS HYBRID CLOUD

Hybrid cloud refers to a mixed computing, storage, and services environment made up of on-premises infrastructure, private cloud services, and a public cloud—such as Amazon Web Services (AWS) or Microsoft Azure—with orchestration among the various platforms.



WHY HYBRID CLOUD?

Apps that can easily move to the cloud already have. Meanwhile, two out of every three apps remain on-premises due to issues such as data gravity, sovereignty, compliance, cost and interdependencies with other systems. This leaves enterprises caught in the middle of old and new, struggling to reach their transformation goals within a complex dual IT operating environment.

HOW DO HYBRID CLOUD WORKS?

- Hybrid cloud infrastructure can be used in several ways. Here are a few examples:
- A public development platform can send data to a private cloud or a data center. In the case of a business process that works as a service, to connect with environments as though they were a single environment. As such, hybrid cloud infrastructures work well for numerous industries.
- Finance: Organizations have adopted hybrid cloud architectures that allow for trade orders to be placed on a private cloud, and trade analytics live on a public cloud.
- Healthcare: The healthcare industry is frequently adopting hybrid cloud solutions. One of the main reasons for choosing hybrid clouds is the need to gain control over IT spending while maintaining security and speed. A hybrid cloud solution is responsible for ensuring HIPAA compliance when hospitals send patient data to insurance providers,
- Legal: Hybrid cloud security allows encrypted data to live off-site in a public cloud while connected on a law firm's private cloud. This protects original documents from the threat of theft or loss by natural disasters.
- Retail: Hybrid cloud computing helps companies process resource-intensive sales data and analytics.

PROS OF HYBRID CLOUD:

SCALIBILITY AND RESILIENCE:

Workload traffic spikes can be unpredictable, and even predictable traffic spikes demand affordable capacity. A hybrid cloud strategy allows an organization to detect a surge, and scale up using public cloud infrastructure quickly, cheaply, and possibly even automatically. When the peak has passed, the team can scale down—and all of this takes place without affecting other workloads on the private cloud.

SECURITY AND COMPLIANCE:

Hybrid cloud solutions enable organizations to retain the private cloud for deploying sensitive or highly regulated workloads, while using public cloud services for less-sensitive workloads.

RESOURCE OPTIMIZATION AND COST SAVING:

A hybrid cloud environment provides the IT team with increased flexibility and more options for maximizing infrastructure budget and resources as they deploy workloads. It also offers more responsiveness to new opportunities and changing workloads.

FLEXIBILITY:

Companies work with various types of data in disparate environments and adjust their infrastructure. A hybrid cloud setup uses traditional systems as well as the latest cloud technology, without a full commitment to a vendor. Organizations can migrate workloads to and from their traditional infrastructure and a vendor's public cloud whenever necessary.

CONS OF HYBRID CLOUD:

Cloud Despite these advantages, it also has its share of faults. See below some key disadvantages of a hybrid cloud.

DIFFICULT TO IMPLEMENT:

It can indeed be complex to implement and difficult to maintain. For example, setting up a private cloud can be a remarkably difficult project in itself since it requires a strong demand for local infrastructures, such as servers, storage, and network capabilities.

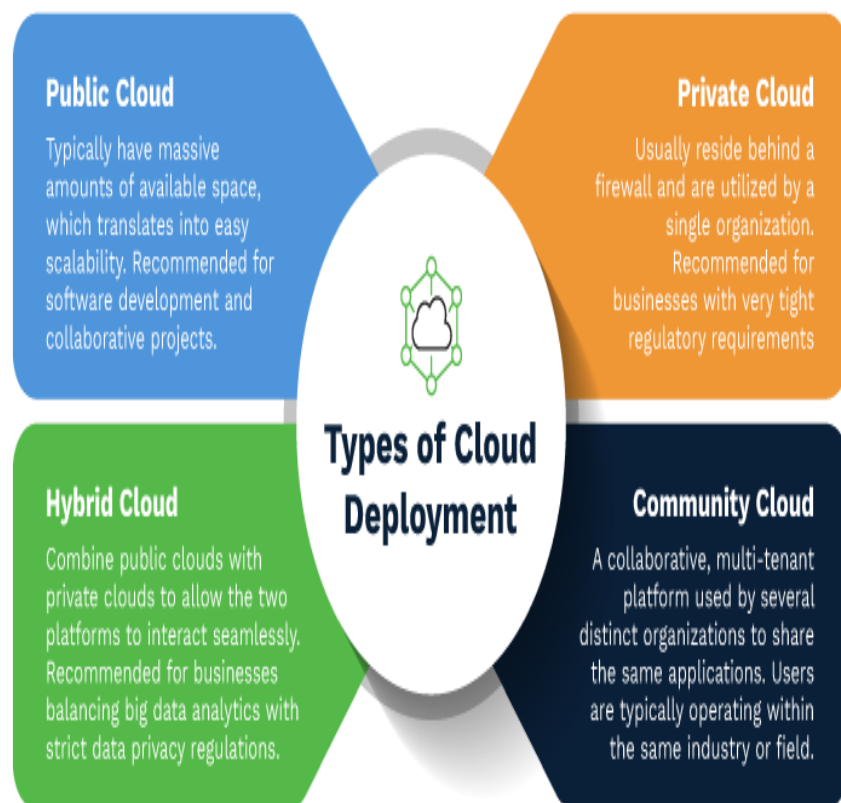
IN-HOUSE EXPENSES:

It actually has the disadvantage of being much more expensive than the public cloud. The cost that accompanies the installation and the maintenance of servers is high.

VISIBILITY:

With your resources and information placed across private and public-based cloud network, you may sometimes lose the whole view of all the information. This can get much more complicated if you're using multiple 3rd party cloud providers.

COMPARISION OF CLOUD DEPLOYMENT MODEL



	Public	Private	Community	Hybrid
Ease of setup	Very easy to set up, the provider does most of the work	Very hard to set up as your team creates the system	Easy to set up because of community practices	Very hard to set up due to interconnected systems
Ease of use	Very easy to use	Complex and requires an in house team	Relatively easy to use as members help solve problems and establish protocols	Difficult to use if the system was not set up properly
Data control	Low, the provider has all control	Very high as you own the system	High (if members collaborate)	Very high (with the right setup)
Reliability	Prone to failures and outages	High (with the right team)	Depends on the community	High (with the right setup)
Scalability	Low, most providers offer limited resources	Very high as there are no other system tenants	Fixed capacity limits scalability	High (with the right setup)
Security and privacy	Very low, not a good fit for sensitive data	Very high, ideal for corporate data	High (if members collaborate on security policies)	Very high as you keep the data on a private cloud
Setup flexibility	Very high as you keep the data on a private cloud	Very flexible	Little flexibility, setups are usually predefined to an extent	Very flexible

CONCLUSION:

Cloud computing is recently new technological development that has the potential to have a great impact on the world. It has many benefits that it provides to its users and businesses. For example, some of the benefits that it provides to businesses, is that it reduces operating cost by spending less on maintenance and software upgrades and focus more on the businesses itself. But there are other challenges the cloud computing must overcome. People are very skeptical about whether their data is secure and private. There are no standards or regulations worldwide provided data through cloud computing.

REFERENCE :

- 1.Sosinsky, “ Cloud Computing” , Wiley Pub
- 2.Rajkumar Buyya, ... S. Thamarai Selvi, in Mastering Cloud Computing, 2013
- 3.Derrick Rountree, Ileana Castrillo, in The Basics of Cloud Computing, 2014

