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Issues Encountered During Migration from Existing Systems to Cloud Based Systems

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Abstract- Cloud Computing has become one of the most popular recently evolved technologies in the field of IT. More and more companies nowadays are getting attracted to the benefits that it offers and hence shifting their data, resources to the cloud. In spite of so many lucrative benefits, it still has some major issues that can give nightmares to the company's team opting for it. In this paper, we present various issues that a company may encounter while switching from a traditional system to a cloud based system.

Keywords- Cloud Computing, Traditional Systems, Cloud Migration, Security, Issues

I. INTRODUCTION

Cloud computing is a computing paradigm where a large pool of systems are connected in private or public networks, to provide dynamically scalable infrastructure for application, data and file storage. A Cloud can be assumed to be a very large server on which different services and data are stored and it is then accessed via a network. The software and data that is accessed for the work doesn't exist on one personal computer, instead it's on the server. This concept of using services not stored on a system is called Cloud Computing. Hence it is the delivery of computing as a service rather than a product, whereby shared resources, software, and information are provided to computers and other devices as a metered service over a network. [2]

A. Service Models

Cloud Computing comprises of three service models:

1) Software As A Service (SAAS):

It can be described as a model in which applications and softwares are hosted typically upon a remote server and made available to customers over a network. One of the biggest benefits of SAAS is that all

clients, irrespective of their geographical locations, run the same version of software and it is very easy to integrate new features and make them available to all clients.

2) *Platform As A Service (PAAS):*

PAAS offers a complete application platform as a service. This enables the clients to deploy custom software using the tools and programming languages offered by the provider. Clients can exercise maximum control over the deployed applications and environment-related settings.

3) *Infrastructure As A Service (IAAS):*

IAAS offers storage and infrastructure resources that are needed to deliver the Cloud services. It only comprises of the infrastructure or physical resources such as CPU, disk space or network components. These resources are usually delivered as a virtualization platform by the Cloud provider and can be accessed across the Internet by the client.

II. CLOUD MIGRATION

The process of moving data, applications or other business elements from an organization's onsite computers to the cloud is called cloud migration. There are various methodologies involved in migration from traditional to cloud system viz. Trials and structured migrations, Hybrid and wholesale migrations, Depreciation based migration, Strategic migration and Traditional migration[4].

III. ISSUES IN CLOUD MIGRATION

The following are some of the main obstacles commonly associated with cloud migration:

- A. Sensitive data:** Organizations of all types base their operations on the cost of the data they store or share. But due to cloud migration, their data is moved to the servers. This puts the sensitive data of the company at risk during the process of migration. If this data gets leaked, companies can incur a large amount of damage, in terms of cost or reputation or both. However, with the proper skills and experience, migration can be carried out in a secure way.
- B. Data Security:** The biggest issue in today's IT industry is undoubtedly, internet security. Because of this, the process of migration must be carefully completed by experts and novices should not be trusted with such a job. When a company's data is moved from a physical server to the cloud, it faces many risks and vulnerabilities. Therefore it is very important to find and implement security solutions for sensitive as well as private information.
- C. Interoperability** "The ability of systems to communicate" with one another is what interoperability means, and it's one of the most pressing issues in cloud migration. In cloud computing terminology, 'communication' means something different than it usually does. It is the ability to write code that can work with multiple cloud providers at the same time, despite a number of differences between them. The cloud environment should be compatible with more than one cloud provider.
- D. Portability:** Portability is "the ability to run components or systems written for one environment in another environment with no or minimum changes." To ensure portability, the software that is to be migrated needs to be portable with other cloud environments and not just the parent one.
- E. Adaptability:** Implementation of any new policy or system is quite a challenging task for any company. It is called the transition period. The company's team has to learn a completely new process and adapt their working to the new system. Whenever an organization switches to cloud computing, changes in "mission, authority, funding and staffing" are inevitable.

- F. Cost and Time:** Moving an existing workload to the cloud requires time and resources, from a financial standpoint. Some of the examples that are particularly important include the bandwidth cost of migration and the time it takes to transfer.
- G. Limited Control:** Whenever a company shifts to cloud, the team risks losing a level of control over the company. While many IT managers are experimenting with various ways of implementing an in-house cloud system that runs on delivered metered services, this is not always the most lucrative business move.
- H. Restricted Space:** The cloud technology sometimes disappoints some users because they find that once they have instituted a cloud system within their business, they run out of storage space. Although updating the system is possible, it is usually a tedious and time consuming process.

IV. CONCLUSION

The study conducted thus puts forward the various issues and incompetencies that cloud computing brings with itself. There are numerous issues but proper care is taken during the migration and maintenance phase, there may be fewer reasons to worry. However if the lacunae that cloud computing already has, are coupled with mistakes from the human end, the results are bound to plunge deeper into negativity.

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