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Migration Issues in Cloud Computing

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Abstract: Cloud computing rules in the new digital transformation world and gets wide acceptance in the field of business. The cloud can solve many problems like scalability of the business, flexibility of the business, cost and performance that may come across while running an enterprise. In fact, by digital transformation, fixed costs may get reduced, a more flexible allocation of resources is possible, faster development of the enterprise is resulted, worldwide reach is through the cloud highly appreciable, a safer change control process, and faster time-to-market with objectively better products. Even though it promises many benefits, it is not an easy task to migrate to cloud platform from a current conventional business platform. Cloud migration introduces its own issues. While looking for migrating business from on-premises to cloud, many challenges should be kept in mind for successful migration.

Keywords: Cloud migration, digital transformation

I. INTRODUCTION

Cloud computing is providing computing services like servers, storage, databases, networking, software, and intelligence to the needy user over the Internet ("the cloud")[1]. The user has to pay only the services he has availed. It helps to lower your operating costs, run your infrastructure more efficiently and scale as your business needs change.

The Cloud computing is a big shift from the traditional way businesses think about IT resources. It eliminates the capital expense of buying hardware and software and setting up and running on-site servers, cost of electricity for power and cooling, the computer experts for managing the infrastructure and data. The cloud computing services are provided self service and on demand, so even vast amounts of computing resources can be accessed in minutes with few mouse clicks. Hence it gives businesses a lot of flexibility and reliability.

Since, cloud provides everything for the IT business needs, the end user can spend more time on achieving more important business goals. So, the cloud computing enhances the productivity. The biggest cloud computing services run on a worldwide network of secure data centers, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate data center, including reduced network latency for applications and greater economies of scale.

Since Cloud computing[2] makes data backup, disaster recovery, data mirroring multiple redundant sites on the cloud provider's network, the business continuity is easier and less expensive. Or we can say that the by cloud computing the reliability is ensured. As far as the security is concerned, the cloud providers has a broad set of policies, technologies and controls that strengthen your data and apps secure from threats.

In cloud computing inorder to get a successful digital transformation cloud migration is incorporated. It is the process of moving digital business operations into the cloud. Cloud migration[3] is like a physical move, except it involves moving data, applications, and IT processes from some data centres to other data centres, instead of packing up and moving physical goods. Much like a move from a smaller office to a larger one, cloud migration requires quite a lot of preparation and work, but eventually resulting in cost savings and a greater flexible and reliable move.

However, a well-executed digital transformation should do much more than keep you competitive. It should also make you to confident focus on innovative and high-impact projects. Cloud migration benefits can yield tremendous value to your business. Cloud migration is not a simple task as we move from one office to another one, it needs a challenging strategy for an effective digital transformation[4].

Most often, "cloud migration" describes the move from on-premises or legacy infrastructure to the cloud. However, the term can also apply to a migration from one cloud to another cloud.

II. ISSUES IN THE CLOUD MIGRATION

However, even as many businesses rush to adopt cloud computing environment, it is not an easy task . Cloud migration introduces its own issues. While looking for migrating business from on-premises to cloud, the following challenges should be kept in mind for successful migration.

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A. Financial cost

Financial concerns touch on almost every issues of digital transformation. The cost may be immediate one to make the migration and in addition to the immediate cost of migration there will be the long-term financial risks of low or slow adoption and training after the migration has occurred.

The cost concerns of migration include:

- Restructuring application architecture for the cloud
- Investing in skilled people and equipments needed to migrate successfully
- Skill training to be provided to the users on the new systems
- Performance issues including latency, interoperability, dependencies on non-cloud apps, and downtime
- Computer network costs

1) *The Solution To Cloud Migration Costs:* However, the companies can keep cloud computing costs low by implementing the following three strategies.

B. Proper Planning

Plan the migration process properly to get the maximum benefit out of it. Invest in a solid change management plan. A well-laid plan will help you manage the scope of the project as well as the level of disruption to the business.

Carefully examine your business objectives and requirements, the current state of your IT operations, network bandwidth and the cloud options available. This evaluation and analysis will help you identify potential issues, opportunities, and needs that you can then prepare for the digital transformation.

C. Batch Wise Migration

Another approach of digital transformation is to manage your financial investment incrementally. That is without making the change on all of sudden Batch wise investment[5] can be adopted. The advantage of breaking down what can be a financially overwhelming project into more manageable pieces over time.

Additionally, by migrating operations in batches, the organization doesn't have to invest as much money up front, giving them more flexibility and options. But the drawback here is that the business can get the benefit of migration slowly.

D. Migrate to a Hybrid Cloud

Depending on your computing needs, a full cloud migration may not be the best option. Some organizations rely fully on the public cloud while others prefer private or hybrid cloud options[6]. Understanding the financial risks and benefits can help guide your decision and your approach. See, some IT operations would work well in a cloud environment, others may be less compatible. However, if the applications with consistent usage, there is less financial incentive or reward to move completely to the public cloud. In these cases, a hybrid cloud option can make the most financial sense. The migration of applications with varying usage while keeping the rest in on-premise or private cloud operations.

The financial investment and risks associated with a cloud migration can be difficult. But with careful evaluation and planning, it can be navigated those obstacles and map a path to success.

E. Resistance Towards Migration

When it comes to migration success, it is often some stake holders who pose the biggest challenge. People tend to resist change. And a cloud migration brings a lot of change and disruption. The people will be reluctant significantly to the new systems, processes, and even leadership. The fact is that if the human element is left unmanaged, then the the top level management will face struggle to execute a successful migration. Fortunately, a change management plan with a few key strategies can ensure organization-wide buy-in and a smoother transition process.

F. Get Leadership Buy-in

For a successful adoption at the bottom, the migration to be started at the top. The executive leadership is one of the primary factors influencing employee engagement and adoption, so the company need strong executive buy-in right from the start.

Make sure that leadership understands the business need and objectives for the migration and have them communicate the business case to the organization. When all stake holders understand the reason behind a change, they are more likely to get behind it.

By demonstrating support[7], excitement, and the value of these changes, they can create a positive culture around the migration and encourage higher rates of adoption.

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G. Choose Intuitive tech Solutions

When choosing cloud solutions for the applications, prioritize usability and integration. The more intuitive and user-friendly the tool is, the more likely employees will adopt it.

Additionally, applications that integrate with the current tech stack are more attractive to users because they can seamlessly connect the new tools to their other work. Integrations not only make the workflow smoother but increase employees' efficiency.

H. Expert Training and Resources

Although the cloud will ideally make life easier for everyone, the adjustment can still be painful which could slow down the change over. The stake holders may find the new processes confusing, complex, or difficult to integrate. Without proper training and support, they are more likely to keep using familiar techniques.

To make sure the users understand your new systems and processes, invest in a robust training programmes. Place experts to train and support employees on the new applications. For that designate internal employee who are familiar with cloud background cloud champions who are capable of answering any queries raised by the users.

User buy-in and adoption can be a frustrating hurdle. But if you plan ahead, communicate clearly, and focus on user education and support, you can execute a successful migration.

I. Skill Shortage and Its Remedy

Even though the cloud computing have many benefits, the complexity of migrating stops many organizations in their tracks. One of the primary hurdle is appointing the suitable people who have the skills to manage an effective cloud migration.

In the arena of business as more organizations set their sights on the cloud, competition for migration experts has been intensified. Unfortunately,now a days the demand for cloud experts exceeds the supply.

Many reports found that the skills gap in cyber security is responsible for slowing down cloud migration for 40% of IT professionals. That's a big problem for businesses trying to remain competitive.

How to tackle the shortage of professionals with proper skill may the biggest hurdle today while migration of cloud is being done.If you don't have the resources (or luck) to hire cloud migration talent, the company will need to find other solutions.

The best long-term plan is to make the cloud skill personnel internally, a strategy that provides several advantages.

First, the current IT employees are already familiar with the legacy technology and existing processes. Therefore, once they are trained in new skills, they will be ready to make meaningful contributions and support more quickly. Additionally, hiring and placing new employees is costly in both duration of migration and money. Working with existing talent can save the money and translate into a better financial investment. This approach isn't easy though as expected.

The shelf life for cloud computing skills is increasingly short. The fast pace of new releases necessitates a strong commitment to regular training and education in order to maintain and retain top talent in the firm.

Applying an batch wise migration approach can also relieve some of the pressure of finding and qualifying talent. By focusing on smaller migrations[8] of key applications, your computer professional team can learn and master the systems over time instead of facing a full migration risk all at once.

For a successful and robust internal training program, the firm needs to;

1) Build a culture of continuous learning and understanding.
2) Plan the training strategically with the business goals.
3) Make training relevant to each employee's role and operational environment of the company.
4) Always be future-minded.

A corporate training initiative is no small feat. However, when done well, internal education can help the organization continue moving forward with a successful cloud migration.

To remain competitive and relevant in the field, the company needs to invest resources into your current talent force and make the program a strategic part of the business plan. As the comparison among cloud solutions, look for vendors that provide dedicated resources to supporting a successful migration. They can be a valuable asset for your computer professional team and an important tool in the overall training program.

Cloud migration is a big, complex initiative for any company. While this initiative brings many unique challenges to the company and those challenges are very helpful to the future existence.

The key is to recognize those potential risks[9] and obstacles in the beginning and create a plan to manage them. With careful planning and evaluation, the firm can navigate the complexities of the cloud and reap the benefits of cloud-based IT operations.

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III. CONCLUSION

Cloud migration decision is something that can be either loved or hated, but no one can ignore it. A thorough understanding of the cloud environment is necessary so that the migration decision can be made. Many organizations are migrating to the cloud every day. But there are other organizations that are hesitant and unsure to take the plunge. If top level management of a firm are not able to make up the mind, the company must focus on the high-level elements which comprise the benefits and risks.

The issues the companies may face while migrating from existing on- premise business to the cloud. They are, financial cost, resistance to the migration by the stakeholders rather than the top level management. Lack of skilled professionals are also a concern. Besides all these hurdles this chapter also put forward the remedies to overcome the obstacles are proper training for the employees, the methods to convince the resisting people.

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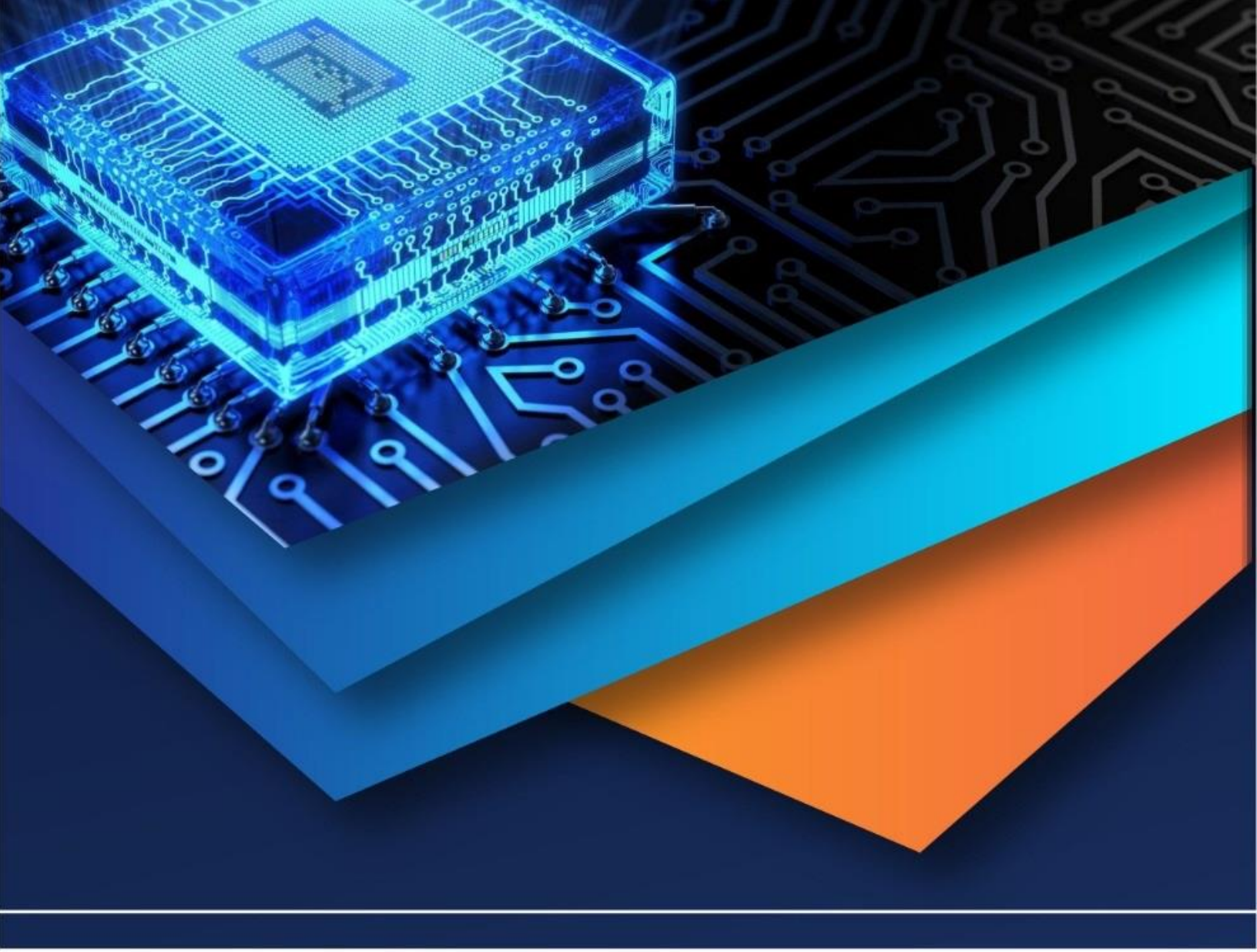
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