ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 3, Issue 2, pp: (717-721), Month: April - June 2015, Available at: www.researchpublish.com

Cloud FTP: A Case Study of Migrating Traditional Applications to the Cloud

Pooja H [1], S G Maknur[2]

[1] M.Tech Student, Dept. of Computer Science and Engineering, STJIT, Ranebennur (India)
[2] Head of Department, Dept. of Information of Science and Engineering, STJIT, Ranebennur (India)

Abstract: **The cloud computing is growing rapidly for it offers on-demand computing power and capacity. The power of cloud enables dynamic scalability of applications facing various business requirements. However, challenges arise when considering the large amount of existing applications. In this work we propose to move the traditional FTP service to the cloud. We implement FTP service on Windows Azure Platform along with the auto-scaling cloud feature. Based on this, we implement a benchmark to measure the performance of our Cloud FTP. This case study illustrates the potential benefits and technical issues associated with the migration of the traditional applications to the clouds.**

Keywords**: Cloud computing, FTP, Traditional application.**

I. INTRODUCTION

Recently, cloud computing has been under a growing spotlight in both industrial and academic areas. Cloud computing is an on-demand and cost saving computing with scalability, high-availability, and reduced management.

Amazon's Elastic Compute Cloud (EC2) is an example of IaaS (Infrastructure as a Service) platform. It offers basic infrastructure component such as CPUs, memory, and storage. Google App Engine is an example of PaaS (Platform as a Service) platform. It could deploy and dynamically scale Java and Python based web applications. Based on IaaS and PaaS platforms, a lot of time and money have been saved for start-up companies, such as foursquare and dropbox. Along with the benefits, cloud computing also raises severe concern when regarding the large amount of existing applications. One major challenge is how to migrate these traditional applications to the cloud. Current research focuses on the migration of specific applications such as high-performance applications, but little work has been proposed for the migration of general services. In this paper, we present a case study moving the traditional FTP server to the cloud. We have implemented the Cloud FTP server on Windows Azure and enabled the auto-scaling feature. Based on this, we have implemented a benchmark to measure the performance of our CloudFTP. We use this case study to illustrate the potential benefits and issues associated with the migration of the traditional applications to the clouds.

II. RELATED WORK

Literature survey is the most important step in software development process. Before developing the tool it is necessary to determine the time factor, economy n company strength. Once these things r satisfied, ten next steps are to determine which operating system and language can be used for developing the tool. Once the programmers start building the tool the programmers need lot of external support. This support can be obtained from senior programmers, from book or from websites. Before building the system the above consideration are taken into account for developing the proposed system.

In this section, we discuss some previous work related to cloud migration. Cloud migration is still a new topic in research of cloud computing. Only a few papers have proposed the cloud migration. Some of these papers mentioned the cloud migration explicitly, while in others the cloud migration is implicit, but all have indicated the idea of cloud migration. The concept of cloud computing has been proposed for about six years, a lot of works have discussed the definition, the scope, and the advantages and challenges of cloud computing. And current works focus on scientific computing, which needs

ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 3, Issue 2, pp: (717-721), Month: April - June 2015, Available at: www.researchpublish.com

high performance calculating. The mode of cloud computing is natural for scientific calculations, but we can't ignore the existing large amount of general applications. In Ali et al. presented a case study to migrate an Enterprise system to IaaS. In their work, they evaluated the cost and summarized the benefits and risks. But they didn't analyze the risks from the technical view. In summary, though cloud migration is not a totally new idea, there is no case study to present potential advantages and technical issues on cloud migration, especially on Windows Azure platform.

III. EXISTING SYSTEM

Recently, cloud computing has been under a growing spotlight in both industrial and academic areas. Cloud computing is an on-demand and cost saving computing with scalability, high-availability, and reduced management. Amazon's Elastic Compute Cloud (EC2) is an example of IaaS (Infrastructure as a Service) platform. It offers basic infrastructure component such as CPUs, memory, and storage. Google App Engine is an example of PaaS (Platform as a Service) platform. It could deploy and dynamically scale Java and Python based web applications. Based on IaaS and PaaS platforms, a lot of time and money have been saved for start-up companies, such as foursquare and drop box. Along with the benefits, cloud computing also raises severe concern when regarding the large amount of existing applications. One major challenge is how to migrate these traditional applications to the cloud. Current research focuses on the migration of specific applications such as high-performance applications, but little work has been proposed for the migration of general services.

Disadvantage:

More expensive and it costs maintenance. Data loss, no security.

IV. PROPOSED SYSTEM

In this paper, we present a case study moving the traditional FTP server to the cloud. We have implemented the Cloud FTP server on Windows Azure and enabled the auto-scaling feature. Based on this, we have implemented a benchmark to measure the performance of our Cloud FTP. We use this case study to illustrate the potential benefits and issues associated with the migration of the traditional applications to the clouds.

Advantage:

Less expensive, Time management, more secure.

V. SYSTEM DESIGN

System Architecture:

The architectural design process is concerned with establishing a basic structural framework for a system. The Large systems are always decomposed into sub-systems that provide some related set of services. The initial design process of identifying these sub-systems and establishing a framework for sub-system control and communication is called Architecture design and the output of this design process is a description of the software architecture. The figure 1 and 2 depicts proposed block diagram and how the different components are connected & interacted with each other.

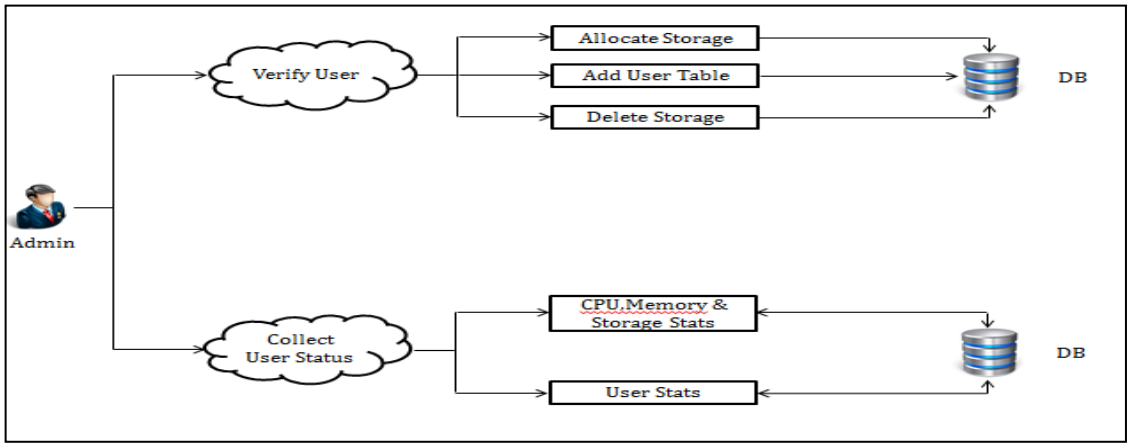

Figure 1 Administrator Block Diagram

ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 3, Issue 2, pp: (717-721), Month: April - June 2015, Available at: www.researchpublish.com

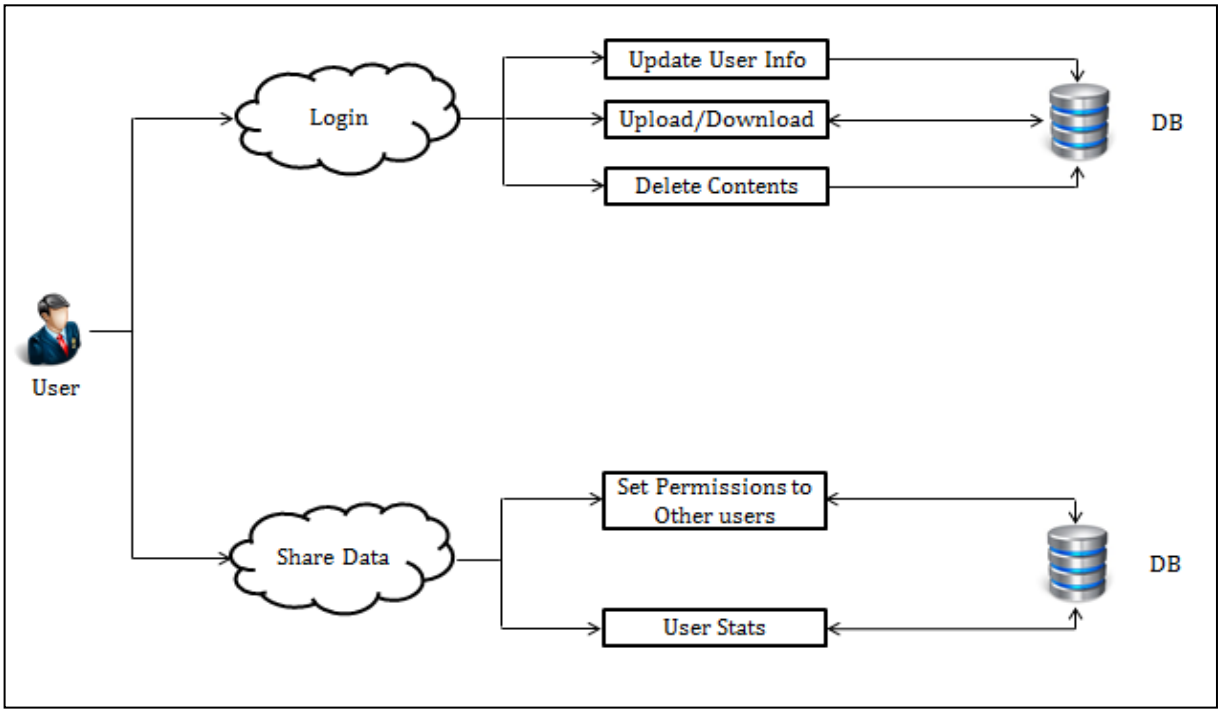

Figure 2 User Block Diagram

The Administrative block consists of the following:

1. Administrator will be given the privileges to create/allocate the storage and delete the storage for the user who no need the cloud storage.
2. Administrator has the access to view the system health statistics.
3. Administrator can view the user statistics.
4. Administrator will be able to notify the user who are about to exceed the storage limit.

The User block consists of the following:

1. User will be allowed to update the profile.
2. User will be able to Upload and Download the Files.
3. User will have the privileges to set permission for other users to access the data files.
4. User can view the Statistics of their own.

VI. MODULE DESCRIPTION

CLIENT REGISTRATION: In this module a client has to upload its files in a cloud server, he/she should register first. Then only he/she can be able to do it. For that he needs to fill the details in the registration form. These details are maintained in a database.

SERVER LOGIN: In this module after server (admin) gets logged in, he will see how many clients are registrar. Only registration of clients will make them in a waiting state.

CLIENT LOGIN: In this module, if a client wants to login, he/she should enter email and password of them. After validating the data he will be able to get logged in. Only registration will make them in a waiting state. Connected state will come only when he has getting paid for using the cloud resources. He will be provided with the plans corresponding of size, days, price for utilizing resources of the cloud. Chart will be created for displaying their plans in which they have chosen. After these formalities get completed, then only they are able to log in…Utilize the cloud database. Client uploads the file into cloud database. Cloud server (admin) checks the uploaded file.

ISSN 2348-1196 (print)
International Journal of Computer Science and Information Technology Research ISSN 2348-120X (online)
Vol. 3, Issue 2, pp: (717-721), Month: April - June 2015, Available at: www.researchpublish.com

USER REGISTRATION: In this module if a user wants to access the data which is stored in a cloud server, he/she should register their details first. These details are maintained in a Database.

USER LOGIN: If the user is an authorized user, he/she can download the file by using file id which has been stored by data owner when it was uploading.

VII. SIMULATION RESULT

In this section we present the evaluation of Cloud FTP and discuss the advantages and issues of migrating traditional applications to the cloud. We implement a benchmark to evaluate the performance of our cloud FTP server. The bandwidth is 100Mbps and it is adequate for the network connections to Azure platform. We record the download speed while increasing the number of work loaders, which continually send pwd commands to the server. We increase the number of work loaders by 10. Figure 3 depicts the download speed of different workloads. It shows that the average download speed is decreasing as the work load increases. When the number of work loaders is 180, the worker role instances increase by one. Thus the download speed arises. We evaluate the quality of service by recording successful requests per 100 requests. Every request will send pwd, list, store, retrieve, and delete command in order. The transferring data fie is created randomly and uploaded to the server. Then it would be downloaded and MD5 checksum would be calculated to ensure the file is the same as before. Each request with correct checksum is labeled as successful request. Figure 4 depicts successful requests per 100 requests while increasing the workloads. The increasing step is also 10. It shows that the quality of service in Windows Azure platform could keep 100% approximately with the workload increases. But when the workload is up to 180, the successful requests decrease. It is because the server is performing auto-scaling and it requires a certain time to increase the instance.

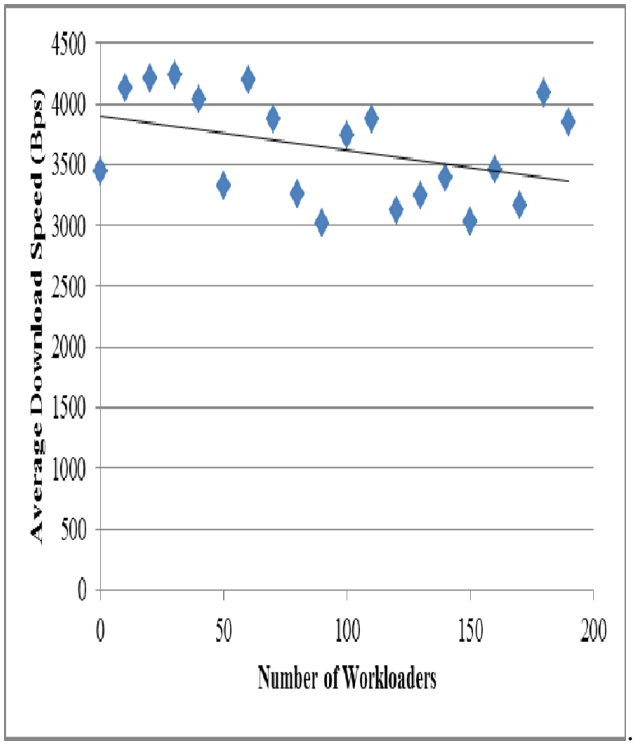

Figure 3. Download speed of different workloads

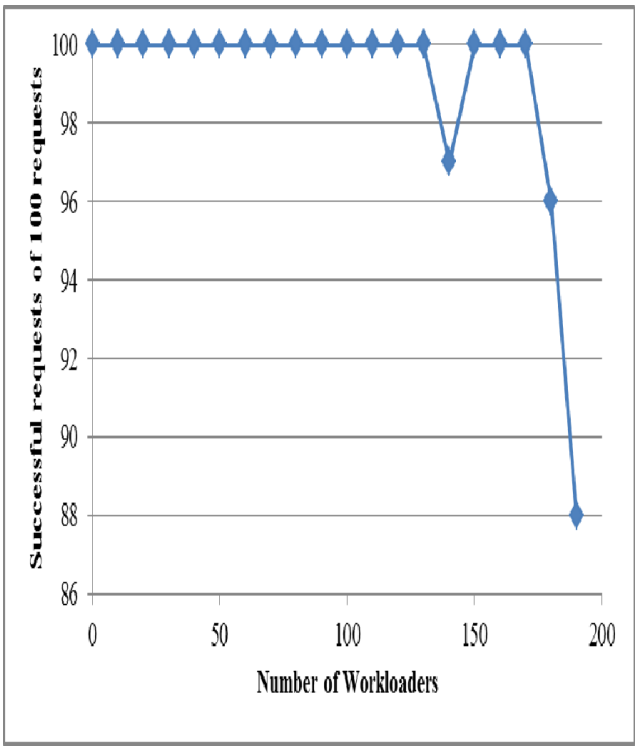

Figure 4. QoS of different workloads

VIII. CONCLUSION AND FUTURE WORK

This paper presents a case study to migrate traditional applications to the cloud. We implement CloudFTP on Windows Azure along with the auto-scaling feature. We also implement a benchmark to evaluate the performance of the cloud ftp server. From the design and the evaluation results, we summarized potential benefits and risks to migrate traditional applications to the cloud. The summary could help cloud developers migrate traditional applications quickly and safely, especially on Windows Azure platform.

ACKNOWLEDGEMENT

I consider it is a privilege to express my gratitude and respect to all those who guiding me in the progress of my paper.
I wish my grateful thanks to **S G Maknur *M.Tech*,** project guide, for his invaluable support and guidance.

REFERENCES

[1] M. Armbrust, A. Fox, R. Griffith et al., "A view of cloud computing," Communications of the ACM, vol. 53, no. 4, pp. 50-58, 2010.

[2] S. Bhardwaj, L. Jain, and S. Jain, "Cloud computing: A study of infrastructure as a service (IAAS)," International Journal of engineering and information Technology, vol. 2, no. 1, pp. 60-63, 2010.

[3] W. Lu, J. Jackson, and R. Barga, "Azureblast: a case study of developing science applications on the cloud." pp. 413-420.

[4] T. White, Hadoop: The definitive guide: Yahoo Press, 2010.

[5] M. Isard, M. Budiu, Y. Yu et al., "Dryad: distributed data-parallel programs from sequential building blocks," ACM SIGOPS Operating Systems Review, vol. 41, no. 3, pp. 59-72, 2007.