

# A Cloud Environment to Reduce Loss of Data using PVFS2

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**Abstract:** Cloud computing as a popular solution to provide for storage of data. Today some applications like database, media etc deals with the large amounts of data having higher I/O data demands. In order to improve performance and reduce loss of data of these applications can use parallel file systems. PVFS2 is a free parallel file system developed by a multi-institution team of parallel I/O, networking and storage experts. In this paper we present the design of an implementation for cloud environment to reduce loss of data through using remote servers that can be accessed through the Internet. The implementation aims to increase the availability of data and reduce in loss of information.

**Keywords:** PVFS2, Parallel file system, Loss of data.

## I. INTRODUCTION

Currently derived from advances and technological developments can have Input-Output devices ever better able to store more information. The use of the disks of the nodes of a cluster as global storage system is an inexpensive solution for a cloud environment. The need for the available of information from anywhere is increasing; this represents a problem for many users who use applications such as databases, media, personal file, documents, etc. The I/O data demands of these applications get higher as they get larger. In order to improve performance of these applications can use parallel file systems. PVFS2 is a free parallel file system developed by a multi-institution team of parallel I/O, networking and storage experts. In this paper we present the design of an implementation for cloud environment for able to store and back up data through using remote servers that can be accessed through the Internet. The implementation aims to increase the availability of data and reduce in loss of information. Cloud Computing and cloud storage have become the preferred method for delivering information and online functionality. The implementation of a larger number of servers time access to data is reduced with respect to the implementation of a single server. This is due to the distribution of data across multiple servers, allowing to access parts of the file parallel. Better still is the fact that it allows to manage in file different customers because each of them can Manage a part of the file, so further increasing parallelism. This implementation is being developed in order to give users the experience of implementing and managing a private cloud environment that facilitates the backup and data storage, using infrastructure already available or low cost. Avoiding payment of fees or memberships required to contract this service. This allows full control of those who access the information, so maintaining the confidentiality of the data.

## II. RELATED WORK

Microsoft and others have built their own infrastructure to provide the user with a public cloud, this type of cloud is maintained and operated by third parties not related with the organization, for this reason, both the processes and data of various clients are mixed on servers, storage systems and other infrastructure of the cloud. For companies that need high confidentiality and data security, an option are private clouds. This type of cloud is a good alternative. Management is carried by a client that controls which applications should run. Servers, network, and storage devices are the property of the organization. So they can decide which users are allowed to use the infrastructure. There is one more type of cloud is known of hybrid models combine public and private clouds. In this model it owns and shared portions other in a controlled manner.

## III. EXISTING SYSTEM

Nowadays due to the growth of technologies, we have different services and applications that allow users to perform tasks that improve productivity in their daily activities. However, the need to access any time and / or from a remote site has grown from a theoretical proposal a genuine need. This has given rise to seek alternatives to solve this problem.

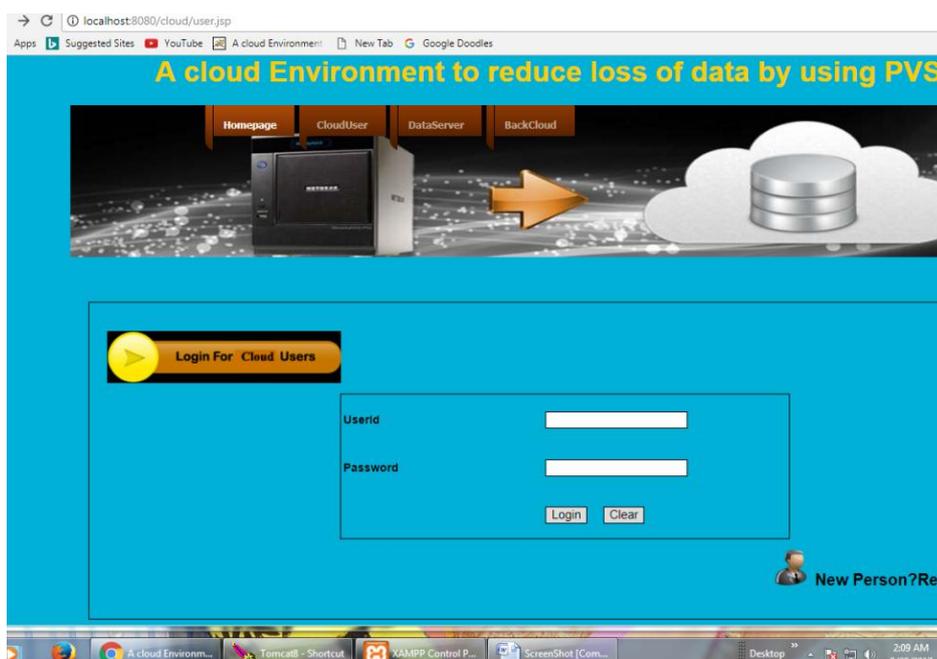


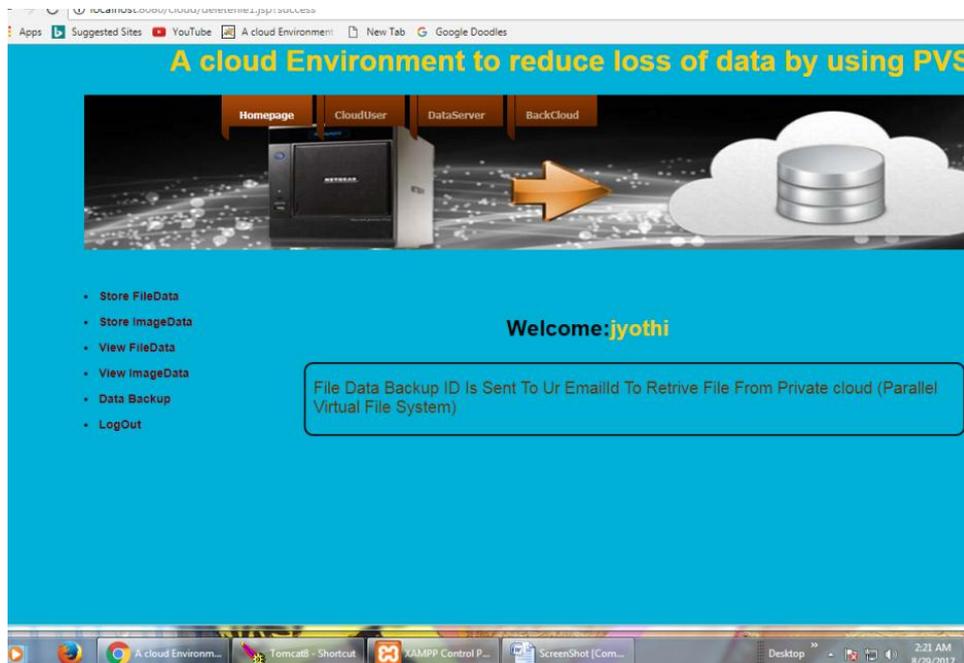
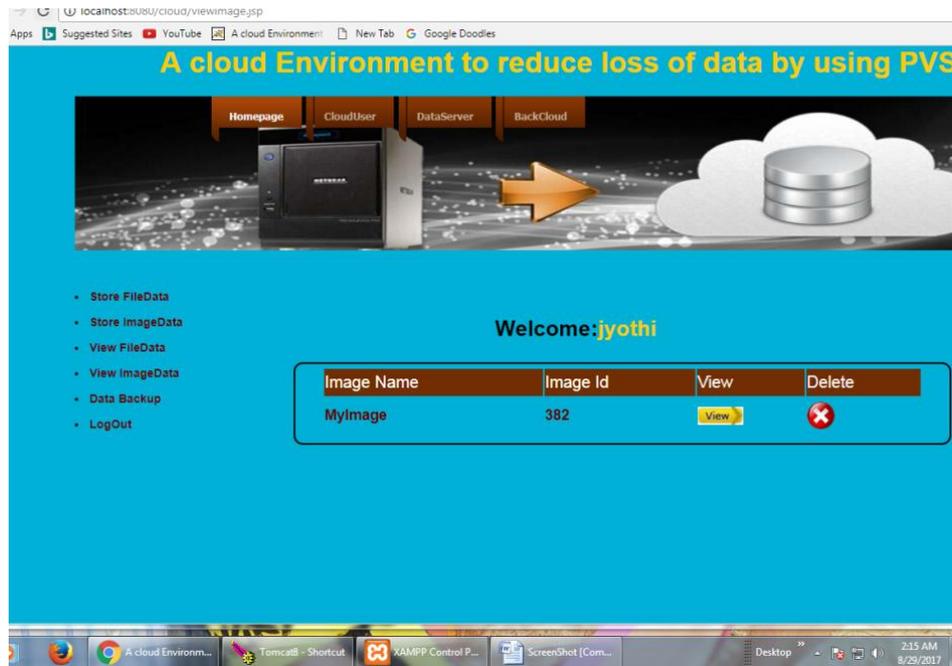
One of the alternatives is known by the term cloud computing; cloud computing can be defined as that service (software, platform or infrastructure) located on the Internet and is accessed from a mobile device or desktop computer, giving users a wide variety of applications (databases, middle office software, storage, etc.).

IV. PROPOSED SYSTEM

We propose a cloud environment to reduce loss of data on a private cloud using PVFS2 like file system for backup data in order to increase the performance of these applications. This option allows input / output parallel, so that will reduce the access times to data. On the client-end, a multiplatform application is developed using free software that allows data transfer fast and simple way. The advantages of this implementation is that it can reuse existing infrastructure (servers, cluster, and other devices) to reduce costs, becoming an advantage compared to having to deploy a private cloud from nowhere.

V. EXPERIMENTAL RESULTS





## VI. CONCLUSION

The experimental results show the superiority that exists on a local file system compared to a parallel file system where data is accessed remotely. However, PVFS2 improves results thanks to the implementation of different I/O servers, thereby reducing the difference in performance between PVFS2 and EXT3. This will justify the proposal to implement file system PVFS2 for a cloud environment for backup and data storage. The aim is to obtain better performance with the inclusion of PVFS2, because it decreases the data access latency, reducing network traffic and the data is distributed across different I/O servers. This allow data be distributed rather than be centralized, preventing complete loss of data. Also in the future we may use implementations made by Camacho and Nieto in order to further improve its performance and fault tolerance. Finally this implementation is being developed in order to give users the experience of implementing and managing a private cloud environment that facilitates the backup and data storage, using infrastructure already available or low cost. Avoiding payment of fees or memberships required to contract this service.. This allows full control of those who access the information, so maintaining the confidentiality of the data.



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