Cloud E - Learning With Data Backup And Restore

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Abstract

Cloud e network is type of E-learning which comprises all forms of electronically supported learning and teaching. Cloud computing providers deliver applications via the internet, which are accessed from web browsers and desktop and mobile apps, while the business software and data are stored on servers at a remote location. Cloud-e Networks design for students who can be able to communicate and share notes, documents, information etc. through cloud. This will help to provide educational facility for the site. They can send friend request to other students , accepts or reject received request. Here it provides Cloud Storage Server for document storage . This server uses XML based protocol to communicate .This project deals with the Social Networking providing various features of the major sites. In this paper we also define approach towards data security and backup while dealing with cloud network using REST architecture.

Keywords : *Cloud Computing, E-learning, XML, Cloud Storage Server ,data backup and restore*.

1. Introduction

Cloud Computing gives the ability to rent a server or a thousand servers and run a application on the most powerful systems available anywhere. It can be the ability to rent a virtual server, load software on it, turn it on and off, or clone it ten times to meet a sudden workload demand. It can be storing and securing immense amounts of data that is accessible only by authorized applications and users. It can be supported by a cloud provider that sets up a platform that includes the OS, Apache, a MySQL™ database, Perl, Python, and PHP with the ability to scale automatically in response to changing workloads. Although we learn every day, in everything we do, whether it is in what we read, watch or listen to, or in the conversations and discussions we have with other people, at some time people started believing that the only important learning happens in a formal setting, e.g. in a school classroom or a university lecture hall. Through popular website like Myspace, Orkut, Facebook, LinkedIn increasingly popular in recent years particular with high schools and university students but also with their teachers . Social Network is the best way to build professional relationships, maintain and cultivate contacts and disseminate info about oneself and their business. We are implementing features in our projects are as follows:

- Messaging.
- Upload Documents.
- Download Documents.
- Creating a group.
- In group message passing/upload and download documents.
- Registration Module.

The user can Share their Learning Material with their friends by uploading the documents, Useful Information etc. This will help to provide educational facility for the site using cloud. Hardware ,software failure or human errors lead to loss of important information,so here backup is an important task. In addition to faults, backups are even more important for devices such as laptops and smartphones, since they are more prone to loss or to theft. So as we are using here a cloud technology ,we have to not worry about our data in cloud .In this paper the main goal of this work is a backup system for cloud that allows users to share part of their personal data in the backup with their friends. In order to assess the

feasibility and impact of our approach in a real scenario, we realized prototypes of our backup and restore in cloud system.

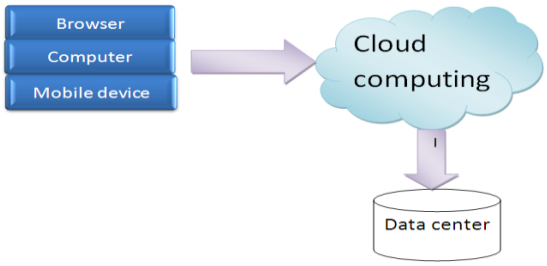
2. Literature Review

So the activities generally occurring on a particular social cloud e network are:

- Connect friends and families.
- Discovering new people.
- Sharing your personal videos, pictures, passions at one place .
- Instant scraping and messaging.
- Uploading and downloading files.

2.1 Definition

Cloud computing is a term used to describe both a platform and type of application. A cloud computing platform dynamically provisions, configures, reconfigures, and deprovisions servers as needed. Servers in the cloud can be physical machines or virtual machines. Advanced clouds typically include other computing resources such as storage area networks (SANs), network equipment, firewall and other security devices. Due to this it involves the existence of data centers that are able to provide services, the cloud can be seen as a unique access point for all the requests coming from the world wide spread clients (see figure 1).



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Cloud computing comprises of three layers

- infrastructure as a service (IaaS)
- platform as a service (PaaS)
- software as a service (SaaS)

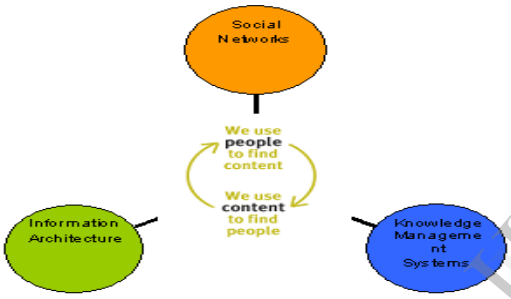
A social network is a social structure made of nodes (which are generally individuals or organizations) that are tied by one or more specific types of interdependency, such as values, visions, ideas, financial exchange, friendship, kinship, dislike, conflict or trade. Social network inter-relates and intra-relates into views of social relationships in terms of nodes and ties. Nodes are the individuals who have signed up for particular social network within the networks, and ties are the relationships between these nodes.

So just using the online tools to deliver content doesn't support "social cloud learning;" that happens when you use the tools to invite interaction from and between the learners. It's about social, not media, and it's about shared learning, not just pushing content. Here are some non-negotiable criteria to dub any learning as social:

- Democratic: To me the classic example of social interaction is gossip at a water cooler. Gossip emerges from the ground up. It doesn't need someone to lead, though a regular gossip fellow can facilitate the conversation and lubricate it. The key ingredient with social interactions at work or otherwise however, is that the crowd decides the agenda, the crowd decides the conversation. When a minority decides the agenda for a large group, then the interaction can still be social, but not enough to be any different from older models. Learning is truly social when individuals can decide what they want to learn and how they wish to collaborate on it.
- Autonomous: The key factor with social interaction in real life is that it moves by itself and is not controlled by a facilitator. We aren't talking about a specific platform, it's about a pattern of interaction. Now a facilitator can help make the flow of the interaction smoother, but in no way does the facilitator become responsible for the direction of these interactions. We can term something as social learning when it gathers a pace of its own without intervention from a trainer, facilitator, manager or leader of any kind.
- Embedded: One of the key aspects of social interaction in real life is that it's about life in general. It's not a separate exercise. Learning is truly social when it's embedded into the context of work.
- Emergent: Social interactions have no predefined structure. The structure emerges from the natural interactions of a participating group. A big problem with enterprise social learning is the desire to structure before you start. The uses however are limited to finite amounts of information such a sitemap for a website. The nature of social communication is that it's frequent and high volume. You can try second

guessing the structure for this endless stream of communication and you can also guarantee failure for every such attempt.

In fact the social network, information architecture, knowledge management system are simultaneously contributing to the actual process. The conceptual structure and logical organization of the intelligence of a person or group of people (organizations) lead to provide the information architecture Knowledge Management System (KM System) refers to a (generally IT based) system for managing knowledge in organizations, supporting creation, capture, storage, sharing and dissemination of information. KMS is document based i.e. any technology that permits creation/management/sharing of formatted documents such as web, distributed databases etc.



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3. System Design

Every task needs a complete analysis before it is actually start to built. It also includes the resources which are used to complete the various tasks . The detail analysis of each module included helps the developer to keep the complete track of the development .In this article we have also made a blue-print of what are the aims and the requirement of the various resources of our system.

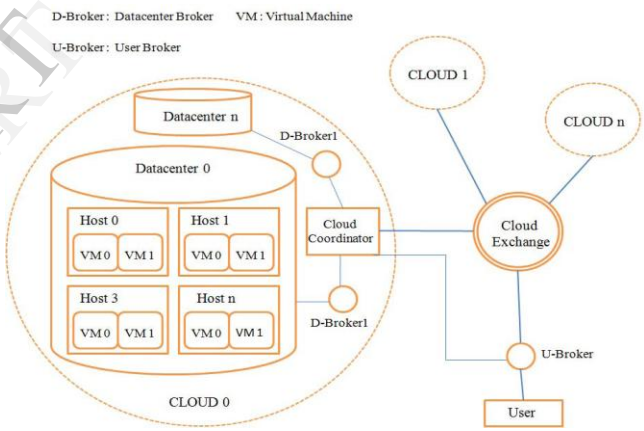
3.1 Servers and Web Interface

3.1.1 Cloud Storage Server

- A Server where a user can store documents.
- It will be a network application which will use xml based command request to perform operations.
- It will maintain user registry.
- It will also maintain storage space of all users.
- Will Store user documents in user space.
- New Users can be registered.
- Documents can be retrieved.

3.1.2 Cloud Exchange Server

- It will be the main cloud providing different services to clients.
- Different types of services can be registered with this exchange server.
- It will provide different stubs to client applications to communicate with the cloud.
- It will use XML based protocol to communicate.



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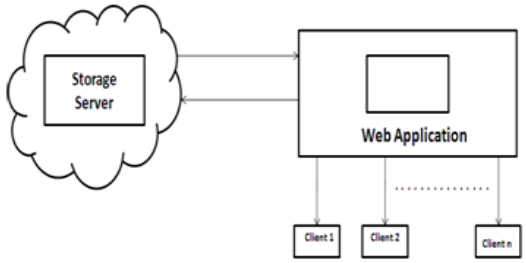
3.1.3 Web Interface

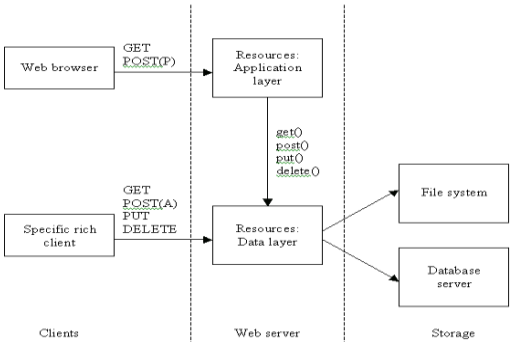
- User Management: It involves user registration, login & verification, profile display, profile edit.
- Request Management: It involves Search friends , Send request, Accept or Reject Request, Remove friends.
- Document Management :Upload document/Notes/Seminars/Projects etc,

Search Contents, View Contents, Download Contents, Remove Uploaded contents.



4. Backup And Restore

In this work, our aim is to overcome the limitations in saving and restoring data from cloud by using online backups as a uniform interface for sharing data among different users and multiple platforms. All the communication exchanged between the client and the server is based on an extensible markup language (XML).Data on server is always equipped with client ,for this purpose we use REST **(**representational state transfer) architecture. This architectures consist of clients and servers. Clients initiate requests to servers, servers process requests and return appropriate responses. A resource can be essentially any coherent and meaningful concept that may be addressed. A representation of a resource is typically a document that captures the current or intended state of a resource**.** Following figure show rest web base architecture



4.1 Cloud Exchange Server

The server has been design as RESTful: in REST architectures requests and responses are build around the transfer of representations of resources ,here we use XML rest architectures are based HTML protocol. And use all the http facilities, server allows client to perform backup, and when client perform backup ,the old data is stored on server to allow the user to revert to old backup in case failure. Our server implementation offers two rest methods: put, used to insert new entries on the server's database, and get that allows the client to perform queries. When receiving a get request at a URL ,the server will answer.

4.2 Client

The client begins sending requests when it is ready to make the transition to a new state. A uniform interface separates clients from servers. This separation of concerns means that, for example, clients are not concerned with data storage, which remains internal to each server, so that the portability of client code is improved. Servers are not concerned with the user interface or user state, so that servers can be simpler and more scalable. Servers and clients may also be replaced and developed independently, as long as the interface between them is not altered. While one or more requests are outstanding, the client is considered in transition. The representation of each application state contains links that may be used the next time the client chooses to initiate a new state-transition. The client can be implemented for different types of devices (mobile, desktop, game console, Internet TV etc…). The software should be implemented to access private data residing on the device and to send such data on remote server which will store these data. Clients are able to handle HTTP messages bodies, get data sent by the server store them into the device. Usually devices need to be built on purpose to interact with a backup server; in some cases they need to handle dirty flags in order to manage the status of the resources to be saved. In our approach, in order to interact with the server ,clients need only to be able to read and write resources to be saved and to implement just some basic HTTP methods.

5. Conclusion

Highlighting the advantages of this site, a Learning network is emerging as a great shareware and a common SharePoint tool. Moreover, it can act as a great knowledge resource implementing the concept of knowledge management system .It can be called as the huge turnover point for information and relationship where there is the large turnover of information and knowledge every day. With this, knowledge-based economy will reap significant rewards in just-in-time hiring, productivity,

increasing profit and many more. Workplace and business increases performance of practitioners that help organizations exploits emerging practices in work smarter with securely backup and restore of data in cloud.

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