



Virtualization in Cloud computing Domain structure and data security enhancement

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Abstract: cloud virtualization and data security is a process to provide secure services and virtualization to cloud consumers. We have implemented a private cloud domain structure to control a private cloud consumer network and its client. In this paper we are using Microsoft server windows 2012 as cloud server and domain controller and providing virtualization and data security services by using centralize storage system.

I. Introduction

cloud computing is very new flexible, secure, adaptive, and easy upgradable technique. Which provides centralized controlling and data storage facility? It has virtualization power to enhance remotely login services and secure communication. It is based on virtualization which means we have no need to use any other special device to implement cloud server. Cloud is much secure and strong facility for corporate clients. computing provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications. In other words Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal Management effort or service provider interaction. This cloud model promotes Availability and is composed of five essential characteristics, three service models, and four deployment models.

II. Literature survey

virtualization is a technique in which we share our private resources for as limited time period with next hopes. In virtualization we can use multiple sessions at the same time and same shell. Virtualization is very powerful technique in computer networking which provide a very secure communication and we have no need to do any up gradation in next hosts. It is very flexible service of cloud computing and it provide centralized controlling so we can control our private network through unwanted malicious.

III. How cloud computing services work

Cloud computing services have several common attributes:

Virtualization- cloud computing utilizes server and storage virtualization extensively to allocate/reallocate resources rapidly

Multi-tenancy -resources are pooled and shared among multiple users to gain economies of scale

Network-access - resources are accessed via web-browser or thin client using a variety of networked devices (computer, tablet, Smartphone)

On demand - resources are self-provisioned from an online catalogue of pre-defined configurations

Cloud computing Services: - basically cloud computing have 3 main services in its background.

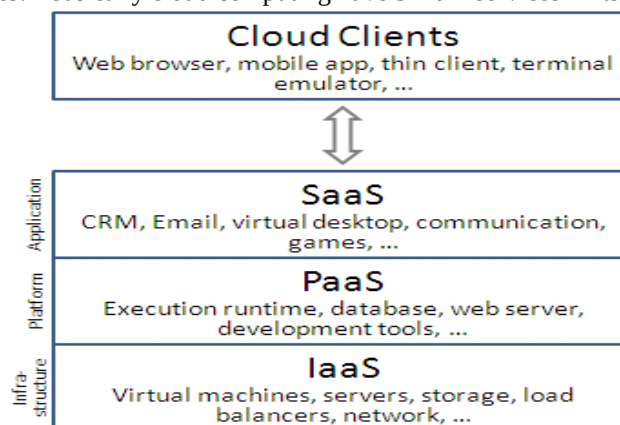


Fig. 1.1: cloud services

1. **SAAS** (software as service) Cloud-based applications or software as a service (SaaS) run on distant computers “in the cloud” that are owned and operated by others and that connect to users’ computers via the Internet and, usually, a web browser.
2. **PAAS** (platform as service) Platform as a service provides a cloud-based environment with everything required to support the complete life cycle of building and delivering web based (cloud) applications without the cost and complexity of buying and managing the underlying hardware, software, provisioning and hosting.
3. **IAAS** (Infrastructure as service) Infrastructure as a service provides companies with computing resources including servers, networking, storage, and data centre space on a pay-per-use basis.

IV. Proposed system

We have implemented a private cloud domain structure to control a private cloud consumer network and its client. In this paper we are using Microsoft server windows 2012 as cloud server and domain controller and providing virtualization and data security services by using centralize storage system.

Experimental methodology: - we have developed code in JAVA by using IIS services.

Running the service

```
JAXRS Server Factory Bean sf = new JAXRS Server Factory Bean ();
sf.set Resource Classes (Rest Calculator Service Impl.class);
sf.set Resource Provider (Rest Calculator Service Impl.class, new Singleton Resource Provider (new Rest Calculator Service Impl ());
sf.set Address("192.168.1.1");
sf.setAddress("192.168.1.1");
sf.create();
```

The lib cloud interface

- list_images()
- list_sizes()
- list_locations()
- create_node()
- list_nodes() •reboot_node() •

Other calls for querying UUIDs, locations, setting, passwords, etc.

Apache lib cloud

- Find all the VMs I have running in the IBM, Slice host and Rack space clouds:

```
cloud = get_driver(Provider.cloud)
Slice host= get_driver (Provider.SLICEHOST)
Rack space = get_driver (Provider.RACKSPACE)
drivers = [ cloud ('access key id', 'secret key'),
Slice host('api key'),
Rack space('username', 'api key') ] #
```

Now do what you like with your running VMs

V. Result

After applying these algorithms in cloud by using JAVA codes our Virtualization in Cloud computing Domain structure will be ready and clients would be able to use cloud virtualization services and also can store its data remotely in cloud server with more security.

First cloud server will ask for username and password.

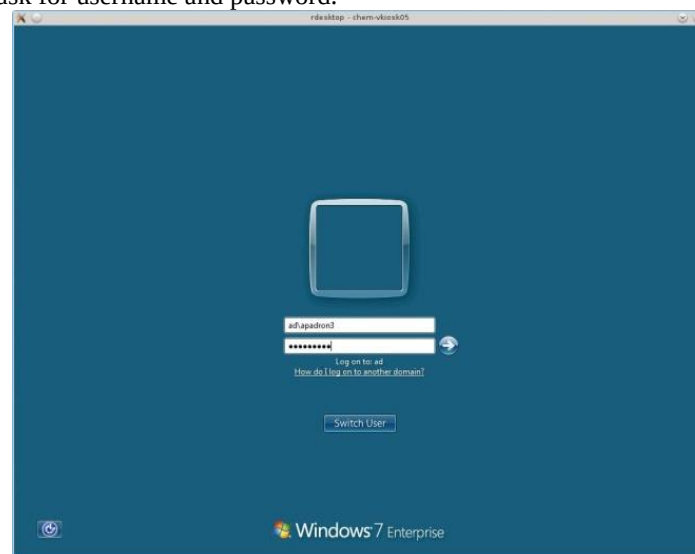


Fig. 1.2: cloud secure login services

After providing username and password to the cloud login window it will directly take you to the cloud server main screen and client would be able to use that virtual cloud system.



Fig. 1.3: cloud server connected

VI. Conclusion

In this paper we have implemented a Virtual Cloud computing Domain structure and data security enhancement system with the help of java and IIS services. And we have created a more efficient and secure cloud server.

VII. Future work

After these privileges and process we can work further in future also for security purpose, we can use firewalls and advance security system, access control list and many for further modifications and services deployment.

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