

# PRIVATE CLOUD SERVER IMPLEMENTATIONS FOR DATA STORAGE

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**Abstract**— In without internet connection. this paper we have implemented private cloud data storage server in Microsoft windows server 2K12 operating system which provides software as a services with mailing system for private cloud consumers & clients, through private cloud server services clients can access web services, centralized data storage services , software as services and can also send and receive mails in entire network without internet connectivity. This paper is the implementation of cloud software as service, centralized remote accessibility and private mails system.

**Keyword**— Cloud Computing, Data Storage

## I. INTRODUCTION

Cloud computing has recently reached popularity in computer networking world which provide centralized data storage service, remote accessibility and many more cloud is very new, safe, and advanced technology it provides remote access service and centralized data storage service to the cloud consumers and its domain client in cloud. This paper is the implementation of private cloud software as service server; centralized remote accessibility and data storage system without internet connection in Microsoft windows server 2K8 with domain controlling. Migrating from a traditional model to the cloud model reduce cost for enterprise customer. The main objectives of SaaS provider are to minimize cost and to improve Customer Satisfaction Level (CSL).

## II. PROPOSED WORK

In this paper we are implementing a private cloud server with the help of windows server 2k12. We are providing Data storage, security and mailing system to our cloud networks client without using internet connections and in this cloud server we are also providing software as service facility to our private cloud networks clients.

Clients can send and receive mails remotely by private cloud mailing system services.

Previous algorithm to calculate time coast (TTL):

Minimize (cost) = VM Cost + Penalty Cost;

Where Penalty Cost = 100

Per Unit Time VMC cost large = VM Price large X Min (VM large) = VM Price large

Client needs application software's and windows 32 bit application for their databases

$SQI = \text{respT (SLA)} - \text{respT (actual)} = 32 \text{ bit /seconds}$

## III. EXPERIMENT METHODOLOGY

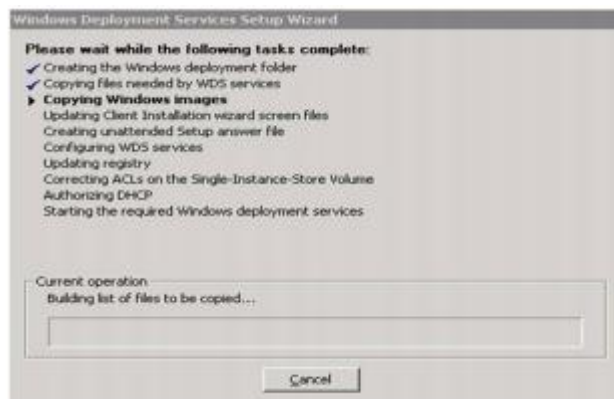
To implement cloud server we have to install and configure Hyper-V with the following steps 1. Open Windows Firewall with Advance Security and click Inbound Rules. 2. Right-click Hyper-V Replica HTTP Listener (TCP-In) and click Enable Rule. Enable the firewall rules for certificate-based authentication 1. Open Windows Firewall with Advance Security and click Inbound Rules. 2. Right-click Hyper-V Replica HTTPS Listener (TCP-In) and click Enable Rule. For servers that are part of a failover cluster, run this Windows PowerShell cmdlet on any node in the cluster if you will be using Kerberos authentication for Replica. The cmdlet must be run by a user with administrative

privileges. `get-clusternode | ForEach-Object {Invoke-command - computername $_.name - scriptblock {Enable-Netfirewallrule - displayname "Hyper-V Replica HTTP Listener (TCP-In)"}}`  
For servers that are part of a failover cluster, run this Windows PowerShell cmdlet on any node in the cluster if you will be using certificate-based authentication for Replica. The cmdlet must be run by a user with administrative privileges.

`get-clusternode | ForEach-Object {Invoke-command - computername $_.name -scriptblock {Enable-Netfirewallrule - displayname "Hyper-V Replica HTTPS Listener (TCP-In)"}}` Configure the Hyper-V Replica Broker 1. In Server Manager, open Failover Cluster Manager. 2. In the left pane, connect to the cluster, and while the cluster name is highlighted, click Configure Role in the Actions pane. The High Availability wizard opens 3. In the Select Role screen, select Hyper-V Replica Broker. 4. Complete the wizard, providing a NetBIOS name and IP address to be used as the connection point to the cluster (called a “client access point”). The Hyper-V Replica Broker is configured, resulting in a client access point name. Make a note of the client access point name for configuring Replica later on. 5. Verify that the Hyper-V Replica Broker role comes online successfully and can fail over between all nodes of the cluster. To do this, right-click the role, point to Move, and then click Select Node. Then, select a node, and then click OK..Windows Power Shell equivalent commands The following Windows Power Shell cmdlet or cmdlets perform the same function as the preceding procedure. Enter each cmdlet on a single line, even though they may appear word-wrapped across several lines here because of formatting constraints. This example sequence of cmdlets will create a Hyper-V Replica Broker names “HVR-Broker” that uses the static IP address 192.168.1.5. All steps must be completed by a user with administrative privileges. `$BrokerName = “HVR-Broker” Add-ClusterServerRole -Name $BrokerName –StaticAddress 192.168.1.5 Add-ClusterResource -Name “Virtual Machine Replication Broker” -Type "Virtual Machine Replication Broker"Group$BrokerNameAdd-lusterResourceDependency “Virtual Machine Replication Broker”$Broker NameStartClusterGroup $BrokerName` create a self-signed certificate with `Makecert.exe` Time coast (TTL) reduce algorithm: when we provide all applications and windows operating system to the client Minimize (cost) = VM Cost + Penalty Cost; Where Penalty Cost = 0 Per Unit Time VMC cost large = VM Price large 0 Min (VM 0) = VM Price large X VMcost Where VMcost = 0 SQI = respT (SLA) - respT (actual) = 32 and 64 bit /seconds

#### IV. RESULT ANALYSIS

After this implementation process client can connect from cloud server remotely and can use its software as service facility, client can install operating systems , software from everywhere. Client can download software also, but cloud clients need to register on cloud server. All those software, windows applications and operating systems can be 32 bit or 64 bit. Which reduce the cost of VM and increases the time limits for all cloud clients?



Previous

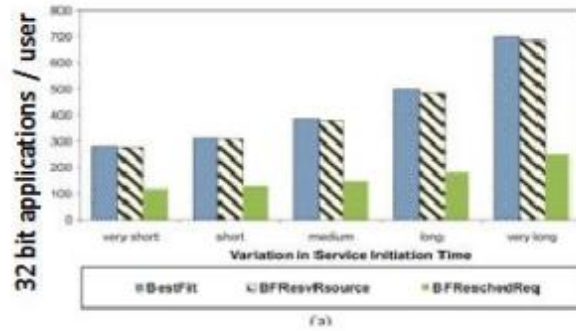


Fig .2 32 bit application usage Updated cost result: reducing cost and 64 bit software deployment for saving user time (TTL)

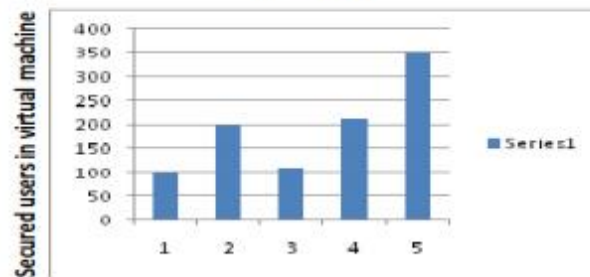


Fig 3. Secured users parameters Comparison chart after algorithm:

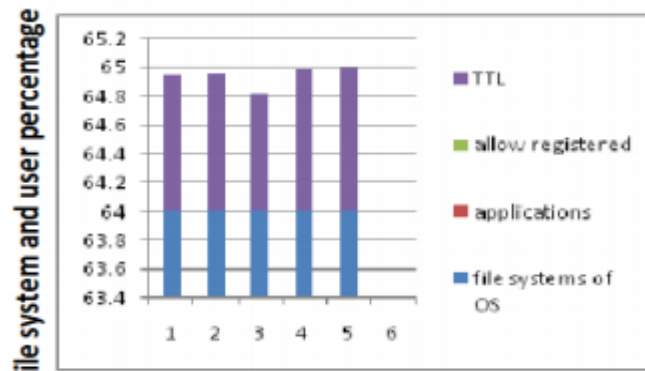


Fig.4 registerd users for 32 bit and 64 bit applications.

In previous result user can just use 32 bit applications from server. and after implementing algorithm user need to register first to get user id and password and user can also use 32 bit and 64 bit applications both and also can install 32 bit and 64 bit operating system remotely from server  
Start=> Run => Type the command MSTSC Type=> 192.168.1.1 (cloud servers ip address)  
Username => Client 1 Password => @\$passwd



Fig 5. Client login window

## V. CONCLUSION

After all these configuration client will directly connect to the cloud server and can access cloud client software as a service from server, server will provide operating system to the client and software's, with all these facilities client can also use or download software's from cloud server express to entire private cloud networks, server and to cloud clients and user can also use 32 bit and 64 bit applications both and also can install 32 bit and 64 bit operating system remotely from server

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