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MAINTAINING CLOUD HOST TO MONITOR VIRTUAL MACHINE USING SUNSTONE IN OPENNEBULA

Vijayarajan.V`[1], Siva Shanmugam.G[2], Kannadasan.R[3], Krishnamoorthy.A[4], Sendhil kumar.K.S[5]
[1]Associate Professor,School, of Computer Science & Engineering
VIT University,Vellore,Tamil Nadu.

ABSTRACT

The OpenNebula Cloud Reference Architecture is an outline to guide IT planners, advisors, managers and field specialists in the configuration and sending of open and private mists in view of OpenNebula on top of VMware VCenter. The reference design in this paper is planned for associations with existing VMware situations or ability who need to restrict changes to their hidden VMware foundation, however see advantages in a typical provisioning layer by means of OpenNebula to control figure workloads and need to step toward freeing their stack from seller lock-in[7]. Open Nebula is simple, feature-rich and flexible solution to build and manage enterprise clouds and virtualized DCs. The archive has been made from the aggregate data and encounters from several clients what's more, cloud customer engagements. Other than primary sensible parts and interrelationships, this reference archives programming items, arrangements, and prerequisites of framework stages prescribed for a smooth Open Nebula establishment. Three discretionary functionalities finish the design: high accessibility, cloud blasting for workload outsourcing and league of topographically scattered information focuses.

Keywords: Open Nebula, VMware, DC, IT planners.

1. INTRODUCTION

Open Nebula is a distributed computing stage for overseeing heterogeneous circulated focus foundations. The Open Nebula stage deals with a server farm's virtual framework to fabricate private, open and half and half usage of foundation as an administration[10]. Open Nebula is free and open-source programming, subject to the prerequisites of the Apache License adaptation. The essential commitment of this licentiate theory is the improvement and assessment of our combinatorial streamlining ways to deal with virtual machine situation in cloud situations. We show displaying for element cloud planning by means of movement of virtual machines in multi-cloud situations, and virtual machine position for unsurprising and time-obliged crest loads in single-cloud situations. The concentrated on issues are encoded in a scientific displaying dialect and settled utilizing a direct programming solver. Notwithstanding scientific productions, this work additionally contributes as programming apparatuses (in EU-financed venture OPTIMIS) that show the achievability and qualities of the methodologies introduced. We are moving into universe of open cloud - everywhere association be able to locate the right cloud. The incorporation is consistent, implying that a client signed into the Sunstone web interface of a Zone won't need to log out and enter the location of another Zone. Endeavor distributed compute be the following stride within advancement of server farm virtualization[2][3]. Open Nebula consolidates existing virtualization advances with cutting edge highlights multi-occupancy.

programmed procurement and versatility, taking after a base up methodology driven by the genuine needs of sys admins and devious. Sunstone permits to change the dynamic Zone whenever, and it will naturally divert the solicitations to the privilege Open Nebula at the objective Zone. A solitary cloud administration stage can't exist all things to individuals ; we imagine a cloud space by few offerings concentrated on various situations and commercial ventures . Open Nebula make cloud development by leveraging IT infrastructure , defending our savings , and avoid retailer fence in . This be characteristic development similar in_different market resembling social database or web servers . Our point is bring magnificence,significant serenity and effortlessness to the private and cross breed venture cloud.

2. PROBLEM STATEMENT

World is attempting to actualize open cloud on the grounds that every association fluctuates on embracing distinctive cloud for their one of a kind needs[5]. Be that as it may, cloud suppliers not offer a few spaces to the cloud clients because of physical disadvantages present in embracing the cloud. In any case, we contend that numerous cloud administrations and cloud-situated applications are not sufficiently old for the accompanying reasons:
1)Absence of data sharing,
2)Suspicion of homogeneous situations. 3)Flightiness of the situations by this anticipate we plan to make effortlessness on private cloud environment.

EXPERIMENTAL_SETUP:
The Open Nebula cloud management software should be installed and configured as a prototype implementation which is tested on the DIU Cloud Lab .

Values:
- The core values of the open nebula.org project are
- **Free available** of the processes and the technology
- **Excellence** for being project of maximum value in all feature of its operation
- **Assistance** by open-source hard work and explore projects to progress cloud computing .
- **Innovation** in new technologies and methods to address needs of large-scale cloud deployments.

Software setup:
- Cloud management platform – Open Nebula
- Operating System – Win7
- Open Nebula Apps
- Open Nebula Sunstone

Hardware setup:
- 64-bit Processor runs only on servers with 64-bit x86 CPU.
- Required least two core host machine.
- Supports only LAHF and SAHF instructions .
- NX/XD bit should be enabled in the CPU .

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RAM:
Supply 2GB RAM with 512MB for virtual Machine and 3GB of Disk space full advantage of open nebula cloud.

Hardware Virtualization Support:

• To maintain 64-bit virtual machines carry for hardware virtualization (Intel VT-x or AMD RVI) must be empowered on x64 CPUs .
To figure out if server has 64-bitVMware carry downloads the CPU Identification value from vmware.com .

3. IMPLEMENTATION

Principles:

- Openness of the engineering, interfaces, and code
- Adaptability to fit into any datacenter
- Interoperability and convey ability to avert merchant lock-in
- Solidness for use underway undertaking class situations
- Adaptability for expansive scale frameworks
- SysAdmin-anti-extremism with complete control over the cloud
- Straightforwardness, simple to convey, work and utilize
- Daintiness for high proficiency

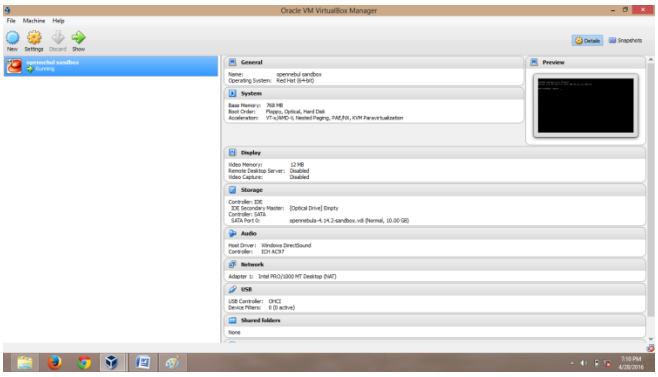
CLI Interface

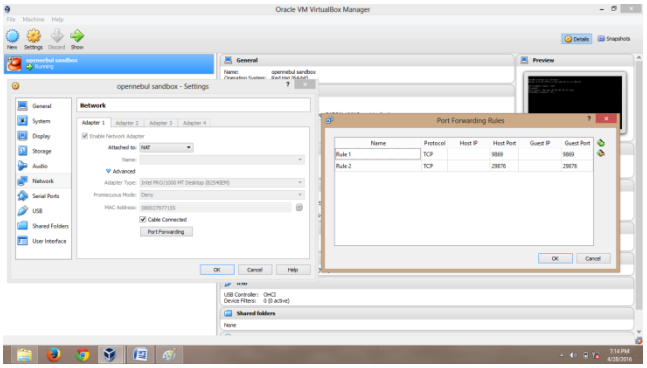
$ su - oneadmin
From the oneadmin account you can see all the already bootstrapped resources:
# one-sandbox is configured as a worker node and monitored
$ onehost list
# There is one network created
$ onevnet list
# You can see the leases and the specific configuration of the network
$ onevnet show 0
# A TTYLinux image has been created
$ oneimage list
# A Virtual Machine template is registered
$ onetemplate list
# You can see the template configuration if further detail
$ onetemplate show 0
Once the above coding has done do not repeat it again and we can check the coding in open nebula database.
REFERENCE ONLY - DON'T DO AGAIN

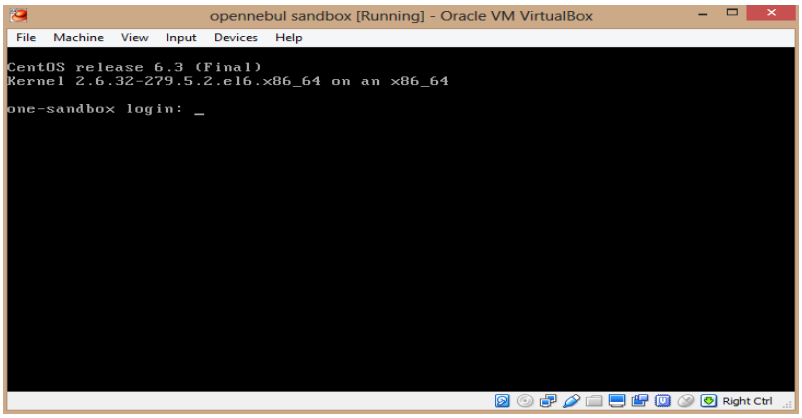

```
# create a host
$ onehost create one-sandbox --imkvm --vmqemu --net dummy
# create a network
$ onevnet create ~/templates/cloud.net
# create a template
$ onetemplate create ~/templates/ttylinux-template.one
# create an image
$ oneimage create ~/templates/ttylinux-image.one
```

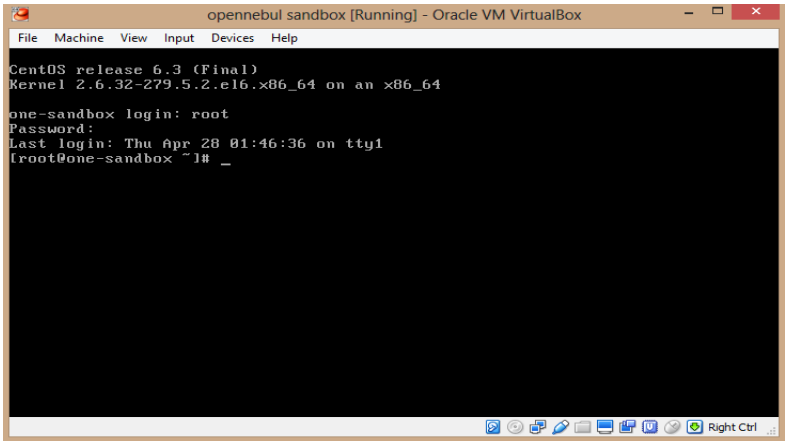
Screenshot

These are few steps how to do the data transfer using VM Virtual box in Opennebula sunstone.






opennebul sandbox [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
CentOS release 6.3 (Final)
Kernel 2.6.32-279.5.2.el6.x86_64 on an x86_64
one-sandbox login: _
Right Ctrl


opennebul sandbox [Running] - Oracle VM VirtualBox
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CentOS release 6.3 (Final)
Kernel 2.6.32-279.5.2.el6.x86_64 on an x86_64
one-sandbox login: root
Password:
Last login: Thu Apr 28 01:46:36 on tty1
[root@one-sandbox ~]# _
Right Ctrl


OpenNebula
Sunstone
Username
oneadmin
Password
Login

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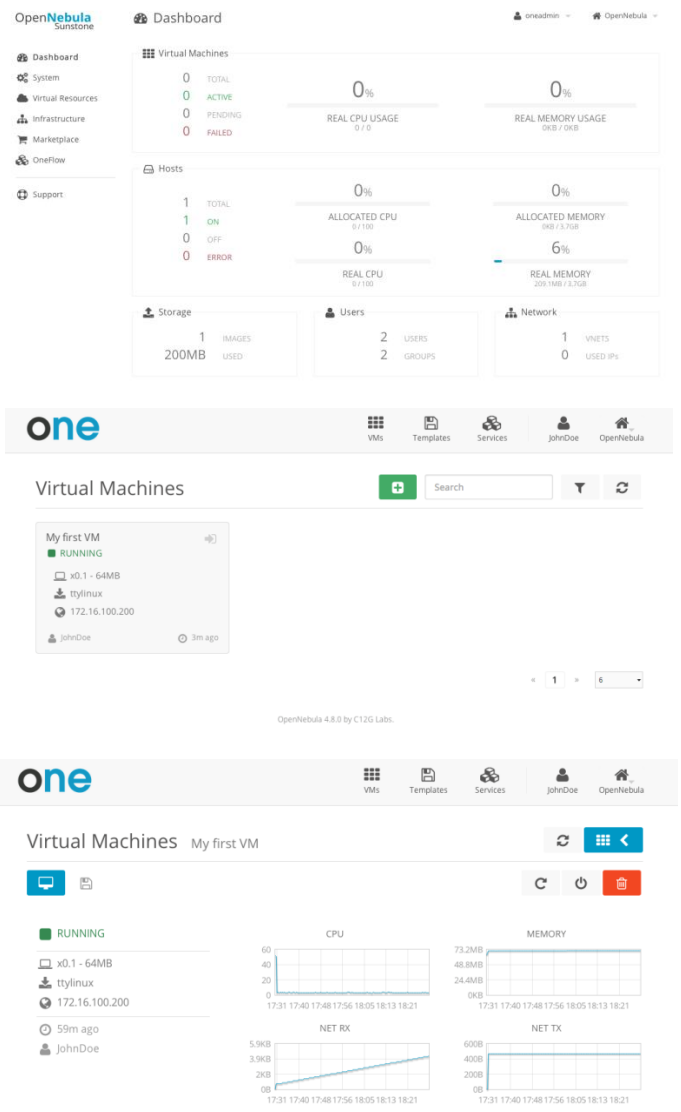


4. LITERATURE SURVEY

1. **Title:** An Experimental Study of Load Balancing of OpenNebula Open-Source Cloud Computing Platform

Description:

Distributed computing is turning into a reasonable figuring answer for administrations situated registering A few open-source cloud arrangements be accessible toward backings[4] . Open-source programming loads propose colossal measure of flexibility with no immense authorizing expenses . Subsequently, open source programming are generally utilized for outlining cloud , and private mists are being manufactured progressively in the open source way . Various commitments contain by the open-source group identified with private-IaaS-cloud . Open Nebula - a cloud sis one of the mainstream cloud administration_programming_. Be that as it may , small have done to methodically examine the execution assessment this open-source cloud

arrangement in the obtainable journalism[7] . The execution assessment helps fresh and obtainable exploration , manufacturing and universal ventures while select Open Nebula programming to work . The goal of this paper is to evaluate the heap adjusting execution of the Open Nebula cloud administration programming[8] . For the execution assessment the Open Nebula cloud administration programming is introduced and configured as a model usage and tried on the DIU Cloud Lab .

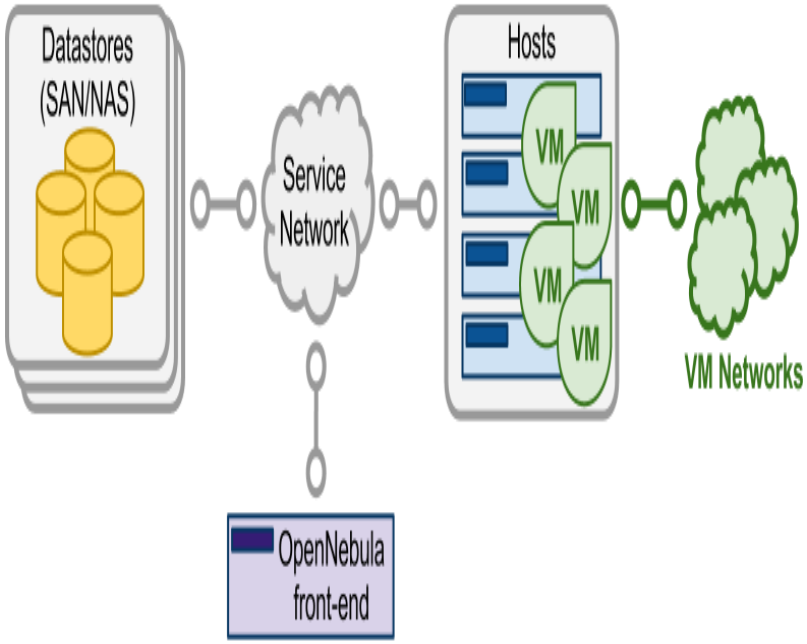
2. **Title:** Asset Allocation and Scheduling in Heterogeneous Cloud Environments

Description: The essential commitment of this licentiate proposition is the improvement and assessment of our combinatorial enhancement ways to deal with virtual machine arrangement in cloud environments[6]. We introduce displaying for element cloud planning through relocation of virtual machines in multi-cloud situations, and virtual machine position for predictable and time-obliged top burdens in single-cloud situations[4]. The studied problems are encoded in a numerical displaying dialect and unraveled utilizing a linear programming solver. Notwithstanding scientific distributions, this work additionally contributesin the type of programming instruments (in EU-financed venture OPTIMIS) that show the feasibility and qualities of the methodologies exhibited.

3.Title: Virtual Machine Placement in Cloud Environments

Description: The rise of distributed computing, figuring assets (i.e., systems, servers, storage, applications, and administrations) are provisioned as metered on-interest service sover arranges, and can be quickly apportioned and discharged with insignificant management effort.

DESIGN:



5. RESULT:

In this document we or trying to reduce the work time of data transfer in virtual machine with the help of Open Nebula front-end as sunstone which store the data temporally all the images and files before sending it to client. It works as the cache files which can easily upload the same file type second time.

CONCLUSION

The reference engineering portrayed in this archive has been made from the aggregate data furthermore, encounters from several clients and cloud customer engagements to help in the configuration and organization of cloud bases taking into account OpenNebula on VMware. We imagine a cloud space with a few offerings concentrated on various situations and/or commercial ventures . This is the characteristic advancement same happened (1)in different markets like social databases or the web servers . Our point is to bring excellence , genuine feelings of serenity and effortlessness to the private and half breed endeavor cloud .

REFERENCE:

1) Web Services Agreement Specification (WS-Agreement).http://www.ogf.org/documents/GFD.107.pdf, visited May, 2012.
2) Andreolini, M. and S. Casolari, *Load prediction models in web-based systems*, in *Proceedings of the 1st international conference on Performance evaluation methodolgies and tools*. 2006, ACM: Pisa, Italy. p. 27.
3) Arlitt, M. and H. Jin, *Workload Characterization of the 1998 World Cup Web Site*, in *HPL*- 1999-35 (R.1
4) Dinda, P.A., *Design, Implementation, and Performance of an Extensible Toolkit for Resource Prediction in Distributed Systems.* IEEE Transactions on Parallel and Distributed Systems, 2006. **17**: p. 160-173.
5) M. Ahronovitz et al. Cloud computing use cases white paper, v4.0.www.cloudusecases.org, visited May 2012.
6) Open Cirrus cloud computing testbed.bhttp://www.opencirrus.org/.
7) http://cloudstack.apache.org/ last access on 30 June 2013
8) http://www.openstack.org/ last access on June 2013
9) Zhang, S., Qian, Z., Wu, J., & Lu, S. (2012, March). An opportunisticresource sharing and topology-aware mapping framework for virtualnetworks. InINFOCOM, 2012 Proceedings IEEE (pp. 2408-2416).
10) Shanmugam, G.S. and Iyengar, N.C.S., 2016. Effort of Load Balancer to Achieve Green Cloud Computing: A Review. *International Journal of Multimedia and Ubiquitous Engineering*, *11*(3), pp.317-332.
11) Arm - the architecture for the digital world. http://www.arm.com.
12) Zhenning, Y., Kai, W., Liuyang, Z., Shanmugam, G.S., Caytiles, R.D. and Iyengar, N.C.S., 2017. Library Cloud: Concept and Design with Security Features.
13) H. Qian and D. Medhi, "Server operational cost optimization for cloud computing service providers over a time horizon," in *Proceedings of the 11th USENIX Conference on Hot Topics in Management of Internet, Cloud, and Enterprise Networks and Services (Hot-ICE), 2011*.