GRAND CANYON
U N I V E R S I T Y™

LOPESWRITE
FEEDBACK CENTER™

Zachary Chambers
test3

Summary

📄 1628 Words

9%   SIMILARITY SCORE   **5** PLAGIARISM ISSUES   **40** GRAMMAR ISSUES

Internet Source   1%
Institution   8%

Zack Chambers

CST 221

John Zupan

February 10, 2019

GitHub Link: https://github.com/zchambers3/CST-221/tree/master/Final

> ✏️ Potentially missing comma: 2019 → 2019,

Assessing Virtualization Software

I have chosen to research Hyperconverged Infrastructure, also known as HCI. HCI is an Information Technologist framework that is the combination of application resources all merged into a single system. It was built to help streamline the management and scaling of datacenter resources. It allows for an organization to provide great mobility in workloads, applications, scale in/out resources and restore data.

> ✏️ Spelling mistake: datacenter → data center

HCI allows companies to start small and expand their resources over time. Vendors also see a drastic potential in cost savings in areas such as IT labor, data center power and space, disaster recovery tools and possibly avoiding licensed software. The future of the corporate data center is not hyperconverged, it is closure after the apps migrate to public cloud. I can already see this trend at work: the enterprise server market is in secular decline. Hyperconverged is simply monopolizing existing data center server, networking and storage businesses, not growing them. Servers only exist to run apps. Declining server revenues can only mean fewer apps in enterprise data centers. Meanwhile, public cloud revenue from tech giants such as AWS, Microsoft and Google are exploding and none of the big cloud vendors are using hyperconverged hardware.

> ✏️ Spelling mist...: hyperconverge... → hyper converg...

> ✏️ Spelling mistake: Hyperconverged

> ✏️ Spelling mist...: hyperconverge... → hyper converg...

Architecture of the virtualization environment

> 🌐 Student: Submitted to Grand Canyon University 0...

Virtualization Solution 1

Category

Score

Reasoning

Company Name

Nutanix

> ✏️ Spelling mistake: Nutanix → Mutant

Product Name

Nutanix AHV

> ✏️ Spelling mistake: Nutanix → Mutant

Version

AOS 5.6

Release Date

April 2018

Performance Metrics

3

While great in mechanics, it lacks advanced security, machine backup and migration.

Cost

1

$75,000.00 for this appliance is only feasible for large corporations.

Disaster Recovery Capabilities

4

Clusters easily create and store snapshots of a failing VM which can be recovered from any other node.

Availability

3

VM's are easily created and managed. Models are slightly limited.

Security

3

Standard security.

Infrastructure Scaling

4

New nodes are easily combined for scalability.

Management tools

5

Easily locate all VM's and nodes with only two management panes.

Report Generation

3

Appears to have standard report generation tools.

Other:

Notes

.

Virtualization Solution 2

Category

Score

Reasoning

Company Name

Dell EMC

Product Name

EMC VxRail

Version

14th generation

Release Date

July 2017

Performance Metrics

4

Very promising reviews with no negative comments.

Cost

4

Prices range from 2000 – 15000 per node, roughly equating to $45,000.00 for a standard 3 node model. Flexible range of prices would make for a better score.

Disaster Recovery Capabilities

5

Can tolerate an entire site failure as well as local component failures with no data loss and zero down time.

Availability

4

Worldwide with many models.

Security

4

Cluster level encryption coupled with 2 factor authentications. Dell EMC RecoverPoint enables

rapid recovery if an attack occurs.

Infrastructure Scaling

5

Scales with more data types than the Nutanix.

Management tools
5
All virtualization management is done within the familiar Center Server interface.

Report Generation
4
Appears to have standard report generation.

Other:

Notes
.

Virtualization Solution 3
Category
Score
Reasoning

Company Name

HPE

Product Name

Simplivity

Version

CN-3000

Release Date

April 2018

Performance Metrics
4
Good reviews with few negative comments.

Cost
2
$40,000.00 for single core and $80,000.00 for dual core with no support.

Disaster Recovery Capabilities

5

Built in rapid DR, 60 seconds to recover 1 TB data. Easily recover over 200,000 backups.

Availability

4

Globally Federated Architecture.

Security

5

Built in HPE Secure Encryption, data corruption easily detectable through fingerprint.

Infrastructure Scaling

4

Rapidly deploy and scale hyperconverged

building blocks to meet changing demands. It allows control of your infrastructure from one pane instead of having separate management portals for storage, servers, backup, etc.

Spelling mist...: hyperconverge... → hyper converg...

Management tools

5

Single interface to view all data centers and remote branches.

Grammatical problem: interface

Report Generation

3

Report generation not mentioned in any documentation or reviews.

Other:

Notes

.

Virtualization Solution 4

Category

Score

Reasoning

Company Name

Cisco

Product Name

Springpath

Version

Release Date

Performance Metrics

2

Reviews did not look good, product seems to be lacking on many aspects.

Cost

2

Subscription starts at 12,000, requires 3 years minimum, that's still 12,000 per year.

Disaster Recovery Capabilities

4

Enterprise-grade self-healing mechanism ensures always-on operations during a server or disk failure.

Availability

4

ReadyClones, inline Deduplication and inline Compression allow for many different uses.

Spelling mist...: Deduplication → Reduplication

Redundant phrase: many different → many

Security

3

Relatively new product exploits are not well known, and security is underdeveloped.

Hyphenation problem: well known → well-known

Infrastructure Scaling

5

Independent scaling of compute, caching and capacity resources – add resources based on your specific business needs.

Use an m-dash.: – → —

Management tools

5

Seamless integration with VMware vCenter – get started in minutes without learning curves.

Spelling mistake: VMware → Wear

Spelling mistake: vCenter → center

Use an m-dash.: – → —

Report Generation

4

Cloud monitoring continuously sends health and usage updates about your infrastructure.

Other:

Notes
.

Virtualization Solution 5
Category
Score
Reasoning

Company Name

NetApp

Product Name

NetApp HCI

Version

Release Date

Performance Metrics
4
Fair reviews but important detriments, lagging trendsetters, lack of quality of service.

Cost
2
100,000 for 10 TB seems a bit more expensive than other brands.

Disaster Recovery Capabilities
2
Specifications hidden, unable to find reliable details.

Availability
5
First time there is specifications listed for individual nodes.

Security

2

Specifications hidden, unable to find reliable details.

Infrastructure Scaling

4

Fairly standard for this type of product.

Management tools

5

Simple centralized management through a VMware Center Plug-in gives full control of an entire infrastructure through a simple user interface.

Report Generation

2

Unable to find reliable details.

Other:

Notes

.

Top Choice

After reviewing the specifications of the the Dell EMC VxRail, I have grown quite fond of it. I also found that the VxRail product has the highest overall rating from multiple companies and users. Furthermore, the VxRail does not require real end user training and it can tolerate a site failure with no data loss and no downtime.

Being able to perform upgrades and check the system through the VxRail Manager is very helpful. It allows files to be uploaded, performs a pre-check against the system, then upgrades the appliance from the hardware up through the VMware environment. The fact that VxRail can accommodate a wider range of datatypes allows for an environment to be created that is easy to manage and back up. This reduces the amount of time that is required by staff to manage and update systems within an organization. All of the above gives it more versatility to virtualize all the bugs and issues of an operating system. When it comes to companies not losing data, VxRail seems to be the best option available. This would be a large benefit to healthcare organizations who need to keep their patient's personal information secure.

Discussion of related topics

Topic 1

The hardware-based approach can become very messy. Increasing the storage capacity of the overall unit one must install and connect each individual piece, and not many people know how to replace this type of equipment making prone to human error. Next, when you want to upgrade the processing power of the overall unit, one would have to know how to boost the processing power leaving it susceptible to human error. Hardware based systems need a lot of attention and care from people who are experts in operating systems. This in turn creates more and more chance for error, each of which need to be managed by an expert, eventually leaving one with an

---

type of (omit): type of

Web Content: https://blog.netapp.com/blogs/introducin…

Spelling mistake: VMware → Wear

Two consecutive articles: the the → the

Spelling mistake: pre-check → recheck

Spelling mistake: VMware → Wear

Spelling mistake: datatypes → datatype

Redundant phrase: All of the → All the

Spelling mistake: virtualize → visualize

not many (few): not many → few

type of (omit): type of

unusable system or CPU. It is also extremely easy for HCI to add nodes when a user is in need of more CPU and memory. With HCI it allows one the ease to manage and connect more nodes to the device and a user is on and they are good to go. There is no human error, little configuration is needed, overall it is a much simpler process. HCI allows for ease of management, HCI power is simply controlled with the already installed, user-friendly interfaces. An example would be the Dell EMC VxRail, which can recover from site failure without any loss in the organizations data. The structural layout of the Hyperconverged Infrastructure makes it superior to that of the hardware-based setup. Another great example is the HPE Simplivity, where its backup creates a full independent logical copy of the virtual machine. There is no link or dependency to the original VM, and operations on the original VM do not affect the backup or the restored copy of the VM. All of this strictly depends on the size of the organization or tasks trying to be completed by the organization. Hardware-based HCI are easy to setup and deploy, offering a more of a plug and play type of system.

Topic 2

Binary translation allows code written for an instruction set to run on another destination architecture, without access to the original source code. Computers do not talk in characters, they talk in zero's and one's. For example, adding two numbers together in machine language might look like something similar to 1101101010011010. In a CPU all working mechanism depend on switches ON/OFF techniques to read and write data. A swith ON corresponds to 1 and OFF corresponds O. In this fashion, all data is stored in memory. Input data is converted into digital signals and passes from component to component and in storing devices. Next, the CPU's memory or register is converted into binary or machine codes. Computer cannot do anything on its own, a user must give instructions to perform the particular task, In the CPU the control unit controls the flow of instructions as decode, fetch, execute and store. This is the way that computer understand the binary language.

References

De Gelas, Johan. (2008). Hardware Virtualization: The Nuts and Bolts. Retrieved from https://www.anandtech.com/show/2480/4

Dell EMC. (2018). Dell EMC VxRail. Retrieved from https://www.dellemc.com/en-us/converged-infrastructure/vxrail/index.htm

Harshe, Charlene. (2017). Having a private cloud for my organization is valuable. Retrieved from https://www.itcentralstation.com/product_reviews/hpe-simplivity-review-42296-by-charlene-harsch

HPE.com. (2018). HPE Simplivity. Retrieved from https://www.hpe.com/us/en/integrated-systems/simplivity.html

ItCentralStation.com. (2018). Cisco HyperFlex HX-Series vs Springpath. Retrieved from https://www.itcentralstation.com/products/comparisons/cisco-hyperflex-hx-series_vs_springpath

ItCentralStation.com. (2018). NetApp FAS Series vs Nutanix. Retrieved from https://www.itcentralstation.com/products/comparisons/netapp-fas-series_vs_nutanix

NetApp. (2018). NetApp HCI. Retrieved from https://www.netapp.com/us/products/converged-systems/hyper-converged-infrastructure.aspx

Nutanix. (2018). What is hyperconverged infrastructure? Retrieved from https://www.nutanix.com/hyperconverged-infrastructure/

Rouse, Margaret. (2018). Hyper-Convergence. Retrieved from http://searchconvergedinfrastructure.techtarget.com/definition/hyper-convergence

Springpathinc.com. (2018). Springpath. Retrieved from http://www.springpathinc.com/

StoragePricing.org. (2018). Nutanix Pricing. Retrieved from http://www.storagepricing.org/category/nutanix/

Annotations (margin):

- comma between independent ...: on and → on, and
- Student: Submitted to Grand Canyon University 0...
- Possible typo: organizations
- Spelling mistake: Simplivity → Simplicity
- can setup (set up): to setup → to set up
- type of (omit): type of
- Spelling mistake: swith → with

StorageReview.com. (2017). Dell EMC VxRail Overview. Retrieved from http://www.storagereview.com/dell_emc_vxrail_overview

Ung, David. Cifuentes, Christina. (2005). Dynamic binary translation using run-time feedbacks. Elsevier B.V.

Wyman, Eric. (2016). Nutanix Acropolis Review: "Making the jump to Acropolis is worth it". Retrieved from https://www.trustradius.com/reviews/nutanix-acropolis-2016-08-30-12-01-00