SIES
RISE WITH EDUCATION

Graduate School of Technology

TECHNIZ 2016-17

DEPARTMENT OF COMPUTER ENGINEERING

VISION

To be a centre of Excellence in Computer Engineering to fulfill the rapidly growing needs of the Society.

MISSION

- To Impart quality education to meet the professional challenges in the area of Computer Engineering.
- To create an environment for research, innovation, professional and social development.
- To nurture lifelong learning skills for achieving professional growth.
- To strengthen the alumni and industrial interaction for overall development of students.

PEO

- Practice Computer engineering in core and multi-disciplinary domains.
- Exhibit leadership skills for professional growth.
- Pursue higher Studies for career advancement.

PSO

- To apply computational and logical skills to solve Computer engineering problems.
- To develop interdisciplinary skills and acquaint with cutting edge technologies in software industries.

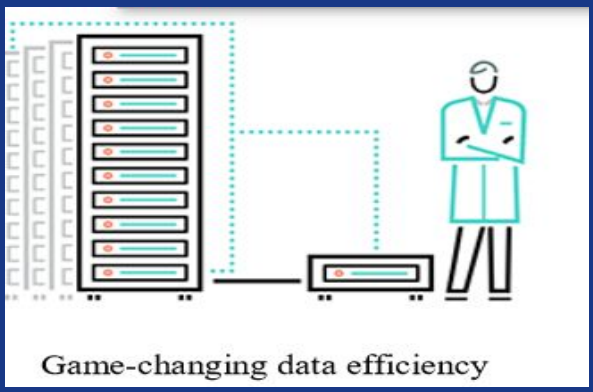
CONTENTS

FACULTY ARTICLE

Hyper convergence and new generation data center management Editor

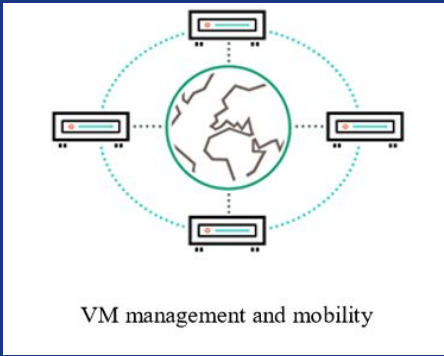
Prof. Namrata Patel

DHyper simple. Hyper scalable. Hyperconverged. Rapid proliferation of applications and the increasing cost of maintaining legacy infrastructure causes significant IT challenges for many organizations. With HPE SimpliVity, you can streamline and enable IT operations at a fraction of the cost of traditional and public cloud solutions by combining your IT infrastructure and advanced data services into a single, integrated all-flash solution.

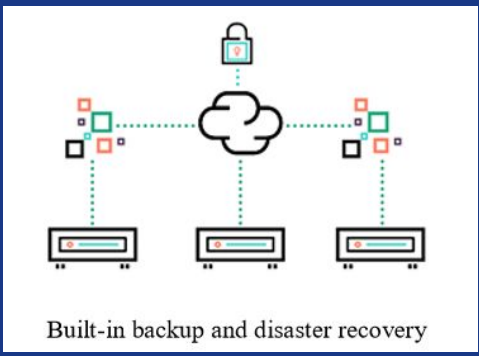


HPE SimpliVity is a powerful, simple, and efficient hyper converged platform that joins best-in-class data services with the world's best-selling server and offers the industry's most complete guarantee.A new way to handle data.

Achieve dramatic improvements in data efficiency, availability, complexity, and costs with purpose-built data management and storage capabilities. Game-changing data efficiency The data efficiency baked into HPE SimpliVity improves application performance, frees up storage and accelerates local and remote backup and restore functions, delivering an average data efficiency improvement of 52:11 across deployments.



VM management and mobility

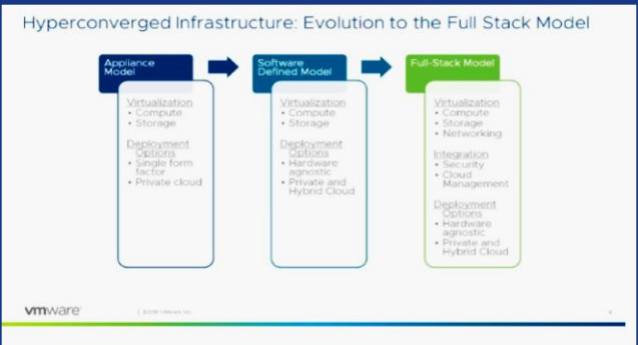


Built-in backup and disaster recovery

- **VM management and mobility**

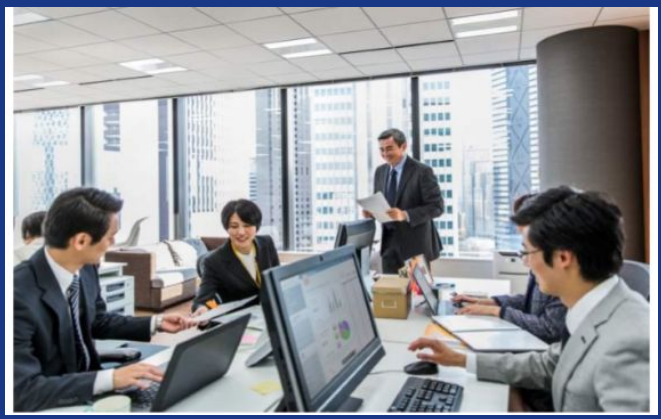
Policy-based,VM-centric management abstracted from the underlying hardware simplifies day-to-day operations and enables seamless data mobility, making development teams and end users more productive. Built-in backup and disaster recovery Eliminate the need for third-party data protection. HPE SimpliVity delivers the resilience, built-in backup, and bandwidth-efficient replication you need to ensure the highest levels of data integrity and availability. Today, we're pleased that VMware was once again named a Leader in the 2018 revision of the Gartner Magic Quadrant for Hyperconverged Infrastructure (HCI), improving on both the Completeness of Vision and Ability to Execute axes. VMware believes this is a validation not only of our strategy, but also our ability to execute on our vision and deliver real value to our customers.

VMware believes that this report showcases the strength of our unique vision for HCI: by leading with a hardware agnostic approach, VMware is uniquely positioned to deliver full-stack hyperconverged infrastructure to support organizations' digital transformation and cloud strategy.



Data protection and disaster recovery protect your data in a fraction of the time required by legacy solutions. With built-in, end-to-end data protection and automated disaster recovery, HPE SimpliVity reduces storage and bandwidth requirements,resulting in more recovery points and enhanced VM protection. VDI Drive down costs without sacrificing performance or resiliency. Get more virtual desktops on less hardware; easily add nodes when you deploy new desktops; and globally backup, restore or clone a VM in three clicks or less. ROBO Remove distance as a limitation. HPE SimpliVity introduces cost-effective scalability for remote and branch offices, provides built-in data efficiency and protection for ROBOs, and centralizes management into a single, unified solution. New single-processor configurations result in server and licensing cost savings at every site.Data centers can be daunting to manage for small and medium-sized businesses with minimal IT staff. However, the market is starting to shift in favour of technology solutions that make such administration a lot easier.

Hyper Converged infrastructure, or HCI, has allowed SMBs and even larger enterprises to reduce the cost and simplify the maintenance of their data center environments. HCI allows IT teams to easily manage and scale their IT resources. The phenomenon, also known simply as hyperconvergence, is gaining traction in the business world. HCI has been the fastest-growing segment of the converged infrastructure market for several years. That growth is expected to continue. IDC predicts that the HCI market will grow from $2.32 billion in 2016 to $7.64 billion in 2021. Here is a primer on hyperconverged infrastructure, the benefits of deploying HCI and how it is being used in real-world environments.



- **What Is Hyperconvergence?**

It's important to identify what separates hyperconverged infrastructure from converged infrastructure solutions. Converged infrastructure, or CI, allows companies to deploy compute, networking and storage components and virtualization in a single platform or chassis. As BizTech has reported, with CI models, "a vendor supplies an organization with specific storage, network, server and related technologies. The preconfigured components are integrated and standardized to help organizations achieve timely, repeatable, consistent deployments." That allows organizations to accurately plan their final deployment's parameters for power, floor space, usable capacity, performance and cost.Companies can also deploy CI via reference architecture, a system design developed by a provider or an independent party. These reference architectures guide organizations about which components to buy and how to connect and configure them to optimize performance. Organizations can gain greater flexibility with this model, since it allows them to freely mix and match hardware and software that meet the reference architecture specifications. HCI takes converged infrastructure a step further. HCI platforms combine computing, storage, networking and virtualization capabilities into a single appliance as well, but importantly, all of the components are pre-integrated and controlled by one software management layer. HCI solutions are provided by one vendor and they allow IT administrators to manage all of the components as a single system with one common toolset.

- **The Benefits of Hyperconverged Infrastructure**

Companies deploy hyperconverged infrastructure for two reasons: cost savings and operational efficiencies, says Scott Lowe, partner and CEO at IT consultancy ActualTech Media. "Companies are looking to rein in IT costs," he tells BizTech. "Plus, the hyperconverged infrastructure is simpler to deploy and manage.

It's just much easier than adding all those point solutions to your infrastructure." HCI lets organizations add in additional nodes as they see fit to scale up IT resources. By coming as a streamlined and centrally managed solution, HCI lowers IT acquisition and deployment costs for organizations. The benefits can especially accrue for small and medium-sized businesses, which often lack specialized IT staff and face tight budgets. "Reducing vendors eases procurement management and oversight," says Mike Grisamore, vice president of small business sales at CDW. "And streamlining equipment reduces total cost of ownership and conserves power, cooling and physical space — benefits that can impact companies with tight margins."

Instead of having a team that manages servers and staff that supports storage solutions, HCI simplifies that structure. Companies that adopt HCI can bring together disparate IT teams and streamline data center operations. That can free up IT staff to work on tasks more critical to the business. "A lot of people think it's about hyperconvergence the hardware — storage, servers, together," Lee Caswell, VMware s ice president of products, storage and availability, said last year at the VMworld 2017 conference. "But really, it's about hyperconverging IT — the storage and server management coming together." IT generalists can work with the HCI appliances and manage them, said Jeff Thomas, CTO of Smithfield Foods, during a panel at VMworld 2017. "From an IT standpoint, it really has reduced my need for staff."

- **Best Practices for Deploying HCI**

What is the best way for an organization to roll out HCI? There are several key elements to the process, as BizTech has outlined. First, IT leaders must take time to understand the characteristics of the workloads they plan to run on HCI.

Once they have a good understanding of the workloads, they should use this information to design an appropriate HCI environment. Next, organizations should turn to the marketplace and evaluate each available solution against those requirements. There are numerous vendors that offer HCI solutions, including Dell EMC, Hewlett Packard Enterprise, Nutanix, Cisco Systems and VMware.After evaluating and selecting the right partner, companies should begin to plan the HCI implementation before purchasing and installing hardware. It's also wise to deploy HCI with a pilot project that migrates a specific workload to test how future migrations will go and validate the benefits of the hyperconverged infrastructure.

- **Real-World Examples of Hyperconvergence Deployments**

There are numerous organizations, large and small, that have successfully deployed HCI. PreCheck, a healthcare background check company in Houston, was growing rapidly two years ago, and had been using a three-tiered infrastructure that included an undersized storage area network, as BizTech reported. Users experienced slow access to Microsoft Exchange and SharePoint. Robert Wilcox, PreCheck's infrastructure manager, began to virtualize the servers, but with aging equipment and little or no storage to assign, he started looking at HCI to solve the company's problems. Wilcox tested every HCI offering he could find, but in the end, he selected Nutanix, opting for two three cluster boxes: one for production and the other for replication and disaster recovery. Ease of migration and ongoing management were immediate benefits of the move to HCI, Wilcoxsays. "It's really simplified the environment and reduced the overhead of the hardware. We've gone from a three tiered model to one tier," he says. "It's a complete ecosystem, and if I need to scale up, I can just buy another node and slide it in. It gets picked up by the system, and everything is done automatically."

Steve Schaff, CTO of FDF Energy Services, which provides services to oil and gas drilling companies across Louisiana, Oklahoma and Texas, was an early adopter of converged infrastructure in 2013. He has since switched the company to HCI, and uses HPE's SimpliVity OmniStack software on UCS servers from Cisco. "SimpliVity offers compute and all the storage features, including backup, deduplication, compression and a management module," he tells BizTech. Last year, the Chicago Bears deployed a Nutanix HCI solution to get IT resources that were more flexible and scalable. "It was shockingly simple," Justin Stahl, vice president of IT for the Bears, tells BizTech about setting up HCI.

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At the end, we would like to extend our sincere gratitude to our management for their constant support. Also, we would like to thank our Principal for the constant encouragement. We would also like to thank our HOD Dr. Rizwana Shaikh for her support and motivation to make this magazine a successful one. Also would like to thank our Faculty Incharge, Prof. Namrata for shaping Techniz. Lastly we would like to thank all the faculty members, students, alumni and all stakeholders for their valuable inputs.

The Editorial Board
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