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EMPOWERING TECHNOLOGY

Take the First Step Toward Software-Defined Infrastructure with Hyperconvergence

Improve Patient Care, Deliver More Innovation, and Simplify Operations

Abstract:

Healthcare organizations are facing increasing complexity within their IT infrastructure as they wrestle to continuously innovate while maintaining existing business processes, like many industries where increased interaction with users (patients) combined with efficient delivery of their product (care) drives their ability to succeed and grow. In order to deliver efficient applications and services, many organizations are leveraging both on-premises and cloud-based infrastructure in order to maintain cost efficiencies as well as achieve security and performance metrics. Hybrid IT has become a common methodology to achieve these goals. However, implementing a hybrid IT environment in a haphazard manner can lead to unnecessary complexity, cost, and inefficiencies. Implementing a software-defined infrastructure can significantly simplify IT operations, reduce costs, and help developers more quickly deploy new applications and services that help streamline operations and improve patient care.

Overview:

We live in a world where digital technology is a way of life. Everyone and everything has access to some form of connected technology. "Compute" is embedded in every technology and is primarily designed to change the user experience, whether via interactive interface or built-in analytics.

Digital transformation is disrupting every industry, including healthcare, where user experience ultimately influences business and patient outcomes (i.e., how companies conduct business). The "connected compute everywhere" paradigm that spans end-user and medical devices has created a data deluge, which is only going to get worse as more devices come online. Healthcare facilities that master the science of gaining timely insight from these diverse and sometimes big data sets are the ones that will race ahead of their competitors, improve operational agility, and enhance patient outcomes.

Healthcare entities that treat information technology as a core competency and their IT organizations as essential partners will more easily achieve new sources of competitive differentiation (such as new point-of-care offerings) while supporting ongoing business processes.

Limitless Possibilities Bring New Complexity

Operating your apps and data across technologies and platforms is complex. Most enterprises didn't plan for a hybrid IT world, but it's here for the foreseeable future. To achieve speed and flexibility amidst the reality of hybrid IT, enterprises must:

Keep the business running: Address the inefficiencies of existing environments (inflexible, legacy siloes, overprovisioning, underutilization, capital-intensive infrastructure) to free resources for innovation. Enterprises spend a disproportionate amount of budget keeping the lights on. 85 percent of IT organizations are spending at least as much or more keeping the lights on as they were three years ago. Rigid technology infrastructure was cited as the leading barrier preventing rapid innovation and speed to market.[1]

Deliver new products and services faster: Increase the speed of creating new apps and services (agile, MVP strategies, containers as a service) across mobile, IoT, AI, and more—amidst a growing ecosystem of partners. Applications are exploding, far outstripping current abilities to deliver. This is driving growth[2] in both cloud and hyper converged systems to take the pressure off IT and deliver the services that healthcare facilities need to stay competitive and deliver optimal patient care. Healthcare organizations need to create and deliver apps and data across multiple platforms and technologies, while understanding these critical new dimensions. Hyperconvergence offers an optimal IT operating model that handles these functions to accelerate the business.

Majority of Hybrid IT Environments Endure Operational Friction

Many organizations have already made the foray into Hybrid IT, not by plan, but by happenstance. According to a recent survey by Forrester, only 33% of enterprises created a comprehensive ground-up strategy for their Hybrid IT environments—[3] meaning most organizations that have deployed Hybrid IT, have done so without a centralized strategy or have endured a combination of organic growth with some planning. It is in these organically grown IT environments where "operational friction" can occur—inhibiting IT's ability to quickly respond to support new business initiatives. Lots of time, energy, and cost is lost to this "friction," reducing the time available to develop, test, and deploy new apps and services. Friction can come in multiple forms:

- Managing apps and data across multiple on-premises siloed infrastructure using disparate tools that are incompatible across platforms.
- Moving apps and data from on-premises to private or public clouds.
- Moving apps and data between different clouds.
- Application developers needing access to compute, storage, and networking infrastructure and having to wait for it to be provisioned to them.

Creating a Frictionless IT Experience

Hybrid IT, by definition, includes managed deployment of IT infrastructure, applications, and services in both on-premises and multi-cloud (public, private, or a combination of both) environments. Software-defined infrastructure solutions from Hewlett Packard Enterprise are designed to reduce IT complexity, increase efficiencies, and improve business velocity. A good place to begin the transition to a software-defined infrastructure is your on-premises environment. Working with an experienced partner, like Versatile, can help you navigate this daunting process.

[1] Forbes Insights, "Delivering Value to Today's Digital Enterprise: The State of IT Service Management, 2017," 2017.
[2] Gartner, "Forecast Analysis: Integrated Systems, Worldwide, 3Q17 Update," Oct. 17, 2017.
[3] Forrester Research, "Hybrid IT Strategy Insights: How Composable Infrastructure Can Fuel Breakthrough Business Innovation and Performance," Feb. 2018.

Make Hybrid IT Simple

Many healthcare organizations are looking to replace legacy systems, reduce data center floorspace, and implement VDI solutions that enable cloud-like access and performance for their users, while satisfying security and data protection requirements for IT and government compliance. HPE SimpliVity leverages hyper converged technology, coupled with software-defined infrastructure to deliver a high-performance, scalable solution that is optimal for virtualized environments. The goal: Make IT simpler and improve organizational and patient outcomes by quickly and easily spinning up new applications through simple, rapid provisioning and management.

- **Accelerated application performance** — 4.5x better application performance over traditional IT[4]

- **Simplified operations** — Increase staff productivity by over 50 percent[5]

- **Rapid backup/restoration** — Less than one minute to back up or restore a 1 TB VM[6]

- **Lower TCO** — 69 percent cost savings compared to traditional IT[7] and delivers up to 55 percent savings compared to public cloud (AWS)[8]

Improve IT Staff Productivity

The Data Virtualization Platform of HPE SimpliVity makes virtual machines lightweight and mobile. Easily move and/or clone VMs between sites to support global "follow the sun" development efforts, or move VMs to the appropriate location based on the requirements of the application.

With Global VM-centric management, gone are the days of managing LUNs and shares and volumes. Instead, all management is done at the VM level with a single view across all of data centers and remote sites. The unique file system of HPE SimpliVity abstracts the VMs, policies, and management from the underlying hardware. Managing the system is designed to be simple and easy, which is why IDC found that HPE SimpliVity customers reported an 81 percent increase in time spent supporting new projects.[9]

VM-Centric Hyper Converged Architecture

Part of the modern data architecture is not only VM-centric management, but also that the HPE SimpliVity solution delivers co-provisioned CPU, memory, and all-flash storage without the need for SAN. Apps have data local to them, and this speeds performance. Plus, the architecture leverages inline dedupe compression to eliminate IO and speed application performance.

The system is designed to keep data close to the applications even in an HA configuration. The data is not spread across multiple nodes creating potential added network traffic and caching dependencies that slow performance. In fact, 88 percent of installed HPE SimpliVity customers surveyed saw dramatic increases in application response times.[10]

Efficiency Gains from Built-In Resiliency, Back-Up, and Disaster Recovery

Part of the core architecture includes built-in resiliency, backup, and disaster recovery. HPE SimpliVity takes full logical backups with near zero overhead. Because of the global deduplication and compression, you're only sending information that's changed, and you can back up every few hours or as often as needed.

All data protection is built in at the VM level. You can easily backup, restore, and move VMs using vCenter or VMware vRealize Automation, and not have to worry about the underlying storage infrastructure.

[4] Hewlett Packard Enterprise, "Red Bull Racing is even faster with HPE SimpliVity," [video], Nov. 2017.
[5] IDC, "SimpliVity Hyperconvergence Drives Operational Efficiency and Customers are Benefitting," April 2016.
[6] Hewlett Packard Enterprise, "HPE Hyperguarantee," June 2017.
[7] Forrester Research, "The Total Economic Impact™ of HPE SimpliVity Hyperconverged Infrastructure," a Forrester Total Economic Impact™ Study Commissioned by Hewlett Packard Enterprise, Aug. 2017.
[8] Evaluator Group, "Independent 3-Year TCO Comparison Between SimpliVity and AWS," Jan. 2016.
[9] IDC, "HPE SimpliVity Hyperconvergence Drives Operational Efficiency and Customers are Benefiting," an IDC White Paper sponsored by Hewlett Packard Enterprise, June 2017.
[10] TechValidate, "HPE SimpliVity provides dramatic application performance improvements," Nov. 16, 2017.

Data Efficiency Improves Capacity, Speeds Recovery

HPE SimpliVity offers guaranteed data efficiency. All data, at inception, is globally deduplicated, so before that block is written to disk (locally or remotely), the Data Virtualization Platform will talk to the other site and only send changed blocks to disc. If you're doing a backup in a virtual environment, you're only backing up the parts that have changed.

HPE OmniStack Accelerator Card offloads these data-processing-intensive tasks to the accelerator card, so there are no performance hits, and you can enjoy the full benefits of deduplication. HPE SimpliVity delivers an average of 52:1 data efficiency[12] with the potential to be much higher.[13]

> **A recent study from IDC found that 70 percent of HPE SimpliVity customers reported improvement in backup and disaster recovery, and a majority eliminated the use of existing third-party backup or replication tools.[11]**

Conclusion

For healthcare organizations seeking ways to increase their IT agility and move away from their legacy infrastructure and start to achieve an efficient transition to Hybrid IT, HPE SimpliVity offers a compelling solution. It dramatically simplifies IT by combining all infrastructure and advanced data services for virtualized workloads—including guaranteed data efficiency, data protection, and VM-centric management and mobility. Reduce data center footprint, lower TCO, and improve operational productivity. Give time back to IT so efforts can be directed to supporting more strategic projects that move the organization forward in the digital economy.

Versatile—Your HPE Supplier of Choice

What makes us Versatile? Our people, who work for YOU. We have in-depth and wide-breadth expertise assisting clients within the healthcare industry with their hybrid IT and digital transformations. Our staff is ready to serve your organization. We care. Adaptable, flexible, resourceful. Versatile is more than our name; it's who we are. It doesn't matter if your IT needs are big or small, simple or complex; we work collaboratively with you to create thoughtful, robust solutions tailored to your company's unique needs. Let our nimble, thoughtful, smart, and adaptable people work for you.

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[11] IDC, "HPE SimpliVity Hyperconvergence Drives Operational Efficiency and Customers are Benefiting," an IDC White Paper sponsored by Hewlett Packard Enterprise, June 2017.
[12] Forrester Research, "The Total Economic Impact™ of HPE SimpliVity Hyperconverged Infrastructure," a Forrester Total Economic Impact™ Study Commissioned by Hewlett Packard Enterprise, Aug. 2017.
[13] TechValidate, "HPE SimpliVity Hyperconverged Infrastructure Customer Research," Nov. 16, 2017.