

Need to Do More With Exchange?

Consider a Move to Hyperconvergence

WHITE PAPER

For all of Microsoft's considerable successes, few match the company's achievements with Exchange. The email package owns the lion's share of the market, claiming more than half of business email seats. And, as email traffic continues to grow by leaps and bounds, IT organizations are relying on Exchange more heavily than ever.

With more than 100 billion emails being sent and received daily, Exchange has become an essential part of nearly every IT organization's portfolio.¹ In fact, it's not a stretch to call email a strategic application; after all, think of what happens to employee productivity if email is down for even a few minutes.

But it's not just full-scale email service interruptions that annoy and worry IT decision makers. Slow, spotty and inconsistent email performance can create numerous problems that take time, energy and money to remedy. That is particularly the case since Microsoft began promoting Exchange as part of a unified communications suite that includes SharePoint and Skype for Business. As an embedded application within a unified communications solution, Exchange must sustain high performance even as it is more widely utilized within an organization.

That puts pressure on the underlying infrastructure Exchange runs on, as well as such capabilities as managing an increasingly complex email and communications platform with "five 9s" availability. Traditional infrastructure can no longer keep up with the dramatic improvements in functionality, integration, security and performance that Exchange users require. Another key challenge for Exchange shops is the fact that the application is becoming one of the most virtualized Tier 1 applications in the enterprise, and most legacy infrastructures are far from optimized for virtualization.

¹ ["Email Statistics Report 2014-2018."](#) The Radicati Group, April 2014



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As a result, an increasing number of IT organizations are moving to modernized, more efficient and better-managed solutions that are driven by hyperconverged infrastructure and built around a commitment to virtualization. Hyperconverged infrastructure is built on such fundamental elements as:

- Tightly integrated storage, compute and networking components that work right out of the box
- VM-centric architecture, including a VM-centric management approach
- Single shared pool of industry standard resources
- Built-in data protection
- Ease of scale
- Resiliency

Why Exchange Shops Need Hyperconvergence

Microsoft has made many important improvements in recent releases of Exchange; the newest versions have unique performance, utility and management issues that are quite different from older, legacy versions. Many of these improvements were made in response to the increasing importance of email within most organizations, as well as the huge growth of email volume and complexity.

As often is the case with updated applications, IT departments quickly realize that legacy infrastructure isn't designed to keep up with new application functionality. Of course, the massive growth in email volumes—often carrying attachments such as presentations, documents, sound clips and embedded video—has put even more pressure on traditional infrastructure stacks.

Some organizations have found a measure of relief by adopting first-generation converged systems, either as a result of reference architectures or integrated hardware components. But many others are looking for even more, such as broader hardware and software component integration, VM-centric architecture and management, improved data protection/disaster recovery and greater data efficiency along with the application performance that is a must-have for Exchange users.

That's where hyperconvergence comes in. With hyperconverged solutions, Exchange users benefit not only from a more modern approach to hardware convergence, but also from its more complete integration of other components, such as hypervisor, management console, data protection, WAN optimization, cloud gateway and data efficiency technologies.

Hyperconverged solutions also help alleviate one of traditional infrastructure's biggest shortcomings—infrastructure silos. These silos are inflexible, costly, difficult to scale and hard to manage, often requiring specialized IT staff to manage each point solution. This siloed approach often results in underutilization of hardware resources, but at the same time can also act as an IOPS drain on storage, especially when email volumes surge.

Another benefit of hyperconvergence is increased resilience and easier deployment, both due to tight component integration in a server appliance form factor and an optimized management framework.

Additionally, Exchange's integration within Microsoft's unified communications suite has put even greater performance demands on data center infrastructure, while adding still more management complexity. Addressing only the infrastructure issue or the management challenge isn't enough; hyperconverged infrastructure covers both bases.

Finally, there is another factor driving the growing adoption of hyperconverged infrastructure for Exchange: the desire of many IT departments to continue deploying and operating Exchange on-premises, as opposed to using cloud versions such as Office 365. While cloud certainly can be a viable architectural choice for Exchange, its growing strategic value as part of a more tightly integrated collaboration framework often lends itself to an on-premises model. In scenarios such as those, IT organizations want to ensure that their infrastructure foundation is more than equal to the task of managing growing Exchange workloads.

Requirements of a Hyperconverged Solution

Not all hyperconverged solutions are the same, and many vendors fail to include a number of functions and capabilities in their solutions that are essential for Exchange environments. These capabilities should include:

- **VM-centric architecture.** Managing all resources—physical and virtual—from a single pane of glass with a single click represents an alignment with the increasingly virtualized data center. This creates the ability to view and treat these systems as a collective, integrated pool of resources. Rather than managing LUNs or data stores associated with physical infrastructure, administrators manage and create policies around VMs, which is key to reducing complexity.

- Built-in data protection.** The increasingly strategic nature of Exchange, email files and data appended to those emails means that it is more essential than ever to protect the data. Add in compliance and discovery requirements, and lost or compromised data carries a huge cost.
- Data efficiency (deduplication, compression, data optimization) at ingest across the full data lifecycle.** Deduplication, compression and data optimization are fundamental requirements for Exchange, as the growing amount of email traffic increasingly creates performance bottlenecks and availability challenges. Remember that Microsoft no longer supports single-instance storage in its newer releases; this was a basic deduplication approach that helped cut down on the amount of storage needed for attachments.
- Industry-standard hardware platforms.** Hyperconverged solutions often run on enterprise-grade, reliable x86 hardware platforms, and appliance-based hyperconvergence gives organizations everything in the IT stack, delivered in a single compact building block.
- Support for large numbers of Exchange mailboxes.** Microsoft continues to expand the number of mailboxes supported by Exchange. Hyperconverged

solutions are optimized to all those mailboxes in tight, efficient configurations to keep Capex and Opex under control.

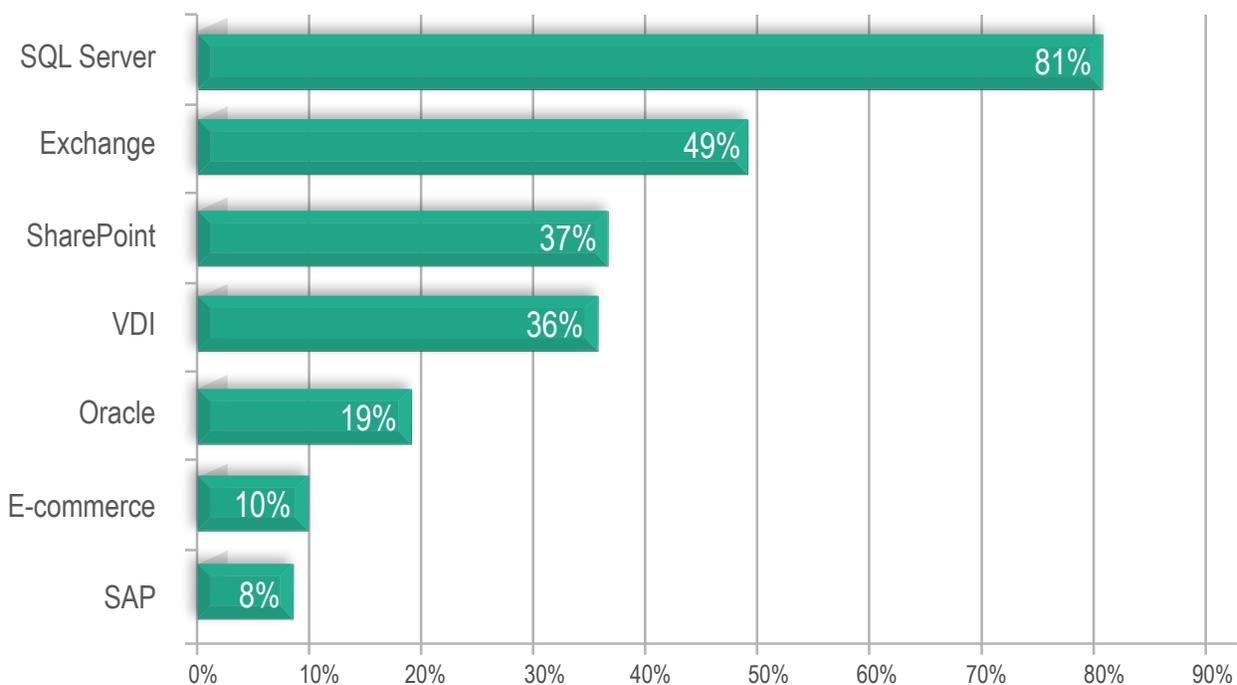
How HPE SimpliVity Fits With Exchange

Hyperconverged appliance solutions from Hewlett Packard Enterprise (HPE) are optimized to address the many challenges IT organizations face with the growing scale and scope of Exchange.

In 2017, HPE acquired SimpliVity and now offers HPE SimpliVity hyperconverged systems, complete hardware-software solutions that are designed, built, and supported by HPE. The infrastructure combines compute, storage services, and networking in a single 2U appliance, and incorporates all of the traditional IT functions: WAN optimization, unified global VM-centric management, data protection, cloud integration, deduplication, built-in backup, caching, and scale-out capabilities.

At the heart of the HPE SimpliVity hyperconverged value proposition is the HPE SimpliVity Data Virtualization Platform, a software layer that acts as a virtual controller on VMware vSphere ESXI. Rather than trying to reinvent the wheel with proprietary software platforms and management tools, HPE has embraced vCenter as its management console in the new HPE

Which application types are you running or planning to run on HPE SimpliVity?



SimpliVity appliances, and supports a range of well-established and proven management and orchestration software from different vendors.

HPE SimpliVity hyperconverged systems are based on three key components:

- **Built-in data protection.** Instead of dealing with the need to be more vigilant in protecting Exchange files and data through third-party backup software and add-on data protection appliances, HPE delivers built-in data protection with RPOs of less than 10 minutes and RTOs of just seconds. This ensures service-level agreements are met, eliminates cost associated with buying and integrating third-party backup solutions, and simplifies management while increasing operational efficiency.
- **VM-centric, global unified management.** HPE SimpliVity hyperconverged infrastructure's global unified management allows for the centralized management of all VMs across the entire federation globally through a single pane of glass. Policy management is handled at the VM level and promotes VM mobility. It also reduces IT administrative overhead by basing the management framework on VMware's vSphere, a familiar foundation for IT organizations.
- **Accelerated data efficiency.** Think about how many times one email is sent, forwarded, shared and archived. Now think about how many copies of that one email—which may include "fat" attachments—need to be stored. Through techniques such as deduplication, compression and data optimization, HPE SimpliVity hyperconverged infrastructure dramatically improves data efficiency ratios. In fact, customers see an average 40:1 efficiency ratio—although it is not at all unusual for customers to report ratios even higher than 100:1. With HPE's accelerated data efficiency, IT professionals and storage and backup administrators alike can eliminate the duplication among attachments across the entire Exchange environment while improving application performance.

Given the strategic nature of Exchange for most organizations, HPE has taken pains to implement techniques that help drive performance improvements, without adding management complexity and cost. The HPE OmniStack Accelerator Card improves performance through inline deduplication, compression and data optimization at ingest across all phases of the data lifecycle, globally. Offloading this processing

requirement mitigates any potential performance penalty otherwise experienced by VMs.

HPE SimpliVity hyperconverged appliances are designed to address the most significant challenge faced by Exchange administrators: how to deliver increased performance, scalability and resiliency without taking on significant new Capex or dramatically increasing management complexity.

With rising service-level agreements and the increasing complexity of legacy IT infrastructure running virtualized applications, IT organizations are resorting to cloud alternatives such as Office 365 to achieve agility and flexibility. However, they are often hesitant to lose control of their environment. HPE brings the agility and economics of the cloud into the data center while delivering enterprise capabilities.

Deploying a hyperconverged appliance for Exchange in a data center or remote office provides several important advantages over cloud solutions. First, Tier 1 applications like Exchange demand lightning-fast performance, particularly as email boxes proliferate and become increasingly clogged with unstructured data. Many organizations have encountered severe latency problems with cloud solutions that must send and receive data over wide geographic areas. Additionally, the continued proliferation of email workloads puts a premium on easy, fast and affordable scalability, which again tilts the scale in favor of hyperconverged appliances. Of course, there are lingering concerns—particularly among senior business executives—about cloud security and the need to rely on third-party organizations to properly control access to essential data such as intellectual property or customer records.

Conclusion

When IT professionals talk about mission-critical applications, they usually cover topics like OLTP, ERP, big data and others typically associated with organizational performance. But who would dispute the user anguish and economic impact when email systems are unavailable?

Microsoft Exchange's ascendancy to a Tier 1 application is undisputed, particularly as email volumes continue to mount. Add in the impact of compliance and legal discovery on email systems, and it's easy to understand why organizations are taking great pains to ensure the availability, performance, protection and manageability of Exchange.

More and more often, Exchange administrators are modernizing their underlying infrastructure in order to improve the resilience,

Real-World Success Stories for Hyperconvergence in Exchange Environments

CUSTOMER:
**Saddleback Valley Unified
School District**

This extremely large public school district was supporting over 3,000 Exchange mailboxes and experiencing performance bottlenecks as a result. Adding more hardware components wasn't a cost-effective solution because of scalability and management concerns, as well as Capex spending limitations.

Saddleback Valley adopted the HPE SimpliVity Data Virtualization Platform to significantly reduce data center hardware and simplify management. Capex was cut, and scalability was dramatically improved.

CUSTOMER:
**Central One Federal
Credit Union**

As Exchange transformed into a more strategic application, the credit union's IT team found itself needing to accommodate more mailboxes and significantly greater storage and management demands.

Moving to an HPE SimpliVity appliance helped the organization achieve a capacity savings of 300:1, cutting Capex and simplifying management.

responsiveness and scalability of Exchange. For many organizations, that has led to the adoption of hyperconverged infrastructure, because of the technology's flexibility, cost efficiency, ease of management and alignment with the growing trend towards virtualization.

HPE SimpliVity 380 hyperconverged appliances are optimized for the growing performance and management challenges of Exchange. The tight integration of all hardware components, as well as the hypervisor and VM-centric management framework, makes it the ideal solution for IT organizations looking to ensure their infrastructure can perform and keep pace with escalating and expanding Exchange volume and complexity—without busting the budget.

HPE SimpliVity hyperconverged infrastructure delivers the performance and scalability Exchange shops need, while the HPE SimpliVity Data Virtualization Platform makes the management of hardware and software components drastically easier, from configuration management and provisioning to data protection and VM mobility.

For more information, go to: www.hpe.com/info/simplivity

Hewlett Packard Enterprise (HPE) is an industry leading technology company with the industry's most comprehensive portfolio, spanning the cloud to the data center to workplace applications. HPE technology and services help customers around the world make IT more efficient, more productive and more secure. Early in 2017, the company acquired SimpliVity and now offers HPE SimpliVity hyperconverged systems, complete hardware-software solutions that are designed, built, and supported by HPE.