



2015 State of Virtualization and Storage Management — Survey Results

By David Davis, vExpert
Co-Founder, ActualTech Media

and

Scott D. Lowe, vExpert
Co-Founder, ActualTech Media

March, 2015

Developed in Partnership with



Table of Contents

- Table of Contents 2**
- Introduction..... 3**
- Demographics 3**
- State of Virtualization..... 5**
- Virtualization Management Challenges 8**
- DevOps Adoption..... 8**
- Storage Management Challenges..... 9**
- State of Software Defined Storage..... 13**
- Virtualization and Storage Tools..... 13**
- State of the Hybrid Cloud 18**
- State of Hyper-Converged Infrastructure 18**
- Conclusion.....20**



ActualTech Media © 2015. All rights reserved.

Under no circumstances should this document be sold, copied, or reproduced in any way except with written permission.

The information contained with the document is given in good faith and is believed to be accurate, appropriate and reliable at the time it is given, but is provided without any warranty of accuracy, appropriateness or reliability.

The author does not accept any liability or responsibility for any loss suffered from the reader's use of the advice, recommendation, information, assistance or service, to the extent available by law.

Introduction

Most modern data centers have become quagmires of chaos. With multi-tiered applications, hybrid clouds, multi-sites, and latency-sensitive applications combined with 24x7 expectations, slashed budgets, and a constant rate of change, many data center managers and administrators are in a constant state of struggle, grasping for anything as they (perhaps unknowingly) fall farther into the abyss.

Virtualization along with storage monitoring and management solutions are helping, but how widely deployed are they? Are administrators seeing capturing the full promise of proactive problem solving in the data center?

To find out the answers to these questions and more, we at ActualTech Media surveyed 1,373 technologists in early 2015 during our annual State of Virtualization and Storage Management Survey. The survey was designed to gather information about what companies are doing in their data centers when it comes to managing dynamic virtual and storage infrastructures, such as what tools they use, how their tools help them, where their tools could be improved, and much more.

Read on to discover the state of virtualization and storage management in the data center as of 2015.

Demographics

The first step to understanding the state of virtualization and storage management is to understand more about the companies using these data centers. So, to gain understanding about their perspective, we asked a series of demographics questions, including, how many people work in their company, how large the IT staff is at their company, and what industry vertical their company is in.

Company Size

What we found is that there is great variety in the number of employees at each company (shown in Figure 1). For example, the single largest group of those surveyed (300 respondents) said that their companies had over 5,000 people. However, the groups with the next highest levels of respondents said they worked at places that 500 people or less. In fact, over 200 of the respondents worked at companies with less than 100 people.

Such a wide variety of company sizes means that the cross section of technologists surveyed is a strong representation of the technologists at a variety of companies around the world.

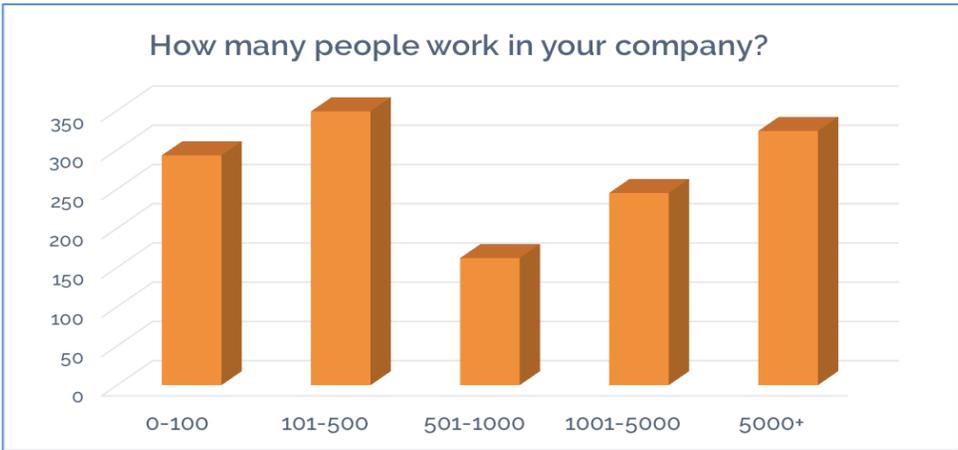


Figure 1

IT Staff

In Figure 2, you can see that with a wide-variety of company sizes in the survey response pool, there is also a wide range when it comes to the size of IT staff. Over 375 respondents have an IT staff between 1–10 people. Whereas, on the other end of the spectrum, over 250 respondents have over 100 in their IT staff alone.

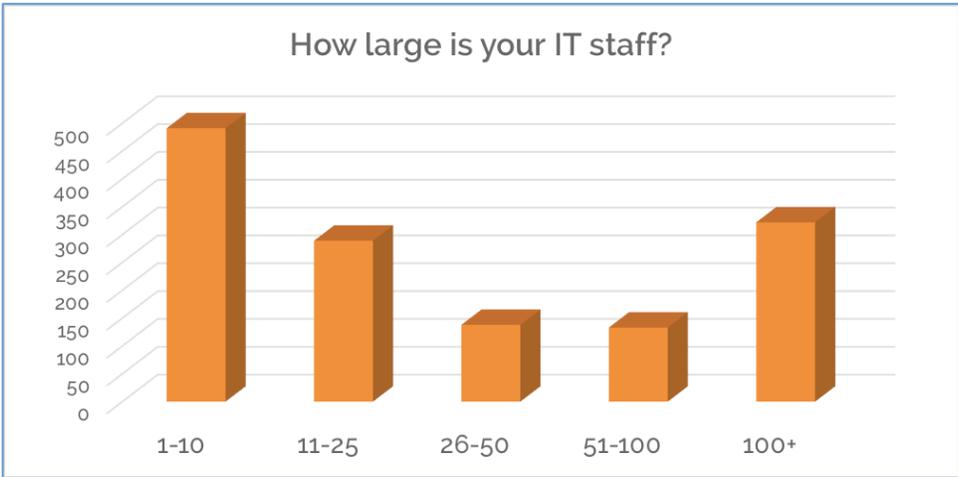


Figure 2

As the responses later in the survey results will show, there is no correlation between the size of the IT staff and the need for improved and integrated virtualization and storage management tools in the data center.

Industry Verticals

The last of the demographic data shows, when correlated with survey responses later in this results report, that virtualization and storage management struggles appear, no matter the industry vertical that a company is a part of (Figure 3). Survey respondents work for finance, banking, insurance, energy, oil and gas, manufacturing, high tech, telecommunications government, transportation, travel, and retail.

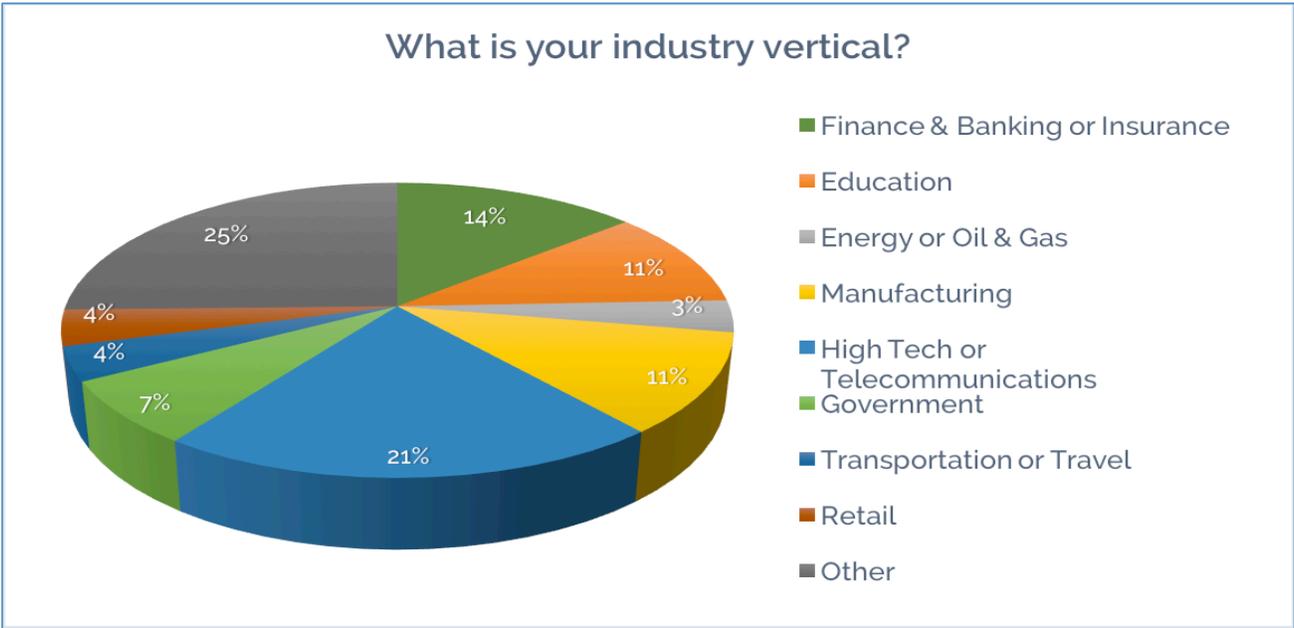


Figure 3

State of Virtualization

Next, we polled respondents on the state of their virtual infrastructure. It's well known that the virtualization of physical servers into virtual machines is on the rise; however, the percentage of servers virtualized across all companies varies greatly. Once again, the survey pool shows that a solid cross-section of all worldwide companies are in varied states of virtualization, with the largest group of respondents already having virtualized 70% or more of their servers (Figure 4). On the

other hand, approximately 100 respondents are somewhere between having not started with server consolidation and 10% virtualization.

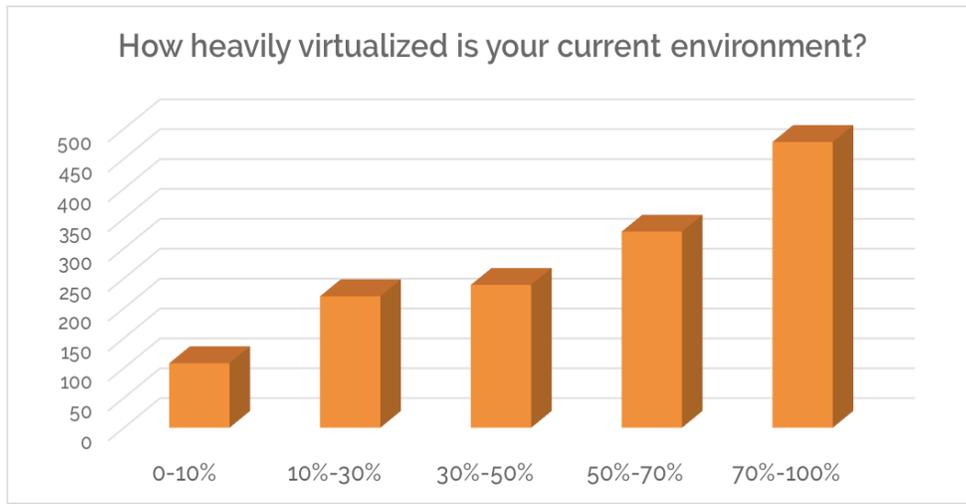


Figure 4

Hypervisors

So what are most companies using to virtualize their servers? Figure 5 shows that approximately 70% of those surveyed use VMware vSphere with Microsoft Hyper-V coming in second with roughly 38% of all data centers.

“VMware vSphere is the preferred hypervisor in ~70% of all data centers”

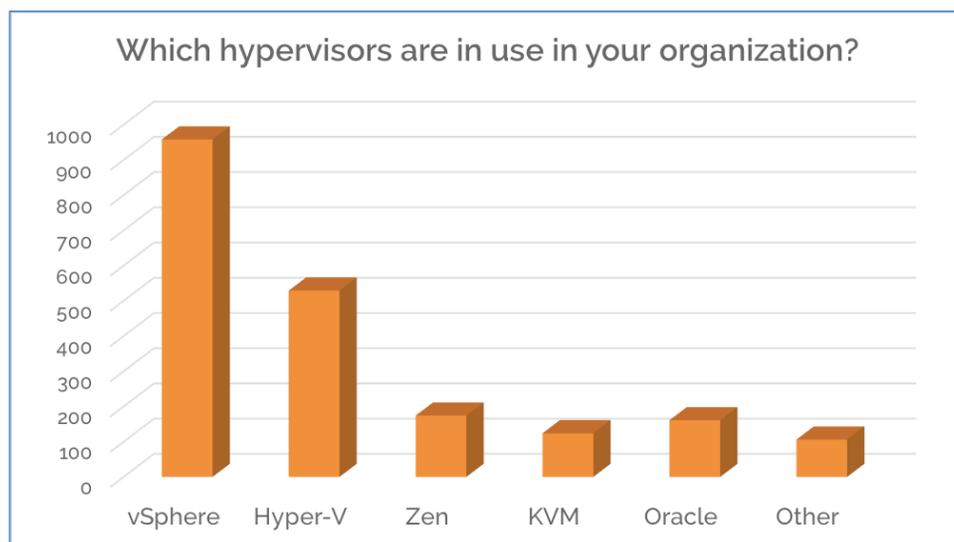


Figure 5

Virtualization Hosts and Machines

Just how many hosts and virtual machines do the more than 1,300 companies run in their virtual infrastructures? There was a split between the data centers that had 4 to 10 virtualization hosts and those that had large virtual infrastructures with over 25 hosts (shown in Figure 6). The vast majority of those surveyed have 100 or more virtual machines in their virtual infrastructures (Figure 7).

Overall, there was a varied mixture of virtual infrastructure sizes. Only about 4% of all respondents stated that they hadn't started virtualizing the physical servers in their data center (and thus had no virtualization hosts or virtual machines).

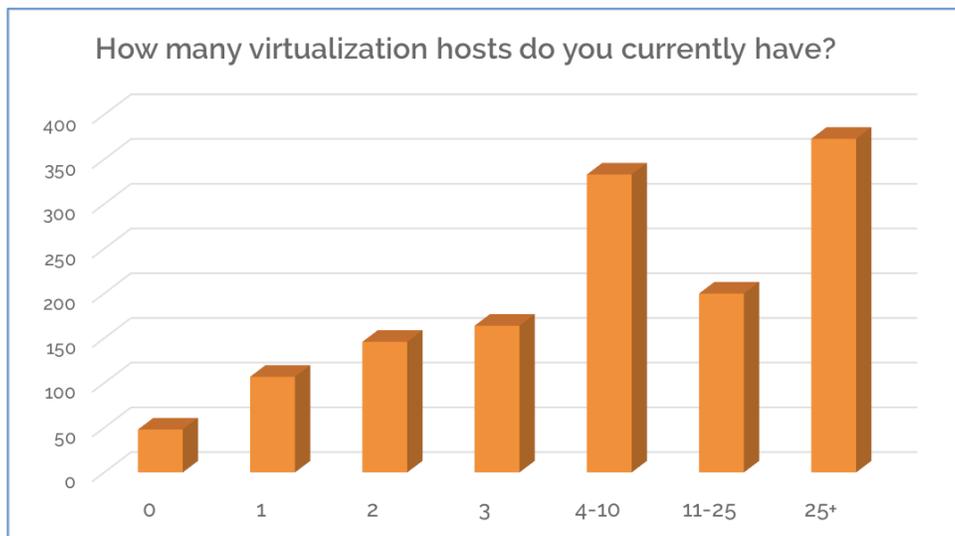


Figure 6

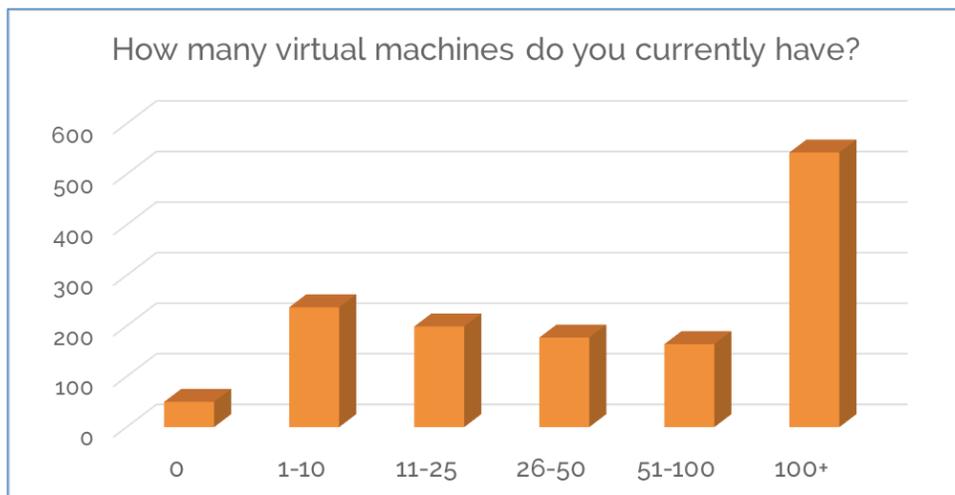


Figure 7

Virtualization Management Challenges

With demographics and state of virtualization consolidation out of the way, we can now look at virtualization management challenges. What are the challenges companies face when it comes to managing their growing and dynamic virtual infrastructures?

Based on the responses shown in Figure 8, you can see that the companies struggle with many aspects of virtualization management. In fact, each challenge that we suggested received at least 75 responses. However, this list of virtualization management challenges can be boiled down to the top 5 virtualization management challenges facing today's companies as shown in the call-out box.

Top 5 Virtualization Management Challenges

1. Capacity planning
2. Performance issues
3. Storage Performance
4. Storage Capacity
5. Virtual machine configuration issues

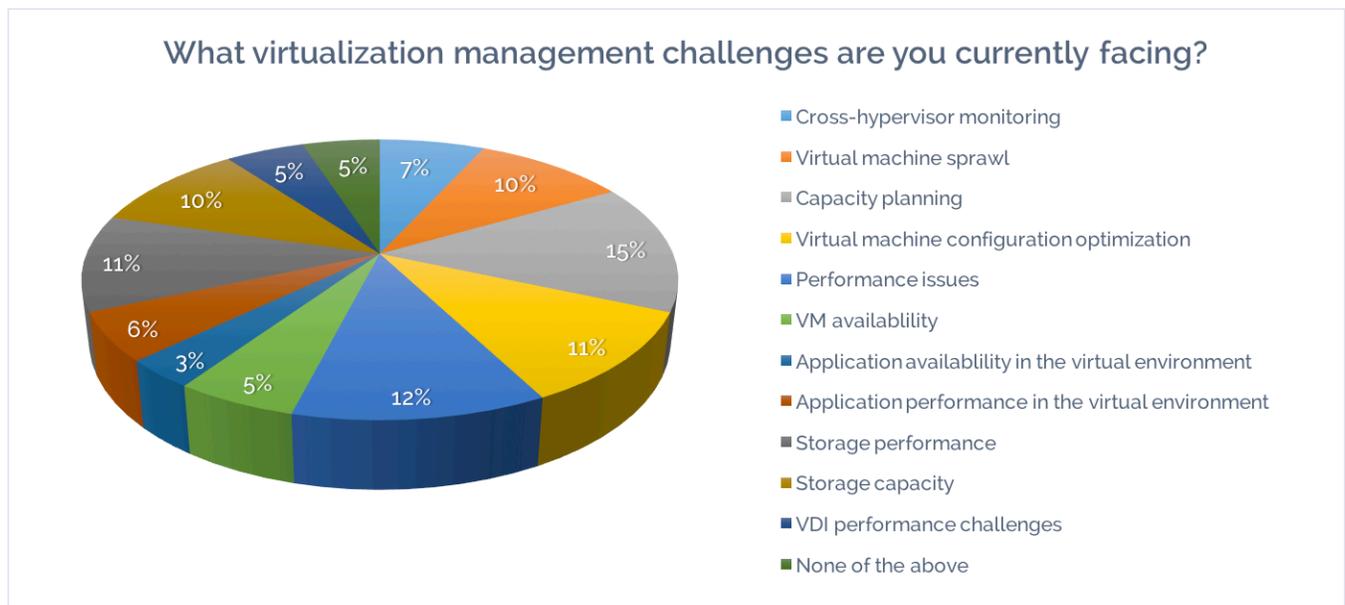


Figure 8

DevOps Adoption

In order to gain greater efficiency and agility in their IT department, many companies are moving to a "DevOps" mindset. Just as the IT infrastructure silos of compute, storage, and network break down, so do the traditional silos of development and operations. DevOps is the cooperation (and sometimes the merging) of the development and operations groups into a single DevOps group. In order to be successful, DevOps requires greater communication, collaboration, integration and

automation. The payoff for companies willing to put in the effort is far greater efficiency and productivity in IT.

While DevOps offers many benefits and has gained great popularity, based on the responses in Figure 9, it would seem that the vast majority of companies have yet to implement DevOps and only about 10% have even started to evaluate DevOps solutions.

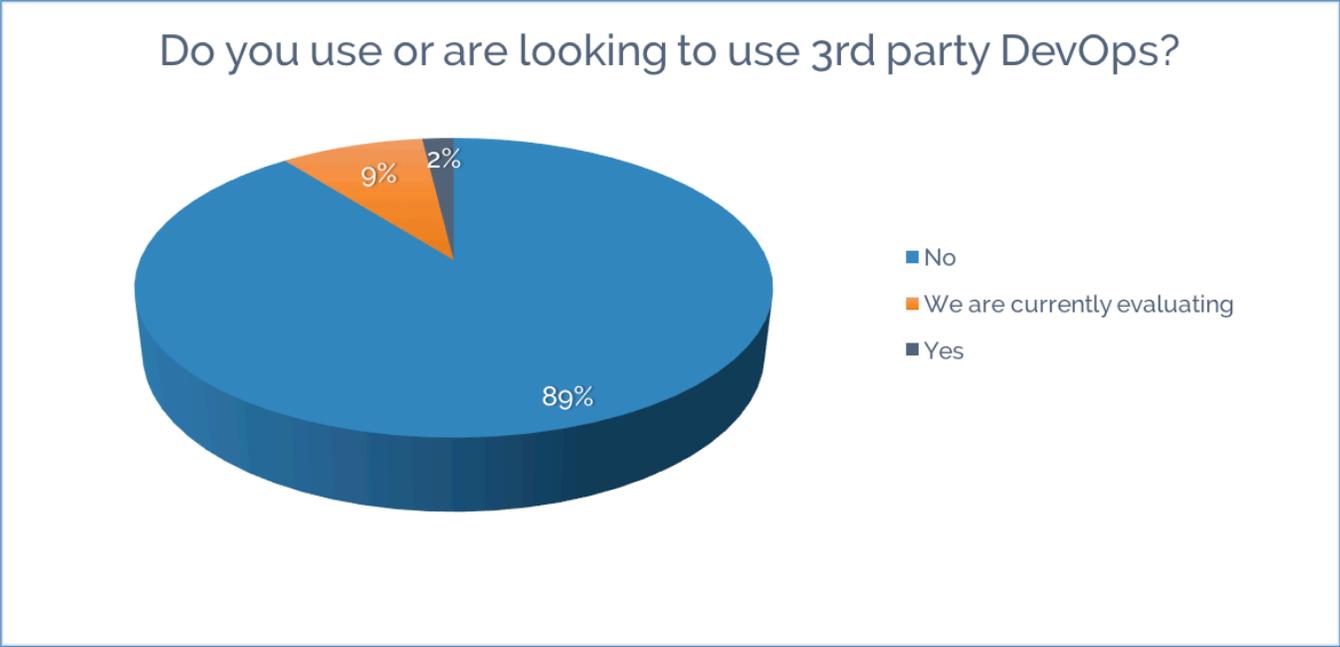


Figure 9

Those who have not yet considered using a DevOps solution (or who are currently evaluating a solution) cite concerns such as safety and a lack of understanding the virtual layer. However, those that have fully moved to a DevOps solution have found that it makes it easy for users to maintain and provision virtual machines as needed.

Storage Management Challenges

We've discussed virtualization management challenges, but what about storage management challenges? Storage is one of the most critical resources of any virtual infrastructure. Without solid and predictable storage performance, all virtual machines in the virtual infrastructure can grind to a halt resulting in critical tier 1 apps going down. Because of this, smart companies are utilizing virtualization management solutions that bring storage analytics into the mix.

Storage Environments

Figure 10 shows us that the amount of storage dedicated to the virtual infrastructure varies greatly from one company to the next.

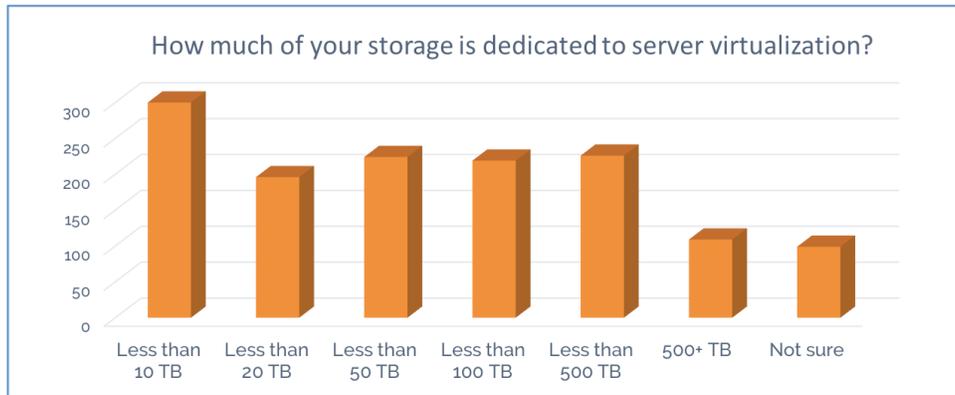


Figure 10

In Figure 11 you can see that most companies have between 20TB and 500TB of data to manage. Many companies have over 500TB of data to manage. With the demands that a dynamic and growing virtual infrastructure places on storage, you might guess that these companies face a lot of storage challenges (and you'd be guessing correctly).

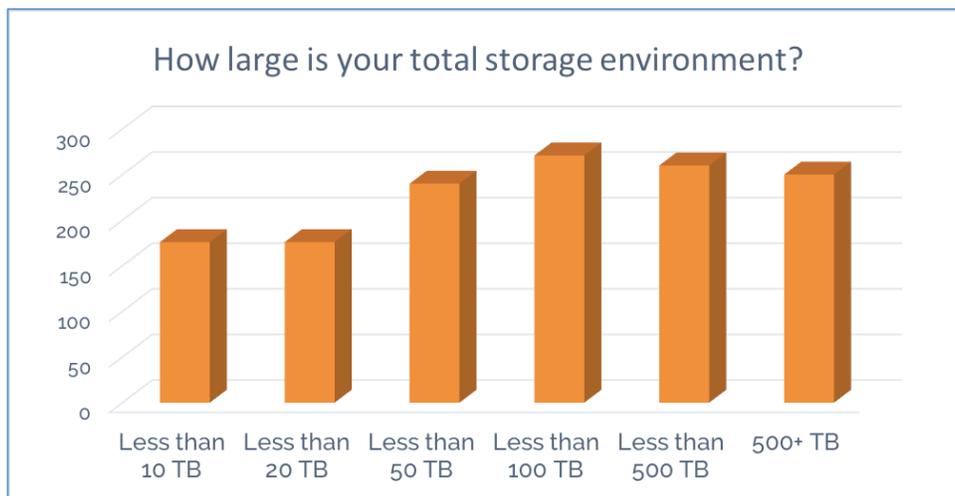


Figure 11

Storage Challenges

Figure 12 shows that the single most common storage challenge companies face is storage capacity growth and storage capacity planning. As that storage continues to grow, companies said that they are struggling to identify storage performance bottlenecks. They struggle with scaling their storage to meet demands, correlating information in the virtual infrastructure and storage infrastructure, and finally, simply monitoring storage. The survey results point out that storage monitoring and management is critically important to most all companies — especially related to storage performance and capacity for the virtual infrastructure.

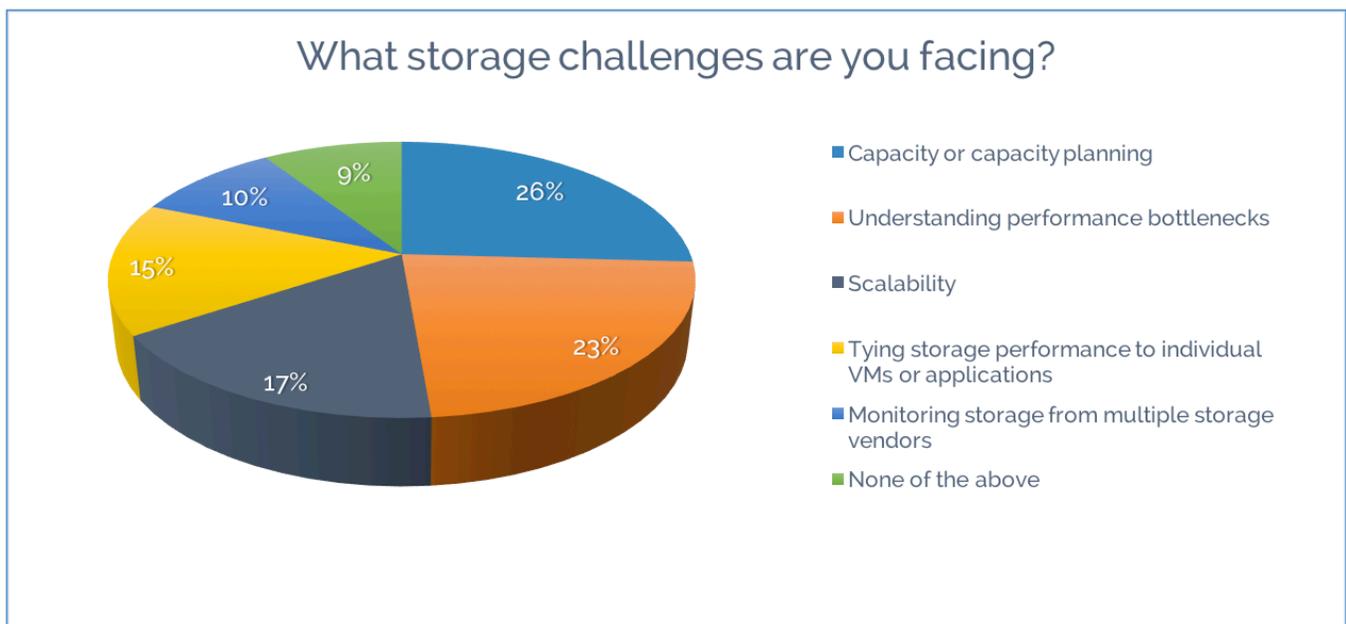


Figure 12

Storage Vendors

When asked what storage vendors were in use, there was great variety. However, three solutions stood out with a total of 51% of all companies:

- 16% use EMC VNX
- 17% use NetApp
- 18% use Dell Equlogic

The full survey results of the storage vendors used by all survey respondents are below in Figure 13.

What storage vendors do you currently have deployed?

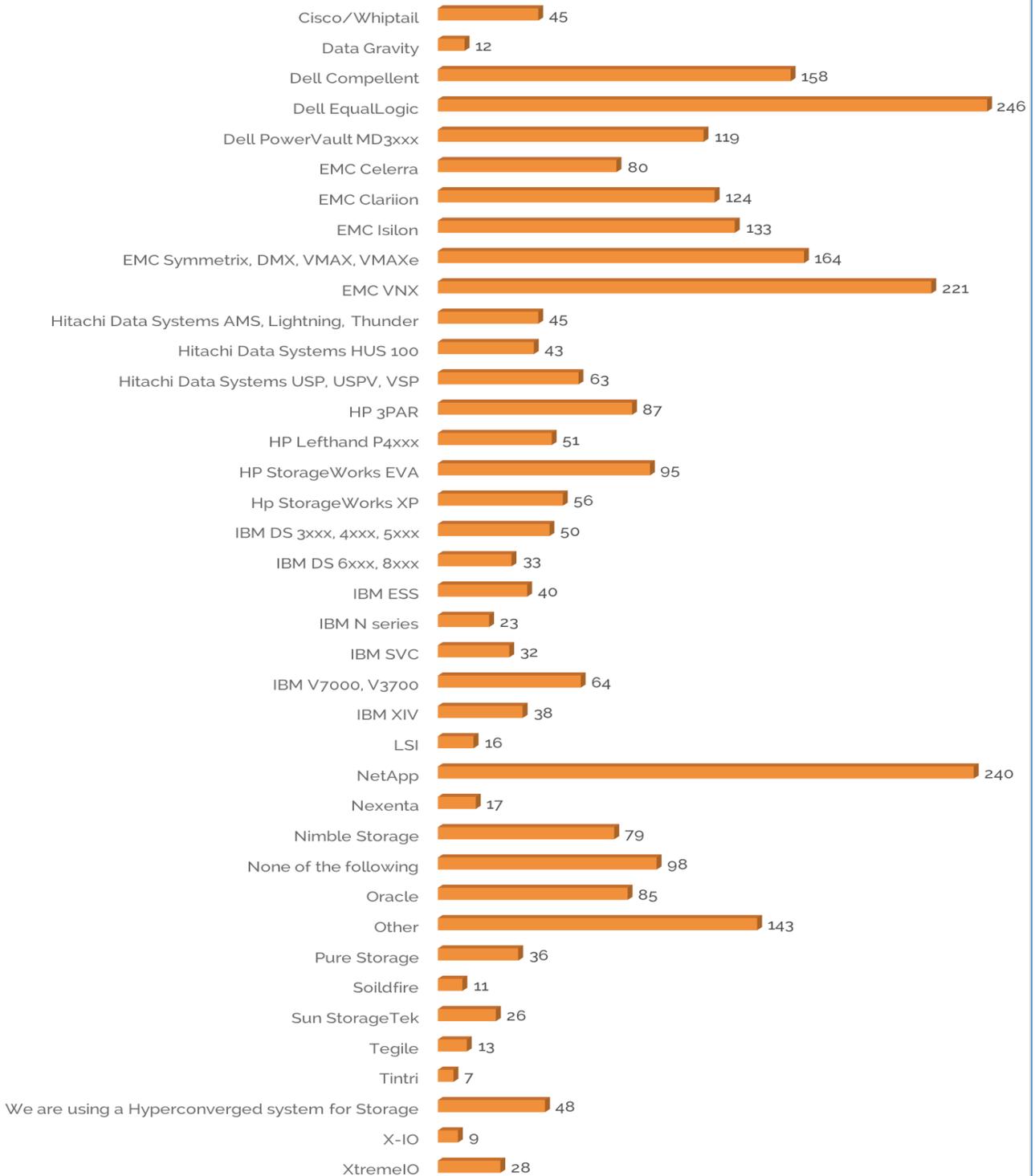


Figure 13

State of Software-Defined Storage

Technology media and the growing number of vocal start-ups seems to indicate that the popularity of software-defined storage (SDS) is skyrocketing. However, the survey results tell us something quite the opposite. We found that 87% of all respondents have **no current plans to evaluate software-defined storage** (Figure 14) — a surprising deviation from the expected!

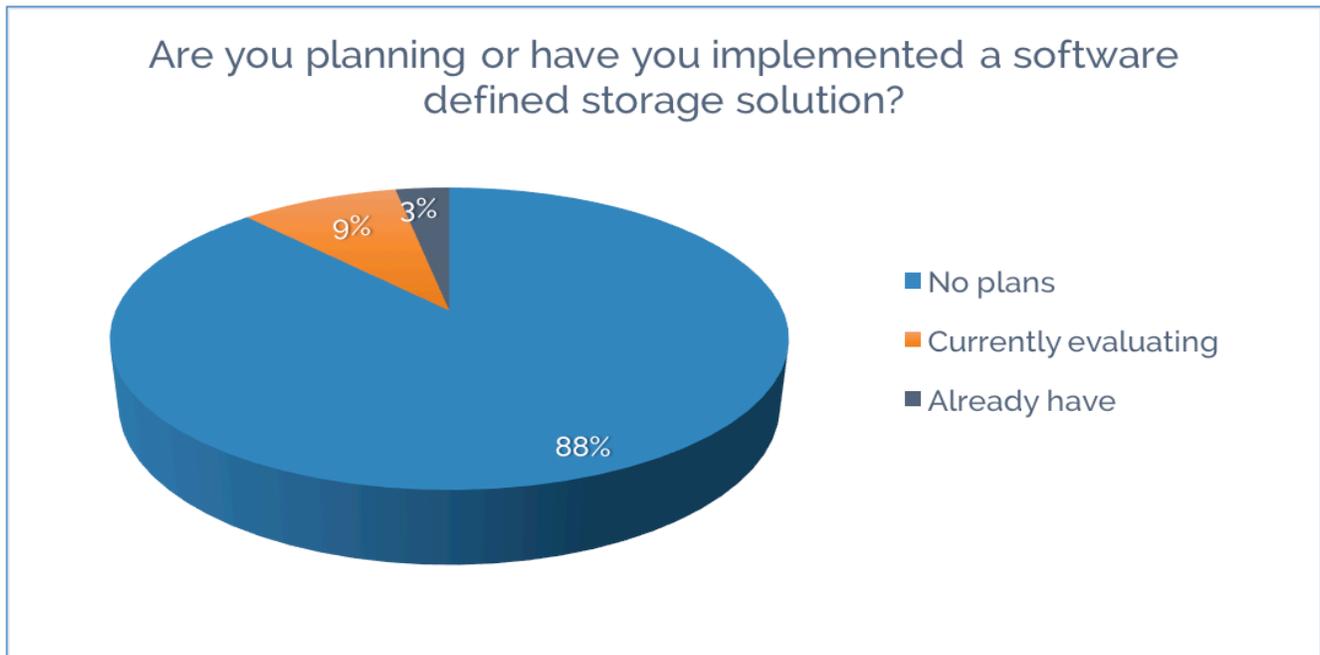


Figure 14

We also asked those who are currently evaluating SDS solutions, or have already implemented one, which vendors they were using or interested in (approximately 13% of all companies). The most common SDS solution mentioned was VMware VSAN.

Virtualization and Storage Tools

We found that one of the greatest challenges that companies face with preventing or solving virtualization and storage issues is having the right tool (or tools) in place that have all the information necessary to do the job. Unfortunately, too many companies either don't have any tools (or perhaps don't know how to use them). Alternatively, they have way too many tools in place and can't use them effectively.

Existing Storage and Virtualization Tools

Figure 15 shows that the survey respondents indicated that:

- 21% have no storage and virtualization tools in place
- 22% have 1 tool in place
- 44% have 2–4 tools in place
- 12% have 5 or more tools in place (with 3% of those even having as many as 8–10 tools)

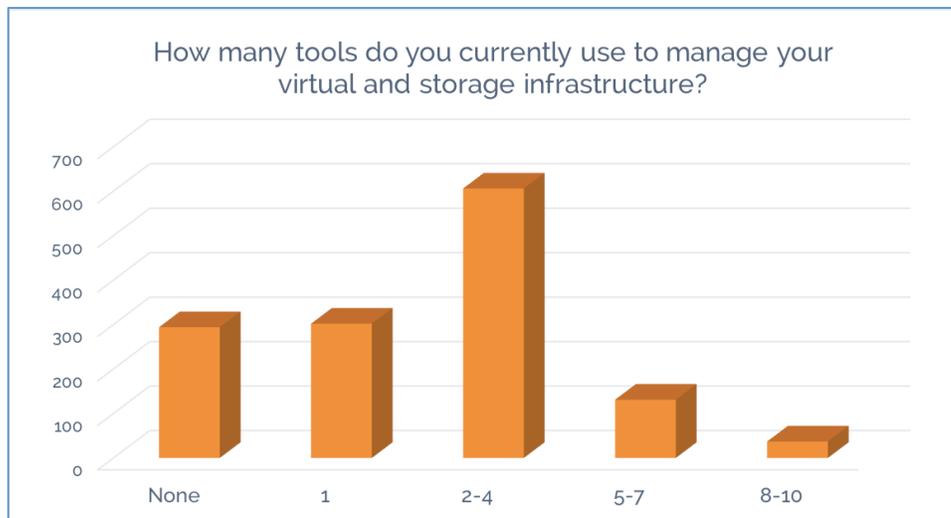


Figure 15

The responses shown in Figure 16 show us that a large number (about 27%) don't even have a virtualization and storage monitoring system in place, and, for those that do, they struggle to get actionable intelligence out of them.

It's likely that the 78% of the respondents that either have no tools or have more than one tool could be much more efficient if they had just a single tool for virtualization and storage infrastructure management and monitoring.

These respondents can't quickly correct anything from within the system, and they don't have a tool in place that monitors both storage and virtualization, in one.

What is missing from your existing monitoring system?

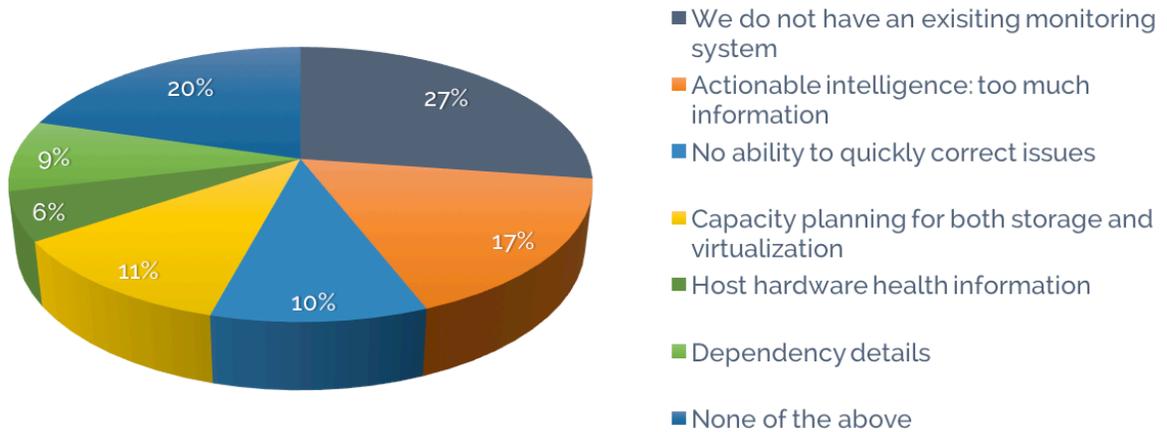


Figure 16

Due to these storage and virtualization management inefficiencies, only 32% of companies can resolve an issue in their virtualization or storage infrastructure in under an hour (Figure 17). The remaining companies spend over an hour (with some spending 24 hours or even 48 hours) to find the root cause of a problem and get their most critical applications back up and running.

Only 32% of companies can resolve their storage and virtualization outages in under an hour.

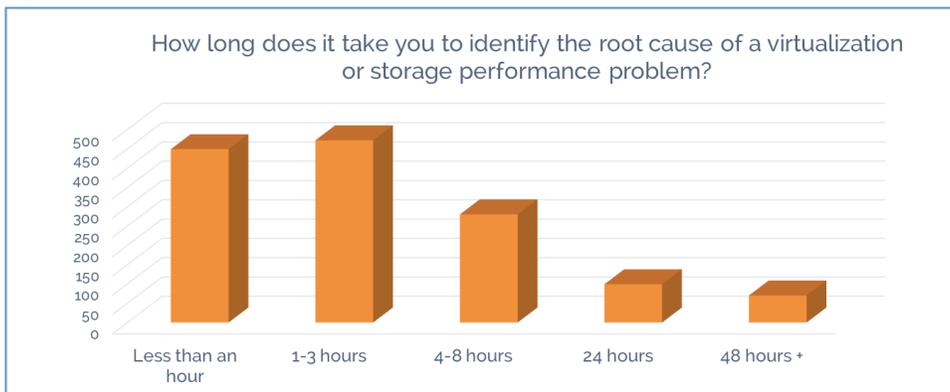


Figure 17

Consideration of New Management Tools

When it comes to virtualization management tools, the majority of those surveyed say that analytics, automated remediation, and cloud mobility are all features that their next virtualization management tool should offer (Figure 18, 19, and 20).

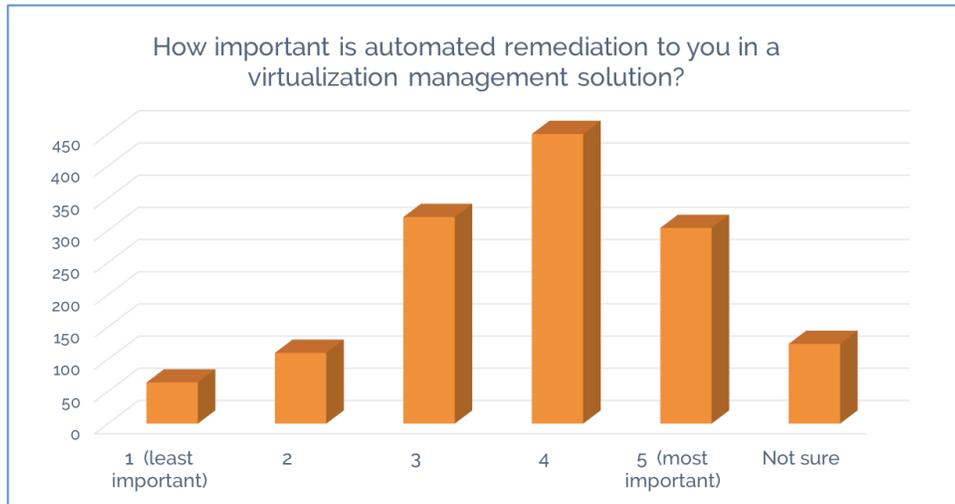


Figure 18



Figure 19

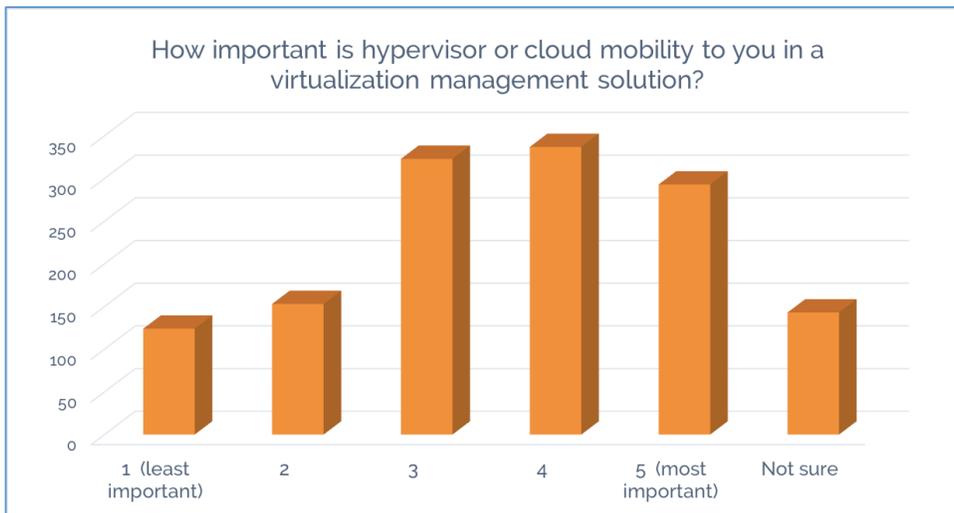


Figure 20

According to Figure 21, some 44% of all respondents are either actively evaluating or are interested in evaluating a new virtualization and storage monitoring/management solution.

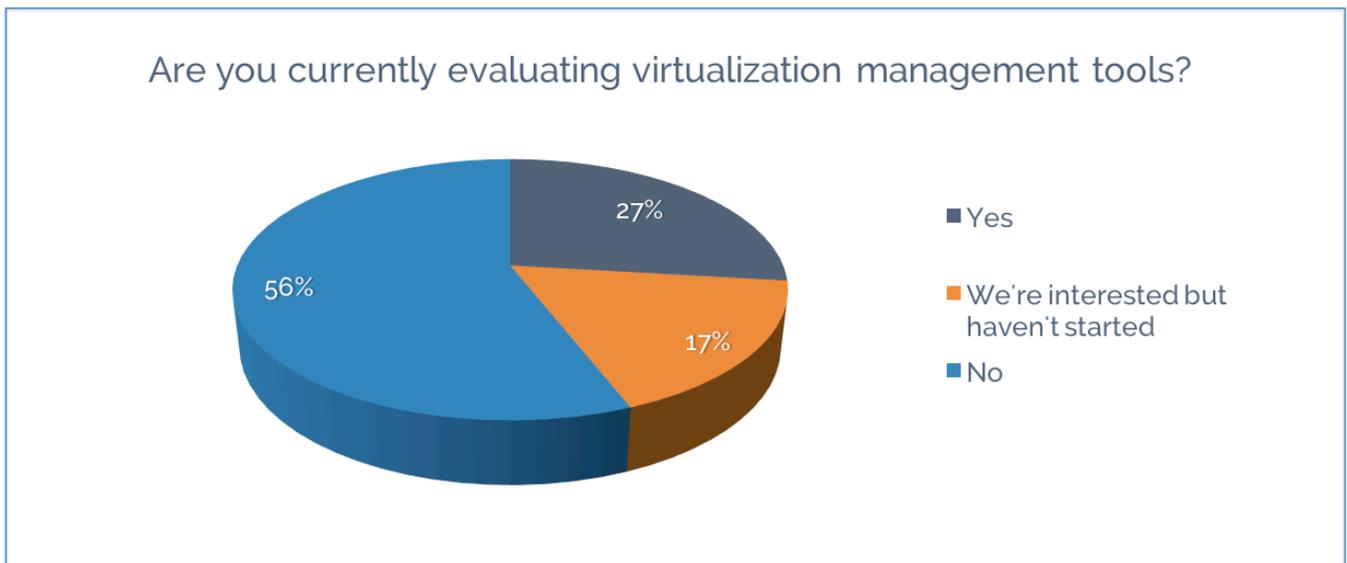


Figure 21

State of the Hybrid Cloud

What about "the cloud"? Tech media and commercials tell us that everything is "moving to the cloud," but are businesses really considering the hybrid cloud? According to the responses in Figure 22, 80% of respondents currently aren't running or have no plans to run a hybrid cloud.

Of the small percentage of companies who have implemented a hybrid cloud, the vendors most mentioned or preferred were VMware vCloud Air and Amazon AWS.

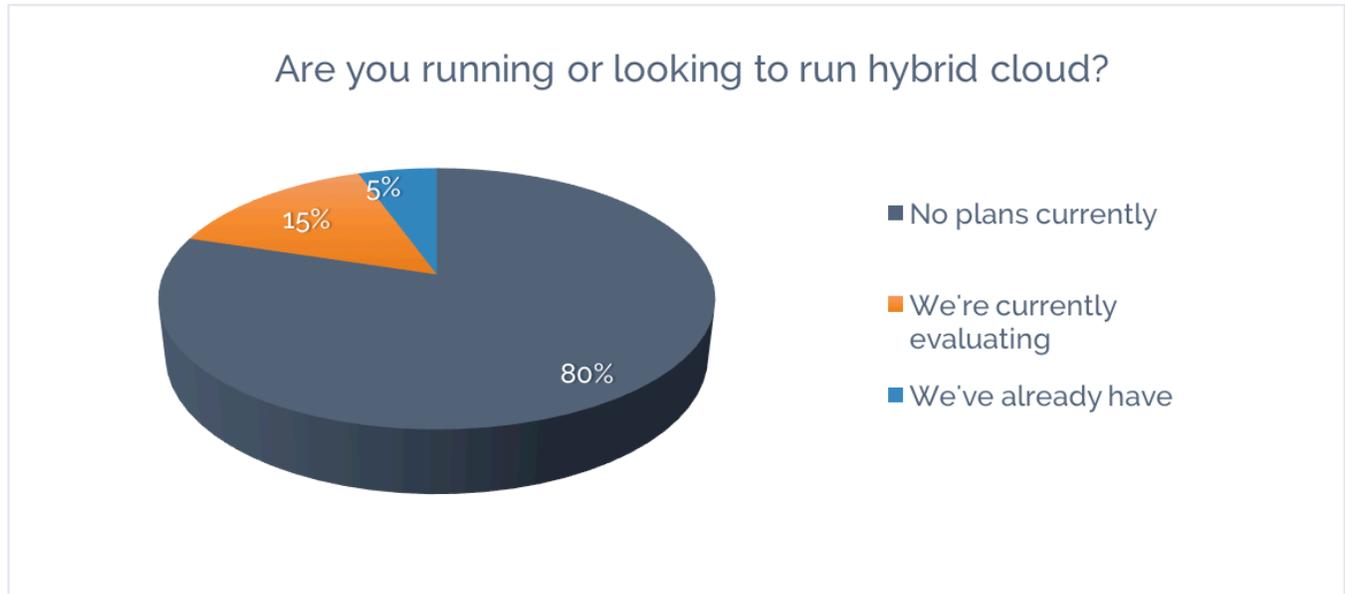


Figure 22

State of Hyper-Converged Infrastructure

The last area that our survey explored was related to the hyper-converged infrastructure. Hyper convergence of compute and storage eliminates the storage layer (folding it into compute) and greatly simplifies daily operations (usually saving money in the process). We found that, similarly to the hybrid cloud, despite the benefits roughly 80% of all respondents say that they currently have no plans to evaluate hyperconverged infrastructure for their data center (Figure 23).

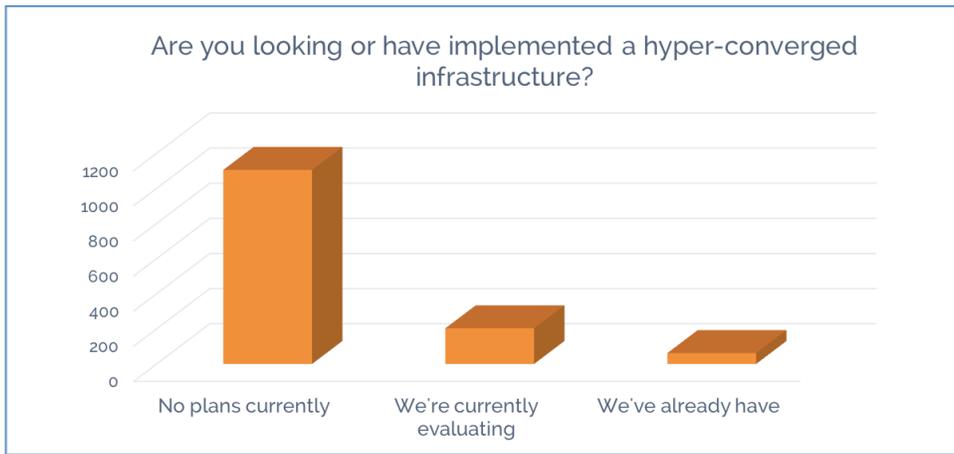


Figure 23

Of those who said they were considering or using a hyper-converged infrastructure, most said that they were evaluating or using either SimpliVity or Nutanix (Figure 24).

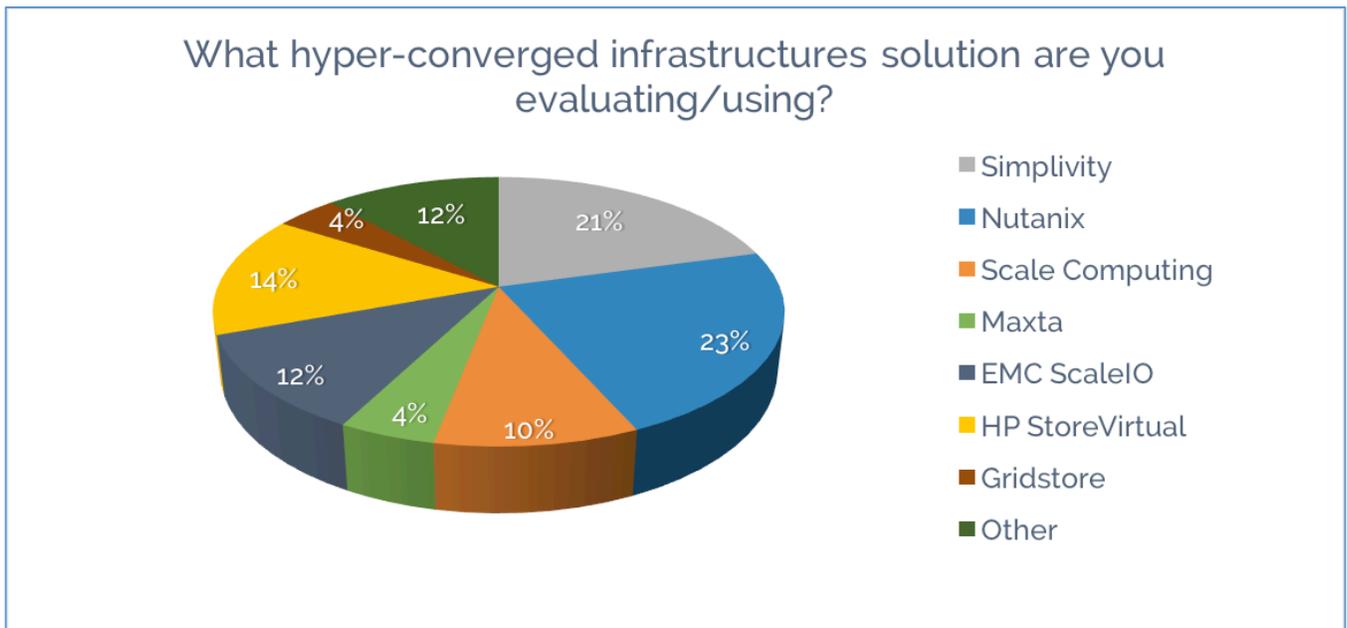


Figure 24

Conclusion

Do today's data centers stand a chance of conquering the chaos, beating latency before it happens, and regaining control of the storage and virtual infrastructure? What have we learned from this survey?

Overall, companies of all sizes are moving faster to virtualize their servers and consolidate their storage, but management tools aren't always adapting quickly enough. New virtualization and storage monitoring and management solutions are smarter because they are able to monitor both storage and virtualization; however, enterprises need to move more quickly to adopt them.

By implementing a single tool for performance monitoring and capacity management, across the entire data center, administration teams can become more efficient, prevent downtime before it happens, and identify root cause when needed.

Will your company finally tame the data center chaos or be left behind?

About the Authors



David Davis is a well-known virtualization and cloud computing expert, author, speaker, and evangelist. David's library of popular virtualization video training courses can be found at Pluralsight.com. He holds several certifications including VCP5, VCAP, CCIE, and has been awarded the VMware vExpert award 6 years running. His website, covering the latest in virtualization is VirtualizationSoftware.com.



Scott D. Lowe is Senior Editor of EnterpriseStorageGuide.com. Scott has been in the IT field for close to twenty years and spent ten of those years in filling the CIO role for various organizations. Scott is also a micro-analyst for Wikibon and an InformationWeek Analytics contributor. In addition, Scott has also written thousands of articles and blog postings and regularly contributes to such sites as TechRepublic, Wikibon, and virtualizationadmin.com. Because of his unique blend of skills (CIO/strategic & Engineer/tactical), Scott is also a sought-after resource for marketing collateral, including white papers and e-books, for a variety of technology firms.