

STATE OF STORAGE 2015

EXECUTIVE SUMMARY

In March 2015, we conducted the State of Storage study with 1,020 data center professionals. We offered all respondents advance copies of this final report so that they could compare their pains and priorities to those of their peers.

Our study reveals that data center professionals continue to struggle with long-standing pain points—professionals name performance (**50%**), capital expenses (**41%**), and scaling to manage growth (**40%**) as their top three pains. Rapid adoption of virtualization amplifies this—in the past decade the percentage of virtualized workloads has grown from **2%** to **75%** (Gartner, March 2014). Moreover, in our study, **38%** of respondents already use multiple hypervisors, and there is a pronounced shift from legacy storage providers toward emerging providers.

We wish we could share that the shift lessens storage pain. On the surface, the performance and manageability of emerging solutions satisfy our respondents far more, but under the covers they still spend as much time on manual manipulation as they do with legacy providers—a **2:1 ratio** of time spent tuning LUNs and troubleshooting vs. diving into strategic projects.

As decision-makers and influencers seek alternative solutions, they continue to use dated criteria to evaluate providers—cost-per-gigabyte (#3 criteria) and vendor relationships (#4 criteria) are primary examples. If this “buying guide” needs to be reconsidered, now is the time. Respondents project that storage and private cloud spend will be the fastest areas of growth over the next three years.

It all tallies up to a breaking point on the horizon. Respondents are frustrated with legacy providers’ inability to support the shift to virtualization. They need to transform the role of storage in their data center from inhibitor to enabler. That means finding solutions with a fundamentally different architecture: one built specifically for virtualization and cloud.

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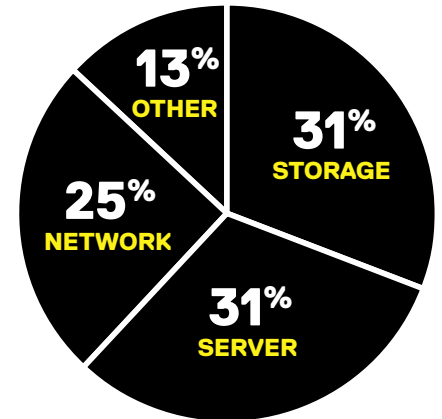
SECTION 1: RESPONDENT PROFILE

So, who are the 1,020 data center professionals who responded to the State of Storage study? Let us tell you a little about them:

Job role. Respondents represent a cross-section of data center accountabilities. **31%** state storage as their primary responsibility. **31%** claim server. And a further **25%** are primarily responsible for network. The remaining **13%** fall into a “Non-IT” category, writing in roles that span engineering, product management and more.

Across the board, they’re an experienced bunch—**57%** of respondents have more than 5 years of experience in their current function.

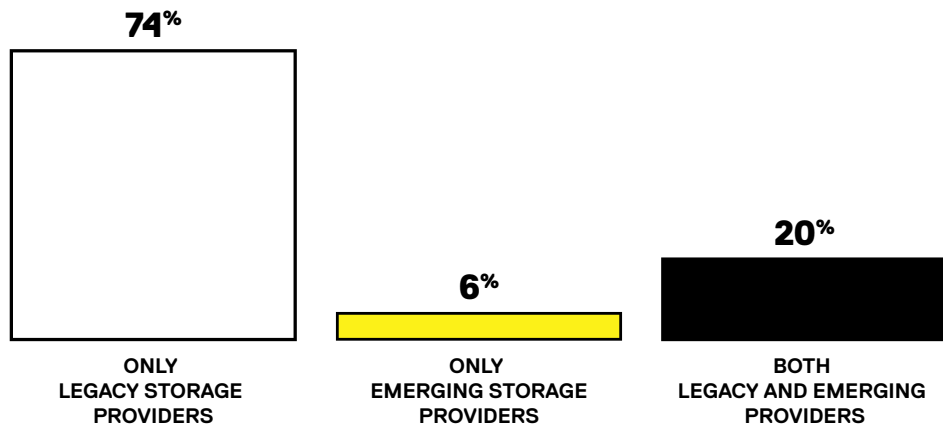
Storage type. Since this is a state of storage study, we asked respondents which specific storage providers had a footprint in their data center. In analyzing the results, we assigned providers into one of two groups:



Legacy providers: Dell, EMC, Fujitsu, Hitachi, HP, IBM and NetApp

Emerging providers: Nimble, Nutanix, Pure, Solidfire, Tegile and Tintri

We learned that **74%** of respondents use **ONLY** legacy storage providers, **6%** of respondents use **ONLY** emerging storage providers, and **20%** use some combination. Later in this report we’ll slice up responses by storage type used—you’ll see that the three different groups here have different expectations and unique pains.



SECTION 2: STORAGE PAIN

When it comes to storage, everybody has aches and pains—are you suffering the same maladies as your peers? We asked respondents to categorize their biggest storage pain points and performance (**50%**) is clearly the sharpest pain. In a second tier are capital expenses (**41%**), scaling to manage growth (**40%**) and manageability (**39%**).



Then we took the above pains and put them through an x-ray machine. First, we looked at pain by job role. Respondents whose primary responsibility is storage are MORE likely to experience pain from capital expenses, operating expenses and cloud than their peers with other job roles—whereas the respondents accountable for server are pained by the constant pressure to better scale.

It's time for a quick primer on reading the tables in this report. The arrows indicate correlation. Yellow boxes tell you that the responses have a significant, positive correlation. Black boxes tell you that the responses have a significant, negative correlation.









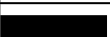


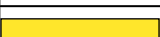


Column %	Network	Storage	Server	Non-IT	NET
Performance (latency)	48%	58%	54%	47%	53%
Manageability (admin time and effort)	31%	40%	39%	44%	38%
Capital expenses (reduce spend)	34%	48% ↑	39%	17% ↓	39%
Operating expenses (reduce ongoing cost)	23%	38% ↑	23%	19%	28%
Cloud (changing business model)	18%	30% ↑	16% ↓	14%	21%
Scale (managing growth)	21% ↓	40%	51% ↑	22% ↓	39%
Security (data availability and safety)	27%	24%	28%	36%	27%
Other	4%	3%	4%	6%	4%
NET	100%	100%	100%	100%	100%

Next we cut the numbers by the storage type used. We want to know—are the people with legacy storage environments experiencing the same pain levels as those using only emerging providers? In short: no.

Below, you can see that respondents using only legacy storage feel a LOT more performance pain (**+23%**) and manageability aches (**+18%**) than their peers using only emerging providers. In fact, the pain caused by emerging providers is less across every single measured dimension.



BIAS ALERT: *The irony is the perception that sticking with the legacy ‘incumbent’ is the path of least resistance, or certainly of lowest career risk. The reality—based on these numbers—is that legacy providers create a ton of friction. The performance pain puts storage admins in the sights of end users, and the manageability pain costs them evenings and weekends. There’s a case to be made that sticking with legacy providers is in fact risky business.*

	Column Sample Size	Traditional Only	Storage Segments Next Gen Only
	Column %	381	33
Storage Pain Points	Performance (latency)	 53% ↑	 30% ↓
	Manageability (admin time and effort)	 39%	 21% ↓
	Capital expenses (reduce spend)	 44%	 36%
	Operating expenses (reduce ongoing cost)	 31%	 27%
	Cloud (changing business model)	 22%	 21%
	Scale (managing growth)	 42%	 33%
	Security (data availability and safety)	 29%	 15%

Performance pain is pretty well understood, but how do we parse problems with manageability? We asked respondents how they spend their time on a week-to-week basis. Answers were on a scale, for which we created an index. So, the numbers below shouldn’t be looked at in isolation, but relative to one another.

Time Drains (in descending order)	Weighted Index (All Providers)
Tackling strategic projects	4.7 (Most time spent)
Troubleshooting	2.6
Engaging vendors (sales & support)	2.4
Adding or Moving VMs	2.0
Replicating and Cloning VMs	1.7
Tuning LUNs and volumes	1.5 (Least time spent)

For example, respondents spend about triple the time on strategic projects than on tuning LUNs and volumes. Phew—that’s reassuring. But wait—if you tally up all the manual drudgery of troubleshooting, engaging vendors, and messing around with VMs, LUNs and volumes, the average respondent is spending more than twice as much time on those low-value tasks (**10.2**) as on high-value strategic projects (**4.7**).

And there’s no clear divide between legacy and emerging providers; regardless of the storage type used, respondents spent about the same ‘ratio’ of time on storage tactics vs. strategy. The exception is Tintri—the only provider whose users spend more time on strategy than on tactics (the inverse of all others).



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SECTION 3: VIRTUALIZATION

One of the trends defining storage is virtualization. In the past decade the percentage of virtualized workloads has climbed from **2%** to **75%** (Gartner, March 2014). Indeed, 2 out of 3 respondents to our study said they work for organizations where more than **50%** of workloads are virtualized. So we dug in to see how data centers are digesting this change.

Multi-hypervisor. Already, **38%** of respondent organizations depend on more than one hypervisor; many more forecast joining the multi-hypervisor club in the next 12 months.

VMware vSphere	76%
Microsoft Hyper-V	31%
Red Hat KVM	10%
Citrix XenServer	17%
Open source KVM	9%
Other	11%

Spending shift. Then we asked them how their organization's spending would change over the coming three years. On average, respondents predict increased spend across the board—compute, network, storage, private cloud and public cloud. Looking deeper though, compute was the most likely to be an area of decreased spend for respondents. This marries with the previous question—organizations are turning to multiple hypervisors to stretch compute and contain costs.

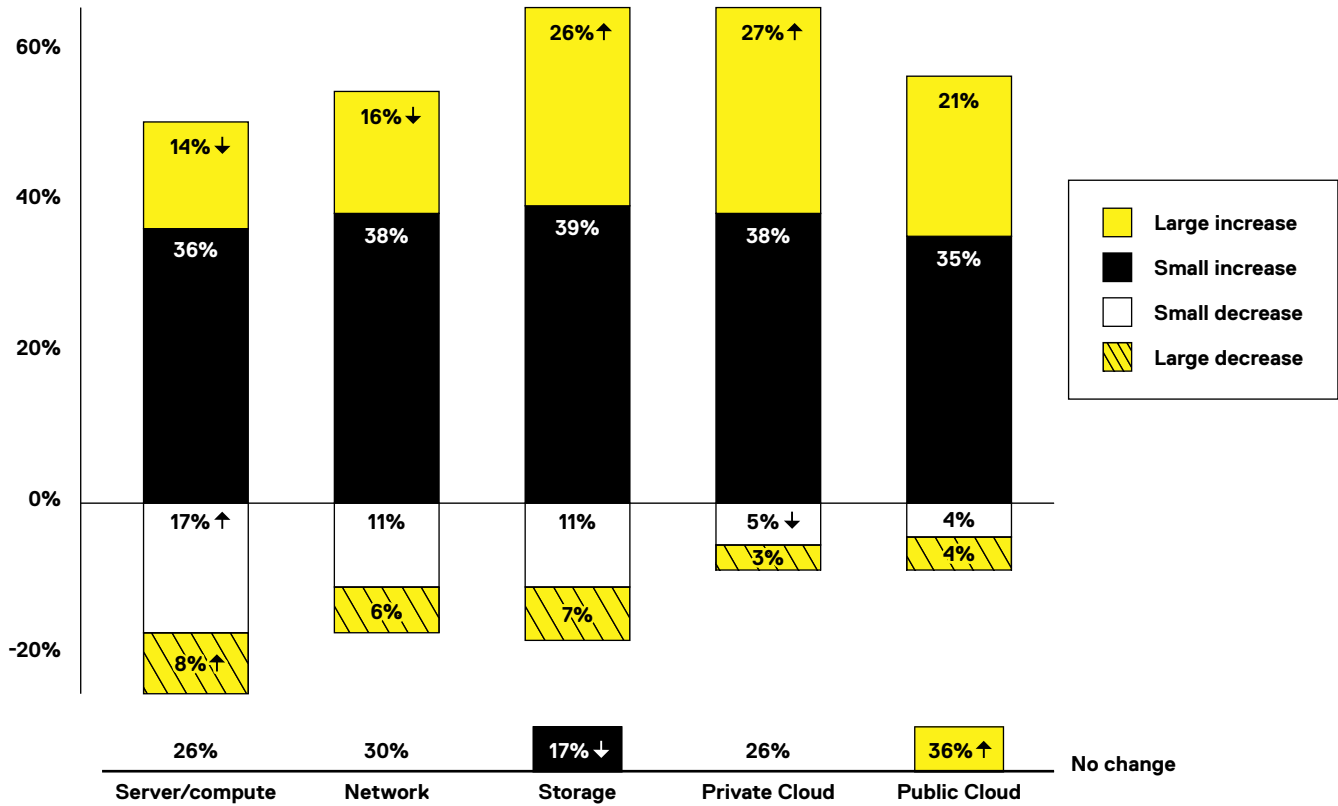
Moreover, respondents reported storage and private cloud as the areas most likely to see significantly increased spend. This is consistent with our experience; as organizations virtualize more workloads, their legacy storage struggles and their need to over-provision (and over-spend) only grows. Plus, storage and private cloud go hand-in-hand. Want to build out a private cloud? Well, it's too often a storage-thirsty proposition.



Respondents reported storage and private cloud as the areas most likely to see significantly increased spend.



BIAS ALERT: Let's connect the dots. Organizations are virtualizing more; leaning on multiple hypervisors more. It's the misfit between this increasing virtualization and the physical-first design of legacy storage that is driving costs. The key to containing storage costs is finding storage that is specifically designed for virtualization and cloud. When your storage operates at the virtual machine level, you can fully realize your virtualization vision without the fully loaded cost.






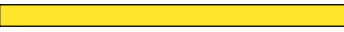






















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SECTION 4:

ENABLING THE VIRTUALIZATION VISION

Above we point out that storage is one of the fastest growing areas of spend in the data center. So, where are companies spending their money? Two-out-of-three respondents have onboarded a new storage vendor in the last 24 months. And they are still looking for additional, innovative solutions. **56%** are evaluating hybrid storage vendors, and **42%** are evaluating storage that is VM-aware.

There's a shift happening, away from legacy and toward emerging providers. See below which storage vendors are being used today, and which are being considered for future use.

	Using today	Considering for future use
Dell	 34% ↑	 26% ↓
EMC	 41% ↑	 35% ↓
Fujitsu	 4%	 6%
Hitachi	 12%	 12%
HP	 33% ↑	 28% ↓
NetApp	 36% ↑	 31% ↓
Nimble	 6% ↓	 21% ↑
Nutanix	 5% ↓	 16% ↑
Pure Storage	 4% ↓	 17% ↑
Solidfire	 2% ↓	 7%
Tegile	 1% ↓	 8% ↑
Tintri	 12% ↓	 32% ↑
Other	 26%	 24%

On average, consideration of legacy providers decreased **3.7%**, while consideration of emerging providers increased **11.8%**. The biggest positive shift was seen for Tintri (+20%), Nimble (+15%) and Pure Storage (+13%).

As organizations evaluate emerging providers, they continue to lean on the same buying criteria they have used in the past. In order of importance, the top four criteria that respondents use are:

1. PERFORMANCE	2. EASE OF USE	3. COST PER GIGABYTE	4. VENDOR RELATIONSHIP
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BIAS ALERT: *There's a buying criteria disconnect that needs to be resolved. When organizations were storing physical workloads, it made perfect sense to include cost-per-gigabyte in the purchase decision. But now, organizations have virtualized 75% of their workloads. As they deploy virtual machines with increasing pace, the real cost driver has shifted from cost-per-gigabyte to cost-per-virtual machine. Storage that can store VMs more efficiently can best save you costs.*

There's an inherent danger here that's worth noting. If decision makers and influencers are using the exact same 'buying guide' to select emerging providers as they've used to choose their legacy systems, they may overlook innovations that don't fit neatly with those criteria. Open-ended responses to our last two questions may offer some proof.

We asked respondents what was the most recent innovation from their storage provider(s). In the word cloud below, the size of words reflects the number of mentions (the bigger the font size, the more it was mentioned). Flash, dedupe, auto-tiering, cloud and cache stand out.



This second word cloud represents the innovations that respondents want to see next from their provider(s). Different terms like VM-aware, software-defined storage and integration are introduced.



In evaluating these solutions, are performance, cost-per-gigabyte and vendor relationships still relevant criteria? We'd argue that if IT professionals truly want to transform their data centers, they first have to transform their buying criteria to match their expectations.

CONCLUSION

This was the first time we've conducted this broad of a State of Storage survey. Gathering the perspectives and experiences of more than 1,000 data center professionals reveals a rich picture of priorities and pains. We've learned that long-standing pain points are only being amplified by virtualization, and that consequently, organizations are exploring emerging providers.

Results also showed that as organizations deploy emerging providers, they do not relieve themselves of the burden of manual storage management. The amount of time spent on traditional tasks—tuning LUNs, troubleshooting, etc.—remains the same. We argue that if organizations truly want to transform their data center and eliminate old pain points, they need to turn to storage with a fundamentally different architecture: one that is specifically built for virtualization and cloud.

We'd like to thank the professionals that participated in this first annual study. We're at the outset of very significant changes in the data center, and we're excited to continue the State of Storage survey as an annual tradition to identify and share those changes with you.



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