Survey Report: Flash Insights and Revelations From 1,000 Storage Users

Executive Summary

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Executive Summary

We started with a simple question: What surprises have you experienced since you started deploying flash storage in your organization? Of course, surprises can be good or they can be bad, but we sought to understand what may have changed—and what hasn't—since our survey respondents deployed flash storage into their environments. To that end, we asked 1,047 people to share with us their attitudes and experiences around storage. In the full report, we will share with you what we learned and how you may be able to use this information to better inform your own path forward.

Let's start with a look at the general state of flash deployment in the data center. In Figure 1, you can see the trends in data center flash deployments. Within the next 24 months, 35% of data centers will be running storage systems that are at least half flash. You will see a more granular breakdown in the full report.

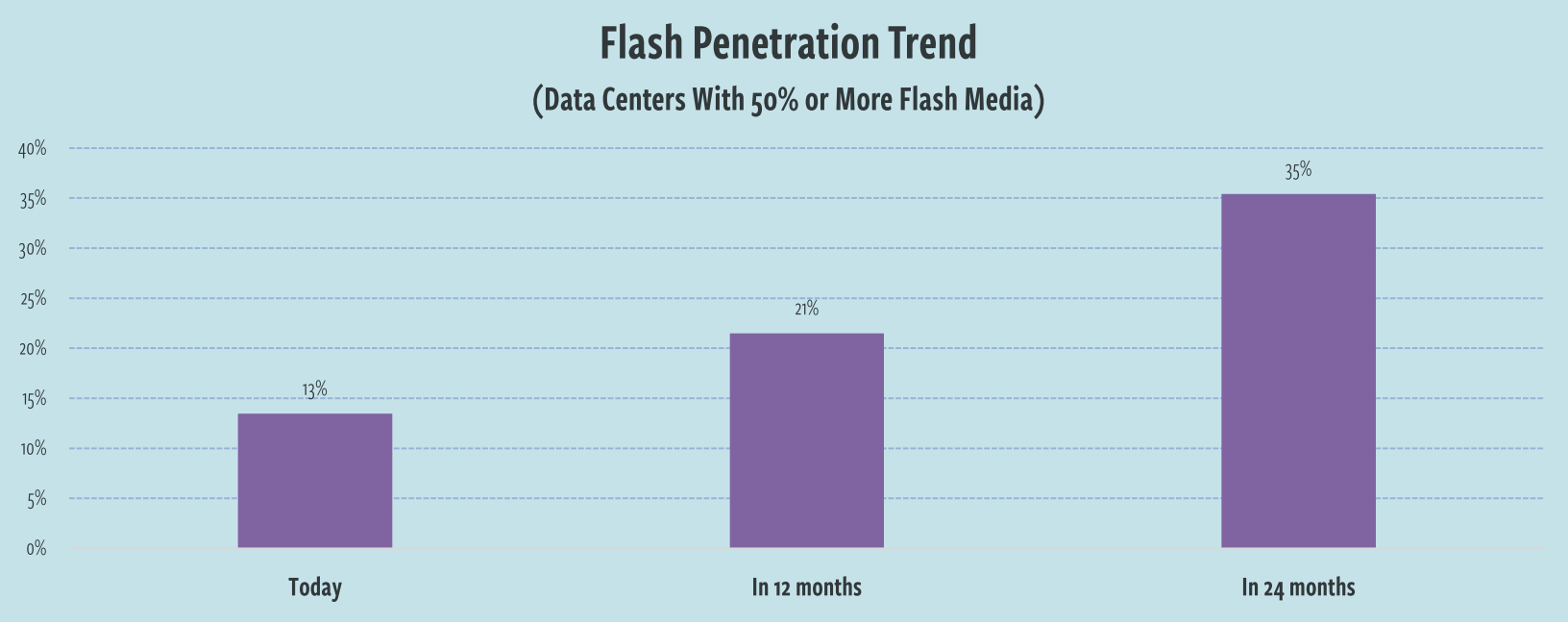

Figure 1: Data centers with at least 50% flash media adoption rate

Within the next 24 months, the number of organizations using at least 50% flash storage is expected to almost triple.

> Flash basically gives me the option for almost-instant backup and restore that I never had. It's a no-brainer.
>
> Application Manager/Database Administrator, Technology company

Data protection is a key element for every IT function, and storage plays a big part in how that process is carried out. Fortunately for those using flash, the data protection story has a happy ending; twice as many respondents that are running hybrid or all-flash systems report that they have a very easy or relatively easy time meeting their data recovery SLAs as compared to before their flash implementations.

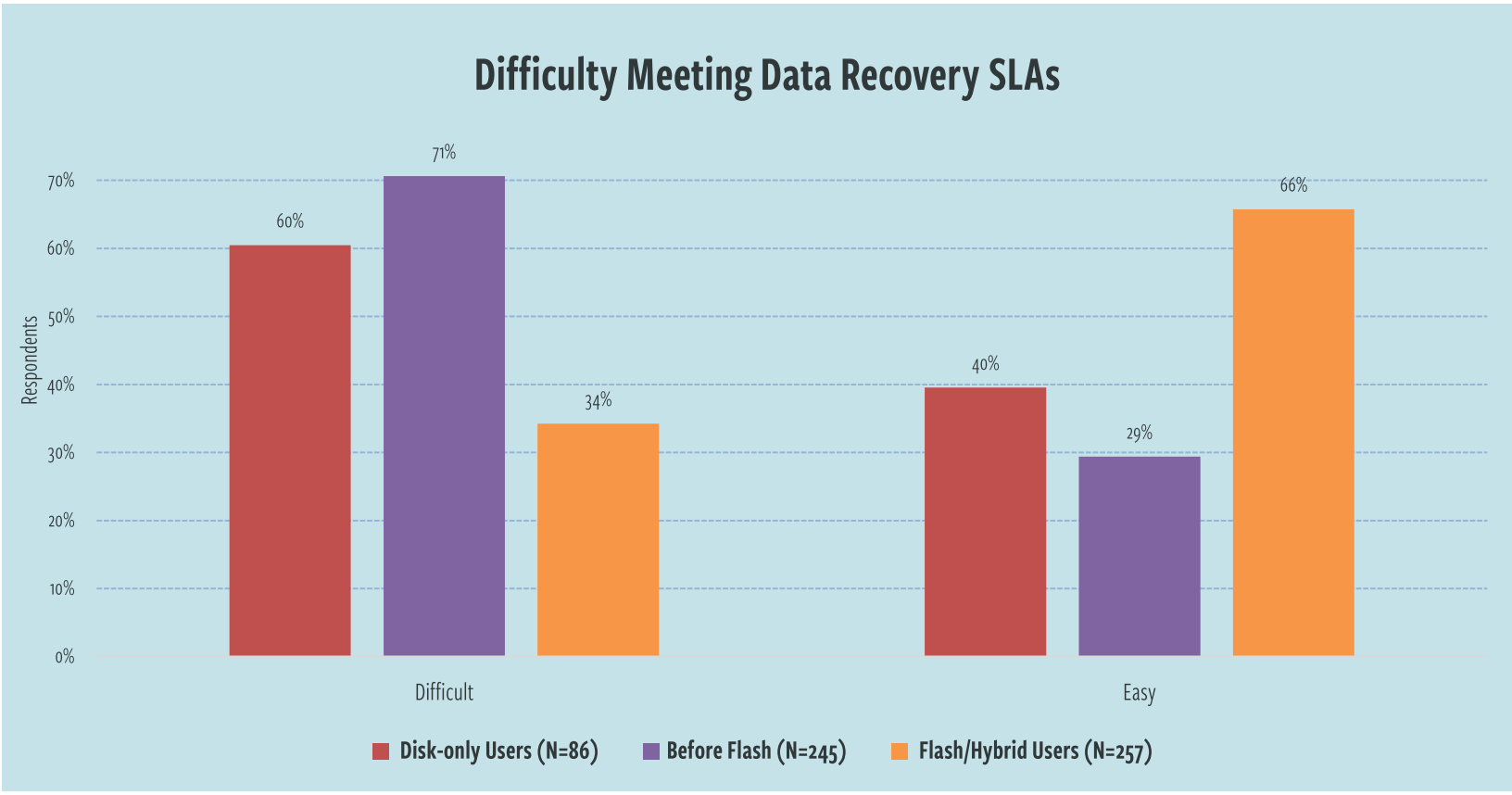

Figure 2: Ease by which data protection SLAs are met by flash users

For those running disk-based systems, there is a strong belief that they will re-evaluate their data protection options as they replace their storage systems. 58% of respondents currently running on all-disk plan to reconsider their data protection systems as they move to hybrid and all-flash systems.

Figure 3: Disk-based respondents who believe that they will reconsider data protection options as they move to flash

Data reduction has always been important, but, for various performance-related reasons, has not always been feasible. Flash has changed the data reduction game.

Systems with flash often have a combination of one or more data reduction features. Some may even have multiple reduction techniques. Back in the days of disk, data-reduction technologies were not as prevalent as they have become today. This is partially due to the fact that reduction—especially deduplication and compression—can be a processor-intensive operation. Older processors were not always up to the task.

Our survey respondent average reduction, as you would expect, depends on storage type and is shown below in Figure 4. As you can see, respondents running all-flash storage are seeing average reduction ratios of a whopping 5.4:1 while those running all-disk only achieve 3.8:1. *This is a **39% difference*** and is extraordinarily important when it comes to determining the overall economics of a storage solution.

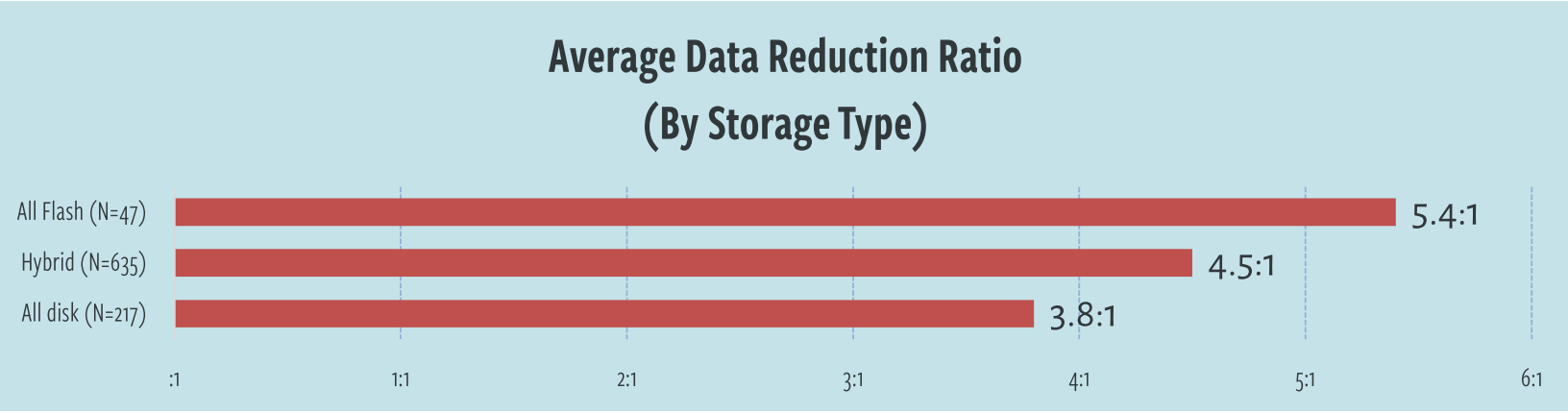

Figure 4: Average data reduction broken out by storage type

Let's talk about economics. For years, you've heard that deploying flash storage helps reduce OPEX costs thanks to the fact that flash storage can reduce your physical storage footprint and power and cooling costs. Survey respondents generally agree with this statement. In fact, a full 82% of respondents running flash agree that doing so does, in fact, reduce power and cooling needs. The remaining 18% believe that flash either doesn't have an impact on power and cooling or believe that it increases power and cooling costs. Our survey data confirms this reduction in overall OPEX due to smaller footprint and lower power and cooling needs.

Figure 5: Experience related to power and cooling costs running flash in the data center

The importance of performance simply can't be overstated. Abysmal storage performance has led to the rapid increase in the use of flash and has enabled the implementation of new kinds of workloads. But, believe it or not, customers that deploy all-flash-based systems are actually *less concerned* about storage performance than their colleagues operating disk or hybrid storage environments. We asked respondents to rank a number of storage characteristics. In Figure 6, you can see that those respondents running all-flash systems rated performance quite low compared to those running other kinds of systems.

Why? We believe people fully understand that performance outcomes simply aren't a question with all-flash systems. Respondents rated other characteristics more highly because they knew that performance would be strong. The full report will provide you with a comparison of all of these characteristics.

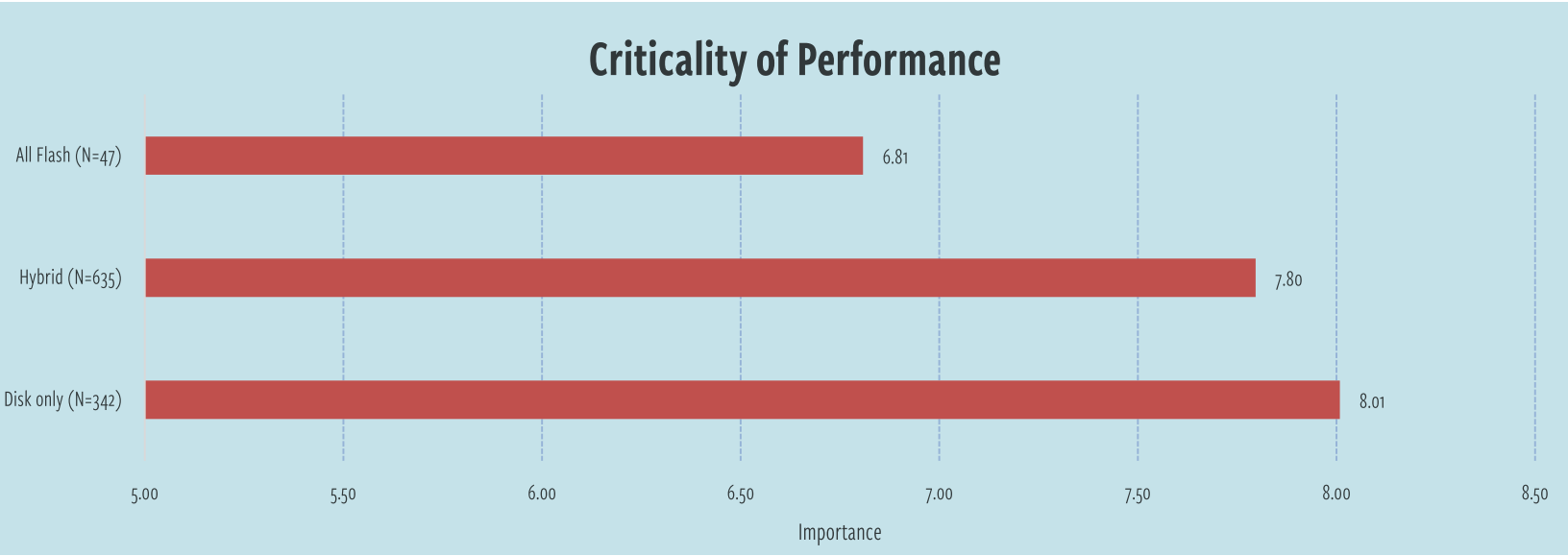

Figure 6: Criticality of performance broken down by storage type

Summary

Of course, there is much more to the story than we're able to share in this short Executive Summary. To view the full results of our research, please download the complete report here.

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