SELECTING AN ALL-FLASH STORAGE SOLUTION

PeerPaper Report

BASED ON REAL USERS REVIEWS OF DELL EMC UNITY

IT Central Station
Unbiased reviews from the tech community

ABSTRACT

The market for all-flash storage solutions has grown increasingly richer and broader in scope. With use cases expanding and uptake of the new storage technology growing among organizations of different sizes, each storage team must develop its own solution selection criteria. What works for one IT department may not be right for another. To help identify and refine all-flash storage selection factors, members of IT Central Station share what they look for in a solution. Based on their experience with the mid-range Dell EMC Unity, their recommendations include a focus on performance, security, virtualization integration, ease of use, ease of administration by IT generalists, economics, replication, multi-protocol support and beyond.

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INTRODUCTION

The all-flash storage market continues to grow in size and scope. Storage professionals are developing an increasingly broad collection of use cases. To serve these expanding needs, storage vendors are now offering a wider portfolio of all-flash storage solutions than ever before. Given that each organization will have distinct requirements, storage teams must develop their own criteria for selecting a solution that will be right for them. What works for one IT department may not be right for another.

To help identify and refine all-flash storage selection factors, members of IT Central Station share what they look for in this technology. They base their recommendations on their experiences with the mid-range Dell EMC Unity solution. Having worked extensively with all-flash in real world IT environments, their suggested selection factors include a focus on performance, security, virtualization integration, ease of use and ease of administration by IT generalists. They also recommend evaluating all-flash solutions with an eye toward economics, replication, multi-protocol support and beyond.

All-Flash Storage Use Cases, An Increasingly Broad Collection

IT Central Station members are putting their all-flash storage arrays to work in an impressively diverse set of use cases. Some use it for block storage only, while others combine file and block storage. Databases and virtual machines are popular use cases. Examples of uses for Dell EMC Unity found on IT Central Station include:

- Block storage only
- Block storage for healthcare IT
- Storage for high I/O databases
- Combined file and block storage
- General storage for virtual machines
- Production SAN
- Microsoft workloads, e.g. SQL Server, Exchange for on-premise use; Oracle all-flash
- Branch office
- Test and dev
- Mid-range storage: hybrid and all-flash versions

Key All-Flash Storage Solution Selection Factors

Storage managers at both large and small organizations seek storage solutions that offer enterprise functionality with mid-tier economics. They want the performance and features available at the high end, but with the affordable operations of a mid-range solution. As a storage User on IT Central Station put it, "Among the [Dell] EMC storage options, [Dell EMC] Unity is the best choice when we analyze price, scalability, performance and features."

Specifically, IT Central Station managers identified a number of selection factors that drove their choice for all-flash storage. In addition to performance, these selection criteria include efficiency, financial value, unified storage (e.g. block and file), multi-protocol support, multi-stack integration (e.g. VMware, Microsoft), physical footprint, compression and deduplication, tiering and caching, disaster recovery and more.

PERFORMANCE

The ability to deliver high IOPS and low latency relative to real-world mixed workloads figures prominently into the selection of an all-flash storage solution. This was certainly the case for a Senior Systems Engineer at a sports company. Another Senior Systems Engineer, who works in the Storage & Systems Practice at a tech services company, described the advantage they saw from switching to Dell EMC Unity by saying, "We saved money by moving off old storage and we gained extra capacity and speed. I appreciate the great performance with flash drives, 12Gb SAS connections, and the 16Gb fibre channel."

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An Infrastructure Manager at a hospitality company sought a solution that would support high performance. Setting up Dell EMC Unity as a SAN, he found the solution "currently exceeds our requirements in terms of performance." He then added, "We have seen a huge performance increase due to all-flash that is beyond what was anticipated." Additionally, a Senior IT Infrastructure Engineer and Administrator at a pharma/biotech company with more than 1,000 employees noted, "Performance-wise it [Dell EMC Unity] has met or exceeded all our expectations."

EFFICIENCY AND ECONOMICS

Storage users, especially in small to midsize IT organizations, demand a combination of efficiency and good economics. A storage solution has to conform to several different parameters to realize these qualities. Unified storage, for example, helps storage managers be more efficient by reducing the number of solutions they have to install, manage and monitor. On this point, a Design Architect at a tech services company with over 200 employees described his unified solution by saying, "It does block and file; I can provide everything on a single array."

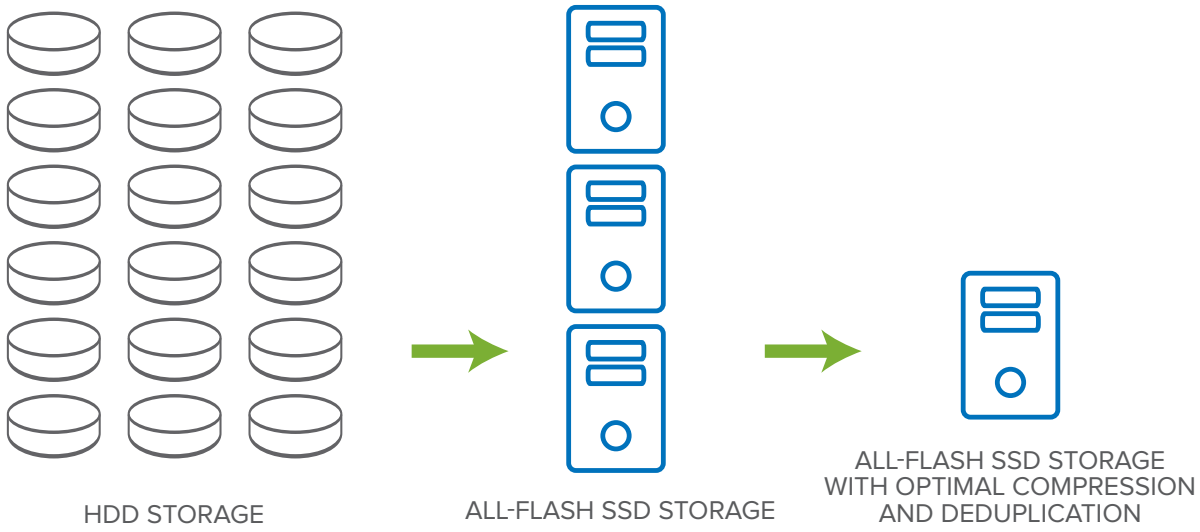
Another User was pleased that Dell EMC Unity provided block and file as well as VVol datastores in a 2U form factor. For a Director of Infrastructure Services at a tech services company with over 50 employees, the benefit came from unified block and file storage without the need of control stations and data movers. As he said, "This simplifies administration and deployment and requires less rack space."

MULTI-PROTOCOL SUPPORT

Support for multiple protocols adds to storage efficiency. This capability attracted an IT Engineer at a company with more than 1,000 employees. He valued the fact that Dell EMC Unity is "supporting NFS, fiber channel, CIFS" as well as other protocols. Similarly, a Senior Systems Engineer at a tech services company with more than 1,000 employees was pleased with "The true 'Unification' to have a fully-flexible solution combining multiple technologies and protocols in 2U of rack space."

INTEGRATION WITH VMWARE AND OTHER PLATFORMS

Storage is best when it can integrate with multiple stacks and run a mixed set of diverse workloads. For



All-flash reduces the physical footprint required for storage hardware, but even that can be improved by optimal data compression and deduplication.

an IT Supervisor, this meant compatibility with VMware. He said, "It's helped with the overall stability of our VMware environment. We use it to provide VMware VMFS to our VMware environment." An IT Techinal Engineer at a consultancy with over 50 employees described his solution's VMware integration, especially that it "grants both the Storage and Virtual Administrator the ability to create and mount datastores, or even to check how much space each VM is consuming." An IT Infrastructure and DWH/BI Manager at a company with over 5,000 employees felt that his storage solution's VMware integration made his engineers' lives easier. As he said, , "We are almost 100% virtualized." His team uses this feature on a daily basis.

IT Central Station members also rely on Dell EMC Unity for Microsoft and Oracle workloads. A Solution Architect - Data Center at a tech consulting company with over 50 employees uses Dell EMC Unity as on-premise storage for Microsoft SQL Server and Microsoft Exchange Server. He also runs Dell EMC Unity all-flash with Oracle. A Director of Technical Services at a small tech services company found "the benefits are the simplicity, flexibility and the ease of integration between the [Dell EMC] Unity platform and VMware and Microsoft platforms; the integration tools and the simplicity of management."

ECONOMICS

Financial impact (price/performance) is a compelling selection factor for an all-flash storage solution. After all, storage is an area of IT where budgets inevitably trend upward, given the increasing amount of data that needs to be stored. As a result, storage managers are thrilled when they can realize strong value propositions. This was the case with an IT Manager who declared Dell EMC Unity to be a "good value for the money." A Managing Partner at a small tech services company felt the economic benefit of Dell EMC Unity was "the performance combined with the Gig-per-dollar value." He remarked, "That combination is superior to other storage options."

Details matter in storage economics, as the IT Technical Engineer at the consultancy explained. Describing how Dell EMC Unity offered him "more space for less money" by means of block compression on the All-Flash F Models, compression on F Models or in flash pools. He said this "allows us to almost duplicate the available space on the array," adding, "Everyone likes this."

SMALL PHYSICAL FOOTPRINT / GREAT DENSITY

Data center space, power and cooling are costly. Thus, smaller storage footprints offer an economic advantage. The Senior Systems Engineer at the Storage & Systems Practice commented on the benefits of the Dell EMC Unity solution, saying, "All this comes with a smaller footprint, with the main unit taking 2U instead of 8U." A Storage And Virtualization Architect at a legal firm with more than 1,000 employees

agreed, noting, “It’s a much smaller footprint than our older storage arrays, which take up some six tiles, a lot of space in the data center. The [Dell EMC] Unity’s are a lot smaller, and they’re a lot faster.”

Some IT Central Station members, like a Director, Solution Architecture at a tech company with more than 500 employees, expressed the value of a small footprint in terms of data reduction. He said, “The biggest improvement is the data reduction for the organization. That is where they see the better TCO and improved ROI for their existing footprint. That’s the biggest advantage for the businesses that are using the [Dell EMC] Unity platform.”

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Others see the benefit in terms of scale potential. A Group Technology Ops Executive at a retailer with over 10,000 employees felt his solution “will certainly help us scale bigger.” He shared, “If I look at the footprint, VNX was multi-rack. Now, all of a sudden, we’re only [using] a portion of a rack. And, obviously, if we can scale within the same rack - we can certainly see that by the number of hard drives we’ve had to put in - we can scale a lot more easily.”

COMPRESSION AND DEDUPLICATION

Compression and data deduplication further contribute to greater storage density and better overall storage economics. On IT Central Station, both an IT Manager at a financial services firm with more than 1,000 employees and a Director at a tech services company with over 50 employees are pleased with these capabilities provided with Dell EMC Unity.

For a Systems Engineer at a small tech vendor, the inline compression and dedupe is “quite a stunning feature for mid-range customers.” This sentiment aligns with the notion of valuing enterprise features with mid-range economics. He explained, “That is something that is much better than the expectation that we have with VNX, which does that [deduplication] post-processing, and is not recommended for databases. So it’s a big step for [Dell EMC] Unity. When we position [Dell EMC] Unity, that is one of the first things we say, that it is prepared to work things inline with dedupe and compress.”

AUTO-TIERING AND FAST CACHE

Auto-tiering and Fully Automated Storage Tiering (FAST) cache capabilities factor into all-flash selection because both make storage management more efficient and cost-effective. For instance, a Senior Implementation Engineer at a tech company with more than 500 employees felt that FAST caching “allows some FLASH drives to be used to improve the overall performance and reduce the cost of the array versus an all flash or old style spinning disk array.”

A Platform Administrator also valued auto-tiering and FAST Cache while an IT Supervisor was pleased that he could “use Auto-Tier and FAST VP to build up flexible space.” The ability to redefine storage policies and improve performance by adding dynamic cache and auto tiering appealed to the Senior Systems Engineer at the tech services company. According to a Senior Storage Consultant at a tech services company with over 200 employees, automated storage tiering is fast in a hybrid storage solution, though he noted that the all-flash version provides higher performance, compression and data replication. The hybrid version supports these features as well.

“The FAST Cache helps to have a large quantity of data in memory,” said the Platform Administrator. It also speeds up this user’s presentation of new storage. The Senior IT Infrastructure Engineer and Administrator at the pharma/biotech company liked FAST Cache for its “ability for hot blocks to almost instantaneously be served from flash.” For a Storage Specialist at a tech services company with over 200 employees, “The amount of fast cache is great for meeting all demands.”

DATA PROTECTION

INTEGRATED COPY DATA MANAGEMENT

IT Central Station members value an all-flash array’s ability to provide snapshots and clones as part of a simple management feature set. A Storage Engineer at a healthcare company with over 10,000 employees

shared that Dell EMC Unity's Quick Snapshots have improved performance for his overall storage portfolio. He also expressed a need for cloning his environment.

Snapshots are one of the best features of Dell EMC Unity, said a Technical Lead at a energy/utilities company with more than 1,000 employees. As he put it, "We have been seeing a significant improvement, not just the way that we take Snaps, but with the recoveries as well. Snapshot performance is what is key in [Dell EMC] Unity, compared to a traditional VNX." An Infrastructure Engineer at a pharma/biotech company with more than 1,000 employees also found that Snapshot was a key feature.

REPLICATION/DISASTER RECOVERY/RTO/RPO

Suitability for Disaster Recovery (DR) and related workloads like replication also figure into the all-flash storage selection process. IT Central Station members talk about applying Dell EMC Unity to disaster recovery in several reviews. An Architect at a consultancy with more than 500 employees discussed how he is using Dell EMC Unity's DR and data protection functions "now that we are stepping up from VNX and other storage appliances." The IT Supervisor uses the Replication function to build both cold and warm DR sites.

In practice, using an all-flash array for DR is about attaining a good Recovery Point Objective (RPO) or Recovery Time Objective (RTO). These issues arose for an IT Manager who described how the Dell EMC Unity replication gives him the RPOs and RTOs he requires. Further to this point, a Manager, Information Technology at a small real estate/law firm commented, "It also has improved our disaster recovery because we have two of them in place replicating."

The solution provides a measure of economic benefit in DR, as an Infrastructure Manager explained. He said Dell EMC Unity offers "Cost-effectiveness." To him that meant, "We are actually able to provide the sums in pairs to have disaster recovery (DR) as opposed to buying one single larger solution. We can have multiples."

SECURITY

Today's ongoing series of massive data breaches highlights the critical importance of security in storage. Security concerns rank high on the list of storage solution selection criteria as a result. This means, for the Senior Implementation Engineer at the tech company that Data at Rest Encryption (DARE) is the feature he values most in Dell EMC Unity. The Senior Implementation Engineer at the tech company echoed this sentiment, expressing how valuable he found DARE and saying, "This feature MUST be enabled at the time of purchase of the array. It has very little impact on performance and does not affect any of the functionality of the array. We advise always including DARE on the arrays. You need to consider this upon ordering the array."

LIFECYCLE SIMPLICITY

Keeping things simple is an overarching need in the hectic, complex world of storage management. Lifecycle simplicity and ease of management therefore emerge as selection criteria for all-flash arrays. With the Dell EMC Unity solution, for example, the cycle of acquisition to provisioning is so simple it has actually cut into the professional business of the Solution Architect - Data Center at the tech consulting company.

This development, which would be considered a plus for the customer, is compounded by "greatly simplified" deployment and general maintenance. The Director, Solution Architecture at the tech added

The storage lifecycle.

that "provisioning is very simple in the [Dell EMC] Unity platform, as well as the reporting structure back to the customer."

"The simplicity of the technology means it is easier for my team to do administration, to deliver," said a Director at a non-tech company with more than 1,000 employees. The Director of Technical Services at the small tech services company concurred, reflecting that Dell EMC Unity "provides our customers with simplicity, flexibility, and ease of integration," while a Systems Consultant at a tech services company with more than 500 employees mentioned how it "gives our customers simplicity [and] streamlines management."

> **"It has a very intuitive web console that runs in HTML5 and makes navigation and administration fairly easy."**

IT Central Station members prize ease of use and administration for storage. As the Senior IT Infrastructure Engineer and Administrator at the pharma/biotech company exclaimed, "The [Dell EMC] Unity 400 is one of the easiest to manage and the most reliable storage systems that I have managed in my 22 years in IT." Part of its appeal is the all-inclusive nature of the [software] offering. A Head of IT Infrastructure explained, "It is shipped with all [software] licensed, included for this product range, no need to buy additional licenses." This saves time and effort in storage management.

A modern user interface helps with ease of storage administration. That is what a Storage Specialist at a tech company with over 50 employees found with Dell EMC Unity. He shared how he felt the solution's new HTML5 graphic management was an improvement over earlier generations. A Storage Solutions Architect IV at a manufacturing company with more than 1,000 employees shared, "It has a very intuitive web console that runs in HTML5 and makes navigation and administration fairly easy." The Senior Systems Engineer at the Storage & Systems Practice added, "I like the easy management with the new Unisphere management and the HTML5 interface."

Users also discussed Dell EMC Unity's CloudIQ, the cloud-based storage function, as a means to simplify management. As the Design Architect at the tech services company noted, "It's the simplicity part of it. It's the ease of management, it's the call home, the CloudIQ functionality. It's all built in. I think Dell EMC has put a lot of thought into it." The Senior IT Infrastructure Engineer and Administrator at the pharma/biotech company commented on the value of CloudIQ by saying, "Having the array communicating back to Dell EMC enables me to get faster responses to issues which may arise, like a failed disk."

Flexibility and ease of deployment also contribute to an improved overall storage management scenario. "It's flexible," shared the IT Engineer. For context, he added, "We've been doing a decentralization exercise for the last number of years, so we've used the [Dell EMC] Unity 300 for our remote sites as a storage box." A Data Center Architect at a tech services company with more than 500 employees praised Dell EMC Unity's ease of deployment while the Infrastructure Manager at the hospitality company shared how "deployment time is quick from unboxing to setup," adding satisfaction that Dell EMC Unity "supports both small environments and larger deployments."

CONCLUSION

Selecting the right all-flash storage solution means thinking through an organization's unique needs and applying them to relevant use cases. The market has gone way beyond the early, simple tactic of adding all-flash to the storage mix. Today, according to expert users on IT Central Station, it's necessary to review potential all-flash solutions from a range of perspectives.

Based on their experiences with the Dell EMC Unity solution, they recommend paying attention to performance in the context of specific workload demands. They urge potential all-flash buyers to evaluate security features such as data encryption at rest. Other relevant selection factors include virtualization integration, ease of use and ease of administration. The best solutions can be handled by IT generalists. They also suggest focusing on the economic impact of the solution and its physical "footprint" as well as its capabilities for replication, disaster recovery, multi-protocol support and beyond.

ABOUT IT CENTRAL STATION

User reviews, candid discussions, and more for enterprise technology professionals.

The Internet has completely changed the way we make buying decisions. We now use ratings and review sites to see what other real users think before we buy electronics, book a hotel, visit a doctor or choose a restaurant. But in the world of enterprise technology, most of the information online and in your inbox comes from vendors but what you really want is objective information from other users. IT Central Station provides technology professionals with a community platform to share information about enterprise solutions.

IT Central Station is committed to offering user-contributed information that is valuable, objective and relevant. We validate all reviewers with a triple authentication process, and protect your privacy by providing an environment where you can post anonymously and freely express your views. As a result, the community becomes a valuable resource, ensuring you get access to the right information and connect to the right people, whenever you need it.

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