

Optimize Cost and Performance of a Storage Tech Refresh

As storage continues its exponential growth in most enterprises, it is critical to make vendor agnostic, data-driven, modeling analyses of new storage purchases to select the optimal sizing and configuration while simultaneously minimizing the total cost of ownership of the purchase.

Customer Challenges

As the pace of change of storage technology has increased, it becomes more difficult to make an informed decision when it is time to refresh your storage infrastructure. Many IT shops depend on their storage vendor recommendations to select the products and configuration that best fits their needs. That does raise some questions:

- Is it truly in your best interest to rely on a party with a vested financial stake to select a solution that meets your cost, reliability and performance needs?
- All-flash storage solutions are gaining in popularity, but are they always the optimal solution for all environments?
- How do you know after the refresh that your new storage is providing the performance benefits the vendor promised?

Storage Performance Modeling Analysis

IntelliMagic offers services to provide objective, vendor-independent hardware and configuration recommendations to support your tech refresh efforts. IntelliMagic consultants are experts in storage with many years of industry experience. Using your own data, IntelliMagic can profile your workload for the peak periods that put the most stress on your storage. This profile information is then used by IntelliMagic experts to create baseline models with IntelliMagic Direction. From there predictive performance models of various alternatives may be done which allows configuration tradeoffs to be properly evaluated.

For example, is the performance benefit of an all-flash solution really worth the expense or will hybrid storage with auto-tiering provide nearly all the benefit at a fraction of the cost? Based on your input, a variety of model scenarios may be executed which will provide suggestions on what you should procure. The resulting modeling analysis provides a detailed comparison of each vendor's predicted performance, both for your current workloads and future growth workloads. The analysis provides critical insights on the performance of each of the subcomponents of the storage system such that you know exactly what portions of the infrastructure will become overloaded at which level of future workload.

After installation, the IntelliMagic team can verify that the new hardware is performing up to expectations and potentially what is misconfigured if the performance falls short. This information is critical if you have negotiated any performance improvement guarantees with the storage vendor.



Features	Benefits
1. Select optimal hardware vendor and storage configuration that meets performance requirements for your specific peak workloads	1. Minimize the total cost of ownership (TCO) of storage purchases.
2. Profile peak storage workloads	2. Gain a deep understanding of current I/O workloads as well as a detailed health check of existing storage infrastructure
3. Perform predictive modeling	3. Visualize tradeoffs between configuration choices such as channel speed, back end storage devices, and cache size
4. Model multiple different hardware configurations from each vendor	4. Independently compare hardware from different storage vendors (including IBM, EMC, HP, HDS)
5. Model the performance impact of remote replication	5. Guidance selecting remote replication method
6. Validate that new hardware meets critical Service Level Agreements both now and into the future.	6. Reduce risk of misconfiguration or faulty hardware affecting production performance

Example of a Tech Refresh Storage Performance Analysis

The first step of the analysis is to accurately profile the I/O workload based on historical data. Typically, a peak throughput interval from a busy period is used as this tends to put the most stress on the storage infrastructure. In some cases, multiple profiles may be used based on peak I/O rates or peak write throughput for modelling storage with replication.

Once the interval is chosen, baseline models may be created for the current storage hardware. From there the baseline model may be migrated to any desired storage configuration and the performance of that storage may be estimated.

One common scenario is a storage consolidation. In this example, there are two existing disk storage systems from Vendor A. The idea is to merge these systems into a new single disk storage system. Technology options from three different vendors were evaluated and the performance of the merged storage system was estimated at current I/O load and shown in figure 1.

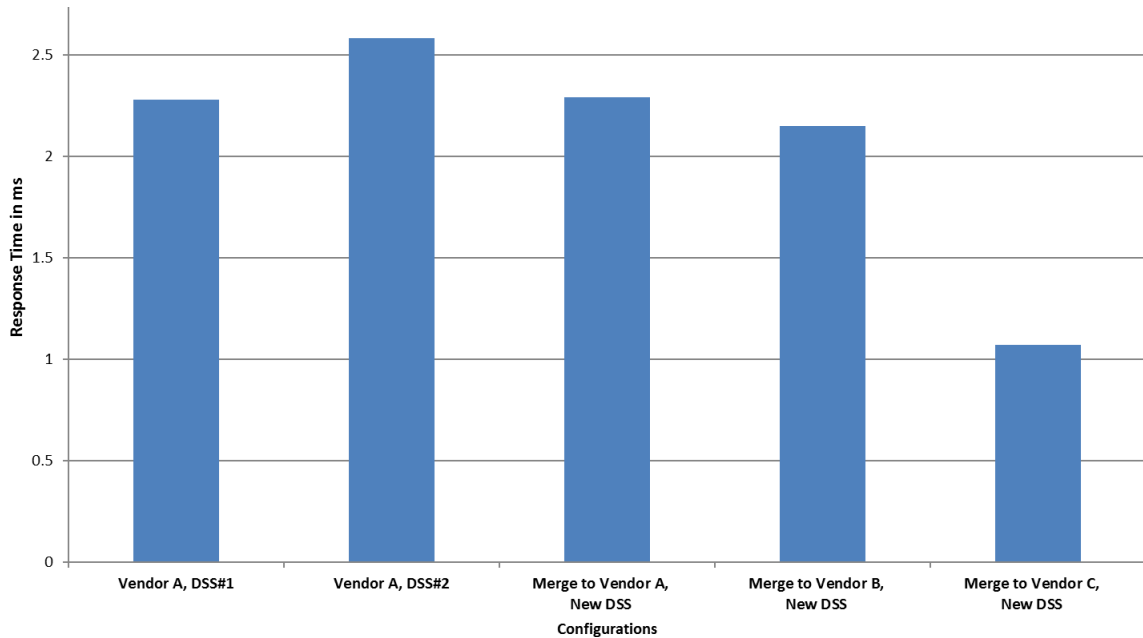
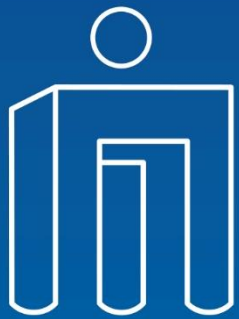


Figure 1: Response Time Projections for Proposed Disk Storage Systems from Three Different Vendors.

This of course is not the complete story. One important question is how much I/O growth can be handled before these new disk storage systems become saturated. Figure 2 shows response time projections for all three proposed disk storage systems. You can see that the solution from Vendor C shows the best combination of low response time and high sustained levels of growth.

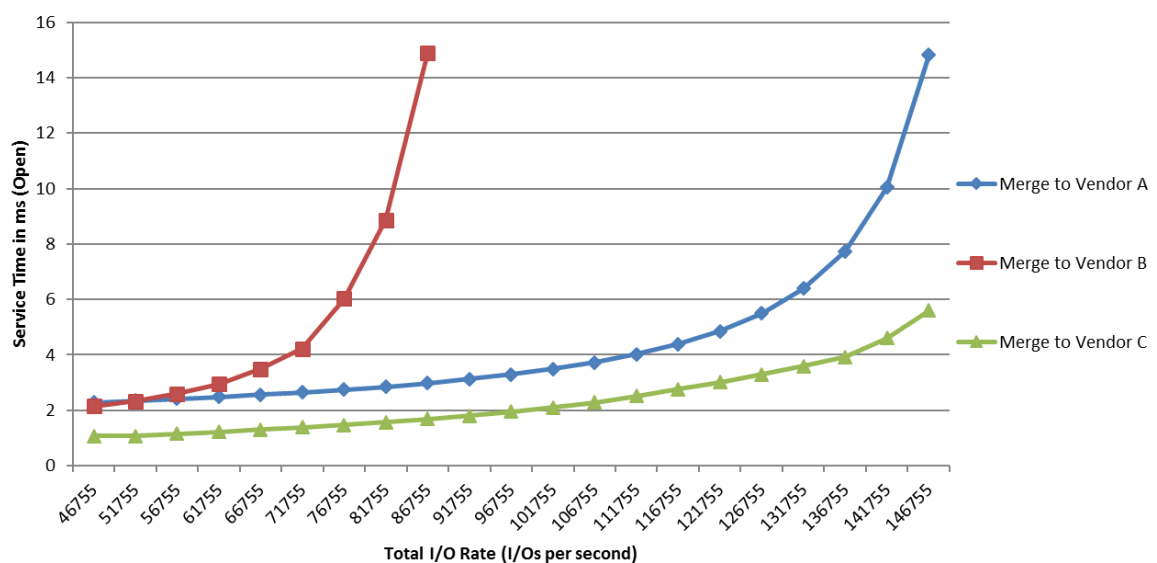
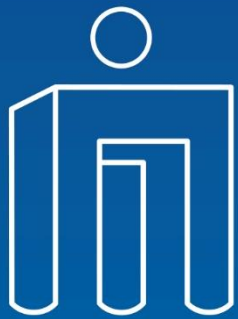


Figure 2: I/O Growth Projections for Proposed Disk Storage Systems from Three Different Vendors.



This is just the tip of the iceberg. The number of configuration options that may be evaluated is nearly unlimited. Different cache sizes, channel speed, back end storage devices, auto-tiering, and replication technologies may all be examined on a “what if” basis. IntelliMagic experts can help you wade through this decision tree and make sensible selections for evaluation.

Complimentary Service – Preliminary Workload Profile

If you are considering a storage technical refresh, IntelliMagic can help you make an informed decision. As a complimentary offer, IntelliMagic experts will evaluate your existing storage hardware configuration and performance data to determine if any components are approaching saturation during your busiest intervals. This will help you decide if new storage hardware is truly needed based on current loads.

About IntelliMagic

Availability is critical for your business applications. Yet, the systems and storage infrastructure that your applications depend on are still causing expensive service disruptions. IntelliMagic's intelligent IT Operations Analytics (ITOA) software unlocks the full potential of existing infrastructure performance data to prevent these outages by automatically applying embedded expert knowledge.

Some of the world's largest corporations rely daily on this modernized, intelligent interpretation from IntelliMagic software. They detect risks before issues impact production, uncover true root causes, and identify optimization opportunities. Ultimately, the software enables their IT staff to deliver a higher level of application service reliability at optimal cost.