BEST PRACTICES FOR MANAGING A MULTI-VENDOR STORAGE ENVIRONMENT

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The eternal quest for IT managers is to find a single storage platform that meets all their needs, one that's fast, scalable, reliable, and affordable. The problem is that this is a difficult goal to attain. There's always a system that's better suited for a particular task. Ignoring the opportunity to use one of these project specific products in favor of a one-size-fits-all strategy may cost the organization a competitive edge or simply not be practical given the reality of IT budgets.

A multi-vendor strategy allows the flexibility to address specific business needs whether it be performance, capacity, or cost. However, storage management becomes a critical part of such a strategy, so that the flexibility and cost savings it provides don't get lost in administrative complexity. IT managers need a set of best practices so that once several project-specific products have been implemented they can still be effectively managed.

BEST PRACTICE # 1 – UNIFY AND NORMALIZE YOUR VIEW

The first best practice is to collect data from all the different storage platforms and centralize them into a single interface or management suite. The software that's provided by storage vendors do a fairly good job of reporting on their particular operating conditions. The problem is that they typically don't have a holistic view of multiple storage devices and, only do so if the entire environment consists of their products.

Even if the organization is able to settle on a single storage vendor, the vendors themselves have multiple products for multiple purposes, often the result of product line acquisitions. With most vendors, it's uncommon for their software to provide reporting across all of these offerings. And where there are common statistics reported between systems, how they are reported may be different. For example, some vendors may report free capacity in GBs, while others may do it in TBs.
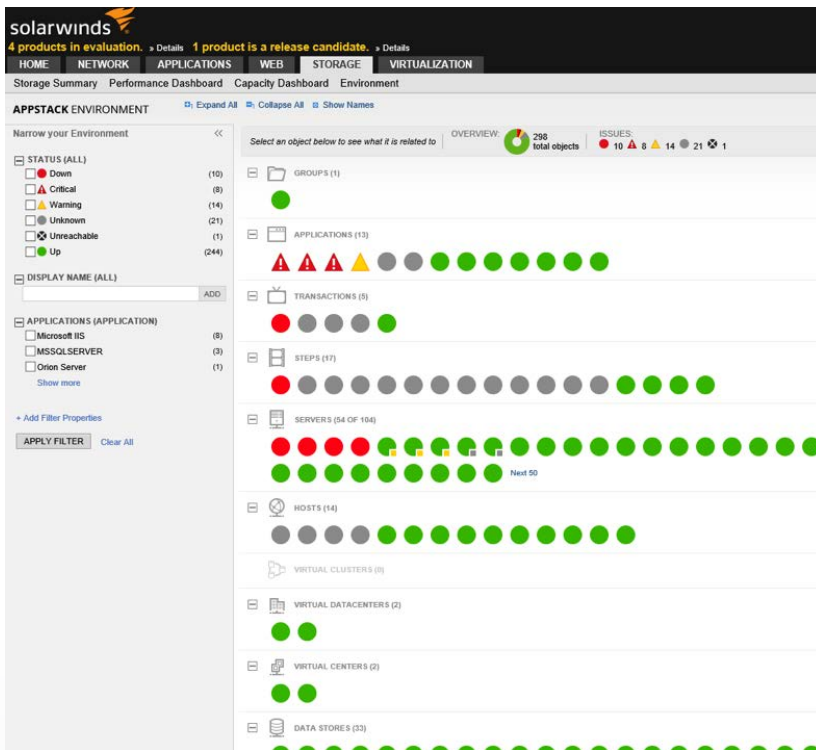
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This 'solution' requires that the storage manager manually correlate the different reports these software applications provide. Then they must be combined with other data points, like information from the virtual infrastructure, and then rolled up into a single report that can be presented to management. Using standard tools in a mixed vendor environment would seem like it requires an 'advanced degree in spreadsheets'.

To make this first best practice manageable, storage managers should look at using third party software tools that can consolidate and normalize all of this information from a variety of storage platforms. Products like SolarWinds Storage Resource Monitor provide a single pane of glass inventory of the storage environment.

BEST PRACTICE # 2 – OPTIMIZE YOUR STORAGE ASSETS

Unification of storage information onto a single storage management tool has more value than simply providing reports to management. As stated in the opening, different storage systems perform different roles. With a combined view, where the storage manager can see, volume by volume, the activity being required of those volumes, they are better-equipped balance workloads.

Further, if the storage management tool can interface with the host infrastructure to provide application-level, or even virtual server-level, performance reporting that information could then be mapped into an overall optimization strategy. For example, if a virtual machine has very low storage I/O requirements it could be migrated to a lower performing, but less expensive storage system. This would free up a higher performing system for critical VMs and save money.

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Optimizing storage assets often brings the discussion of storage tring. A storage management tool that can see across different vendors' storage products can also report on free space. Thanks again to the virtual environment, it's relatively easy to shift workloads between storage systems without disrupting users.

This unified view not only helps with balancing the current workloads, but provides critical information required when adding new workloads. For example, if a new virtual machine needs to be created and it's going to support a demanding application, the Storage Resource Monitornow has an instant view into which volumes had the lowest number of VMs active on them and which have the most available bandwidth.

If a volume is not available to support the required storage I/O of the new VM, a tool like Storage Resource Monitor can help the organization rebalance other workloads so that the new VMs can be squeezed in. No longer does the first reaction have to be purchasing a new storage system.

Even if it's decided that a new performance oriented storage tier is needed, a unified view will help the storage manager understand how much performance and how much capacity is required so that exactly the right storage system can be chosen.

BEST PRACTICE # 3 – UNIFIED MONITORING

Another big challenge in managing a mixed storage vendor environment is the time it takes to "check-in" with the system to make sure it's operating correctly. In some cases this becomes a once a day ritual that may take a few hours for the storage manager to work through, assuming there are no problems. Other than the obvious time consumption, this process would not allow storage manager to know if there's a problem when one develops in the afternoon. It may go unnoticed and get worse prior to the next morning's check.

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With the unified storage management tool alarms, a threshold can be set to notify the storage manager in the event of such a problem. This accomplishes two goals. First, the storage manager no longer has to spend every morning logging in to every storage system to see if it's functioning properly. The return of literally hours a day can be invaluable.

Second, with an alerting function, any time an error or performance condition occurs the storage manager can be notified and immediately take corrective action. These alerts can be more than a message saying simply "running out of disk space". They can also be more sophisticated, such as sending an alert if volume response time is higher than a given threshold. This allows the storage manager to more quickly resolve problem areas and also be proactive in addressing performance problems.

BEST PRACTICES # 4 – OPERATIONAL PREPAREDNESS

With a unified view of the storage infrastructure that's updated in near real-time the storage manager can develop a history of information that allows them to more accurately predict future storage trends. One of the most difficult tasks for an IT department is the creation of a storage budget. The problem is that inaccurate usage predictions often lead to an "aim high" storage purchasing strategy, which inflates the storage budget.

With this strategy, the storage budget is often consumed upfront and the capacity purchased may go unused or idle for months, if not years. Unlike wine which becomes more expensive with age, storage gets cheaper. Accurate storage trending capabilities provided by solutions like - Storage Resource Monitor will allow the storage manager to buy only the storage that's required for that particular purchasing cycle. This frees up IT budget for other tasks and projects.

Trending also allows the storage manager to stop purchasing on a per-gigabyte basis alone. With trending in place, the storage manager may learn that their current storage budget can be used to buy less capacity, but more performance. A faster performing system will then lead to easier day-to-day system management because it can eliminate the ongoing task of performance tuning.

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SUMMARY

While storage vendors have long propagated the idea of purchasing a single system, this is often not in the best interest of the customer. All-in-one solutions typically limit the IT team's ability to address specific issues and meet current budget realities. Mixed storage system environments can provide this flexibility, but at an increased cost of management. The role of a third-party storage management tool is to normalize the cost of management to the point that multiple storage systems can be managed as if they were all created by the same vendor.

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