

Unleash SharePoint and Empower Your SharePoint Users

SharePoint has become the cornerstone of collaboration for businesses. Sharing information and collaborating on work has increased productivity as well as fostered creativity. As SharePoint deployments grow with the business, storage performance becomes a challenge and impedes this collaboration.

In deploying SharePoint or any other document management solution, the primary challenge is related to database storage, costs and performance.

5 Challenges

In SharePoint Deployments and How Violin Memory Addresses Them

With Violin Memory, data delivery from the storage to the SQL server is handled much faster, streamlining all SharePoint processes and task, without impacting the environment.

Due to the nature of Flash technology and how Violin Memory has architected it, the demand for quicker data access can now be addressed.

1 Growth in content database size degrades SharePoint user experience

The size of the content database has always been a challenge for SharePoint application managers. With SharePoint 2010, database sizes can go up to 4TB, begging for a different approach to storage requirements. If SharePoint recommends 2 IOPS per GB for optimal performance, this means that for a 4TB content database, the storage sub-system needs to deliver 8,000 IOPS per content database.

How quickly can the data be retrieved and delivered to your SharePoint user? On traditional hard disk drives (HDD), latencies have been gone up to 87 milliseconds, creating a bottleneck and frustrating users. With Violin, latency stays below 1 millisecond and keeps on streamlining your SharePoint application performance with the speed it requires. Violin can also be used to lower the number of SQL Server hosts to serve the content databases, resulting in overall lower power, cooling, rack-space, as well as SQL Server licenses. The most important thing to focus on is the impact on the user community. IOPS is meaningless to the users when they have to wait much longer on data or search results.

2 Database maintenance negatively impacts other operations

The main reason to deploy larger databases is to reduce the number of servers and SQL Server licenses. The bigger the database size, the longer the maintenance windows for data integrity checks. This maintenance task cannot be run during production hours. Today's 4TB of content is 20x the size of traditional content databases. If the previous consistency checks took 1 hour, will that be 40 hours for a 4TB environment? How will that impact the other maintenance requirements, such as backup?

Database integrity checks generate a lot of IO. The quicker the data gets fed into the server memory, keeping the CPU busy, the faster the process will complete. The speed of data delivery is what counts to accelerate that process. This is exactly what Violin Memory will do from a storage perspective.

3 Defragmentation tasks for Indices and Statistics are disruptive

When the database grows to 4TB per content database, it becomes apparent that the Index and Statistics defragmentation will take longer. The index consumes approximately 20% of the content database as a sizing rule, meaning that the defragmentation needs to happen on 800GB rather than on 20GB. Defragmentation cannot be scheduled like the consistency checks. The impact on the user experience is massive for all the databases running from the same SQL Server.

A re-index for 20GB will happen much faster than for 800GB. When the data delivery is stuck because the locking is not released quickly enough due to slow data delivery, it will continue to take longer. Violin provides sustained performance on data delivery, releasing locks much quicker and decreasing the re-index process from many milliseconds (up to 20 or more), down to less than 1 millisecond. The end result is that the re-index task no longer degrades the end-user experience.

4 Security authentication on sites, lists and libraries add overhead

For each object in the content database (websites, lists, folders, and list items), user access is authenticated; meaning that when a user accesses a site where documents are shared, it takes time before the documents can be displayed. What happens when we supersize the content database by 40x and at the same time have to perform a re-index?

With Violin Memory, the locking process is released within a sub-millisecond, allowing the security component to process much quicker. It is all about the speed of data delivery, users will not get stuck and sites will be built instantly per user, rather than waiting for information to be released.

5 FAST Index Search

FAST Search Server 2010 for SharePoint uses flat files to construct the required indices. The Fast engine can be used to build new indices in addition to incremental indices. Take a 7-server farm: the storage subsystem must be able to serve 15,000 – 20,000 IOPS to the FAST Search Server 2010 for the server farm regardless of any other traffic the same system may serve. For a 2TB index, it can take up to 4 days to finish rebuilding of the index structure.

Violin ensures high query performance without a dedicated search row while reducing your server count, thus reducing overall total cost of ownership. Simultaneously, more complex queries can be generated and completed quicker. A Violin Memory customer achieved 400 million rows scanned within 1 minute rather than an hour.