Samsung helps BLDD Architects use their CPUs more efficiently

BLDD Architects leverage Samsung AutoCache to increase productivity, save processing time and optimize storage and CPU resource usage

Company Overview

BLDD is an architectural and interior design firm with five offices across Illinois and Iowa. The firm has a virtual desktop environment with more than 84 employees utilizing design applications, such as Autodesk® Revit®, for executing projects and delivering services. The firm also uses VMware View®, which allows all desktops and data to be located in one place, while enabling users to use a virtual desktop from anywhere, whether they are at home or on the road.

Customer Needs

With the virtualized desktop serving as the users' primary tool, and production operating at full tilt from 9 a.m. to 5 p.m. every day, BLDD Architects needed to find a solution to get the desktop environment working faster and more efficiently. By doing so, they could enable users to work faster and increase their productivity. They could also serve clients more quickly and help boost their bottom line.

"In a Microsoft® Windows® environment like ours, when you have 84 users accessing applications and files simultaneously, even the fastest disk won't be responsive enough," explained Dan Reynolds, senior system administrator at BLDD. "We looked at the VMware View built-in caching solution, but it is based only on RAM memory. With the virtual desktops keeping so much in memory, I continually ran out of space, even running with the memory maxed out. There was no way I could use the VMware caching solution."

Solution

"I sought out the Samsung AutoCache™ solution to help us resolve our caching problem," said Reynolds. "By combining AutoCache™ with a small amount of flash, we took the burden off main memory and optimized disk access. With AutoCache, we can get a 90 to 100 percent hit rate on the cache, which helps smooth out those spikes that occur during the day when everyone is hitting the disk the hardest."

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Besides gaining speed from caching data, AutoCache gained BLDD CPU capacity

"With AutoCache, 90 to 100 percent of the time users can get their data from the cache and don't have to access the SAN."

- Dan Reynolds, senior system administrator, BLDD Architects

When BLDD users can get their data faster, and their machines and applications respond faster, they save time completing projects. By caching as frequently as they do now with AutoCache, BLDD was surprised to find an additional benefit — reclaiming CPU resources.

Result

"You wouldn't think that caching the disk would have that much to do with the CPU, but it does because it takes CPU cycles to go get that data from the storage area network (SAN) and bring it back," explained Reynolds. "When the data is already there in the cache, you gain some of the CPU cycles back that otherwise would have been used to retrieve the source from storage. I've got three servers juggling 84-plus users, so recovering CPU capacity or memory, on top of gaining speed from caching the data, is a huge plus. For me, it's a double benefit."

After installing AutoCache, Reynolds also noticed that VMware VirtualCenter, which lets him view the activity inside all his host servers, wasn't displaying the CPU alarms he was getting before. By using AutoCache to cache BLDD's data, BLDD found that the CPUs were being used more efficiently.

"I was so used to having to go in and clear the alarms for this host or that host that had used too much CPU, but now those alarms aren't there," said Reynolds.

"With the price of AutoCache, divided by 80-plus users, you don't need much to get a big return," he added. "The numbers I'm seeing are phenomenal. For the cache hit rate, they are routinely in the upper 90th percentile."

"AutoCache is priced based on how much you want to cache, and I can see an increasing need for more of that in the future," said Reynolds. "Going forward, I know I'm going to put it on every VMware ESXi™ server I build. With AutoCache, I can get a reasonably priced solid state disk, tell AutoCache to use it, and I'm off and running."

"Pulling data from the cache is so much faster and saves CPU cycles; it's saving us both time and money."

- Dan Reynolds, senior system administrator, BLDD

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For more information

For more information about Samsung AutoCache, visit www.samsung.com/semiconductor.

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