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09 March 2004

## US govt buys world's biggest RAM disk

2.5TB in solid state memory - but what's it for?

By [Chris Mellor, Techworld](#)

The US government has just bought the world's biggest ever solid state disk from Texas Memory Systems.

The 2.5TB system is "the largest SSD installation in the world by far, without question", the executive VP for TMS, Woody Hutsell, told Techworld. The previous biggest one was under 500GB, he told us. At 2.5TB, it is roughly 10,000 times the size of the RAM in your PC.

The list price of the system, which is made up from 40 RamSan 320 units, [reviewed here](#), is \$4.7million, although the US government received a discount. It was installed by TMS' OEM Dynamic Solutions International.

So where is it and what's it to be used for? Well, the installation site is in Washington DC and the application involves hosting metadata for large file systems, several databases including Oracle and the acceleration of other storage-based applications by holding, for example, journal files in the SSD.

What that means in simple English is that the US government has just bought the world's biggest RAM drive in order to speed up cross-checking across several vast databases. The way



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databases work, a query will tend to scan an entire table if it thinks that anything more than a small percentage of the table's contents are relevant.

However, when you are talking about vast databases, that process requires a huge amount of memory to store all the details. Unless you can store all that information temporarily (say in RAM), the query has to read from disks and that is a far, far slower process. The problem is compounded hugely when you are running a query across multiple databases. So, if you want to get at the information as fast as possible you need a monster RAM memory to temporarily store the details while it is sifting through.

We do know that several of the servers using the SSD storage are running Solaris and that altogether the site has about 100TB of storage, but the specific government department and applications involved have not been revealed.

However, not that many departments could possibly want to run such vast queries regularly. It would also be extremely difficult to justify a \$4.7 million investment unless that work was seen as vital and speed was a main consideration in that work. It is also peculiar that such a large purchase could be approved at a time of tightening belts.

Now, we're not saying that the Department of Homeland Security is behind the purchase. Or that it is using the technology to search the various databases of people that it, the government, the NSA and the Pentagon possess. But all of them are based in Washington DC and there are of course some issues about Islamic terrorists

already living in the States.

A RamSan 320 unit holds up to 64GB of RAM in a 3U rack unit. The US government order is housed in three full height rack units. There are over 320 2Gbit/s Fibre Channel ports and the aggregate I/O rate is 36Gbit/s. That is some serious hardware.

Hutsell tells us that "the customer has been happy so far". He expects there may be additional purchasing later this year.

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