Case Study

> " NCache provides the ultimate solution for our client's scalability, session storage, and high availability. It is a simple architecture, extremely easy to use, highly reliable, and quite powerful. Here at Cybercom, we are all Microsoft .NET developers, and it's very easy for us to incorporate NCache into our solutions. For sure, with this success story for our Denmark government client, we recommend NCache to our other clients."
>
> Sripad Kosuri
> IT Consultant
> Cybercom Group

CYBERCOM GROUP

Ncache has provided us an extremely fast and scalable ASP.NET session storage with replication

" Data storage was not able to scale. That was the basic problem. But NCache distributed computing provided the right solution at the right price."

Sripad Kosuri
IT Consultant
Cybercom Group

THE CHALLENGE

The Cybercom Group's client experiencing website challenges was a public government agency that helps Denmark citizens with their energy efficiency. Sripad Kosuri, IT consultant at Cybercom Group, said, "Everyone living in an apartment or house can go to this website and check their energy patterns as a way to decrease their energy bills and optimize energy use."

However, this Denmark government agency customer faced a trio of distinct problematic areas with its website. Those were difficulties maintaining its sessions states, high availability, and scalability. In short, the database server in this instance did not scale for both sessions and applications.

Kosuri said, "We initially implemented Microsoft's SqlServer for session storage, complementing it with an in-house session handling mechanism. We went live with that. But after a time, we realized there were issues with that arrangement."

The basic problem is the fact data storage was not able to scale. Also, website users couldn't automatically save their data, but had to take time to save it and if they didn't, it was lost.

These issues were compounded by an increasing number of website users averaging about two thousand daily and a considerable number of complementary legacy systems the website used for related energy data.

"The website users of our government client need to follow a large number of regulations when they're on this website, and they must input data to respond to those regulations," Kosuri explained. "As long as the user was on the website, the session state was maintained while we were using the SqlServer. At the end of each session, if the user wanted to save their information, that particular data was saved in the SqlServer database. If the user decided not to save the data, the session expired and all the data provided was wiped out."

Those issues surfaced because Microsoft's SqlServer, as a storage mechanism, not only is burdened with session storage limitations, but is also a bottleneck for both sessions and application data. As a result, a database server doesn't scale for sessions and applications data. Also to be considered here is that SqlServer is a disk-based data store and not an in-memory data store. This means its performance isn't as fast as it should be, resulting in a performance drop.

Further, SqlServer storage keeps all sessions in a single table. The locking contention for concurrent access and concurrent updates of the session data becomes obvious as soon as you scale up. As transactions per second dramatically escalate, increasing numbers of lock delays occur because everything is kept in one table. This SqlServer shortcoming works against both performance and scalability.

The NCache Solution

To resolve the problem, Cybercom initially agreed to go along with its government customer to take the "homegrown session handling" approach. However, this solution also presented a "lot of issues," according to Kosuri, plus there was inordinate cost involved with this solution. That's when Cybercom stepped in after conducting the necessary research to find and install NCache distributed caching as the ultimate solution at the right price point.

Kosuri stated, "NCache has its own process so it's like operating it from the core website. It's a simple architecture; it involves considerably less work, is highly reliable, and is cost effective."

"All of us here at Cybercom Group are Microsoft ASP.NET developers, and it is very easy for us to incorporate NCache into our solutions. For sure, we will recommend NCache to other customers as well. We are happy with the results and its performance."

An in-memory data storage, NCache is extremely fast, and is linearly scalable. Linear scalability means that as you add more servers you are multiplying capacity. Say for example you're performing 10,000 transactions per second against one server. By adding a second one, you can have close to 20,000 transactions per second total. That's linear scalability, which Microsoft's SqlServer doesn't provide since it isn't an in-memory storage mechanism.

While a database is structured for long-term storage, in-memory storage is transient and temporary. In Cybercom customer's situation, they needed to store data in temporary storage during users sessions.

Ncache also maintains high availability. This means NCache is highly stable so it never crashes, plus it has the ability to make configuration changes without stopping it. NCache allows Cybercom consultants to bring a cache server down, add new cache servers, or increase cache capacity without stopping the entire cache.

"Today, when we perform regular deployments on our client's website -- meaning we make changes or additions regularly to this website every two to three days, NCache maintains high availability without losing any session data and no downtime is incurred," Kosuri said.