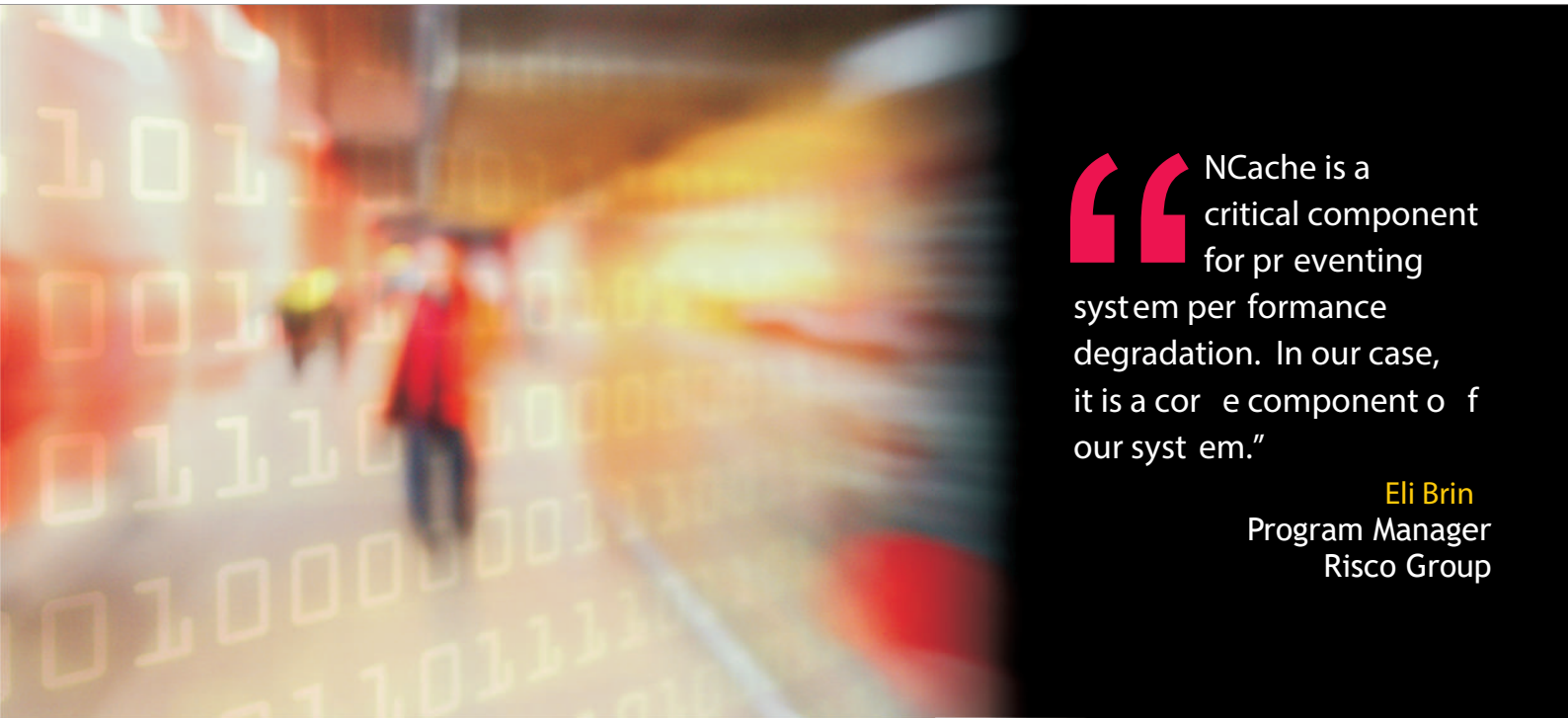# Case Study

> " NCache is a critical component for pr eventing system per formance degradation. In our case, it is a cor e component o f our syst em."
>
> **Eli Brin**
> **Program Manager**
> **Risco Group**

RISCO
G R O U P
Creating Security Solutions. *With Care.*

Risco Group Scores Over 600 Transactions Per Second; Thanks to NCache Speed, Scalability and Redundancy.

RISC○
G R O U P

Creating Security Solutions.
With Care.

Country or Region:
Israel

Industry:
IP based integrated security solutions

Customer Profile:
RISCO Group, headquartered in Israel, creates IP based integrated security solutions for global security markets. From software solutions to high-performance wired and wireless integrated systems, the company develops products matching customers' requirements and industry standards. RISCO Group's solutions for buildings and control rooms, sophisticated detector technology, intrusion, video and access control systems are found in commercial, industrial, institutional and residential applications around the world.

Alachisoft Product:
NCache

Customer Needs Met:
• Scalability
• Redundancy
• Reliability

Risco Group Scores Over 600 Transactions P er Second; Thanks to NCache Speed, Scalability and Redundancy   .

THE CHALLENGE

Risco Group instituted a new business model by providing its customers software as a service (SaaS). Its SaaS is based on a steadily growing server site system. Eli Brin, Program Manager for this SaaS operation, said, "Our service is part of Risco's service platform. This platform provides security and access control services to our clients. As a service in these domains, it must provide a 24/7 service with telecom grade availability."

He added, "By accessing our servers, our clients don't have to take care of the software they need. Cost of ownership is considerably reduced. They don't need to handle computer or software upgrades, maintenance, and things like that."

However, Risco Group's server site and SaaS business model faced a major challenge. Brin explained, "We use a great number of web servers to load balance the information and maintain session information between client requests. As a result, the challenges we confronted dealt with scalability bottlenecks due to the inordinate transactions coming to our database."

Scalability takes on a couple of meanings. On the one hand, Risco Group needed to effectively handle peak customer loads. On the other, it required a mechanism to increase total capacity. Scalability means being able to grow with the number of users or adding more users without negatively affecting performance.

Brin said, "We didn't have the capability at the beginning so we developed something overall and later in the first release of ASP.NET, we used the .NET ability to maintain sessions between requests and the MS sqlserver database.

"But this solution has a cost," he added. "With each request, we have to access the database and read the data. This was not as fast as we wanted, so it did not work effectively for us."

There are various reasons why bottlenecks can occur in ASP.NET applications. The most obvious is that data storage technology is not as scalable as Web applications architecture. Any place in an ASP.NET application dealing with data storage or data access immediately becomes a bottleneck. The two areas where this happens in ASP.NET are Session State storage and application data coming from a relational database or a mainframe database.

NCache Scalability Solution

Risco Group turned to NCache distributed caching to solve its scalability issues. Brin said, "NCache from Alachisoft solved our problem of persisting data in a distributed environment without a database."

Persistent data is intended for long-term storage since it meets certain requirements. A database like Risco Group's is intended for long-term storage, while NCache distributed data caching is always transient and temporary. In Risco Group's situation, the company only needs to store data in temporary storage or distributed caching during a user session or perhaps for the duration of an application for a few hours, days, or weeks. Then that data goes away because there is always permanent master storage or database from where data can be loaded again.

As for fast reading of data as Risco Group required, NCache is fast because it is an in-memory cache. Plus, it is virtually linearly scalable. Linear scalability means that as more servers are added, capacity is multiplied. For example, if 10,000 transactions per second are carried out against one server, adding a second server provides about 20,000 transactions per second total.

Redundancy via Clustering is Key

"What is particularly appealing is that NCache distributed caching supports full redundancy between servers, which is critical for the size of our web server farm," Brin said. Today, Risco Group uses a 22 server web farm, most of them are NCache clients with a separate caching tier of two servers.

Clustering and replicated cache topology makes redundancy possible. As shown in Fig. 1, NCache's replicated topology replicates the cache many times, depending on how many times Risco Group needs. Replicated cache is ideal for read-intensive use as in the case of Risco Group.

Figure 1

Brin said, "Hardware has a tendency to fail; it's just a matter of time. The NCache server is a critical component for preventing system performance degradation. In our case, it is a core component of our system.
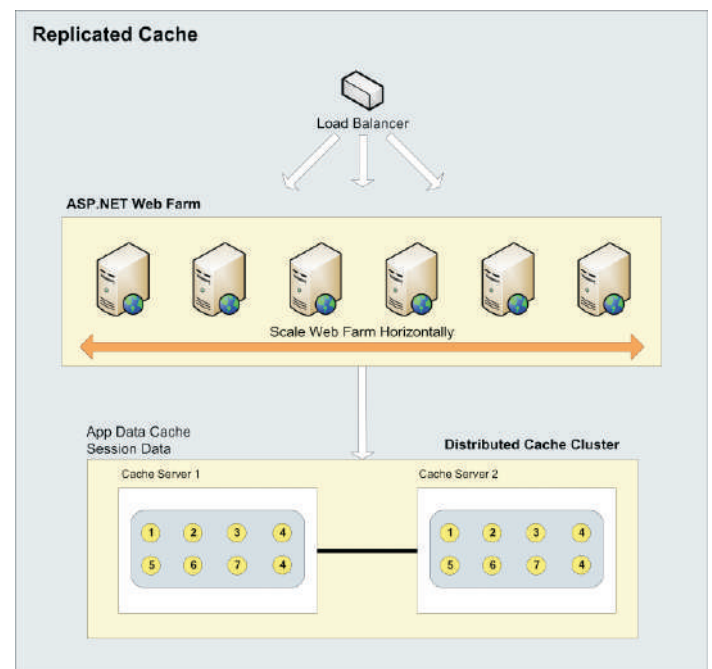
Alachisoft

About Alachisoft:

Alachisoft, a California based company provides NCache and StorageEdge. NCache is an in-memory distributed data cache that lets you cache application data and ASP.NET Session State to boost your application performance and scalability. StorageEdge speeds up SharePoint by externalizing BLOBs and caching BLOB and list data.

Visit our website at www.alachisoft.com or send email at sales@alachisoft.com.

You can download a free 60 days fully working trial of NCache from here: www.alachisoft.com/ncache

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If any web server goes down, (going down means memory in that server becomes unavailable), Risco Group won't lose any data and another web server will have that data. Replication provides more than one copy of the same data in different locations on different servers and by doing that, Risco Group achieves 100 percent up time for the duration of its data storage.

After implementing NCache, Risco Group soon discovered an added benefit – high performance to the tune of 600 transactions per second. Brin said, "Each transaction involves a complete application serving the client and includes all pertinent data."

Moreover, he noted that their SaaS operation and server site software must provide stable and reliable 24/7 service. "NCache speed, scalability, reliability and stability are proving to be excellent and is proven in our production environment," Brin added.