GleSYS

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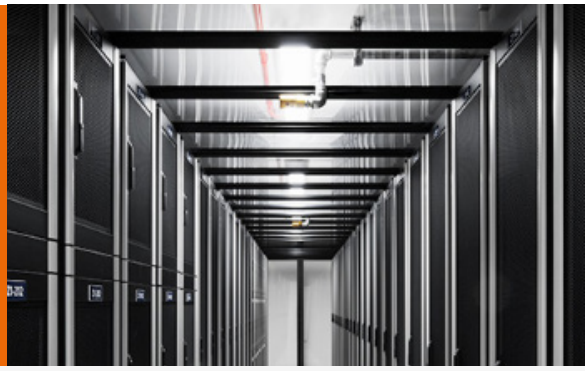
Global Leader in Software-Defined Storage.

GleSYS Internet Services AB
Case Study

GleSYS Offers the Next Generation of Cloud Solutions with Nexenta and SanDisk InfiniFlash

Falkenberg, Sweden
www.glesys.com
Cloud hosting



Summary

Challenge: Experiencing performance issues with legacy storage system
Solution: NexentaStor
Platform: InfiniFlash™ System from SanDisk
Use Case: Server Virtualization / Hosting

Benefits:
- Three-year ROI
- 9X improvement in server density
- 2X increase in IOPS
- 10X reduction in admin time

Business Overview

Founded in 1999, GleSYS Internet Services AB (GleSYS) is a next-generation cloud platform that provides flexible, scalable hosted Internet solutions to customers across the world. In 2000, GleSYS built their own data center in their own facilities. Today, the company boasts five ultra-modern data centers – two strategically located in Falkenberg and Stockholm, Sweden – and one each in New York, London, and Amsterdam. Networking and SAN hardware are from best-in-class vendors to provide high uptime and performance. By maintaining a highly virtualized architecture, GleSYS provides significant flexibility and scalability, with the ability to add or remove servers instantly, upgrade or downgrade services without restarts, and provide full root access to customers' servers.

Challenges

Before GleSYS implemented their current architecture, they were dealing with ongoing issues that were typically related to storage. "We needed to find a solution where both the technical guys and sales guys actually understand our use case and what we wanted to do. We were not interested in buying a lot of bells and whistles that we don't need. Looking deeper, you could see that the issues were always IOPS-related in some way," said Johansson.

> *"The biggest benefit is that it actually works – that it actually delivers what it promised it would deliver. Since we switched to the Nexenta solution in Falkenberg, we haven't had any outages and we don't have any complaints such as 'my server isn't performing as it should' or 'we don't get the performance that we need.' So it saves us a lot of time. Since we resolved the performance issue, I have only spent about 2 hours administering that solution, which makes a lot of hours to do other stuff – which is good."*
>
> Andreas Bergman
> Internet Engineer
> GleSYS Internet Services AB

The key considerations for the new solution included power consumption, speed, and redundancy at the right price. “If we look at the installation that we are running in Falkenberg, we have a theoretical maximum. If every virtual machine in that cluster runs at full IOPS they would require about five million IOPS or something like that. Obviously we don’t count on every VM doing their maximum configured IOPS at a given time,” said Bergman.

One issue that GleSYS faces on a continual basis is not having visibility into customer needs at a particular point in time. “It’s a matter of trying to deliver perhaps 1000-2000 IOPS per VM without affecting all the other virtual machines in that cluster. Since we don’t know what kind of work load each customer actually runs, we have to provide a solution that is good enough for most use cases,” said Bergman.

“We don’t have the information about which virtual machine needs power at a given moment,” Johansson explained. “We may have a customer that has been using servers for one year with low usage. Then suddenly one day they are moving a new workload to us. We don’t necessarily get a ‘heads up’ but we need to be able to deliver that performance directly.”

Johansson and Bergman assume that most customer use cases involve heavy database activity, which requires a lot of small IOPS that are crucial at the point in time that IOPS is needed. “Our customers can’t wait for the storage or the data to get hot,” Bergman told us. “If we were to use a tiered solution, the data would never get hot. However, when we talk to traditional storage vendors, they are often talking about some tiered solution. What we need is a lot of IOPS and a lot of storage that is predictable. We need it to perform as predicted and most solutions we have tried before haven’t actually done that.”

Johansson emphasized that they are not a traditional office-based company. “We don’t have 2000 people working on a VDI solution from 9 to 5. We aren’t selling our services based on a 12- or 24-month contract. All of our customers are buying our services on an hourly basis. Therefore, if they are not getting the power that they are expecting, then they will turn the server off and go somewhere else.”

“We have a business that is running around the clock and all our customers are probably dependent on us for their mission or their company,” agreed Bergman. “If we don’t deliver, they won’t grow.”

Solution and Benefits

Solution

GleSYS has been working with Layer 8 IT-Services and Nexenta since October 2014. The Layer 8 team recommended that GleSYS try using flash instead of relying solely on hard disk drives (HDDs). The GleSYS team was intrigued by the smaller power and cooling requirements needed from flash solutions and, although they had become aware of Fusion ioMemory, this was their first foray into using flashstorage. “NexentaStor had already proven itself at GleSYS. With the breakthrough economics found with the NexentaStor/InfiniFlash solution, combined with its performance and minimal footprint, the value of this solution was very appealing to GleSYS. With the cost/GB, we see a lot of scenarios which could benefit from this solution, such as virtual data center, Big Data, media streaming, Hot Archive and more,” said Johan Tungström, CEO at Layer 8 IT-Services.

Glenn Johansson, the founder of GleSYS met with the Nexenta team at VMworld in San Francisco and later invited Layer 8 IT-Services to build a NexentaStor hybrid solution as a test in the Stockholm data center. They installed NexentaStor with hybrid pools populated with 10K HDDs. “That performed well and we had a really good experience with the Nexenta solution,” said Bergman. “After solving some very minor issues, we had strong trust in Nexenta and the Layer 8 folks.”

When the GleSYS team next met with Nexenta at VMworld 2015 in Barcelona, they were seeking another opportunity to work with Nexenta for their Falkenberg site. Layer 8 and Nexenta directed them to the SanDisk booth and, after evaluating pricing, performance, and storage options, GleSYS agreed to a proof of concept evaluation. Although Layer 8 presented some alternative solutions to consider, Johansson and Bergman were not convinced. “We knew that the Nexenta solution would deliver what we need and we just needed to decide about the SanDisk hardware. However, the numbers looked really promising,” said Bergman.

The team implemented InfiniFlash in the South Sweden (Falkenberg) data center within weeks, with the plan of using the new system for primary storage and the existing architecture for secondary storage. “We had a working relationship with Layer 8 and Nexenta. They presented the solution to us and promised it would deliver what we wanted. And it does,” confirmed Johansson.

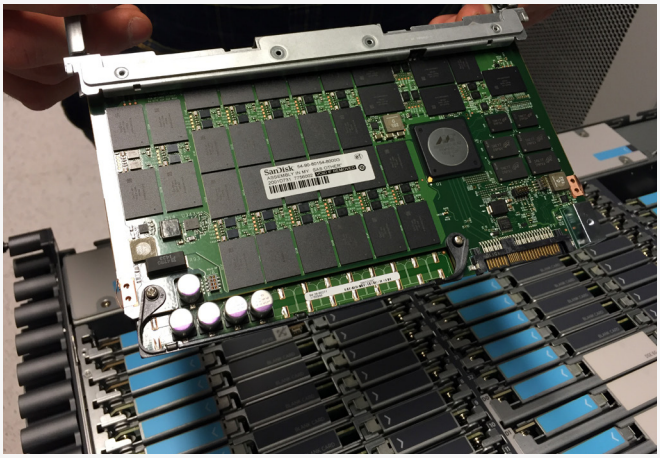
Benefits

Due to the cost competitiveness of the NexentaStor/InfiniFlash solution, GleSYS expects to recover the initial investment cost over a three-year period. “We used to have problems with performance, so the cost was secondary for us,” Johansson told us. “However, we didn’t have to make any price changes going from HDD to SSD. And that’s a good thing for us. Our customers think they are buying a solution with HDD and we are delivering on SSD disks.”

“The biggest benefit is that it actually works – that it actually delivers what it promised it would deliver,” said Bergman. “Since we switched to the Nexenta solution in Falkenberg, we haven’t had any outages and we don’t have any complaints such as ‘my server isn’t performing as it should’ or ‘we don’t get the performance that we need.’ So it saves us a lot of time.” The GleSYS team had been spending upward of 40 hours per month on system administration and solving storage-related issues. “Since we resolved the performance issue, I have only spent about two to four hours per month administering the new solution, which makes a lot of hours to do other stuff, which is good.”

The metrics observed by the team emphasize the enhanced performance of the new solution. While the previous architecture reached a maximum 12,000 IOPS, in the current daily operation, the solution maintains a constant 20,000 IOPS – with a latency of less than 1.5 milliseconds – and peaks as high as 80,000 IOPS. Although this is not the maximum achievable by the new solution, it is the maximum utilization the GleSYS team has observed with their current client load.

The team is spending less time handling performance issues with their customers. In this way, they are preventing ‘bad will’ and turning it into ‘good will.’ Customers have



provided very positive feedback since the conversion to InfiniFlash and are spending less money adapting and moving around their applications due to performance issues. As a result, they are buying more resources from GleSYS. “So we’re not necessarily saving money, but we’re making money,” said Bergman.

Support from Layer 8 has assisted greatly with the transition to the new architecture. “We have a really good relationship with Layer 8 where we get answers to all the questions that a customer would ask when you run a new solution. For us that is really valuable.”

Johansson and Bergman sense that customers are getting even more out of GleSYS services than before. Compared with the previous environment, the new solution has alleviated the issues that customers were experiencing.

“Customer impact is a direct business impact for us,” said Bergman. “So if one of our customers has issues we will probably have business issues with that customer because we are selling those resources directly to a customer.”

Toll free: 1-855-639-3682
sales@nexenta.com
nexenta.com

twitter.com/nexenta
facebook.com/nexenta
LinkedIn: Nexenta Systems Inc

Nexenta Systems, Inc.
451 El Camino Real, Suite 201
Santa Clara, CA 95050

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