



In-Depth Balancing the load

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*Clifford Chew, VP of Infrastructure for global wireless community provider BuzzCity, tells Computerworld Malaysia how implementing a network load balancing solution optimised access for more than five million users. **CW***

AvantiKumar

Created in 1999, Singapore-based BuzzCity operates myGamma, a 24x7 networking wireless community across 54 countries. Five million young mobile users around the globe provide an audience for content owners, service providers and other merchants to sell online products and services.

Faced with the doubling and tripling of network traffic every week, BuzzCity had to purchase additional servers every other week, as well as recruit and train new staff. "For some years, we used a successful in-house load balancing software which we had built for our own use," Chew said.

However, the cost of new servers, time lag in training new staff to handle the new hardware as well as maintenance demands was impacting the company's core business. "Also, adding servers did not allow for easy scalability, added to our maintenance costs and increased our downtime," said Chew. "Most importantly, we were receiving unfavourable customer feedback relating to this—they were finding it more difficult to get access to our services."

"When we started looking for load balancing solutions toward the end of 2006, we were handling one million community page views daily and 30 million advertising impressions a month," said Chew. "We projected that we needed to at least double the size of our server farms and increase our staff strength by 50 per cent in order to handle the rapid growth."

So Chew's team carried out extensive searches and sat through vendor demos to source a provider for an ideal network optimisation tool. The term load balancing did not figure in BuzzCity's original search for a solution to its access optimisation woes. But eventually, BuzzCity arrived at Juniper's DX solution, the implementation of which took six days at a cost of around US\$60,000 (RM195,513).

Test and Align

"This is not an off-the-shelf solution," said Chew.

"A company needs to customise implementation carefully to align with its business needs. To help change internal working culture you also must ensure sufficient onsite user education is part of the implementation plan."

The Juniper load balancer is not as established a product as its firewall applications, he added.

"Out-of-the-box load balancers will not be ready to go," said Chew. "So Juniper's expertise was greatly in demand in the initial months."

A significant key to successful implementation is to build a strong relationship with the vendor. BuzzCity depended on Juniper's expertise from the outset. "We had to call them up to 20 times a day. That meant calling Juniper's local and overseas experts, and their support service. It also meant having midnight conference calls with Juniper's overseas advisors," said Chew. "You need to do this to derive real value from the solution you have bought."

Benefits and Opportunities

Returns on investment for BuzzCity included the customer perception of the company and its operations as being "always on". Partners in different parts of the world, including those in the US, reported experiencing no latency. And maintenance could be handled by a small IT staff of four people.

"Also, there was now no need to invest in 'hundreds of servers', and less hardware investment translated into decreased maintenance time," said Chew. "And employees seldom refer to the handbook which indicates how easy they find the Juniper tool to use."

"With Juniper's solution and some proprietary improvements to our internal architecture, we are now handling twice the number of community daily page views—2.2 million—delivering 20 times the ad impressions—20 million a day—with only a 20 per cent increase in server resources and a moderate increase in staff costs," said Chew. "This works out to approximately 40 per cent in savings with the tangible benefits of higher uptime: from an average downtime of seven hours a month—which translates into 99 per cent uptime on average—to less than one hour a month, which means 99.9 per cent uptime. We can run this with an IT staff of just four people."

Before the load balancing upgrade, the company had to plan and communicate system upgrades, such as software patches via marketing and business development teams, and prepare users for possible downtimes of up to 30 minutes.

Now the load balancer will divert traffic to half the number of servers that will be left "live", while the other half will be upgraded within seconds. Customers therefore perceive no change in quality of service.

Another plus, according to Chew: network management is "much easier and flexible now....A recent example is the downtime caused by a major power outage in Singapore. We took 50 per cent less time in returning to full service than did the government websites there."

The company now operates its global service using just 20 to 30 servers. This is to be compared with the potential use of more than a hundred should it have continued with its original plan.

The load balancer has also opened up a new business opportunity. "A new opportunity now exists in mobile advertising for our community products," said Chew. "We now build the opportunity to new advertisers around our load balancing back end. Advertisers who are not aware of the back end have a perception that we can deliver any audience load—for example, one million page views—without difficulty."

Deciding Factors

Looking forward, Chew has in mind some improvements he would like to see made. "Juniper needs to be made idiot proof, as it is potentially too powerful. Make it more robust. Also, no tool will hit 100 per cent of your needs. Eighty per cent is good. Juniper meets that right now."

Chew also highlighted some lessons he has learnt from his experience in implementing BuzzCity's Juniper technology-based network optimisation platform. "There are three things that a new company should have on its agenda when looking to invest in IT: don't expect it to be a magic pill; test everything and adjust it to work for you; and, build the relationship with the vendor," he said. "It is difficult to compare Juniper's solution with other offerings as this is not 'an apple to apple' comparison. Each product offers a different mix of benefits and downsides. You have to do your homework and do extensive testing."