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CACHEBOX supports Gabonese ISP's rapid growth

CHALLENGE

High demand for caching large objects, such as videos

Escalating costs of bandwidth in Africa

SOLUTION

CACHEBOX**230** and **310** for better use of existing bandwidth

WCCP deployment for easy clustering of additional units as the network grows

BENEFIT

High performance video caching resulting in 28-30% bandwidth savings

Significantly improved customer internet access speed

> *Our customers wanted fast web content delivery and we had to provide it before adding new users.*

A fast expanding internet service provider, IPI9, struggled with high bandwidth costs along with insufficient performance. Deploying CACHEBOX enabled the company to manage its growth cost-effectively whilst providing better user experience.

About IPI9

IPI9 is an internet service provider headquartered in Libreville, the capital of Gabon. With 70 employees IPI9 caters for increasing demand for internet in the country providing internet access via a WiMAX network to 15,000 residential and business users.

Preparing for expansion

Before moving to submarin optic fiber, IPI9 provided internet access to a rapidly growing customer base using a 30 Mbps satellite connection with 6 Mbps uplink and 24 Mbps downstream. Up to 50% of its bandwidth was consumed by HTTP traffic with huge demand for video streaming from both business and residential customers. Faced with escalating costs and customer complaints about performance, IPI9 wanted to manage its growth cost-effectively whilst providing a better user experience to its existing customers.

"We were planning to add more users on the same connection but our bandwidth consumption was already very high," explained Raz Biramah, IPI9 Chief Technology Officer. "Our customers wanted fast web content delivery and we had to provide it before adding new users. It seemed that our only option was to buy more bandwidth but this would be a very expensive investment. We soon realised that what we could do instead was to make better use of existing bandwidth and ApplianSys' **CACHE**BOX seemed like a good option."

CACHEBOX makes an impression

According to Raz, "What we found most impressive about **CACHE**BOX was that it handled video content like YouTube even though each time a video was requested from that site, it came with a different URL. With conventional web caching, each time a video is requested, it is downloaded from the web server and added to the local cache, resulting in multiple copies, because of the different URLs."

CACHEBOX has proprietary software which extend caching to include objects which would not be cached by standard caches. It recognises that even though that file that is being requested may come from a different server and have a different URL from a copy that it has already stored, it is the same content and can be served from cache.

Content providers change their methods for delivering content from time to time, often breaking the existing "rules" for determining URLs. The existing software may stop caching their content as a result. Part of the appliance package is that when the providers make these changes, ApplianSys responds by updating the **CACHE**BOX software and then automatically supplying updates to customers' appliances. As a result, **CACHE**BOX is soon successfully caching the content again, working with the modified URL rules.

Raz was also intrigued by the fact that **CACHE**BOX uses compact flash cards to store the operating system and caching application, while the hard disk is used solely for cached objects. In the unlikely event of equipment failure, the cards can simply be extracted and inserted into a replacement appliance without losing any settings.

> *CACHEBOX saves us an estimated of 28-30% of our bandwidth. Average download times have been dramatically improved and it makes a noticeable difference to our users' web experience.*

The model that best fitted IPI9's requirements was **CACHE**BOX**230** which can serve up to 2500 HTTP requests/second. It was deployed using WCCP (Web Cache Communication Protocol), with a Cisco 4503 router. An added benefit of WCCP was that traffic could be added to the **CACHE**BOX in stages based on its source IP, without making physical changes to the network. WCCP deployment mode also delivers load balancing and fault tolerance and allows further units to be added easily as required

CACHEBOX310 for further network growth

The **CACHE**BOX**230** provided a simple solution to get higher performance from IPI9's network, reducing transmission costs and response times. The appliance saved bandwidth and dramatically improved user experience.

One year after the deployment, the number of users served by IPI9 had doubled and a further increase to 25-38,000 users is expected by the end of 2013. To address the expected growth IPI9 decided to purchase an additional unit. This time they opted for the next model up - **CACHE**BOX**310**, which serves 3600 HTTP requests per second.

Raz reported: "Simply put, **CACHE**BOX saves us an estimated of 28-30% of our bandwidth. Average download times have been dramatically improved and it makes a noticeable difference to our users' web experience. In general, **CACHE**BOX offers a very good price-to-performance ratio."

A modest investment in deploying a cache deliver a clear and rapid Return on Investment. **CACHE**BOX allowed IPI9 to make better use of its existing bandwidth and delay its investment in higher bandwidth. IPI9 is now ready for further expansion.

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