efficient iP®

FusionNet

Improving ISP Customer Experience With Scalable High Performance DNS

fusionnet

Project Objectives:

- **Improve subscriber satisfaction by replacing limited legacy DNS solution**

- **Prevent DNS service downtime, causing forced use of 3rd party providers**

- **Eliminate security risks & meet regulatory requirements**

- **Remove complexity of legacy DNS management**

- **Overcome scalability issues to cope with company growth**

Key Benefits:

- **Improved customer experience with highest performance DNS servers**

- **Reduced subscriber churn rate thanks to enhanced service availability**

- **Simplified DNS management with intuitive GUI and work delegation**

- **Strengthened security and compliance using domain blocking by DNS Firewall**

- **Enhanced flexibility of DNS, incorporating scalability and security features**

FusionNet is a Class A Internet Service Provider (ISP) providing next generation broadband services across India, for both residential users and enterprise businesses. With over 250 employees, FusionNet ranked 29th in India as per data released by TRAI in Nov 2020.

As part of their expansion strategy, FusionNet needed to move away from their conventional DNS servers and implement a solution capable of meeting the performance, scalability and security required to meet regulatory and user experience demands. A purpose-built DNS solution was therefore mandatory.

"The SOLIDserver DNS has improved subscriber request response rate by over 300%, helping to enhance UX and significantly reduce our customer churn rate."

Pankaj Nagpal – CTO

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Situation and Challenges Being Faced

For providing broadband services, FusionNet were using conventional DNS servers based in their Delhi site. But with company growth, it became apparent that the solution lacked many features and functionality. The user interface was inadequate, management of the system could only be performed by expert staff, and the solution was unable to be easily scaled.

The rapidly increasing number of subscribers was also causing performance issues. Consequently, DNS queries were not being resolved in a timely manner, severely affecting customer experience. The rise in complaints from home broadband users regarding lack of internet access resulted in the call center often becoming overloaded.

Security was another tricky point for FusionNet. Security policies were difficult to enforce, and regulatory issues were at risk as there was no way to block the domains being requested, in accordance with the list defined by government authorities. As with most organizations, DNS is often a primary attack target for cybercriminals, and unfortunately for FusionNet, attacks they suffered were mostly service affecting. That had led to a 17% increase in average customer churn, causing an associated revenue impact. For treating DNS outages, the workaround of pointing to 3rd party providers in the cloud for providing the DNS service diminished FusionNet's operational control and opened up issues around compliance. It was clear that a much-improved DNS solution was therefore required.

Solution Implemented

To overcome their long list of challenges, FusionNet reviewed several DNS vendors, including EfficientIP. The EfficientIP SOLIDserver DNS was chosen as, according to FusionNet's CTO Pankaj Nagpal, it clearly stood out in terms of being technically superior and the most commercially viable, as well as offering highest flexibility. The timely support given by the knowledgeable EfficientIP team was also a deciding factor.

> *"Out of all the leading DNS vendors we evaluated, the EfficientIP SOLIDserver DNS stood out as being clearly superior from technical, commercial and flexibility points of view."*
>
> Pankaj Nagpal – CTO

SOLIDserver virtual appliances were installed in the Delhi office to provide simple-to-manage DNS services in high-availability mode, with blacklisting domains being obtained from the Government of India. To block these forbidden domains, FusionNet made use of the EfficientIP DNS Firewall product, which came readily installed in the DNS appliances at no extra cost.

For simplifying deployment, FusionNet benefited from the EfficientIP SmartArchitecture feature. Making use of SmartArchitecure's state-of-the-art policy driven templates helped them automate and accelerate rollout of DNS services, while practically eliminating the risk of configuration errors.

Lastly, FusionNet took advantage of the EfficientIP training options, praising the quality of the transfer of knowledge given by the trainers.

Main Results

Moving to a purpose-built solution has made DNS management far simpler for FusionNet. Work delegation of repetitive tasks is now possible, so responsibility can be given to other team members, freeing up valuable time for expert staff.

FusionNet staff are also less stressed when it comes to regulatory compliance, as the DNS Firewall solution keeps the list of forbidden domains always up to date by automatically synchronizing with the government feed.

In addition, administrators now also have far better control over security policies, thanks to having enhanced visibility over the requests made to the DNS Firewall lists (using analytics on domains which have been visited). Security has therefore been strengthened, and troubleshooting made far easier due to the level of stats provided by the SOLIDserver.

On the subscriber side, important customer experience improvements have been noted, confirmed by the reduction in customer churn numbers. This has been made possible by the EfficientIP SOLIDserver DNS increasing request-handling performance by over 300% - while retaining similar infrastructure - helping eliminate DNS outages and provide the quality of service that FusionNet has been striving for.

Finally, horizontal scalability has been made possible with the SmartArchitecture functionality of SOLIDserver, an important factor given the rapid rate of subscriber growth, and the plans for future company expansion.

Conclusions / Future Plans

EfficientIP SOLIDserver DNS's are now positioned as a foundation for the FusionNet service offering, and will play an important part in expansion plans. The core network placed in Delhi is used to cover the entire north of India. Coverage is planned to be expanded to other cities including Lucknow, Kanpur and Ahmedabad. The resulting increase in traffic will be handled by new SOLIDserver DNS servers, moving potentially in the future to a distributed architecture model composed of DNS servers placed at each location. Load balancing will be a consideration so the EfficientIP Edge DNS GSLB is being investigated for improving application traffic routing.

Lastly, with continuous strengthening of network security always being top of mind for FusionNet, there is a likelihood that the DNS Guardian feature of the EfficientIP DNS will be leveraged to protect users and apps, while enhancing data confidentiality in order to meet regulatory requirements such as the Personal Data Protection Bill (PDPB).