

# HYOSUNGITX ENSURES RELIABILITY OF ITS CONTENT DISTRIBUTION NETWORK WITH JUNIPER'S MX SERIES ROUTERS

## Summary

**Industry:** IT services

**Challenges:** To ensure the smooth delivery of e-learning and gaming services by addressing performance and reliability issues, especially in the face of potential distributed denial of service (DDoS) attacks.

**Selection Criteria:** Performance, reliability, cost.

**Network Solution:** Juniper Networks MX960 and MX480 3D Universal Edge Routers.

**Results:** The deployment of Juniper Networks MX960 and MX480 routers has enabled HyosungITX to counter DDoS attacks.

HyosungITX began as a storage-on-demand service provider in Korea in 2005 and has since expanded its core business to provide content distribution network (CDN) services for the e-learning and gaming markets.

As a CDN provider, HyosungITX enables the streaming of high-quality video, smooth downloads for online games and installation/patch files, and the caching of bandwidth-intensive Web content. It also provides dedicated players, media security, and digital rights management which are required by e-learning service providers, as well as video encoding and transcoding solutions which ensure quality in service delivery.

To deliver CDN services, HyosungITX operates server farms in six Internet service provider (ISP) locations nationwide. Data is mirrored across these server farms. When a client accesses a service, the data is sent via the fastest and most reliable network route from any of these server farms.

## Challenges

One of the key challenges faced by HyosungITX is to ensure the reliability of its services in the face of security threats such as DDoS attacks, which could bring down its e-learning or gaming services.

To help address this, HyosungITX has architected its network such that when one of the locations is under attack, a global load balancing solution will exclude the IP address of the particular ISP and deliver the services through another ISP. If this, in turn, comes under attack, the services will be provided through cache servers located in other server farms.

For the solution to be effective, however, Hyosung ITX would have to ensure that the network connecting its server farms is highly reliable and can handle the performance requirements, so that even if a large number of users are accessing the servers, the services can be delivered smoothly without any delay.

## Selection Criteria

Performance and reliability, as well as pricing, were therefore the key considerations that HyosungITX had in selecting a routing solution for its network.

"We decided to deploy the Juniper Networks® MX Series because the routers offer the highest performance for the particular price point, and also provide a very high level of reliability," said Park Sun- Kyu, Manager of the CDN Infrastructure Team at HyosungITX.

An additional factor in the decision was the fact that many of HyosungITX's carrier partners were using the same series of Ethernet services routers running Juniper Networks Junos® operating system. This offered further proof of the reliability of the Juniper Networks MX Series, said Park.

## Solution

HyosungITX linked its server farms using the high-performance, multi-functional MX960 and MX480 3D Universal Edge Routers. The MX Series features superior quality of service (QoS) at the interface level, which improves port density and enables HyosungITX to ensure that services receive the appropriate level of service regardless of traffic conditions.

The MX960 router is one of the industry's largest-capacity carrier Ethernet platforms, with up to 960 Gbps of switching and routing capacity. With high-density interfaces and high-capacity switching throughput, the MX960 supports a wide range of business and residential applications and services including high-speed transport and VPN services, next-generation broadband multiplay services, and high-volume Internet data center internetworking.

The MX480 enables Ethernet services and connectivity to move closer to the provider edge. It provides a dense, highly redundant platform primarily targeted for dense dedicated access aggregation and provider edge services in medium and large points of presence (POPs). The MX480 offers common hardware redundancy including the Switch Control Board, Routing Engines, fan trays, and power supplies.

The routers in the MX Series leverage the highly robust and user-friendly Junos OS which allows HyosungITX to define management and operation policies to ensure the smooth delivery of services. Junos OS is the first routing operating system developed specifically for the Internet and is especially designed for the large production networks typically supported by service providers. The software has been designed to configure the routing protocols that run on the MX Series and the properties of its interfaces. After a software configuration is activated, Junos OS monitors the protocol traffic passing through the MX Series, as well as troubleshoots protocol and network connectivity problems.

## Results

According to Park, the deployment of Juniper Networks MX960 and MX480 routers has enabled HyosungITX to address its concerns over DDoS attacks. "DDoS attacks occur instantaneously and are concentrated on a certain target, so the performance of the MX Series routers is extremely important in helping us to counter the attacks," he said.

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Manager of the CDN Infrastructure Team,  
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## Next Steps and Lessons Learned

Going forward, HyosungITX is looking to leverage its robust network to deliver innovative new services such as Infrastructure as a Service, which provides the customer with an infrastructure solution without having to invest in equipment, and Database as a Service, which caches the customer's database and ensures smooth delivery of services when access to the customers' own database server is affected by traffic congestion.

"Based on the technology and operational 'know how' that we have accumulated through the deployment of our CDN service, we plan to invest in further research and development to position HyosungITX as a leading Korean IT service provider," said Park.

## About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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