



Empowering Broadcast Content Creation with Reliable, Secure Network

Overview

A newly built six-story broadcast content production center in Geumcheon-gu, Seoul, required a robust and efficient wired and wireless network infrastructure to support its extensive facilities, including a large studio and multiple editing rooms. Zyxel Networks worked with LG U+ to provide a comprehensive solution to meet these demands, ensuring seamless connectivity for staff and visitors, enhanced security, and simplified network management. The new network delivered smooth connections capable of handling high user density and demanding data transfer needs of video production, while also improving network management efficiency.

Challenges

The production center is primarily composed of conference and editing rooms, where staff frequently move between spaces using wireless devices like tablets and laptops, making a stable WiFi environment essential. Each conference room also required wired printers for immediate printing of revised schedules, with seamless integration between wired and wireless networks. Supporting wired IP phones in the cast waiting and editing rooms added another layer of complexity. One of the most pressing challenges came from large-scale audition programs, which brought in hundreds of audience members and performers accessing the network. To enhance security, the visitor WiFi had to be isolated from the business network, while still providing stable connectivity for a high volume of users.

Solutions

Following a site assessment, Zyxel Networks and LG U+ teamed up to provide a customized, end-to-end solution. The production center's wired network was constructed using Zyxel Networks' smart managed switches, ensuring stable, high-speed connectivity for key devices like IP phones and printers. These switches can automatically detect and prevent network failures (such as looping and reverse IP flow) caused by cable misconnections. With features like Loop Guard and DHCP Server Guard, they block incorrect connections, enhancing network stability.

Customer

Broadcasting content production center

Industry

Entertainment

Location

Seoul, South Korea

Partner

LG U+

Customer Background

The newly constructed broadcast content production center is Seoul's largest facility for producing large-scale audition programs. Covering 2,000 square meters (600 pyeong) from the first basement level to the fifth floor above ground, it houses everything needed for entertainment production, including a spacious studio with a 25-meter-high ceiling, around 60 editing rooms.



To support the center's heavy internet demands, from high-resolution video streaming and large file transfers to cloud-based editing, the USG FLEX 700 firewall with WAN redundancy was deployed. This equipment can connect multiple internet lines to distribute traffic, preventing potential issues and ensuring smooth processing of large-scale data. With flexible WAN/LAN port switching, the system is ready for future upgrades, including 8K and 16K video workflows. Business and visitor traffic are kept on separate lines, and automatic failover prevents service disruption.

The center required reliable, segmented WiFi for various spaces, from a 500-seat studio to editing rooms and conference areas, as staff frequently moved with laptops and wireless phones. With multi-SSID functionality, each AP broadcasted multiple networks, providing tailored WiFi access for each area. To prevent bandwidth congestion, QoS settings were implemented to manage individual usage and prioritize essential services like voice calls. Customized QoS rules were applied to each SSID, with the internet phone network receiving top priority due to its sensitivity to latency. This ensures stable performance even with demanding services like video streaming and file transfers. In the main studio, APs were installed closely to support up to 500 users. Load balancing was applied to prevent traffic bottlenecks, ensuring an even distribution and stable wireless experience.

Product List



- WAX610D/WAX510D WiFi 6 Access Point



- XGS4600-32F L3 Aggregation Fiber Switch
- GS1920-8HPv2/24v2 Smart Managed Switch



- USG FLEX 700 Firewall

Results

The network delivers reliable connectivity tailored to the needs of each space, including conference rooms, editing rooms, main studios, and waiting rooms. With the entire infrastructure monitored and managed via a centralized cloud platform, network management became more efficient, and staff benefited from uninterrupted connectivity for collaboration, data transfers, and cloud access. Enhanced security and stability were achieved through guest network separation, QoS, load balancing, and intelligent switch features. A dedicated mobile app further enables on-the-go monitoring and immediate responses to any network issues, ensuring smooth and continuous production operations.

- Stable internet access and consistent WiFi performance
- Reliable wired connections that prevent network failures and cable misconnection issues
- Enhanced security through guest and internal network separation
- Efficient cloud network management enables real-time monitoring and fast troubleshooting

