



Turning Citizens' Plaza into a Smart, Connected Space with Reliable WiFi

Overview

To enhance the usability of Citizens' Plaza and support large-scale public events, the city government deployed Zyxel Networks' outdoor access points, firewall, and network switches powered by the Nebula solution. The solution delivers seamless coverage for 200 to 300 concurrent users, reliable and resilient performance in harsh environments, and simplified network expansion through Smart Mesh. With the Nebula solution, the city now benefits from real-time network visibility, reliable connectivity, and efficient network operations across the entire plaza.

Challenges

To build a reliable outdoor WiFi infrastructure, one key challenge was ensuring stable wireless connection in high-density environments, with 200 to 300 users connecting simultaneously during large-scale events. The network also had to deliver seamless coverage across the expansive outdoor space without dead zones, while remaining durable under conditions such as rain and changing temperatures. Besides, limited cabling options within the plaza posed a challenge, requiring a flexible solution that could support efficient network expansion.

Solutions

To ensure reliable outdoor wireless service at the Citizens' Plaza, Zyxel Networks' WAX655E outdoor access point was deployed, specifically designed to withstand harsh environmental conditions. With IP67-rated dust and water resistance, it can endure submersion in one meter of water for 30 minutes. Its wide operating temperature range of -40°C to 65°C ensures stable performance year-round, from heavy rain to extreme heat and cold. Built-in surge protection safeguards the device from lightning strikes and sudden over-voltage, making it resilient against unexpected electrical shocks. In public spaces, stable coverage is more important than connectivity speed. The entire plaza has consequently been configured as a single SSID WiFi network. Once connected, users automatically switch to the nearest access point as they move, enabling uninterrupted internet use, whether watching videos, uploading photos, or browsing the web.

Customer

Citizens' Plaza

Industry

Government

Location

Pocheon, Gyeonggi-do,
South Korea

Partner

New One Systems

Customer Background

Located in front of the new city hall, the Citizens' Plaza is a 1,600-square-meter public space designed for both relaxation and community activities. Featuring a central lawn, seating areas, cooling mist systems, and performance facilities, it serves as a popular spot for families and a venue for events such as cultural performances, local bazaars, and seasonal celebrations. Now, it has become a symbolic public space where citizens gather, connect, and build a sense of community.



Featuring MU-MIMO technology, the outdoor access points maintain stable connectivity even during crowded events. Load balancing ensures users are evenly distributed across access points, preserving service quality even at peak times.

Laying a wired LAN across a large outdoor space is costly and complex. Standard UTP cables are limited to a maximum length of 100 meters, often requiring additional equipment for longer distances. To address this, Zyxel Networks' Smart Mesh technology was deployed to connect access points via wireless backhaul. Each access point automatically selects the optimal path based on signal strength, speed, and connection quality, and reroutes traffic if an issue occurs. This ensures stable WiFi even in hard-to-wire areas, delivering seamless, full-plaza coverage without dead zones.

In addition, a centralized cloud network management system powered by Nebula enables real-time traffic analysis and performance optimization, along with rapid detection and response to anomalies. This approach ensures a stable public WiFi experience for citizens while minimizing the operational burden on the city government.

Product List



- WAX655E WiFi 6 Outdoor Access Point
- WAC6553D-E WiFi 5 Outdoor Access Point



- GS1920-8HPv2 Smart Managed PoE Switch



- USG FLEX 200 Firewall

Results

These technologies establish a durable and scalable outdoor WiFi infrastructure that delivers stable public connectivity while minimizing installation complexity and maintenance burden. The system reduces operational workload and is well-suited for public institutions with limited IT staff.

- 200 to 300 people connect simultaneously even in high-density environments
- Full-plaza coverage achieved with no dead zones
- Reduced deployment complexity by using Smart Mesh to minimize cabling requirements
- Reliable performance in extreme weather conditions lowers maintenance risks
- Faster issue detection and response with real-time cloud monitoring
- Simplified network expansion with plug-and-play deployment and centralized control

