



## Pivot3 Case Study

Safe City Solution

### Industry

Government

### Location

Bogotá, Colombia

### Key Challenges

- Number of surveillance cameras well short of international standards
- Outdated surveillance infrastructure provided no central monitoring
- Unreliable surveillance systems exposed the city to risk

### Solution

- 30 hyperconverged servers and 20 storage-only appliances with 5PB capacity with an additional 10PB planned for phases two and three
- Integrated SecurOS™ video management software from Intelligent Security Systems

### Business Benefits

- Simplified management and open architecture improves effectiveness by allowing operators at all control centers to view city-wide video data
- Reduces risk and liabilities by eliminating data loss and downtime
- Modular scalability allows the city to expand camera counts and capacity as demand increases
- High-density solution fits in limited floorspace, reducing space, power and cooling requirements by up to 40%

Joint Solution with:



## City of Bogotá

Pivot3, Lenovo and ISS Provide Modern, Centralized Safe City Infrastructure for Major South American City

### About the Customer

At an elevation of over 8,500 feet and over 8 million inhabitants, Bogotá is the capital and largest city of Colombia and the thriving political, economic, arts, and sports center of the country. It's a diverse and multicultural blend of residents spread across 20 localities, or boroughs, forming an extensive network of neighborhoods with a mix of colonial and modern architecture. Known as the Heart of the Andes, Bogotá is responsible for over half of the tourism in Colombia.

### The Challenge

In 2016, the security team responsible for citizen and visitor safety in Bogotá was operating with a jumble of technology from 14 contracts signed and implemented over many years. The city had 2,000 cameras, well below the international standard for cameras per capita. Of those 2,000 cameras, only 1,500 were operational; some were obsolete, some had been vandalized, and some were simply out of order. Many of the cameras, from brands such as Pelco, Bosch, Indigo and others, operated as islands, with no centralized monitoring or management. The city realized they needed to upgrade to an infrastructure platform with mission-critical capabilities purpose built for the demands of Safe City and Internet of Things (IoT) initiatives. Specifically, they needed a platform that offered resiliency and the ability for a security operator in any location to view any camera throughout the city. The platform also needed the ability to scale up from today's 2,000 cameras to support, manage and view feeds from 5,000 cameras spread across 18 different boroughs. The security team was severely constrained by limited space in the datacenter, so it was essential that the solution meet the rigorous storage requirements for all cameras in a footprint that occupied less than two racks.

### The Solution

The city selected the Pivot3-Lenovo Safe City solution, which included 30 Lenovo servers and 20 storage-only appliances running Pivot3's Intelligence Engine. The first phase of the implementation includes 5 PBs of capacity for the city's central administration, with an additional 10PBs scheduled for the second and third phases to support the city's 18 boroughs. The city is adding 1,600 PTZ cameras and 43 fixed, high-resolution cameras in

“With this new scalable edge computing solution, the city’s security team can view any camera, regardless of brand across the city from a single location, which will greatly simplify operations”

– Rafael Padilla, Systems Integrator, City of Bogotá Safe City Project

the first stage, plus almost 1,700 PTZ cameras in subsequent stages. By providing greater density, higher performance and better resiliency, Pivot3’s patented erasure coding allowed the city to optimize the use of floorspace with a modern, high performance solution that could scale linearly as the city’s requirements grew. Space, power, and cooling requirements per PB were from 20 to 40 percent more efficient than competitive solutions, including HP, Dell, and a DVR solution. The camera density supported by the Pivot3-Lenovo solution allowed the city to meet their limited floorspace requirements.

Lenovo’s servers had the ability to provide the right hardware configuration to support the raw processing power required by the high camera count. In addition, Pivot3’s software provides the ability to sustain high throughput, preventing image degradation and frame loss. The city’s solution also includes the SecurOS™ video management software from Intelligent Security Systems (ISS), which offers a streaming capability designed for high camera count environments. In addition to the feature differentiation of the combined solution, Lenovo’s on-the-ground network in Colombia was vital to providing the level of same-day, six-hour support required by the city. In addition to traditional video surveillance, the Pivot3-Lenovo infrastructure will support analytics and other security software. The solution’s virtual environment gave the city the flexibility to support any OS required for the selected analytics and security software. The Pivot3-Lenovo solution will be integrated with the Bogotá telephone company’s fiber networks across the city.

## The Results

The Pivot3-Lenovo Safe City - IoT solution provides enterprise-grade infrastructure for large-scale surveillance for Bogota and its boroughs. The infrastructure is managed from a central location, greatly simplifying management and increasing the city’s situational awareness and ability to monitor and respond to an incident. The solution can scale out processing and storage capacity simultaneously with each added appliance, or scale storage capacity independently as needed, as camera counts grow. The solution will also provide significant benefits to the police department, as well as the citizens and visitors that rely on police services. Over time, police response times will be improved by the ability to dispatch directions to incidents within the boundaries of the affected borough. Virtualized client workstations to be deployed during a second phase of the project will arm police with live video of an incident on a mobile device, dramatically improving police safety and increasing effectiveness of their response.

Joint Solution with:



For more information, visit [Pivot3.com](https://www.pivot3.com)