tyco

Case Study

Datacenter ODATA

Bogotá, Colombia

Location:

Bogotá, Colombia

Systems:

- **exacqVision (Video Management System VMS, NVR, Failover Architecture)**
- **Illustra Flex Indoor and Outdoor Cameras**
- **C·CURE 9000 access control and event management system**
- **C·CURE BMS (Building Management System for 65.000 variables and Industrial Protocols Modbus, BACnet and SNMP)**

ODATA, a hyperscale, carrier-neutral multi-tenant data center operator with headquarters in Brazil, recently embarked on a project to expand its data center footprint in Latin America. Founded in 2015, the company constructed a new data center in Bogotá, Colombia, it's first facility outside of Brazil and part of an aggressive plan to address the growing data center needs in the Latin American market.

Known as BG01, the ODATA data center is located 15 minutes from Bogotá, in the Metropolitan Free Trade Zone and is the largest data center in Colombia. The state-of-the-art data center, built at a cost of nearly $100 million (US), occupies an area of 64,584 square feet and consists of three floors and a "white area" with six rooms, which has the capacity to house a sea of 1,000 racks. This facility would serve as the model for the company's future expansion plans in the region.

Introduction

The BG01 data center is the largest facility of its kind in Bogotá, with a building that is equivalent to that of a football field. Expansive in size, with three levels, the facility needed to maintain tight security controls on employees, contractors and visitors.

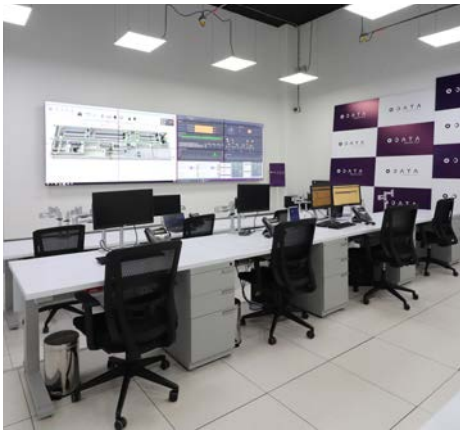
Datacenter ODATA

Designed within the strictest quality and security standards, the BG01 data center is TIER III certified, meaning that it has been constructed with redundant and dual-powered servers, storage, network links and other IT components to ensure uninterrupted operations. The building is also highly energy efficient – with 1.5 PUE, flexible power density up to 8 kVA / rack and high carrier neutral connectivity.

In order to ensure uninterrupted services and building efficiency, the data center incorporated various building systems, including generators, air conditioning, and an overall building management system. And, like all data centers, the BG01 facility had to follow strict network security requirements and encrypted communication protocols. To guard against unauthorized access to the facility and to protect the data contained within, the BG01 data center implemented a comprehensive and integrated video and access control system.

Challenges

The security needs of the BG01 data center can be characterized as both stringent and complicated, since these types of facilities require multiple layers of security to heavily restrict and manage access for employees and contractors alike.



The BG01 data center required a comprehensive building management system that would give the facility manager the ability to monitor and manage all of the building's functions – HVAC, lighting, and elevator controls – from a central location or a mobile device. In addition, the BMS system needed to seamlessly integrate with the security and safety system, which included video, access control, fire alarm and a fire suppression system.

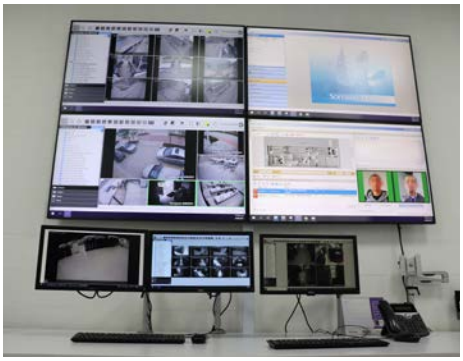
It was also critical that each system deployed was cyber secure to protect against both internal and external cyber attacks and threats. The goal for BG01 was to not only protect the data within its facility, but to also protect its clients and their external IT infrastructure and network.

The Solution

On the solutions front, Tyco's diverse portfolio of scalable, yet cyber secure access control and video solutions, made Tyco an ideal technology partner for ODATA.

"ODATA is always looking for the best available technology" stated Fabio Cortés, Engineering Manager for ODATA at BG01. "After analyzing the different solutions on the market and seeing the cost-benefit-support relationship, we decided on Tyco to manage the entire data center security portfolio."

When the time came to build the ODATA BG01 data center, one of the most important aspects of the project was finding an integrator who had the capacity to install and integrate all of the building systems. The company chose UPSISTEMAS, a local contractor with more than 30 years of experience delivering integrated infrastructure and security solutions.



Systems integrator UPSISTEMAS was tasked with installing the C•CURE 9000 security and event management system, a dynamic enterprise level access control system that monitors events, manages personnel, creates reports and provides a central location to view video and manage visitors, either through a personal computer or a mobile phone application. The system allows BG01 to easily manage access permissions for both employees and visitors, and to acknowledge and respond to significant incidents.

An important benefit of the C•CURE 9000 system is that it is part of the Tyco Cyber Protection Program and follows the stringent cyber security compliance guidelines set forth by the company. This begins with the product development phase and continues through the entire life cycle of the solution. A rapid response team monitors and quickly addresses cyber security threats should any rise.

BG01 gained an additional level of security in the type of credentials it is using. The highly encrypted cards and also OSDP (Open Supervised Device Protocol) compliant readers. OSDP is a recognized access control protocol designed to improve the interoperability between access control devices.

Communication between the controller and the server is encrypted using AES 256 advanced encryption standard. For the most critical areas of the building, BG01 requires employees and contractors to use multi factor authentication, a process that combines contactless smartcard readers with fingerprint biometric technology from Suprema readers, to confirm the identity of the individual.

To visually monitor the facility, the data center deployed a robust video surveillance system comprised of both indoor and outdoor surveillance cameras. More than 99 Illustra Flex surveillance cameras are located throughout the facility, including the reception area, parking lots, hallways, elevators and the server rooms.

Each camera is monitored in real-time through the exacqVision Video Management System (VMS), a scalable, intuitive management solution that is easy to use. Through the VMS platform, BG01 can bookmark important video to view later or easily search through a timeline of events. Tamper protection protects exported video.

Two high performance exacqVision Z-series NVRs provide the data center with a high capacity and scalable video storage solution. With 48TB of storage and enterprise-level licensing, the system supports more than 90 days of video storage for each camera that is located in critical areas of the data center. Cameras are also recorded in a failover configuration, enabling for automatic system recovery when a power or networking failure occurs.

All of these solutions – including the fire detection and suppression system - are fully integrated with the C·CURE BMS platform which enables continuous monitoring, maintenance and scheduling for each system. This includes air conditioning, the uninterruptible power supply (UPS) and generators. BG01 also leverages the BMS platform to collect data on energy use consumption and key performance indicators to measure how effectively the company is achieving key business objectives.

Luis Enrique Bonilla, Business Development Manager Latin America & Caribbean for Tyco security solutions, part of Johnson Controls, worked closely with ODATA to plan and design its security and BMS solution. He characterized the process as dynamic, with additional systems and capabilities added as the project progressed.

"We continuously reviewed the design, including every piece of equipment and specific capabilities, such as camera resolution, and looked for ways to improve each system to get the best results for the end user," Bonilla.

It was the ability to adapt and respond to the changing needs of the data center that made this business relationship a success.

"Tyco has a robust platform that allows the integration of all systems in a natural, sustainable way over time and that supports the growth of the data center over time," added Cortés, from BG01. "Tyco also has local support, which is essential considering the sensitivity of the information."

The Future

Since the construction of the BG01 campus in Bogota, ODATA is beginning the process to build another in country campus. The BG01 campus is also serving as a model for future facilities.

"Against this backdrop, we see a large demand for data center capacity in Latin America, and ODATA is well positioned to take advantage of this trend," said Cortés.

The Client

Founded in May 2015, ODATA was created with the goal of offering companies an entire IT data center infrastructure scalable, secure, and flexible in the region. Specializing in colocation solutions, ODATA supports the growing demands for energy, space and security for all companies that advance in their digital transformation processes.

ODATA's first data center, was inaugurated in May 2017, after a record seven-month construction in Santana de Parnaíba, in Greater São Paulo. Built on a 247,570 square foot, the data center has its own power substation with 20MVA of installed power and is located near the main networks of energy and telecommunications in the country, connecting various points in Brazil.

In parallel to the operation in Brazil, ODATA began an international expansion into Latin America with investments initially in Colombia, where the data center came into operation in 2019. In Sao Paulo ODATA has begun construction of a new site at its DC SP02 campus and will soon start a new expansion at its existing DC SP01 campus, with further plans to develop two additional campuses in 2021. In Rio de Janeiro the company will build a new data center, the first phase of which will be operational in 2023. In Colombia, plans are also being weighed up for another in-country campus. In Querétaro, Mexico, ODATA made an initial investment of more than $100 million to build a new data center. Construction began in January 2021 with the first phase predicted to be completed by the start of 2022. Chile is top of ODATA's list for new market entry with a wholesale data center being developed. It is ODATA's commitment to become the first choice for data center colocation in Latin America.

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