

Case study

Arena da Baixada Stadium delivers reliable WiFi with HP Networking



40,000+ fans share their 2014 soccer experiences through their mobile devices and tablets without a glitch

Industry

Entertainment/stadiums

Objective

Provide WiFi access with high-density requirements to support 40,000+ fans attending Brazilian soccer matches with 20 percent concurrent users, according to LEMCON AMERICAS requirements (network owner)

Approach

Implement HP Networking's complete unified wired & wireless LAN solution and leverage HP Technical Services to provide exceptional installation, configuration, and support services

IT matters

- Install a Unified Wired and Wireless LAN solution to support a very high-density environment
- Provide a highly reliable network with redundancy and load balancing
- Manage the network with a reliable and easy-to-use management platform

Business matters

- Deliver a network that will support soccer fans and stadium visitors for the next 10 years
- Design a network with very high-density requirements to enable 20 percent of capacity (approx. 9,000 concurrent users)
- Manage a unified network with a single-pane-of-glass management platform—IMC
- Deploy a network with on-site support despite severe time constraints



“HP’s unified wired and wireless solution enabled the soccer fans at Arena da Baixada Stadium in Brazil to seamlessly post photos, videos, and comments on all social media platforms using their smart phones and tablets.”

—Alexandre Tude, VP Latin America—LEMCON AMERICAS

Meeting the challenge

Getting ready for the world to attend the big soccer events held in Brazil was very challenging. Many of the soccer stadiums being built for competition faced construction delays and were completed just in time to host their soccer matches. As a result of these delays, only 6 of the 12 stadiums were designed to be WiFi enabled. Arena da Baixada, is one of Brazil’s most modern and best-appointed venues. It was among the six stadiums designed to offer fans WiFi access. It was also one of the stadiums that was completed late, leaving just 20 days for installation and deployment. To make things even more complex, the stadium required a very high-density WiFi design with the ability to support 20 percent concurrent sessions.

HP Networking scores two goals with Unified Wired and Wireless LAN technology

One of the goals for Arena da Baixada Stadium was to provide free WiFi to all the fans so that they would be able to seamlessly and easily post photos, videos, and comments on all social media platforms using their smart phones and tablets. The second goal was to build a wired and wireless network that would continue to support stadium visitors over the next 10 years.

Deploying a high-density network in record time

This stadium can accommodate up to 45,000 people. HP deployed a very high-density solution that offers easy access and connectivity for up to 9,000 concurrent users with all kinds of different devices.

A detailed RF site survey of the stadium was conducted to identify potential interference and plan for optimal wireless coverage. One of the design requirements was to allow 10 percent of the stadium attendees to access the wireless network simultaneously and support 124 concurrent users per access point. To allow for increased user densities, smaller cell sizes were used with minimal channel overlap to reduce co-channel interference. Cell size was kept the same for both the 2.4GHz and 5GHz frequency bands to simplify management.

Redundant HP 870 Unified Wired-WLAN Appliances provided high availability and load sharing and 110 MSM466 access points were deployed under the roof of the stadium to support the fans during the games. Directional 45° and 75° antennas were used for each access point to improve signal coverage. An additional 80 MSM 430 indoor access points were deployed in restaurants and VIP lounges. High-density features such as transmit power control helped reduce gaps in coverage while Airtime Fairness enabled equal RF transmission times for 802.11a/b/g and n devices improving the overall capacity and performance of the wireless network.

For the first four soccer matches, free WiFi was provided with an open guest SSID. Going forward the stadium will implement guest authentication.

Keeping score of network activity

The HP IMC Wireless Services Manager enables unified access, security, and management of the entire network. This single-pane-of-glass

management tool shows stadium network administrators what devices are attempting to access the network. It also has the ability to provide controlled access for those who could pose a security threat (Android devices prone to malware), or those who are abusing the network bandwidth.

The IMC network reports showed that there were an average of 4,210 simultaneous users connected to the system per game generating 20.9GbE of traffic per hour.

The big win

One of the biggest challenges was installing the access points under the roof. A team specializing in these types of installs was commissioned and the project took 20 days to complete. To prevent rework, each access point was tested before being mounted.

An additional 95 access points were installed throughout the stadium in the same timeframe. Once installed, the network had to be configured and tested. HP provided Technical Professional Services and worked alongside its partners, LEMCON AMERICAS and DIGITAL WORK to successfully deploy the solution. Arena da Baixada Stadium hosted four matches during June with attendance recorded at a maximum capacity of 42,000 people per match.

About LEMCON AMERICAS

LEMCON AMERICAS is a company with 18 years of experience in the telecommunications and infrastructure market. The company provides all the necessary services for the planning, implementation, and monitoring of wireless networks. It is part of the American group Blue Skies Network and carries out business throughout Latin America, with projects in over 10 countries, with Brazil being its biggest market presence.

About DIGITAL WORK

DIGITAL WORK is one of the largest value-added channels in Latin America. It develops various projects to meet the technological needs of the corporate market. Through partnerships with leading manufacturers of IT World, DIGITAL WORK continues steadily growing to serve you better, adding guarantee and quality.

Customer at a glance

Hardware

- HP 870 Unified Wired-WLAN Appliance
- HP MSM430 Access Points
- HP MSM466 and MSM466R Access Points
- HP MSM Controllers
- HP Outdoor Directional Antennas
- HP 7500 Switches
- HP 5120 Switches
- HP 5500 Switches

Software

- HP IMC Wireless Services Manager (WSM)

HP services

- HP Care Pack Services
- HP Professional Technical Services

Partner

- DIGITAL WORK

Systems integrator

- LEMCON AMERICAS

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