

Colegio FEMW Irlandesas Madrid

Recognised as a Google Reference School Network for the modern digitalisation of its classrooms and educational platforms, thanks to the deployment of D-Link's Wireless and Switching solutions, with unified management from the free Nuclias Connect software



Irlandesas Madrid
FUNDACIÓN EDUCATIVA MARY WARD

SUMMARY

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| Client | Colegio FEMW Ireland Madrid |
| Sector | Education |
| Country | Spain |
| The challenge | Wired networking infrastructure and Wi-Fi to digitize classrooms |
| The solution | Smart Managed PoE Switches Nuclias Connect Access Points Nuclias Connect Management |
| Results | High-performance classroom digitisation Wi-Fi for tablet and Chromebook Internet access. Robust security with classroom/teacher network segmentation and access control. |

The Mary Ward Education Foundation (or FEMW in Spanish) is a modern, bilingual, Catholic education project with a total of eight schools in Spain. The FEMW is the first Spanish educational institution to be recognised in the Google Reference School Network, which distinguishes schools that have successfully implemented digitalisation within the framework of the various tools proposed by Google for teaching.

The challenge

One of the pillars of this digitalisation has been the FEMW-driven Digital Citizens Project, which aims for students to develop digital skills at the highest level. To this end, teachers and students were provided with Chromebooks, but the Wi-Fi infrastructure needed to be renovated to ensure the necessary bandwidth for classroom digitalisation.

The solution

FEMW relied on D-Link as a provider of computer network solutions for two of its schools, in Madrid and in El Soto. Both projects were managed by EGSON, a certified partner of D-Link's VIP+ Channel Programme. In this successful case study, we are focusing on the project we undertook at the Colegio FEMW Irlandesas Madrid.

We deployed high-performance Wi-Fi infrastructure with x39 D-Link DAP-2680 Wireless AC1750 Wave 2 Dual-Band PoE Access Points. Featuring internal antennas in a 3 x 3 configuration, they are designed for high-density user environments such as Band Steering to automatically connect each device to the best band (2.4 or 5 GHz), MU-MIMO to transmit simultaneously to multiple connected users, beamforming and automatic RF management, so in this scenario, where APs are placed close to each other, there will be no overlapping of channels or frequencies. All access points are PoE, so they receive data and power over the same data cable from the PoE switch, which has simplified installation and saved costs.

Specifically, they were connected to a D-Link DGS-1210-52MP PoE switch, with 48 Gigabit ports, capable of delivering up to 30W per port with a total PoE budget of 370W, allowing connections to all Wi-Fi access points, as well as VoIP phones. The DGS-1210 Series stands out for integrating advanced Layer 2 and Layer 3 Lite management capabilities into affordable costs of a Smart Switching solution. Notably, Layer 3 static routing was used, one of the great advantages of the DGS-1210 Series, which has led to improved network performance alongside spanning tree protocol (MSTP) and Link Aggregation (LACP). In addition, ACLs (Access Control List) security can prevent access to Wi-Fi by unauthorised devices such as student mobiles.

The 39x DAP-2680APs and 4x DGS-1210 network switches are managed in a unified way through the free Nuclias Connect platform and through remote access, allowing the integrator to monitor the network without having to go to the school and without the need for school staff dedicated to managing the network. In other security features, WPA3 encryption was enabled at the wireless level, while VLANs were generated at the switching layer to segment the network and isolate the classroom network from the teacher and management network, both for security and bandwidth management.

Result

Manuel Sanchez Fernández, ICT Coordinator at FEMW schools, said, “The Wi-Fi network now has the coverage and performance we need so that each classroom can perform its digital activities as normal, which is essential given that one of the pillars of our education project is the development of our students’ digital skills.” Ignacio Dávila, Technical Director at Egson, comments, “We decided to rely on a very robust, high-performing, and well-proven D-Link solution in other schools, so it was the perfect choice.” He adds, “Consulting from the manufacturer is a great advantage in such large-scale projects.”

Installed products

- 2x Gigabit Smart Managed Switches, DGS-1210-52MP
- 1x Gigabit Smart Managed Switch, DGS-1210-24
- 1x Gigabit Smart Managed Switch, DGS-1210-10P
- 39 x 1750 Wave 2 AC Wi-Fi Access Points, DAP-2680
- Centralised network management with free Nuclias Connect platform, DNC-100

