D-Link®

Nuclias Connect,
Comprehensive network management, without subscription

nuclias
connect

nuclias connect

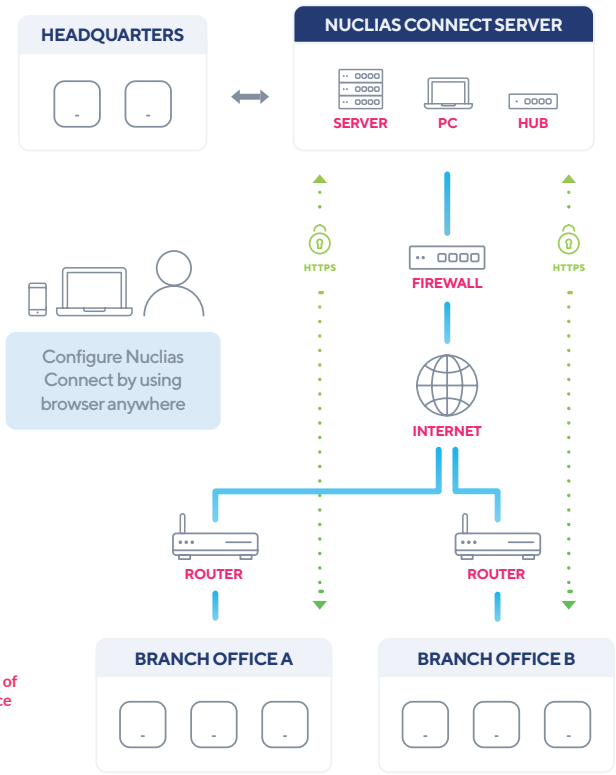
What is Nuclias Connect?

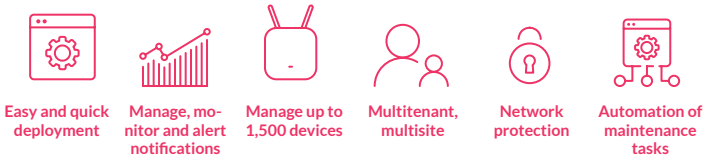
Nuclias Connect is a unique platform for managing and monitoring your network infrastructure, including switches, Wi-Fi access points, and VPN routers, from anywhere, anytime. It's easy to use, free and without subscription charges.

With automated deployments, task scheduling and alerting capabilities, you save time by eliminating repetitive and routine maintenance and configuration tasks.

With Nuclias Connect, you can :

- Quickly and easily deploy networking devices from a single location
- Manage, monitor and maintain your entire network
- Secure your company's network and adapt when necessary
- Be alerted instantly with device malfunctions
- Compliant with public Wi-Fi legal requirements





Who is Nuclias Connect for?

Nuclias Connect is suitable for organisations of all sizes, ranging from small businesses to mid-sized enterprises, thanks to its support for up to 1,500 network devices, including switches, Wi-Fi access points and multi-WAN VPN routers.

SMBs and SMEs
Gain valuable insights into your business, manage multiple locations, ensure critical data stays on your premises, and customise the network to meet your needs.

Retail Chains
Create a secure, reliable wireless network for retailers of all sizes. Connect all POS devices and quickly create public Wi-Fi networks for customers, keeping their IT networks safe.

Education
Provide an efficient, scalable and robust network to students and teachers to meet new educational needs and challenges.

Hospitality
Provide customers with an optimal public Wi-Fi experience for current and future needs.

How does Nuclias Connect work?

At the heart of your infrastructure is the Nuclias Connect controller. Software or hardware, the choice is yours!

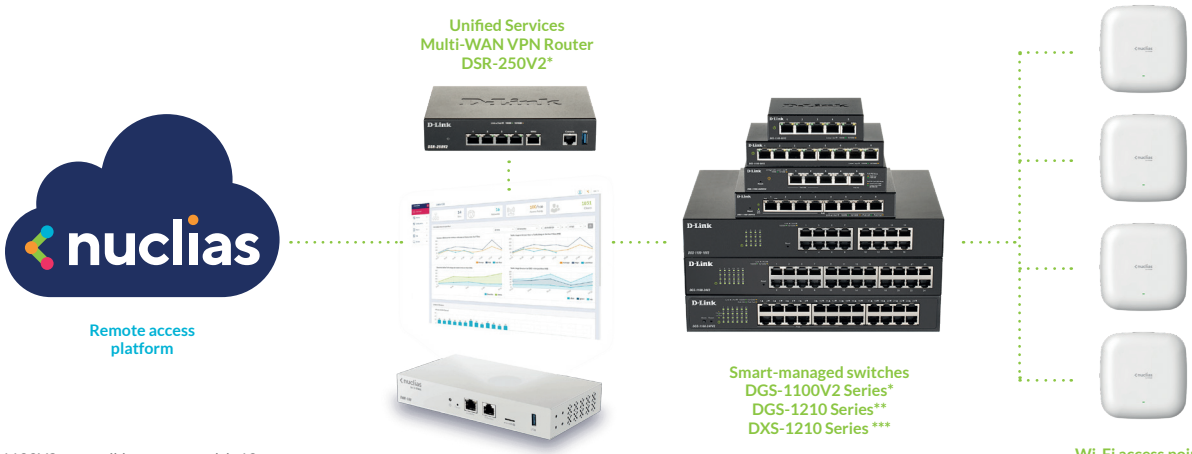
The controller fulfils different roles and objectives:

1. Centralised zero touch deployment and provisioning of network devices through profiles. Management by profile allows you to save time by avoiding repetitive deployment tasks.
2. Monitor your network with deployment reports, network topology, Wi-Fi client statistics, switches port status, etc.
3. Alert you in the event of devices malfunctioning or going offline, firmware updates, configuration changes, etc.
4. Network troubleshooting with event logs.

Easier for you to install switches, Wi-Fi access points and VPN routers:

- Directly retrieve their configuration made on the controller
- Report various information to the controller (statuses, statistics, etc.)

You have an overview of the network infrastructure and your different sites on a single interface.



** DGS-1100V2 compatible soon on models 10 ports or more*
*** DGS-1210 hardware revision Fx/Gx only*
**** DXS-1210 hardware revision Bx only*

Nuclias Connect controllers

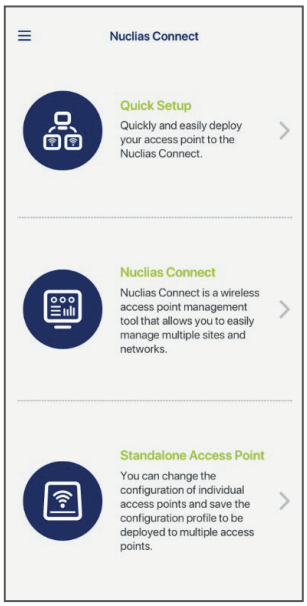
	Options	Maximum number of managed devices	Type of network device	
DNC-100	On-premise or cloud-hosted software controller	Up to 1500	Switches Wi-Fi access points Multi-WAN VPN router	
DNH-100	On-premise hardware controller	Up to 100		

Nuclias Connect mobile app

The Nuclias Connect app, available for Android and iOS, allows you to remotely manage your network easily with your mobile device whether you use the software or hardware controller:

- Provisioning of access points on a Nuclias Connect controller
- Administration and monitoring of your Nuclias Connect controllers (software and/or hardware)

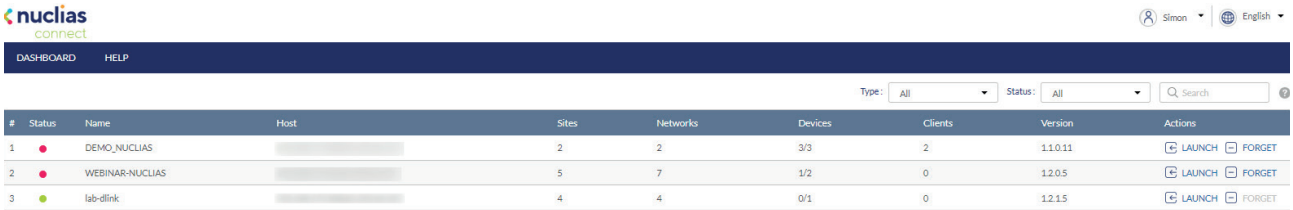
You can also use the Nuclias Connect mobile app to configure a group of access points without a controller. Useful for small installations that do not require regular administration.

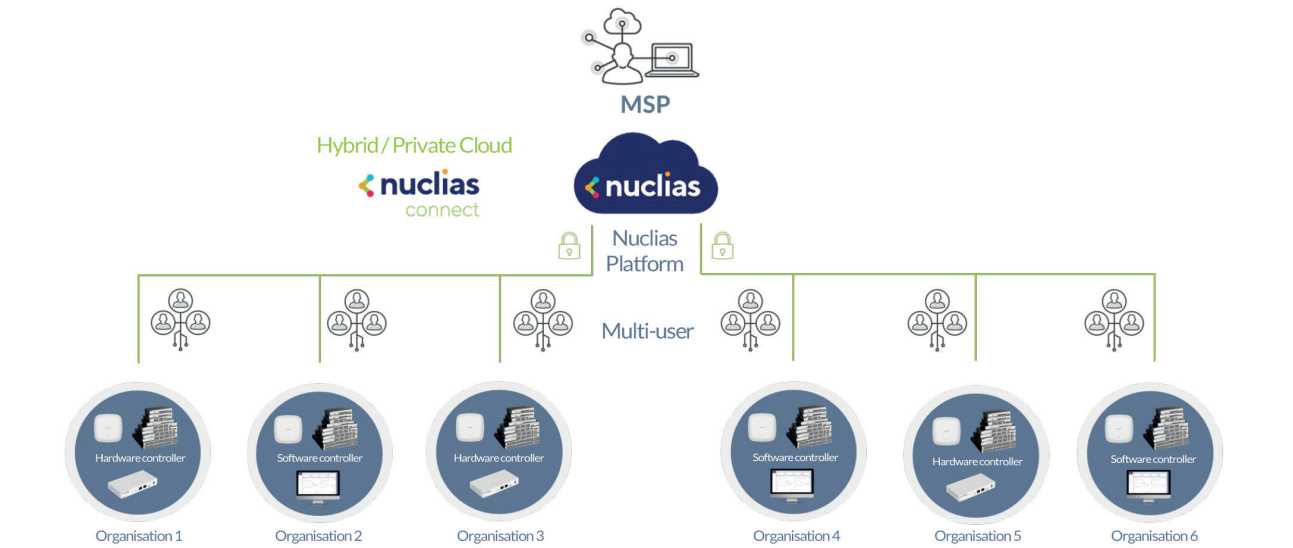


Easy remote access

You can easily remote manage and monitor all of your Nuclias Connect controllers (software and/or hardware) through the dedicated and free Nuclias Connect portal. It only takes 3 simple steps:

1. Create your free account at https://connect.eu.nuclias.com
2. Enable single sign-on (SSO) on your Nuclias Connect controllers
3. Access your controllers remotely





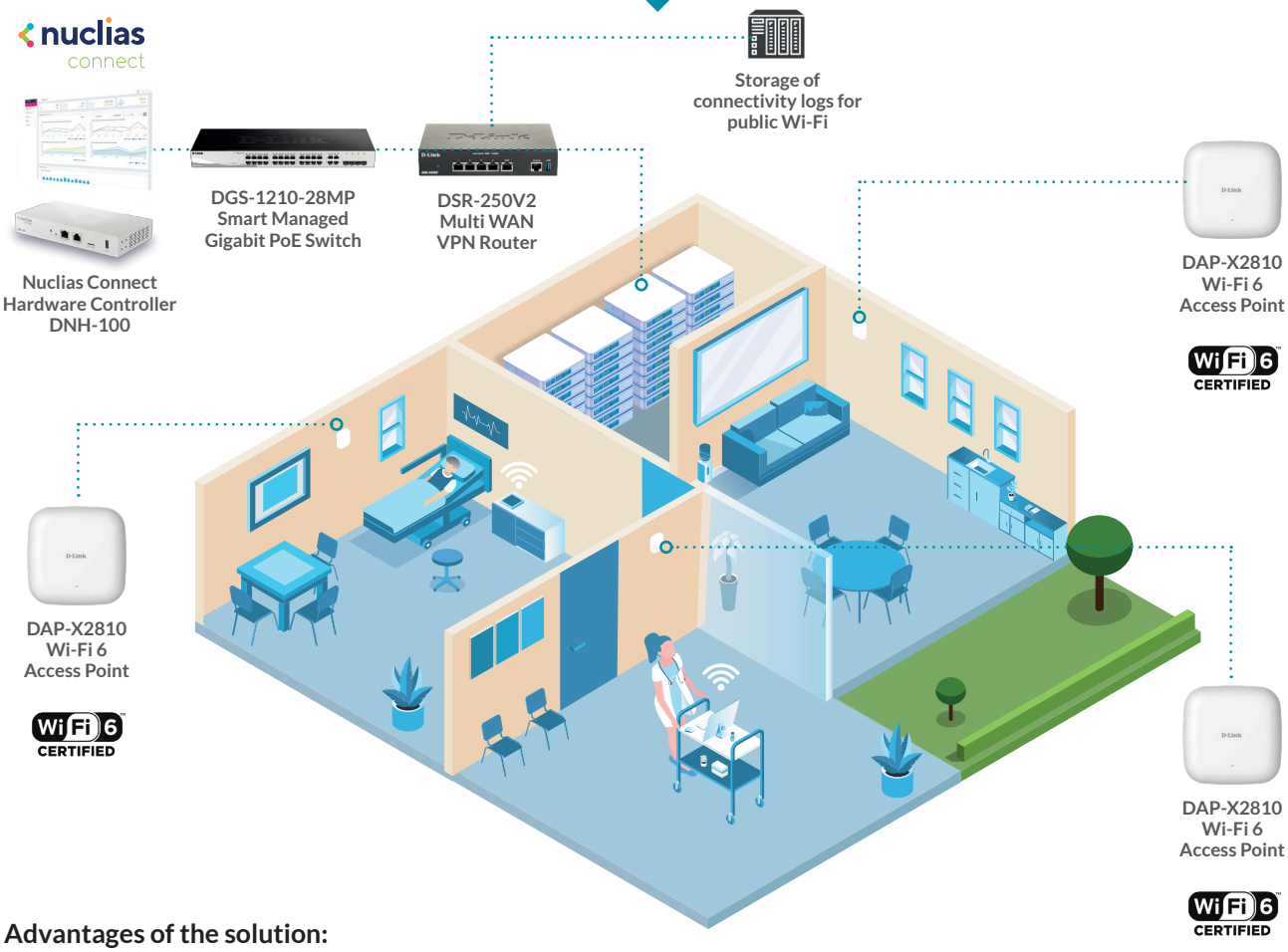
Private cloud installation

If you prefer to create your private cloud instance, it's possible! Installing the Nuclias Connect software on your server or data centre allows you to manage your different sites on a private infrastructure controlled from end to end.

There are many advantages of hosting Nuclias Connect on a private cloud:

- A single, centralised controller for your various multi-site deployments*
- Total control of your infrastructure
- A large capacity of up to 1500 network devices
- Rapid integration of equipment into the existing private cloud infrastructure

HOSPITALITY/HEALTH SOLUTION



Advantages of the solution:

- Latest-generation Wi-Fi 6 high-speed and secure wireless connectivity meeting the needs of healthcare establishments (patient files, guest Wi-Fi), hotels (public Wi-Fi, streaming), etc.
- Customisation of the branded captive portal for public Wi-Fi access
- Secure public Wi-Fi access thanks to the Multi-WAN router/firewall

EDUCATION SOLUTION

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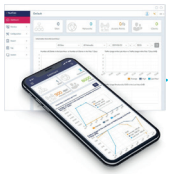

Nuclias Connect
Software Controller
DNC-100

DMS-1250-12TP
Smart Managed
Multi-Gigabit
PoE Switch

DXS-1210-16TC
Smart Managed
Multi-Gigabit / 10 GbE
Switch

Wi-Fi 6 Multi-Gigabit
Access Point
DAP-X2850

Wi Fi 6 CERTIFIED

Advantages of the solution:

- Latest generation very high-speed and secure wireless connectivity with Wi-Fi 6, meeting current and future needs
- High performance wired network thanks to Multi-Gigabit and 10 GbE technology
- Deployment, administration and centralised monitoring of wired and wireless infrastructure using Nuclias Connect

SMB/SME SOLUTION

Advantages of the solution:

- Hardened industrial Wi-Fi access point design for outdoor areas and challenging environments (dust, temperatures, etc.)
- Enterprise-grade PoE switches with advanced features
- Easy management and maintenance with monitoring and alert reporting through the Nuclias Connect controller

Industrial Wi-Fi 5
Access Point
DIS-2650AP

Nuclias Connect
Hardware Controller
DNH-100

DGS-1210-52
Smart Managed
Gigabit Switch

DGS-1210-52MP
Smart Managed
Gigabit PoE Switch

Industrial Outdoor
Wi-Fi 5 Access Point
DIS-3650AP

Wi-Fi 6
Access Point
DAP-X2810

Wi Fi 6 CERTIFIED

Wi-Fi deployment considerations

Before deploying a Wi-Fi network, it is essential to define the needs and carry out a coverage survey (theoretical and ideally on site). The area to be covered and the number of users are not the only elements to take into account when determining the number of Wi-Fi hotspots.

Step 1 : The right questions to ask yourself

- Is this a new Wi-Fi installation or an extension of an existing network?
- Is there a map or floor plan of the site available?
- What are the areas to cover?
- Which Wi-Fi applications are used? ((VoWi-Fi, high density, ultra mobility, etc...)
- How many estimated Wi-Fi clients are there?
- Do you have existing wiring to connect and power the Wi-Fi access points?

Step 2 : The coverage survey

- Carry out a theoretical coverage survey using our Wi-Fi Planner Pro tool (see page 9)
- Compare this theoretical survey by carrying out an on-site survey and adapt it if necessary

Step 3 : choose the most suitable solution and products

Wi-Fi standards

The first version of the 802.11 protocol was released in 1997. At the time, it allowed speeds of up to 2 Mbit/s. In 1999, the Wi-Fi Alliance® consortium was founded to ensure the interoperability of 802.11 products, and the acronym Wi-Fi was born.

Today, the most recently ratified and popular standard is Wi-Fi 6. There is already equipment available with the Wi-Fi 6E standard, but there are few advantages over Wi-Fi 6, especially in Europe, where access to the 6GHz frequency band is limited. And then the very next standard, Wi-Fi 7, is coming by the end of 2023 at the beginning of 2024, so you might as well skip Wi-Fi 6E.

	WI-FI 5	WI-FI 6	WI-FI 6E	WI-FI 7
Release year	2013	2021	2022	2024 (planned)
IEEE standard	802.11ac	802.11ax	802.11ax	802.11be
Maximum data rate	3,5 Gbit/s	9,6 Gbit/s	9,6 Gbit/s	46 Gbit/s
Bands	5 GHz	2.4 GHz and 5 GHz	2.4 GHz, 5 GHz and 6 GHz	2.4 GHz, 5 GHz and 6 GHz
Channel size	20, 40, 80, 80+80, 160 MHz	20, 40, 80, 80+80, 160 MHz	20, 40, 80, 80+80, 160 MHz	Up to 320 MHz

How to choose the right access points?

The choice of a professional Wi-Fi access point depends on several factors, such as the space area to be covered, the number of simultaneous users, the applications used, the security and the necessary functionalities.

Here are some criteria to consider when choosing a professional Wi-Fi access point:

- **Range:** Choosing an access point that offers sufficient range to cover the entire space is important.
- **Capacity:** It is essential to choose an access point that can handle a large number of users simultaneously, and that can support bandwidth-intensive applications.
- **Security:** The access point must offer robust security features, such as support for WPA2 or WPA3 encryption protocols, intrusion detection and access policy management.
- **Features:** The access point should offer advanced features such as support for multiple SSIDs, centralised management, quality of service (QoS), and guest network support.
- **Compatibility:** The access point must be compatible with the existing network and other network equipment.
- **Management:** Choosing an access point that can be easily managed and configured, preferably via a web interface and a centralised solution, is essential.

Securing your Wi-Fi network

Securing a Wi-Fi network is essential to protect user data and prevent unauthorised network access.

Here are some of the important things to consider when securing a Wi-Fi network:

- **Using a strong password:** The first step in securing a Wi-Fi network is to set a strong password for the wireless network. This password must be complex, difficult to guess and be changed regularly.
- **Use of an encryptioni protocol:** ncryption protocols, such as WPA2 or WPA3, allow the data sent over the Wi-Fi network to be encrypted, which prevents any unauthorised person from intercepting and reading these data
- **MAC address filtering:** This feature limits access to the Wi-Fi network to specific pre-approved MAC addresses. MAC addresses are unique for each device, and this feature helps ensure that only authorised devices can connect to the network.
- **Using a guest network:** A separate guest network allows visitors to access the Internet without having access to corporate private network resources.
- **Ensuring network equipments are running latest software:** Network equipment, such as access points, must be regularly updated with the latest security patches to avoid any vulnerabilities.
- **Use of a firewall:** Using a firewall allows you to monitor and control traffic entering and exiting the network and block unauthorised connections.
- **Implement a network access solution (NAC):** The NAC controls access to company resources through the establishment of authorisations and the application of policies. It is based on the 802.1x authentication protocol (RADIUS)

It is essential to combine several security measures to strengthen the protection of the Wi-Fi network and minimise the risk of attacks.

Take out the guess work with Wi-Fi Planner PRO

Wi-Fi Planner PRO (WFP) is a 100% free tool available to all partners, allowing Wi-Fi coverage planning from floor plans.

EBy taking into account construction materials (walls, doors) and obstacles (logistics storage), WFP provides a visual simulation of wireless signals (heatmap), allowing you to provide a comprehensive visualisation of the Wi-Fi environment before actual deployment (type and number of access points and their positioning) to meet the needs of your customers.

Partners can save all planning proposals for different Wi-Fi projects in the cloud and export the reports for your clients.

The advantages of using Wi-Fi Planner PRO

- **Time-saving:** Quick and easy to get started (free training on demand)
- **Realistic:** By informing the nature of the different materials, you ensure the most realistic theoretical coverage possible
- **Reliable:** The tool guarantees you the most reliable simulation possible depending on your design and the choice of Wi-Fi access points
- **Professional:** Automated simulation export, including coverage areas (heatmap)
- **Cloud storage:** All your projects are saved on the VIP+ partner portal
- **Reports:** Record of access point types, inventory, locations and heatmap

Do you know?
There are legal obligations when you offer Wi-Fi to the public

Whether you are a hotel, a retirement home or any establishment offering free or paid internet access to the public, the law requires you to set up wireless connectivity traceability.

Wi-Fi access offered can be used for malicious and criminal purposes.

Information that may be required to be retained for 12 months includes:

- User identification information (IP address, email, etc.)
- Data relating to the equipment used
- Date, time and duration of communications
- Data relating to additional services requested or used and their suppliers
- Data enabling the identification of the recipient(s) of the communication

It is important to check with your local authorities on the laws and requirements with regard to providing public Wi-Fi in your country.

Wi-Fi Access Points

	DAP-2610	DAP-2662	DAP-2680	DAP-2682	DAP-3666	DIS-2650AP	DIS-3650AP
Wi-Fi standard							
Maximum speed	1300 mbps	1200 Mbps	1750 Mbps	2300 Mbps	1200 Mbps	1200 Mbps	1200 Mbps
Latency	Average	Average	Average	Average	Average	Average	Average
Recommended maximum number of clients*	50	60	80	120	100	80	80
Usage	Indoor	Indoor	Indoor	Indoor	Outdoor	Industrial Indoor	Industrial Outdoor
Applications types	Office Hospitality/ Health Vo-WiFi	Office Hospitality/ Health Vo-WiFi	Office Hospitality/ Health Vo-WiFi	Office Hospitality/ Health Vo-WiFi	Camping Logistics Vo-WiFi	Logistics Industrial Vo-WiFi	Logistics Industrial Vo-WiFi
Fast Roaming	Yes with controller	Yes with controller	Yes with controller	Yes with controller	Yes - native and controller	Yes - native and controller	Yes - native and controller

	DAP-X2810	DAP-X2850
Wi-Fi standard		
Maximum speed	1800 Mbps	3600 Mbps
Latency	Low	Low
Recommended maximum number of clients*	150	250
Usage	Indoor	Indoor
Applications types	Office Hospitality/Health Vo-WiFi	Office Hospitality/Health Vo-WiFi / Streaming High density
Fast Roaming	Yes with controller	Yes with controller

* Maximum capacity recommended by D-LINK and depending on usage

How to choose the right switches?

Choosing the right network switch is crucial to ensuring optimal network connectivity for users.

Here are some considerations to make when selecting a network switch:

- **Number of ports:** The number of ports you need will depend on the number of devices you need to connect. Make sure you choose a switch with enough ports to meet your current and future needs. We advise you to add a buffer of 20% extra.
- **Port speed:** Port speed is an important factor in the performance of your network. Today, for standard office use, we will opt for Gigabit. Certain uses require higher flow rates. We will opt for switches with Multi-Gigabit ports for the installation of Wi-Fi 6 access points, for example, or 10 GbE ports for server or inter-switch interconnections.
- **Port type:** Switches can have ports of different types, such as RJ45 ports or SFP (optical fibre) ports. Make sure you choose a switch with the port types you need.
- **Advanced functions:** Depending on the design of your network and the functionalities needed, such as VLAN management, network loop detection, and advanced security of your network.
- **PoE:** Power-over-Ethernet provides electrical power to the equipment connected via the RJ45 data cable. Essential for Wi-Fi, IP telephony and IP video surveillance deployments. You must check and enure that the over all PoE budget and also standards (802.3af / 802.3at / 802.3bt) is sufficient to power all the PoE-enabled devices you are connecting to it.

Good to know

D-Link Green is an initiative to reduce the environmental impact of our products and activities:

- A range of environmentally friendly products eco-designed to reduce energy consumption
- Energy-saving features such as auto-standby, cable length detection to regulate transmission power to minimise power consumption without compromising performance.
- Environmentally friendly materials in our products (REACH, RoHS)

	Management	Vitesse des ports majoritaires	Other ports	PoE models	PoE Budgets
DGS-1100V2	Smart L2	Gigabit	-	Yes - 8, 12 and 24 ports	65 to 370 W
DGS-1210	Smart L2+	Gigabit	SFP (optical)	Yes - 8, 24 and 48 ports	65 to 370 W
DXS-1210	Smart L2+	Gigabit / 2.5 GbE / 5 GbE / 10 GbE	10 GbE copper or SFP+ 25 GbE SFP28	-	-

Network switches

DGS-1100V2 Series

Nuclias Connect Easy Smart Managed Switches

- 8/16/24 Gigabit ports with SFP ports
- PoE+ models: 8, 12 or 24 ports (PoE budget from 130 W to 370 W)
- Complete Level 2 features
- VLAN, QoS, Voice VLAN, etc. ..

DGS-1210 Series

Nuclias Connect Smart Managed Switches

- 8/16/24/48 Gigabit ports with 2/4 SFP ports
- PoE+ models: 8, 24 or 48 ports (65W to 370W PoE budget)
- Complete Level 2+ features
- VLAN, QoS, Voice VLAN, static routing, etc...

DXS-1210 Series

Nuclias Connect Smart Managed Full 10 Gigabit Switches

- 10 to 16 Multi 10 Gigabit ports
- Complete Level 2+ features
- VLAN, QoS, Voice VLAN, static routing, etc...
- Full command line (CLI)

The DGS-1100V2 and DXS-1210 series will soon be compatible via a firmware update.

Multi-WAN VPN Router

DSR-250V2

Nuclias Connect Multi-WAN VPN Router

- 5 Gigabit ports: 1 x WAN - 1 x WAN/LAN - 3 x LAN
- Firewall, VLAN, Bandwidth control
- Full VPN features (IPSec, L2TP, PPTP/OpenVPN)
- Captive portal and application control
- Traffic monitoring
- Dynamic web content filtering (optional license)
- Intrusion detection and prevention
- Collection of logs for Public Wi-Fi (sending to a syslog server)

DSR-250V2 will be compatible via a firmware update in 2024

Security and availability	Collection of logs for Public Wi-Fi (sending to a syslog server)
The DSR-250V2 is a complete firewall with prevention and intrusion detection, application control, Dynamic web content filtering (optional) and multi-WAN for high availability. Comprehensive VPN features are also integrated for optimal security.	When providing public Wi-Fi, it may be necessary to set up retention of Internet connectivity logs (see page 10). The DSR-250V2 allows this by respecting the associated technical criteria and sending the data to a Syslog server (e.g. NAS)

D-Link and you
A partnership and local support

D-Link's success as a provider of network and video surveillance solutions is based on our commitment to our partners. Our Value in Partnership + programme builds on these relationships and offers an end-to-end support that will increase your skills and profitability.

D-Link® | Value in Partnership+

D-Link VIP+ benefits:

- Free certified commercial and technical training
- Personalised support for your projects
- Special project prices
- Pre-sales tools: Wi-Fi planning, product selector etc.
- Technical resources: technical library, typical architectures, tutorials, etc.
- Priority technical support

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