



Scalable Unified Wired/Wireless Network Architecture:

- Manages up to 64 wireless APs per switch, up to 256 APs per cluster
- Adaptable Wireless Technology
- Complete Wireless and Wired features

Robust Wired/Wireless Security

- Wireless Intrusion Detection System (WIDS)
- Rogue AP Detection & Classification
- Captive Portal
- 64/128-Bit WEP Data Encryption
- 802.11i WPA2/RSN
- MAC Authentication
- Dynamic ARP Inspection (DAI)
- DHCP Snooping
- Access Control List
- 802.1X Authentication

Comprehensive QoS

- Auto-Voice over IP
- Voice VLAN
- 802.1p & DiffServ
- Per-Flow Bandwidth Control
- Per-Port Traffic Shaping
- Minimum Bandwidth Guarantee
- Supports WMM & SVP

Seamless Mobility

- L2/L3 Fast Roaming¹
- AP-AP Tunnel
- Intra-Switch & Inter-Switch Roaming

L2+ Unified Wired/Wireless Gigabit Switch

Overview

The D-Link® DWS-4026 is the next generation L2+ Unified Wired/Wireless Gigabit Switch with an array of advanced features and 802.11n support. With the ability to manage up to 64 DWL-8600AP wireless access points by itself and up to 256 DWL-8600APs in a switch cluster, the DWS-4026 is a full-featured and cost-effective mobility solution for mid-to-large enterprises and service providers. Extremely versatile and flexible, the DWS-4026 can be deployed as a Wireless Controller in the core network or as an L2+ PoE Gigabit Switch at the edge, depending on the customer's requirement. By centralizing WLAN configuration and management functions, the DWS-4026 enables network administrators to have the control, security, redundancy, and reliability needed to scale and manage their wireless networks easily and efficiently.

Adaptable Wireless Technology

Most of the current Wireless LAN controllers' architecture requires wireless traffic to return to the controller for centralized processing, causing unnecessary traffic delay. The DWS-4026 offers network administrators additional options; depending on the wireless application, wireless traffic can either be tunneled back to the switch for better security control or locally forwarded at the access point for optimal performance. This device offers administrators maximized flexibility with options to tunnel client traffic to the switch for centralized security control and forward VoIP traffic directly from the access point for optimal performance.

Comprehensive Wired/Wireless Security

The DWS-4026 offers a state-of-the-art Wireless Intrusion Detection System (WIDS), which empowers network administrators to detect Rogue Access Points and Rogue Clients as well as anticipate wireless threats, preventing them from causing damage to the network. With WIDS, administrators can activate various threat detections and use Radio Frequency (RF) scans to sweep the entire wireless network to any possible security breach in advance. Other wireless security features include WPA/WPA2 Enterprise, 802.11i Captive Portal and MAC Authentication.

On the wired side, the DWS-4026 utilizes Dynamic ARP Inspection (DAI) and DHCP Snooping to ensure maximum security. Together, DAI and DHCP Snooping will prevent even the most sophisticated attacks such as man-in-the-middle and ARP poisoning. Along with other advanced security features such as 802.1X Access Control, Denial-of-Service Protection, Broadcast Storm Control, and Protected Port, the DWS-4026 provides robust and centralized security, ensuring maximum network reliability.

Seamless Mobility

Wireless clients can enjoy seamless and uninterrupted roaming from AP to AP managed by a DWS-4026 even if they are not in the same subnet. Because the DWS-4026 employs various mechanisms such as pre-authentication and key-caching, wireless users can freely "roam" the entire network without needing to re-authenticate. The additional Fast Roaming feature results in disruption-free, reliable wireless connectivity crucial for mobile applications such as Wi-Fi IP Phones and wireless PDAs. Furthermore, the DWS-4026

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L2+ Unified Wired/Wireless Gigabit Switch

Advanced Switching and Routing

- RIP v1/v2
- VLAN Routing
- VRRP
- Spanning Tree Protocol
- IGMP/MLD Snooping
- Subnet-based VLAN

Simplified Management

- Switch Cluster
- AP Clustering
- Web Access Using HTTP
- Telnet Server/Client
- SSH v2, SSL v3
- SNMP v1/2c/3
- sFlow
- Dual Image Support

supports advanced “AP-AP Tunneling,” which is used to support L3 roaming for wireless clients without forwarding any data traffic to the Unified Switch. This can help to significantly reduce network traffic and save bandwidth.

Voice-Optimized Quality of Service (QoS)

The DWS-4026 is specifically designed and optimized for Voice over Wireless traffic with features such as Auto-VoIP and Voice VLAN. The Auto-VoIP feature explicitly matches VoIP streams and provides them a better class-of-service than ordinary traffic. These VoIP streams include the popular call-control protocols such as SIP, H.323 and SCCP. Voice VLAN enables the switch ports to carry voice traffic with defined priority, ensuring that the sound quality of an IP phone will be safeguarded from deteriorating when data traffic on the port is high. Voice QoS capability enables administrators to maintain the integrity and priority of the most time-sensitive traffic.

In addition, the DWS-4026 supports traffic shaping, which helps to smooth out temporary bursts over time so that the transmitted traffic rate is bounded. Other advanced QoS features including per-flow bandwidth control, minimum bandwidth guarantee, and 802.1p CoS all help to keep the network traffic in a predictable manner.

Network Resiliency

The DWS-4026 offers a “self-healing” network capability to increase the resiliency of the entire wireless network. To make up for a sudden RF signal vacuum created by any “dead” AP (AP with DC power failure, for example), the DWS-4026

automatically increases the transmit output power of the neighboring APs to expand the RF coverage, thereby “healing” the network. Also, to ensure continuous connection for current clients, the DWS-4026 performs load balancing across access points when network traffic reaches a certain threshold by forcing additional clients to associate with other access points. Through a self-healing network and AP load balancing, the DWS-4026 can effectively manage the wireless bandwidth, optimize WLAN traffic and ensure maximum RF coverage.

Maximized Flexibility

In addition to all its wireless capabilities, the DWS-4026 also excels as an advanced L2+ PoE Switch. Complete with dynamic routing using RIPv1/v2, ACL security, multi-layer QoS, comprehensive VLAN support, IGMP/MLD Snooping as well as dual 10-Gigabit uplink support, the DWS-4026 truly enables network administrators to integrate their enterprise-class wireless network with their wired infrastructure. Businesses contemplating upgrading their current wired or wireless network can deploy the DWS-4026 to take advantage of its dual-role flexibility.

Simplified Management

Multiple DWS-4026 switches can form a Switch Cluster, which enables the network administrator to configure all switches from one single “Cluster Master.” In addition, the Switch Cluster also manages information of all the DWL-8600AP access points as well as their associated clients. This helps to significantly simplify management and reduce maintenance efforts as the network scales up.

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Technical Specifications

Product Specifications

Device Interfaces	• 24 10/100/1000BASE-T Gigabit Ports with Integrated 802.3af PoE
	• 4 Combo SFP Slots
	• RS-232 Console Port
	• 2 Open Slots for Optional 10-Gigabit Module
MAC Address Table	• 8K
Switching Capacity	• 88Gbps
Maximum Forwarding Rate	• 65.47Mpps
Forwarding Method	• Store and Forward
Packet Buffer Memory Size	• 750KB
802.3af Power over Ethernet (PoE)	• 15.4W Per Port
	• 370W Total Voltage Output
	• Auto Disable if Port Current Exceeds 350mA
Number of VLANs Per Device	• 3,965
Flow Control	• 802.3x Standard in Full Duplex Mode
	• Back Pressure in Half Duplex Mode
	• Head-of-Line Blocking Prevention
Quality of Service (QoS)	• 802.1p Priority Queues (Up to 8 Queues Per Port)
	• Minimum Bandwidth Guarantee per Queue
	• Traffic Shaping per Port
	• Per-Flow Bandwidth Control
	• CoS Based on: Switch Port, VLAN, DSCP, TCP/UDP Port, TOS, Destination/Source MAC Address, Destination/Source IP Address
L2 Features	• IGMP Snooping: 1K Multicast Groups
	• MLD Snooping
	• 802.1D/w/s Spanning Tree
	• 802.3ad Link Aggregation: Up to 32 Groups, up to 8 Ports Per Group
	• 802.1ab LLDP
	• LLDP-MED
	• Port Mirroring (One-to-One and Many-to-One)
	• Jumbo Frame Size: Up to 9KB
VLAN	• 802.1Q VLAN Tagging
	• 802.1V
	• Subnet-based VLAN
	• MAC-based VLAN
	• GVRP
	• Double VLAN
	• Voice VLAN

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L3 Features	• IPv4 Static Route
	• Routing Table Size: Up to 128 Static Routes
	• Floating Static Route
	• VRRP
	• Proxy ARP
	• RIP v1/v2
ACL (Access Control List)	• ACL based on: Switch Port, MAC Address, 802.1p Priority Queues, VLAN, Ethertype, DSCP, IP Address, Protocol Type, TCP/UDP Port
LAN Security	• RADIUS Authentication for Management Access
	• TACACS+ Authentication for Management Access
	• SSH v1/v2
	• SSL v3, TLS v1
	• Port Security: 20 MAC Addresses per Port, Trap Violation Notification
	• MAC Filtering
	• 802.1X Port-based Access Control and Guest VLAN
	• Denial of Service Protection
	• Dynamic ARP Inspection (DAI)
	• DHCP Snooping
	• Broadcast Storm Control in Granularity of 1% of link speed
	• Protected Port
	• DHCP Filtering
	Management Methods
• Switch Clustering	
• RADIUS Accounting	
• CLI	
• Telnet Server: Up to 5 Sessions	
• Telnet Client	
• TFTP Client	
• SNMP v1/2c/3	
• sFlow	
• Multiple Configuration Files	
• Dual Image Services	
• RMON v1: 4 Groups (Statistics, History, Alarms, Events)	
• BOOTP/DHCP Client	
• DHCP Server	
• DHCP Relay	
• SNTP	
• SYSLOG	
• Dual Images	
• Port Description	

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Wireless	
Managed AP	<ul style="list-style-type: none"> • 10Base-T, 100Base-TX, & 1000Base-T
WLAN Management Capability	<ul style="list-style-type: none"> • Up to 64 APs per Switch
	<ul style="list-style-type: none"> • Up to 256 APs per Cluster
	<ul style="list-style-type: none"> • Up to 2,048 Wireless Users (1,024 Tunneled Users, 2,048 Non-Tunneled Users)
Roaming	<ul style="list-style-type: none"> • Fast Roaming¹
	<ul style="list-style-type: none"> • Intra-Switch/Inter-Switch Roaming
	<ul style="list-style-type: none"> • Intra-Subnet/Inter-Subnet Roaming
	<ul style="list-style-type: none"> • AP-AP Tunnel
Access Control and Bandwidth	<ul style="list-style-type: none"> • Up to 32 SSID per AP (16 SSID per RF Frequency Band)
	<ul style="list-style-type: none"> • AP Load Balancing based on the number of users or utilization per AP
AP Management	<ul style="list-style-type: none"> • AP Auto-Discovery
	<ul style="list-style-type: none"> • Remote AP Reboot
	<ul style="list-style-type: none"> • AP Monitoring: List Managed AP, Rogue AP, Authentication Failed AP
	<ul style="list-style-type: none"> • Client Monitoring: List Clients Associated with Each Managed AP
	<ul style="list-style-type: none"> • Ad-hoc Client Monitoring
	<ul style="list-style-type: none"> • AP Authentication Supporting Local Database and External RADIUS Server
	<ul style="list-style-type: none"> • Centralized RF/Security Policy Management
	<ul style="list-style-type: none"> • Visualized AP Management Tool (Supports up to 16 jpg files)
	<ul style="list-style-type: none"> • Unified AP Support (DWL-8600AP): Managed/Standalone
	<ul style="list-style-type: none"> • AP Auto-Discovery
WLAN Security	<ul style="list-style-type: none"> • Wireless Intrusion Detection & Prevention System (WIDS)
	<ul style="list-style-type: none"> • Rogue AP Mitigation
	<ul style="list-style-type: none"> • Rogue and Valid AP Classification based on MAC Address
	<ul style="list-style-type: none"> • WPA Personal/Enterprise
	<ul style="list-style-type: none"> • WPA2 Personal/Enterprise
	<ul style="list-style-type: none"> • 64/128-bit WEP Data Encryption
	<ul style="list-style-type: none"> • Wireless Station and AP Monitoring on RF Channel, MAC Address, SSID, Time
	<ul style="list-style-type: none"> • Captive Portal
	<ul style="list-style-type: none"> • MAC Authentication
	<ul style="list-style-type: none"> • Station Isolation
	<ul style="list-style-type: none"> • Encryption Type Support: WEP, WPA, Dynamic WEP, TKIP, AES-CCMP, EAP-TLS, EAP-TTLS, EAP-MD5 PEAP-GTC, PEAP-MS-CHAPv2, PEAP-TLS

Electrical and Emissions Summary

EMI/EMC Certifications	<ul style="list-style-type: none"> • FCC Class A, ICES-003, VCCI-003, VCCI, CE, C-Tick, EN 60601-1-2
Safety Compliance	<ul style="list-style-type: none"> • UL/cUL, CB
Power	<ul style="list-style-type: none"> • AC Input Power: 100 to 240 VAC, 50/60Hz Internal Universal Power Supply
Maximum Power Consumption	<ul style="list-style-type: none"> • 525 Watts (with all PoE ports in operation)

Physical and Environmental

Operating Temperature	<ul style="list-style-type: none"> • 32° to 104°F (0° to 40°C)
Storage Temperature	<ul style="list-style-type: none"> • 14° to 158°F (-10° to 70°C)

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Operating Humidity	• 10% to 90% non-condensing
Storage Humidity	• 5% to 90% non-condensing
Dimensions (W x D x H)	• 17.32in x 15.31in x 1.73in (440mm x 389mm x 44mm)
	• 19-inch Standard Equipment Rackmount Width, 1U Height
Weight	• 13.23lbs (6kg)
MTBF	• 185,540 Hours

Warranty

Warranty	• Limited Lifetime ²
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Ordering Information

DWS-4026	• Managed 24-Port Gigabit Ethernet L2+ PoE Unified Wireless Switch, 4 SFP, 2 10GE
DWL-8600AP	• Unified Wireless PoE Access Point, Simultaneous Dual Band 11n
DEM-410X	• 1-Port 10-Gigabit XFP Module for DWS-4026
DEM-410CX	• 1-Port 10-Gigabit CX4 Module for DWS-4026
DEM-421XT	• 10GBASE-SR Multimode XFP, up to 300m
DEM-422XT	• 10GBASE-LR Singlemode XFP, up to 10Km

¹ To demonstrate fast roaming in a PC, a wireless NIC (Network Interface Card) needs to support the fast roaming feature.

² 1-Year Limited Warranty available only in the USA and Canada.

All references to speed are for comparison purposes only. Product specifications, size and shape are subject to change without notice, and actual product appearance may differ from that depicted herein.

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