L2+ Unified Wired/Wireless Gigabit Switch

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
- 64/128/152-Bit WEP Data Encryption
- 802.11i WPA2/RSN
- MAC Authentication
- Dynamic ARP Inspection (DAI)
- DHCP Snooping
- Access Control List (ACL)
- 802.1X

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 Roaming
- AP-AP Tunnel
- Intra-Switch & Inter-Switch Roaming

Advanced Switching & Routing
- RIP v1/v2
- VLAN Routing
- VRRP
- Spanning Tree Protocol (STP)
- IGMP / MLD Snooping
- Subnet-based VLAN

Simplified Management
- Switch Cluster
- Web Access Using HTTP
- Telnet Server/Client
- SSH v2, SSL v3
- SNMP v1, v2c, v3
- sFlow
- Dual Image support

The DWS-4026 is D-Link's 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 a L2+ PoE Gigabit Switch at the edge depending on the customer's requirement. By centralizing WLAN configuration and management functions, DWS-4026 enables network administrators to have control, security, redundancy, and reliability needed to scale and manage their wireless networks easily and efficiently.

Adaptable Wireless
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 RF scans to sweep the entire wireless network for 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 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 with 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. The DWS-4026's 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 traffic bursts over time so that the transmitted traffic rate is bounded. Other advanced QoS features include 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 self-healing network and AP load lancing, the DWS-4026 can effectively manage the wireless bandwidth, optimize WLAN traffic and ensure maximum RF coverage.

L2+ Unified Wired/Wireless Gigabit Switch

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-4026s can form a Switch Cluster, which enables network administrator to manage and configure all switches from one single "Cluster Master." In addition, the Switch Cluster also manages information of all the Access Points as well as their associated clients. This helps to significantly simplify management and reduce maintenance efforts as the network scales up.

Technical Specifications

WLAN Management Capability	▪ Up to 64 APs per switch ▪ Up to 256 APs per cluster ▪ Up to 2,048 Wireless Users (1,024 Tunneled Users, 2,048 Non-Tunneled Users)
Roaming	▪ Fast Roaming· ▪ Intra-Switch/Inter-Switch Roaming ▪ Intra-Subnet/Inter-Subnet Roaming ▪ AP-AP Tunnel
Access Control & Bandwidth Management	▪ Up to 32 SSID per AP (16 SSID per RF Frequency Band) ▪ AP Load Balancing based on the number of users or utilization per AP
Managed AP	▪ DWL-8600AP
AP Management	▪ AP Auto-Discovery ▪ Remote AP Reboot ▪ AP Monitoring: List Managed AP, Rogue AP, Authentication Failed AP ▪ Client Monitoring: List Clients Associated with Each Managed AP ▪ Ad-hoc Clients Monitoring ▪ AP Authentication Supporting Local Database and External RADIUS Server ▪ Centralized RF/Security Policy Management ▪ Visualized AP Management Tool (Supports up to 16 jpg files) ▪ Unified AP Support (DWL-8600AP): Managed/Standalone mode
WLAN Security	▪ Wireless Intrusion Detection & Prevention System (WIDS) ▪ Rogue AP Mitigation ▪ Rogue and Valid AP Classification Based on MAC Address ▪ WPA Personal/Enterprise ▪ WPA2 Personal/Enterprise ▪ 64/128/152-bit WEP Data Encryption ▪ Wireless Station and AP Monitoring on RF Channel, MAC Address, SSID, Time ▪ Encryption Type Support: WEP, WPA, Dynamic WEP, TKIP, AES-CCMP, EAP-FAST, EAP-TLS, EAP-TTLS, EAP-MD5, PEAP-GTC, PEAP-MS-CHAPv2, PEAP-TLS ▪ Captive Portal ▪ MAC Authentication ▪ Station Isolation

L2+ Unified Wired/Wireless Gigabit Switch

L2 Features	▪ MAC Address Table Size: 8K Entries ▪ IGMP Snooping: 1K Multicast Groups ▪ MLD Snooping ▪ 8021.D Spanning Tree ▪ 802.1w Rapid Spanning Tree ▪ 802.1s Multiple Spanning Tree ▪ 802.3ad Link Aggregation: Up to 32 groups, up to 8 ports per group ▪ 802.1ab LLDP ▪ LLDP-MED ▪ One-to-One Port Mirroring ▪ Many-to-One Port Mirroring ▪ Jumbo Frame Size: Up to 9KBytes
VLAN	▪ 802.1Q VLAN Tagging ▪ 802.1V ▪ VLAN Groups: Up to 3965 entries ▪ Subnet-based VLAN ▪ MAC-based VLAN ▪ GVRP ▪ Double VLAN ▪ Voice VLAN
L3 Features	▪ IPv4 Static Route ▪ Routing Table Size: Up to 128 Static Routes ▪ Floating Static Route ▪ VRRP ▪ Proxy ARP ▪ RIPv1/v2
Quality of Service	▪ 802.1p Priority Queues (Up to 8 Queues per Port) ▪ CoS Based on: Switch Port, VLAN, DSCP, TCP/UDP Port, TOS, Destination/Source MAC Address, Destination/Source IP Address ▪ Auto-VoIP ▪ Minimum Bandwidth Guarantee per Queue ▪ Traffic shaping per port ▪ Per-Flow Bandwidth Control
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

L2+ Unified Wired/Wireless Gigabit Switch

Management Methods	▪ Web-Based GUI ▪ Switch Clustering ▪ RADIUS Accounting ▪ CLI ▪ Telnet Server: Up to 5 Sessions ▪ Telnet Client ▪ TFTP Client ▪ SNMP v1, v2c, v3 ▪ 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
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
Redundant Power Supply	Connector for Optional External DPS-600 RPS
Power over Ethernet	▪ Standard: 802.3af ▪ Per Port Voltage Output: 15.4 W ▪ Total Voltage Output: 370 W ▪ Auto Disable If Port Current Over 350mA
Performance	▪ Switching Capacity: 88Gbps ▪ Maximum Forwarding Rate: 65.47Mpps ▪ Forwarding Mode: Store and Forward ▪ Packet Buffer Memory Size: 750KBytes
Flow Control	▪ 802.3x Standard in Full Duplex Mode ▪ Back Pressure in Half Duplex Mode ▪ Head-of-Line Blocking Prevention
Optional 10-Gigabit Uplink Modules	▪ DEM-410X 1-Slot 10-Gigabit XFP Modul (For Fiber Backbone Attachment) ▪ DEM-410CX 1-Port 10-Gigabit CX4 Module (For Switch Cascading)
Optional 10-Gigabit XFP Transceivers	▪ DEM-421XT XFP Transceiver (10GBASE-SR Standard, Up to 300 m Multi-Mode Fiber Distance, 3.3/5V Operating Voltage) ▪ DEM-422XT XFP Transceiver (10GBASE-LR Standard, Up to 10 km Single-Mode Fiber Distance, 3.3/5V Operating Voltage) ▪ DEM-423XT XFP Transceiver (10GBASE-ER Standard, Up to 40 km Single-Mode Fiber. Distance, 3.3/5V Operating Voltage)
Diagnostic LEDs	▪ Per Device: Power, Console, RPS ▪ Per 10/100/1000BASE-T Port: Link/Activity/Speed, PoE Mode ▪ Per SFP Slot: Link/Activity ▪ Per 10-Gigabit Slot: Link/Activity

L2+ Unified Wired/Wireless Gigabit Switch

Power	▪ AC Input Power: 100 to240 VAC, 50/60 Hz Internal Universal Power Supply ▪ Power Consumption: 525 Watts (max. with all PoE ports in operation)
MTBF	185,540 Hours
Dimensions	▪ 440 (W) x 389 (D) x 44 (H) mm (17.32 x 15.31x 1.73 inches) ▪ 19-Inch Standard Equipment Rack Mount Width, 1U Height
Weight	6kg (13.23 lbs)
Temperature	▪ Operating Temperature: 0° to 40° C (32° to 104° F) ▪ Storage Temperature: -10° to 70° C (14° to 158° F)
Humidity	▪ Operating Humidity: 10% to 90% non-condensing ▪ Storage Humidity: 5% to 90% non-condensing
EMI/EMC Certifications	FCC Class A, ICES-003, VCCI, CE, C-Tick, EN 60601-1-2
Safety Certifications	UL/cUL, CB

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