# DCN Europe

# WIRELESS ACCESS CONTROLLERS

DCWS-6028-C

DCWS-6028 (R2)

Advanced AP management

Fast wireless access

Intelligent RF management

Advanced network security features

## WIDE RANGE OF ACCESS POINTS MANAGEMENT FEATURES

Thanks to DCN Access Controllers you can centrally manage all DCN Access Points in the network. Access Controllers integrate: exact user control management, perfect RF management, security mechanisms, super QoS and seamless roaming providing advanced WLAN access control functions. All AC models have a complete layer 3 core switch function and powerful forwarding performance. A DCN Access Controller can be used as a wireless controller and a layer 3 core switch at the same time. It is not only the brain of the wireless network but also the data forwarding centre of the entire wireless network.

## HIGH-DENSITY ACCESS PORT, INTELLIGENT INTEGRATED CONTROL AND FORWARDING ARCHITECTURE

DCN Access Controllers adopt the wireless forwarding technology based on ASIC chipset. The port density and wireless throughput are the highest among similar AC products in the market. They support not only wireless forwarding but also switching, they forward all wireless and wired traffic by the same chipset. Thanks to the integrated control and forwarding architecture the devices support trunk mode deployment, which greatly reduces investment costs, improves network performance and enables easy network management.

## INTELLIGENT RF MANAGEMENT FEATURES

provide an automatic power and channel adjustment function.They employ particular RF detection and management algorithms to obtain a better RF coverage effect. When the signals of an AP are interfered by strong external signals, the AP may automatically switch to an appropriate operating channel under the controlof the AC to avoid such interference, thereby guaranteeing wireless network communication. The system also supports wireless network blackhole compensation. When an AP in the network accidentally stops operating, the RF management function of the AC compensates the resulting blind area of signals so that the wireless network can still operate normally.

## ACCESS POINTSPLUG-AND-PLAY

DCN smart APs are able to automatically discover the controllers. A wireless network function enables automatic configuration of the Access Point without the administrator's involvement. DCN smart APs support plug-and-play technology and zero configuration. The wireless AC undertakes all the management, control and configuration of the APs. Network administrators donot need to separately manage or configure a huge number of wireless APs. All actions, such as configuration, firmware upgrading and security policy updating, are performed uniformly under the control of the wireless AC.

## MULTIPLE MANAGEMENT MODES

DCN Access Controllers support various management modes such as command lines and web interface. They can be used to plan, deploy, monitor, and manage APs in the entire network centrally and efficiently. Thanks to DCN Access controllers administrators can monitor and manage the entire network by checking the working status of APs and online users, planning RF resources in the entire network, locating users, generating security alarms, checking link loads, device usage and supporting an advanced wireless AC cluster technology to provide seamless roaming, to guarantee the continuity of real-time mobile services.

| | DCWS-6028-C | DCWS-6028 (R2) |
|---|---|---|
| **Hardware Specifications** | | |
| Ports | 24x 10/100/1000Base-T RJ45<br>2x COMBO (10/100/1000Base-T RJ45 lub 100/1000Base-X SFP),<br>2x 1/10GBase-X SFP+ | 16x COMBO (10/100/1000Base-T RJ45 or 100/1000Base-X SFP),<br>8x 100/1000Base-X SFP,<br>4x 1/10GBase-X SFP+ |
| Switching capacity | 364Gbps | 208Gbps |
| Console port | 1x RJ45 (RS-232) | 1x RJ45 (RS-232) |
| Management port | 1x 10/100/1000Base-T RJ45<br>1x USB 2.0 | 1x 10/100Base-TX RJ45 |
| **Control** | | |
| Maximum number of manageable Aps | 256 | 1024 |
| Base number of manageable Aps | 16 | 32 |
| Number of access points supported in the cluster | 16 | 64 |
| Maximum number of concurrent wireless users | 10K | 40K |
| Forwarding mode | Local forwarding / Centralized forwarding | Local forwarding / Centralized forwarding |
| Deployment mode | Bypass / Trunk | Bypass / Trunk |
| **Wireless protocols and standards** | | |
| IEEE 802.11 | √ | √ |
| IEEE 802.11a | √ | √ |
| IEEE 802.11b | √ | √ |
| IEEE 802.11g | √ | √ |
| IEEE 802.11n | √ | √ |
| IEEE 802.11ac | √ | √ |
| IEEE 802.11ax | √ | √ |
| IEEE 802.11d | √ | √ |
| IEEE 802.11e | √ | √ |
| IEEE 802.11h | √ | √ |
| IEEE 802.11i | √ | √ |
| IEEE 802.11k | √ | √ |
| **High reliability** | | |
| N+1, N+N backup | √ | √ |
| DHCP Server backup | √ | √ |
| Portal 1+1 backup | - | √ |
| Automatic emergency mechanism for access points | √ | √ |
| **RF management** | | |
| Setting country codes | √ | √ |
| Manually/automatically setting the transmit power | √ | √ |
| Manually/automatically setting the working channelego | √ | √ |
| Automatically adjusting the transmission rate | √ | √ |
| Blind area detection and repair | √ | √ |
| RF environment scanning, which enables a working AP to scan the surrounding RF environment | √ | √ |
| RF interference detection and avoidance | √ | √ |
| 11n prefer red RF policy | √ | √ |
| SSID hiding | √ | √ |
| 20 MHz and 40 MHz channel bandwidth configuration | √ | √ |
| Airtime protection in hybrid access of 11bg and 11n terminals | √ | √ |
| Terminal based airtime fairness scheduling | √ | √ |
| Spectral analysis | √ | √ |
| Terminal locating | √ | √ |
| Spectral navigation (5 GHz preferred) | √ | √ |
| 11n only | √ | √ |
| SSID based or Radio based limit on the number of users | √ | √ |
| User online detection | √ | √ |
| Automatic aging of traffic free users | √ | √ |
| Prohibiting the access of clients with weak signals | √ | √ |
| Remote probe analysis | √ | √ |
| Forced roaming of clients with weak signals | √ | √ |
| **Security** | | |
| 64/128 WEP, dynamic WEP, TKIP, CCMP, and SMS encryption | √ | √ |
| 802.11i security authentication and two modes (Enterprise and Personal) of 802.1x and PSK | √ | √ |
| WAPI encryption and authentication | √ | √ |
| LDAP authentication | √ | √ |
| MAC address authentication | √ | √ |
| Portal authentication, including built in portal, external portal, and custom portal authentication modes | √ | √ |
| PEAP user authentication | √ | √ |
| Forwarding security control, such as frame filtering, white list, static blacklist, and dynamic blacklist | √ | √ |
| User isolation | √ | √ |
| Periodic Radio/SSID enabling and disabling | √ | √ |
| Access control of free resources | √ | √ |
| Secure admission control of wireless terminals | √ | √ |
| Access control of various data packets such as MAC, IPv4, and IPv6 packets | √ | √ |
| Protection against ARP spoofing | √ | √ |
| DHCP Security | √ | √ |
| Source address validation (SAVI) | √ | √ |

| | | |
|---|---|---|
| User access control based on AP locations | √ | √ |
| Wireless intrusion detection system (WIDS) and wireless intrusion prev ention system (WIPS) | √ | √ |
| Protection against flooding attacks | √ | √ |
| Protection against spoofing attacks | √ | √ |
| Radius Client | √ | √ |

## QoS

| | | |
|---|---|---|
| 802.11e (WMM) | √ | √ |
| Ethernet port 802.1P identification and marking | √ | √ |
| Mapping from wireless priorities to wired priorities | √ | √ |
| Mapping of different SSIDs/VLANs to different QoS policies | √ | √ |
| Mapping of data streams that match with different packet fields to different QoS policies | √ | √ |
| Load balancing based on the number of users, users traffic, frequency bands | √ | √ |
| Band width limit based on Aps, SSIDs, terminals, specific data streams | √ | √ |
| Power saving mode | √ | √ |
| Multicast to unicast mechanism | √ | √ |

## Switch feature

| | | |
|---|---|---|
| VLANs | 4k | 4k |
| ACL Table | 3k | 4k |
| MAC address Table | 16k | 32k(standard)/40k(routee)/64k(bridge) |
| ARP Table | 4k | 48k(standard)/40k(routee)/16k(bridgee) |
| Routing Table | 1k (shared by IPv4 and IPv6) | 16k |
| Layer 2 protocols and standards | IEEE802.1Q (VLAN), IEEEE802.1d (STP), IEEEE802.1W (RSTP), IEEE802.1S (MSTP), IEEE802.1p (COS), IEEE802.1x (Port Control), IEEE802.3x (Flow Control), IEEE802.3ad (LACP), Port Mirror, IGMP Snooping, MLD Snooping, QinQ, GVRP, PVLAN, Broadcast control | IEEE802.1Q (VLAN), IEEEE802.1d (STP), IEEEE802.1W (RSTP), IEEEE802.1S (MSTP), IEEE802.1p (COS), IEEE802.1x (Port Control), IEEE802.3x (Flow Control), IEEE802.3ad (LACP), Port Mirror, IGMP Snooping, MLD Snooping, QinQ, GVRP, PVLAN, Broadcast storm control |
| Layer 3 protocols and standards | Static Routing, RIPv1/v2, OSPF, VRRP, IGMP v1/v2/v3, ARP, ARP Proxy, PIM-SM, PIM-DM, PIM-SSM | Static Routing, RIPv1/v2, OSPF, VRRP, IGMP v1/v2/v3, ARP, ARP Proxy, PIM-SM, PIM-DM, PIM-SSM |
| IPv6 protocols and standards | IPv4/v6 dual-stack, manual tunnel, ISATAP, 6to4 tunnel, IPv4 over IPv6 tunnel, DHCPv6, DNSv6, ICMPv6, ACLv6, TCP/UDP for IPv6, SOCKET for IPv6, SNMP v6, Ping /Traceroute v6, RADIUS, Telnet/SSH v6, FTP/TFTP v6, NTP v6, IPv6 MIB support for SNMP, VRRP for IPv6, IPv6 QoS, static routing, OSPFv3, IPv6 SAVI | IPv4/v6 dual-stack, manual tunnel, ISATAP, 6to4 tunnel, IPv4 over IPv6 tunnel, DHCPv6, DNSv6, ICMPv6, ACLv6, TCP/UDP for IPv6, SOCKET for IPv6, SNMP v6, Ping /Traceroute v6, RADIUS, Telnet/SSH v6, FTP/TFTP v6, NTP v6, IPv6 MIB support for SNMP, VRRP for IPv6, IPv6 QoS, static routing, OSPFv3, IPv6 SAVI |

## Management

| | | |
|---|---|---|
| Console port RS-232 (RJ45) | √ | √ |
| GUI (Web) | √ | √ |
| SNMP v1/v2c/v3 | √ | √ |
| Both local and remote maintenance | √ | √ |
| Local logs, Syslog, and log file export | √ | √ |
| Statistics | √ | √ |
| Telnet / SSH | √ | √ |
| SSH v1/v2 | √ | √ |
| Dual-image (dual-OS) | √ | √ |
| Automatic emergency mechanism of AP | √ | √ |
| Hardware watchdog | √ | √ |
| AC cluster management | √ | √ |
| Automatic information synchronization between ACs in a cluster and automatic or manual push of configuration information | √ | √ |

## Physical

| | | |
|---|---|---|
| Dimensions (width x height x depth) | 440mm x 240mm x 44mm | 440mm x 350mm x 44mm |
| Operating temperature | 0°C +55°C | 0°C +50°C |
| Humidity | 5% - 90% (no condensation) | 10% - 90% ((no condensation) |

## Electrical

| | | |
|---|---|---|
| Modular power supply | - | √ |
| Number of slots for modular power supplies | - | 2 |
| Power consumption | ≤ 25W | ≤ 90W |
| Power supply | 230V AC | 230V AC lub / and 48V DC, RPS, Hot Swap |