Air Pro

High Performance 10G Intelligent Wireless Controller

AP-WLC7028

- Combination of routing switch and wireless AC.
- High-reliability backup mechanism.
- Automatic emergency mechanism of APs.
- Intelligent RF management.
- Intelligent control of terminals based on airtime fairness.
- Intelligent load balancing mechanism.
- Intelligent identification of terminals.
- PEAP user authentication.

Quick Overview

AP-WLC7028 is a new generation of high-performance 10G intelligent wireless controller. Designed for a new generation of high-speed wireless networks, it can manage up to 256 wireless access points (APs) and is suitable for small and medium-sized wireless network.

AP-WLC7028 integrates exact user control management, perfect RF management and security mechanisms, super QoS and seam-less roaming, providing powerful WLAN ac-cess control functions.

AP-WLC7028 has full layer 3 core switch function and powerful forwarding performance. It can be used as a wireless controller and layer 3 core switch at the same time. It offers 24 GE ports, 2 combo (GbE/SFP) ports.

Features

Wired-and-wireless Unified and High-Reliability Network
Combination of routing switch and wireless AC
The AP-WLC7028 can be used as a routing switch and a wireless access controller simultaneously in a trunk deployment mode, with an ASIC-based forwarding architecture and high-density access-ports, it can pro-vide line-speed forwarding for both wired and wireless traffic.

High-reliability backup mechanism:-
The AP-WLC7028 supports the following high-reliability backup mechanisms to ensure that a wireless network runs reliably:

- N+1 backup
- N+M backup

Automatic emergency mechanism of APs:-
This mechanism enables an AP to intelligently detect a link between AC and AP. When detecting the break-down of the link the AP quickly switches to its operating mode so that it can continue to forward data and allow new users to access the network. This mechanism makes sure that the access is available for all users when the AC is down.

Intelligent Control of Wireless Network:-
Intelligent RF management:-
The AP-WLC7028 provides an automatic power and channel adjustment function. It employs particular RF detection and management algorithms to attain a better RF coverage effect. When the signals of an AP are interfered with by strong external signals, the AP can automatically switch to an appropriate operating channel under the control of the AC to avoid such interference. It also supports the blackhole compensation mechanism. Which adjusts the AP power to cover the blind area resulted from the crashing of some APs.

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Intelligent control of terminals based on airtime fairness:-

This function makes sure that both the low-rate and the high-rate clients get relatively the same accessing time, which can avoid the low-rate clients to affect the AP overall performance by taking up too much accessing time.

Intelligent load balancing mechanism:-

In general, a wireless client will select an AP according to the signal strength of APs. So, if one AP is connected to a large number of APs while the others are connected fewer, it will cause small bandwidth for each client. The AirPro load balancing mechanism can overcome this problem through these functions:

- Load balancing between APs based on traffic.
- Load balancing between APs based on the number of users.
- Load balancing between radios within the AP based on the number of users.

Intelligent identification of terminals:-

The AP-WLC7028 can identify a terminal in different ways by combining with AirPro smart APs and a unified authentication platform. It can identify the OS of a terminal, such as Apple iOS, Android, and windows, the size of a terminal, and the type of a terminal, such as mobile phone, laptop, and PC. Basing on these identifications, AP-WLC7028 can implement dynamic policies for different types of terminal and present a corresponding-sized authentication page.

PEAP user authentication:-

Protected Extensible Authentication Protocol (PEAP) authentication can provide a better user experience. The user needs to manually enter the username and passwords only during the first-time certification, the second time, and the subsequent certifications are performed automatically.

Secure and Controllable Wireless Network

User isolation policy:-

The AP-WLC7028 supports the isolation of wireless users. If this user isolation function is enabled, only the communication between the clients and gateway is allowed, the direct communication between clients is forbidden, which can increase the security of the wireless network.

Wireless intrusion detection and intrusion defense:-

The AP-WLC7028 supports wireless intrusion detection and intrusion defense features, such as detection of unauthorized wireless devices, intrusion detection, blacklist, and white list, as well as anti-DoS for various wireless management packets, thereby greatly improving security management of an entire wireless network.

Secure user admission:-

The AP-WLC7028 provides multiple secure access, authentication, and accounting mechanisms for various application environments. These mechanisms include:

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- 802.1x authentication
- Captive portal authentication, including built-in portal, external portal, and custom portal authentication modes.
- MAC address authentication
- LDAP authentication
- WAPI encryption and authentication
- Wired/wireless integrated authentication and ac counting.

Easy-to-Manage Wireless Network

AP plug-and-play:-

When used with the AP-WLC7028, AirPro smart APs support plug-and-play and zero configuration. AP-WLC7028 undertakes all the management, control, and configuration of the APs. Network administrators do not need to separately manage or maintain a huge number of wireless APs.

Remote probe analysis:-

The AP-WLC7028 supports remote probe analysis of APs. It enables the APs to captures Wi-Fi packets and mirrors them to a local analysis device in real-time to help network administrators troubleshooting or optimizing the network. The remote probe analysis function can perform analysis of a single working channel continuously or all channels in a polling mode to flexibly meet various wireless network monitoring requirements.

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TECHNICAL SPECIFICATIONS

HARDWARE FEATURES		
Basic Parameter	Max QTY of managed AP	256
	Default QTY of managed AP	16
	AP License upgrade step	16,32,128
	Max con-current users	10K
	Switch capacity	128Gbps
	Forwarding rate	95Mpps
	VLAN	4K
	ACL	3K
	MAC	16K
	ARP	4K
Physical Parameter	Interface	24 x 10/100/1000Base-T Ethernet ports 2 x combo (GbE/SFP) Ethernet ports 2 x 10G SFP+ Ethernet ports
	Management interface	1 x Console (RJ-45) 1 x 10/100/1000BASE-T MGMT 1 x USB 2.0
	Dimension(L*W*H)	440mm*240mm*44mm, 1U
Power Parameter	Consumption	<25W
	Power input	AC 110V - 240V， 50-60Hz (+/- 3Hz)
Environmental Parameter	Working temperature	0°C~55°C
	Storage temperature	-40°C~70°C
	Working humidity	5%~90% non-condensing
L2 protocols and standards	IEEE802.3(10Base-T), IEEE802.3u(100Base-TX), IEEE802.3z (1000BASE-X) IEEE802.3ab(1000Base-T), IEEE802.3ae(10GBase-T) IEEE802.3ak(10GBASE-CX4), 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 control	
L3 protocols and standards	Static Routing RIPv1/v2, OSPF, BGP, VRRP, IGMP v1/v2/v3 ARP, ARP Proxy Static Multicast Route	
Wireless protocols and standards	802.11, 802.11a, 802.11b, 802.11g, 802.11n, 802.11d, 802.11h, 802.11i, 802.11e, 802.11k	
CAPWAP protocol	Supports L2/L3 network topology between an AP and an AC. Enables an AP to automatically discover an accessible AC. Enables an AP to automatically upgrade its software version from an AC. Enables an AP to automatically download configurations from an AC.	
IPv6 protocols and standards	6to4 Tunnel, Configured Tunnel, ISATAP Tunnel, GRE Tunnel ICMPv6, ND, DNSv6 IPv6 LPM Routing, IPv6 Policy-based Routing (PBR) IPv6 VRRPv3, IPv6 URPF, IPv6 RA RIPng, OSPFv3, BGP4+ MLD Snooping, IPv6 Multicast VLAN MLDv1/v2, IPv6 ACL, IPv6 QoS	
High reliability	N+1 backup N+N backup	

TECHNICAL SPECIFICATIONS

HARDWARE FEATURES	
RF management	Setting country codes Manually/automatically setting the transmit power Manually/automatically setting the working channel 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-preferred 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 Terminal locating (A terminal locating algorithm can be embedded in the AC) 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
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 Secure access control of APs, such as MAC authentication, password authentication, or digital certificate authentication between an AP and an AC Radius Client Backup authentication server Wireless SAVI User access control based on AP locations Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS) Protection against flooding attacks Protection against spoofing attacks

TECHNICAL SPECIFICATIONS

HARDWARE FEATURES	
Forwarding	IPv6 access and forwarding; constructing IPv6 WLAN access service on an IPv4 network; providing IPv4 WLAN access service on an IPv6 network; and constructing private IPv6 WLAN network service on an IPv6 network Fast L2/L3 roaming between APs served by the same AC IPv4 and IPv6 multicast forwarding WDS AP
QoS	802.11e (WMM); and 4-level priority queues, ensuring that applications sensitive to the real-time effect, such as voice and video services, are transmitted first 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 Access control of MAC, IPv4, and IPv6 data packets Load balancing based on the number of users Load balancing based on user traffic Load balancing based on frequency bands Bandwidth limit based on APs Bandwidth limit based on SSIDs Bandwidth limit based on terminals Bandwidth limit based on specific data streams Power saving mode Multicast-to-unicast mechanism Automatic emergency mechanism of APs Intelligent identification of terminals
Management	Web management Configuration through a console port SNMP v1/v2c/v3 Both local and remote maintenance Local logs, Syslog, and log file export Alarm Fault detection Statistics Login through Telnet Login through SSH Dual-image (dual-OS) backup Hardware watchdog AC cluster management; automatic information synchronization between ACs in a cluster, and automatic or manual push of configuration information SSID-based user permission management mechanism

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