



Huawei

AC6005

Wireless Access Controller

Datasheet



Product Overview

The AC6005 is a small-capacity fixed wireless access controller (AC) for small and medium enterprises. It can manage up to 256 access points (APs) and integrates the GE Ethernet switch function, achieving integrated access for wired and wireless users. The AC features high scalability and offers users considerable flexibility in configuring the number of managed APs. When used with Huawei's full series 802.11ac and 802.11n APs, the AC6005 can be used to construct small and medium campus networks, enterprise office networks, wireless Metropolitan Area Networks (MANs), and hotspot coverage networks. The AC6005 is available in two models: AC6005-8 and AC6005-8-PWR. The AC6005-8-PWR supports PoE power supply and can supply power for eight GE ports. It complies with the 802.3af/at standard and supports a maximum PoE output power of 130 W.



AC6005 front panel



AC6005 rear panel

Huawei AC6005 wireless access controller

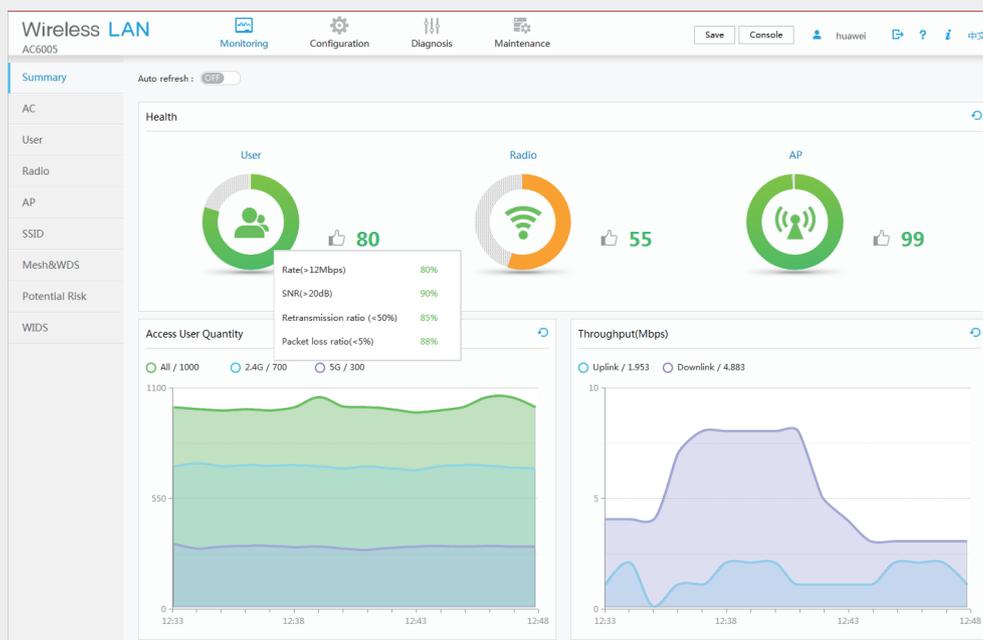
Product Features

Built-in visualized network management platform

The AC6005 has a built-in web system that is easy to configure and provides comprehensive monitoring and intelligent diagnosis.

- Health-centric one-page monitoring, visualized KPIs

One page integrates the summary and real-time statistics. KPIs are displayed in graphs, including user performance, radio performance, and AP performance, enabling users to extract useful information from the massive amounts of monitored data, while also knowing the device and network status instantly.

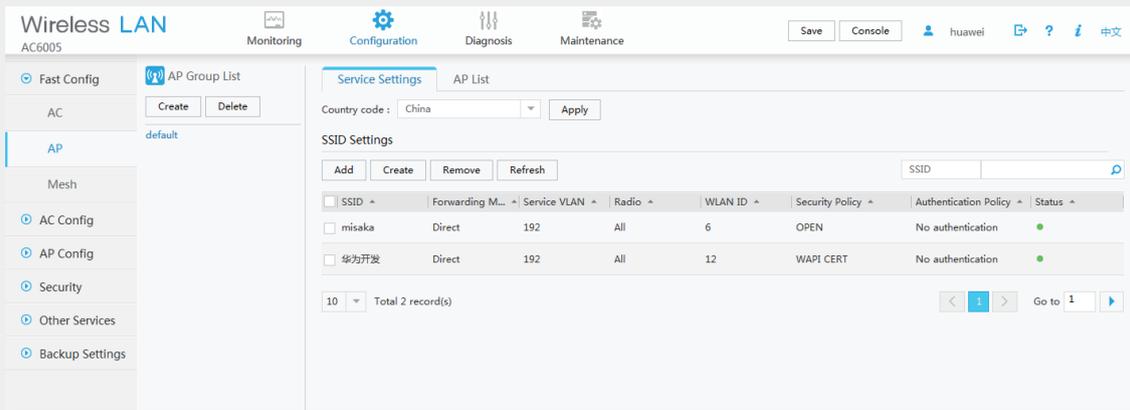


Monitoring interface

- Profile-based configuration by AP group simplifies configuration procedure and improves efficiency.

The web system supports AP group-centric configuration and automatically selects the common parameters for users, meaning that users do not need to pre-configure the common parameters, simplifying the configuration procedure.

If two AP groups have small configuration differences, users can copy the configurations of one AP group to the other. This improves configuration efficiency because users only need to modify the original configurations, not create entirely new ones each time.



Configuration interface

- One-click diagnosis solves 80% of common network problems.

The web system supports real-time and periodic one-click intelligent diagnosis from the dimensions of users, APs, and ACs, and provides feasible suggestions for troubleshooting the faults.

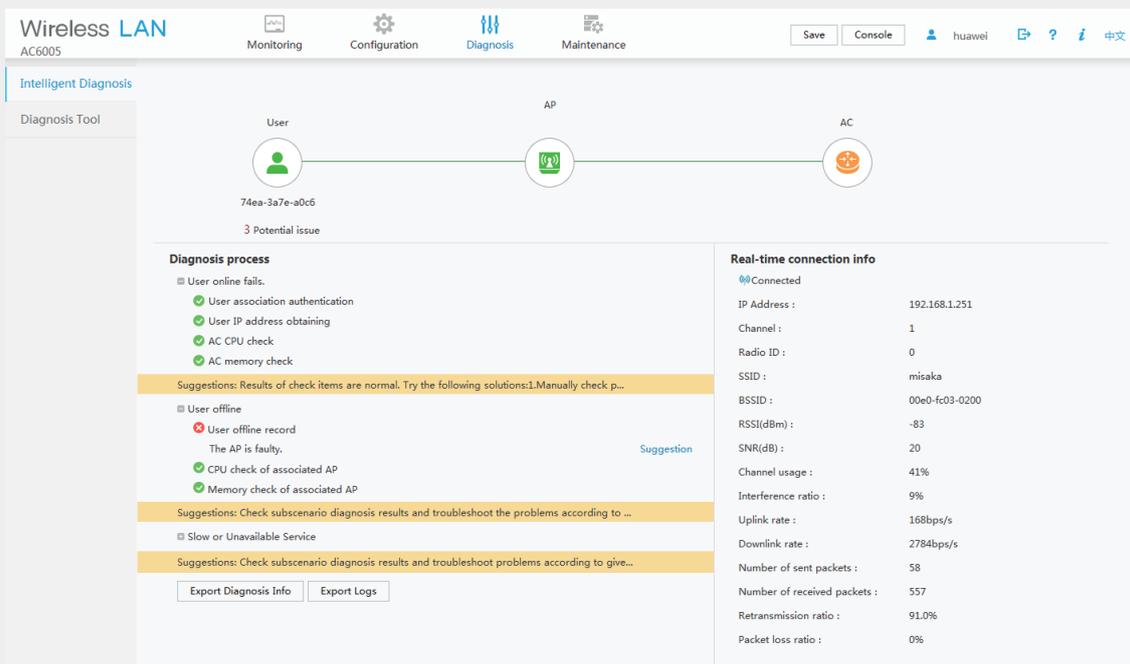


Figure 1-4 Intelligent diagnosis

Built-in application identification server

- Supports Layer 4 to Layer 7 application identification and can identify over 1600 applications, including common office applications and P2P download applications, such as Lync, FaceTime, YouTube, and Facebook.
- Supports application-based policy control technologies, including traffic blocking, traffic limit, and priority adjustment policies.
- Supports automatic application expansion in the application signature database.

Comprehensive reliability design

- Supports the Boolean port for environmental monitoring and the intra-board temperature probe, which monitors the operating environment of the AC6005 in real time.
- Supports AC 1+1 HSB, and N+1 backup, ensuring uninterrupted services.
- Supports port backup based on the Link Aggregation Control Protocol (LACP) or Multiple Spanning Tree Protocol (MSTP).

Large-capacity and high-performance design

- The AC6005 can manage up to 256 APs, meeting requirements of small and medium campuses.
- An AC6005 has eight GE interfaces, and provides a 20 Gbit/s switching capacity and a 4 Gbit/s forwarding capability (the highest among all similar products of the industry).
- The AC6005 can manage up to 2048 users, allowing 100 users on an AP to transmit data simultaneously.

Various roles

- The AC6005 provides PoE power on eight interfaces or PoE+ power on four interfaces and can supply power to directly connected APs, requiring no additional PoE switch for AP power supplies.
- The AC6005 has a built-in Portal/AAA server and can provide Portal/802.1x authentication for 1K users.

Flexible networking

- The AC can be deployed in inline, bypass, bridge, and Mesh network modes, and supports both centralized and local forwarding.
- The AC and APs can be connected across a Layer 2 or Layer 3 network. In addition, NAT can be deployed when APs are deployed on the private network and the AC is deployed on the public network.
- The AC is compatible with Huawei full-series 802.11n and 802.11ac APs and supports hybrid networking of 802.11n and 802.11ac APs for simple scalability.

Multiple interface support

- Six GE and two GE combo interfaces
- One RJ45 serial maintenance interface
- One Mini USB serial maintenance interface

AC6005 features

Feature	Description
Scalability	Licenses are available for managing 1, 8, or 32 APs.
Flexible networking	<p>The AC and APs can be connected across a Layer 2 or Layer 3 network. NAT can be deployed in configurations where APs are deployed on an internal network and the AC is deployed on an external network.</p> <p>Services can be mapped between VLANs and Service Set Identifiers (SSIDs). The number of service VLANs and number of SSIDs can be in a ratio of 1:1 or 1:N based on service requirements. You can assign user VLANs based on SSIDs, physical locations, or services.</p> <p>The AC can be deployed in inline, bypass, and WDS/Mesh networks.</p>
Flexible forwarding	<p>The AC6005 allows you to easily configure local or centralized forwarding based on Virtual Access Points (VAPs) according to network traffic and service control requirements.</p> <ul style="list-style-type: none"> Centralized forwarding meets the requirements of most network configurations; however, when bandwidth demands from users connected to the same AP steadily increase, traffic switching loads will increase. Local forwarding improves bandwidth efficiency; however, user authentication cannot be controlled by the AC in local forwarding mode. <p>The AC6005 solves this problem with support for centralized authentication in local forwarding to accommodate changing needs.</p>
Radio management	<p>The AC6005 supports automatic selection and calibration of radio parameters in AP regions, including these features:</p> <ul style="list-style-type: none"> Automatic signal level adjustment and channel selection on power-up Automatic signal re-calibration in the event of signal interference <ul style="list-style-type: none"> Partial calibration: Adjusts a specific AP to optimal signal levels. Global calibration: Adjusts all APs in a specified region for optimal signal levels. When an AP is removed or goes offline, the AC6005 increases the power of neighboring APs to compensate for reduced signal strength.
Flexible user rights management	<p>The AC6005 uses Access Control Lists (ACLs) based on APs, VAPs, or SSIDs and provides isolation and bandwidth-limiting for each option. The AC6005 also provides access controls for users, and user roles, to meet enterprise requirements regarding permissions, authentication, and authorization, as well as bandwidth limitations per user and user group.</p> <ul style="list-style-type: none"> The AC6005 implements per-user access control based on ACLs, VLAN IDs, and bandwidth limits sent from the RADIUS server. User groups are defined with access control policies. An ACL, user isolation policy, and bandwidth limitations can be applied to user groups for additional access control. Inter-group user isolation or intra-group user isolation can also be configured.

Feature	Description
WDS	<p>The AC6005 provides STA access and wireless bridge management functions, as well as network bridge management when in Fit AP mode.</p> <p>The AC6005 supports these networking modes: point-to-multipoint bridging, single-band/dual-band multi-hop relay, dual-band WDS bridging + WLAN access, and single-band WDS bridging + WLAN access.</p> <p>The AC6005 can also function as a wireless bridge between a central campus network and multiple branch campuses. This configuration works well for deployments with no wired network or where cable routing is inconvenient.</p>
High reliability	<p>Multiple ACs can be configured in a network to increase WLAN reliability. If an active AC experiences a fault or the link between the active AC and APs disconnects, the APs can switch to a standby AC.</p> <p>The AC6005 system provides N+1 active/standby mode, which allows multiple active ACs to share the same standby AC. This feature provides high reliability at reduced cost.</p>
Load balancing	<ul style="list-style-type: none"> • Inter-AP load balancing: When an STA is in the coverage area of multiple APs, the AC6005 connects the STA to the AP with the lightest load, delivering STA-based or traffic-based load balancing. • Inter-STA resource balancing: The AC6005 can dynamically and evenly allocate bandwidth resources to prevent some STAs from overusing available bandwidth due to network adapter performance or special applications, such as BT Total Broadband. • The AC6005 first utilizes the 5 GHz band to increase overall utilization of bandwidth.
Visualized WLAN network management and maintenance	<p>The AC6005 and APs use Fit AP + AC networking and standard Link Layer Discovery Protocol (LLDP) for centralized AP management and maintenance. When paired with Huawei's eSight network management tool, the AC6005 provides network topology displays to easily manage and optimize network performance.</p>
System security	<ul style="list-style-type: none"> • Application identification: Use the service awareness technology to identify packets of dynamic protocols such as HTTP and RTP by checking Layer 4 to Layer 7 information in the packets, helping implement fine-grained QoS management. • URL filtering: URL filtering regulates online behavior by controlling which URLs users can access. • Antivirus: The antivirus function depends on the powerful and constantly updated virus signature database to secure the network and system data. • Intrusion prevention: Intrusion prevention detects intrusions, such as buffer overflow attacks, Trojan horses, and worms, by analyzing network traffic and takes actions to quickly terminate the intrusions. In this way, intrusion prevention protects the information system and network architecture of enterprises.

AC6005 specifications

Item	Specifications
Technical specifications	<ul style="list-style-type: none"> • Dimensions (H x W x D): 43.6 mm x 320 mm x 233.6 mm • Weight: 2.9 kg • Operating temperature: -5°C to 50°C • Storage temperature: -40°C to +70°C • Humidity: 5% to 95% • Input voltage: 100 V AC to 240 V AC; 50/60 Hz • Maximum voltage range: 90 V AC to 264 V AC, 47 Hz to 63 Hz • Maximum power consumption: 163.6 W (device power consumption: 39.6 W, PoE: 124 W)
Interface type	<ul style="list-style-type: none"> • 8 x GE interfaces, among which the last two are multiplexed with two optical interfaces as combo interfaces • One RJ45 serial maintenance interface • One Mini USB serial maintenance interface
LED indicator	<ul style="list-style-type: none"> • Power module indicator (PWR): indicates the power-on status of the device. • System running status indicator (SYS): indicates the running status of the device. • Service network port indicator: indicates the data transmission status, interface rate, and PoE status of a network port.
Number of managed APs	256
Number of SSIDs	16K
Number of APs controlled by each license	1, 8, 32
Number of access users	Entire device: 2K
User group management	<p>The AC supports 128 user groups:</p> <ul style="list-style-type: none"> • Each user group can reference a maximum of 8 ACLs. • Each user group can associate with a maximum of 128 ACL rules.
Number of MAC addresses	4K
Number of VLANs	4K
Number of ARP entries	4K
Number of routing entries	8K
Number of multicast forwarding entries	2K
Number of DHCP IP address pools	64 IP address pools, each containing a maximum of 8K IP addresses

Wireless features

Feature	Description
Network management and maintenance	<p>Device management and statistics</p> <ul style="list-style-type: none"> • Command line management based on SSH/Telnet/Console • SNMPv2/v3 • Web management • Standard MIBs and Huawei proprietary MIBs • Syslog • AP and station statistics • Alarms with different severity levels <p>Centralized AP configuration and management</p> <ul style="list-style-type: none"> • Group-based AP management • Centralized version management and automatic version file load • Built-in AP type and customized AP addition <p>Graphic AP deployment and topology displays</p> <ul style="list-style-type: none"> • AP LLDP • AC LLDP
Wireless protocols	IEEE 802.11a, 802.11b, 802.11g, 802.11d, WMM/802.11e, 802.11h, 802.11k, 802.11n, 802.11ac
WLAN deployment	<p>AP-AC networking</p> <ul style="list-style-type: none"> • AP-AC Layer 2/3 networking • AC Layer 2 forwarding or Layer 3 routing • NAT traversal (APs are deployed on a private network and ACs are deployed on the public network) <p>Data forwarding</p> <ul style="list-style-type: none"> • AP-AC CAPWAP tunnel and DTLS encryption • VAP-based forwarding (centralized forwarding and local forwarding) • Centralized authentication and local forwarding <p>VLAN deployment</p> <ul style="list-style-type: none"> • Mapping between SSIDs and VLANs, and VLAN assignment based on SSIDs or physical locations <p>WDS deployment</p> <ul style="list-style-type: none"> • Point-to-point and point-to-multipoint • Automatic topology detection and loop prevention (STP) <p>AC active/standby mode</p> <ul style="list-style-type: none"> • Dual-linked active and standby ACs with Virtual Router Redundancy Protocol (VRRP) • N:1 active/standby deployment

Feature	Description
Radio management	Channel and power configuration <ul style="list-style-type: none"> • Centralized or static channel power configuration • Automatic channel allocation to implement global radio calibration or partial radio calibration • Automatic power adjustment to implement coverage hole compensation • AP region-based configuration and management Load balancing <ul style="list-style-type: none"> • Load balancing based on the traffic volume on each radio • Load balancing based on the number of users
Wireless service control	Extended Service Set (ESS)-based service management <ul style="list-style-type: none"> • ESS-based SSID hiding and AP isolation at Layer 2 • Maximum number of access users and associated aging time settings in an ESS • ESSs to service VLANs mapping • ESS associations with a security profile or a QoS profile • Internet Group Management Protocol (IGMP) support for APs in an ESS Wireless roaming <ul style="list-style-type: none"> • Layer 2 roaming • Inter-VLAN Layer 3 roaming • Pairwise Master Key (PMK) caching, rapid key negotiation • Identity check on users who request to reassociate with the AC to reject reassociation requests of unauthorized users • Delayed clearing of user information after a user goes offline so that the user can rapidly go online again DHCP service control <ul style="list-style-type: none"> • Built-in DHCP server • Support for DHCP snooping on APs • Support for DHCP relay and DHCP snooping on AC Multicast service management <ul style="list-style-type: none"> • IGMP snooping • IGMP proxy
Wireless user management	WLAN user management <ul style="list-style-type: none"> • User blacklist and whitelist • User access number limit • User disconnection • Support for multiple queries including online user information and statistics User group management <ul style="list-style-type: none"> • ACLs based on user groups • Isolation based on user groups

Feature	Description
Wireless security and authentication	<p>Authentication and encryption</p> <ul style="list-style-type: none"> • OPEN/WEP/PSK/WPA(2) + 802.1x • WEP/TKIP/AES(CCMP) • WAPI <p>User authentication and control</p> <ul style="list-style-type: none"> • MAC address authentication, Portal authentication, and 802.1x authentication • MAC + Portal authentication • PEAP/TLS/MD5/CHAP <p>Security and defense</p> <ul style="list-style-type: none"> • ACLs based on interface, users, and user groups • Isolation based on VAPs and user groups • IP source guard for STAs • Detection of unauthorized APs and alarm function • User blacklist and whitelist <p>AAA</p> <ul style="list-style-type: none"> • Local authentication/local accounts (MAC addresses and accounts) • RADIUS authentication • Multiple authentication servers
Wireless QoS control	<p>Flow control</p> <ul style="list-style-type: none"> • VAP-based rate limiting • User-group-based rate limiting • Rate limiting for a specified user • Dynamic traffic control, preventing resources from being wasted by STAs <p>Priority mapping and scheduling</p> <ul style="list-style-type: none"> • Mapping QoS settings of encapsulated data packets to 802.1p and DSCP fields of outer tunnel packets • Mapping between DSCP, 802.1p, and 802.11e

Wired features

Feature	Description
Ethernet features	<ul style="list-style-type: none"> • 802.1p, QinQ, Smart Link, LLDP • Storm suppression, port isolation, and link aggregation
Ethernet loop protection	<ul style="list-style-type: none"> • Spanning Tree Protocol (STP)/Rapid Spanning Tree Protocol (RSTP)/Multiple Spanning Tree Protocol (MSTP) • Bridge Protocol Data Unit (BPDU) protection, root protection, and loop protection • Partitioned STP and BPDU tunnels • Rapid Ring Protection Protocol (RRPP) • Hybrid networking of RRPP rings and other ring networks

Feature	Description
IP routing	Unicast routing protocols: RIP, OSPF, BGP, and IS-IS
Device reliability	Virtual Router Redundancy Protocol (VRRP)
QoS features	Traffic classifier, traffic behavior, queue scheduling, congestion avoidance, and outbound interface rate limiting
Link detection	BFD EFM OAM, CFM OAM, and Y.1731
IP service control	ARP Built-in DHCP server RADIUS client Built-in FTP server DHCP relay and DHCP snooping

AC6005 purchase and accessory information

Component	Part Number	Name	Description
AC+license	02356813	AC6005-8-PWR-8AP	AC6005-8-PWR-8AP Bundle(Including AC6005-8-PWR,Resource License 8 AP)
AC+license	02356816	AC6005-8-8AP	AC6005-8 -8AP Bundle(Including AC6005-8,Resource License 8 AP)
License	88031VEB	L-AC6005-1AP	Software Charge,AC6005,L-AC6005-1AP,AC6005 Access Controller AP Resource License(1 AP)
	88031VEA	L-AC6005-8AP	Software Charge,AC6005,L-AC6005-8AP,AC6005 Access Controller AP Resource License(8 AP)
Power module	See the ordering guide.		
Power cable			
Optical module			
Optical jumper			
Network cable			
Ground bar			

Professional Service and Support

Huawei Professional Services provides expert network design and service optimization tasks to help customers:

- Design and deploy a high-performance network that is reliable and secure.
- Maximize return on investment and reduce operating expenses.

Company Addendum

For more information, please visit <http://e.huawei.com/en/> or contact your local Huawei office.

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HUAWEI TECHNOLOGIES CO.,LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129,P.R.China
Tel: +86 755 28780808

www.huawei.com