GRANDSTREAM
CONNECTING THE WORLD



Enterprise Layer 3 Managed Network Switch

GWN7816(P)

The GWN7816(P) are 48-port Layer 3 managed network switches that allow medium-to-large enterprises to build scalable, secure, high performance and smart business networks that are fully manageable. It supports advanced VLAN for flexible and sophisticated traffic segmentation, advanced QoS for prioritization of network traffic, IGMP/MLD Snooping for network performance optimization, and comprehensive security capabilities against potential attacks. The GWN7816P provides smart dynamic PoE output to power IP phones, IP cameras, Wi-Fi access points and other PoE endpoints. The GWN7816(P) can be managed in several ways, including the local Web user interface of the switch, and CLI, the command-line interface. It is also supported by GWN.Cloud and GWN Manager, Grandstream's cloud and on-premise network management platform. With an advanced set of features, comprehensive security protection, and flexible management options, the GWN7816(P) is ideal for enterprises and medium-to-large businesses who require high-performance networks with maximum capacity and control.

Gigabit

48 Gigabit Ethernet ports and 6 Gigabit SFP+ ports

PoE

Smart power control to support dynamic PoE/PoE+, PoE++ (GWN7816P) power allocation per port for the PoE models

Supports deployment in IPv6 and IPv4 networks

Reliability features including fault detection, device protection, dual boot, dual system file redundancy, link aggregation, storm control, and more

ARP Inspection, IP Source Guard, DoS protection, port security & DHCP snooping

Embedded controller to manage switch; GWN.Cloud and GWN Manager, Grandstream's cloud and on-premise network management platform, CLI management

QoS

Built-in QoS allows for prioritization of network traffic

Supports stacking (pending) for easy management on one interface while creating redundant backup between multiple devices

	GWN7816	GWN7816P
Network Protocols	IPv4, IPv6, IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3ae, IEEE 802.3az, IEEE 802.3ad, IEEE 802.3x, IEEE 802.1p, IEEE 802.1Q, IEEE 802.1d, IEEE 802.1s, IEEE 802.1w, IEEE 802.1x	
PoE Standards	/	IEEE 802.3af/at/bt
Gigabit Ports	48	
SFP+ Ports	6	
	Note: Support DAC cable, and must be ≤ 5m	
Maximum Amount of Supported Modules	SM-10G: 6 MM-10G: 6 RJ45-10G: 3	
	Note: RJ45-10G modules must be interval inserted	
Console	1	
# of PoE Ports	/	48
PSUs	1 PSU of 70W by default, support 1 Hot swap PSU(Purchased Separately)	1 PSU of 920W by default, support 1 Hot swap PSU(Purchased Separately)
Maximum Output Power Per PoE Port	/	60W(1-8,PoE++) 30W(9-48)
Max Total PoE Output Power	/	740W with 1 PSU
PoE Standards	/	IEEE 802.3af/at/bt
Surge Protection	± 4KV CM and ± 2KV DM for power ± 4KV CM for network ports	
ESD	± 12KV for contact discharge	
Auxiliary Ports	1x Reset Pinhole	
Forwarding Mode	Store-and-forward	
Total non-blocking throughput	108Gbps	
Switching Capability	216Gbps	
Forwarding Rate	160.704Mpps	
Packet Buffer	16Mb	
Network Latency	<4μs	
Switching	• 32K MAC addresses, including static, dynamic and filtering MAC address • 4K VLANs, port-based VLAN, IEEE 802.1Q VLAN tagging, voice VLAN • VLAN virtual interface • GVRP(pending) • 27 link aggregation • Spanning tree, 64 instances for STP/RTSP/MSTP/PVST(+)	
Routing	• Static routing • Dynamic routing, including RIP, RIPng, OSPF and OSPFv3 • Policy routing(pending)	
Multicast	• IGMP Snooping with IGMPv2 and IGMPv3 • MLD Snooping with MLDv1 and MLDv2 • MVR(pending)	
QoS/ACL	• Port priority • Priority mapping • Queue scheduling, including SP, WRR, WFQ, SP-WRR and SP-WFQ • Traffic shaping • Rate limit • 4K ACL for Ethernet, IPv4 and IPv6	
DHCP	DHCP server, DHCP relay, DHCP Option 82, 60, 160 and 43	
Maintenance	CPU and memory monitoring, fault detection and alarm for power supply and fan, SNMP, RMON, LLDP&LLDP-MED, backup and restore, syslog, diagnostics including Ping, Traceroute, port mirroring, UDLD(pending) and copper test	
Security	• User hierarchical management and password protection, HTTPS, SSH, Telnet • 802.1X authentication • AAA authentication including RADIUS, TACACS+ • Storm control • Port isolation, port security, sticky MAC • Filtering MAC address • IP source guard, DoS attack prevention, ARP inspection • DHCP Snooping • Loop protection including BPDU protection, root protection(pending) and loopback protection(pending) • Kensington Security Slot (Kensington Lock) support	
Mounting	Desktop, or Rack-Mount (rack-mounting kits included)	Desktop, or Rail-Mount (rack-mounting kits included)
LEDs	1x tri-color LED for device tracking and status indication 2x bi-color LEDs for per power supply PSU1/2 54x green-color LEDs for data transferring 48x yellow-color LEDs for PoE powered (GWN7816P)	
Fan	4	
Environmental	Operation: 0°C to 45°C, humidity 10-90% RH(Non-condensing) Storage: -10°C to 60°C, humidity: 10% to 90% RH(Non-condensing)	
Dimensions	440mm(L)x300mm(W)x44mm(H)	440mm(L)x380mm(W)x44mm(H)
Unit Weight	4.7Kg	6Kg
Package Content	1x Switch	
	1x 1.2m AC Cable	
	1x 25cm Ground Cable	
	4x Rubber Footpads	
	/	1x Power Cord Anti-Trip
	2x Front Rack-Mounting Kits	
	/	2x Rear Rack-Mounting Kits
	/	2x Rear Slideways
	8x Screws(KM 3*6)	16x Screws(KM 3*6)
	1x Quick Installation Guide	
Hot-Swappable PSU	Available for Separate Purchase	
Compliance	FCC, CE, RCM, IC, UKCA	

Features & Benefits

Powerful Processing Capabilities

- Static routing for easy, efficient, and reliable data communication routing between different network segments
- Built-in DHCP Server and Relay to assign IP address to hosts in the network
- GVRP(pending) for dynamic VLAN distribution, registration and attribute propagation reduces manual configuration and ensures proper configuration
- Built-in QoS, including Port Priority, Priority Mapping, Queue Scheduling, Traffic Shaping and Rate Limit
- Access Control List (ACL) recognizes and filters data packets by configuring matching rules, processing operations, and time schedules while providing flexible security access control policies
- IGMP Snooping and MLD Snooping to meet the needs of multi-terminal video deployments, including video surveillance, conferencing and more
- Supports IPv6 and IPv4 to coordinate network transition from IPv4 to IPv6
- 1588v2 TC satisfies precise time synchronization between network devices, improves security and reduces costs compared to GPS time synchronization schemes
- Stacking (pending) provides powerful network expansion capabilities and easy management. By adding member devices, users can easily expand the number of ports, bandwidth and processing capacity of the stacking system.

Multi-Layer Security Protection

- Static and dynamic MAC tables and MAC table filtering supports data transmission and prevents network attacks
- Packet filtering based on binding IP address, MAC address, VLAN and port
- Dynamic ARP Inspection protects against ARP spoofing and ARP flooding attacks common in LAN environments, including gateway spoofing, man-in-the middle attacks and more.
- IP Source Guard prevents illegal address spoofing including IP/MAC/VLAN spoofing and IP/VLAN spoofing
- DoS Attack Defense, including Land Attack, Smurf Attack, TCP SYN Attack, Ping Flooding and more
- 802.1X, RADIUS, AAA, TACACS+ to provide authentication and authorization for LAN devices
- Supports port security: when the number of MAC addresses learned by a port reaches the maximum, it will be set to error-down status automatically to prevent MAC address attack and control the network traffic of the port.
- DHCP Snooping ensures DHCP packets are only allowed from trusted ports to keep the enterprise DHCP environment safe

IPv4/IPv6 Dual Protocol Stack

- Supports IPv4 and IPv6 routing protocols, including unicast routing, to satisfy all networking
- Supports an IPv4, IPv6 or IPv4/IPv6 hybrid environment

Power & Green Energy Efficiency

- All Ethernet ports support EEE (Energy Efficient Ethernet) to provide quick and seamless transitions between normal operation and low power states with low traffic and low power consumption.
- Intelligent control of the integrated fan automatically adjusts fan speed based on environmental temperature and provides precise temperature control, energy saving and noise reduction

Enterprise Grade Reliability

- Grandstream's hot swappable power supply module (purchased seperately) ensures uninterrupted operation and protection against device power supply failures by providing seamless failover.
- Supports fault detection and alarms for the power supply and fan, and automatically adjusts the fan speed based on temperature changes to adapt to the environment
- Provides multiple reliability mechanisms at device level, including overcurrent and overvoltage protection, overheat technology and surge protection
- Dual boot of hardware level: the GWN7816(P) uses two FLASH chips to store boot software (system boot program), achieve hardware level boot redundancy backup, and avoid switching failures due to FLASH chip failures.
- Dual system file redundant backup ensures normal startup and operation of the system, and improves the stability of the device
- STP/RSTP/MSTP guarantees fast convergence, improves fault tolerance, ensures network stability, and provides link load balance and redundancy
- PVST/PVST+ provides quick convergence by optimizing network performance through VLAN-based network load balancing
- ERPS loopback detection identifies and removes loops on the network
- VRRP minimizes network downtime caused by gateway failures
- Link aggregation increases bandwidth and improves reliability and load balancing
- Storm control prevents traffic interruption caused by broadcast, multicast or other unicast packets
- Stacking (pending) supports the virtualization of up to 16 switches into one. This improves the device-level reliability through redundant backups between multiple member devices and improves the link-level reliability through link aggregation across devices.

Smart PoE Capabilities (GWN7816P)

- Complies with the IEEE 802.3af/at/bt standards
- Smart power control for dynamic PoE/PoE+ power allocation per port
- IEEE 802.3af/at support meets the PoE power requirements for security monitoring, audio and video conferencing, Wi-Fi networks and more
- Supports user-defined time periods to control the power supply of PoE port through the Web UI
- Prioritize PoE ports: when remaining power is insufficient, this setting will power the ports based on priority
- Users can configure the maximum power allowed per port. The maximum limit is 30w.
- Dynamic power negotiation via LLDP-MED

Easy Management and Maintenance

- Managed by GWN.Cloud and GWN Manager
- Supports management by Web GUI, CLI (Console, Telnet, SSH) and SNMP(v1/v2c/v3)
- Provides monitoring of CPU and memory usage for network analysis by supporting common networking tools inlcuding Ping, Traceroute, UDLD(TBD) and Copper Test
- Supports RMON, Syslog, traffic statistics and sFlow(pending) for network optimization
- LLDP and LLDP-MED provides automatic discovery, provisioning, and management of endpoint devices
- Stacking (pending) simplifies configuration and management: after a stacking configuration is formed, multiple physical devices become one virtual device. Users can log in to the stacking system through any member device to uniformly configure and manage all member devices of the stacking system. member device to uniformly configure and manage all member devices of the stacking system.