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 GDMS Networking and GWN Manager, Grandstream's cloud and on-premise network management platform, and Routers. 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 10Gigabit 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, Routers, CLI management

QoS

Built-in QoS allows for prioritization of network traffic

Supports stacking 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	
10G 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, filtering and sticky MAC address • 4K VLANs, port-based VLAN, IEEE 802.1Q VLAN tagging, MAC-based VLAN, protocol-based VLAN, QinQ • Private VLAN • Voice VLAN including auto voice VLAN, tagged OUI and untagged OUI • 32 VLAN virtual interface with 9216 MTU • 2K ARP/NDP • GVRP(pending) • 32 link aggregation • Spanning tree, 64 instances for STP/RTSP/MSTP/PVST(+)/RPVST(+) • ERPS (pending)	
Routing	• 12K(IPv4)/4K(IPv6) routes • 32(IPv4)/32(IPv6) static routing • Policy routing (pending) • Dynamic routing, including RIP, RIPng, OSPF, OSPFv3 and BGP • Routing Policy • VRRP(pending)	
Multicast	• IGMP Snooping with IGMPv2 and IGMPv3, 256 IGMP Snooping groups • MLD Snooping with MLDv1 and MLDv2, 256 MLD Snooping groups • MVR	
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 including SNMPv1, SNMPv2c, SNMPv3 • RMON • LLDP&LLDP-MED • Backup and restore • Syslog • Diagnostics including Ping, Traceroute, Mirroring including SPAN and RSPAN, UDLD(pending) and copper test • Upgrade via FTPS / TFTP / HTTP / HTTPS or local upload, mass provisioning using DHCP Option / TR-069(pending) / GDMS Networking / GWN Manager / GWN router	
Security	• User hierarchical management and password protection, HTTPS, SSH, Telnet • Identity authentication including 802.1X authentication and MAC authentication • AAA authentication including RADIUS, TACACS+ • Storm control • Port isolation, port security, sticky MAC • Filtering MAC address • IP/IPv6 source guard, DoS attack prevention, ARP inspection • DHCP/DHCPv6 Snooping • Loop protection including BPDU protection, root protection and loopback protection • 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 Simplified Quick Installation Guide	
	1x Regulatory Paper	
Hot-Swappable PSU	Available for Separate Purchase	
Compliance	FCC, CE, RCM, IC, UKCA	

Features & Benefits

Powerful Business Processing Capabilities

- Routing including static routing, dynamic routing, policy routing(pending) and routing policy to realize routing data communication between different network segments. Simpler, more efficient and more reliable.
- DHCP Server and Relay to assign IP address to hosts in the network.
- GVRP (pending) to realize VLAN dynamic distribution, registration and attribute propagation, reduce the amount of manual configuration, and ensure the correctness of configuration.
- QoS, including Port Priority, Priority Mapping, Queue Scheduling, Traffic Shaping and Rate Limit.
- ACL to realize the filtering of data packets by configuring matching rules, processing operations and time schedule, and provide flexible security access control policies.
- IGMP Snooping and MLD Snooping to meet the needs of multi-terminal HD video surveillance and video conference.
- IPv6 to meet the needs of the network transition from IPv4 to IPv6.
- 1588v2 TC satisfies high-precision time synchronization between network devices, improves security while reducing costs compared to GPS time synchronization schemes.
- Stacking 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.

Multiple Security Prevention Mechanism

- Static MAC table, dynamic MAC table to allow data transmission, and filter MAC table to avoid network attacks.
- Packet filtering based on binding of IP address, MAC address, VLAN and port.
- Dynamic ARP Inspection to protect against ARP spoofing and ARP flooding attacks such as gateway spoofing, man-in-the middle attacks and etc. that are common in LAN environment.
- IP/IPv6 Source Guard to prevent illegal address spoofing including IP(v6)/MAC/VLAN spoofing and IP(v6)/VLAN spoofing.
- DoS Attack Defense, including Land Attack, Smurf Attack, TCP SYN Attack, Ping Flooding and more.
- 802.1X, MAC, RADIUS, AAA, TACACS+ authentications to provide authentication function for LAN devices.
- Supports port security. When the number of MAC addresses learned by a port reaches the maximum number, it will be set to error-down status automatically or stop learning to prevent MAC address attack and control the network traffic of the port.
- Supports DHCP/DHCPv6 Snooping. Only allow DHCP/DHCPv6 packets from trusted ports to keep the enterprise DHCP/DHCPv6 environment safe.

Diverse Reliability Protection

- Hot swap PSU module(optional). Dual modular power supplies models contribute to business continuity management.
- Support fault detection and alarm for power supply and fan, and automatically adjust the fan speed based on temperature changes to better adapt to the environment.
- Multiple reliability protection at device level, such as overcurrent protection, overvoltage protection, overheat technologyand surge protection.
- Dual boot of hardware level. Use two FLASH chips to store boot software(system boot program), achieve hardware level boot redundancy backup, and avoid switching failure due to FLASH chip failures.
- Dual system file redundancy backup ensures the normal startup and operation of the system, and improves the stability of the device.
- STP/RSTP/MSTP to guarantee fast convergence, improve fault tolerance, ensure stable network and provide link load balance, and redundancy.
- Compatible with PVST(+)/RPVST(+) for faster convergence. Optimizing network performance through VLAN-based network load balance.
- ERPS (pending), loopback detection to identify and remove loops on the network.
- VRRP (pending) to minimize network downtime caused by gateway failure.
- Link aggregation to increase bandwidth, improve reliability and load balancing.
- Storm control to prevent traffic interruption caused by broadcast, multicast or certain unicast packets.
- Stacking supports the virtualization of up to 4 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.

PoE Power Supply Capability (Only GWN7816P supports)

- PoE power supply and comply with the IEEE 802.3af/at/bt standards to meet the PoE power supply requirements of security monitoring, audio and video conferencing, wireless signal coverage and more scenarios.
- Supports setting user-defined time period to control the power supply of PoE port on Web GUI.
- Setting priority of PoE ports. When remaining power is insufficient, it will power the ports based onpriorities.
- Users can configure the maximum power allowed per port. The maximum limit is 60w for port 1-8, 30w for port 9-48.
- Dynamic power negotiation via LLDP-MED.

Easy Management and Maintenance

- Managed by Web GUI, CLI (Console, Telnet, SSH) and SNMP(v1/v2c/v3).
- Monitoring of CPU and memory usage. Support common networking tools such as Ping, Traceroute, UDLD (TBD) and Copper Test to analysis networking issues.
- Supports RMON, Syslog, traffic statistics and sFlow (pending) for network optimization.
- LLDP and LLDP-MED for automatic discovery, provisioning and management of endpoint devices.
- Managed by GDMS Networking and GWN Manager, and GWN series router.
- Stacking simplifies configuration and management. After stacking is formed, multiple physical devices become a 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.

Power & Green Energy Efficiency

- High efficiency power supply module, higher efficiency of power supply system.
- All Ethernet ports support EEE(Energy Efficient Ethernet), fast transitions between normal operation and low power states with low traffic and low power consumption.
- Intelligent control of fan speed based on environmental temperature. Precise temperature control, energysavingandnoise reduction.

IPv4/IPv6 Dual Protocol Stack

- IPv4 routing protocol, including IPv4 unicast routing to satisfy different networking needs.
- IPv6 routing protocols, including IPv6 unicast routing to satisfy different networking needs.
- Supports an IPv4, IPv6 or IPv4/IPv6 hybrid environment.
- Policy routing (pending) can not only flexibly adjust routing paths according to actual needs to meet different network requirements, but also dynamically select routing paths based on network load, thereby achieving load balancing.