NETGEAR®

New Generation of ProSAFE® Gigabit Smart Switches

Data Sheet

GS716Tv3, GS724Tv4 and GS748Tv5



The NETGEAR® new generation of ProSAFE Gigabit Smart Switches offers new, powerful L2 and L2+ features with enhanced performance and usability. They are purposely designed for the future where increased traffic and application-oriented tasks demands more intelligence at the edge, higher realiability and improved network efficiency on top of operational cost savings and ease of management.

There are three products in this series: a 16-port, a 24-port, and a 48-port Gigabit Ethernet Smart Switch. The GS716T and GS724T comes with 2 dedicated Gigabit SFP ports for fiber connectivity while GS748T comes with 2 combo SFP and 2 Dedicated SFP ports, all with increased number of simultaneously connected ports. This new generation of Gigabit Smart Switch from NETGEAR is the optimized solution providing the best value at an affordable SMB price point.

Highlights

Designed for Converged Network, Big or Small

- Gigabit Speed with non-blocking architecture supporting 100% Gigabit throughput
- Auto Voice VLAN for fast and reliable deployment of VoIP
- Auto Video VLAN, following the same concept of Auto Voice, help speed up your deployment of IP-based surveillance system
- Static routing, helps to route internal traffic for more efficient use of network resources
- IGMP and MLD snooping, providing advanced multicast filtering

Build a future-proof network with NETGEAR

- Solid performance with non-blocking architecture, 16K MAC addresses, 256 VLANs, 100 shared ACL entries, 32static routes, and 512 Multicast Groups
- Comprehensive IPv6 supporting management, QoS and ACL, ensuring investment protection and a smooth migration to IPv6-based network
- Dedicated SFPs instead of combo ports, offering more connectivity ports and providing better value and usability at no extra cost
- Energy Efficient Ethernet (IEEE802.3az) support for more energy saving in the future when more EEE-compliant end devices come to market
- Advanced QoS with IPv4/IPv6 ingress traffic filtering and prioritization
- Dynamic VLAN assignment for easy user authentication and location-independent access to network
- Multicast VLAN Registration for eliminating unnecessary multicast traffic and improve the efficiency of network utilization

Network Development Made Easy

- Auto Voice VLAN for easy development of VoIP
- Auto Video for simple deployment of IP Surveillance
- ACL Wizard for a guided tour to set up your network access control
- Smart Control Center, a powerful tool for multi-switch discovery, deployment, monitoring and firmware upgrade
- Network Management System (NMS300), allowing all NETGEAR business products to be deployed and managed through this single management interface

Small IT, not Big IT

- Easy to manage via web-Based Management GUI or Smart Control Center for multi-switch deployment
- Standard-based technology, ensuring interoperability with any standard-based devices in the existing network
- Dual firmware images, improving reliability and uptime to your network
- Worry-free with NETGEAR ProSAFE Lifetime Hardware Warranty†
- Assist with customer deployment with 1-year Free 24x7 Advanced Technical Support*

Page 2	Models at a Glance
Page 3-4	Features and Benefits
Page 5	Target Application
Page 6- 10	Technical Specifications
Page 11	Ordering information

LIFETIME WARRANTY
1 YEAR TECH SUPPORT

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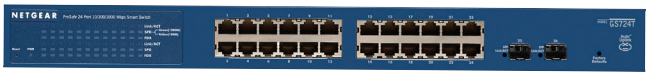
Hardware at a Glance

		FRONT		REAR	
Model name	Form-Factor	10/100/1000Base-T RJ45 ports	100/1000X Fiber SFP ports	Power Supply	Fan
GS716Tv3	Rackmount	16	2 (Dedicated)	Internal	No
GS724Tv4	Rackmount	24	2 (Dedicated)	Internal	No
GS748Tv5	Rackmount	48	2 (Dedicated) + 2 (Combo)	Internal	1



GS716Tv3: 16-port 1000base-T Gigabit Smart Switch

- 16 Gigabit copper ports
- 2 dedicated SFP ports
- Fanless



GS724Tv4: 24-port 1000base-T Gigabit Smart Switch

- 24 Gigabit copper Ports
- 2 dedicated SFP ports
- Fanless



GS748Tv5: 48-port 1000base-T Gigabit Smart Switch

- 48 Gigabit Copper Ports
- 2 dedicated SFP and 2 Combo SFP ports

Software at a Glance

Management	IPv4 / IPv6 Multicast filtering	Auto-VoIP	EEE (802.3az) Auto-EEE	VLANs	Convergence
Web GUI: HTTPs; RMON SNMP	IGMP and MLD Snooping	Yes	Yes	Static, Voice Video, MAC, Protocol-based	LLDP-MED, RADIUS, 802.1X

Performance at a Glance

Model Name	Packet buffer	ACLs	MAC address table VLANs Multicast Group	Fabric	Static Routes IP interfaces
GS716Tv3 GS724Tv4 GS748Tv5	2Mb	100 shared ACLs (MAC, IP4 and IPv6)	16K MAC 256 VLANs 512 Multicast Groups	all models line-rate	32 static routes IPv4

Features and Benefits

Hardware Features	Benefits
Dedicated SFP Fiber Uplinks	• Dedicated SFP ports provides fiber uplinks without sacrificing any downlink Gigabit port. 4 SFP ports provide not only redundant uplinks, but can also build dual redundancy by a trunked uplink with link aggregation and failover, the dual-redundancy, a powerful design for the network virtualization
Fanless Design (GS716T and GS724T)	• Quiet operation makes these switches ideal solution for business environments which favor no noise from networking gears such as libraries, class rooms, offices and etc.
Energy Efficient Ethernet (IEEE802.3az)	• Maximum power reduction for onging operational cost savings
Software Features	**Benefits**
Dynamic VLAN Assignment	• IP phones and PCs can authenticate on the same port but under different VLAN assignment policies. Users are free to move around and enjoy the same level of network access regardless of their physical location in the network
Static Routing	• A simple way to provide segmentation of the network with internal routing through the switch – reserving the router for external traffic routing only, making the entire network more efficient
Comprehensive IPv6 Support for Management, ACL and QoS	• Build current network with future in mind. Ensure investment protection and a smooth migration to IPv6-based network without switch replacement
IGMP Snooping and MLD Snooping	• Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches designated receivers without the need of an extra multicast router.
Robust Security Features: • 802.1x authentication • DHCP Snooping • Port-based security by locked MAC • ACL filtering to permit or deny traffic based on MAC and IP addresses	• Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users
Auto Voice and Auto Video	• Automatic Voice over IP prioritization with Auto-VoIP simplifies most complex multi-vendor IP telephones deployments either based on protocols (SIP, H323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address; providing the best class of service to VoIP streams (both data and signaling) over other ordinary traffic by classifying traffic, and enabling correct egress queue configuration. When deployed IP phones are LLDP-MED compliant, the Voice VLAN will use LLDP-MED to pass on the VLAN ID, 802.1P priority and DSCP values to the IP phones, accelerating convergent deployments

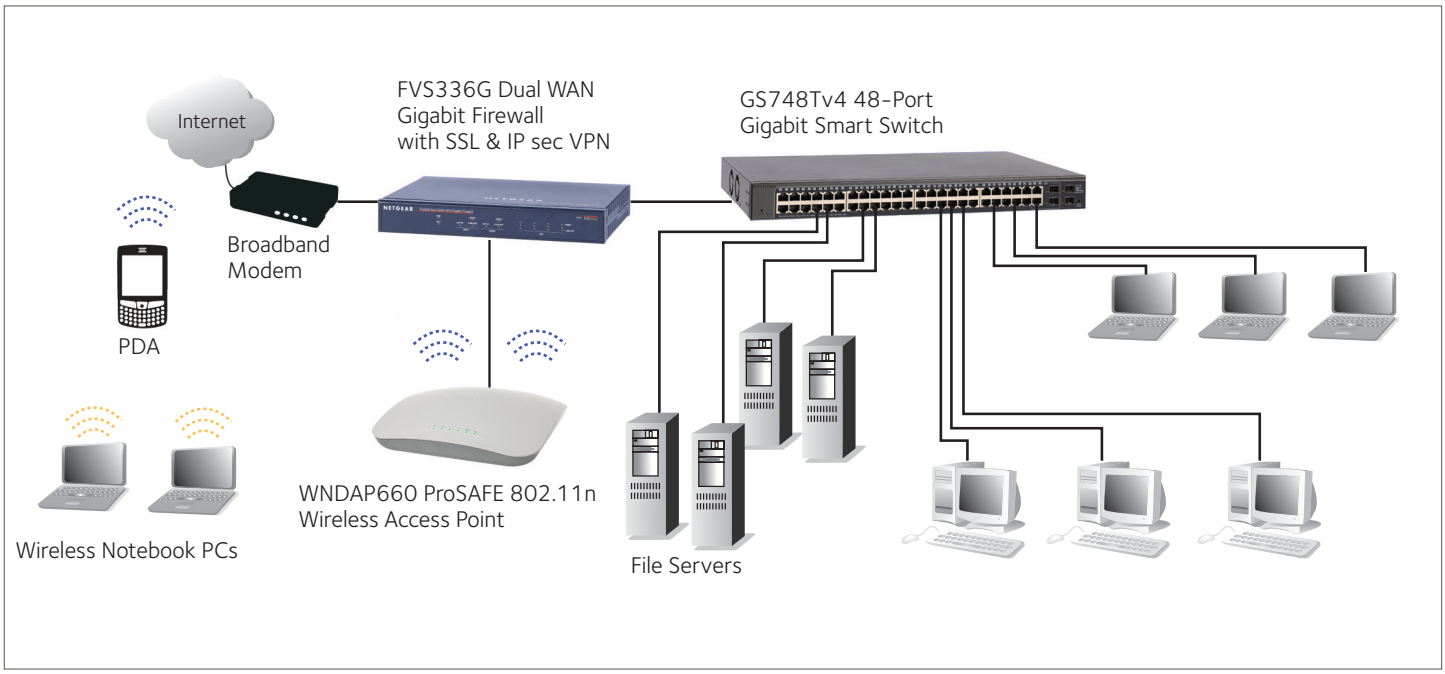
Features and Benefits

Comprehensive QoS Features: • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting	• Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video
DHCP Snooping	• Ensure IP address allocation integrity by allowing only clients with specific IP/MAC addresses to have access to the network
Dual Firmware Images and Configuration Files	• Dual firmware image and dual configuration file for transparent firmware updates/configuration changes with minimum service interruption
Protected Ports	• Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, therefore, improve the security of your converged network where your sensitive phone conversation can stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
Dynamic ARP Inspection	• Prevents a class of man-in-the-middle attacks, where an unfriendly station intercepts traffic for other stations by poisoning the ARP caches of its unsuspecting neighbors.
Multicast VLAN Registration	• Eliminates the replication of the same multicast traffic for every VLAN by sending multicast traffic only on to the dedicated multicast/source VLAN, resulting in more efficient utilization of network bandwidth.
EAV (Ethernet Audio/Video Bridging) Support*	• Extends Ethernet usage to support multimedia streaming. The Ethernet AVB standard adds QoS (Quality of Service) features like time-synchronized low latency streaming services and bandwidth reservation to make it possible to carry professional quanity audio and video signals on a standard Ethernet line.

* EAV support can be acquired through the purchase of EAV software license that is sold separately from the switch. Please refer to ordering information for part numbers of these licenses.

Converged Network Application

Network Diagram



Why is the NETGEAR latest generation of Gigabit Smart Switch the right choice for SMBs?

NETGEAR Gigabit Smart Switches offer the best Return on your Investment:

- Well-staged for future network upgrade with Gigabit to desktop and network virtualization
- Cost-Effectively bring intelligence to the edge of the network with traffic management features from the Smart Switches
- Improved usability for easier and smoother deployment of voice, video and WLAN on the same converged platform
- Lifetime warranty and 1-year Free Advanced Tech Support for peace-of-mind

Technical Specifications

PRODUCT SPECIFICATIONS			
Model	GS716Tv3	GS724Tv4	GS748Tv5
			
Interfaces	16 10/100/1000 Mbps auto-sensing Gigabit-Ethernet switching ports, and two dedicated 1000M SFP fiber ports.	24 10/100/1000 Mbps auto-sensing Gigabit-Ethernet switching ports, and two dedicated 1000M SFP fiber ports.	48 10/100/1000 Mbps auto-sensing Gigabit-Ethernet switching ports, and two dedicated 1000Mbps SFP fiber ports, and two combo 1000Mbps SFP fiber ports.
PERFORMANCE SPECIFICATION			
Forwarding modes	Store-and-forward		
Bandwidth	36 Gbps	52 Gbps	100 Gbps
Priority queues	8	8	8
Priority queuing	Weighted Round Robin (WRR)		
MAC Address database size	16k media access control (MAC) addresses		
Addressing	48-bit MAC address		
Multicast groups	512		
Number of static routes	32		
Number of routed VLANs	15		
Number of ARP Cache entries	512		
Number of DHCP snooping bindings	8K		
Number of DHCP static entries	1024		
ACL	100 shared for MAC, IP and IPv6 ACLs		
Jumbo frame support	up to 9K packet size		
Acoustic noise (ANSI-S10.12)	0 dBA	0 dBA	37.2 dBA
Mean Time Between Failures (MTBF)	726,612 hours	567,680 hours	390,728 hours
L2 SERVICES - VLANS			
IEEE 802.1Q VLAN Tagging	Yes		
Protocol based VLANs	Yes		
MAC based VLANs	Yes		
Voice VLAN	Based on phones OUI bytes (internal database, or user-maintained) or protocols (SIP, H323 and SCCP)		
Protocol-based VLAN	Yes		

Technical Specifications

NETWORK SECURITY	
IEEE 802.1x	Yes
Guest VLAN	Yes
RADIUS based VLAN assignment via .1x	Yes
MAC-based .1x	Yes
RADIUS Accounting	Yes
Network Storm Protection, DoS	Yes
Broadcast, Unicast, Multicast DoS Protection	Yes
DoS Attacks	Yes
Dynamic ARP inspection	Yes
L2 SERVICES - AVAILABILITY	
IEEE 802.3ad - LAGs	Yes
LACP	Yes (26 LAGS with max. of 8 members in each LAG)
Broadcast Storm Control	Yes
IEEE 802.3x (Full Duplex and flow control)	Yes
IEEE 802.1D Spanning Tree Protocol	Yes
IEEE 802.1w Rapid Spanning Tree	Yes
IEEE 802.1s Multiple Spanning Tree	Yes
L2 SERVICES - MULTICAST FILTERING	
IGMP Snooping (v1, v2 and v3)	Yes
MLD Snooping Support (v1 and v2)	Yes
IGMP Snooping Queries	Yes
Block Unknown Multicast	Yes
Multicast VLAN Registration	Yes
L3 SERVICES - DHCP	
DHCP Client	Yes
DHCP Snooping	Yes
L3 SERVICES - IPV4 ROUTING	
Static Routing	Yes
VLAN Routing	Yes
IP Source Guard	Yes
NETWORK MONITORING AND DISCOVERY SERVICES	
802.1ab LLDP	Yes
SNMP	V1, V2, V3
RMON 1,2,3,9	Yes

Technical Specifications

NETWORK TRAFFIC	
Access Control Lists (ACLs)	L2 / L3 / L4
IP-based ACLs (IPv4 and IPv6)	Yes
MAC-based ACL	Yes
TCP/UDP-based ACL	Yes
MAC lockdown	Yes
MAC lockdown by the number of MACs	Yes
IEEE 802.1x Radius Port Access Authentication	Yes
Port-based security by locked MAC addresses	Yes
Dynamic VLAN Assignment	Yes
Dynamic ARP inspection	Yes
QUALITY OF SERVICE (QOS)	
Access Lists	Yes
L2 MAC, L3 IP and L4 Port ACLs	Yes
Ingress rate limiting	Yes
Egress rate limiting	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes
IEEE 802.1p COS	Yes
Dst MAC and IP	Yes
IPv4 and v6 DSCP	Yes
IPv4 and v6 TOS	Yes
WRED (Weighted Deficit Round Robin)	Yes
Strict Priority Queue Technology	Yes
Timing and Synchronization for Time-Sensitive Applications (IEEE802.1AS)	Yes
Stream Reservation Protocol (SRP) (IEEE802.1Qat)	Yes
Forwarding and Queuing for Time-Sensitive Streams (IEEE802.1Qav)	Yes
Audio Video Bridging Systems (IEEE802.1BA)	Yes
Auto-VoIP	Yes, based on protocols (SIP, H323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address
Auto Video	Yes
Port Mirroring	Yes

Technical Specifications

IEEE NETWORK PROTOCOLS		
IEEE 802.3 Ethernet	IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX	IEEE 802.1D Spanning Tree (STP)
IEEE 802.3i 10BASE-T	IEEE 802.3ae 10-Gigabit Ethernet	IEEE 802.1s Multiple Spanning Tree (MSTP)
IEEE 802.3u 100BASE-T	IEEE 802.3ad Trunking (LACP)	IEEE 802.1w Rapid Spanning Tree (RSTP)
IEEE 802.3ab 1000BASE-T	IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)	IEEE 802.1X Radius network access control
IEEE 802.1Q VLAN Tagging	IEEE 802.1p Class of Service	IEEE 802.1AB*
IEEE 802.3x Full-Duplex Flow Control	IEEE 802.1Qat*	IEEE 802.1AS*
IEEE802.1Qav*		
MANAGEMENT		
Password Management	Yes	
Configurable Management VLAN	Yes	
Admin Access Control via Radius and TACACS+	Yes	
Web-based Graphical User Interface (GUI)	Yes	
Smart Control Center (SCC) for Multi-switch Management	Yes	
IPv6 Management	Yes	
Dual Software (firmware) Image	Yes	
Dual Configuration File	Yes	
SNTP Client over UDP Port 123	Yes	
SNMP v1/v2	Yes	
SNMP v3 with Multiple IP Addresses	Yes	
RMON 1,2,3,9	Yes	
Port Mirroring	Yes	
Many to One Port Mirroring	Yes	
Cable Test Utility	Yes	
SSL/HTTPS and TLS v1.0 for Web-based access	Yes	
File Transfers (uploads, downloads)	TFTP / HTTP	
HTTP Download (firmware)	Yes	
Syslog (RFC 3164)	Yes	

Technical Specifications

LEDs			
Per Port	Speed, Link, Activity		
Per Device	Power and Fan (GS748T only)		
PHYSICAL SPECIFICATIONS			
Weight (kg)	2.57 kg	2.74 kg	3.46 kg
Dimensions (WxDxH) mm	440 x 204 x 43 mm	440 x 204 x 43 mm	440 x 257 x 43 mm
POWER CONSUMPTION (WHEN ALL PORTS USED, LINE-RATE TRAFFIC AND MAX POE IF APPLICABLE)			
WorstCase, all ports used, line-rate traffic	14.4W	17.4W	41.1W
ENVIRONMENTAL SPECIFICATIONS			
Operating			
Operating Temperature	32° to 122°F (0° to 50°C)		
Humidity	90% maximum relative humidity, non-condensing		
Altitude	10,000 ft (3,000 m) maximum		
Storage			
Storage Temperature	– 4° to 158°F (–20° to 70°C)		
Humidity	95% maximum relative humidity, non-condensing		
Altitude	10,000 ft (3,000 m) maximum		
ELECTROMAGNETIC EMISSIONS AND IMMUNITY			
Certifications	CE mark, commercial		
	FCC Part 15 Class A, VCCI Class A		
	Class A EN 55022 (CISPR 22) Class A		
	Class A C-Tick		
	EN 50082-1		
	EN 55024		
	CCC		
SAFETY			
Certifications	CE mark, commercial		
	CSA certified (CSA 22.2 #950)		
	UL listed (UL 1950)/cUL IEC 950/EN 60950		
WARRANTY AND SUPPORT			
ProSAFE Lifetime Warranty†	Included, lifetime		
ProSUPPORT Lifetime 24x7 Advanced Technical Support*	Included, 1 year		

* The feature can be acquired through the purchase of EAV software license that is sold separately from the switch. Please refer to ordering information for part numbers of these licenses.

Ordering Information

PACKAGE CONTENT	
All models	ProSAFE® Gigabit Smart Switch
	Power cord
	Rack-mounting kit
	Resource CD with links to online documentation, installation guides, Web-management user manual, Smart Control Center (SCC) software and user guide.
ORDERING INFORMATION	
GS716T-300NAS	North America and Latin America
GS716T-300EUS	Europe
GS716T-300AJS	Asia
GS724T-400NAS	North America and Latin America
GS724T-400EUS	Europe
GS724T-400AJS	Asia
GS724T-400PRS	China
GS748T-500NAS	North America and Latin America
GS748T-500EUS	Europe
GS748T-500AJS	Asia
GS748T-500PRS	China
OPTIONAL MODULES, SOFTWARE LICENSE AND ACCESSORIES	
GS716TAV-20000S	Ethernet Audio/Video (EAV) software license for GS716T-300
GS724TAV-20000S	Ethernet Audio/Video (EAV) software license for GS724T-400
GS748TAV-20000S	Ethernet Audio/Video (EAV) software license for GS748T-500
AGM731F	1000Base-SX SFP GBIC (Multimode)
AGM732F	1000Base-LX SFP GBIC (Single mode)

† Lifetime warranty for product purchased after 05/01/2007. For product purchased before 05/01/2007, warranty is 5 years.

* 1-year 24x7 Advanced Technical Support includes Remote Diagnostics performed by our technical experts for prompt resolution of technical issues.

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NETGEAR, Inc. 350 E. Plumeria Drive, San Jose, CA 95134-1911 USA, 1-888-NETGEAR (638-4327), E-mail: info@NETGEAR.com, www.NETGEAR.com