

### Experience the most versatile and easy to manage switches in the market

As a leading provider of network equipment for SMBs, NETGEAR® understands the importance of reliable and high performance networks. With the growth of virtualization, cloud-based services and applications like VoIP, video streaming and IP surveillance, SMB networks need to extend beyond simple reliability to simpler management and remote monitoring to ensure your network is “always up”. NETGEAR also understands that small business owners shouldn’t have to understand networking and IT; they need a network that’s easy-to-setup and is reliable, so they can focus on their business, not their network. To that end, NETGEAR is introducing our most versatile and easy-to-manage switches ever, NETGEAR Insight Managed Smart Cloud switches.

The Insight Managed Smart Cloud Gigabit Ethernet Switches are the first switches from NETGEAR with anywhere configuration and management. Using either the NETGEAR Insight app on your mobile device or tablet, or the Insight Cloud Portal from your PC, Mac, or tablet, you can quickly discover, setup, monitor and manage your Smart Cloud Switches from anywhere in the world! With their remote cloud manageability, sleek design silent or whisper-quiet operation, they are the most versatile switches in the market for any environment. Whether at home, out of the office or on a business trip, you can still manage and monitor your network as if you were right there.

### Innovative features for the most versatile and easy-to-manage switches in the market

#### Your network. Anytime. Anywhere.

The NETGEAR Insight Managed Smart Cloud Switches fundamentally change the way you think of networks and IT. Using the NETGEAR Insight app with Insight Managed Smart Cloud Switches and Wireless Access Points provides:

- Instant in-app discovery & set-up
- Local or remote configuration and monitoring from your mobile device, PC, Mac or tablet
- Centralized network configuration policies with auto-join and configure (zero-touch provisioning)
- Multi-site/remote network management and monitoring with single pane-of-glass view
- Multi-switch/multi-port concurrent configuration using the Port Config Wizard

#### Remote monitoring and management from the palm of your hand!

With the NETGEAR Insight app, you can setup, manage, and monitor your networks from anywhere, anytime, from the palm of your hand on your phone or tablet! Or, for a larger screen experience, you can use the Insight Cloud Portal from your PC, Mac, or tablet web browser.

#### Network-centric configuration and management

NETGEAR Insight Managed Switches and Wireless Access Points using the NETGEAR Insight app allow for cross-device automated configuration of VLANs, QoS, ACLs, and LAGs. Auto-join and configure (zero-touch provisioning) allows for additional devices added seamlessly.

#### Fully-integrated cloud-manageable devices

NETGEAR Insight Managed switches are fully-integrated, cloud-manageable, plug-and-play devices. Just connect to your network and without any setup, they’re passing traffic. For configuration setup, management, and monitoring, you can use the Insight mobile app on your mobile device or the Insight Cloud Portal from your PC, Mac, or tablet web browser. No additional cloud controller, appliance, network manager, or on-premise cloud server necessary.

#### Clean, sleek silent (or whisper-quiet) designs

Insight Managed switches have a modern, clean design, with simple power and cloud connection LEDs on the front. GC110, GC110P and GC510P models are all fanless and silent, while GC510PP has a whisper-quiet fan.

#### Great choice of non-PoE, PoE and PoE+ options

All models have 8 copper Gigabit Ethernet ports and two 1G SFP fiber ports for uplinks. On PoE/PoE+ models, all 8 gigabit copper ports support PoE or PoE+, with varying PoE power budgets to suit every need.

#### Build a future-proof network with NETGEAR Insight Managed Switches

- Extensive L2+ switching features
- Comprehensive IPv6 management, QoS and ACL support, ensuring investment protection and a smooth migration to IPv6-based networking
- Advanced QoS with IPv4/IPv6 ingress traffic filtering (ACLs) and prioritization (QoS)
- Dynamic VLAN assignment for easy user authentication and location-independent access to network
- Up to 195W PoE power, with the flexibility to add power-hungry devices such as 11ac Wireless APs, VoIP voice and video phones, security/surveillance cameras including PTZ, and other IoT devices
- Advanced per-port PoE controls (set specific power budget per port in addition to automatic class-defined) and PoE scheduling on PoE models

#### NETGEAR quality and reliability

- Industry-leading 5-year Limited Hardware Warranty\*
- Minimal down-time with Next-Business-Day Replacement Warranty
- Get deployment assistance with 90-days Free Advanced Technical Support\*\*





### Experience the most versatile and easy to manage switches in the market

As a leading provider of network equipment for SMBs, NETGEAR® understands the importance of reliable and high performance networks. With the growth of virtualization, cloud-based services and applications like VoIP, video streaming and IP surveillance, SMB networks need to extend beyond simple reliability to simpler management and remote monitoring to ensure your network is “always up”. NETGEAR also understands that small business owners shouldn’t have to understand networking and IT; they need a network that’s easy-to-setup and is reliable, so they can focus on their business, not their network. To that end, NETGEAR is introducing our most versatile and easy-to-manage switches ever, NETGEAR Insight Managed Smart Cloud switches.

The Insight Managed Smart Cloud Gigabit Ethernet/10G SFP+ Switches are the first switches from NETGEAR with anywhere configuration and management. Using either the NETGEAR Insight app on your mobile device or tablet, or the Insight Cloud Portal from your PC, Mac, or tablet, you can quickly discover, setup, monitor and manage your Smart Cloud Switches from anywhere in the world! With their remote cloud manageability, sleek design, and combination of Gigabit copper, Gigabit SFP fiber, and 10G SFP+ fiber ports, Insight Managed Smart Cloud Switches are the most versatile switches in the market for any environment. Whether at home, out of the office or on a business trip, you can still manage and monitor your network as if you were right there.

### Innovative features for the most versatile and easy-to-manage switches in the market

#### Your network. Anytime. Anywhere.

The NETGEAR Insight Managed Smart Cloud Switches fundamentally change the way you think of networks and IT. Using the NETGEAR Insight mobile app or the Insight Cloud Portal with Insight Managed Smart Cloud Switches and Wireless Access Points provides:

- Instant in-app device discovery & set-up
- Local or remote configuration and monitoring from your mobile device, PC, Mac or tablet
- Centralized network configuration policies with auto-join and configure (zero-touch provisioning)
- Multi-site/multi-network remote management and monitoring with single pane-of-glass view
- Multi-switch/multi-port concurrent configuration using the Port Config Wizard

#### Remote monitoring and management from the palm of your hand!

With the NETGEAR Insight mobile app, you can setup, manage, and monitor your networks from anywhere, anytime, from the palm of your hand on your phone or tablet! Or, for a larger screen experience, you can use the Insight Cloud Portal from your PC, Mac, or tablet web browser.

#### Network-centric configuration and management

NETGEAR Insight Managed Switches and Wireless Access Points using the NETGEAR Insight app or Insight Cloud Portal allow for cross-device automated configuration of VLANs, QoS, ACLs, and LAGs. Auto-join and configure (zero-touch provisioning) allows for additional devices added and provisioned seamlessly.

#### Fully-integrated cloud-manageable devices

NETGEAR Insight Managed switches are fully-integrated, cloud-manageable, plug-and-play devices. Just connect to your network and without any setup, they’re passing traffic. For configuration setup, management, and monitoring, you can use the Insight mobile app on your mobile device or the Insight Cloud Portal from your PC, Mac, or tablet web browser. No additional cloud controller, appliance, network manager, or on-premise cloud server necessary.

#### Clean, sleek designs

Insight Managed switches have a modern, clean design, with at-a-glance cloud, power, fan, and PoE max<sup>1</sup> LEDs for quick status monitoring. On-port LEDs for link/activity and PoE power<sup>1</sup> allow for port-specific connectivity monitoring.

#### Connectivity options for every environment

All models have 24 copper Gigabit Ethernet ports, two 1G SFP fiber ports, and two 10G SFP+ fiber ports for maximum connectivity. On PoE+ models, all 24 Gigabit Ethernet copper ports support PoE or PoE+, with a PoE power budget of 390W. Dedicated Gigabit SFP and 10G SFP+ ports provide fiber uplinks for server interconnects or across long distances, or can be used to build dual redundancy by a trunked uplink with link aggregation and failover.

#### Build a future-proof network with NETGEAR Insight Managed Switches

- Extensive L2+/L3 Lite switching features including static routing
- Comprehensive IPv6 management, QoS and ACL support, ensuring investment protection and a smooth migration to IPv6-based networking
- Advanced QoS with IPv4/IPv6 ingress traffic filtering (ACLs) and prioritization (QoS)
- Dynamic VLAN assignment for easy user authentication and location-independent access to network
- 390W PoE+ power budget<sup>1</sup>, with the flexibility to serve power-hungry devices such as 11ac Wireless APs, VoIP voice and video phones, security/surveillance cameras including PTZ, and other IoT devices
- Advanced per-port PoE controls<sup>1</sup> (set specific power budget per port in addition to automatic class-defined) and PoE scheduling

#### NETGEAR quality and reliability

- Industry-leading 5-year Limited Hardware Warranty\*
- Minimal down-time with Next-Business-Day Replacement Warranty
- Get deployment assistance with 90-days Free Advanced Technical Support\*\*

<sup>1</sup> On PoE models only (GC728XP)



### Hardware at a Glance

	FRONT	REAR						SIDE	
Model Name	Form-Factor	LEDs (System)	Gigabit Copper (RJ-45) Ports	1G SFP Fiber Ports	10G SFP+ Fiber Ports	PoE/PoE+ Ports (Budget)	LEDs (Per Port)	Power Supply	Fans
GC728X	Rackmount, Desktop	Cloud, Power, Fan	24	2 (dedicated)	2 (dedicated)	N/A	Speed/Link/Activity	1 internal PSU, fixed	1 internal fan, fixed
GC728XP	Rackmount, Desktop	Cloud, Power, PoE Max, Fan	24	2 (dedicated)	2 (dedicated)	24 PoE+ (390W)	Speed/Link/Activity, PoE	1 internal PSU, fixed	2 internal fans, fixed



#### GC728X: 28-Port Gigabit Ethernet Insight Managed Smart Cloud Switch w/2 SFP and 2 SFP+ 10G Fiber Ports

- 24 x 1000BASE-T Copper ports supporting 1G/100M speeds
- 2 x 1000BASE-X Dedicated SFP Fiber ports
- 2 x 10GBASE-X Dedicated SFP+ Fiber ports supporting 10G/1G speeds
- Max 28dB @ 25°C / 77°F ambient

#### GC728XP: 28-Port Gigabit Ethernet PoE+ Insight Managed Smart Cloud Switch w/2 SFP and 2 SFP+ 10G Fiber Ports

- 24 x 1000BASE-T PoE+ Copper ports supporting 1G/100M speeds
- 2 x 1000BASE-X Dedicated SFP Fiber ports
- 2 x 10GBASE-X Dedicated SFP+ Fiber ports supporting 10G/1G speeds
- 390W PoE budget (max 39dB @ 25°C / 77°F ambient)

### Software at a Glance

MANAGEMENT		LAYER 2						
Device Management	Network Management Features	IPv4 / IPv6 ACL and QoS	IPv4 / IPv6 Multicast Filtering	VLANs	Auto-VoIP, Auto-Video	Convergence	Link Aggregation/Port Trunking	IPv4 & IPv6 Static Routing
NETGEAR Insight mobile app or Insight Cloud Portal for local/remote/anywhere management from your mobile device, PC, Mac, or tablet Local web browser-based management GUI, SNMP, RMON IPv4 & IPv6 management	Centralized network configuration (policies) Auto-join & configure (zero-touch provisioning) Multi-site, multi-network single pane-of-glass view Multi-switch/multi-port concurrent configuration	L2, L3, L4 Ingress	IGMP and MLD Snooping	Static, Dynamic, Voice, Video, MAC, Protocol-based, and Private	Yes	LLDP-MED, RADIUS, 802.1X	LACP and Manual Static LAGs (up to 24 LAGs with max 8 members)	Yes

### Performance at a Glance

Model Name	CPU & Memory	Fabric (Full-duplex)	Latency (64-byte Packet @ Max Connection Speed)	Packet Buffer	Packet Forwarding Rate (64-byte)	ACLs	MAC Address Table ARP/NDP Table VLANs	Static Routes (IPv4 & IPv6)	Priority Queues	Multicast IGMP Groups
GC728X GC728XP	400 MHz Cortex-A9 Single Core, 512MB RAM 8MB SPI + 256 NAND FLASH	92Gbps line-rate	1G Copper: 3.200 µs 1G SFP: 1.720 µs 10G SFP+: 1.510 µs	1.5 MB	68.5 Mfps	100 (shared)	16K MAC (dynamic) 384 ARP / 256 NDP 256 VLANs	IPv4: 32 IPv6: 31	8 (WRR)	512

### Features and Benefits

Hardware Features	Benefits
Fully-integrated Cloud-manageable Devices	Require no additional hardware (cloud keys, network portals, local servers, VPN or proxy appliances etc) to directly connect to the cloud and allow remote management. No additional hardware, no software or server to setup; nothing. Just connect and go.
1000BASE-T Copper Ethernet PoE+ (GC728XP) connections	Support high-density VoIP, Surveillance and Wi-Fi AP deployments, scalable for future growth. Never face the risk of running out of PoE ports or PoE power budget.
1000BASE-X SFP ports	Two dedicated Gigabit SFP ports provide fiber uplinks without sacrificing any downlink copper Gigabit Ethernet port, and across long distances. Support for Fiber and Copper modules.
10GBASE-X SFP ports	Providing flexibility to uplink to 10G-capable core or aggregation switches that support fiber links. Backward compatible to Gigabit fiber. Support copper or fiber modules.
Cloud, Power, PoE (GC728XP only), and Fan LEDs	Quickly confirm switch has power and is connected to the cloud/internet, fan is operating normally or not, and if max PoE budget has been reached.
USB Port	Quickly and conveniently upgrade or restore firmware, load or backup configuration files, or download system log files for troubleshooting.
Micro-USB Debug Port	Only for use when directed by customer support for troubleshooting.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for ongoing operation cost savings.
Rackmount or Desktop	Flexible deployment in standard 19" rack using the included rackmount kit or on desktop using included rubber feet.
Kensington Lock Slot	Prevent theft, removal, or tampering when used for desktop deployment.
Software Features	Benefits
Remote setup, management, and monitoring anywhere, anytime, from your mobile device, PC, Mac, or tablet	Locally or remotely setup, configure, manage, monitor or even troubleshoot your network from anywhere, anytime. Check network status, view dashboards for network health and activity, power cycle PoE ports, etc, and update firmware remotely. No need to be on-site, open up ports to your network, or VPN into it.
Auto-join and Configure (Zero-Touch Provisioning)	Additional Insight Managed devices added to the network automatically inherit settings and configuration of the network.
Multi-site, Multi-network Single Pane-of-Glass View	View and configure multiple networks across multiple sites, all from one single app; NETGEAR Insight.
Comprehensive IPv6 Support for Management, ACLs and QoS	Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement.
IPv4 & IPv6 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.
Robust Security Features (802.1x, ACLs, MAC Authentication)	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users.
Comprehensive QoS Features (802.1p, DSCP, Rate-limiting)	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.
Auto-VoIP, Auto-Voice VLAN, and Auto-Video VLAN	Automatic Voice over IP prioritization (Auto-VoIP) simplifies most complex multi-vendor IP telephone deployments either based on protocols (SIP, H.323 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. Similarly, Auto-Video VLAN enables IGMP snooping to minimize broadcast streams.

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.
Protected Ports	Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, thereby improving the security of your converged network. This allows your sensitive phone conversations to stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
DHCP Snooping	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch.
Dynamic VLAN Assignment (RADIUS)	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 on the network.
Private VLAN	Private VLANs help reduce broadcast with added security.
Port Trunking/Link Aggregation (LACP)	Build up bigger bandwidth to support aggregated uplink/downlink traffic or to provide redundant link(s). Aggregate up to 8 ports for 8Gbps connections.
Loop Prevention and Auto-DoS Prevention	Detect and prevent (auto port shutdown) accidental network loops and protect against DoS attacks.
PoE Timer and Scheduling	Allows IT administrators to increase network security, better utilize network resources and conserve energy by scheduling or remotely controlling on/off of PoE ports.
Port Mirroring and Cable Test	Many-to-one port mirroring for better and quicker network diagnostics and troubleshooting. Cable test easily identifies bad Ethernet cables.
Firmware Updates from Cloud	Direct cloud-to-device firmware updates, initiated and/or scheduled using the Insight mobile app or Insight Cloud Portal, all from the palm of your hand, anytime, anywhere!

### Why Insight Managed Smart Cloud Switches?

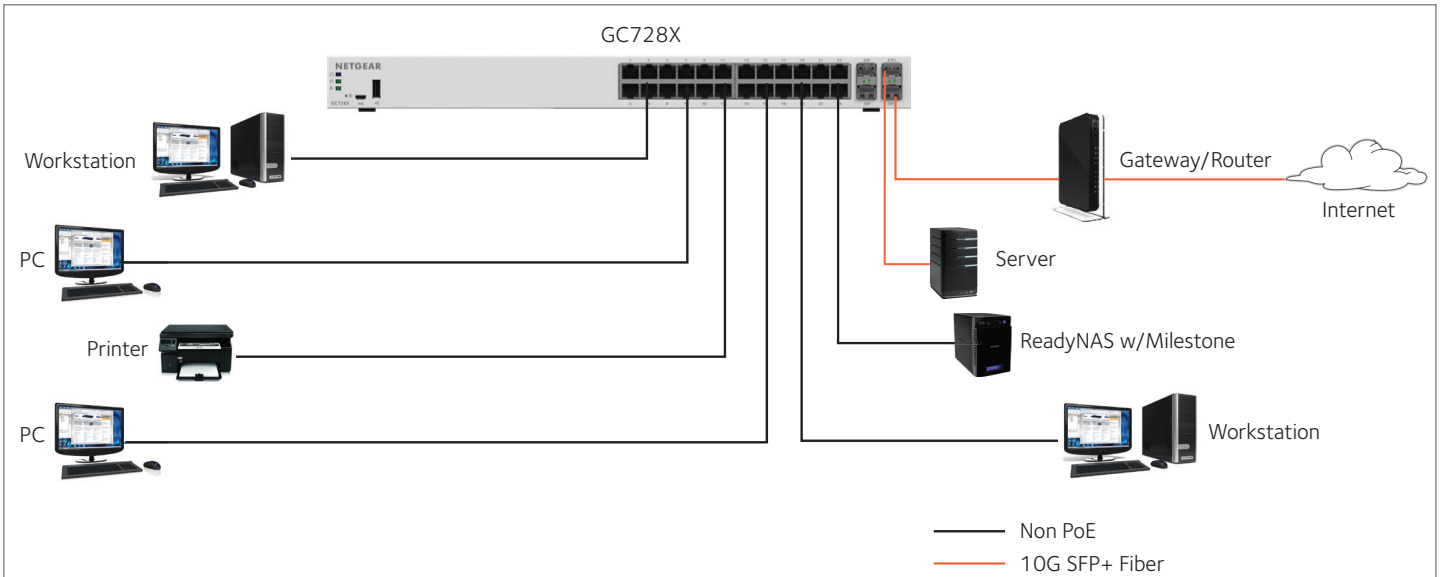
NETGEAR is revolutionizing unified, centralized network management with its new line of Insight Managed Smart Cloud Switches and Wireless Access Points, all managed from the palm of your hand, anytime, anywhere, on your phone or tablet using the NETGEAR Insight mobile app. Or, for a larger screen experience, from your PC, Mac, or tablet web browser using the Insight Cloud Portal.

- Ideal for SMBs, offices, retail stores, education, healthcare, owner-operated businesses, etc.
- IT expert or no networking experience at all: Insight Managed Smart Cloud Switches let you focus on your business, not maintaining your network.
- Know immediately if and when your network is not running perfectly; not after you've already lost business or suffered significant down-time.
- Advanced L2+/L3 Lite network features such as IPv4/IPv6 management, VLANs, DiffServ QoS, LACP Link Aggregation, Spanning Tree, Static Routing, advanced per-port PoE controls and PoE scheduling will satisfy even the most advanced small business networks.
- Fundamentally change and simplify network usability for easier and smoother deployment of voice, video, and WLAN on the same converged platform.
- Industry-leading 5-year warranty on switches, 5-year Next-Business-Day (NBD) replacement, and 90-days free technical support\*\* for peace-of-mind.

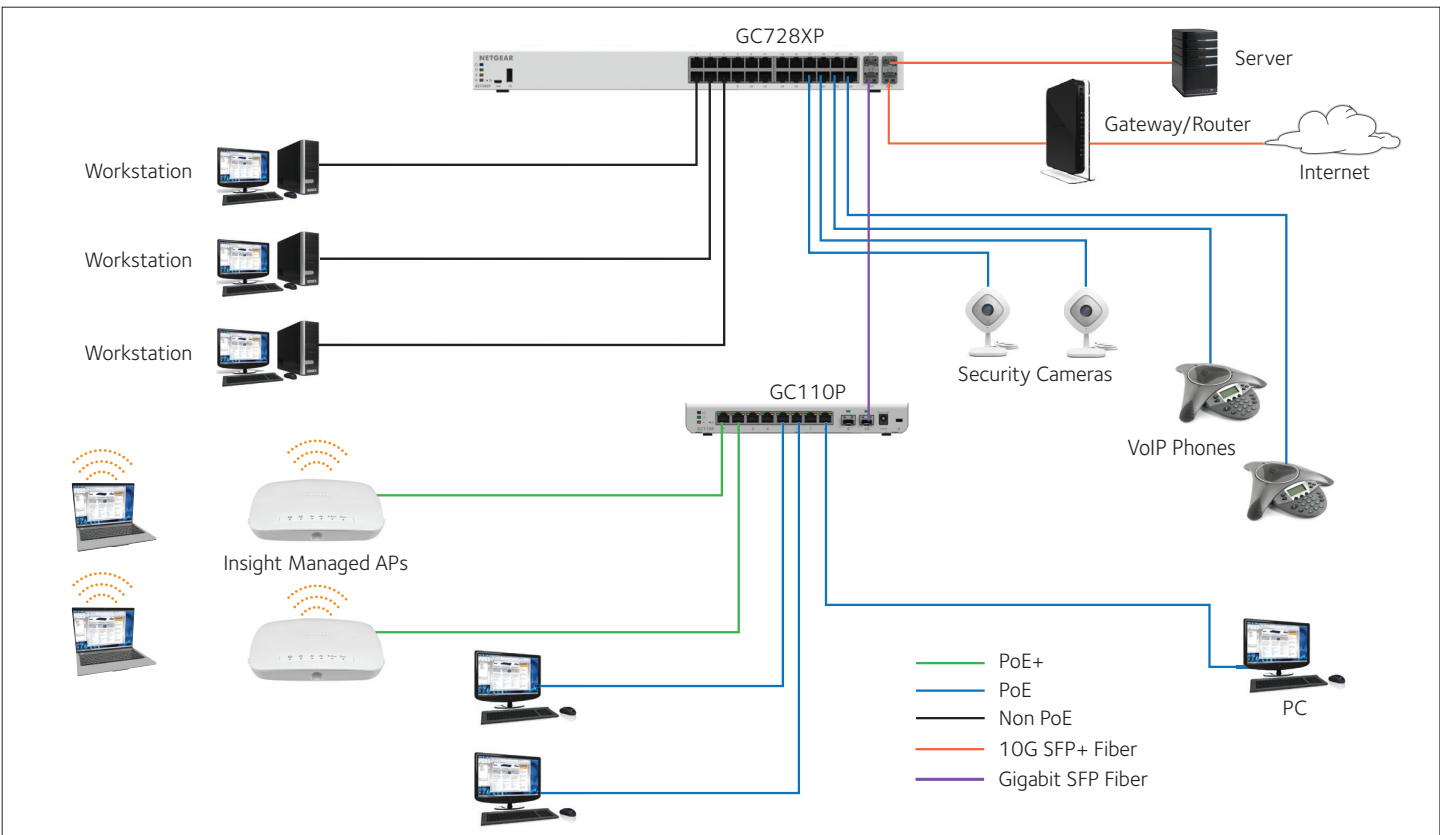
Within small and medium-sized organizations, there is growing adoption of PoE devices such as VoIP phones, IP security cameras, wireless access points, proximity sensors, LED lighting, door locks, and other IoT devices that require network switches capable of supporting dense PoE installations. Wireless access points and pan-tilt-zoom HD cameras using Wave 2 802.11ac Wi-Fi also require PoE+ power (802.3at), increasing the power demands on PoE switches. With a generous power budget of 390W, the GC728XP is designed to meet the current and future needs of wireless converged networks.

### Example Applications

#### In a Business/Retail Environment



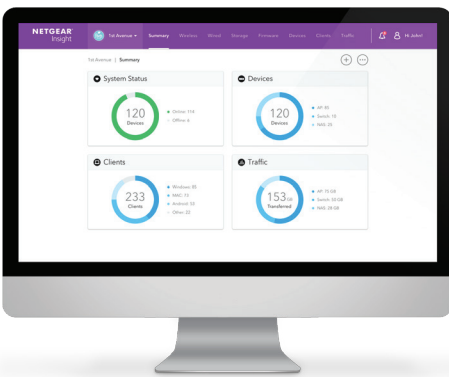
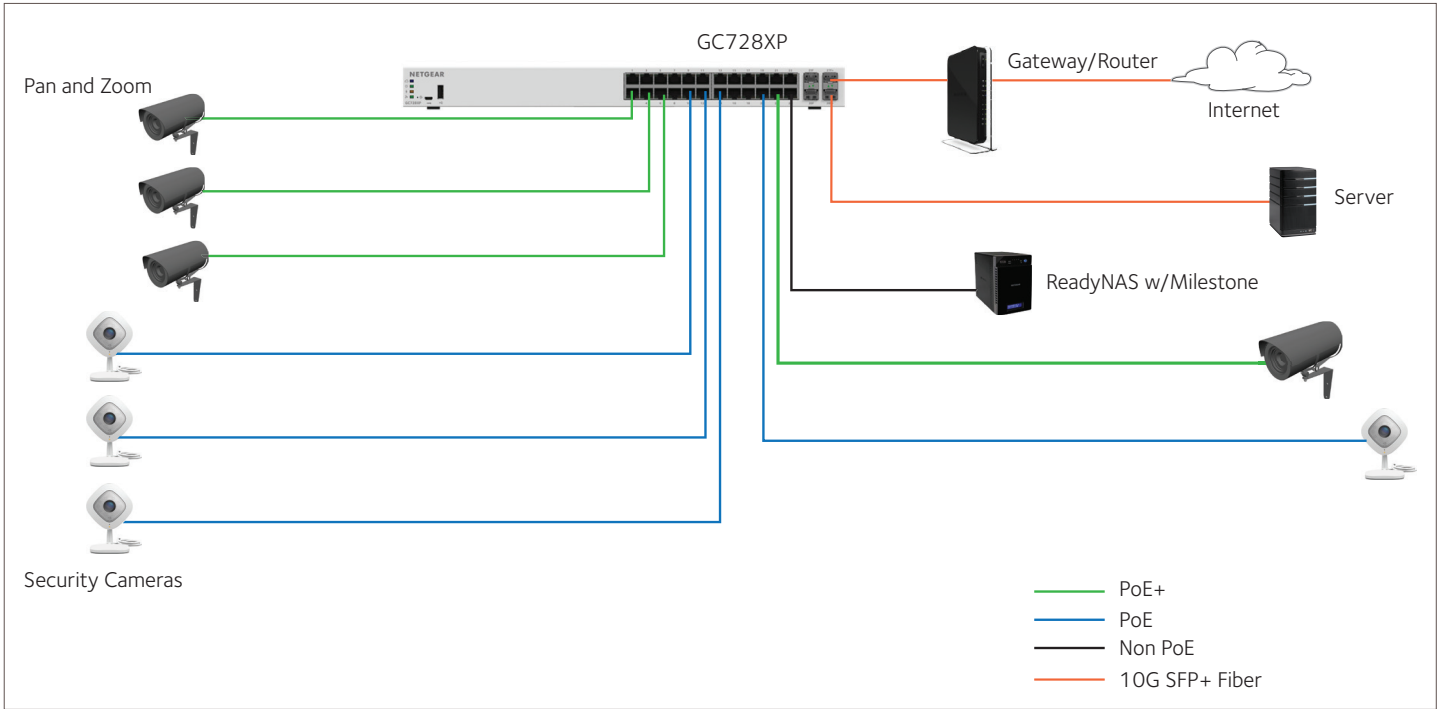
#### In a Small Office/Workgroup Environment (Aggregation/Core Switch)





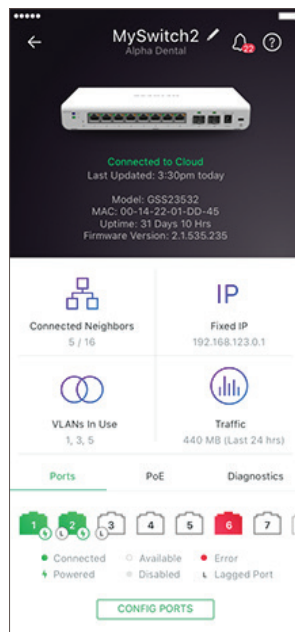
### Example Application

#### In a Security and Surveillance Environment

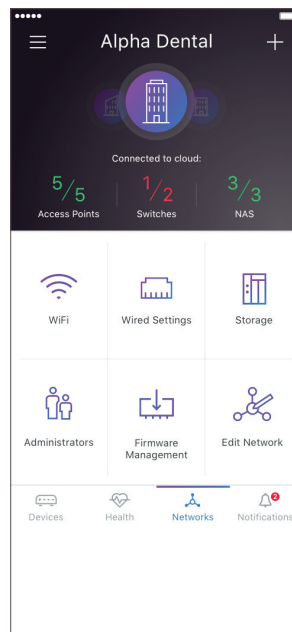


Large screen access via Insight Cloud Portal

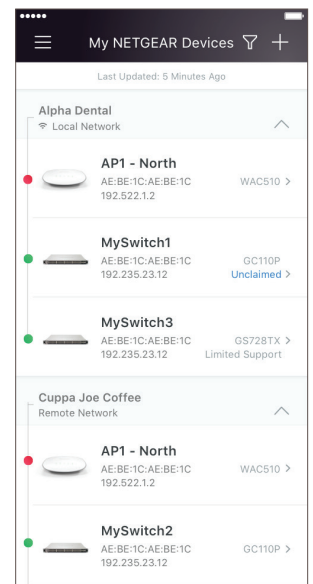
**NETGEAR®**  
Insight



Port configuration and monitoring





Network dashboard



Single pane-of-glass view of multiple networks/locations

### Technical Specifications

PRODUCT	GC728X	GC728XPP
		
Gigabit Ethernet RJ-45 Copper ports (10M/100M/1G) - 1000BASE-T	24	24
PoE/PoE+ ports	N/A	24 PoE+ (390W PoE budget)
Gigabit SFP (fiber) ports (100M/1G) - 1000BASE-X	2 (dedicated)	2 (dedicated)
10-Gigabit SFP+ (fiber) ports (1G/10G) - 10GBASE-X	2 (dedicated)	2 (dedicated)
USB port (for config file upload/backup & firmware updates)	Yes	Yes
Micro-USB port (for debugging only)	Yes	Yes
Power Supply	Internal 100-240VAC ~ 50-60Hz, 1A Max	Internal 100-240VAC ~ 50-60Hz, 10A Max
Kensington Lock	Yes (rear)	Yes (rear)
<b>LEDs</b>		
System LEDs (per device)	Cloud/Internet Connection, Power, Fan Status	Cloud/Internet Connection, Power, PoE Max, Fan Status
Ethernet (Copper) Port LEDs (per port)	Speed/Link/Activity	Speed/Link/Activity (left), PoE Power (right)
SFP/SFP+ (Fiber) Port LEDs (per port)	Speed/Link/Activity	Speed/Link/Activity
<b>UNIFIED NETWORK MANAGEMENT (DISCOVERY, SETUP, MONITORING, AND MANAGEMENT)</b>		
Discovery, setup, monitoring and management	NETGEAR Insight mobile app on phone or tablet; Insight Cloud Portal from PC, Mac, or tablet web browser	
Remote/Cloud management	Anywhere, anytime, from the palm of your hand using Insight mobile app or from any PC, Mac, or tablet web browser using the Insight Cloud Portal	
Centralized network configuration (policies)	Centralized network configuration (policies) across Insight Managed Switches, Wireless Access Points, and Business-class ReadyNAS Storage for VLANs, ACLs, QoS, and LAGs	
Device auto-join and configure (zero-touch provisioning)	Additional Insight Managed devices added to the network automatically inherit the network configuration	
Multi-site, multi-network single pane-of-glass view	Manage multiple sites, locations, and networks in a single view using the Insight mobile app or Insight Cloud Portal	
Multi-switch, multi-port concurrent configuration for ACLs, VLANs, QoS, PoE, etc	Apply settings and policies on multiple ports across multiple switches all at the same time using the Port Config Wizard	
<b>PERFORMANCE SPECIFICATION</b>		
CPU	400 MHz Cortex-A9 Single Core, 512MB RAM, 8MB SPI + 256MB NAND FLASH	
Packet buffer memory (Dynamically shared across only used ports)	1.5 MB	
Forwarding modes	Store-and-forward	
Bandwidth (non-blocking, full duplex)	92Gbps	



### Technical Specifications

Priority queues	8	
Priority queuing	Weighted Round Robin (WRR) and Strict Priority	
MAC Address database size (48-bit MAC addresses)	16K (dynamic)	
Multicast groups	512	
Number of IPv4 static routes	32	
Number of IPv6 static routes	31	
Number of ARP/NDP cache entries	384 ARP / 256 NDP	
Number of VLANs	256	
Number of DHCP snooping bindings	8K	
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs	
Packet forwarding rate (64 byte packet size) (Mfps or Mpps)	68.5	
1G Copper latency (64-byte; 1518-byte; 9216-byte frames)	64-byte: 3.200 µsec 1518-byte: 3.160 µsec 9216-byte: 3.140 µsec	
1G SFP Fiber latency (64-byte; 1518-byte; 9216-byte frames)	64-byte: 1.720 µsec 1518-byte: 1.740 µsec 9216-byte: 1.740 µsec	
10G SFP+ Fiber latency (64-byte; 1518-byte; 9216-byte frames)	64-byte: 1.510 µsec 1518-byte: 1.520 µsec 9216-byte: 1.510 µsec	
Jumbo frame support	Up to 9K packet size	
Acoustic noise level @ 25° C (dBA) (ANSI-S10.12)	28 dBA	39 dBA
Mean Time Between Failures (MTBF) @ 25° C	1,874,356 hrs (214 yrs)	629,962 hrs (72 yrs)
<b>POE CONFIGURATION</b>		
Number of PoE (802.3af) / PoE+ (802.3at) ports	N/A	24 PoE+
Total PoE power budget (watts)	N/A	390 W
Advanced per-port PoE controls (enable/disable/ power limit)	N/A	Yes
Advanced per-port PoE scheduling	N/A	Yes
<b>L2 SERVICES - VLANS</b>		
IEEE 802.1Q VLAN Tagging	Yes	
IP-based VLANs	Yes	
MAC-based VLANs	Yes	
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address	
Auto-VoIP	Yes, based on protocols (SIP, H.323 and SCCP). Prioritizes traffic to a higher queue.	

### Technical Specifications

Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED.
Auto-Video VLAN	Yes
Private VLAN	Yes
<b>L2 SERVICES - AVAILABILITY</b>	
Broadcast, multicast, unknown unicast storm control	Yes
IEEE 802.3ad - LAGs (LACP)	Yes
IEEE 802.3x (full duplex and flow control)	Yes
IEEE 802.1D Spanning Tree Protocol	Yes
IEEE 802.1w Rapid Spanning Tree Protocol	Yes
IEEE 802.1s Multiple Spanning Tree Protocol	Yes
Layer 2 DHCP Relay	Yes
<b>L2 SERVICES - MULTICAST FILTERING</b>	
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 (MVR)	Yes
Multicast groups	512
<b>L3 SERVICES - DHCP</b>	
DHCP client	Yes
DHCP snooping	Yes
Number of DHCP snooping bindings	8K
<b>L3 SERVICES - ROUTING</b>	
IPv4 static routes	32
IPv6 static routes	31
VLAN routing	Yes
Host ARP table (number of entries)	384 ARP / 256 NDP
ICMP Router Discovery Protocol (IRDP)	Yes
Number of IP VLAN interfaces (routed VLANs)	15
<b>LINK AGGREGATION</b>	
IEEE 802.3ad - LAGs (LACP)	Yes
Manual Static LAG	Yes
# of Static or LACP LAGs # of members in each LAG	24 LAGs with max 8 members in each LAG

### Technical Specifications

NETWORK MONITORING AND DISCOVERY SERVICES	
802.1ab LLDP	Yes
LLDP-MED	Yes
SNMP	v1, v2c, v3
RMON group 1,2,3,9	Yes
NETWORK SECURITY	
IEEE 802.1x	Yes
Guest VLAN	Yes
RADIUS-based VLAN assignment via .1x	Yes
MAC-based .1x	Yes
RADIUS accounting	Yes
Access Control Lists (ACLs)	L2 / L3 / L4
IP-based ACLs (IPv4 and IPv6)	Yes
MAC-based ACLs	Yes
TCP/UDP-based ACLs	Yes
MAC lockdown	Yes
MAC lockdown by the number of MACs	Yes
Control MAC # Dynamic learned entries (per port)	4096
Control MAC # static entries (per port)	48
IEEE 802.1x RADIUS port access authentication/type	Yes (MD5, EAP, PEAP)
Port-based security by locked MAC addresses	Yes
Dynamic ARP inspection	Yes
Broadcast, multicast, unknown unicast storm control	Yes
DoS attacks prevention	Yes
Protected ports	Yes
QUALITY OF SERVICE (QoS)	
Port-based rate limiting	Yes, egress
Port-based QoS	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes, ingress
IEEE 802.1p COS	Yes
Destination MAC and IP	Yes
IPv4 and v6 DSCP	Yes
IPv4 and IPv6 ToS	Yes
TCP/UDP-based	Yes

### Technical Specifications

Weighted Round Robin (WRR)	Yes	
Strict priority queue technology	Yes	
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address	
Auto-VoIP	Yes, based on protocols (SIP, H.323 and SCCP). Prioritizes traffic to a higher queue.	
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED.	
Auto-Video VLAN	Yes	
<b>OTHER FEATURES</b>		
Advanced per-port PoE controls (enable/disable/power limit)	N/A	Yes
Advanced per-port PoE scheduling	N/A	Yes
Loop detection & prevention	Yes (both)	
DNS Client	Yes	
Option to enable/disable BPDU flooding when STP is disabled	Yes	
Option to enable/disable the flooding of EAPOL when 802.1x is disabled	Yes	
<b>IEEE NETWORK PROTOCOLS</b>		
<ul style="list-style-type: none"> <li>• IEEE 802.3 Ethernet</li> <li>• IEEE 802.3u 100BASE-T</li> <li>• IEEE 802.3ab 1000BASE-T</li> <li>• IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX</li> <li>• IEEE 802.3ae 10-Gigabit Ethernet Over Fiber (10GBASE-SR, 10GBASE-LR, 10GBASE-LRM, 10GBASE-ER, 10GBASE-LX4)</li> <li>• IEEE 802.3af PoE (GC728XP only)</li> <li>• IEEE 802.3at PoE+ (GC728XP only)</li> <li>• IEEE 802.3ad Trunking (LACP)</li> <li>• IEEE 802.3az Energy Efficient Ethernet (EEE)</li> <li>• IEEE 802.3x Full-Duplex Flow Control</li> <li>• IEEE 802.1Q VLAN Tagging</li> <li>• IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)</li> <li>• IEEE 802.1p Class of Service</li> <li>• IEEE 802.1D Spanning Tree (STP)</li> <li>• IEEE 802.1s Multiple Spanning Tree (MSTP)</li> <li>• IEEE 802.1w Rapid Spanning Tree (RSTP)</li> <li>• IEEE 802.1x RADIUS Network Access Control</li> </ul>		
<b>MANAGEMENT, MONITORING &amp; TROUBLESHOOTING</b>		
Cloud/Remote management	Yes	
Insight mobile app & Insight Cloud Portal management	Yes	
uPnP Discovery	Yes	
Bonjour Discovery	Yes	
Networking monitoring	Yes	
Data/performance logs	Yes	
Centralized network configuration/policies (network-centric management)	Yes	
Device auto-join and configure (zero-touch provisioning)	Yes	
Multi-site, multi-network single pane-of-glass view	Yes	
Multi-switch, multi-port concurrent configuration	Yes	

### Technical Specifications

Network/global password (for all Insight Managed devices on a network)	Yes (per network/subnet via NETGEAR Insight mobile app and Insight Cloud Portal)	
Password management	Yes	
IP Access List	Yes	
Configurable management VLAN	Yes	
Admin access control via RADIUS and TACACS+	Yes	
IPv6 management	Yes	
SNTP client over UDP port 123	Yes	
Firmware update direct from Cloud (via mobile device or Insight Cloud Portal)	Yes	
SNMP v1/v2c	Yes	
SNMP v3 with multiple IP addresses	Yes	
RMON group 1,2,3,9	Yes	
Port mirroring	Yes	
Many-to-one port mirroring	Yes	
Cable test utility	Yes	
Ping and tracerout client	Yes	
Local-only web browser-based management GUI	Yes	
SSL/HTTPS Web-based access (version)	Yes (v3)	
TLS Web-based access (version)	Yes (v1.0)	
TFTP/HTTP firmware upload/download	Yes	
Dual software (firmware) image	Yes	
Memory and flash log	Yes	
Syslog (RFC 3164)	Yes	
USB port for firmware updates, configuration settings upload/backup, and system log file downloads	Yes	
Micro-USB port (for debugging only)	Yes	
<b>POWER CONSUMPTION</b>		
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	18.5 W	47.1 W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	N/A	437.1 W
Min power (link-down standby) (Watts)	13.7 W	25.5 W
Heat Dissipation (min w/o PoE and max with full PoE) (BTU/hr)	Min: 46.58 BTU/hr Max: 62.95 BTU/hr	Min: 86.94 BTU/hr Max: 1491.45 BTU/hr
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)	
Auto power down	Yes (deactivated by default)	
Fan(s)	1	2

### Technical Specifications

PHYSICAL SPECIFICATIONS		
Dimensions (W x D x H)	440 x 224 x 44 mm (17.3 x 8.8 x 1.7 in)	
Weight	2.81 kg (6.19 lb)	3.79 kg (8.36 lb)
Mounting options	Rackmount, desktop (kits included)	
ENVIRONMENTAL SPECIFICATIONS		
Operating		
Operating Temperature	-0° to 50°C (32° to 122°F)	
Humidity	90% maximum relative humidity (RH), non-condensing	
Altitude	10,000 ft (3,000 m) maximum	
Storage		
Storage Temperature	-20° to 70°C (-4° to 158°F)	
Humidity (relative)	95% maximum relative humidity (RH), non-condensing	
Altitude	10,000 ft (3,000 m) maximum	
ELECTROMAGNETIC EMISSIONS AND IMMUNITY CERTIFICATIONS		
Certifications	CE Mark, Commercial	
	EN55032:2012+AC:2013, Class A	
	EN55024:2010+A1:2015	
	EN61000-3-2:2014, Class A	
	EN61000-3-3:2013	
	VCCI-CISPR 32:2016, Class A	
	RCM, AS/NZS CISPR 32:2015 CLASS A	
	47 CFR FCC Part 15, Subpart B, Class A	
	ICES-003:2016 Issue 6, Class A	
	BSMI CNS13438, Class A	
	KCC KN32 / KN35	
CCC GB/T 9254-2008		
SAFETY CERTIFICATIONS		
Certifications	CB Mark, Commercial	
	EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013	
	UL 60950-1, 2nd, 2014 and CAN/CSA C22.2 No. 60950-1-07, 2nd, 2014	
	IEC 60950-1:2005 (ed.2) + Am 1:2009 + Am 2:2013	
	RCM, AS/NZS 60950.1:2015	
	BSMI CNS14336-1	
	KCC K60950-1	
	CCC GB4943.1-2011	

### Technical Specifications

WARRANTY AND SUPPORT	
Hardware Limited Warranty	5 years
Next-Business-Day (NBD) Replacement	5 years
Technical support (online, phone)	90 days free from date of purchase*
ProSUPPORT OnCall 24x7 Service Packs**	Category 1: PMB0311 (1 yr.) PMB0331 (3 yrs.) PMB0351 (5 yrs.)
PACKAGE CONTENTS	
All models	NETGEAR Insight Managed 28-Port Gigabit Ethernet Smart Cloud Switch with 2 SFP and 2 SFP+ 10G Fiber Ports
	AC power cord (localized to country of sale)
	Rack-mounting kit
	Rubber footpads for tabletop installation
	Quick install guide



### Ordering Information

ORDERING INFORMATION	
GC728X-100NAS	North America and Latin America
GC728X-100EUS	Europe and United Kingdom
GC728X-100AJS	Japan, Asia Pacific, and Australia
GC728XP-100NAS	North America and Latin America
GC728XP-100EUS	Europe and United Kingdom
GC728XP-100AJS	Japan, Asia Pacific, and Australia
OPTIONAL MODULES AND ACCESSORIES	
AGM731F-10000S	SFP Transceiver 1000BASE-SX (Short range, multimode)
AGM732F-10000S	SFP Transceiver 1000BASE-LX (Long range, single mode)
AGM734-10000S	SFP Transceiver 1000BASE-T Copper RJ45 GBIC
AXM761-10000S	SFP+ Transceiver 10GBASE-SR (Short range, multimode)
AXM762-10000S	SFP+ Transceiver 10GBASE-LR (Long range, single mode)
AXM763-10000S	SFP+ Transceiver 10GBASE-LRM (Long range, multimode)
AXM764-10000S	SFP+ Transceiver 10GBASE-LR Lite (Long range lite, single mode)
AXM765-10000S	SFP+ Transceiver 10GBASE-T (SFP+ Copper RJ-45 GBIC)
AXC761-10000S	SFP+ DAC CABLE (1m)
AXC763-10000S	SFP+ DAC CABLE (3m)
EXTENDED SUPPORT CONTRACTS	
PMB0311	1-Year OnCall 24x7 Service Pack**
PMB0331	3-Year OnCall 24x7 Service Pack**
PMB0351	5-Year OnCall 24x7 Service Pack**

\*This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and modifications to product may void the warranty; covers hardware, fans, and internal power supplies—not software or external power supplies; see <http://www.netgear.com/about/warranty/> for details.

\*\* The NETGEAR OnCall 24x7 contract provides unlimited phone, chat and email technical support for your networking product.

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### Hardware at a Glance

Model Name	FRONT	REAR						SIDE
	Form-Factor	LEDs (System)	100M/1G Copper (RJ-45) Ports	1G SFP Fiber Ports	PoE/PoE+ Ports (Budget)	LEDs (Per Port)	Power Supply	Fans
GC110	Desktop, Wallmount	Cloud, Power	8	2 (dedicated)	N/A	Speed/Link/Activity	External adapter	Fanless
GC110P	Desktop, Wallmount	Cloud, Power, PoE Max	8	2 (dedicated)	8 PoE (62W)	Speed/Link/Activity, PoE	External adapter	Fanless
GC510P	Desktop, Wallmount, Rackmount (kit)	Cloud, Power, PoE Max	8	2 (dedicated)	8 PoE+ (130W)	Speed/Link/Activity, PoE	1 internal PSU, fixed	Fanless
GC510PP	Desktop, Wallmount, Rackmount (kit)	Cloud, Power, PoE Max, Fan	8	2 (dedicated)	8 PoE+ (195W)	Speed/Link/Activity, PoE	1 internal PSU, fixed	1 internal fan, fixed



#### GC110: 8-Port Gigabit Ethernet Insight Managed Smart Cloud Switch w/2 SFP Fiber Ports

- 8 x 1000BASE-T Copper ports supporting 1G/100M speeds
- 2 x 1000BASE-X Dedicated SFP Fiber ports

#### GC110P: 8-Port Gigabit Ethernet PoE Insight Managed Smart Cloud Switch w/2 SFP Fiber Ports

- 8 x 1000BASE-T Copper PoE ports supporting 1G/100M speeds
- 2 x 1000BASE-X Dedicated SFP Fiber ports
- 62W PoE budget (fanless, 0dB)



#### GC510P: 8-Port Gigabit Ethernet PoE+ Insight Managed Smart Cloud Switch w/2 SFP Fiber Ports

- 8 x 1000BASE-T Copper PoE+ ports supporting 1G/100M speeds
- 2 x 1000BASE-X Dedicated SFP Fiber ports
- 134W PoE budget (fanless, 0dB)

#### GC510PP: 8-Port Gigabit Ethernet PoE+ High-Power Insight Managed Smart Cloud Switch w/2 SFP Fiber Ports

- 8 x 1000BASE-T Copper PoE+ ports supporting 1G/100M speeds
- 2 x 1000BASE-X Dedicated SFP Fiber ports
- 195W PoE budget (max 28dB @ 25°C / 77°F ambient)

### Software at a Glance

MANAGEMENT		LAYER 2						
Device Management	Network-wide Management	IPv4 / IPv6 ACL and QoS	IPv4 / IPv6 Multicast Filtering	VLANs	Auto-VoIP, Auto-Video	Convergence	Link Aggregation/ Port Trunking	Jumbo Frame Support
<p>NETGEAR Insight mobile app or Insight Cloud Portal for local/remote/anywhere management from your mobile device, PC, Mac, or tablet</p> <p>Local web browser-based management GUI</p> <p>IPv4 &amp; IPv6 management</p>	<p>Centralized network configuration (policies)</p> <p>Auto-join &amp; configure (zero-touch provisioning)</p> <p>Multi-site, multi-network single pane-of-glass view</p> <p>Multi-switch/multi-port concurrent configuration</p>	L2, L3, L4 Ingress	IGMP and MLD Snooping	Static, Dynamic, Voice, Video, MAC, Protocol-based, and Private	Yes	LLDP-MED, RADIUS, 802.1X	LACP and Manual Static LAGs (up to 5 LAGs with max 8 members)	Yes (up to 9K)

### Performance at a Glance

Model Name	CPU & Memory	Fabric (Full-duplex)	Latency (64-byte Packet)	Packet Buffer	Packet Forwarding Rate (64-byte)	ACLs	VLANs	MAC Address Table	Priority Queues	Multicast IGMP Groups
All Models	400 MHz Cortex-A9 Single Core, 256MB RAM 8MB SPI + 256 NAND FLASH	20Gbps line-rate	1G Copper: 3.000 µs 1G SFP: 2.000 µs	1.5 MB	14.9 Mfps	100 (shared)	256	16K Entries (dynamic)	8 (WRR)	512

### Features and Benefits

Hardware Features	Benefits
Fully-integrated Cloud-manageable Devices	Require no additional hardware (cloud keys, network portals, local servers, VPN or proxy appliances etc) to directly connect to the cloud and allow remote management. No additional hardware, no software or server to setup; nothing. Just connect and go.
1000BASE-T Copper Ethernet PoE (GC110P)/PoE+ (GC510P/GC510PP) connections	Support high-density VoIP, Surveillance and Wi-Fi AP deployments, scalable for future growth. Never face the risk of running out of PoE ports or PoE power budget.
1000BASE-X SFP ports	Two dedicated Gigabit SFP ports Dedicated SFP ports provide fiber uplinks without sacrificing any downlink copper Gigabit Ethernet port, and across long distances. Support for Fiber and Copper modules.
Front Cloud & Power LEDs	Quickly confirm switch has power and is connected to the cloud/internet.
Silent or Low (GC510PP) Acoustics	Fanless design (all except GC510PP) allows for silent operation; temperature- and load-based fan-speed control (GC510PP) provides whisper-quiet operation; great for deployment in noise-sensitive environments.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for ongoing operation cost savings.
Desktop, Wallmount, or Rackmount (GC510P, GC510PP)	Flexible deployment on desktop, wall or other location using 75mm VESA-compliant mounts, or rackmount using the included rackmount kit (GC510P, GC510PP only).
Kensington Lock Slot	Prevent theft, removal, or tampering when used for desktop deployment.

Software Features	Benefits
Remote setup, management, and monitoring anywhere, anytime, from your mobile device, PC, Mac, or tablet	Locally or remotely setup, configure, manage, monitor or even troubleshoot your network from anywhere, anytime. Check network status, view dashboards for network health and activity, power cycle PoE ports, etc, and update firmware remotely. No need to be on-site, open up ports to your network, or VPN into it.
Auto-join and Configure (Zero-Touch Provisioning)	Additional Insight Managed devices added to the network automatically inherit settings and configuration.
Multi-site, Multi-network Single Pane-of-Glass View	View and configure multiple networks across multiple sites, all from one single app; NETGEAR Insight.
Comprehensive IPv6 Support for Management, ACLs and QoS	Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement.
Robust security features: <ul style="list-style-type: none"> <li>• 802.1x authentication (EAP)</li> <li>• Port-based security by locked MAC</li> <li>• ACL filtering to permit or deny traffic based on MAC and IP addresses</li> </ul>	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users.
Comprehensive QoS features: <ul style="list-style-type: none"> <li>• Port-based or VLAN 802.1p-based prioritization</li> <li>• Layer 3-based (DSCP) prioritization</li> <li>• Port-based egress rate limiting</li> </ul>	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.

Software Features (con't)	Benefits
Auto-VoIP, Auto-Voice VLAN, and Auto-Video VLAN!	Automatic Voice over IP prioritization (Auto-VoIP) simplifies most complex multi-vendor IP telephone deployments either based on protocols (SIP, H.323 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. Similarly, Auto-Video VLAN enables IGMP snooping to minimize broadcast streams.
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.
Protected Ports	Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, thereby improving the security of your converged network. This allows your sensitive phone conversations to stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
DHCP Snooping	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch.
Dynamic VLAN Assignment (RADIUS)	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 on the network.
Private VLAN	Private VLANs help reduce broadcast with added security.
Port Trunking/Link Aggregation (LACP)	Build up bigger bandwidth to support aggregated uplink/downlink traffic or to provide redundant link(s). Aggregate up to 8 ports for 8Gbps connections.
Loop Prevention and Auto-DoS Prevention	Detect and prevent (auto port shutdown) accidental network loops and protect against DoS attacks.
PoE Timer and Scheduling (except GC110)	Allows IT administrators to increase network security, better utilize network resources and conserve energy by scheduling or remotely controlling on/off of PoE ports.
Port Mirroring and Cable Test	Many-to-one port mirroring for better and quicker network diagnostics and troubleshooting. Cable test easily identifies bad Ethernet cables.
Firmware Updates from Cloud	Direct cloud-to-device firmware updates, initiated and/or scheduled using the Insight app, all from the palm of your hand, anytime, anywhere!

### Why Insight Managed Smart Cloud Switches?

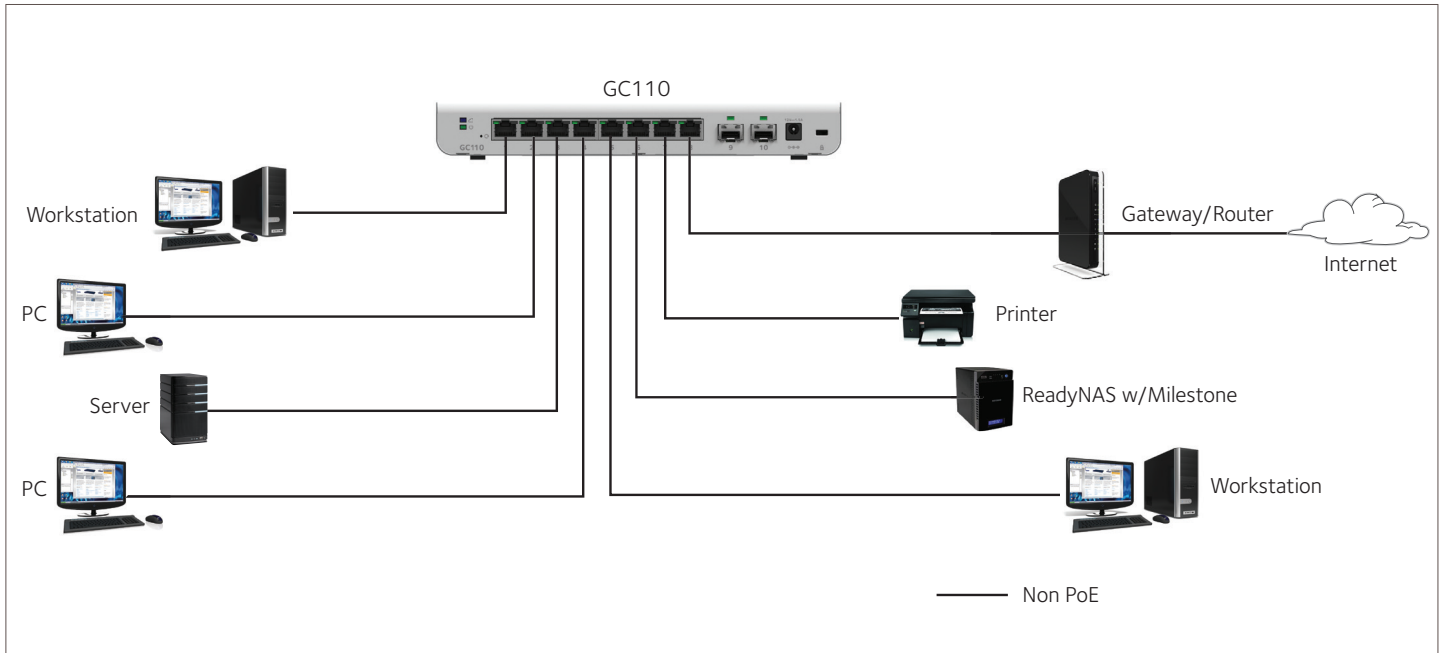
NETGEAR is revolutionizing unified, centralized network management with its new line of Insight Managed Smart Cloud Switches and Wireless Access Points, all managed from the palm of your hand, anytime, anywhere, on your phone or tablet using the NETGEAR Insight mobile app. Or, for a larger screen experience, from your PC, Mac, or tablet web browser using the Insight Cloud Portal.

- Ideal for SMBs, offices, retail stores, education, healthcare, owner-operated businesses, etc.
- IT expert or no networking experience at all: Insight Managed Smart Cloud Switches let you focus on your business, not maintaining your network.
- Know immediately if and when your network is not running perfectly; not after you've already lost business or suffered significant down-time.
- Advanced L2 network features such as IPv4/IPv6 management, VLANs, DiffServ QoS, LACP Link Aggregation, Spanning Tree, advanced per-port PoE controls and PoE scheduling will satisfy even the most advanced small business networks.
- Fundamentally change and simplify network usability for easier and smoother deployment of voice, video, and WLAN on the same converged platform.
- Industry-leading 5-year warranty on switches, 5-year Next-Business-Day (NBD) replacement, and 90-days free technical support\*\* for peace-of-mind.

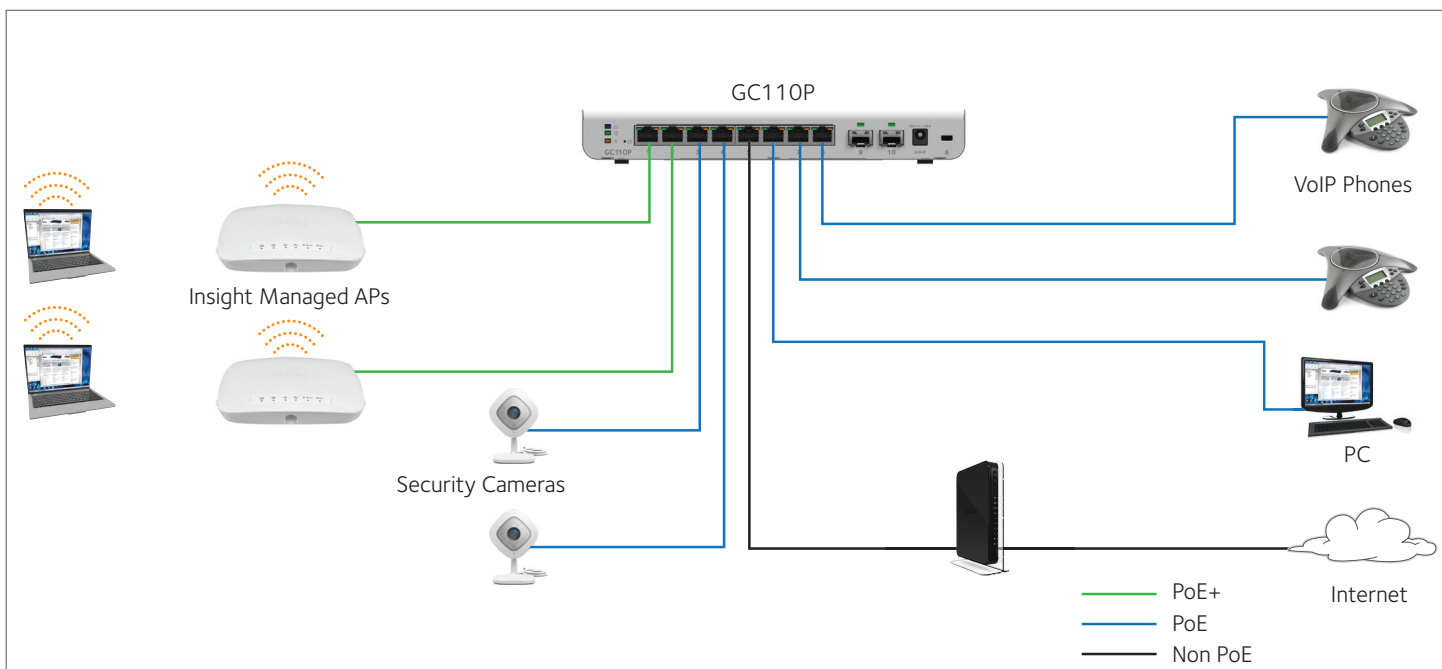
Within small and medium-sized organizations, there is growing adoption of PoE devices such as VoIP phones, IP security cameras, wireless access points, proximity sensors, LED lighting, door locks, and other IoT devices that require network switches capable of supporting dense PoE installations. Wireless access points and pan-tilt-zoom HD cameras using Wave 2 802.11ac Wi-Fi also require PoE+ power (802.3at), increasing the power demands on PoE switches. Therefore, PoE-capable versions (GC110P, GC510P, GC510PP) are designed with PoE power budgets to meet the current and future needs of wireless converged networks.

### Example Application

#### In a Business/Retail Environment

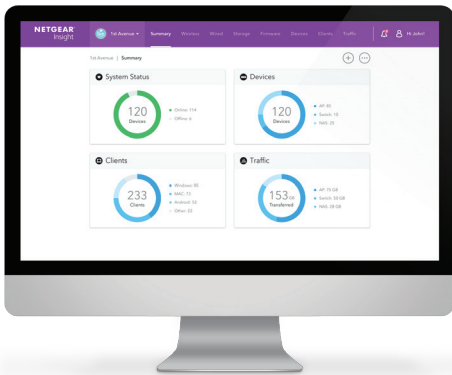
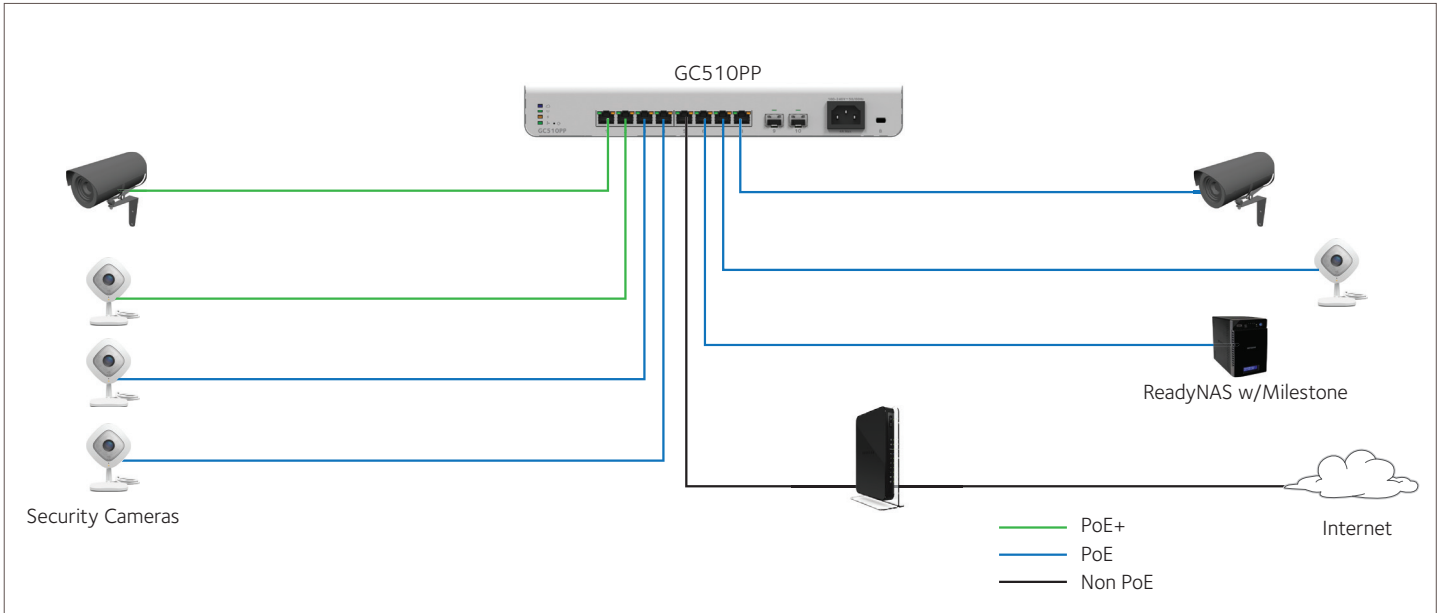


#### In a Small Office/Workgroup Environment



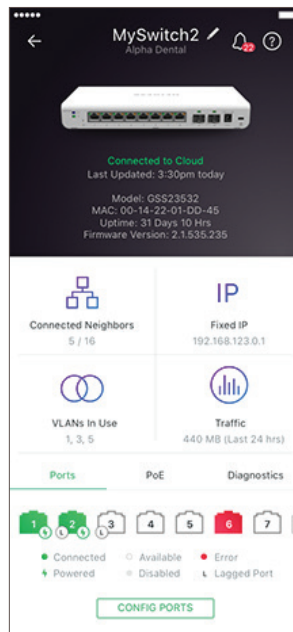
### Example Application

#### In a Security and Surveillance Environment

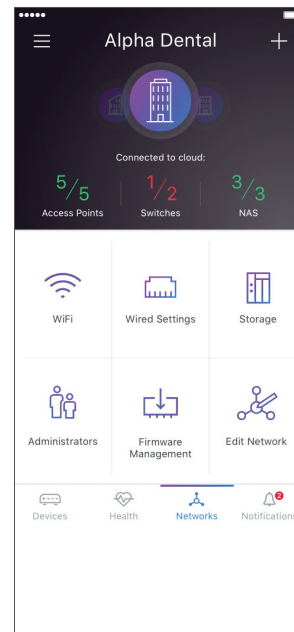


Large screen access via  
Insight Cloud Portal

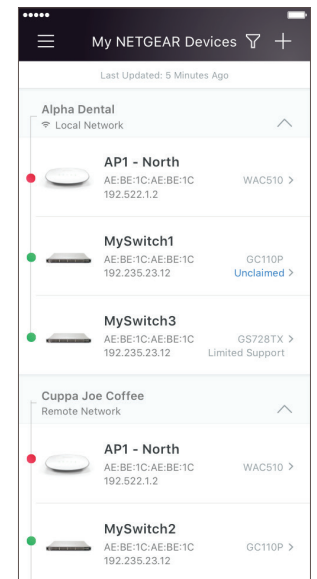
**NETGEAR®**  
Insight



Port configuration and monitoring







Network dashboard



Single pane-of-glass view of  
multiple networks/locations



### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
				
Gigabit Ethernet RJ-45 Copper ports (10M/100M/1G) - 1000BASE-T	8			
PoE/PoE+ ports	N/A	8 PoE (62W PoE budget)	8 PoE+ (134W PoE budget)	8 PoE+ (195W PoE budget)
Gigabit SFP (fiber) ports (100M/1G) - 1000BASE-X	2 (dedicated)			
Power Supply	External Input: 12V/1.5A	External Input: 48V/1.67A	Internal 100-240VAC ~ 50-60Hz, 2A Max	Internal 100-240VAC ~ 50-60Hz, 4A Max
Kensington Lock	Yes (rear)			
<b>LEDs</b>				
Front (per device)	Cloud/Internet Connection, Power			
Rear (per device)	Cloud/Internet Connection, Power	Cloud/Internet Connection, Power, PoE Max		Cloud/Internet Connection, Power, PoE Max, Fan Status
Rear (per port)	Speed/Link/Activity	Speed/Link/Activity (left), PoE Power (right)		
<b>UNIFIED NETWORK MANAGEMENT (DISCOVERY, SETUP, MONITORING, AND MANAGEMENT)</b>				
Discovery, setup, monitoring and management	NETGEAR Insight mobile app on phone or tablet; Insight Cloud Portal from PC, Mac, or tablet web browser			
Remote/Cloud management	Anywhere, anytime, from the palm of your hand using Insight mobile app or from any PC, Mac, or tablet web browser using the Insight Cloud Portal			
Centralized network configuration (policies)	Centralized network configuration (policies) across Insight Managed Switches, Wireless Access Points, and Business-class ReadyNAS Storage for VLANs, ACLs, QoS, and LAGs			
Device auto-join and configure (zero-touch provisioning)	Additional Insight Managed devices added to the network automatically inherit the network configuration			
Multi-site, multi-network single pane-of-glass view	Manage multiple sites, locations, and networks in a single view using the Insight mobile app or Insight Cloud Portal			
Multi-switch, multi-port concurrent configuration for ACLs, VLANs, QoS, PoE, etc	Apply settings and policies on multiple ports across multiple switches all at the same time using the Port Config Wizard			
<b>PERFORMANCE SPECIFICATION</b>				
CPU	400 MHz Cortex-A9 Single Core, 256MB RAM, 8MB SPI + 256MB NAND FLASH			
Packet buffer memory (Dynamically shared across only used ports)	1.5 MB			
Forwarding modes	Store-and-forward			
Bandwidth (non-blocking, full duplex)	20Gbps			
Priority queues	8			
Priority queuing	Weighted Round Robin (WRR) and Strict Priority			
MAC Address database size (48-bit MAC addresses)	16K (dynamic)			

### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
Multicast groups	512			
Number of VLANs	256			
Number of DHCP snooping bindings	8K			
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs			
Packet forwarding rate (64 byte packet size) (Mfps or Mpps)	14.9			
1G Copper latency (µsec) (64-byte; 1518-byte; 9216-byte frames)	64-byte: 3.000 µsec 1518-byte: 3.040 µsec 9216-byte: 3.100 µsec			
1G SFP Fiber latency (µsec) (64-byte; 1518-byte; 9216-byte frames)	64-byte: 2.000 µsec 1518-byte: 2.140 µsec 9216-byte: 2.180 µsec			
Jumbo frame support	Up to 9K packet size			
Acoustic noise level @ 25° C (dBA) (ANSI-S10.12)	0 dBA (fanless)			28 dBA
Mean Time Between Failures (MTBF) @ 25° C	4,013,311 hrs (458 yrs)	2,976,994 hrs (340 yrs)	692,457 hrs (79 yrs)	381,503 hrs (44 yrs)
<b>POE CONFIGURATION</b>				
Number of PoE (802.3af) / PoE+ (802.3at) ports	N/A	8 PoE	8 PoE+	8 PoE+
Total PoE power budget (watts)	N/A	62 W	134 W	195 W
Advanced per-port PoE controls (enable/disable/ power limit)	N/A	Yes		
Advanced per-port PoE scheduling/timers	N/A	Yes		
<b>L2 SERVICES - VLANS</b>				
IEEE 802.1Q VLAN Tagging	Yes			
MAC-based VLANs	Yes			
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address			
Auto-VoIP	Yes, based on protocols (SIP, H.323 and SCCP). Prioritizes traffic to a higher queue.			
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED.			
Auto-Video VLAN	Yes			
Private VLAN	Yes			
<b>L2 SERVICES - AVAILABILITY</b>				
Broadcast, multicast, unknown unicast storm control	Yes			
IEEE 802.3ad - LAGs (LACP)	Yes			
IEEE 802.3x (full duplex and flow control)	Yes			
IEEE 802.1D Spanning Tree Protocol	Yes			
IEEE 802.1w Rapid Spanning Tree Protocol	Yes			

### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
IEEE 802.1s Multiple Spanning Tree Protocol			Yes	
Layer 2 DHCP Relay			Yes	
<b>L2 SERVICES - MULTICAST FILTERING</b>				
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 (MVR)			No	
Multicast groups			512	
<b>L3 SERVICES - DHCP</b>				
DHCP client			Yes	
DHCP snooping			Yes	
Number of DHCP snooping bindings			8K	
<b>LINK AGGREGATION</b>				
IEEE 802.3ad - LAGs (LACP)			Yes	
Manual Static LAG			Yes	
# of Static or LACP LAGs # of members in each LAG			5 LAGs with max 8 members in each LAG	
<b>NETWORK MONITORING AND DISCOVERY SERVICES</b>				
802.1ab LLDP			Yes	
LLDP-MED			Yes	
<b>NETWORK SECURITY</b>				
IEEE 802.1x			Yes	
Guest VLAN			Yes	
RADIUS-based VLAN assignment via .1x			Yes	
MAC-based .1x			Yes	
RADIUS accounting			Yes	
Access Control Lists (ACLs)			L2 / L3 / L4	
IP-based ACLs (IPv4 and IPv6)			Yes	
MAC-based ACLs			Yes	
TCP/UDP-based ACLs			Yes	
MAC lockdown			Yes	
MAC lockdown by the number of MACs			Yes	
Control MAC # Dynamic learned entries (per port)			4096	
Control MAC # static entries (per port)			48	
IEEE 802.1x RADIUS port access authentication/type			Yes (MD5, EAP, PEAP)	

### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
Port-based security by locked MAC addresses			Yes	
Dynamic ARP inspection			No	
Broadcast, multicast, unknown unicast storm control			Yes	
DoS attacks prevention			Yes	
Protected ports			Yes	
<b>QUALITY OF SERVICE (QOS)</b>				
Port-based rate limiting			Yes, egress	
Port-based QoS			Yes	
Support for IPv6 fields			Yes	
DiffServ QoS			Yes, ingress	
IEEE 802.1p COS			Yes	
Destination MAC and IP			Yes	
IPv4 and v6 DSCP			Yes	
IPv4 and IPv6 ToS			Yes	
TCP/UDP-based			Yes	
Weighted Round Robin (WRR)			Yes	
Strict priority queue technology			Yes	
Auto-VoIP VLAN / Auto-Voice VLAN	Yes, based on OUI bytes (default database and user-based OUIs) in the phone source MAC address			
Auto-VoIP	Yes, based on protocols (SIP, H.323 and SCCP). Prioritizes traffic to a higher queue.			
Voice VLAN	Yes, based on either VLAN ID or 802.1p priority, packets are passed onto the connecting VoIP phone using LLDP-MED.			
Auto-Video VLAN			Yes	
<b>OTHER FEATURES</b>				
Advanced per-port PoE controls (enable/disable/power limit)	N/A		Yes	
Advanced per-port PoE scheduling	N/A		Yes	
Loop detection & prevention			Yes (both)	
DNS Client			Yes	
Option to enable/disable BPDU flooding when STP is disabled			Yes	
Option to enable/disable the flooding of EAPOL when 802.1x is disabled			Yes	

### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
<b>IEEE NETWORK PROTOCOLS</b>				
<ul style="list-style-type: none"> <li>• IEEE 802.3 Ethernet</li> <li>• IEEE 802.3u 100BASE-T</li> <li>• IEEE 802.3ab 1000BASE-T</li> <li>• IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX</li> <li>• IEEE 802.3af PoE</li> <li>• IEEE 802.3at PoE+ (GC510P, GC510PP only)</li> <li>• IEEE 802.3ad Trunking (LACP)</li> <li>• IEEE 802.3az Energy Efficient Ethernet (EEE)</li> </ul>			<ul style="list-style-type: none"> <li>• IEEE 802.3x Full-Duplex Flow Control</li> <li>• IEEE 802.1Q VLAN Tagging</li> <li>• IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)</li> <li>• IEEE 802.1p Class of Service</li> <li>• IEEE 802.1D Spanning Tree (STP)</li> <li>• IEEE 802.1s Multiple Spanning Tree (MSTP)</li> <li>• IEEE 802.1w Rapid Spanning Tree (RSTP)</li> <li>• IEEE 802.1x RADIUS Network Access Control</li> </ul>	
<b>MANAGEMENT, MONITORING &amp; TROUBLESHOOTING</b>				
Cloud/Remote management			Yes	
Insight mobile app & Insight Cloud Portal management			Yes	
uPnP Discovery			Yes	
Bonjour Discovery			Yes	
Networking monitoring			Yes	
Data/performance logs			Yes	
Centralized network configuration/policies (network-centric management)			Yes	
Device auto-join and configure (zero-touch provisioning)			Yes	
Multi-site, multi-network single pane-of-glass view			Yes	
Multi-switch, multi-port concurrent configuration			Yes	
Network/global password (for all Insight Managed devices on a network)			Yes (per network/subnet via NETGEAR Insight mobile app and Insight Cloud Portal)	
Network/global password (for all Insight Managed devices on a network)			Yes (per network/subnet via NETGEAR Insight app)	
Password management			Yes	
IP Access List			Yes	
Configurable management VLAN			Yes	
Admin access control via RADIUS and TACACS+			Yes	
IPv6 management			Yes	
SNTP client over UDP port 123			Yes	
Firmware upgrade direct from Cloud (via mobile device)			Yes	
Port mirroring			Yes	
Many-to-one port mirroring			Yes	
Cable test utility			Yes	
Ping and tracerout client			Yes	
Local-only web browser-based management GUI			Yes	

### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
SSL/HTTPS Web-based access (version)	Yes (v3)			
TLS Web-based access (version)	Yes (v1.0)			
TFTP/HTTP firmware upload/download	Yes			
Dual software (firmware) image	Yes			
Memory and flash log	Yes			
Syslog (RFC 3164)	Yes			
<b>POWER CONSUMPTION</b>				
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	10.1 W	10.3 W	10.3 W	10.3 W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	N/A	74.4 W	146.9 W	200.0 W
Min power (link-down standby) (Watts)	7.9 W	8.1 W	8.1 W	8.1 W
Heat Dissipation (min w/o PoE and max with full PoE) (BTU/hr)	Min: 30.03 BTU/hr Max: 38.22 BTU/hr	Min: 30.71 BTU/hr Max: 282.07 BTU/hr	Min: 30.71 BTU/hr Max: 556.94 BTU/hr	Min: 30.71 BTU/hr Max: 758.25 BTU/hr
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)			
Auto power down	Yes (deactivated by default)			
Fan(s)	Fanless	Fanless	Fanless	1
<b>PHYSICAL SPECIFICATIONS</b>				
Dimensions (W x D x H)	245 x 123 x 33 mm (9.6 x 4.8 x 1.3 in)	245 x 123 x 33 mm (9.6 x 4.8 x 1.3 in)	314 x 188 x 44 mm (12.4 x 7.4 x 1.7 in)	314 x 188 x 44 mm (12.4 x 7.4 x 1.7 in)
Weight	0.74 kg (1.63 lb)	0.77 kg (1.70 lb)	2.00 kg (4.41 lb)	2.23 kg (4.92 lb)
Mounting options	Desktop, wallmount, VESA-standard (75mm)		Desktop, wallmount, VESA-standard (75mm), rackmount	
<b>ENVIRONMENTAL SPECIFICATIONS</b>				
<b>Operating</b>				
Operating Temperature	-0° to 45°C (32° to 113°F)			
Humidity	90% maximum relative humidity (RH), non-condensing			
Altitude	10,000 ft (3,000 m) maximum			
<b>Storage</b>				
Storage Temperature	-20° to 70°C (-4° to 158°F)			
Humidity (relative)	95% maximum relative humidity (RH), non-condensing			
Altitude	10,000 ft (3,000 m) maximum			

### Technical Specifications

PRODUCT	GC110	GC110P	GC510P	GC510PP
<b>ELECTROMAGNETIC EMISSIONS AND IMMUNITY CERTIFICATIONS</b>				
Certifications	CE Mark, Commercial EN55032:2012+AC:2013, Class A EN55024:2010+A1:2015 EN61000-3-2:2014, Class A EN61000-3-3:2013 VCCI-CISPR 32:2016, Class A RCM, AS/NZS CISPR 32:2015 CLASS A 47 CFR FCC Part 15, Subpart B, Class A ICES-003:2016 Issue 6, Class A BSMI CNS13438, Class A KCC KN32 / KN35 CCC GB/T 9254-2008 <sup>1</sup>			
<b>SAFETY CERTIFICATIONS</b>				
Certifications	CB Mark, Commercial EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 UL 60950-1, 2nd, 2014 and CAN/CSA C22.2 No. 60950-1-07, 2nd, 2014 IEC 60950-1:2005 (ed.2) + Am 1:2009 + Am 2:2013 RCM, AS/NZS 60950.1:2015 BSMI CNS14336-1 KCC K60950-1 <sup>2</sup> CCC GB4943.1-2011 <sup>1</sup>			
<b>WARRANTY AND SUPPORT</b>				
Hardware Limited Warranty	5 years (switch) 2 years (power adapter)		5 years	
Next-Business-Day (NBD) Replacement	5 years			
Technical support (online, phone)	90 days free from date of purchase*			
ProSUPPORT OnCall 24x7 Service Packs**	Category 1: PMB0311 (1 yr.) PMB0331 (3 yrs.) PMB0351 (5 yrs.)			
<b>PACKAGE CONTENTS</b>				
All models	NETGEAR Insight Managed 8-Port Gigabit Ethernet Smart Cloud Switch with 2 SFP Fiber Ports Rubber footpads for tabletop installation Wall-mount kit (with 75mm VESA standard pattern) Quick Install Guide			
GC110, GC110P Only	DC power adapter (localized to country of sale)			
GC510P, GC510PP Only	AC power cord (localized to country of sale) Rack-mounting kit			

<sup>1</sup> GC110, GC110P Only

<sup>2</sup> GC510P, GC510PP Only



### Ordering Information

ORDERING INFORMATION	
GC110-100NAS	North America and Latin America
GC110-100PES	Europe
GC110-100UKS	United Kingdom
GC110-100AUS	Australia
GC110-100JPS	Japan and Asia Pacific
GC110-100KOS	Korea
GC110-100PRS	China
GC110P-100NAS	North America and Latin America
GC110P-100PES	Europe
GC110P-100UKS	United Kingdom
GC110P-100AUS	Australia
GC110P-100JPS	Japan and Asia Pacific
GC110P-100PRS	China
GC510P-100NAS	North America and Latin America
GC510P-100EUS	Europe and United Kingdom
GC510P-100AJS	Japan, Asia Pacific, and Australia
GC510PP-100NAS	North America and Latin America
GC510PP-100EUS	Europe and United Kingdom
GC510PP-100AJS	Japan, Asia Pacific, and Australia
OPTIONAL MODULES AND ACCESSORIES	
AGM731F-10000S	SFP Transceiver 1000BASE-SX (Short range, multimode)
AGM732F-10000S	SFP Transceiver 1000BASE-LX (Long range, single mode)
AGM734-10000S	SFP Transceiver 1000BASE-T Copper RJ45 GBIC
EXTENDED SUPPORT CONTRACTS	
PMB0311	1-Year OnCall 24x7 Service Pack**
PMB0331	3-Year OnCall 24x7 Service Pack**
PMB0351	5-Year OnCall 24x7 Service Pack**

\*This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and modifications to product may void the warranty; covers hardware, fans, and internal power supplies—not software or external power supplies; see <http://www.netgear.com/about/warranty/> for details.

\*\* The NETGEAR OnCall 24x7 contract provides unlimited phone, chat and email technical support for your networking product.

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