What is PoE?

- Power over Ethernet (PoE) is a networking feature defined by the IEEE 802.3af and 802.3at standards. PoE lets Ethernet cables supply power to network devices over the existing data connection.
- PoE-capable devices can be power sourcing equipment (PSE), powered devices (PDs), or sometimes both. The device that transmits power is a PSE, while the device that is powered is a PD. Most PSEs are either network switches or PoE injectors intended for use with non-PoE switches. Common examples of PDs include VoIP phones, wireless access points, and IP cameras.

What are the benefits of PoE?

- Because PoE allows you to use one cable for both power and data transmission, PoE saves you money on purchasing and running cable for networking equipment and VoIP phones.
- PoE makes installing or expanding a network much simpler and cheaper in buildings where it is too expensive or inconvenient to install new power lines.
- Using PoE lets you mount devices in places where it would be impractical to install power, such as drop ceilings.
- Using PoE can reduce the number of cables and electrical outlets needed in a crowded equipment room or wiring closet.

What is PoE+?

- The latest update to PoE is the IEEE 802.3at standard, known as PoE+. The major difference between 802.3af (PoE) and 802.3at (PoE+) is that PoE+ PSEs can provide almost twice as much power over a single Ethernet cable.
- PoE+ PSEs can supply power to both PoE and PoE+ PDs, but PoE PSEs can only supply power to PoE PDs. PoE+ PDs require more power than PoE PSEs can provide.

How much power can PoE devices supply?

- PoE devices can supply a maximum of 15.4 watts per port. However, some power is always lost over the length of the cable, and more power is lost over longer cable runs. The minimum guaranteed power available at the PD is 12.95 watts per port for PoE and 25.5 watts per port for PoE+.
- PSEs also have a maximum power budget, which is the total amount of power they can supply to PDs at one time, measured in watts. Most PSEs do not have a high enough power budget to supply the maximum possible power to all PoE-capable ports, because most users do not require that much power. When you are shopping for a PoE-capable PSE, make sure that you calculate your required power budget carefully for all of the PDs you plan to connect.

What do the PoE Classes mean?

PoE and PoE+ powered devices are assigned a class from 0-4 based on how much power they require. When a PD is connected to a PSE, it provides its class to the PSE so that the PSE can supply the correct amount of power to it. Class 1, Class 2, and Class 3 devices require very low power, low power, and medium power, respectively. Class 4 (PoE+) devices require a high amount of power and are only compatible with PoE+ PSEs.

Can I mix PoE and non-PoE devices in my network?

PoE devices can be mixed in a network with non-PoE devices, but non-PoE devices cannot provide power for PDs or be powered by PSEs. The non-PoE devices must have a separate source of power.

Which NETGEAR switches are PoE-capable?

Any NETGEAR switch with a letter "P" after the model number but before the hyphen (-), including "LP" and "PP" is PoE-capable: for example, GS308P, GS728TPP, GSM7252PS.

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NETGEAR®
BUSINESS

A new generation of Stackable Smart Managed Switches that optimize network device installation and power management through Power-over-Ethernet (PoE)

NETGEAR®
PROSAFE

From Wireless Access Points to Network Switches, NETGEAR Provides a Reliable, Affordable, Simple PoE Solution for your Business.

Power-over-Ethernet (PoE) is a revolutionary technology that is quickly being adopted by devices such as VoIP phones, IP video surveillance, and wireless access points. PoE supplies not only data but also power through that same Ethernet cable, allowing for easier deployment of devices and greatly reducing electrical wiring requirements.

PoE CLASS CHART				
PoE Class Chart	Total power the PSE needs to allocate for the port/device	Max. power available to the PD	Class Description	Powered Devices (PD)
0[1]	0.44W	0.44W-12.95W	Default Power (full)	Any that don't specify their class
1	4.0W	0.44W-3.84W	Very low power	IP phone
2	7.0W	3.84W-6.49W	Low power	IP camera
3	15.4W	6.49W-12.95W	Mid power	Single-band wireless access point, video phone
4	30.0W	12.95W-25.50W	High power	PTZ IP camera, dual-band 11N wireless access point

PD CHART		
PD Product	Product Description	Power Consumption
GS105PE* (PD-Powered Device ONLY)	Gigabit Web Managed (Plus) Switch	8W min, 22W max
GS108T	Gigabit Smart Managed Switch	6W
GS516TP	Gigabit Smart Managed Switch	10W min, 22W max
M4100-D12G (GSM5212)	12 x GbE + 4 Combo SFP Managed Switch	25W
WNAP320	Wireless 11N Access Point	5.8W
WND930	Outdoor Dual-Band Wireless 11N Access Point	15.2W min, 43.8W max
WAC510	Insight Managed AC WiFi Acces Point	9.3W
WAC720	2 x 2 11AC Access Point	11.0W
WAC730	3 x 3 11AC Access Point	12.9W
WAC740	4 x 4 Wave 2 11AC Access Point	17.9W

Default if not specified by device
*The Lifetime Hardware Warranty only covers hardware, fans and internal power supplies, and does not include external power supplies or software. Hardware modifications or customization void the warranty. The warranty is only valid for the original purchaser and cannot be transferred.

Power-over-Ethernet with NETGEAR®

ProSAFE® SWITCHES WITH PoE/PoE +/ UPoE			
MODEL	PORTS	PoE PORTS	PoE BUDGET
UNMANAGED SWITCHES			
FS116P	16 x FE	8	70W
GS305P	5	4	55.5W
GS308P	8	4	53W
GS108LP	8	8	60W
GS108PP	8	8	123W
GS116LP	16	16	76W
GS116PP	16	16 (PoE+)	183W
WEB MANAGED (PLUS) SWITCHES			
GS108PE	8 x GbE	4	53W
JGS516PE	16 x GbE	8	85W
JGS524PE	24 x GbE	12	100W
SMART MANAGED SWITCHES			
GS110TP	8 x GbE + 2 SFP	8	46W
GS510TP	8 x GbE + 2 SFP	8 (PoE+)	130W
GS516TP	16 x GbE	8 x PoE, 2 x PD	up to 76W (AC Power in), up to 22W (2 x 802.3at in), up to 11W (1 x 802.3at and 1 x 802.3af in)
GS510TLP	8 x GbE + 2 SFP	8 (PoE+)	75W
GS510TPP	8 x GbE + 2 SFP	8 (PoE+)	190W
GS724TP	24 x GbE + 2 SFP	24 (PoE+)	190W
GS418TPP	16 x GbE + 2 SFP	16 (PoE+)	240W
GS728TP	24 x GbE and 4 GbE dedicated SFP	24 (8 PoE+)	192W
GS728TPP	24 x GbE and 4 GbE dedicated SFP	24 PoE+	384W and up to 720W with EPS
GS752TP	48 x GbE and 4 GbE dedicated SFP	48 (8PoE+)	384W
GS752TPP	52	48 (PoE+)	760W
STACKABLE SMART SWITCHES			
S3300-28X-PoE+ (GS728TXP)	24 x GbE + 4 Dedicated 10G ports (2 RJ45 + 2 SFP+)	24 PoE+ w/RPS	195W and up to 720W with RPS
S3300-52X-PoE+ (GS752TXP)	48 x GbE + 4 Dedicated 10G ports (2 RJ45 + 2 SFP+)	48 PoE+ w/RPS	390W and up to 1400W with RPS
M4100 SERIES MANAGED SWITCHES (L2+ STANDALONE)			
M4100-12GF (GSM7212F)	12 x GbE with 12 shared SFP and 4 GbE PoE+	4 (PoE+)	150W
M4100-24G-PoE+ (GSM7224P)	24 x GbE + 4 Combo SFP	24 (24 PoE+)	380W and up to 720W with EPS
M4100-50G-PoE+ (GSM7248P)	50 x GbE + 4 Combo SFP	48 (48 PoE+)	380W and up to 1,440W with EPS
M4200 SERIES INTELLIGENT EDGE MANAGED SWITCHES (L2+ L3 MULTI-GIGABIT)			
M4200-10MG-PoE+ (GSM4210P)	8x1G/2.5G + 2x SFP+	8(PoE+)	240W
M4300 SERIES INTELLIGENT EDGE MANAGED SWITCHES (L2+ L3 STACKABLE)			
M4300-28G-PoE+ (GSM4328PA)	24 x GbE + 2 x 10GBASE-T + 2 x SFP+	24 (24 PoE+)	480W with 1 included PSU (APS550W) and up to 720W w/ 2 PSU
M4300-28G-PoE+ (GSM4328PB)	24 x GbE + 2 x 10GBASE-T + 2 x SFP+	24 (24 PoE+)	630W (720W w/ 220V AC input) w/ 1 included PSU (APS1000W) and up to 720W w/ 2 PSU
M4300-52G-PoE+ (GSM4352PA)	48 x GbE + 2 x 10GBASE-T + 2 x SFP+	48 (48 PoE+)	480W with 1 included PSU (APS550W) and up to 720W w/ 2 PSU
M4300-52G-PoE+ (GSM4352PB)	48 x GbE + 2 x 10GBASE-T + 2 x SFP+	24 (48 PoE+)	591W (860W w/ 220V AC input) w/ 1 included PSU (APS1000W) and up to 1010W (1440W w/ 220V AC input) w/ 2 PSU
M4300-96X (XSM4396KO)+(APM408P)	48x10GbE(PoE+)	48(PoE+)	1440W PoE Budget with 2x APS1200W PSU
INSIGHT MANAGED SWITCHES			
GC110P	10	8	62W
GC510P	10	8 (PoE+)	134W
GC510PP	10	8 (PoE+)	195W
GC728XP	28	24 (PoE+)	390W
GC752XP	52	48 (PoE+)	505W
RPS/EPS OPTIONS			
PRODUCT	DESCRIPTION		ORDERING SKU
RPS4000	External / Redundant Power Supply (up to four switches - RPS or EPS mode)		RPS4000-200NES/200AJS
APS1000W	Power Module for RPS4000		APS1000W-100NES /-100AJS
APS600W	600W Power supply for M4300 Series		APS600W-100AJS
APS1200W	1200W Power supply for M4300 Series		APS1200W-100AJS

Actual power supplied by the PoE switch may vary due to Ethernet cable length: The switch's PoE budget requirement should be slightly higher than what the PD devices actually consume.