Lenovo CE0128PB Gigabit Ethernet Campus Switch with Power over Ethernet

Product Guide (withdrawn product)

The Lenovo CE0128PB Switch is a 1/10 Gb Ethernet (GbE) switch with Power over Ethernet (PoE) that delivers a compact, high-density, cost-effective GbE solution for network environments where space and power are at a premium. Featuring a small, 1U footprint, this switch is designed for access-layer deployments in branches, retail and workgroup environments, and campus networks. It can also be used as a management network switch in the data center infrastructures.

The CE0128PB switch offers 24x 10/100/1000BASE-T (RJ-45) fixed ports with Power over Ethernet (PoE) for powering attached network devices, such as such as telephones, video cameras, IEEE 802.11ac WLAN access points, and videophones. The switch also offers 4x SFP+ ports that support 1 GbE and 10 GbE optical transceivers, 10 GbE active optical cables (AOCs), and 10 GbE direct attach copper (DAC) cables. The switch supports a wide range of L2 and L3 features that provide performance, availability, security, and manageability for campus networks.

The Lenovo CE0128PB Switch is shown in the following figure.

Figure 1. Lenovo CE0128PB Switch

Did you know?

The CE0128PB switch can simultaneously deliver up to 15.4 watts of standards-based 802.3af Class 3 PoE to a maximum of 12 ports or 30 watts of standards-based 802.3at PoE+ to a maximum of 6 ports.

The CE0128PB switch supports the LLDP-Media Endpoint Discovery (LLDP-MED) protocol, enabling the switches to automatically discover Ethernet-enabled devices, determine their power requirements, and assign virtual LAN (VLAN) membership.

The CE0128PB switch supports stacking, enabling up to eight interconnected switch devices to be managed as a single logical device.

The CE0128PB switch supports AutoInstall, which enables a switch to automatically configure itself using the resources available on the network, without manual intervention.

Key features

The CE0128PB switch is considered particularly suited for the following environments:

- 1 GbE network connectivity with Power over Ethernet for networked devices such as telephones, video cameras, IEEE 802.11ac WLAN access points, and videophones.
- Economical network connectivity for 1 GbE access layer deployments in branch and remote offices, as well as enterprise campus networks.
- 1 GbE management network connectivity in data center infrastructures.
- 1 GbE network connectivity with 10 GbE SFP+ ports for additional server, storage, or switch connections.
- Virtualized and cloud environments with multiple 1 GbE ports.
- Scalable 1 GbE networking deployments with switch stacking.
- Converged infrastructures with 1 GbE NAS or iSCSI.

The CE0128PB switch offers the following features and benefits:

- High performance
  The 1/10 GbE CE0128PB switch provides a combination of low latency and non-blocking, line-rate switching.
- Availability and redundancy
  The CE0128PB switch offers learns alternate routes automatically and performs faster convergence in case of a link or switch failure.
- Unified communications
  The CE0128PB switch provides flexibility for the most demanding converged data, voice, and video environments, delivering a reliable platform for unifying enterprise communications by providing PoE to VoIP telephones, videophones, closed-circuit security cameras, wireless access points, and other IP-enabled devices.
- Layer 3 functionality
  In addition to Layer 2 switching, the CE0128PB switch includes Layer 3 functionality, which provides security and performance benefits of inter-VLAN routing with support for static routes and dynamic routing protocols, including Routing Information Protocol (RIP) and Open Shortest Path First (OSPF).
- Quality of Service
  The CE0128PB switch supports traffic classification and processing to provide consistent network performance and efficient use of network bandwidth by allocating and scheduling resources based on service levels requirements for different data streams.
- Security
  Working as an enforcement point, the CE0128PB switch provides standards-based 802.1x port-level access control for multiple devices per port, as well as Layer 2-4 policy enforcement with Access Control Lists (ACLs).
- Stacking
  The CE0128PB supports stacking of up to eight campus switches (including intermix of CE0128TB, CE0128PB, CE0152TB, and CE0152PB switches), enabling simplified, centralized management of a single logical entity that uses a single switch image, configuration file, management IP address, and management interface.

- Simplified management
  To ease deployment, the CE0128PB switch supports the industry-standard Link Layer Discovery Protocol (LLDP) and GARP VLAN Registration Protocol (GVRP) protocols, enabling the switches to automatically discover Ethernet-enabled devices and automate VLAN configuration.

  The CE0128PB switch also support the industry-standard Link Layer Discovery Protocol (LLDP) and LLDP-Media Endpoint Discovery (LLDP-MED) protocol, enabling the switches to automatically discover Ethernet-enabled devices, determine their power requirements, and assign VLAN membership.

- AutoInstall
  The CE1028PB switch supports the AutoInstall feature, which enables upgrading the switch software image and installing configuration files via TFTP automatically during the boot process by using the resources available on the network.

Components and connectors

The following figure shows the front (port-side) panel of the CE0128PB switch.

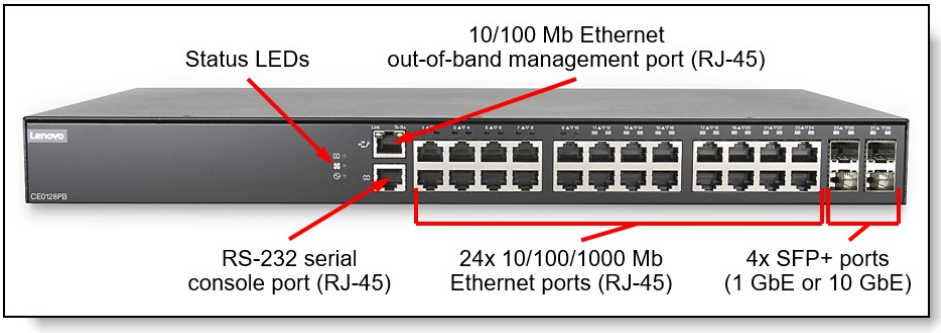

Figure 2. Front panel of the CE0128PB switch

The front panel of the CE0128PB switch includes the following components:

- 24x RJ-45 ports for 10/100/1000 Mb Ethernet connections over twisted pair.
- 4x SFP/SFP+ ports to attach SFP/SFP+ transceivers for 1 Gb or 10 Gb Ethernet connections, or DAC cables or AOCs for 10 Gb Ethernet connections.
- One RJ-45 10/100 Mb Ethernet port for out-of-band management.
- One RJ-45 RS-232 serial console port that provides another means to configure the switch.
- LEDs that display the status of the switch and the network.

The following figure shows the rear (non-port-side) panel of the CE0128PB switch.

Figure 3. Rear panel of the CE0128PB switch

The rear panel of the CE0128PB switch contains the IEC 320-C14 power connector.

System specifications

The following table lists the CE0128PB switch specifications.

Note: The supported hardware options and software features listed in this product guide are based on the Lenovo Campus Networking Operating System (Campus NOS) version 8.4.3. For details about specific Campus NOS software releases that introduced support for certain hardware options and software features, refer to the Release Notes for the particular software release.

Table 1. CE0128PB switch specifications

Attribute	Specification
Form factor	1U rack mount.
Ports	• 24x 1 Gb Ethernet fixed ports (RJ-45) with Power over Ethernet (PoE). • 4x SFP/SFP+ ports.
Media types	1 Gb Ethernet fixed ports (1000BASE-T): • RJ-45 UTP Category 5 or 5e 1 Gb Ethernet SFP: • 1 GbE short-wavelength (SX) SFP transceivers • 1 GbE long-wavelength (LX) SFP transceivers 10 Gb Ethernet SFP+: • 10 GbE short-range (SR) SFP+ transceivers • 10 GbE long-range (LR) SFP+ transceivers • 10 GbE extended-range (ER) SFP+ transceivers • 10 GbE RJ-45 SFP+ transceivers • 10 GbE SFP+ active optical cables • 10 GbE SFP+ DAC cables 1/10 Gb Ethernet SFP+: 1/10 GbE SX/SR SFP+ transceivers
Port speeds	• 1 GbE fixed ports: 10 / 100 / 1000 Mbps auto-sensing • 1 GbE SFP transceivers: 1 Gbps • 10 GbE SFP+ transceivers, DAC cables, and AOCs: 10 Gbps • 1/10 GbE SFP+ transceivers: 1 Gbps or 10 Gbps
Switching method	Store-and-forward.
Data traffic types	Unicast, multicast, broadcast.
Software features	Lenovo Campus Networking OS (Campus NOS): Layer 2 switching, Layer 3 switching, virtual local area networks (VLANs), VLAN tagging, spanning tree protocol (STP), link aggregation (trunk) groups (LAGs), link dependency, quality of service (QoS), stacking, IPv4/IPv6 management, IPv4/IPv6 routing, IPv4/IPv6 virtual router redundancy protocol (VRRP), IPv4/IPv6 policy-based routing (PBR), IPv4/IPv6 protocol independent multicast (PIM).
Performance	Non-blocking architecture with wire-speed forwarding of traffic: • 100% line-rate performance • Up to 128 Gbps switching throughput • As low as 2 µs (10 Gbps) or 4 µs (1 Gbps) port-to-port switching latency • Up to 95 Million packets per second (Mpps) (64-byte packets) • Up to 9216-byte jumbo frames • Buffer size: 1.5 MB

Attribute	Specification
Scalability	• MAC address forwarding database entries: 16384 • VLANs: 4093 • PVST instances: 64 • MSTP instances: 31 • Link aggregation groups: 64 • Ports in a link aggregation group: 8 • IP interfaces: 192 • ARP cache entries: 512 • Routing table entries: 512 • ACL entries: 256
Cooling	Tree fixed, internal, variable-speed system fans with side-to-side (left-to-right) airflow.
Power supply	One fixed 260 W AC (100 - 240 V) power supply (IEC 320-C14 connector).
Power over Ethernet (PoE)	• RJ-45 fixed ports: Up to 15.4 W / 30 W power output (PoE / PoE+). • SFP+ ports: No PoE support. • Maximum PoE/PoE+ power output for the switch on all ports: 185 W.
Hot-swap parts	SFP/SFP+ transceivers, SFP+ DAC cables, and SFP+ AOCs.
Management ports	1x 10/100 Mb Ethernet port (RJ-45), 1x RS-232 port (RJ-45).
Management interfaces	Web-based GUI; Command line interface (CLI); SNMP v1, V2, and v3.
Security features	Secure Shell (SSH); Secure Copy (SCP); Secure FTP (sFTP); user level security; Role-based Access Control (RBAC); RADIUS and TACACS+ authentication; access control lists (ACLs), port security; port-based network access control (IEEE 802.1x).
Warranty services and upgrades	Three-year (Machine Type 7Z34) or limited lifetime (Machine Type 7Z36) Customer Replaceable Unit (CRU) limited warranty with 9x5 coverage and Next Business Day (NBD) parts delivered. Optional warranty service upgrades are available through Lenovo: 9x5 coverage with NBD onsite response, 24x7 coverage with 2-hour or 4-hour onsite response, 6-hour or 24-hour committed repair (select countries), up to 5 years of warranty coverage (for models with 3-year warranty), 1-year or 2-year post-warranty extensions (for models with 3-year warranty), Premier support, and Basic installation services.
Mean Time Between Failures	Over 600 000 hours MTBF at 25 ºC (77 ºF).
Dimensions	Height: 44 mm (1.7 in.); width: 441 mm (17.4 in.); depth: 254 mm (10.0 in.)
Weight	3.7 kg (8.2 lb).

Models

The following table lists the CE0128PB switch models.

Table 2. CE0128PB switch models

Description	Part number	Machine Type/Model	Feature code
Lenovo CE0128PB Switch (3-Year Warranty)	7Z340012WW	7Z34CTO2WW	B59P
Lenovo CE0128PB Switch (Limited Lifetime Warranty)	7Z360012WW	7Z36CTO2WW	B59T

The CE0128PB switch models ship with the following items:

- Rack Mount Brackets (2-post)
- RJ-45 (plug) to DB-9 (jack) Console Cable (2 m)
- *Electronic Publications Flyer*

Configuration notes:

- Power cables are not included and should be ordered for the switch (see Power supplies and cables for details).
- SFP/SFP+ transceivers and cables are not included and should be ordered for the switch (see Transceivers and cables for details).

Transceivers and cables

With the flexibility of the CE0128PB switch, customers can choose the following connectivity technologies:

- For 1 GbE links, customers can use RJ-45 fixed ports with RJ-45 UTP Category 5 or 5e cables for distances up to 100 meters.

  For longer distances, the 1000BASE-SX transceiver supports distances up to 220 meters with OM1 (62.5 µ) or up to 550 meters with OM2 (50 µ) multimode fiber optic (MMF) cables, or the 1000BASE-LX transceiver supports distances up to 10 kilometers with single-mode fiber optic (SMF) cables.

- For 10 GbE links, 10 GbE SFP+ direct-attached copper (DAC) cables can be used for distances up to 7 meters, or 10 GbE SFP+ active optical cables (AOCs) can be used for distances up to 20 meters. The AOCs and DAC cables have SFP+ connectors on each end, and they do not need separate transceivers. For distances up to 30 meters, the 10GBASE-T SFP+ transceiver can be used with UTP Category 6a or 7 cables.

  For longer distances, the 10GBASE-SR transceiver supports distances up to 300 meters with OM3 or up to 400 meters with OM4 MMF cables. The 10GBASE-LR transceivers can support distances up to 10 kilometers with SMF cables. For extended distances, the 10GBASE-ER transceivers can support distances up to 40 kilometers with SMF cables.

The following table lists the supported cables and transceivers.

Table 3. Supported SFP/SFP+ transceivers and cables

Description	Part number	Feature code	Maximum quantity
UTP Category 5e cables for RJ-45 fixed and management ports			
0.6m Blue Cat5e Cable	40K5679	3801	25
1.5m Blue Cat5e Cable	40K8785	3802	25
3m Blue Cat5e Cable	40K5581	3803	25
10m Blue Cat5e Cable	40K8927	3804	25
25m Blue Cat5e Cable	40K8930	3805	25
SFP transceivers - 1 GbE			
Lenovo 1000BASE-SX SFP Transceiver	81Y1622	3269	4
Lenovo 1000BASE-LX SFP Transceiver	90Y9424	A1PN	4
SFP+ transceivers - 10 GbE			
Lenovo Dual Rate 1/10Gb SX/SR SFP+ Transceiver	00MY034	ATTJ	4
Lenovo 10Gb SFP+ SR Transceiver (10GBASE-SR)	46C3447	5053	4
Lenovo 10GBASE-LR SFP+ Transceiver	00FE331	B0RJ	4
Lenovo 10Gb SFP+ ER Transceiver (10GBASE-ER)	90Y9415	A1PP	4
Lenovo 10GBASE-T SFP+ Transceiver	7G17A03130	AVV1	4
Optical cables for 1 GbE SX SFP and 10 GbE SR SFP+ transceivers			
Lenovo 1m LC-LC OM3 MMF Cable	00MN502	ASR6	4
Lenovo 3m LC-LC OM3 MMF Cable	00MN505	ASR7	4
Lenovo 5m LC-LC OM3 MMF Cable	00MN508	ASR8	4
Lenovo 10m LC-LC OM3 MMF Cable	00MN511	ASR9	4
Lenovo 15m LC-LC OM3 MMF Cable	00MN514	ASRA	4
Lenovo 25m LC-LC OM3 MMF Cable	00MN517	ASRB	4
Lenovo 30m LC-LC OM3 MMF Cable	00MN520	ASRC	4
SFP+ active optical cables - 10 GbE			
Lenovo 1m SFP+ to SFP+ Active Optical Cable	00YL634	ATYX	4
Lenovo 3m SFP+ to SFP+ Active Optical Cable	00YL637	ATYY	4
Lenovo 5m SFP+ to SFP+ Active Optical Cable	00YL640	ATYZ	4
Lenovo 7m SFP+ to SFP+ Active Optical Cable	00YL643	ATZ0	4
Lenovo 15m SFP+ to SFP+ Active Optical Cable	00YL646	ATZ1	4
Lenovo 20m SFP+ to SFP+ Active Optical Cable	00YL649	ATZ2	4
SFP+ passive direct-attach cables - 10 GbE			
Lenovo 0.5m Passive SFP+ DAC Cable	00D6288	A3RG	4
Lenovo 1m Passive SFP+ DAC Cable	90Y9427	A1PH	4
Lenovo 1.5m Passive SFP+ DAC Cable	00AY764	A51N	4
Lenovo 2m Passive SFP+ DAC Cable	00AY765	A51P	4
Lenovo 3m Passive SFP+ DAC Cable	90Y9430	A1PJ	4
Lenovo 5m Passive SFP+ DAC Cable	90Y9433	A1PK	4
Lenovo 7m Passive SFP+ DAC Cable	00D6151	A3RH	4

Description	Part number	Feature code	Maximum quantity
SFP+ active direct-attach cables - 10 GbE			
Lenovo 1m Active DAC SFP+ Cable	00VX111	AT2R	4
Lenovo 3m Active DAC SFP+ Cable	00VX114	AT2S	4
Lenovo 5m Active DAC SFP+ Cable	00VX117	AT2T	4

The network cables that can be used with the switch are listed in the following table.

Table 4. CE0128PB switch network cabling requirements

Transceiver	Standard	Cable	Connector
10 Gb Ethernet			
10Gb SR SFP+ (46C3447) 1/10Gb SFP+ (00MY034)	10GBASE-SR	Up to 30 m with MMF cables supplied by Lenovo (see Table 3); up to 300 m with OM3 or up to 400 m with OM4 MMF cables.	LC
10Gb LR SFP+ (00FE331)	10GBASE-LR	Up to 10 km with 1310 nm SMF cables.	LC
10Gb ER SFP+ (90Y9415)	10GBASE-ER	Up to 40 km with 1310 nm SMF cables.	LC
10Gb RJ-45 SFP+ (7G17A03130)	10GBASE-T	Up to 30 m with UTP Category 6a or 7 cables.	RJ-45
Active optical cables	10GBASE-SR	Up to 20 m (see Table 3).	SFP+
DAC cables	10GSFP+Cu	Up to 7 m (see Table 3).	SFP+
1 Gb Ethernet			
Fixed 1 GbE ports	1000BASE-T	Up to 25 m with UTP cables supplied by Lenovo (see Table 3); up to 100 m with UTP Category 5 or 5e cables.	RJ-45
1Gb SX SFP (81Y1622) 1/10Gb SFP+ (00MY034)	1000BASE-SX	Up to 30 m with MMF cables supplied by Lenovo (see Table 3); up to 550 m with 50 µ OM2 or 220 m with 62.5 µ OM1 MMF cables.	LC
1Gb LX SFP (90Y9424)	1000BASE-LX	Up to 10 km with 1310 nm SMF cables.	LC
Management ports			
10/100 Mb Ethernet port	100BASE-TX	Up to 25 m with UTP cables supplied by Lenovo (see Table 3); up to 100 m with UTP Category 5 or 5e cables.	RJ-45
Serial port	RS-232	DB-9-to-RJ-45 (comes with the switch).	RJ-45

Software

The CE0128PB switch ships with the Lenovo Campus NOS that offers the following software features:

- Scalability and performance:
  - Media access control (MAC) address learning with automatic updates
  - Static and 802.3ad Link Aggregation Control Protocol (LACP) link aggregation groups (LAGs)
  - Configurable load balancing over LAGs (source or destination MAC, VLAN, or IP)
  - Broadcast, multicast, and unicast storm recovery
  - IPv4 IGMP/IPv6 MLD snooping and querier to limit flooding of IP multicast traffic
- Availability and redundancy:
  - 802.1D Spanning Tree Protocol (STP) for providing Layer 2 (L2) redundancy
  - 802.1s Multiple STP (MSTP) for topology optimization
  - 802.1w Rapid STP (RSTP) for rapid convergence for delay-sensitive traffic, such as voice
  - Per-VLAN STP (PVST) and Rapid PVST (RPVST) enhancements
  - Unidirectional Link Detection (UDLD) protocol
  - Link dependency to support active/standby configurations of NIC teaming on servers
  - L2 Loop Protection to detect loops in downstream switches that do not run STP
- Virtual Local Area Networks (VLANs):
  - Up to 4093 VLANs
    - VLAN 1 is the default VLAN
    - Up to 4092 VLANs can be configured
  - Port-based, MAC-based, subnet-based, and protocol-based VLANs
  - 802.1Q VLANs and VLAN tagging on all ports
  - 802.1Q-in-Q VLAN tunneling (Double VLAN [DVLAN])
  - Private VLANs
  - Voice VLAN
  - Multicast VLAN Registration (MVR)
- Stacking:
  - Up to eight switches in a stack
  - Single IP management
  - Ring or line stacking topology
  - Link aggregation across member devices with local preference
  - Intermix of CE0128TB, CE0128PB, CE0152TB, and CE0152PB switches in the same stack
- Security:
  - MAC-, IPv4-, and IPv6-based access control lists (ACLs)
  - Management access control and administration list (MACAL)
  - 802.1x port-based network access control
  - Protected port groups
  - Port security
  - Multiple user IDs and passwords
  - Privilege-based user access control
  - Authentication and authorization through local user database, RADIUS, or TACACS+
  - Protection from Denial of Service (DoS) attacks
  - DHCP snooping (IPv4/IPv6)
- Quality of Service (QoS):
  - IEEE 802.1p, IP ToS/DSCP, DiffServ, and ACL-based traffic classification and processing
  - Eight output Class of Service (COS) queues per port for processing qualified traffic
  - Weighted round robin or strict priority queue scheduling
  - Traffic shaping and re-marking based on defined policies
  - IPv4/IPv6 ACL metering

- IP v4 Layer 3 functions:
  - Host management
  - Routed ports (Switch ports as Layer 3 interfaces)
  - Address Resolution Protocol (ARP) and Proxy ARP
  - IP forwarding
  - IP filtering with ACLs
  - Static routes
  - Dynamic routing protocols:
    - Routing Information Protocol (RIP) v1/v2
    - Open Shortest Path First (OSPF) v2
    - Distance Vector Multicast Routing Protocol (DVMRP)
  - Virtual Router Redundancy Protocol (VRRP)
  - Policy-based routing (PBR)
  - Dynamic Host Configuration Protocol (DHCP) server, client, and relay operations
  - Internet Group Management Protocol (IGMP) v1/v2/v3
  - Protocol Independent Multicast (PIM) in Sparse Mode (PIM-SM) and Dense Mode (PIM-DM)
  - Domain Name System (DNS) client
- IPv6 Layer 3 functions:
  - IPv6 host management
  - Routed ports (Switch ports as Layer 3 interfaces)
  - Neighbor Discovery
  - IPv6 forwarding
  - IPv6 filtering with ACLs
  - Static routes
  - Dynamic routing protocol: OSPF v3
  - VRRP
  - PBR
  - DHCP server, client, and relay operations
  - Multicast Listener Discovery (MLD)
  - PIM-SM and PIM-DM
  - DNS client
- Monitoring:
  - Switch LEDs for port status and switch status indication
  - Port mirroring (Switched Port Analyzer [SPAN] / Remote SPAN [RSPAN]) for analyzing traffic
  - Remote Monitoring (RMON) agent to collect statistics and monitor switch performance
  - Buffered log, console log, and syslog for change tracking and logging
  - Email alerts
  - sFlow agent for monitoring traffic in data networks (an sFlow analyzer required elsewhere)
- Manageability:
  - Web GUI interface (HTTP/HTTPS)
  - Command line interface (CLI)
    - Serial interface
    - Telnet
    - Secure Shell (SSH) v2
  - Simple Network Management Protocol (SNMP V1, V2, and V3)
  - AutoInstall for automated switch software image upgrade and configuration
  - HTTP, TFTP, FTP, Secure FTP (sFTP), and Secure Copy (SCP) file transfer protocols
  - Industry Standard Discovery Protocol (ISDP) for discovering Cisco devices running CDP
  - Link Layer Discovery Protocol (LLDP) for discovering network devices
  - LLDP Media Endpoint Discovery (LLDP-MED)
  - Generic Attribute Registration Protocol (GARP) for registering VLAN IDs and multicast group membership
  - GARP VLAN Registration Protocol (GVRP) for dynamic VLAN registration
  - GARP Multicast Registration Protocol (GMRP) for dynamic L2 multicast registration
  - Dual firmware images
  - Simple Network Time Protocol (SNTP) for switch clock synchronization

Ethernet standards

The CE0128PB switch supports the following Ethernet standards:

- IEEE 802.1Q VLANs and VLAN tagging
- IEEE 802.3ac VLAN tagging
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.1D Spanning Tree Protocol (STP)
- IEEE 802.1s Multiple STP (MSTP)
- IEEE 802.1w Rapid STP (RSTP)
- IEEE 802.1p Class of Service (CoS) prioritization
- IEEE 802.3x Full-duplex Flow Control
- IEEE 802.1x Port-based authentication
- IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)
- IEEE 802.3af Power over Ethernet (PoE)
- IEEE 802.3at Power over Ethernet Plus (PoE+)
- IEEE 802.3az Energy Efficient Ethernet (EEE)
- IEEE 802.3 10BASE-T copper twisted pair Ethernet (10 Mb)
- IEEE 802.3u 100BASE-TX copper twisted pair Fast Ethernet (100 Mb Ethernet)
- IEEE 802.3ab 1000BASE-T copper twisted pair Gigabit Ethernet
- IEEE 802.3z 1000BASE-SX short range fiber optics Gigabit Ethernet
- IEEE 802.3z 1000BASE-LX long range fiber optics Gigabit Ethernet
- IEEE 802.3ae 10GBASE-SR short range fiber optics 10 Gb Ethernet
- IEEE 802.3ae 10GBASE-LR long range fiber optics 10 Gb Ethernet
- IEEE 802.3ae 10GBASE-ER extended range fiber optics 10 Gb Ethernet
- IEEE 802.3an 10GBASE-T copper twisted pair 10 Gb Ethernet
- SFF-8431 10GSFP+Cu SFP+ Direct Attach Cable

Cooling

The CE0128PB switch ships with three fixed, internal, variable-speed system fans that provide side-to-side (left-to-right) airflow.

Power supplies and cables

The CE0128PB switch ships with one 260 W AC power supply that has one IEC 320-C14 connector.

The models of the CE0128PB switch that are listed in Models ship without a power cable. The following table lists the power cables that can be ordered for the switch (one power cable is required per switch).

Table 5. Power cable options

Description	Part number	Feature code
Rack power cables		
1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	39Y7937	6201
1.8m, 10A/100-250V, 2xC13PM to IEC 320-C14 Rack Power Cable	43V6034	6568
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	4L67A08366	6311
2.8m, 10A/100-250V, C13 to IEC 320-C20 Rack Power Cable	39Y7938	6204
4.3m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	39Y7932	6263
Line cords		
Argentina 2.8m, 10A/250V, C13 to IRAM 2073 Line Cord	39Y7930	6222
Australia/New Zealand 2.8m, 10A/250V, C13 to AS/NZ 3112 Line Cord	39Y7924	6211
Brazil 2.8m, 10A/125V, C13 to NBR 6147 Line Cord	39Y7929	6223

Description	Part number	Feature code
China 2.8m, 10A/250V C13 to GB 2099.1 Line Cord	39Y7928	6210
Denmark 2.8m, 10A/250V, C13 to DK2-5a Line Cord	39Y7918	6213
European 2.8m, 10A/250V, C13 to CEE7-VII Line Cord	39Y7917	6212
India 2.8m, 10A/250V, C13 to IS 6538 Line Cord	39Y7927	6269
Israel 2.8m, 10A/250V, C13 to SI 32 Line Cord	39Y7920	6218
Italy 2.8m, 10A/250V, C13 to CEI 23-16 Line Cord	39Y7921	6217
Japan 2.8m, 12A/125V, C13 to JIS C-8303 Line Cord	46M2593	A1RE
Korea 2.8m, 12A/250V, C13 to KS C8305 Line Cord	39Y7925	6219
South Africa 2.8m, 10A/250V, C13 to SABS 164 Line Cord	39Y7922	6214
Switzerland 2.8m, 10A/250V, C13 to SEV 1011-S24507 Line Cord	39Y7919	6216
Taiwan 2.8m, 10A/250V, C13 to CNS 10917-3 Line Cord	00CG265	A53E
Taiwan 2.8m, 15A/125V, C13 to CNS 10917-3 Line Cord	00CG267	A53F
United Kingdom 2.8m, 10A/250V, C13 to BS 1363/A Line Cord	39Y7923	6215
United States 2.8m, 10A/250V, C13 to NEMA 6-15P Line Cord	46M2592	A1RF
United States 4.3m, 10A/125V, C13 to NEMA 5-15P Line Cord	39Y7931	6207

Rack installation

The CE0128PB switch ships with two mounting brackets for 19-inch, 2-post rack installation.

Physical specifications

The CE0128PB switch features the following dimensions and weight (approximate):

- Height: 44 mm (1.7 in.)
- Width: 441 mm (17.4 in.)
- Depth: 254 mm (10.0 in.)
- Maximum weight: 3.7 kg (8.2 lb)

Operating environment

The CE0128PB switch is supported in the following operating environment:

- Temperature: 0 - 50 ºC (32 - 122 ºF).
- Relative humidity: 5 - 95% (Non-condensing)
- Altitude: Up to 3000 m (9,842 ft)
- Airflow: Side-to-side (Left-to-right)
- Electrical input:
  - 100 - 127 V AC (nominal); 50 Hz / 60 Hz; 2.37 A
  - 200 - 240 V AC (nominal); 50 Hz / 60 Hz; 1.19 A
- Power consumption (with PoE/PoE+): 237 W
- Heat dissipation: 809 BTU/hour
- Acoustic noise emission: Less than 66 dB

Warranty services and upgrades

The CE0128PB switch comes with a 3-year (Machine Type 7Z34) or limited lifetime (Machine Type 7Z36) Customer Replaceable Unit (CRU) limited warranty with 9x5 Next Business Day (NBD) Parts Delivered.

Also available are Lenovo Services warranty upgrades and post-warranty maintenance agreements, with a well-defined scope of services, including service hours, response time, term of service, and service agreement terms and conditions.

The following Lenovo warranty service upgrades are available:

- Warranty and maintenance service upgrades:
  - Foundation Service: 9x5 service coverage with next business day onsite response
  - Essential Service: 24x7 service coverage with 4-hour onsite response or 24-hour committed repair (available only in select countries)
  - Advanced Service: 24x7 service coverage with 2-hour onsite response or 6-hour committed repair (available only in select countries)
  - Foundation, Essential, or Advanced service period:
    - For switch models with a 3-year warranty:
      - 3, 4, or 5 years
      - 1-year or 2-year post-warranty extensions
    - For switch models with a limited lifetime warranty: 1 year.
- Premier Support
  The Premier Support service offers direct access to Lenovo's most advanced technicians for faster troubleshooting with single point of contact for end-to-end problem resolution and collaborative third-party software support.
- Basic Hardware Installation Services
  Lenovo experts can seamlessly manage the physical installation of your server, storage, or networking hardware. Working at a time convenient for you (business hours or off shift), the technician will unpack and inspect the systems on your site, install options, mount in a rack cabinet, connect to power and network, check and update firmware to the latest levels, verify operation, and dispose of the packaging, allowing your team to focus on other priorities.

Lenovo warranty service upgrade offerings are country-specific. Not all warranty service upgrades are available in every country. For information about Lenovo warranty service upgrade offerings that are available in your country or area, refer to the following resources:

- Service part numbers in Lenovo Data Center Solutions Configurator (DCSC):
  http://dcsc.lenovo.com/#/services
- Lenovo Services Availability Locator
  https://lenovolocator.com/

The firmware upgrade entitlement is included for the entire warranty period (base or with upgrades). The options that are installed in the switch assume the switch's base warranty and any Lenovo warranty service upgrade for the switch.

Note: The limited lifetime warranty is active until the switch reaches its end of service date announced by Lenovo (Lenovo typically provides support for at least five years following the last order date of a product).

Some countries might have different warranty terms and conditions than the standard warranty. This is due to local business practices or laws in the specific country. Local service teams can assist in explaining country-specific terms when needed. Examples of country-specific warranty terms are second or longer business day parts delivery or parts-only base warranty.

If warranty terms and conditions include onsite labor for repair or replacement of parts, Lenovo will dispatch a service technician to the customer site to perform the replacement. Onsite labor under base warranty is limited to labor for replacement of parts that have been determined to be field-replaceable units (FRUs). Parts that are determined to be customer-replaceable units (CRUs) do not include onsite labor under base warranty.

If warranty terms include parts-only base warranty, Lenovo is responsible for delivering only replacement parts that are under base warranty (including FRUs) that will be sent to a requested location for self-service. Parts-only service does not include a service technician being dispatched onsite. Parts must be changed at customer's own cost and labor and defective parts must be returned following the instructions supplied with the spares parts. For service definitions, country-specific details, and service limitations, please refer to the following documents:

- Lenovo Statement of Limited Warranty for Infrastructure Solutions Group (ISG) Servers and System Storage
  http://pcsupport.lenovo.com/us/en/solutions/ht503310
- Lenovo Data Center Services Agreement
  http://support.lenovo.com/us/en/solutions/ht116628
- End of Service Announcement for Server and Storage Products
  http://pcsupport.lenovo.com/us/en/solutions/endofservice

Regulatory compliance

The CE0128PB switch conforms to the following regulations:

- United States: FCC Part 15, Class A; UL 60950-1 / UL 62368-1
- Canada: ICES-003, Issue 6, Class A; CSA C22.2 60950-1 / CSA C22.2 62368-1
- Mexico: NOM-19
- Argentina: IEC 60950-1
- European Union:
  - CE Mark (EN55032 Class A, EN55024, EN61000-3-2, EN61000-3-3)
  - ROHS Directives 2011/65/EU and 2015/863/EU (with exemptions)
- Germany: TUV-GS (EN 60950-1 / EN 62368-1, EK1-ITB2000)
- Russia, Kazakhstan, Belarus: EAC (TR CU 020/2011 and TR CU 004/2011)
- China: CCC GB4943.1, GB/T9254, YD/T993, CECP CQC3140
- Japan: VCCI-CISPR32:2016, Class A
- Taiwan: BSMI CNS13438, Class A; CNS14336-1
- Korea: KN32, Class A; KN35
- Australia/New Zealand: AS/NZS CISPR 32 Class A
- CB Certificate and CB Test Report: IEC 60950-1

Network connectivity

The following table lists the Ethernet LAN switches that are currently offered by Lenovo that can be used with the CE0128PB switch for network connectivity.

Table 6. Ethernet LAN switches

Description	Part number
1 Gb Ethernet switches	
Lenovo CE0128TB Switch (3-Year Warranty)	7Z340011WW
Lenovo CE0128TB Switch (Limited Lifetime Warranty)	7Z360011WW
Lenovo CE0152TB Switch (3-Year Warranty)	7Z350021WW
Lenovo CE0152TB Switch (Limited Lifetime Warranty)	7Z370021WW
Lenovo CE0152PB Switch (3-Year Warranty)	7Z350022WW

Description	Part number
Lenovo CE0152PB Switch (Limited Lifetime Warranty)	7Z370022WW
Lenovo RackSwitch G7028 (Rear to Front)	7159BAX
Lenovo RackSwitch G7052 (Rear to Front)	7159CAX
Lenovo RackSwitch G8052 (Rear to Front)	7159G52
Lenovo ThinkSystem NE0152T RackSwitch (Rear to Front)	7Y810011WW
Lenovo ThinkSystem NE0152TO RackSwitch (Rear to Front, ONIE)	7Z320O11WW
10 Gb Ethernet switches	
Lenovo ThinkSystem NE1032 RackSwitch (Rear to Front)	7159A1X
Lenovo ThinkSystem NE1032T RackSwitch (Rear to Front)	7159B1X
Lenovo ThinkSystem NE1072T RackSwitch (Rear to Front)	7159C1X
Lenovo RackSwitch G8124E (Rear to Front)	7159BR6
Lenovo RackSwitch G8272 (Rear to Front)	7159CRW
Lenovo RackSwitch G8296 (Rear to Front)	7159GR6
25 Gb Ethernet switches	
Lenovo ThinkSystem NE2572 RackSwitch (Rear to Front)	7159E1X
Lenovo ThinkSystem NE2572O RackSwitch (Rear to Front, ONIE)	7Z210O21WW
100 Gb Ethernet switches	
Lenovo ThinkSystem NE10032 RackSwitch (Rear to Front)	7159D1X
Lenovo ThinkSystem NE10032O RackSwitch (Rear to Front, ONIE)	7Z210O11WW

For more information, see the list of Product Guides in the Top-of-rack Switches category:
http://lenovopress.com/servers/options/switches#rt=product-guide

Storage connectivity

The following table lists the external storage systems that are currently offered by Lenovo that can be used with the CE0128PB switch for external NAS or iSCSI SAN storage connectivity.

Table 7. External storage systems: DE Series

Description	Part number	
	Worldwide	Japan
Lenovo ThinkSystem DE Series Storage (iSCSI connectivity)		
Lenovo ThinkSystem DE2000H 10GBASE-T Hybrid Flash Array LFF	7Y70A003WW	7Y701001JP
Lenovo ThinkSystem DE2000H 10GBASE-T Hybrid Flash Array SFF	7Y71A002WW	7Y711005JP
Lenovo ThinkSystem DE2000H iSCSI Hybrid Flash Array LFF	7Y70A004WW	7Y701000JP
Lenovo ThinkSystem DE2000H iSCSI Hybrid Flash Array SFF	7Y71A003WW	7Y711006JP
Lenovo ThinkSystem DE4000H iSCSI Hybrid Flash Array 4U60	7Y77A000WW	7Y771002JP
Lenovo ThinkSystem DE4000H iSCSI Hybrid Flash Array LFF	7Y74A002WW	7Y74A002JP
Lenovo ThinkSystem DE4000H iSCSI Hybrid Flash Array SFF	7Y75A001WW	7Y75A001JP
Lenovo ThinkSystem DE4000F iSCSI All Flash Array SFF	7Y76A002WW	7Y76A002JP
Lenovo ThinkSystem DE6000H iSCSI Hybrid Flash Array 4U60	7Y80A002WW	7Y801000JP
Lenovo ThinkSystem DE6000H iSCSI Hybrid Flash Array SFF	7Y78A002WW	7Y781000JP
Lenovo ThinkSystem DE6000F iSCSI All Flash Array SFF	7Y79A002WW	7Y79A002JP

Table 8. External storage systems: DM Series

Description	Part number
Lenovo ThinkSystem DM Series Storage (NAS or iSCSI connectivity)	
Lenovo ThinkSystem DM3000H Hybrid Storage Array (2U12 LFF, CTO only)	7Y42CTO1WW
Lenovo ThinkSystem DM3000H 48TB (12x 4TB HDDs) (Universal SFP+)	7Y420001EA*
Lenovo ThinkSystem DM3000H 48TB (12x 4TB HDDs) (10GBASE-T)	7Y420002EA*
Lenovo ThinkSystem DM5000H Hybrid Storage Array (2U24 SFF, CTO only)	7Y57CTO1WW
Lenovo ThinkSystem DM5000H 11.5TB (12x 960GB SSDs) (Universal SFP+)	7Y570001EA*
Lenovo ThinkSystem DM5000H 11.5TB (12x 960GB SSDs) (10GBASE-T)	7Y570002EA*
Lenovo ThinkSystem DM5000H 29TB (24x 1.2TB 10K HDDs) (Universal SFP+)	7Y570003EA*
Lenovo ThinkSystem DM5000H 29TB (24x 1.2TB 10K HDDs) (10GBASE-T)	7Y570004EA*
Lenovo ThinkSystem DM5000F Flash Storage Array (2U24 SFF, CTO only)	7Y41CTO1WW
Lenovo ThinkSystem DM7000H Hybrid Storage Array (3U, CTO only)	7Y56CTO1WW
Lenovo ThinkSystem DM7000F Flash Storage Array (3U, CTO only)	7Y40CTO1WW

* Available only in EMEA.

Table 9. External storage systems: DS Series

Description	Part number		
	Worldwide	Japan	PRC
Lenovo ThinkSystem DS Series Storage (iSCSI connectivity)			
Lenovo ThinkSystem DS2200 LFF FC/iSCSI Dual Controller Unit	4599A31	4599A3J	4599A3C
Lenovo ThinkSystem DS2200 SFF FC/iSCSI Dual Controller Unit	4599A11	4599A1J	4599A1C
Lenovo ThinkSystem DS4200 LFF FC/iSCSI Dual Controller Unit	4617A31	4617A3J	4617A3C
Lenovo ThinkSystem DS4200 SFF FC/iSCSI Dual Controller Unit	4617A11	4617A1J	4617A1C
Lenovo ThinkSystem DS6200 SFF FC/iSCSI Dual Controller Unit	4619A11	4619A1J	4619A1C
DS6200F 12x 400GB 10DWD SSDs, 1x 8Gb FC SFP, 512 Snapshots, Replication	4619A1F	4619J1F	4619C1F
DS6200F 12x 800GB 3DWD SSDs, 1x 8Gb FC SFP, 512 Snapshots, Replication	4619A2F	4619J2F	4619C2F
DS6200F 12x 1.6TB 3DWD SSDs, 1x 8Gb FC SFP, 512 Snapshots, Replication	4619A3F	4619J3F	4619C3F
DS6200F 12x 3.84TB 1DWD SSDs, 1x 8Gb FC SFP, 512 Snapshots, Replication	4619A4F	4619J4F	4619C4F

Table 10. External storage systems: V Series and Storwize for Lenovo

Description	Part number
Lenovo Storage V Series (iSCSI connectivity)	
Lenovo Storage V3700 V2 LFF Control Enclosure	6535C1D
Lenovo Storage V3700 V2 SFF Control Enclosure	6535C2D
Lenovo Storage V3700 V2 XP LFF Control Enclosure	6535C3D
Lenovo Storage V3700 V2 XP SFF Control Enclosure	6535C4D
Lenovo Storage V5030 LFF Control Enclosure 3Yr S&S	6536C12
Lenovo Storage V5030 LFF Control Enclosure 5Yr S&S	6536C32
Lenovo Storage V5030 SFF Control Enclosure 3Yr S&S	6536C22
Lenovo Storage V5030 SFF Control Enclosure 5Yr S&S	6536C42
Lenovo Storage V5030F SFF Control Enclosure 3Yr S&S	6536B1F
Lenovo Storage V5030F SFF Control Enclosure 5Yr S&S	6536B2F
Lenovo Storage V7000 SFF Control Enclosure 3Yr S&S PRC	6538R11^
Lenovo Storage V7000 SFF Control Enclosure 5Yr S&S PRC	6538R21^
Lenovo Storage V7000F SFF Control Enclosure 3Yr S&S PRC	6538R1G^
Lenovo Storage V7000F SFF Control Enclosure 5Yr S&S PRC	6538R2G^
IBM Storwize for Lenovo (iSCSI connectivity)	
IBM Storwize V7000 SFF Control Enclosure, 3YR SWMA	6195C32†
IBM Storwize V7000 SFF Control Enclosure, 3YR SWMA, LA	6195C3L‡
IBM Storwize V7000 SFF Control Enclosure, 5YR SWMA	6195C52†
IBM Storwize V7000 SFF Control Enclosure, 5YR SWMA, LA	6195C5L‡

^ Available only in PRC.
† Available worldwide except Latin America.
‡ Available only in Latin America.

For more information, see the list of Product Guides in the following categories:

- Lenovo DE Series, DM Series, DS Series, and V Series storage:
  http://lenovopress.com/storage/san/lenovo#rt=product-guide
- IBM Storwize for Lenovo storage:
  http://lenovopress.com/storage/san/ibm#rt=product-guide

Rack cabinets

The following table lists the rack cabinets that are currently offered by Lenovo that can be used for mounting the CE0128PB switch and other IT infrastructure building blocks.

Table 11. Rack cabinets

Description	Part number
25U S2 Standard Rack (1000 mm deep; 2 sidewall compartments)	93072RX
25U Static S2 Standard Rack (1000 mm deep; 2 sidewall compartments)	93072PX
42U S2 Standard Rack (1000 mm deep; 6 sidewall compartments)	93074RX
42U 1100mm Enterprise V2 Dynamic Rack (6 sidewall compartments)	93634PX
42U 1100mm Enterprise V2 Dynamic Expansion Rack (6 sidewall compartments)	93634EX
42U 1200mm Deep Dynamic Rack (6 sidewall compartments)	93604PX
42U 1200mm Deep Static Rack (6 sidewall compartments)	93614PX
42U Enterprise Rack (1105 mm deep; 4 sidewall compartments)	93084PX
42U Enterprise Expansion Rack (1105 mm deep; 4 sidewall compartments)	93084EX

For more information, see the list of Product Guides in the Rack cabinets category:
http://lenovopress.com/servers/options/racks#rt=product-guide

Power distribution units

The following table lists the power distribution units (PDUs) that are currently offered by Lenovo that can be used for distributing electrical power to the CE0128PB switches and other IT infrastructure building blocks mounted in a rack cabinet.

Table 12. Power distribution units

Description	Part number
0U Basic PDUs	
0U 36 C13/6 C19 24A/200-240V 1 Phase PDU with NEMA L6-30P line cord	00YJ776
0U 36 C13/6 C19 32A/200-240V 1 Phase PDU with IEC60309 332P6 line cord	00YJ777
0U 21 C13/12 C19 32A/200-240V/346-415V 3 Phase PDU with IEC60309 532P6 line cord	00YJ778
0U 21 C13/12 C19 48A/200-240V 3 Phase PDU with IEC60309 460P9 line cord	00YJ779
Switched and Monitored PDUs	
0U 20 C13/4 C19 Switched and Monitored 24A/200-240V/1Ph PDU w/ NEMA L6-30P line cord	00YJ781
0U 20 C13/4 C19 Switched and Monitored 32A/200-240V/1Ph PDU w/ IEC60309 332P6 line cord	00YJ780
0U 18 C13/6 C19 Switched / Monitored 32A/200-240V/346-415V/3Ph PDU w/ IEC60309 532P6 cord	00YJ782
0U 12 C13/12 C19 Switched and Monitored 48A/200-240V/3Ph PDU w/ IEC60309 460P9 line cord	00YJ783
1U 9 C19/3 C13 Switched and Monitored DPI PDU (without a line cord)	46M4002
1U 9 C19/3 C13 Switched and Monitored 60A 3Ph PDU with IEC 309 3P+Gnd cord	46M4003
1U 12 C13 Switched and Monitored DPI PDU (without a line cord)	46M4004
1U 12 C13 Switched and Monitored 60A 3 Phase PDU with IEC 309 3P+Gnd line cord	46M4005
Ultra Density Enterprise PDUs (9x IEC 320 C13 + 3x IEC 320 C19 outlets)	
Ultra Density Enterprise C19/C13 PDU Module (without a line cord)	71762NX

Description	Part number
Ultra Density Enterprise C19/C13 PDU 60A/208V/3ph with IEC 309 3P+Gnd line cord	71763NU
C13 Enterprise PDUs (12x IEC 320 C13 outlets)	
DPI C13 Enterprise PDU+ (without a line cord)	39M2816
DPI Single Phase C13 Enterprise PDU (without a line cord)	39Y8941
C19 Enterprise PDUs (6x IEC 320 C19 outlets)	
DPI Single Phase C19 Enterprise PDU (without a line cord)	39Y8948
DPI 60A 3 Phase C19 Enterprise PDU with IEC 309 3P+G (208 V) fixed line cord	39Y8923
Front-end PDUs (3x IEC 320 C19 outlets)	
DPI 30amp/125V Front-end PDU with NEMA L5-30P line cord	39Y8938
DPI 30amp/250V Front-end PDU with NEMA L6-30P line cord	39Y8939
DPI 32amp/250V Front-end PDU with IEC 309 2P+Gnd line cord	39Y8934
DPI 60amp/250V Front-end PDU with IEC 309 2P+Gnd line cord	39Y8940
DPI 63amp/250V Front-end PDU with IEC 309 2P+Gnd line cord	39Y8935
Universal PDUs (7x IEC 320 C13 outlets)	
DPI Universal 7 C13 PDU (with 2 m IEC 320-C19 to C20 rack power cord)	00YE443
NEMA PDUs (6x NEMA 5-15R outlets)	
DPI 100-127V PDU with fixed NEMA L5-15P line cord	39Y8905
Line cords for PDUs that ship without a line cord	
DPI 30a Line Cord (NEMA L6-30P)	40K9614
DPI 32a Line Cord (IEC 309 P+N+G)	40K9612
DPI 32a Line Cord (IEC 309 3P+N+G)	40K9611
DPI 60a Cord (IEC 309 2P+G)	40K9615
DPI 63a Cord (IEC 309 P+N+G)	40K9613
DPI Australian/NZ 3112 Line Cord (32A)	40K9617
DPI Korean 8305 Line Cord (30A)	40K9618

For more information, see the list of Product Guides in the Power Distribution Units category:
http://lenovopress.com/servers/options/pdu#rt=product-guide

Uninterruptible power supply units

The following table lists the uninterruptible power supply (UPS) units that are currently offered by Lenovo that can be used for providing electrical power protection to the CE0128PB switches and other IT infrastructure building blocks.

Table 13. Uninterruptible power supply units

Description	Part number
Worldwide models	
RT1.5kVA 2U Rack or Tower UPS (100-125VAC) (8x NEMA 5-15R 12A outlets)	55941AX
RT1.5kVA 2U Rack or Tower UPS (200-240VAC) (8x IEC 320 C13 10A outlets)	55941KX
RT2.2kVA 2U Rack or Tower UPS (100-125VAC) (8x NEMA 5-20R 16A outlets)	55942AX
RT2.2kVA 2U Rack or Tower UPS (200-240VAC) (8x IEC 320 C13 10A, 1x IEC 320 C19 16A outlets)	55942KX
RT3kVA 2U Rack or Tower UPS (100-125VAC) (6x NEMA 5-20R 16A, 1x NEMA L5-30R 24A outlets)	55943AX
RT3kVA 2U Rack or Tower UPS (200-240VAC) (8x IEC 320 C13 10A, 1x IEC 320 C19 16A outlets)	55943KX
RT5kVA 3U Rack or Tower UPS (200-240VAC) (8x IEC 320 C13 10A, 2x IEC 320 C19 16A outlets)	55945KX
RT6kVA 3U Rack or Tower UPS (200-240VAC) (8x IEC 320 C13 10A, 2x IEC 320 C19 16A outlets)	55946KX
RT8kVA 6U Rack or Tower UPS (200-240VAC) (4x IEC 320-C19 16A outlets)	55948KX
RT11kVA 6U Rack or Tower UPS (200-240VAC) (4x IEC 320-C19 16A outlets)	55949KX
RT8kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC) (4x IEC 320-C19 16A outlets)	55948PX
RT11kVA 6U 3:1 Phase Rack or Tower UPS (380-415VAC) (4x IEC 320-C19 16A outlets)	55949PX
ASEAN, HTK, INDIA, and PRC models	
ThinkSystem RT3kVA 2U Standard UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)	55943KT
ThinkSystem RT3kVA 2U Long Backup UPS (200-230VAC) (2x C13 10A, 2x GB 10A, 1x C19 16A outlets)	55943LT
ThinkSystem RT6kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)	55946KT
ThinkSystem RT10kVA 5U UPS (200-230VAC) (2x C13 10A outlets, 1x Terminal Block output)	5594XKT

For more information, see the list of Product Guides in the Uninterruptible Power Supply Units category:
http://lenovopress.com/servers/options/ups#rt=product-guide

Lenovo Financial Services

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For your region-specific offers please ask your Lenovo sales representative or your technology provider about the use of Lenovo Financial Services. For more information, see the following Lenovo website:
http://www.lenovo.com/us/en/landingpage/lenovo-financial-services

Related publications and links

For more information, see the following resources:

- Lenovo Data Center Networking product page
  http://www.lenovo.com/us/en/c/networking
- Lenovo Data Center Solution Configurator
  http://dcsc.lenovo.com
- Lenovo Data Center Support
  http://datacentersupport.lenovo.com

Related product families

Product families related to this document are the following:

- 1 Gb Ethernet Connectivity
- Campus Networking
- Top-of-Rack Switches

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