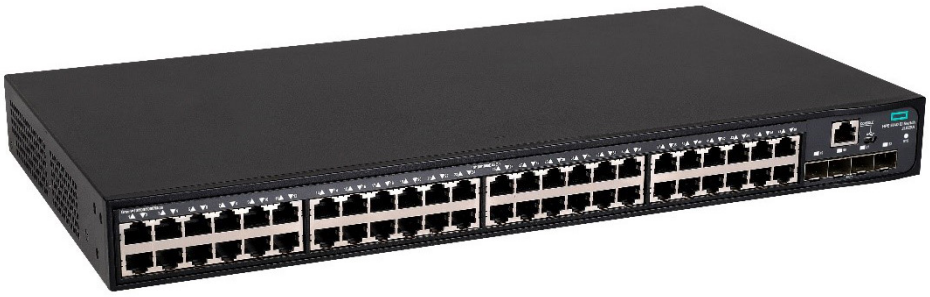
HPE FlexNetwork 5140 EI Switch Series



Key features

- Gigabit Ethernet access switch with static Layer 3 routing, RIP, high density 10GbE uplinks, and PoE+ models for voice, video, and wireless
- Supports HPE Intelligent Resilient Fabric (IRF) technology that enables plug-and-play device aggregation and link aggregation across multiple devices, enhancing network redundancy and resource utilization
- Includes embedded network management capabilities at no additional cost with Smart Management Center (SmartMC)
- Includes energy-saving green design features such as automatic switching of idle ports to energy-saving mode and powering down unused ports

Product overview

HPE FlexNetwork 5140 EI Switch Series delivers scalability, high availability, and low TCO at the access layer of medium and large enterprise campus networks. The series offers enterprise-class quality of service (QoS) and security, HPE IRF stacking, static Layer 3 routing and RIP, convenient fixed 10GbE uplink ports, PoE+, ACLs, and IPv6 and delivers energy savings with Energy Efficient Ethernet.

The HPE FlexNetwork 5140 EI Switch Series also includes SmartMC, an embedded network management tool that can be leveraged at no additional cost by small and medium networks for centralized management and operations. The series can also be managed with HPE Intelligent Management Center (IMC) for a single view of your entire network.

Features and benefits

Scalability and high availability

- The HPE FlexNetwork 5140 EI Switch Series delivers scalability and enhances reliability of the network with HPE IRF technology. IRF stacking enables virtual resilient switching fabrics, where two to nine switches can perform as a single L2 switch and L3 router.
- IRF stacking with stacking bandwidth of up to 80 GB/s enhances performance and reliability with uninterrupted L2 switching and L3 forwarding. By reducing the need for complex protocols, it delivers simpler, flatter, and more agile networks.
- Four fixed 1/10GbE uplinks deliver performance for bandwidth-intensive applications.
- Link redundancy with support for protocols such as Multiple Spanning Tree Protocol (MSTP), Rapid Spanning Tree Protocol (RSTP), Per-VLAN Spanning Tree (PVST+), Rapid Per-VLAN Spanning Tree (RPVST+), and Smart Link provides high availability.

Comprehensive security control

- The HPE FlexNetwork 5140 EI Switch Series supports flexible authentication methods including 802.1X and MAC Authentication for greater security and policy-driven application authentication. Per-user access control lists (ACLs) provide identity-driven security and access control.
- ACLs provide IP Layer 2 to Layer 4 traffic filtering while supporting global ACL, VLAN ACL, port ACL, and IPv6 ACL. Supports hardware-based wire speed ACLs that provide high levels of security without impacting network performance.
- Dynamic ARP protection with functions such as ARP detection and ARP packet validation that block broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data.
- Centralized security policy management and network protection with HPE IMC End User Admission Domination (EAD), which integrates security policies, network access control, and access right control policies to form a cooperative security system.
- Enhance security with encryption of access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMP v3, and other features including Dynamic Host Configuration Protocol (DHCP) protection, IP source guard, and RADIUS/TACACS.

Simplified management

- The HPE FlexNetwork 5140 EI Switch Series can be seamlessly managed with HPE IMC to provide end-to-end network transparency with a consistent network experience through comprehensive configuration, compliance, and policy management.
- Supports SmartMC, an embedded network management tool with a web-based GUI to simplify operations and facilitate centralized management. It is made available at no additional cost and offers features such as configuration backup, software version management, and seamless switch replacement.
- RMON and sFlow® provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events to help network operators with capacity planning and real-time network monitoring.
- Supports SNMP v1, v2c, and v3 to facilitate centralized discovery, monitoring, and secure management of networking devices. It also provides complete session logging to aid problem identification and resolution.
- Provides future-proof networking because the switch is capable of being managed whether the attached network is running IPv4 or IPv6; supports pingv6, tracertv6, Telnetv6, TFTPv6, DNSv6, syslogv6, FTPv6, SNMP v6, DHCPv6, and RADIUS for IPv6.

Layer 2 switching and Layer 3 routing

- Supports a large number of Layer 2 devices with a 16K MAC address table. Supports IEEE 802.1ad QinQ and selective QinQ that increase scalability by providing a hierarchical structure
- Supports jumbo frames with frame size of up to 10000-byte, improving the performance of large data transfers
- Supports Device Link Detection Protocol (DLDP) that monitors link connectivity and shuts down ports at both ends if unidirectional traffic is detected, preventing loops in STP-based networks

Enhanced quality of service

- The HPE FlexNetwork 5140 EI Switch Series supports advanced classifier based QoS, which groups traffic using multiple match criteria based on Layer 2 and 3 information. It applies QoS policies such as setting priority level and rate limit to selected traffic on a port, VLAN, or entire switch.
- Provides traffic prioritization with supported congestion actions include strict priority (SP) queuing, weighted round robin (WRR), weighted random early detection (WRED), and SP+WRR and traffic policing with Committed Access Rate (CAR) and line rate.
- Reduce unwanted network traffic with broadcast control and limitation of broadcast traffic rate to cut down on unwanted network broadcast traffic.

Energy efficiency

- The HPE FlexNetwork 5140 EI Switch Series improves energy efficiency and reduces energy costs through the use of the latest advances in silicon development; switches idle ports to energy-saving mode, shuts off unused ports, and utilizes variable-speed fans.
- Provides support for RoHS and WEEE regulations.

Software-defined networking

- Supports OpenFlow 1.3 specification to enable SDN by allowing separation of the data (packet forwarding) and control (routing decision) paths

Warranty and support

For details on Limited Lifetime warranty and software releases available with your product purchase, please refer to hpe.com/networking/support

HPE FlexNetwork 5140 EI Switch Series



Specifications	HPE FlexNetwork 5140-24G-4SFP+ EI Switch (JL828A)	HPE FlexNetwork 5140-24G-SFP-4SFP+ EI Switch (JL826A)	HPE FlexNetwork 5140-48G-4SFP+ EI Switch (JL829A)
I/O ports and slots	24 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: Ports 1–24 support 10BASE-T/ 100BASE-TX, 1000BASE-T (full only) SFP+ fixed 1000/10000 SFP+ ports	16 SFP 100/1000 Mbps ports 8 SFP dual-personality ports—10/100/ 1000BASE-T RJ-45 or 100/1000BASE-X Combo Ports 4 SFP+ fixed 1000/10000 SFP+ ports	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE-T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: Ports 1–48 support 10BASE-T/ 100BASE-TX, 1000BASE-T (full only) 4 SFP+ fixed 1000/10000 SFP+ ports
Additional ports and slots	1 RJ-45 serial console port	1 RJ-45 serial console port	1 RJ-45 serial console port
Power supplies		2 power supply slots 1 minimum power supply required (ordered separately)	
Physical characteristics **Dimensions** **Weight**	17.32 in. (w) x 6.3 in. (d) x 1.72 in. (h) (44 cm x 16 cm x 4.36 cm) (1U height) 5.5 lb (2.5 kg)	17.32 in. (w) x 14.17 in. (d) x 1.72 in. (h) (44 cm x 36 cm x 4.36 cm) (1U height) 13.23 lb (6 kg)	17.32 in. (w) x 9.04 in. (d) x 1.72 in. (h) (44 cm x 23 cm x 4.36 cm) (1U height) 7.22 lb (3.5 kg)
Memory and processor	512 MB SDRAM, 256 MB flash	512 MB SDRAM, 256 MB flash	512 MB SDRAM, 256 MB flash
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet	Mounts in an EIA standard 19-inch telco rack or equipment cabinet	Mounts in an EIA standard 19-inch telco rack or equipment cabinet
Performance			
1000 Mb latency	< 5 µs	< 5 µs	< 5 µs
10 Gbps latency	< 3 µs	< 3 µs	< 3 µs
Throughput	95 Mpps	95 Mpps	131 Mpps
Routing/switching capacity	128 Gbps	128 Gbps	176 Gbps
Routing table size	1024 entries	1024 entries	1024 entries
MAC address table size	16,384 entries	16,384 entries	16,384 entries
	IPv6 Ready Certified	IPv6 Ready Certified	IPv6 Ready Certified
Environment			
Operating temperature	23°F to 113°F (–5°C to 45°C)	23°F to 113°F (–5°C to 45°C)	23°F to 113°F (–5°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing	10% to 90%, noncondensing
Non-operating/storage temperature	–40°F to 158°F (–40°C to 70°C)	–40°F to 158°F (–40°C to 70°C)	–40°F to 158°F (–40°C to 70°C)
Non-operating/storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	High-speed fan: 36.8 dB; ISO 7779	Low-speed fan: 41.4 dB, High-speed fan: 47.7 dB; ISO 7779	Low-speed fan: 42.2 dB, High-speed fan: 49.3 dB; ISO 7779

Specifications (continued)	HPE FlexNetwork 5140-24G-4SFP+ EI Switch (JL828A)	HPE FlexNetwork 5140-24G-SFP-4SFP+ EI Switch (JL826A)	HPE FlexNetwork 5140-48G-4SFP+ EI Switch (JL829A)
Electrical characteristics			
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Maximum heat dissipation	64/88 BTU/hr (67.52/92.84 kJ/hr)	102/204 BTU/hr (107.61/215.22 kJ/hr) for AC powered units. For DC powered units, heat dissipation is 130 BTU/hr minimum, 232 BTU/hr maximum.	130/153 BTU/hr (137.15/161.42 kJ/hr)
AC voltage	100 VAC–240 VAC	100 VAC–240 VAC	100 VAC–240 VAC
DC voltage		–48 VDC to –60 VDC	
Current	2A	5A	10A
Maximum power rating	24W	60W	44W
Idle power	19W	30W	38W
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. Power ratings for AC power supply is indicated previously. For DC input power, idle power is 38W and maximum is 68W. DC maximum input current is 8A. Units are supplied without a power supply. Customer must buy 1 or 2 JD362B (AC) or JD366B (DC) power supply.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; RoHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; RoHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; RoHS Compliance
Emissions	FCC Part 15 Subpart B Class A; ICES-003 Class A; VCCI-CISPR 32 Class A; EN 55032 Class A; AS/NZS CISPR 32 Class A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993	FCC Part 15 Subpart B Class A; ICES-003 Class A; VCCI-CISPR 32 Class A; EN 55032 Class A; AS/NZS CISPR 32 Class A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993	FCC Part 15 Subpart B Class A; ICES-003 CLASS A; VCCI-CISPR 32 Class A; EN 55032 Class A; AS/NZS CISPR 32 Class A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993
Immunity			
Generic	EN 55024	EN 55024	EN 55024
ESD	EN 300 386	EN 300 386	EN 300 386
Management	IMC; SmartMC, command-line interface; web browser; SNMP manager	IMC; SmartMC, command-line interface; web browser; SNMP manager	IMC; SmartMC, command-line interface; web browser; SNMP manager
Services	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, contact your local HPE sales office.	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, contact your local HPE sales office.	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, contact your local HPE sales office.

HPE FlexNetwork 5140 EI Switch Series

Specifications	HPE FlexNetwork 5140-24G-PoE+-4SFP+ (370W) EI Switch (JL827A)	HPE FlexNetwork 5140-48G-PoE+-4SFP+ (370W) EI Switch (JL824A)
I/O ports and slots	24 RJ-45 autosensing 10/100/1000 ports with 4 combo ports (RJ-45 or SFP)	48 RJ-45 autosensing 10/100/1000 ports (IEEE 802.3 Type 10BASE T, IEEE 802.3u Type 100BASE-TX, IEEE 802.3ab Type 1000BASE-T); Duplex: Ports 1-48 support 10BASE-T/100BASE-TX, 1000BASE-T (full only) 4 SFP+ 1000/10000 SFP+ ports
Additional ports and slots	1 RJ-45 Serial Console Port	1 RJ-45 Serial Console Port
Physical characteristics		
Dimensions	17.32 in. (w) x 10.24 in. (d) x 1.72 in. (h) (44 cm x 26 cm x 4.36 cm) (1U height)	17.32 in. (w) x 14.17 in. (d) x 1.72 in. (h) (44 cm x 36 cm x 4.36 cm) (1U height)
Weight	17.64 lb (8 kg)	17.64 lb (8 kg)
Memory and processor	512 MB SDRAM, 256 MB flash	512 MB SDRAM, 256 MB flash
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet	Mounts in an EIA standard 19-inch telco rack or equipment cabinet
Performance		
1000 Mb latency	< 5 µs	< 5 µs
10 Gbps latency	< 3 µs	< 3 µs
Throughput	95 Mpps	131 Mpps
Routing/switching capacity	128 Gbps	176 Gbps
Routing table size	1024 entries	1024 entries
MAC address table size	16,384 entries	16,384 entries
	IPv6 Ready Certified	IPv6 Ready Certified
Environment		
Operating temperature	23°F to 113°F (–5°C to 45°C)	23°F to 113°F (–5°C to 45°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing
Non-operating/storage temperature	–40°F to 158°F (–40°C to 70°C)	–40°F to 158°F (–40°C to 70°C)
Non-operating/storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	Low-speed fan: 44.4 dB, High-speed fan: 53.6 dB; ISO 7779	Low-speed fan: 50.6 dB, High-speed fan: 54.6 dB; ISO 7779

Specifications (continued)	HPE FlexNetwork 5140-24G-PoE+-4SFP+ (370W) EI Switch (JL827A)	HPE FlexNetwork 5140-48G-PoE+-4SFP+ (370W) EI Switch (JL824A)
Electrical characteristics		
Frequency	50/60 Hz	50/60 Hz
Maximum heat dissipation	102/1569 BTU/hr (107.61/1655.29 kJ/hr) for AC power. For DC power, minimum heat dissipation is 85 BTU/hr and maximum heat dissipation is 2695 BTU/hr.	160/1671 BTU/hr (168.8/1762.91 kJ/hr) for AC power. For DC power, minimum heat dissipation is 147 BTU/hr and 3037 BTU/hr. maximum.
AC voltage	100 VAC–240 VAC	100 VAC–240 VAC
DC voltage	–54 VDC to –57 VDC	–54 VDC to –57 VDC
Current	10A	10A
Maximum power rating	451W	478W
Idle power	30W	47W
PoE power	370W PoE+	370W PoE+
Notes	Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. When supplemented with the use of an HPE RPS1600, up to 740W of PoE+ can be supplied. Maximum current rating for DC power is 25A. AC input power is 30W typical and 460W maximum (including 370W PoE+ consumption). DC input voltage range is –54 VDC to –57 VDC. Total DC input power is 25W typical and 790W with 740W PoE+ power consumption. DC input voltage range is –54 VDC to –57 VDC. DC input source is the HPE RPS1600.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply. When supplemented with the use of an HPE RPS1600, up to 740W of PoE+ can be supplied. Maximum current rating for DC power is 25A. AC input power is 47W typical and 490W maximum (including 370W PoE+ consumption). DC input voltage range is –54 VDC to –57 VDC. Total DC input power is 43W typical and 890W with 800W PoE+ power consumption. DC input voltage range is –54 VDC to –57 VDC. DC input source is the HPE RPS1600.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; RoHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; RoHS Compliance
Emissions	FCC Part 15 Subpart Class A; ICES-003 Class A; VCCI-CISPR 32 Class A; EN 55032 Class A; AS/NZS CISPR 32 Class A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993	FCC Part 15 Subpart B Class A; ICES-003 Class A; VCCI-CISPR 32 Class A; EN 55032 Class A; AS/NZS CISPR 32 Class A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993
Immunity		
Generic	EN 55024	EN 55024
ESD	EN 300 386	EN 300 386
Management	IMC; SmartMC, command-line interface; web browser; SNMP manager	IMC; SmartMC, command-line interface; web browser; SNMP manager
Services	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, contact your local HPE sales office.	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, contact your local HPE sales office.

HPE FlexNetwork 5140 EI Switch Series

Specifications	HPE FlexNetwork 5140-24G-PoE+-2SFP+ 2XGT (370W) EI Switch (JL823A)	HPE FlexNetwork 5140-48G-PoE+-2SFP+ 2XGT (370W) EI Switch (JL825A)
I/O ports and slots	24 RJ-45 autosensing 10/100/1000 ports; Duplex: Ports 1-24 support 10BASE-T/100BASE-TX, 1000BASE-T (full only) 2 SFP+ fixed 10GbE ports 2 x 1/2.5/5/10GBASE-T	48 RJ-45 autosensing 10/100/1000 ports; Duplex: Ports 1-48 support 10BASE-T/100BASE-TX, 1000BASE-T (full only) 2 SFP+ fixed 10GbE ports 2 x 1/2.5/5/10GBASE-T
Additional ports and slots	1 RJ-45 Serial Console Port	1 RJ-45 Serial Console Port
Physical characteristics		
Dimensions	17.32(w) x 12.6(d) x 1.72(h) in. (44 x 32 x 4.36 cm) (1U height)	17.32(w) x 12.6(d) x 1.72(h) in. (44 x 32 x 4.36 cm) (1U height)
Weight	9.92 lb (4.5 kg)	13.23 lb (6 kg)
Memory and processor	512 MB SDRAM, 256 MB flash	512 MB SDRAM, 256 MB flash
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet	Mounts in an EIA standard 19-inch telco rack or equipment cabinet
Performance		
1000 Mb latency	< 5 µs	< 5 µs
10 Gbps latency	< 3 µs	< 3 µs
Throughput	95 Mpps	131 Mpps
Routing/switching capacity	128 Gbps	176 Gbps
Routing table size	1024 entries	1024 entries
MAC address table size	16,384 entries	16,384 entries
	IPv6 Ready Certified	IPv6 Ready Certified
Environment		
Operating temperature	23°F to 122°F (–5°C to 50°C)	23°F to 122°F (–5°C to 50°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing
Non-operating/storage temperature	–40°F to 158°F (–40°C to 70°C)	–40°F to 158°F (–40°C to 70°C)
Non-operating/storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	Low-speed fan: 44.4 dB, High-speed fan: 52.8 dB; ISO 7779	Low-speed fan: 43.5 dB, High-speed fan: 52.8 dB; ISO 7779

Specifications (continued)	HPE FlexNetwork 5140-24G-PoE+-2SFP+ 2XGT (370W) EI Switch (JL823A)	HPE FlexNetwork 5140-48G-PoE+-2SFP+ 2XGT (370W) EI Switch (JL825A)
Electrical characteristics		
Frequency	50/60 Hz	50/60 Hz
Maximum heat dissipation	83.6/1433 BTU/hr (88.2/1511.9 kJ/hr)	117.7/1467 BTU/hr (124/1547.77 kJ/hr)
AC voltage	100 VAC–240 VAC	100 VAC–240 VAC
Maximum power rating	420W	430W
Idle power	24.5W	34.5W
PoE power	370W PoE+	370W PoE+
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. PoE power is the power supplied by the internal power supply.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance
Emissions	FCC Part 15 Subpart CLASS A; ICES-003 CLASS A; VCCI-CISPR 32 CLASS A; EN 55032 CLASS; AS/NZS CISPR 32 CLASS A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993	FCC Part 15 Subpart B CLASS A; ICES-003 CLASS A; VCCI-CISPR 32 CLASS A; EN 55032 CLASS; AS/NZS CISPR32 CLASS A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993
Immunity		
Generic	EN 55024	EN 55024
ESD	EN 300 386	EN 300 386
Management	IMC—Intelligent Management Center; Smart MC, command-line interface; web browser; SNMP Manager	IMC—Intelligent Management Center; Smart MC, command-line interface; web browser; SNMP Manager
Services	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.	See the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.

HPE FlexNetwork 5140 EI Switch Series

Specifications	HPE FlexNetwork 5140-8G-2SFP-2GT Combo EI Switch (R8J42A)	HPE FlexNetwork 5140-24G-2SFP+-2XGT EI Switch (R8J41A)
I/O ports and slots	8 RJ-45 autosensing 10/100/1000 ports; Duplex: Ports 1-8 support 10BASE-T/100BASE-TX, 1000BASE-T (full only) 2 combo ports with 2 SFP or 2 1GbE ports and 2 SFP ports	24 RJ-45 autosensing 10/100/1000 ports; Duplex: Ports 1-24 support 10BASE-T/100BASE-TX, 1000BASE-T (full only) 2 SFP+ fixed 10GbE ports 2 x 1/2.5/5/10GBASE-T
Additional ports and slots	1 RJ-45 Serial Console Port	1 RJ-45 Serial Console Port
Physical characteristics		
Dimensions	10.47(w) x 6.3 (d) x 1.72(h) in. (26.6 x 16 x 4.36 cm) (1U height)	17.32(w) x 6.3(d) x 1.72(h) in. (44 x 16 x 4.36 cm) (1U height)
Weight	3.3 lb (1.5 kg)	5.51 lb (2.5 kg)
Memory and processor	512 MB SDRAM, 256 MB flash	512 MB SDRAM, 256 MB flash
Mounting and enclosure	Mounts in an EIA standard 19-inch telco rack or equipment cabinet (HPE 5140 EI Rack Mount Kit R8M91A sold separately)	Mounts in an EIA standard 19-inch telco rack or equipment cabinet
Performance		
1000 Mb latency	< 5 µs	< 5 µs
10 Gbps latency	< 3 µs	< 3 µs
Throughput	18 Mpps	95 Mpps
Routing/switching capacity	24 Gbps	128 Gbps
Routing table size	1024 entries	1024 entries
MAC address table size	16,384 entries IPv6 Ready Certified	16,384 entries IPv6 Ready Certified
Environment		
Operating temperature	23°F to 122°F (–5°C to 50°C)	23°F to 122°F (–5°C to 50°C)
Operating relative humidity	10% to 90%, noncondensing	10% to 90%, noncondensing
Non-operating/storage temperature	–40°F to 158°F (–40°C to 70°C)	–40°F to 158°F (–40°C to 70°C)
Non-operating/storage relative humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Acoustic	High-speed fan: 36.8 dB; ISO 7779	Low-speed fan: 41.4 dB, High-speed fan: 47.7 dB; ISO 7779

Specifications (continued)	HPE FlexNetwork 5140-8G-2SFP-2GT Combo EI Switch (R8J42A)	HPE FlexNetwork 5140-24G-2SFP+-2XGT EI Switch (R8J41A)
Electrical characteristics		
Frequency	50/60 Hz	50/60 Hz
Maximum heat dissipation	27.3/51.2 BTU/hr (28.8/54 kJ/hr)	49.5/112.6 BTU/hr (52.2/118.8 kJ/hr)
AC voltage	100 VAC–240 VAC	100 VAC–240 VAC
Maximum power rating	15W	33W
Idle power	8W	14.5W
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.
Safety	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance	UL 60950-1; EN 60825-1 Safety of Laser Products-Part 1; EN 60825-2 Safety of Laser Products-Part 2; IEC 60950-1; IEC 62368-1; CAN/CSA-C22.2 No. 60950-1; EN 62368-1/A11; FDA 21 CFR Subchapter J; ROHS Compliance
Emissions	FCC Part 15 Subpart CLASS A; ICES-003 CLASS A; VCCI-CISPR 32 CLASS A; EN 55032 CLASS; AS/NZS CISPR32 CLASS A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993	FCC Part 15 Subpart B CLASS A; ICES-003 CLASS A; VCCI-CISPR 32 CLASS A; EN 55032 CLASS; AS/NZS CISPR32 CLASS A; CISPR 24; EN 55024; EN 61000-3-2; EN 61000-3-3; ETSI EN 300 386; GB/T 9254; YD/T 993
Immunity		
Generic	EN 55024	EN 55024
ESD	EN 300 386	EN 300 386
Management	IMC—Intelligent Management Center; Smart MC, command-line interface; web browser; SNMP Manager	IMC—Intelligent Management Center; Smart MC, command-line interface; web browser; SNMP Manager
Services	Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.	Refer to the HPE website at hpe.com/networking/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HPE sales office.

Standards and protocols

Device management

- RFC 1157 SNMP v1/v2c
- RFC 1305 NTPv3
- RFC 2573 (SNMP v3 applications)
- RFC 2819 (RMON groups alarm, event, history, and statistics only)
- RFC 3416 (SNMP Protocol Operations v2)
- HTML and Telnet management
- Multiple configuration files
- SNMP v3 and RMON RFC support
- SSHv1/SSHv2
- TACACS/TACACS+
- Web UI

QoS/CoS

- RFC 2474 Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers
- RFC 3260 new terminology and clarifications for DiffServ

General protocols

- IEEE 802.1ad Q-in-Q
- IEEE 802.1ak Multiple Registration Protocol (MRP) and Multiple VLAN Registration Protocol (MVRP)
- IEEE 802.1AX-2008 Link Aggregation
- IEEE 802.1D MAC Bridges
- IEEE 802.1p Priority
- IEEE 802.1Q VLANs
- IEEE 802.1s Multiple Spanning Trees
- IEEE 802.1w Rapid Reconfiguration of Spanning Tree
- IEEE 802.1X PAE
- IEEE 802.3 Type 10BASE-T
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3ac (VLAN Tagging Extension)
- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- IEEE 802.3af Power over Ethernet
- IEEE 802.3at Power over Ethernet Plus
- IEEE 802.3ah Operations Administration and Maintenance (OAM)
- IEEE 802.3az Energy Efficient Ethernet
- IEEE 802.3i 10BASE-T
- IEEE 802.3u 100BASE-X
- IEEE 802.3x Flow Control
- IEEE 802.3z 1000BASE-X
- RFC 768 UDP

- RFC 783 TFTP Protocol (revision 2)
- RFC 791 IP
- RFC 792 ICMP
- RFC 793 TCP
- RFC 826 ARP
- RFC 854 TELNET
- RFC 855 Telnet Option Specification
- RFC 894 IP over Ethernet
- RFC 950 Internet Standard Subnetting Procedure
- RFC 951 BOOTP
- RFC 1027 Proxy ARP
- RFC 1042 IP Datagrams
- RFC 1071 Computing the Internet Checksum
- RFC 1123 Requirements for Internet Hosts
- RFC 1166—IP Addresses
- RFC 1213 Management Information Base for Network Management of TCP/IP-based internets
- RFC 1256 ICMP Router Discovery Protocol (IRDP)
- RFC 1305 NTPv3
- RFC 1350 TFTP Protocol (revision 2)
- RFC 1519 CIDR
- RFC 1533 DHCP Options and BOOTP Vendor Extensions
- RFC 1591 DNS (client only)
- RFC 1643 Definitions of Managed Objects for the Ethernet-like Interface Types
- RFC 1812 IPv4 Routing
- RFC 1866 Hypertext Markup Language 2.0
- RFC 1901 Introduction to Community-based SNMP v2
- RFC 1902-190—SNMP v2
- RFC 2131 DHCP
- RFC 2236 IGMP snooping
- RFC 2462 IPv6 Stateless Address Autoconfiguration
- RFC 2474 Definition of the DS Field in the IPv4 and IPv6 Headers
- RFC 2475 Architecture for DS
- RFC 2597 Assured Forwarding PHB Group
- RFC 2616 HTTP Compatibility v1.1
- RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types
- RFC 2668 Definitions of Managed Objects for IEEE 802.3 Medium Attachment Units (MAUs)
- RFC 2865 Remote Authentication Dial-In User Service (RADIUS)
- RFC 2866 RADIUS Accounting
- RFC 3046 DHCP Relay Agent Information Option

- RFC 3246 Expedited Forwarding PHB
- RFC 3414 User-based Security Model (USM) for version 3 of SNMP v3
- RFC 3415 View-based Access Control Model (VACM) for SNMP
- RFC 3416 Protocol Operations for SNMP
- RFC 3418 Management Information Base (MIB) for SNMP
- RFC 3576 Ext to RADIUS (CoA only)
- RFC 3580—IEEE 802.1X RADIUS Usage Guidelines
- RFC 3587 IPv6 Global Unicast Address Format
- RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
- RFC 4030 Authentication Suboption for DHCP Relay Agent
- RFC 4213 Basic IPv6 Transition Mechanisms
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4541 Considerations for Internet Group Management Protocol (IGMP) and Multicast Listener Discovery (MLD) Snooping Switches
- RFC 4575 A Session Initiation Protocol (SIP) Event Package for Conference State
- RFC 4675 RADIUS VLAN and Priority
- RFC 5095 Deprecation of Type 0 Routing Headers in IPv6
- IEEE 802.1r GARP Proprietary Attribute Registration Protocol (GPRP)

IPv6

- RFC 1981 IPv6 Path MTU Discovery
- RFC 2460 IPv6 Specification
- RFC 2461 IPv6 Neighbor Discovery
- RFC 2463 ICMPv6
- RFC 2464 Transmission of IPv6 over Ethernet Networks
- RFC 3162 RADIUS and IPv6
- RFC 3306 Unicast-Prefix-based IPv6 Multicast Addresses
- RFC 3315 DHCPv6 (client and relay)
- RFC 3484 Default Address Selection for IPv6
- RFC 3736 Stateless DHCP Service for IPv6
- RFC 4291 IP Version 6 Addressing Architecture
- RFC 4293 MIB for IP
- RFC 4443 ICMPv6
- RFC 4861 IPv6 Neighbor Discovery
- RFC 4862 IPv6 Stateless Address Auto-configuration
- RFC 6724 Default Address Selection for IPv6

MIBs

- RFC 1212 Concise MIB Definitions
- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 1757 Remote Network Monitoring MIB
- RFC 2096 IP Forwarding Table MIB

- RFC 2233 Interface MIB
- RFC 2571 SNMP Framework MIB
- RFC 2572 SNMP-MPD MIB
- RFC 2573 SNMP-Notification MIB
- RFC 2573 SNMP-Target MIB
- RFC 2574 SNMP USM MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2665 Ethernet-Like-MIB
- RFC 2668 802.3 MAU MIB
- RFC 2674 802.1p and IEEE 802.1Q Bridge MIB
- RFC 2737 Entity MIB (Version 2)
- RFC 2819 RMON MIB
- RFC 2863 The Interfaces Group MIB
- RFC 2925 Ping MIB
- RFC 3414 SNMP-User based-SM MIB
- RFC 3415 SNMP-View based-ACM MIB
- RFC 3418 MIB for SNMP v3
- RFC 3621 Power Ethernet MIB

IP multicast
- RFC 1112 IGMPv1
- RFC 3376 IGMPv3

Network management
- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- RFC 2579 Textual Conventions for SMIv2
- RFC 2580 Conformance Statements for SMIv2
- RFC 2819 Four groups of RMON: one statistic, two history, three alarms, and nine events
- ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED)

SNMP v1/v2c/v3
- Security
- IEEE 802.1X Port Based Network Access Control
- RFC 1492 TACACS+
- RFC 2138 RADIUS Authentication
- RFC 2139 RADIUS Accounting
- RFC 2865 RADIUS (client only)
- RFC 2866 RADIUS Accounting
- RFC 3260 New Terminology and Clarifications for DiffServ
- Secure Sockets Layer (SSL)
- SSHv2 Secure Shell

HPE FlexNetwork 5140 EI Switch Series accessories

SFP Transceivers	HPE X115 100M SFP LC FX Transceiver (JD102B) HPE X110 100M SFP LC LX Transceiver (JD120B) HPE X115 100M SFP LC BX 10-U Transceiver (JD100A) HPE X115 100M SFP LC BX 10-D Transceiver (JD101A) HPE X120 1G SFP LC SX Transceiver (JD118B) HPE X120 1G SFP LC LX Transceiver (JD119B) HPE X120 1G SFP RJ45 T Transceiver (JD089B) HPE X120 1G SFP LC BX 10-U Transceiver (JD098B) HPE X120 1G SFP LC BX 10-D Transceiver (JD099B) HPE X120 1G SFP LC LH100 Transceiver (JD103A)
SFP+ Transceivers	HPE X130 10G SFP+ LC SR Transceiver (JD092B) HPE X130 10G SFP+ LC LR Transceiver (JD094B) HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable (JD095C) HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable (JD096C) HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable (JD097C) HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable (JG081C) HPE X2A0 10G SFP+ to SFP+ 7m Active Optical Cable (JL290A) HPE X2A0 10G SFP+ to SFP+ 10m Active Optical Cable (JL291A) HPE X2A0 10G SFP+ to SFP+ 20m Active Optical Cable (JL292A)
Cables	HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable (AJ833A) HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable (AJ834A) HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable (AJ835A) HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable (AJ836A) HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable (AJ837A) HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable (AJ838A) HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable (AJ839A) HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 1m Cable (QK732A) HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 2m Cable (QK733A) HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 5m Cable (QK734A) HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 15m Cable (QK735A) HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 30m Cable (QK736A) HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 50m Cable (QK737A)
Internal Power Supplies (for JL826A)	HPE X361 150W AC Power Supply (JD362B) HPE X361 150W DC Power Supply (JD366B)
Rack Mount kits	HPE 5140 E Rack Mount Kit (R8M91A)
External/Redundant Power Supplies and Power Cables	HPE RPS 800 Redundant Power Supply (JD183A) HPE RPS1600 Redundant Power System (JG136A) HPE RPS1600 1600W AC Power Supply (JG137A) **Note:** RPS1600 and RPS800 applicable for JL827A and JL824A HPE X290 500 V 1m RPS Cable (JD186A) HPE X290 1000 A JD5 2m RPS Cable (JD187A) HPE X290 1000 A JD5 NonPoE 2m RPS Cable (JD188A)

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