

# PTX10000 LINE OF MODULAR ROUTERS DATASHEET

## Product Overview

*Juniper Networks PTX10000 modular routers were specifically designed to meet new service level agreements in the cloud era. As cloud and [5G](#) trends accelerate network transformation, core and peering networks face exponential traffic growth due to the massive increase in the number of connected devices, presenting operators with the same challenges but at a faster rate. Leading the [400G](#) transition, these modular routers set new benchmarks of scale, flexibility, and reliability with high-performance custom silicon. These platforms share a common set of components and full feature sets, with various 400GbE-capable line cards available to satisfy specific core, peering, data center, and metro-core deployments in the most demanding environments.*

## Product Description

Increasingly sophisticated network operators and users seek highly responsive and customizable cloud-like online experiences and services that align with their unique needs and interests, creating more traffic that consumes increasing amounts of network bandwidth.

The demands of the increased network traffic are driving the creation of new core and peering architectures. Cloud routing allows for more centralized, interconnected cores to help operators scale their networks to meet new service-level agreements.

Competing with the ability to rapidly expand capacity is the need to reduce operational costs; providers are under enormous pressure to lower margins and compete with new entrants and disruptors that do not have legacy networks to maintain. There is immense pressure on core and peering routers to simultaneously address:

- **Scale:** Providers may offer backbone connectivity that requires a large number of label-switched paths (LSPs). If they are using [Segment Routing](#) or RSVP to take advantage of the traffic engineering (SR-TE/RSVP-TE) functionality, the control plane signaling path must be able to scale in step with the growth of LSPs. This ability to scale is needed for both the primary and backup paths to support redundancy mechanisms like fast re-route (FRR). Today, the total number needed for backbone connectivity is a few million. This type of scaling challenge will be felt by operators who are trying to diversify their portfolios by adding a broader scope of connectivity options; for example, a data center operator who wants to provide cloud connectivity or VPN services to enterprise customers, or an operator of private line service who wants to add a collocation service to its offering.
- **Operational Flexibility:** Virtualized services and the explosion of cloud-based applications are creating increasingly erratic traffic patterns. To handle this unpredictability, [service providers](#) need architectures that are flexible and dynamic across all layers. Operators today rely on the flexibility and capacity of IP filters to mitigate the impact of increasing denial-of-service (DoS) attacks.
- **Investment Protection:** Ensuring operators are investing in platforms designed to last has become imperative to leveraging the next generation of ASIC improvements the industry is offering. The risk of packet drops from rip-and-replace strategies to yearly silicon upgrades severely impacts the reliability of future upgrades.

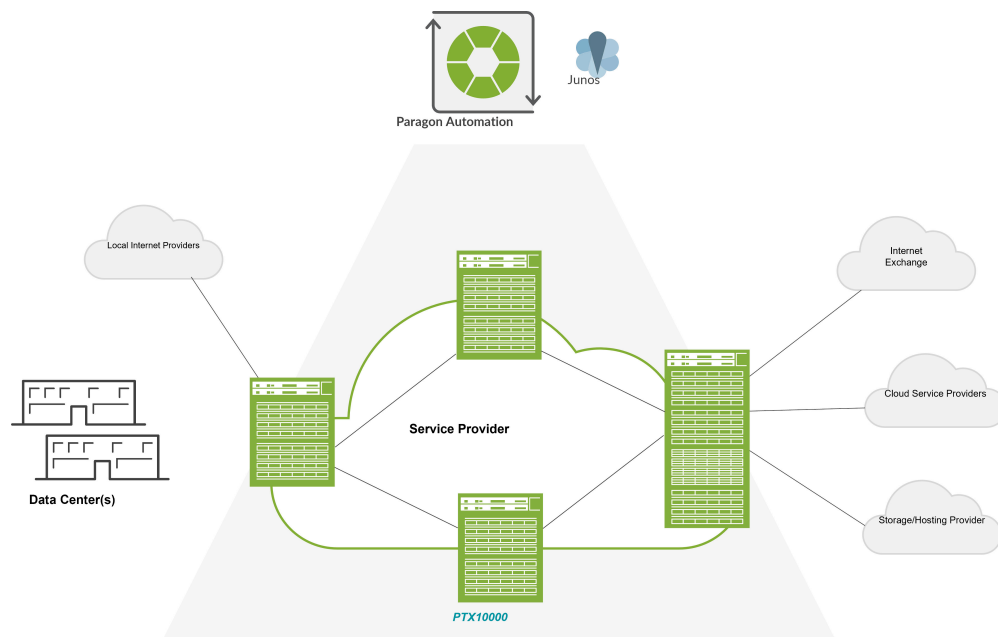


Figure 1: PTX10000 router deployment

In order to address these challenges, network operators need a router that delivers scalability, flexibility, and reliability to the network. Juniper Networks® [PTX Series Routers](#) takes high-performance networking to the next level, easily fitting into both cloud- and service-providers networks across core, peering, data center spine, data center edge, and infrastructure edge routing. (Figure 1).

The PTX Series Routers are powered by Juniper's custom Express family ASICs, supporting 400GbE architectures and delivering predictable IP/MPLS packet performance and functionality, eliminating the complex packet profiles found in elaborate, over-engineered network processing units deployed in other core routers.

The PTX Series Routers bring physical and virtual innovations to the cloud and service provider networks. These next-generation routers help network operators achieve their business goals while effectively handling current and future traffic demands through automation, optimization, and programmability.

The PTX Series Routers combines the best of Juniper's Express ASICs with the reliability and familiarity of [Junos® OS](#). The PTX Series Routers are comprised of feature-rich, 400G-optimized fixed and modular platforms.

### PTX10004, PTX10008, PTX10016 Hardware

The PTX10004 (4-slot), PTX10008 (8-slot), and PTX10016 (16-slot) modular routers utilize Juniper's Express4 ASIC powered line cards to support deep buffers, flexible packet filtering, and bandwidth demanding core and peering architectures.

Table 1. PTX10004, PTX10008, PTX10016 Modular Chassis Options

Router	Bandwidth			Height
	3T (30 x 100GbE; 144 x 10GbE)	4.8T (4 x 400GbE; 48 x 100GbE)	14.4T (36 x 400GbE; 144 x 100GbE)	
PTX10004	-	19.2T	57.6T	4 slots/7 RU
PTX10008	24T	38.4T	115.2T	8 slots/13 RU
PTX10016	48T	76.8T	230.4T	16 slots/21 RU

The PTX10004, PTX10008, and PTX10016 are cloud-optimized to support the transition and expansion of 400GbE networks. These high density routers are designed for today's space- and power-constrained facilities, supporting 400GbE architectures with inline Media Access Control Security (MACsec) on all ports for uncompromised security.

PTX LC1201 and LC1202 line cards offer native SFP+ transceiver support through QSFP adapter, MAM1Q00A-QSA. This option enables deployments where 10GE connectivity over more than 10KM single mode fiber links is required.

These modular routers enable network operators to build core architectures that optimize label-switching router (LSR), Internet backbone, peering, and optical convergence applications.

As a result, operators can—for the first time—match traffic demands with enhanced core router performance and flexible deployments. With its ultra-optimized and compact form factor, the PTX10000 line is ideal for peering, collocation, and central office locations where space and power are at a premium.

## Silicon Innovations with Express Family ASICs

Continuous innovations in silicon enable the PTX10000 modular routers to accommodate scale-up and scale-out architectures with smooth migration paths as traffic patterns change. Juniper's custom Express silicon allows adaptive load balancing, data structure sharing, and better resource utilization, as well as supporting value-added resources for additional filtering flexibility—all while lowering cost per bit.

The PTX10004, PTX10008, and PTX10016 are powered by the highly scalable Juniper Express4 silicon, the industry's first inline MACsec for 400GbE chip to support universal multirate QSFP56-DD. The Juniper Express4 silicon delivers consistently low latency, 8M counters, 256 Advanced Encryption Standard (AES) MACsec encryption supported on all ports, and wire-rate packet performance for IP traffic without sacrificing the optimized system power profile. Preserving the spirit of the Junos Express silicon family, Juniper Express4 silicon is the first purpose-built telecommunications silicon to incorporate a 3D memory architecture into the base design, offering the industry's highest packet performance per gigabit in the fewest rack units. It also provides dynamic table memory allocation for massive IP routing scale while delivering tremendous power efficiency gains at 0.14 watts/gigabit.

The ability to address a provider's core networking requirements—scale, operational flexibility, and SDN control—begins with the silicon. With the PTX10000 line, operators can now deploy a core architecture with full [Juniper Paragon Automation](#) suite.

## Architecture and Key Components

The PTX10000 line of Packet Transport Routers features a number of key architectural elements. Dual redundant routing engines (REs) on the PTX10004, PTX10008, and PTX10016 run the Juniper Networks Junos operating system, where they manage all routing protocol processes, router interface control, and control plane functions such as chassis component, system management, and user access to the router. In addition, unique cryptographic digital identity has been added to the Trusted Platform Module (TPM 2.0), which is embedded in the latest generation of REs. This addition enables device attestation and enhances security. REs' processes interact with the Packet Forwarding Engine (PFE) on the line cards via dedicated high-bandwidth management channels, providing a clean separation of the control and forwarding planes.

The PTX10004, PTX10008, and PTX10016 Express-based line cards currently support 10GbE, 25GbE, 40GbE, 100GbE, and 400GbE interfaces. The horizontal line cards in the front of the chassis connect directly to the vertical switch fabric cards in the rear of the chassis via orthogonal interconnects without requiring a

midplane. This provides unparalleled investment protection by ensuring a smooth upgrade path to higher speed switch fabric cards as they become available. The midplane-less design improves airflow with a front-to-back design and enables limitless scale.

To maintain uninterrupted operation, the PTX10000 modular chassis fan trays cool the line cards and REs with redundant, variable-speed fans. In addition, the PTX10000 line power supplies convert building power to the internal voltage required by the system. All PTX10000 line components are hot-swappable, and all central functions are available in redundant configurations, providing high operational availability by allowing continuous system operation during maintenance or repairs.

## PTX10000 Line: Shared Hardware Components

Key hardware components of the PTX10004, PTX10008, and PTX10016 modular routers include the switch fabrics, REs, and line cards.

Table 2: Shared Components Across PTX Modular Chassis

	PTX10004, PTX10008, PTX10016
Switch Fabrics	<ul style="list-style-type: none"> <li>SF (3 Tbps/slot, Express2)</li> <li>SF3 (14.4Tbps/slot, Express4)</li> </ul>
Routing Engines	<ul style="list-style-type: none"> <li><b>JNP10K-RE0:</b> The first-generation RE0 RE features a quad-core 2.5 GHz Intel processor with 32 GB memory and 2x50 GB solid-state drive (SSD) storage.</li> <li><b>JNP10K-RE1:</b> The second-generation RE1 RE features a 10-core 2.2 GHz Intel processor with memory options of 64 GB or 128 GB and 2x200 GB solid-state drive (SSD) storage.</li> </ul>

Table 3: Express-based Line Cards

Line card	Bandwidth	Silicon	100GbE Ports	400GbE Ports	
PTX10K-LC1201-36CD (JNP10K-LC1201):	14.4 Tbps	Express4	144	36	QSFP56-DD/ QSFP56/ QSFP28-DD/ QSFP28/QSFP+
PTX10K-LC1202-36MR (JNP10K-LC1202):	4.8 Tbps	Express4	32	4	QSFP56-DD and QSFP28
PTX10K-LC1101 (JNP10K-LC1101):	3 Tbps	Express2	30	-	QSFP28/QSFP+
PTX10K-LC1102 (JNP10K-LC1102):	1.4 Tbps	Express2	12	-	QSFP28/QSFP+
PTX10K-LC1104 (JNP10K-LC1104):	1.2 Tbps	Express2	6	-	DWDM
PTX10K-LC1105 (JNP10K-LC1105):	3 Tbps	Express2	30	-	QSFP28/QSFP+

The line cards also supports native MACsec without compromising throughput on any supported interface rate up to 400GbE, providing point-to-point security on Ethernet links. MACsec blocks security threats such as DoS, intrusion, man-in-the-middle, masquerading, passive wiretapping, and playback attacks while securing links for most traffic frames from the Link Layer Discovery Protocol (LLDP), Link Aggregation Control Protocol (LACP), Dynamic Host Configuration Protocol (DHCP), Address Resolution Protocol (ARP), and others. All ports can support 400GbE ZR and ZR+ optics, making it ready for full packet/optical convergence without compromising density.

### Power

The PTX10004 has three power supply slots, the PTX10008 offers six power supply slots, and the PTX10016 has 10 power supply slots, providing complete flexibility for provisioning and redundancy. Each power supply has its own internal fan for cooling. The PTX10000 line supports both AC and DC power supplies; however, AC and DC supplies cannot be mixed in the same chassis. Two generations of power supplies exist: the first generation is designed to support Express2 line cards, while the second generation is designed to support both Express2 and Express4 line cards..

The first generation of AC power supplies on the PTX10000 line routers accept 200 to 240 volts alternating current (VAC) input, delivering 2700 watts of power to the chassis. The first generation of DC power supplies accept -40 to -72 volts direct current (VDC) input, delivering 2500 watts of power to the chassis. Each AC and DC power supply has two inputs for feed redundancy.

Second-generation AC power supplies (AC2) on the PTX10000 line routers are high-capacity, high-line models designed to support either AC or DC systems in either a low-power or high-power mode. The power supply takes AC input and provides DC output of 12.3 VDC, delivering 5000 watts with a single feed and 5500 watts with a dual feed. For AC systems, the operating input is 180 to 305 VAC; for DC systems, the operating input is 190 to 410 VDC.

Second-generation DC power supplies (DC2) provide two power supplies in a single housing that accepts either 60 A or 80 A using four redundant input power feeds.

### Cooling

The PTX10000 line supports front-to-back cooling with air drawn in through the perforations on the REs and the line cards in the front of the platform. The fan trays are in front of the fabric cards and are accessible from the rear of the chassis. Hot air exhausts through the rear of the chassis.

### Chassis Management

The PTX10000 line delivers powerful Junos OS chassis management that allows environmental monitoring and field-replaceable unit (FRU) control. Chassis management provides a faster primary switchover, enhanced power budgeting with a modular power management, reduced power consumption for partially populated systems, granular control over FRU power-on, adaptive cooling, and CPU leveling during monitoring intervals.

### Simplified Management

The PTX10000 line routers simplify management based on the elegance and simplicity of the Junos OS. Management applications can receive streaming telemetry data to provide robust protocol analytics for an SDN environment. Junos OS enables resilience by design, operational consistency, and the versatility needed to evolve your network.

### SONiC Support on the PTX10008

The PTX10008 supports [Juniper's SONiC implementation](#), delivering best-of-breed hardware for cloud operators while taking advantage of the flexibility of SONiC's open and disaggregated architecture. The SONiC-enabled PTX10008 plugs seamlessly into a unified SONiC network infrastructure, leveraging the existing PTX10008 hardware. The Juniper-provided SONiC image, installed on the hardware at the factory, includes the platform device drivers and Juniper's Hardware Abstraction Layer (HAL), including Juniper's implementation of the Switch Abstraction Interface (SAI) for the Express4 ASIC and the line card PFE software.

As a modular and dense multi-PFE 400GbE/100GbE platform, the PTX10008 is perfectly suited for large spine layer applications in data center IP fabrics. Juniper complements the SONiC OS with the containerized Routing Protocol Daemon (cRPD), a full-function routing and management stack packaged as a container. This ensures a consistent end-to-end routing experience across different tiers in the data center. In addition, the cRPD enables high-performance telemetry, automation, and programmability in a lightweight deployment. For features available with SONiC, please refer to the SONiC deployment guide.

## Features and Benefits

Table 1 summarizes the features available on the PTX10004, PTX10008, and PTX10016 routers.

Table 1. PTX10000 Line Features and Benefits

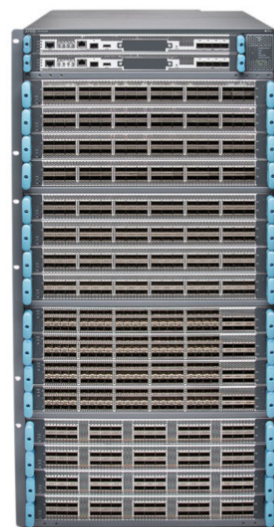
Feature	Feature Description	Benefits
<b>System capacity</b>	The four-slot PTX10004 scales to 57.6 Tbps in a single chassis, supporting up to 576 10GbE, 576 25GbE, 144 40GbE, 576 100GbE, or 144 400GbE interfaces. The PTX10008 scales to 115.2 Tbps in a single chassis, supporting up to 1152 10GbE, 1152 25GbE, 288 40GbE, 1152 100GbE, or 288 400GbE interfaces. The PTX10016 has 16 slots, each supporting 3 Tbps (6 Tbps half-duplex). A fully equipped PTX10016 can support 2304 10GbE, 576 40GbE, or 480 100GbE interfaces.	The PTX10000 line gives network operators the performance and scalability needed to outpace increased traffic demands.
<b>Packet performance</b>	Groundbreaking Juniper silicon innovation powers the PTX10000 line routers with unparalleled packet processing for both full IP and MPLS functionality, thereby leveraging revolutionary 3D memory architecture.	Exceptional packet processing capabilities help alleviate the challenge of scaling the network as traffic increases while optimizing IP/MPLS transit functionality around superior performance and elegant deployability.
<b>Full-scale IP and MPLS routing</b>	The PTX10000 line of routers features a rich set of IP/MPLS services, consistent low latency, and wire-rate forwarding at scale while providing the reliability needed to meet strict SLAs.	Supports peering applications with more than 2 million IPv4 routes and 30 million routing information base (RIB) routing tables, 3000 OSPF adjacencies, and 4000 BGP sessions required to match expanding traffic demands.
<b>Segment Routing (SR)</b>	Junos OS supports Segment Routing, which provides the ability for a trusted source node to specify a forwarding path, other than the normal shortest path, that a particular packet will traverse.	Enables traffic engineering at scale, link protection using topology-independent loop-free alternates (TI-LFA) implementation, VPN traffic steering, egress peering engineering, and path verification.
<b>High availability (HA) hardware</b>	The PTX10000 line is engineered with full hardware redundancy for cooling, power supply, REs, and switch fabric.	High availability (HA) is a critical requirement for maintaining an always-on infrastructure base to meet stringent SLAs across the core.
<b>High availability software</b>	The PTX10000 line features a resilient operating system that supports HA features such as graceful RE switchover (GRES) and nonstop active routing (NSR) for high availability. PTX Series routers support 48 ms redundancy switchover under load.	Junos OS supports HA features that allow software upgrades and changes without disrupting network traffic.



PTX10004 Packet Transport Router



PTX10008 Packet Transport Router



PTX10016 Packet Transport Router

## Specifications

Table 2. PTX10000 Line Specifications

Feature	Specifications
<b>PTX10004</b>	
Physical dimensions (W x H x D)	17.4 x 12.2 x 35 in. (44.2 x 33 x 88.9 cm); 42.2 in. (107.7 cm) depth with EMI door
Maximum weight	271.2 lb (116.7 kg)
Mounting	Front rack mount
Power system rating*	200-240 VAC/50-60 Hz -48 VDC @ 60 A
Typical power consumption	10.3 kW with Express4 line cards, fully loaded
Operating temperature**	32° to 115° F (0° to 46° C) at sea level
<b>PTX10008</b>	
Physical dimensions (W x H x D)	17.4 x 22.55 x 32 in.(44.2 x 57.76 x 81.28 cm); 39.37 in. (100 cm) depth with EMI door
Maximum weight	493 lb (223.62 kg)
Mounting	Front rack mount
Power system rating	200-240 VAC / 50-60 Hz -48 VDC @ 60 A
Typical power consumption	17.3 kW with Express4 line cards, fully loaded
Operating temperature	32° to 115° F (0° to 46° C) at sea level
<b>PTX10016</b>	
Physical dimensions (W x H x D)	17.4 x 36.65 x 35 in.(44.2 x 93.09 x 88.90 cm); 42.40 in (107.7 cm) depth with EMI door
Maximum weight	596 lb (270 kg)
Mounting	Front rack mount
Power system rating	200-240 VAC / 50-60 Hz -48 VDC @ 60 A
Typical power consumption	18 kW with Express2 line cards, fully loaded
Operating temperature	32° to 115° F (0° to 46° C) at sea level

\*These numbers are power supply ratings. Actual power usage is much lower.

\*\*Assuming a max of 14W optics if fully populated and no air filter.

## Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit <https://www.juniper.net/us/en/products.html>.

## PTX10000 Line Ordering Information

For more information, please contact your Juniper Networks representative.

Product Number	Description
<b>PTX10004 Premium and Base Units</b>	
PTX10004-PREM3	PTX10004 redundant 4-slot chassis for 57.6Tbps. Includes 2 REs, 3 AC/HVDC or DC power supplies, 2 fan trays, 2 fan tray controllers, and 6 switch fabric cards.
PTX10004-PREM2	PTX10004 redundant 4-slot chassis. Includes 2 REs, 3 AC/HVDC or DC power supplies, 2 fan trays, 2 fan tray controllers, and 4 switch fabric cards.
PTX10004-BASE3	PTX10004 base 4-slot chassis. Includes 1 RE, 3 AC/HVDC or DC power supplies, 2 fan trays, 2 fan tray controllers, and 3 switch fabric cards.
<b>PTX10008 Premium and Base Units</b>	
PTX10008-PREM3	PTX10008 redundant 8-slot chassis for 115.2Tbps. Includes 2 REs, 6 power supplies, 2 fan trays, 2 fan tray controllers, and 6 switch fabric cards.
PTX10008-PREM2	PTX10008 redundant 8-slot chassis. Includes 2 REs, 6 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 4 switch fabric cards
PTX10008-BASE3	PTX10008 base 8-slot chassis. Includes 1 RE, 6 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 3 switch fabric cards
PTX10008-PREMIUM	PTX10008 redundant 8-slot chassis [JNP10008]. Includes 2 REs, 6 power supplies, 2 fan trays, 2 fan tray controllers, and 6 switch fabric cards.
PTX10008-BASE	PTX10008 8-slot chassis [JNP10008]. Includes 1 RE, 3 power supplies, 2 fan trays, 2 fan tray controllers, and 5 switch fabric cards.
PTX10008-PREM3-SON	PTX10008 8-slot chassis for 14.4T LC, including 1 RE running SONiC, 6 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 6 switch fabric cards.
PTX10008-PREM2-SON	PTX10008 8-slot chassis for 14.4T LC, including 1 RE running SONiC, 6 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 4 switch fabric cards.
PTX10008-BASE3-SON	PTX10008 8-slot chassis for 14.4T LC, including 1 RE running SONiC, 6 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 3 switch fabric cards.
<b>PTX10016 Premium and Base Units</b>	
PTX10016-PREM3	PTX10008 redundant 16-slot chassis for 230.4Tbps. Includes 2 REs, 10 power supplies, 2 fan trays, 2 fan tray controllers, and 6 switch fabric cards.
PTX10016-PREM2	PTX10008 redundant 16-slot chassis. Includes 2 REs, 10 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 4 switch fabric cards.
PTX10016-BASE3	PTX10008 base 16-slot chassis. Includes 1 RE, 10 AC/HVDC/DC power supplies, 2 fan trays, 2 fan tray controllers, and 3 switch fabric cards.
PTX10016-BASE	PTX10016 16-slot chassis [JNP10016]. Includes 1 RE, 5 power supplies, 2 fan trays, 2 fan tray controllers, and 5 switch fabric cards.
PTX10016-PREMIUM	PTX10016 redundant 16-slot chassis [JNP10016]. Includes 2 REs, 10 power supplies, 2 fan trays, 2 fan tray controllers, and 6 switch fabric cards.
<b>PTX10000 Routing Engines</b>	
JNP10K-RE0-BB	PTX10000/JNP10000 RE X4, base bundle
JNP10K-RE0-R	PTX10000/JNP10000 RE X4, redundant
JNP10K-RE0	PTX10000/JNP10000 RE X4
JNP10K-RE1-BB	PTX10000/JNP10000 RE X8, base bundle
JNP10K-RE1-R	PTX10000/JNP10000 RE X8, redundant
JNP10K-RE1	PTX10000/JNP10000 RE X8
JNP10K-RE1-E-BB	PTX10000/JNP10000 RE X8 with Junos Evolved, base bundle

Product Number	Description
JNP10K-RE1-E-R	PTX10000/JNP10000 RE X8 with Junos Evolved, redundant
JNP10K-RE1-E	PTX10000/JNP10000 RE X8 with Junos Evolved
JNP10K-RE1-S128-BB	JNP10000 RE with SONiC, base bundle
JNP10K-RE1-S128	JNP10000 RE with SONiC

**PTX10004 Switch Fabric**

JNP10004-SF3-BB	PTX10004/JNP10004 switch fabric card supporting up to 14.4 Tbps LC, base bundle
JNP10004-SF3-R	PTX10004/JNP10004 switch fabric card supporting up to 14.4 Tbps LC, redundant
JNP10004-SF3	PTX10004/JNP10004 switch fabric card supporting up to 14.4 Tbps LC

**PTX10008 Switch Fabric**

JNP10008-SF3-BB	PTX10008/JNP10008 switch fabric card supporting up to 14.4 Tbps LC, base bundle
JNP10008-SF3-R	PTX10008/JNP10008 switch fabric card supporting up to 14.4 Tbps LC, redundant
JNP10008-SF3	PTX10008/JNP10008 switch fabric card supporting up to 14.4 Tbps LC
JNP10008-SF-BB	PTX10008/JNP10008 switch fabric card, base bundle
JNP10008-SF-R	PTX10008/JNP10008 switch fabric card, redundant
JNP10008-SF	PTX10008/JNP10008 switch fabric card

**PTX10016 Switch Fabric**

JNP10016-SF3-BB	PTX10016/JNP10016 switch fabric card supporting up to 14.4 Tbps LC, base bundle
JNP10016-SF3-R	PTX10016/JNP10016 switch fabric card supporting up to 14.4 Tbps LC, redundant
JNP10016-SF3	PTX10016/JNP10016 switch fabric card supporting up to 14.4 Tbps LC
JNP10016-SF-BB	PTX10016/JNP10016 switch fabric card, base
JNP10016-SF-R	PTX10016/JNP10016 switch fabric card, redundant
JNP10016-SF	PTX10016/JNP10016 switch fabric card, base bundle

**PTX10000 Express4 Line Cards**

PTX10K-LC1201-36CD	36x400GbE/36x200GbE/36x100GbE/36x40GbE line card [JNP10K-LC1201]
PTX10K-LC1202-36MR	4x400GbE and 32x100GbE [JNP10K-LC1202]
S-PTX10K-144C-A1-3	SW, PTX10000 14.4T RTU Adv1 Lic, 3-year term, with SW support
S-PTX10K-144C-A2-3	SW, PTX10000 14.4T RTU Adv2 Lic, 3-year term, with SW support
S-PTX10K-144C-P1-3	SW, PTX10000 14.4T RTU Prem1 Lic, 3-year term, with SW support
S-PTX10K-144C-P2-3	SW, PTX10000 14.4T RTU Prem2 Lic, 3-year term, with SW support
S-PTX10K-144C-A1-5	SW, PTX10000 14.4T RTU Adv1 Lic, 5-year term, with SW support
S-PTX10K-144C-A2-5	SW, PTX10000 14.4T RTU Adv2 Lic, 5-year term, with SW support
S-PTX10K-144C-P1-5	SW, PTX10000 14.4T RTU Prem1 Lic, 5-year term, with SW support
S-PTX10K-144C-P2-5	SW, PTX10000 14.4T RTU Prem2 Lic, 5-year term, with SW support
S-PTX10K-144C-A1-P	SW, PTX10K, 14.4T, Adv1, without SW support, perpetual
S-PTX10K-144C-A2-P	SW, PTX10K, 14.4T, Adv2, without SW support, perpetual
S-PTX10K-144C-P1-P	SW, PTX10K, 14.4T, Pre1, without SW support, perpetual
S-PTX10K-144C-P2-P	SW, PTX10K, 14.4T, Pre2, without SW support, perpetual
S-PTX10K-48C-A1-3	SW, PTX10K, 4.8T, Advanced 1, with SW support, 3 year
S-PTX10K-48C-A2-3	SW, PTX10K, 4.8T, Advanced 2, with SW support, 3 year
S-PTX10K-48C-P1-3	SW, PTX10K, 4.8T, Premium 1, with SW support, 3 year

Product Number	Description
S-PTX10K-48C-P2-3	SW, PTX10K, 4.8T, Premium 2, with SW support, 3 year
S-PTX10K-48C-A1-5	SW, PTX10K, 4.8T, Advanced 1, with SW support, 5 year
S-PTX10K-48C-A2-5	SW, PTX10K, 4.8T, Advanced 2, with SW support, 5 year
S-PTX10K-48C-P1-5	SW, PTX10K, 4.8T, Premium 1, with SW support, 5 year
S-PTX10K-48C-P2-5	SW, PTX10K, 4.8T, Premium 2, with SW support, 5 year
S-PTX10K-48C-A1-P	SW, PTX10K, 4.8T, Adv1, without SW support, perpetual
S-PTX10K-48C-A2-P	SW, PTX10K, 4.8T, Adv2, without SW support, perpetual
S-PTX10K-48C-P1-P	SW, PTX10K, 4.8T, Pre1, without SW support, perpetual
S-PTX10K-48C-P2-P	SW, PTX10K, 4.8T, Pre2, without SW support, perpetual

**PTX10000 Express2 Line Cards**

PTX10K-LC110	30x100GbE/30x40GbE line card [JNP10K-LC110]
PTX10K-LC1101-IR	30x100GbE/30x40GbE line card [JNP10K-LC1101], IR mode
PTX10K-LC1101-R	30x100GbE/30x40GbE line card [JNP10K-LC1101], R mode
PTX10K-LC1102	36x40GbE/12X100GbE line card [JNP10K-LC1102]
PTX10K-LC1102-IR	36x40GbE/12X100GbE line card [JNP10K-LC1102], IR mode
PTX10K-LC1102-R	36x40GbE/12X100GbE line card [JNP10K-LC1102], R mode
PTX10K-LC1104	6x100GbE/150GbE/200GbE DWDM line card with MACsec [JNP10K-LC1104]
PTX10K-LC1105	30x100GbE/30x40GbE line card with MACsec [JNP10K-LC1105]
PTX10K-LC1105-IR	30x100GbE/30x40GbE line card with MACsec [JNP10K-LC1105], IR mode
PTX10K-LC1105-R	30x100GbE/30x40GbE line card with MACsec [JNP10K-LC1105], R mode

**PTX10004 Fan Tray and Controller**

JNP10004-FAN2-BB	JNP10004 fan, Gen2, base bundle
JNP10004-FAN2	JNP10004 fan, Gen2
JNP10004-FTC2-BB	JNP10004 fan tray controller, Gen2, base bundle
JNP10004-FTC2	JNP10004 fan tray controller, Gen2

**PTX10008 Fan Tray and Controller**

JNP10008-FAN-BB	PTX10008/JNP10008 fan, base bundle
JNP10008-FAN	PTX10008/JNP10008 fan
JNP10008-FANCTRL-BB	PTX10008/JNP10008 fan tray controller, base bundle
JNP10008-FAN-CTRL	PTX10008/JNP10008 fan tray controller
JNP10008-FAN2-BB	JNP10008 fan, Gen2, base bundle
JNP10008-FAN2	JNP10008 fan, Gen2
JNP10008-FTC2-BB	JNP10008 fan tray controller, Gen2, base bundle
JNP10008-FTC2	JNP10008 fan tray controller, Gen2

**PTX10016 Fan Tray and Controller**

JNP10016-FAN-BB	PTX10016/JNP10016 fan, base bundle
JNP10016-FAN	PTX10016/JNP10016 fan
JNP10016-FANCTRL-BB	PTX10016/JNP10016 fan tray controller, base bundle
JNP10016-FAN-CTRL	PTX10016/JNP10016 fan tray controller
JNP10016-FAN2-BB	JNP10016 fan, Gen2, base bundle
JNP10016-FAN2	JNP10016 fan, Gen2
JNP10016-FTC2-BB	JNP10016 fan tray controller, Gen2, base bundle
JNP10016-FTC2	JNP10016 fan tray controller, Gen2

**PTX10000 Power Cables**

CBL-PWR2-L6-30P	Power cord, JNP10000 AC2 L6-30P
CBL-PWR2-L6-30P-RA	Power cord, JNP10000 AC2 RA L6-30P
CBL-PWR2-330P6W	Power cord, JNP10000 AC2 IEC309-330P6W
CBL-PWR2-330P6W-RA	Power cord, JNP10000 AC2 RA IEC309-330P6W
CBL-PWR2-332P6W	Power cord, JNP10000 AC2 IEC309-332P6W

Product Number	Description
CBL-PWR2-332P6W-RA	Power cord, JNP10000 AC2 RA IEC309-332P6W
<b>PTX10000 Power Modules</b>	
JNP10K-PWR-AC2-BB	JNP10000 5000 watts AC/HVDC power supply base bundle
JNP10K-PWR-AC2-R	JNP10000 5000 watts AC/HVDC power supply redundant
JNP10K-PWR-AC2	JNP10000 5000 watts AC/HVDC power supply
JNP10K-PWR-DC2-BB	JNP10000 5000 watts DC power supply base bundle
JNP10K-PWR-DC2-R	JNP10000 5000 watts DC power supply redundant
JNP10K-PWR-DC2	JNP10000 5000 watts DC power supply
JNP10K-PWR-AC-BB	PTX10000/JNP10000 2700 W AC power supply, base bundle
JNP10K-PWR-AC-R	PTX10000/JNP10000 2700 W AC power supply, redundant
JNP10K-PWR-AC	PTX10000/JNP10000 2700 W AC power supply
JNP10K-PWR-DC-BB	PTX10000/JNP10000 2500 W DC power supply, base bundle
JNP10K-PWR-DC-R	PTX10000/JNP10000 2500 W DC power supply, redundant
JNP10K-PWR-DC	PTX10000/JNP10000 2500 W DC power supply
<b>PTX10004 Front Panels</b>	
JNP10004-FRPNL-BB	PTX10004/JNP10004 front panel, base bundle
JNP10004-FRNT-PNL	PTX10004/JNP10004 front panel
JNP10004-FRPNL1-BB	PTX10004/JNP10004 front panel with filter, base bundle
JNP10004-FRPNL1	PTX10004/JNP10004 front panel with filter
JNP10004-FLTR	PTX10004/JNP10004 replaceable filter
<b>PTX10008 Front Panels</b>	
JNP10008-FRPNL-BB	PTX10008/JNP10008 front panel, base bundle
JNP10008-FRNT-PNL	PTX10008/JNP10008 front panel
JNP10008-FRPNL1-BB	PTX10008/JNP10008 front panel with filter, base bundle
JNP10008-FRPNL1	PTX10008/JNP10008 front panel with filter
JNP10008-FLTR	PTX10008/JNP10008 replaceable filter
<b>PTX10016 Front Panels</b>	
JNP10016-FLTR	PTX10016/JNP10016 replaceable filter
JNP10016-FRPNL-BB	PTX10016/JNP10016 front panel, base bundle
JNP10016-FRNT-PNL	PTX10016/JNP10016 front panel
JNP10016-FRPNL1-BB	PTX10016/JNP10016 front panel with filter, base bundle
JNP10016-FRPNL1	PTX10016/JNP10016 front panel with filter
JNP10016-FLTR	PTX10016/JNP10016 replaceable filter

## About Juniper Networks

At Juniper Networks, we are dedicated to dramatically simplifying network operations and driving superior experiences for end users. Our solutions deliver industry-leading insight, automation, security and AI to drive real business results. We believe that powering connections will bring us closer together while empowering us all to solve the world's greatest challenges of well-being, sustainability and equality.

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