ACX7100 CLOUD METRO ROUTERS DATASHEET

Product Overview

Emerging 5G, IoT, and low latency services present a unique opportunity for network operators to transform their networks for new and increasingly complex services and applications. The ACX7100 line brings new benchmarks of capacity, density, agility, and low latency to the ACX7000 Family of multiservice routers. Designed to address the accelerating requirements of traffic growth, latency-dependent applications, and cloud-inspired port rates, the ACX7100 platforms are powered by Junos OS Evolved and Juniper Paragon Automation. They deliver the service-aware features, precision-timing support, and capabilities required to facilitate improved business outcomes in a single, converged, multiservice network.

Product Description

Juniper Networks® ACX7100 Cloud Metro Routers are designed to help operators achieve their capital, operational, and differentiated user experience goals. Part of the Juniper Networks ACX7000 Family of routers, the ACX7100 line delivers exceptional TCO and investment protection. It supports Juniper® Cloud Metro solutions for 5G, Internet of Things (IoT), and cloud applications, making it ideal for service provider, enterprise, data center, and residential use cases requiring high-density, power-efficient platforms.

ACX7000 Family Overview

The ACX7000 Family of routers, purposely built for the IP-service fabric underlay of a Juniper® Cloud Metro, leverages the industry's fastest chipset, provides a unique balance of system design, and delivers the most sustainable high-performance portfolio available in the market. Managed by Junos® OS Evolved and Juniper Paragon Automation, ACX7000 routers are embedded with Paragon Active Assurance and Zero Trust security, enabling operators to deliver highly differentiated customer experiences. Available in hardened, fixed, fixed-plus-modular, and modular designs, these energy and footprint efficient, multiservice routers support high-precision timing technologies and are engineered for service provider, enterprise (including PON with the Juniper Unified PON Solution), IoT, and 4G/5G mobile applications.

Figure 1. Juniper Networks ACX7000 Family—engineered for the IP service fabric of a Juniper Cloud Metro

The ACX7100 line offers groundbreaking performance and power efficiency in a compact 1 U footprint. They deliver 4.8 Tbps of forwarding capacity and cloud-inspired native port speeds that include 400GbE interfaces. The integrated low-speed and high-speed port variety, density, and flexibility provide scale for long-term network transformation. The ACX7100 routers come with redundant, field replaceable 6x fans and 2x AC or DC power supply options. A cost-effective and efficient thermal design enables unrestricted high-power ZR/ZR+ transceiver use across all supporting ports. The ACX7100 routers come in two models—ACX7100-32C and ACX7100-48L—each equipped to address the challenges and opportunities of today and tomorrow.

ACX7100-32C: The ACX7100-32C delivers high-end multiservices in a 1 U fixed, compact (60 cm deep), and power-efficient footprint. It provides 4.8 Tbps forwarding capacity, supports 32 ports of 40GbE/100GbE and 4 ports of 400GbE, making it ideal for applications that require a dense fan-out option. This platform supports full line-rate Media Access Control Security (MACsec) encryption on all ports and provides efficient cooling with front-to-back airflow design.

ACX7100-48L: The ACX7100-48L provides 4.8 Tbps throughput for high-end multiservices in a 1 U fixed and power-efficient footprint. It is designed for applications that require dense port distribution in a small (60 cm deep) footprint. It supports cloud-inspired service rates and port-by-port configuration of native 10GbE, 25GbE, and 50GbE on all 48 ports, including 6 ports of 400GbE enabling operators to perform today's most common upgrades on a port-by-port basis. The 100GbE port speed is supported through breakout connectivity on 4 x 400GbE ports. The dual front-to-back and back-to-front airflow design makes this platform ideal for data center use cases.

The ACX7100 platforms support 5G and Juniper Cloud Metro solutions, and they are designed for service provider, enterprise, wholesale, and data center use cases.

Features and Benefits

The ACX7100 routers are engineered for sustainability to address the challenges of evolving service requirements and relentless traffic growth imposed by 5G, IoT, and the cloud era. With the ACX7100, providers are primed and ready to thrive in today's competitive marketplace.

Table 1: Features and Benefits

Feature	Benefits
Junos OS Evolved and Embedded Active Assurance	Managed by Junos OS Evolved, Juniper Paragon Active Assurance test agents are embedded into all ACX7000 platforms, enabling automated monitoring, diagnosis, remediation, and optimization of service delivery, service performance, and user experience.
Rugged and Efficient Design	Compact footprint is suitable for environments with limited space, and the efficient thermal design allows use of unrestricted ZR/ZR+ transceivers across all supporting ports.
Build-As-You-Grow Operational Simplicity	The ACX7100 platforms are engineered to establish new benchmarks for what can be achieved on a 1 U platform. They deliver multispeed 10GbE, 25GbE, 40GbE, 50GbE, 100GbE, and 400GbE ports distribution—ideal for an aggregation use case—and allow the flexibility to manage and scale the network with growing network requirements.
Next-Gen Capabilities	Leading protocols are supported, including segment routing, SRv6, MPLS, Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN), advanced programmability, leading network slicing, telemetry, and support for any overlay, underlay, or service.
Zero-Trust Security	Enhanced security capabilities include MACsec encryption, secure boot, integrated tamper-proof design, and trust anchor with DevID, enabling device attestation and enhanced security through a unique cryptographic digital identity.
Cloud Metro-Ready	With deep buffering for end-to-end service delivery assurance, precision-timing capabilities include Synchronous Ethernet, Precision Time Protocol (PTP), and advanced Class C timing for latency-optimized 5G service experiences, as well as Global Navigation Satellite System (GNSS)/GPS (grand master clock support via external GNSS receiver) network synchronization. ACX7100 platforms are an ideal choice for service provider, enterprise, and residential use cases, including support for Juniper Unified PON, IoT, and 4G/5G mobile applications.

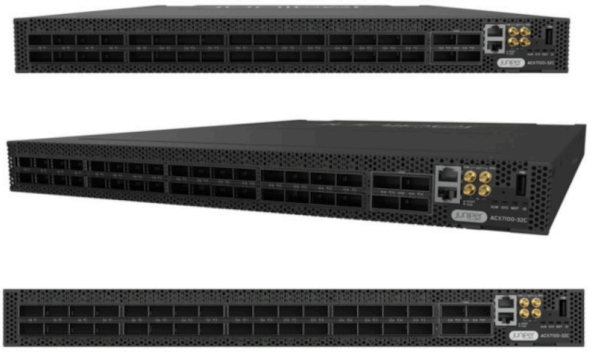

Figure 2. Juniper ACX7100-32C—engineered for the IP service fabric of a Juniper Cloud Metro

Figure 3. Juniper ACX7100-48L—engineered for the IP service fabric of a Juniper Cloud Metro

Table 1. Built-In Interface Options for ACX7100 Models

Model	10GbE/25GbE/ 50GbE SFP-56	100GbE QSFP28/ QSFP-DD	400GbE QSFP56-DD
ACX7100-32C	0	32	4
ACX7100-48L	48[1]	0	6

[1] One of these ports supports 10GbE/25GbE only.

Table 2. ACX7100 Platforms Port Breakout Options

Model	4X 25GbE	4X 10GbE	4X 100GbE	2X 100GbE	2X 50GbE	8X 50GbE
ACX7100-32C: Port 0-31	Y	Y	N	N	Y	N
ACX7100-32C: Port 32-35	Y	Y	Y	Y	Y	Y
ACX7100-48L: Port 0-47	N	N	N	N	N	N
ACX7100-48L: Port 48-53	Y	Y	Y	Y	Y	Y

Table 3. Maximum Port Capacity Supported Per Port Speed

Port Speed	ACX7100-32C	ACX7100-48L
400GbE	4	6
100GbE	48	24
50GbE	96	95[2]
40GbE	36	6
25GbE	80[1]	72[1]
10GbE	80[1]	72[1]

[1] 4x 25GbE and 4x 10GbE breakout options are supported on any 2 ports of 4x 100GbE port group. 1GbE optics will be supported on ACX7100-32C only for PTP grandmaster clocks using QSA adaptor on port #31.

[2] One port supports 10GbE/25GbE only

Table 4. System Features of ACX7100 Routers

Feature	ACX7100-32C	ACX7100-48L
System		
ASIC throughput	4.8 Tbps	4.8 Tbps
Chassis type	Fixed	Fixed
Cooling	6x fans, front-to-back	6x fans, front-to-back/back-to-front

ACX7000 Feature Set

A key differentiator and operator benefit of the ACX7000 family of Cloud Metro Routers is that all platforms in the portfolio share the same feature set with limited hardware-driven exceptions. Refer to the ACX7000 family of Cloud Metro Routers Datasheet and Table 2 for a list of ACX7000 family features and platform-specific exceptions.

Specifications

This section lists basic specifications for the ACX7100 routers. For further detail, please refer to the hardware installation manuals at www.juniper.net/techpubs.

Specification	ACX7100-32C	ACX7100-48L
Dimensions (W x H x D)	17.36 x 1.75 x 23.42 in. (44.09 x 4.45 x 59.49 cm)	17.36 x 1.75 x 23.42 in. (44.09 x 4.45 x 59.49 cm)
Weight (lb/kg) fully configured	28.0 lb/12.7 kg	26.9 lb/12.2 kg
Power (DC)	-48 VDC through -60 VDC	-48 VDC through -60 VDC
Power (AC)	115 VAC/240 VAC	115 VAC/240 VAC
Typical power draw (without optics) *	570 W	270 W
Maximum power draw (without optics) *	960 W	620 W
Operating temperature	Operating (0-40 C), short term (0-55 C) GR-63 NEBS-L3	Operating (0-40C), short term (0-55 C) GR-63 NEBS-L3
Humidity	5% through 90% noncondensing	5% through 90% noncondensing
Interfaces	32 x 100GbE QSFP28/ QSFP-DD 4 x 400GbE QSFP56-DD	48 x 10GbE/25GbE/50GbE SFP56 6 x 400GbE QSFP56-DD
Synchronization interfaces	• 1x RJ-45 port + time of day (TOD) • 1 M/10 M PPS input and output	• 1x RJ-45 port + TOD • 1 M/10 M PPS input and output

*Typical power consumption measured at 77°F (25°C) ambient with 50% load on all ports. Exact power consumption is subject to operating conditions and unit-to-unit variations.

Approvals

	ACX7100-32C	ACX7100-48L
Safety Approvals		
• CAN/CSA-C22.2 No. 60950-1 Information Technology Equipment—Safety	Yes	Yes
• UL 60950-1 (2nd Edition) Information Technology Equipment—Safety	Yes	Yes
• EN 60950-1: 2006/A2:2013 Information Technology Equipment—Safety	Yes	Yes
• IEC 60950-1: 2005/A2:2013 Information Technology Equipment—Safety (All country deviations): CB Scheme	Yes	Yes
• CAN/CSA-C22.2 No. 62368-1-14 Information Technology Equipment—Safety	Yes	Yes
• UL 62368-1 Information Technology Equipment—Safety	Yes	Yes

	ACX7100-32C	ACX7100-48L
• EN 62368-1: 2014 Information Technology Equipment—Safety	Yes	Yes
• IEC 62368-1: 2014 2nd Edition Information Technology Equipment—Safety (All country deviations): CB Scheme	Yes	Yes
• EN 60825-1 Safety of Laser Products—Part 1: Equipment classification and requirements	Yes	Yes
Electromagnetic Capability (EMC)		
• EN 300 386 V1.6.1 Class A Telecom Network Equipment—EMC requirements	Yes	Yes
• EN 300 386 V2.1.1 Class A Telecom Network Equipment—EMC requirements	Yes	Yes
• FCC 47 CFR Part 15 Class A USA Radiated and Conducted Emissions	Yes	Yes
• EN 55032 Class A European Radiated and Conducted Emissions	Yes	Yes
• AS/NZS CISPR 32 Class A Australia/New Zealand Radiated and Conducted Emissions	Yes	Yes
• ICES-003 Class A Canada Radiated and Conducted Emissions	Yes	Yes
• VCCI-CISPR 32 Class A Japanese Radiated and Conducted Emissions	Yes	Yes
• BSMI CNS 13438 and NCC C6357 Taiwan Radiated and Conducted Emissions (at 10 meter)	Yes	Yes
• KN32 Korea Radiated and Conducted Emission (at 10 meter)	Yes	Yes
• TEC/EMI/TEL-001/FEB-09	Yes	Yes
• TEC-SD-DD-EMC-221-05-OCT-16	Yes	Yes
Network Equipment Building System (NEBS)		
• SR-3580 NEBS Criteria Levels (Level 3 Compliance)	Yes	Yes
• GR-63-CORE: NEBS, Physical Protection	Yes	Yes
• GR-1089-CORE: EMC and Electrical Safety for Network Telecommunications Equipment	Yes	Yes
• Data Center DC 3160	Yes	Yes
Immunity		
• EN 300 386 V1.6.1 Class A Telecom Network Equipment—Immunity requirements	Yes	Yes
• EN 300 386 V2.1.1 Class A Telecom Network Equipment—Immunity requirements	Yes	Yes
• EN 55024 (CISPR 24)	Yes	Yes
• IEC/EN 61000-4-X (-2, -3, -4, -5, -6, -11)	Yes	Yes
• KN35 Korea Immunity	Yes	Yes
• KN61000-4-X (-2, -3, -4, -5, -6, -11) Korea Immunity	Yes	Yes
• TEC/EMI/TEL-001/FEB-09 India Immunity	Yes	Yes
• TEC-SD-DD-EMC-221-05-OCT-16	Yes	Yes
• IG Surge	Yes	Yes
• EN 55035 (CISPR 35:2016) Electromagnetic compatibility of multimedia equipment	Yes	Yes

Ordering Information

Product Number	Description
Hardware	
ACX7100-48L-AC-AI	ACX7100 chassis with 48 SFP56/6 QSFP56-DD multi-rate ports, AC PSU, airflow in (AFI)
ACX7100-48L-AC-AO	ACX7100 chassis with 48 SFP56/6 QSFP56-DD multi-rate ports, AC PSU, airflow out (AFO)
ACX7100-48L-DC-AI	ACX7100 chassis with 48 SFP56/6 QSFP56-DD multi-rate ports, DC PSU, AFI
ACX7100-48L-DC-AO	ACX7100 chassis with 48 SFP56/6 QSFP56-DD multi-rate ports, DC PSU, AFO
ACX7100-32C-AC-AO	ACX7100 chassis with 32 QSFP28/4 QSFP56-DD multi-rate ports, AC PSU, AFO
ACX7100-32C-DC-AO	ACX7100 chassis with 32 QSFP28/4 QSFP56-DD multi-rate ports, DC PSU, AFO
Spares	
JNP7100-32C-CHAS	JNP7100 chassis with 32 QSFP28/4 QSFP56-DD multi-rate ports
JNP7100-48L-CHAS	JNP7100 chassis with 48 SFP56/6 QSFP56-DD multi-rate ports.
JNP7100-FAN1RU-AO	7100 front-to-back fan tray, 1 U
JNP7100-FAN1RU-AI	7100 back-to-front fan tray, 1 U
JPSU-1600W-1UACAFO	QFX5220-32CD 1600 W 1 U AC PSU AFO
JPSU-1600W-1UDCAFO	QFX5220-32CD 1600 W 1 U DC PSU AFO
JPSU-1600W-1UACAFI	QFX5220-32CD 1600 W 1 U AC PSU AFI
JPSU-1600W-1UDCAFI	QFX5220-32CD 1600 W 1 U DC PSU AFI
Software	
S-EACX-100G-A-1	SW, EACX Software 1-year Subscription Advance license; per 100GbE capacity, with software support
S-EACX-100G-A-3	SW, EACX Software 3-year Subscription Advance license; per 100GbE capacity, with software support
S-EACX-100G-A-5	SW, EACX Software 5-year Subscription Advance license; per 100GbE capacity, with software support
S-EACX-100G-A1-P	SW, EACX Software Perpetual Advanced 1 license; per 100GbE capacity, without software support
S-EACX-100G-P-1	SW, EACX Software 1-year Subscription Premium license; per 100GbE capacity, includes ADV SW Subscription license, with software support
S-EACX-100G-P-3	SW, EACX Software 3-year Subscription Premium license; per 100GbE capacity, includes ADV SW Subscription license, with software support
S-EACX-100G-P-5	SW, EACX Software 5-year Subscription Premium license; per 100GbE capacity, includes ADV SW Subscription license, with software support
S-EACX-100G-P1-P	SW, EACX Software Perpetual Premium 1 license; per 100GbE capacity, includes ADV SW Subscription license, without software support
S-EACX-400G-A-1	SW, EACX Software 1-year Subscription Advance license; per 400GbE capacity, with software support
S-EACX-400G-A-3	SW, EACX Software 3-year Subscription Advance license; per 400GbE capacity, with software support
S-EACX-400G-A-5	SW, EACX Software 5-year Subscription Advance license; per 400GbE capacity, with software support
S-EACX-400G-A1-P	SW, EACX Software Perpetual Advanced 1 license; per 400GbE capacity, without software support
S-EACX-400G-P-1	SW, EACX Software 1-year Subscription Premium license; per 400GbE capacity, includes ADV SW Subscription license, with software support
S-EACX-400G-P-3	SW, EACX Software 3-year Subscription Premium license; per 400GbE capacity, includes ADV SW Subscription license, with software support
S-EACX-400G-P-5	SW, EACX Software 5-year Subscription Premium license; per 400GbE capacity, includes ADV SW Subscription license, with software support

Product Number	Description
S-EACX-400G-P1-P	SW, EACX Software Perpetual Premium 1 license; per 400GbE capacity, includes ADV SW Subscription license, without software support
MACsec License	
S-ACXEVO100GMSEC-P	SW, ACXEVO, 100GbE, MACsec license, without customer support, must purchase CS separately, Perpetual
S-ACXEVO400GMSEC-P	SW, ACXEVO, 400GbE, MACsec License, without customer support, must purchase CS separately, Perpetual
S-ACXEVO100GMSEC-1	SW, ACXEVO, 100GbE, MACsec License, 1 Year Subscription, with Software Support
S-ACXEVO100GMSEC-3	SW, ACXEVO, 100GbE, MACsec License, 3 Year Subscription, with Software Support
S-ACXEVO100GMSEC-5	SW, ACXEVO, 100GbE, MACsec License, 5 Year Subscription, with Software Support
S-ACXEVO400GMSEC-1	SW, ACXEVO, 400GbE, MACsec License, 1 Year Subscription, with Software Support
S-ACXEVO400GMSEC-3	SW, ACXEVO, 400GbE, MACsec License, 3 Year Subscription, with Software Support
S-ACXEVO400GMSEC-5	SW, ACXEVO, 400GbE, MACsec License, 5 Year Subscription, with Software Support
Data Center Software	
S-ACXCLDDC48L-A1-3	SW, ACX7100-48L, Cloud Data Center (CLLDC), Advanced 1, with SVC customer support, 3 years
S-ACXCLDDC48L-A1-5	SW, ACX7100-48L, Cloud Data Center (CLLDC), Advanced 1, with SVC customer support, 5 years
S-ACXCLDDC48L-A1-P	SW, ACX7100-48L, Cloud Data Center (CLLDC), Advanced 1, without customer support, must purchase CS SKU separately, Perpetual
S-ACXCLDDC48L-A2-3	SW, ACX7100-48L, Cloud Data Center (CLLDC), Advanced 2, with SVC customer support, 3 years
S-ACXCLDDC48L-A2-5	SW, ACX7100-48L, Cloud Data Center (CLLDC), Advanced 2, with SVC customer support, 5 years
S-ACXCLDDC48L-A2-P	SW, ACX7100-48L, Cloud Data Center (CLLDC), Advanced 2, without customer support, must purchase CS SKU separately, Perpetual
S-ACXCLDDC32C-A1-3	SW, ACX7100-32C, Cloud Data Center (CLLDC), Advanced 1, with SVC Customer Support, 3 years
S-ACXCLDDC32C-A1-5	SW, ACX7100-32C, Cloud Data Center (CLLDC), Advanced 1, with SVC Customer Support, 5 years
S-ACXCLDDC32C-A1-P	SW, ACX7100-32C, Cloud Data Center (CLLDC), Advanced 1, without Customer Support, must purchase CS SKU separately, Perpetual
S-ACXCLDDC32C-A2-3	SW, ACX7100-32C, Cloud Data Center (CLLDC), Advanced 2, with SVC Customer Support, 3 years
S-ACXCLDDC32C-A2-5	SW, ACX7100-32C, Cloud Data Center (CLLDC), Advanced 2, with SVC Customer Support, 5 years
S-ACXCLDDC32C-A2-P	SW, ACX7100-32C, Cloud Data Center (CLLDC), Advanced 2, without Customer Support, must purchase CS SKU separately, Perpetual

Optics and Transceivers

ACX7100 supports varying port speeds with different transceiver options of direct attach copper (DAC), active optical cable (AOC), and breakout cable (BO). The most recent information on supported optics can be found at https://apps.juniper.net.

Juniper Networks Service 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.

About Juniper Networks

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Juniper's AI-Native Networking Platform is built from the ground up to leverage AI to deliver the best and most secure user experiences from the edge to the data center and cloud. Additional information can be found at Juniper Networks (www.juniper.net) or connect with Juniper on X (Twitter), LinkedIn, and Facebook.

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EQUIPMENT
FOR SALE

JUNIPER ACX7100 CLOUD METRO ROUTERS

juniper NETWORKS

Emerging 5G, IoT, and low latency services present a unique opportunity for network operators to transform their networks for new and increasingly complex services and applications. The ACX7100 line brings new benchmarks of capacity, density, agility, and low latency to the ACX7000 Family of multiservice routers.

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