cpacket NETWORKS
VISIBILITY YOU CAN TRUST

Data Sheet

cPacket cVu® Series Network Packet Brokers

Precise Real-Time Monitoring, Observing, and Advanced Packet Processing

cVu products enable you to:

- Gain operational agility through real-time visibility at the up to 100 Gbps feeding the right network traffic to the right tools at the right data rates
- Simplify your monitoring strategy through consolidation, data services, and intelligent forwarding, reducing tool-sprawl, and traffic blind-spots
- Monitor, analyze, and forward network traffic as the unbiased source of truth for performance and security investigations and audit-trails
- Meet any scale using cost-effective models for aggregation and high-performance models for advanced processing and flexible delivery
- Assure reliable and lossless data delivery through the distributed full-matrix smart port architecture with filters for packet ingress and egress
- Gain granular microburst details using cBurst millisecond resolution analytics and nanosecond timestamping for capacity planning
- Measure performance of inline devices by eliminating bottlenecks as the security delivery platform
- Integrate and deploy with leading security tools and SecOps workflows through Open monitoring architecture with RESTful API integration
- Access performance/security analytics anytime/anywhere using single-pane-of-glass visibility with customizable KPI dashboards
- License and use the solutions with all features fully unlocked at a consistent and predictable cost

cVu Solution

The cVu series delivers the highest performance 2-in-1 network monitoring and network packet brokering with millisecond resolution observability of KPIs and microbursts at up to 100Gpbs wire speeds. It integrates real-time network performance monitoring (NPM) and network packet brokering (NPB) to enable organizations to cost-effectively and reliably deliver optimized data streams to security and performance tools so you can maintain a strong security posture and quickly troubleshoot infrastructure problems.

The cVu product family seamlessly integrates with the cStor® Packet Capture and analysis appliances and the cClear® Analytics Engine to provide the highest fidelity network visibility for holistic security and performance monitoring, network troubleshooting, capacity planning, and regulatory compliance data capture.

Financial services, retail, manufacturing, government, defense, Internet Service Providers, managed-services providers, telecommunications, and mobile operators are just some of the industries that need network data monitoring for application/user performance management and security investigation. cPacket's cVu reduces tool sprawl and IT spending by consolidating network traffic and providing the right data to the right tools.

Key Benefits

The cVu series appliances combine several key technical features, building upon cPacket's industry-leading monitoring pedigree to maximize performance and analysis-based metrics. cVu network packet brokers help organizations deliver on a wide range of application/network performance and security requirements via a powerful combination of benefits, including but not limited to the following.

Lossless Reliable Performance

As companies enter the digital business era, demands for high-speed ports at the core and edge of the network to support big data, multi-media and e-commerce are ever increasing. However, the ability to provide accurate real-time visibility to monitor multiple links at full line-rate is a challenge that legacy monitoring architectures struggle to handle. Visibility is also key for security, but many packet brokers supplying security tools with network data are losing critical packets because of design limitations. Traditional packer brokers cannot inspect packets on multiple ports at wire speed leading to dropped packets, plus they lack the processing power necessary to allow multiple features to operate concurrently. Such problems worsen at higher speeds.

The cVu® series' Distributed Monitoring Architecture that applies hardware-acceleration to each port outperforms centralized network monitoring solutions by processing directly at the wire, eliminating dropped packets, congestion, bottlenecks, and limited performance that are inherent in legacy architectures. Smart ports inspect every packet before potential congestion. Pre-ingress processing ensures that relevant packets are counted and prioritized at each port before being passed to the internal switch fabric. Post-egress processing enables specific tool customization without generating additional load on the switch fabric.

High-Precision Monitoring and Observation

cPacket cVu® packet brokers provide unbiased traffic details that pinpoint imminent issues before they turn into large problems and degrade the end-user's experience and/or the benefits of other automation and operational technology. This is achieved based on behavioral analysis, customizable alerts, and key performance indicators that can identify spikes, microbursts, over-subscriptions, and data loss. Those requirements are critical for latency-sensitive environments such as high-frequency trading and market data feed in financial services industry.

Using nanosecond timestamping, the packet brokers measure one-way and two-way latencies and report on dropped traffic of key networking devices such as firewalls on a port and VLAN levels. Accurate PTP/PPS time synchronization, SNMP/Syslog autonomous health alerts combined with cPacket cClear network-wide dashboard visualization and cStor® forensic intelligence, allow users to dramatically improve overall mean-time-to-resolution (MTTR).

The unique cBurst feature provides precise microburst analysis at millisecond resolution providing the total burst-load spread over time so that sensitive environments such financial trading exchanges can accurately project and plan the network capacity to handle bursts to maximize utilization and revenue.

Flexible Deployment

A flexible port speed assignment capability allows the cVu product family to be configured for topologies that include a full range of 100, 40, 25, 10 and 1 gigabit per second data rates to enable smooth migration and scaling as network links are upgraded. The adoption of industry standard transceivers (QSFP28, QSFP+, SFP28 and SFP+) means there is no vendor lock-in allowing for a cost-effective operation. Optimally sized for large to small data centers and mission-critical applications, cVu® allows a flexible mix and match combination of ports that can operate from 1 to 100 gigabits per second in a compact 1-RU and 2-RU modular chassis. Easily deploy single and multi-tier topologies by combining cost-effective models for aggregation with high-performance models for advanced processing and flexible delivery.

The cVu® product family delivers nanosecond timestamping with integrated real-time analytics combined with wire-speed ingress and egress processing at each physical port in a distributed architecture. This provides unrivaled accuracy, performance and reliability for network monitoring and security applications. It inspects all packets at line rate and is guaranteed to find specific packets of interest.

Open Distributed Architecture

Our high-performance packet brokers are designed with a patented distributed architecture that puts programmable hardware-acceleration on every port to ensure that all features work simultaneously without dropping packets. This delivers the concurrent combination of traffic redirection, aggregation, smart filtering, Layers 2-7 protocol and packet processing, and load balancing applications. Performance is never an issue because this architecture averts central-CPU overload that is the source of performance limitations and packet loss with other vendor's solutions. Unlike other monitoring solutions, cPacket solutions are designed to be integrated with other tools. You gain detailed performance analytics in real-time to allow users to make informed decisions on every link across the network. In addition to performing advanced analysis, the real-time forensic data and high resolution meta data are available via RESTful API for back-office automation and integration with security and other performance solutions.

Deployment and Use Case

The cVu series comprises of a complete rack-installable solution in the data center, campus, remote site, or telco environment, with a range of options available according to throughput and feature requirements. The cVu series is fully integrated with cPacket cStor® series packet capture/analysis appliances and cClear for centralized single-pane-of-glass analytics through customizable dashboards. cPacket's visibility tools provide proactive metrics such as application visibility, TCP response-time, round-trip time, retransmits, one-way latency, and microburst analysis at high resolution. With cPacket cVu®, network and security operators can deploy the functionality they need at the locations they need, to monitor and analyze issues remotely.

Typical deployment in the on-premises network such as in a data center for north-south traffic visibility requires building a complete visibility overlay architecture. cPacket solutions based on cTap series network TAP (Test Access Point) feed wire-data from strategic points into the cVu series 1/10/25/40/100G-enabled packet brokers where the data is monitored and processed to intelligently forward the right data to the right tools organized in a tool-rail. This design reduces the tool sprawl and blind spots because now you can see and control all traffic.

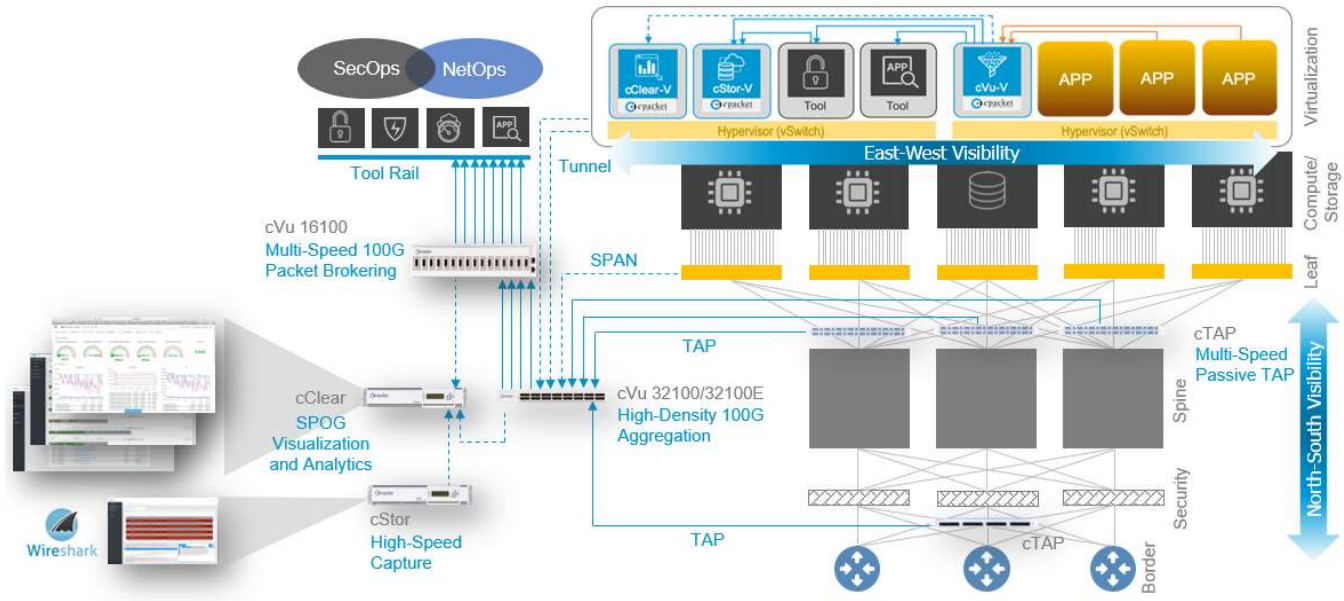

Figure 1: Reference 2-Tier Design for Complete Visibility of North-South and East-West Network Traffic

For high-density deployments, the cVu 32100 or cVu 32100E can be used to aggregate network packet data such from large numbers of ports and/or for delivering packets to many distribution endpoints such as tools. Using either of these packet brokers are ideal for a 2-tier design to cost-effectively scale the monitoring as shown in Figure 1. Advanced processing is also cost-effectively scaled using high-performance packet brokers such as the cVu 16100NG or cVu 3240NG. Filtering, truncating, deduplicating, replicating, and intelligently distributing packets to specific destinations is all shifted to a second tier.

Interesting data can also be relayed to cStor® series 1/10/40G enabled appliances for storage and analysis. Additionally, cPacket's virtual product suite including cVu-V, cStor-V and cClear-V (see those data sheets) can be deployed to monitor virtualized and public cloud infrastructure for the east-west traffic, providing 100% seamless visibility across local and hybrid environments.

Models and Options

The cVu series is the broadest line of packet brokers to meet any needs and scale in data center, branch, and service provider environments. Choose from models that operate up to 100Gbps data rates with low and high port densities. Also choose from models that perform cost-effective aggregation, and from high-performance models that perform high-fidelity packet observation, advanced processing, and intelligent delivery. Multiple I/O connectivity options are available for plugged into existing physical TAP infrastructure or capture devices and start monitoring/relaying the network data.

To learn more, visit [www.cpacket.com.](http://www.cpacket.com)

Figure 2: cPacket cVu series network packet broker+ and aggregation hardware appliances

Technical Specifications

Key Features:

	cVu 160NG	cVu 240NG	cVu 400NG	cVu 560NG
Traffic Aggregation/Replication	Yes	Yes	Yes	Yes
Packet Slicing/Truncation	Yes	Yes	Yes	Yes
Advanced Load Balancing	Yes	Yes	Yes	Yes
VXLAN/MPLS/VNTag Stripping	Yes	Yes	Yes	Yes
VLAN Tag with Inner VLAN Filtering	Yes	Yes	Yes	Yes
Smart Filtering	Yes	Yes	Yes	Yes
High Resolution Counters (HRC KPI)	Yes	Yes	Yes	Yes
Microburst Analysis (cBurst)	Yes	Yes	Yes	Yes
Packet Deduplication	Yes	Yes	Yes	Yes
Packet Size Byte Counter Insertion	Yes	Yes	Yes	Yes
MAC-in-MAC DC Decapsulation	Yes	Yes	Yes	Yes
Timestamping with External PPS	Yes	Yes	Yes	Yes
Timestamping with PTP/NTP	Yes	Yes	Yes	Yes
Time Sync Management (PTP/NTP)	Yes	Yes	Yes	Yes
Role-Based Administration	Yes	Yes	Yes	Yes
Software Upgrade/Restore	Yes	Yes	Yes	Yes
GUI, Serial Console and CLI	Yes	Yes	Yes	Yes
SNMPv2c and MIB	Yes	Yes	Yes	Yes
Optical Transceiver Diagnostics	Yes	Yes	Yes	Yes
TACACS+/RADIUS Authentication	Yes	Yes	Yes	Yes
cClear Management/Dashboards	Yes	Yes	Yes	Yes

	cVu 2440NG	cVu 3240NG	cVu 4100NG	cVu 8100NG	cVu 16100NG
Traffic Aggregation/Replication	Yes	Yes	Yes	Yes	Yes
Packet Slicing/Truncation	Yes	Yes	Yes	Yes	Yes
Advanced Load Balancing	Yes	Yes	Yes	Yes	Yes
VXLAN/MPLS/VNTag Stripping	Yes	Yes	Yes	Yes	Yes
VLAN Tag with Inner VLAN Filtering	Yes	Yes	Yes	Yes	Yes
Smart Filtering	Yes	Yes	Yes	Yes	Yes
High Resolution Counters (HRC KPI)	Yes	Yes	Yes	Yes	Yes
Microburst Analysis (cBurst)	Yes	Yes	Yes	Yes	Yes
Packet Deduplication	Yes	Yes	Yes	Yes	Yes
Packet Size Byte Counter Insertion	Yes	Yes	Yes	Yes	Yes
MAC-in-MAC DC Decapsulation	Yes	Yes	Yes	Yes	Yes
Timestamping with External PPS	Yes	Yes	Yes	Yes	Yes
Timestamping with PTP/NTP	Yes	Yes	Yes	Yes	Yes
Time Sync Management (PTP/NTP)	Yes	Yes	Yes	Yes	Yes
Role-Based Administration	Yes	Yes	Yes	Yes	Yes
Software Upgrade/Restore	Yes	Yes	Yes	Yes	Yes
GUI, Serial Console and CLI	Yes	Yes	Yes	Yes	Yes
SNMPv2c and MIB	Yes	Yes	Yes	Yes	Yes
Optical Transceiver Diagnostics	Yes	Yes	Yes	Yes	Yes
TACACS+/RADIUS Authentication	Yes	Yes	Yes	Yes	Yes
cClear Management/Dashboards	Yes	Yes	Yes	Yes	Yes

	cVu 32100	cVu 32100E
Traffic Aggregation/Replication	Yes	Yes
Load Balancing	Yes	Yes
VXLAN Termination	Yes	Yes
L2/L3 Protocol Stripping (VLAN/MPLS)	Yes	Yes
Filtering	Yes	Yes
High Resolution Counters (HRC KPI)	Yes	Yes
Microburst Analysis (cBurst)	No	Yes
cPacket Timestamping	No	Yes
Arista Timestamping Compatibility	No	Yes
Time Sync Management (PTP/NTP)	Yes	Yes
Role-Based Administration	Yes	Yes
Software Upgrade/Restore	Yes	Yes
GUI, Serial Console and CLI	Yes	Yes
SNMPv2c and MIB	Yes	Yes
Optical Transceiver Diagnostics	Yes	Yes
TACACS+/RADIUS Authentication	Yes	Yes
cClear Management/Dashboards	Yes	Yes

Interface and Connectivity:

	cVu 160NG	cVu 240NG	cVu 400NG		cVu 560NG	
			Option 1	Option 2	Option 1	Option 2
1 GbE Ports (SFP)	(16)	(24)	(24)	(24)	(24)	(24)
10 GbE Ports (SFP+)	16	24	24+16*	24	24+32*	24
40 GbE Ports (QSFP+)	N/A	N/A	0	4	0	8
Max Monitoring Rate	10 Gbps	10 Gbps	10 Gbps	40 Gbps	10 Gbps	40 Gbps
Management Interface	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)
Timing/Synchronization	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP

	cVu 2440NG	cVu 3240NG	cVu 4100NG	cVu 8100NG	cVu 16100NG
1 GbE Ports (SFP)	N/A	N/A	N/A	N/A	N/A
10 GbE Ports (SFP+)	96*	128*	16*	32*	64*
25 GbE Ports (SFP28)	N/A	N/A	16*°	32*°	64*°
40 GbE Ports (QSFP+)	24	32	4	8	16
100 GbE Ports (QSFP28)	N/A	N/A	4	8	16
Max Monitoring Rate	40 Gbps	40 Gbps	100 Gbps	100 Gbps	100 Gbps
Management Interface	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)
Timing/Synchronization	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP	PPS (SMA) PTP/NTP

	cVu 32100	cVu 32100E
1 GbE Ports (SFP)	(128*)	(128*)
10 GbE Ports (SFP+)	128*	128*
25 GbE Ports (SFP28)	128*	128*
40 GbE Ports (QSFP+)	32	32
100 GbE Ports (QSFP28)	32	32
Max Monitoring Rate	100 Gbps	100 Gbps
Management Interface	Ethernet/Serial (RJ45)	Ethernet/Serial (RJ45)
Timing/Synchronization	PTP/NTP	PTP/NTP

* Using QSFP+/QSFP28 breakout box/cables ( ) Using 10G ports ° Future

Dimensions and Weight:

	cVu 160NG	cVu 240NG	cVu 400NG	cVu 560NG
Height/Rack Unit	1.7” (4.3 cm) 1U	1.7” (4.3 cm) 1U	1.7” (4.3 cm) 1U	1.7” (4.3 cm) 1U
Width	16.6” (43 cm)	16.6” (43 cm)	16.6” (43 cm)	16.6” (43 cm)
Depth	28.1” (72 cm)	28.1” (72 cm)	28.1” (72 cm)	28.1” (72 cm)
Weight	40 lb (18.6 kg)	40 lb (18.6 kg)	40 lb (18.6 kg)	40 lb (18.6 kg)

	cVu 2440NG	cVu 3240NG	cVu 4100NG	cVu 8100NG	cVu 16100NG
Height/Rack Unit	3.5” (8.9 cm) 2U	3.5” (8.9 cm) 2U	3.5” (8.9 cm) 2U	3.5” (8.9 cm) 2U	3.5” (8.9 cm) 2U
Width	17.0” (43 cm)	17.0” (43 cm)	16.5” (42 cm)	16.5” (42 cm)	16.5” (42 cm)
Depth	29.0” (74 cm)	29.0” (74 cm)	28.25” (72 cm)	28.25” (72 cm)	28.25” (72 cm)
Weight	80 lb (36.3 kg)	80 lb (36.3 kg)	46 lb (20.8 kg)	50 lb (22.6 kg)	56 lb (25.5 kg)

	cVu 32100	cVu 32100E
Height/Rack Unit	1.72” (4.4) 1U	1.72” (4.4) 1U
Width	16.84” (42.8)	16.84” (42.8)
Depth	22.0” (55.9)	22.0” (55.9)
Weight	24.5 lb (11.1 kg)	24.5 lb (11.1 kg)

Operating Conditions:

	cVu 160NG	cVu 240NG	cVu 400NG	cVu 560NG
Operating Temperature	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C
Operating Humidity	10% – 90%	10% – 90%	10% – 90%	10% – 90%
Certifications	FCC Class A EN 55022 Class A	FCC Class A EN 55022 Class A	FCC Class A EN 55022 Class A	FCC Class A EN 55022 Class A

	cVu 2440NG	cVu 3240NG	cVu 4100NG	cVu 8100NG	cVu 16100NG
Operating Temperature	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C
Operating Humidity	10% – 90%	10% – 90%	10% – 90%	10% – 90%	10% – 90%
Certifications	FCC Class A EN 55022 Class A	FCC Class A EN 55022 Class A	FCC Class A FCC Class CE	FCC Class A FCC Class CE	FCC Class A FCC Class CE

	cVu 32100	cVu 32100E
Operating Temperature	32° F – 104° F 0° C – 40° C	32° F – 104° F 0° C – 40° C
Operating Humidity	5% – 85%	5% – 85%
Certifications	FCC Class A FCC Class CE	FCC Class A FCC Class CE

Power and Cooling:

	cVu 160NG	cVu 240NG	cVu 400NG	cVu 560NG
Airflow	Front-to-Back	Front-to-Back	Front-to-Back	Front-to-Back
Power Redundancy	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz
Max. Power Consumption	650 W	650 W	650 W	650 W
Heat Dissipation	2216 BTU/hour	2216 BTU/hour	2216 BTU/hour	2216 BTU/hour

	cVu 2440NG	cVu 3240NG	cVu 4100NG	cVu 8100NG	cVu 16100NG
Airflow	Front-to-Back	Front-to-Back	Front-to-Back	Front-to-Back	Front-to-Back
Power Redundancy	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz	1+1 AC/DC 100-240 VAC 50-60 Hz
Max. Power Consumption	1700 W	1700 W	1100 W	1350 W	1800 W
Heat Dissipation	5797 BTU/hour	5797 BTU/hour	3751 BTU/hour	4603 BTU/hour	6138 BTU/hour

	cVu 32100	cVu 32100E
Airflow	Front-to-Back	Front-to-Back
Power Redundancy	1+1 AC/DC 100-264 VAC 50-60 Hz	1+1 AC/DC 100-264 VAC 50-60 Hz
Max. Power Consumption	250 W	250 W
Heat Dissipation		

Ordering Information

SKU	Description
CP_CVU_160NG	cPacket cVu 160NG aggregation network packet broker+, 160Gbps forwarding capacity with 16x10GbE SFP+ ports Redundant AC power supplies. Maintenance not included.
CP_CVU_240NG	cPacket cVu 240NG aggregation network packet broker+, 240Gbps forwarding capacity with 24x10GbE SFP+ ports in 2RU. Redundant AC power supplies. Maintenance not included.
CP_CVU_400NG	cPacket cVu 400NG aggregation network packet broker+, 400Gbps forwarding capacity with 4x40GbE QSFP+ and 24x10GbE SFP+ ports in 2RU. Redundant AC power supplies. Maintenance not included.
CP_CVU_560NG	cPacket cVu 560NG aggregation network packet broker+, 560Gbps forwarding capacity with 8x40GbE QSFP+ and 24x10GbE SFP+ ports in 2RU. Redundant AC power supplies. Maintenance not included.
CP_CVU_2440NG	cPacket cVu 2440NG core network packet broker+, 960Gbps forwarding capacity with 24x40GbE QSFP+ ports in 2RU. Quadruple AC power supplies. Maintenance not included.
CP_CVU_3240NG	cPacket cVu 3240NG core network packet broker+, 1.28Tbps forwarding capacity with 32x40GbE QSFP+ ports in 2RU. Quadruple AC power supplies. Maintenance not included.
CP_CVU_4100NG	cPacket cVu 4100NG core network packet broker+, 400Gbps forwarding capacity with 4x100GbE QSFP28 ports in 2RU. Redundant AC power supplies. Maintenance not included.
CP_CVU_8100NG	cPacket cVu 8100NG core network packet broker+, 800Gbps forwarding capacity with 8x100GbE QSFP28 ports in 2RU. Redundant AC power supplies. Maintenance not included.
CP_CVU_16100NG	cPacket cVu 16100NG core network packet broker+, 1.6Tbps forwarding capacity with 16x100GbE QSFP28 ports in 2RU. Quadruple AC power supplies. Maintenance not included.
CP_CVU_32100	cPacket cVu 32100 aggregation and distribution network packet broker, 3.2Tbps forwarding capacity with 32x100GbE QSFP28 ports in 1RU. Redundant AC power supplies. Maintenance not included.
CP_CVU_32100E	cPacket cVu 32100E aggregation and distribution network packet broker+, 3.2Tbps forwarding capacity with 32x100GbE QSFP28 ports in 1RU. Redundant AC power supplies. Low-latency monitoring with microburst analysis (cPacket cBurst) and PTP based timestamping. Maintenance not included.

About cPacket Networks

cPacket enables IT through network-aware application performance and security assurance across the distributed hybrid environment. Our AIOps-ready single-pane-of-glass analytics provide the deep network visibility required for today's complex IT environments. With cPacket, you can efficiently manage, secure, and future-proof your network - enabling digital transformation. cPacket solutions are fully reliable, tightly integrated, and consistently simple. cPacket enables organizations around the world to keep their business running. Our cutting-edge technology enables network, application, and security teams to proactively identify issues before negatively impacting the business. The result: increased security, reduced complexity, and increased operational efficiency. Learn more at cpacket.com, read our blog, or follow us on Twitter, LinkedIn, Facebook, YouTube, and BrightTalk.