

cPacket cStor® Packet Capture & Analysis Observability Nodes

Capture and analyze network packet data at line speeds



Today's large enterprises require zero downtime, continuous change and unceasing vigilance against risks. To deliver on those requirements, enterprises need an observability solution build on reliable and accurate packet data. Those solutions must operate at line speed, anywhere and at anytime.

Fast multi/hybrid-cloud networks increase pressure on IT teams to keep infrastructure reliable and secure. Each packet zooms by in just 6.7 nanoseconds at 100 Gbps—a bare instant for networking tools to analyze, index and store packets.

That's where cPacket cStor can help, by capturing and analyzing every packet as it crosses the network at line speed. cStor's rapid capture-to-disk (CTD) enables network operations (NetOps) and security operations (SecOps) teams to monitor network reliability and security in real-time, while also looking backward to investigate incidents that happened in the past.

cStor combines compute, storage and networking in a single, compact device, capturing and analyzing every packet as it crosses the network. The appliance delivers high-fidelity metrics for network throughput, capacity, latency and errors.

cStor helps NetOps and SecOps teams deliver business continuity, better operational efficiency and more robust security.

Deployment Scenarios

Every business needs to be able to analyze how the network is performing. cStor can help troubleshoot application, server and network problems.

Organizations in every major industry rely on cStor. These include financial institutions, market exchanges, hospitals and healthcare, government, manufacturing, retail, communications, education, and high-performance computing.

Every industry has its own mission-critical applications that require zero-downtime operation and regulations compliance. Financial services companies are involved with electronic trading where each transaction processing is critical. Healthcare providers depend on their electronic health records (EHR) system is up and running, and count on delivering huge X-ray images from one place to another without delay as they deal with saving lives. Hospitals are looking to deploy cameras in thousands of rooms to improve responsiveness. All of these applications require high-performance, reliable with zero downtime networks.

cStor enables NetOps and SecOps teams to:

- Reproduce and investigate critical issues.
- Perform security audits.
- Achieve regulatory compliance, and policy enforcement
- Help with capacity planning
- And deliver packets to business units to to analyze and extract business data

Access to packet data before, during and after a security incident gives forensics tools the information needed for analysis. cStor integrates with Security Information and Event Management (SIEM) and Intrusion Prevention and Detection Systems (IPS/IDS).

cStor's packet capture and analytics performance is a key differentiation compared to the competition. cStor's high CTD rate enables it to write packets to storage as fast as they come over the network, while at the same time indexing for fast retrieval and analyzing. That means cStor doesn't lose packets that might contain essential information to troubleshoot network problems, and more importantly can quickly retrieve them when the team is trying to investigate what happened.

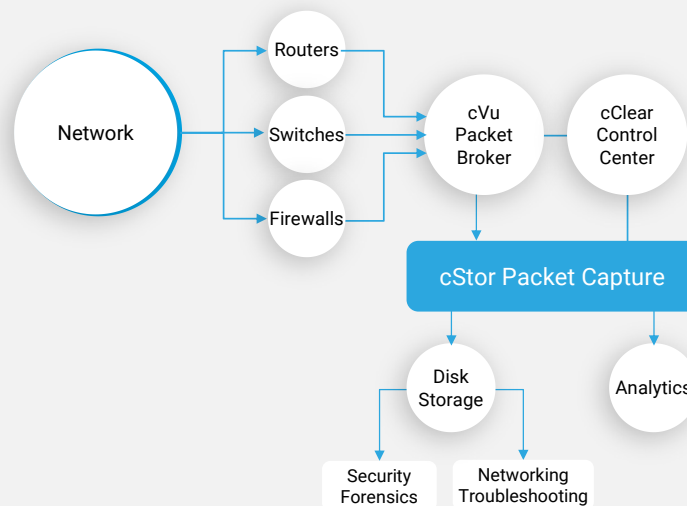
cStor provides the information needed for NetOps to solve a variety of problems:

- Slow application performance, which reduces worker productivity and can result in immediate financial loss in the case of financial trading and similar applications.
- Poor connection quality, leading to errors which can degraded video and voice quality and increase latency.
- Inability to connect to critical business applications.

cStor packet analytics is able to measure latency of every application, identify communication errors and connectivity issues all in real time.

The appliance helps NetOps and SecOps teams root-cause issues by understanding the 4Ws: "what," "when," "where" and "why" of network problems. Users complaints are general and focus on service-slowness, bad-quality or connectivity issues, but the data from cStor identifies the "what," "when" and "where" in a way that a skilled operators can understand the "why." Once you get the "what," "when" and "where," you're on your way to figuring out why an application is experiencing problems.

The cPacket Networks Intelligent Observability Platform



What's inside the case?

cStor provides up to 2 petabytes of high-speed storage and 10 or 100Gbps connectivity—essential for lossless packet capture at line speed. The appliance offers onboard storage and optional external cPacket Extensible Storage (CES) units for expandability and to best use rack space in expensive data center real estate. Self-Encrypting Drives (SED) are optionally available to help keep sensitive data secure.

cStor is available as a hardware appliance, virtual machine (VM) or cloud-native instance, to extend analysis to software-defined data centers, remote branch offices and multi-cloud environments.

A range of hardware and virtual appliances means cStor can be cost-effectively deployed anywhere needed in any network, including hybrid on-premises and cloud networking. cStor can be deployed on appliance turnkey hardware, existing industry-standard servers, or in the cloud.

Captured data can be queried simultaneously while being written to disk to help NetOps and SecOps get results fast.

Management options

cStor offers several options to enable effective device management:

- Each appliance has an individual Web management interface.
- Supports RESTful APIs for integration with standard network management tools.
- cPacket's cClear console and cCloud Suite offer dashboards for managing all cPacket devices on a network.

Better together

cStor packet capture and analytics appliances are integral to the cPacket Networks Intelligent Observability Platform. cStor can function alone or as a part of cPacket's suite of products. The cVu advanced packet broker forwards the right data streams to the right cStor capture device, and the cClear management solution provides a single pane of glass for valuable analysis.

Beating the competition

cStor stands out from competitive products by combining line speed capture at up to 100 Gbps and high-density storage to enable storing petabytes of data in a small form factor.

Conventional network monitoring tools such as NetFlow sample the network but don't reconstruct exact flows. cStor provides all the data for deeper analysis of network and security problems.

Performance is crucial, particularly for security applications. cStor indexes packets on the fly and therefore can extract them in minutes, while our competition takes hours.

cStor's rapid performance helps NetOps teams catch network problems before they become business problems. When the trouble ticket comes in, NetOps teams can say they're already hard at work solving the problem, rather than that trouble ticket being the first time NetOps finds out the problem.

And rapid performance reduces "mean time to innocence." Often, application slowdowns and disruptions are not network problems. In those cases, cStor helps NetOps teams quickly make that determination.

cStor's licensing is simplified compared with the competition. We don't nickel and dime you for features—one license price unlocks all capabilities.

Find out more

Learn more about how the cStor S series of packet capture-to-disk appliances can help you improve performance and security on your network.

Visit cpacket.com/products/cstor/

Here's what cStor appliances can do for you:

- Capture raw packets at data rates of up to 100Gbps, enrich with metadata, and store to persistent storage extensible to 2PB.
- Fast indexing and querying
- Simultaneous reading and writing give you immediate access to captured data.
- Select outputs from charts, tables or raw PCAP, with error and event overlays using Wireshark.
- Configure Syslog and SNMP alerts on frame errors, frame drops, microbursts, transceiver light levels, and link statistics with alert conditions and reporting.
- And here's what you can do more easily with cStor's help:
- Use captured network traffic as the source of truth for troubleshooting, performance management, security, and regulatory compliance.
- Replay and forensically analyze historical data for cybersecurity and incident response.
- Reduce mean-time-to-resolution for stateful (TCP) and real-time (UDP/RTP) application, network performance and user-experience problems.
- Analyze financial market data feeds and latency by analyzing packet capture timestamps.

Technical Specification

Key Features

	cStor 10S	cStor 20S	cStor 30S	cStor 40S	cStor 100S
Precision Time (PPS)	Yes**	Yes**	Yes**	Yes**	Yes**
Packet Indexing	Yes	Yes	Yes	Yes	Yes
Fast/Expedited Querying	Yes	Yes	Yes	Yes	Yes
Multiple Capture Merge	Yes	Yes	Yes	Yes	Yes
Flow Analytics	Yes	Yes	Yes	Yes	Yes
TCP Analytics	Yes	Yes	Yes	Yes	Yes
Latency/Jitter Analysis	Yes	Yes	Yes	Yes	Yes
Real-Time Protocol Analysis	Yes	Yes	Yes	Yes	Yes
Multicast Video Analysis	Yes	Yes	Yes	Yes	Yes
Financial Protocol Analysis	Yes	Yes	Yes	Yes	Yes
Market Data Feed Analytics (cMDF)	Yes	Yes	Yes	Yes	Yes
Data Encryption	Yes	Yes	Yes	Yes	Yes
Integrated Wireshark	Yes	Yes	Yes	Yes	Yes
Packet Replay	Yes	Yes	Yes	Yes	Yes
cVu® NG and AG Integration	Yes	Yes	Yes	Yes	Yes
cClear® Integration	Yes	Yes	Yes	Yes	Yes

** With cPacket cVu® integration

Interface and Storage Options

	cStor 10S	cStor 20S	cStor 30S	cStor 40S	cStor 100S
1 GbE Ports (SFP)	-	-	-	-	-
10 GbE Ports (SFP+)	2	4	8	8*	8*
40 GbE Ports (QSFP+)	N/A	N/A	N/A	2	(2)
100 GbE Ports (QSFP28)	N/A	N/A	N/A	(2)	2
Sustained Capture Rate	10 Gbps	20 Gbps	30 Gbps	40 Gbps	100 Gbps ^
Default Storage	48/96 TB	192 TB	192 TB	288 TB	288 TB
SED Storage Option**	44 TB	192 TB	192 TB	288 TB	288 TB
Extensible Storage (CES)	N/A	1696 TB	N/A	1696 TB	1696 TB
Max Total Storage	N/A	2PB	N/A	2 PB	2 PB

* Using QSFP+ breakout box/cables ** Self-Encrypting Drive (SED) option available () Using QSFP+ supported transceivers ^ Using CES

Dimensions and Weight

Capture Unit	cStor 10S	cStor 20S	cStor 30S	cStor 40S	cStor 100S
Height/Rack Unit	3.5" (8.9 cm) 2U	3.5" (8.9 cm) 2U	7" (17.8 cm) 4U	7" (17.8 cm) 4U	7" (17.8 cm) 4U
Width	17.2" (43.7 cm)	17.2" (43.7 cm)	17.2" (43.7 cm)	17.2" (43.7 cm)	17.2" (43.7 cm)
Depth	23.6" (59.9 cm)	27.75" (70.5cm)	28" (71.1 cm)	28" (71.1 cm)	28" (71.1 cm)
Weight	52 lbs. (23.6 kg)	62 lbs. (28.12 kg)	132 lbs. (60 kg)	132 lbs. (60 kg)	132 lbs. (60 kg)

Extensible Storage	CES 96TB	CES 512TB	CES 1024TB	CES 1696TB
Height/Rack Unit	7" (17.8 cm) 4U	7" (17.8 cm) 4U	7" (17.8 cm) 4U	7" (17.8 cm) 4U
Width	17.2" (43.7 cm)	17.2" (43.7 cm)	17.2" (43.7 cm)	17.2" (43.7 cm)
Depth	45" (71.1 cm)	45" (71.1 cm)	45" (71.1 cm)	45" (71.1 cm)
Weight	171lbs	171lbs	219lbs	310lbs

Operating Conditions

Capture Unit	cStor 10S	cStor 20S	cStor 30S	cStor 40S	cStor 100S
Operating Temperature	41° F – 95° F	41° F – 95° F	50° F - 95° F	50° F - 95° F	50° F - 95° F
Operating Humidity	50% – 90%	8%- 90%	8%- 90%	8%- 90%	8%- 90%

Extensible Storage	CES 96TB	CES 512TB	CES 1024TB	CES 1696TB
Operating Temperature	50° F - 95° F	50° F - 95° F	50° F - 95° F	50° F - 95° F
Operating Humidity	8%- 90%	8%- 90%	8%- 90%	8%- 90%

Power and Cooling

Master Unit	cStor 10S	cStor 20S	cStor 30S	cStor 40S	cStor 100S
Airflow	Front-to-Back	Front-to-Back	Front-to-Back	Front-to-Back	Front-to-Back
Power Redundancy	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz
Max. Power Consumption	650 W	1170 W	1373 W	1373 W	1373 W
Heat Dissipation	2216.5 BTU/hour	2195.3 BTU/hour	4597.4 BTU/hour	4597.4 BTU/hour	4597.4 BTU/hour

Extensible Storage	CES 96TB	CES 512TB	CES 1024TB	CES 1696TB
Airflow	Front-to-Back	Front-to-Back	Front-to-Back	Front-to-Back
Power Redundancy	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz	1+1 AC 100-240 VAC 50-60 Hz
Max. Power Consumption	1183.2 W	1183.2 W	1373 W	1373 W
Heat Dissipation	2860 BTU/hour	2860 BTU/hour	4597.4 BTU/hour	4597.4 BTU/hour



About cPacket Networks

cPacket Networks de-risks IT I&O through network-aware service and security assurance across hybrid and multi-cloud environments. Our AIOps-ready Intelligent Observability Platform provides single-pane-of-glass analytics and deep network visibility required for complex IT environments enabling Fortune 500 organizations around the world to keep their business running. cPacket solutions are fully reliable, tightly integrated, and consistently simple. Our cutting-edge technology enables network, application, and security teams to proactively identify issues before negatively impacting the business. The result: increased service agility, enhanced experience assurance, and faster transactional velocity. Learn more at cpacket.com.