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Data Sheet

cPacket cStor Series Packet Capture Appliances

Captured Network Data for Security and Performance Forensic Analysis, and Regulatory Compliance

cStor appliances enable you to:

- Capture raw packets at data rates of up to 100Gbps, enrich them with metadata, and store them to persistent storage that is extensible to 2PB
- Use captured network traffic as the source of truth for troubleshooting, performance management, security, and meeting regulatory compliance
- Understand high data rate traffic
- Replay and forensically analyze historical data for cybersecurity and incident response
- Provide detailed conversation and session statistics, with flow indices created and maintained through parsing Layer 2-4 headers
- Reduce mean-time-to-resolution for stateful (TCP) and real-time (UDP/RTP) applications, network performance, and end-user-experience issues
- Analyze financial market data feeds and latency by analyzing packet capture timestamps
- 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
- Manage capability with start/stop capture per port, rotation of capture files, and application of filters
- Configure Syslog and SNMP alerts on frame errors, frame drops, microbursts, transceiver light levels, and link statistics with alert conditions and reporting

cStor Packet Capture Solution

The cStor Network Packet Capture appliances are high-performance purpose-built appliances that enable network-aware application performance monitoring for stateful application analysis, end-to-end network monitoring, and network detection and response. The cStor appliances are an integral part of the cPacket Networks® Intelligent Observability Platform and engineered for lossless capture-to-disk at up to 100Gbps, and fast data retrieval even while writing data, which gives you immediate access to data for efficient forensic analysis. Capture-to-disk (CTD) performance varies by model; refer to the technical specifications section below. Persistently stored stateful data is enriched with timestamps and event tags to give you snapshots of traffic before, during, and after events. Fast query execution and data retrieval using an open API facilitates cyberthreat hunting and analysis by security tools for effective Network Detection and Response (NDR), such as Security Information and Event Management (SIEM) and Intrusion Prevention and Detection Systems (IPS/IDS). Historical analysis is necessary for Network Performance Monitoring and Diagnostics (NPMD) to assure exceptional end-user connectivity and application experiences. Persistently stored data also supports regulatory compliance, data retention and reporting requirements, and third-party RegTech solutions.

The cStor series provides industry-leading reliability, simplicity, platform integration, scalability, and high-fidelity metrics of TCP, UDP, and RTP traffic, transmission timing, and latencies (TCP response, DNS lookup, and HTTPS handshake). The broad line of appliances gives you the ability to extend storage and functionality with a unique pricing model that combines flexibility with the highest return on investment. Data is stored on media that can be extended by adding capacity, including optional self-encrypting drives. The appliances also provide an open runtime environment for analytics and applications such as Wireshark. For virtualized, cloud, and hybrid environments, similar and seamless functionality is provided by the cCloud Suite.

The cStor appliances are used by organizations in all major industries, including financial institutions, market exchanges, hospitals/healthcare, government, manufacturing, retail, communications, education, and high-performance computing. Analytics applied to historical data assist the entire IT team to efficiently respond to unplanned events, troubleshoot network and application problems, plan capacity, and maximize performance, experiences, and security.

Key Benefits

The cStor appliances greatly contributes IT operational efficiency by providing necessary visibility and actionable intelligence. The hallmarks of the cStor appliances include:

Flexibility with High Performance

Lossless packet capture and persistence can be achieved at sustained CTD rates of up to 60G and burst rate of up to 100Gbps, supporting both today and tomorrow's network requirements with a future-proof approach. A comprehensive range of hardware and virtual appliances means that the cStor appliance can be cost-effectively deployed anywhere needed in any network including hybrid environments, whether as an appliance-based turnkey hardware solution or stand-alone capture on existing industry-standard servers or cloud-native storage.

Elasticity with Ease of Deployment

The cStor series appliances offer a combination of storage capacities (22TB to 2PB) and connectivity options (10, 25, 40, 100Gbps), can be easily and quickly deployed according to business and IT requirements. The appliances are configured and managed using the administration console within the cClear® and/or the cCloud Suite. The cStor appliance supports on-board storage for optimal use and lower cost while providing extended capacity through external cPacket Extensible Storage (CES) units. The result is an easy to manage, cost-optimized solution that makes the best use of rack space; while providing the breadth and depth of packet data analysis to drive analytics, security forensics, application, user, and network performance. Complete visibility across north-south and east-west traffic across branch, data center, and multi-cloud enables hybrid enterprises for business-ready network operations.

Figure 1: cPacket Extensible Storage Unit (CES) for cStor Appliances

Optimized Search and Data Encryption

Fast queries and data retrieval complement fast packet capture, so your analyses and can be as efficient as possible, which is especially important for time-sensitive matters such as investigating events that cause service disruptions. The cStor appliances facilitate rapid troubleshooting and forensics analysis via an intuitive web-based GUI powered by hardware-assisted timestamping and data indexing. Captured data can be queried simultaneously while being written to disk, so captured data is immediately available. Self-Encrypting Drives (SED) are available as a preinstalled option in specific models to keep data secure (refer to the ordering information table below).

Open Architecture

With its open architecture and API, the cStor appliances can interface with third party analytics and security applications, either locally or remotely. Other applications, such as Wireshark (pre-installed on specific models), can run directly on the cStor appliance; additional analytics are available using the cClear appliance and/or the cCloud Suite. Data streams are delivered as uninterrupted packet streams from disk to performance management, and to cybersecurity tools such as IPS, IDS, SIEM, and NDR tools to understand and prevent security events. Investigations can drill into the indicators of compromise and entire history spanning before, during, and after events.

Deployment and Use Case

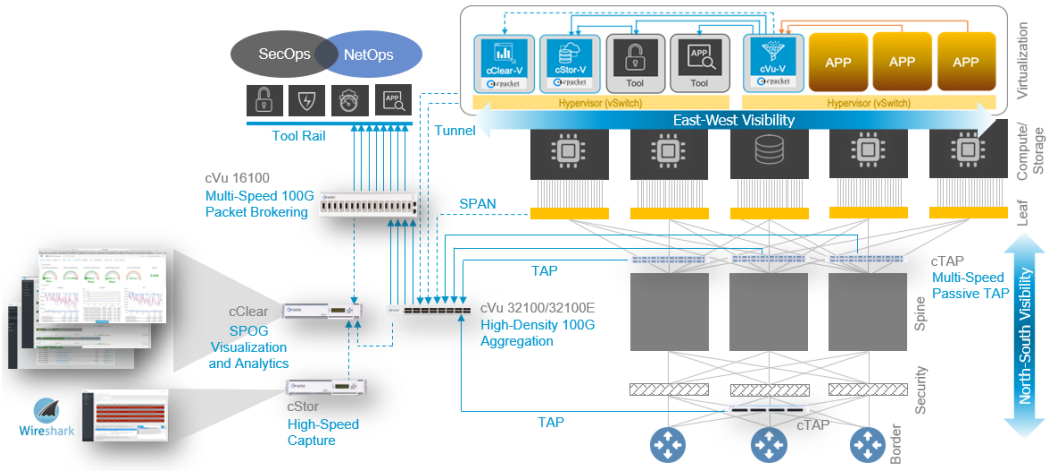

Figure 2: Reference Design for Complete Visibility of North-South and East-West Network Traffic

The cStor appliances are rack-installable for use in data center, campus, and branch environments. The cStor appliances are fully integrated with cPacket cVu® series network packet broker+ products, the cProbe flow-generator devices, the cClear analytics engine and administration console, and the cCloud™ Suite. cPacket's visibility suite provides proactive metrics such as application visibility, TCP stateful analysis (response-time, round-trip time, retransmits, one-way latency), UDP/RTP analysis, financial/market data protocol analysis, VPN analysis, and microburst analysis at high resolution.

The typical deployment in the physical network, such as in a data center, starts with accessing the wire-data at high-speeds by deploying cPacket cTap series network TAPs (Test Access Points). The cTap feeds the raw packet data to a cPacket cVu series multi-speed network packet broker+ where the data is processed and replicated based on different requirements such as for performance and security monitoring tools managed by the IT AppOps, SecOps, and NetOps teams. For cTAP and/or tool aggregation purposes, another cost-effective cVu appliance can be used as the number of tools grow, in a two-tier design. Should any data (raw or customized) be stored for later usages or analysis, a cStor appliance can be simply hooked to a cVu port to gain access to the network data for capture-to-disk.

Models and Options

The cStor appliances offer scale-as-you-grow extensibility with a range of options for I/O connectivity, data capture rates, internal and external storage capacity, and data security using Self-Encrypting Drives.

To learn more about the cStor series of packet capture-to-disk appliances, visit https://www.cpacket.com/products/cstor/

Figure 3: cPacket cStor series packet capture-to-disk appliances

Technical Specifications

Key Features:

	cStor 10	cStor 15	cStor 25	cStor 40	cStor 100
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	Yes	Yes*	Yes*	Yes*	Yes*
Data Encryption	Yes	No	No	Yes	Yes
Wireshark	Yes*	Yes	Yes	Yes	Yes
cVu® Integration	Yes	Yes	Yes	Yes	Yes
cClear® Integration	Yes	Yes	Yes	Yes	Yes

* Roadmap ** With cPacket cVu® integration

Interface and Storage Options:

	cStor 10	cStor 15	cStor 25	cStor 40	cStor 100
10 GbE Ports (SFP+)	1	2 / 4	4 / 8*	4 / 8*	8*
40 GbE Ports (QSFP+)	N/A	N/A	1/ 2	1 / 2	(2)
100 GbE Ports (QSFP28)	N/A	N/A	N/A	N/A	2
Burst Capture Rate	N/A	N/A	N/A	N/A	100 Gbps
Burst Capture Duration	N/A	N/A	N/A	N/A	1 sec (every 1 min)

Sustained Capture Rate	10 Gbps	15 Gbps	25 Gbps	40 Gbps	60/40 Gbps
Default Storage	22/44/88 TB	96 TB	44 TB	288/480 TB	288 TB
SED Storage Option**	44 TB	N/A	N/A	288 TB	288 TB
Extensible Storage (CES)	N/A	96 TB	N/A	96/512/1024/ 1696 TB	1696 TB
Max Total Storage	88 TB	192 TB	44 TB	2 PB	2 PB
Storage Reliability	Yes (SW)	Yes (RAID5)	Yes (RAID5)	Yes (RAID5)	Yes (SW)

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

Dimensions and Weight:

Capture Unit	**cStor 10**	**cStor 15**	**cStor 25**	**cStor 40**	**cStor 100**
Height/Rack Unit	3.5” (8.9 cm) 2U	3.4” (8.7 cm) 2U	3.4” (8.7 cm) 2U	7” (17.8 cm) 4U	7” (17.8 cm) 4U
Width	17.2” (43.7 cm)	16.9” (43 cm)	16.9” (43 cm)	17.2” (43.7 cm)	17.2” (43.7 cm)
Depth	23.6” (59.9 cm)	28” (71.1 cm)	28” (71.1 cm)	28” (71.1 cm)	28” (71.1 cm)
Weight	52 lb (23.6 kg)	66 lb (30 kg)	66 lb (30 kg)	132 lb (60 kg)	132 lb (60 kg)

Extensible Storage	**CES 96TB**	**CES 512TB**	**CES 1024TB**	**CES 1696TB**
Height/Rack Unit	3.4” (8.7 cm) 2U	3.4” (8.7 cm) 2U	7” (17.8 cm) 4U	7” (17.8 cm) 4U
Width	16.9” (43 cm)	16.9” (43 cm)	17.2” (43.7 cm)	17.2” (43.7 cm)
Depth	28” (71.1 cm)	28” (71.1 cm)	28” (71.1 cm)	28” (71.1 cm)
Weight	66 lb (30 kg)	66 lb (30 kg)	132 lb (60 kg)	132 lb (60 kg)

Operating Conditions:

Capture Unit	**cStor 10**	**cStor 15**	**cStor 25**	**cStor 40**	**cStor 100**
Operating Temperature	41° F – 95° F	60° F – 95° F	60° F - 95° F	50° F - 95° F	50° F - 95° F
Operating Humidity	50% – 90%	50% – 90%	50% – 90%	8%- 90%	8%- 90%

Extensible Storage	**CES 96TB**	**CES 512TB**	**CES 1024TB**	**CES 1696TB**
Operating Temperature	60° F – 95° F	60° F - 95° F	50° F - 95° F	50° F - 95° F
Operating Humidity	50% – 90%	50% – 90%	8%- 90%	8%- 90%

Power and Cooling:

Master Unit	**cStor 10**	**cStor 15**	**cStor 25**	**cStor 40**	**cStor 100**
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	1169.6 W	1183.2 W	1373 W	1373 W
Heat Dissipation	2216.5 BTU/hour	2195.3 BTU/hour	2860 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	1169.6 W	1183.2 W	1373 W	1373 W
Heat Dissipation	2195.3 BTU/hour	2860 BTU/hour	4597.4 BTU/hour	4597.4 BTU/hour

Ordering Information

CP_CSTOR_100_60_2100_288TB	cPacket cStor 100 packet capture appliance in 4RU, 100Gbps burst, 60Gbps sustained capture-to-disk rate, 2x100GbE QSFP28 ports and 288TB on-board disk storage, expandable through cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_100_60_2100_288TB_SED	cPacket cStor 100 packet capture appliance in 4RU, 100Gbps burst, 60Gbps sustained capture-to-disk rate, 2x100GbE QSFP28 ports and 288TB self-encrypting drive (SED) on-board disk storage, expandable through cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_40_240_480TB	cPacket cStor 40 packet capture appliance in 4RU, 40Gbps sustained capture-to-disk rate, 2x40GbE QSFP+ ports and 480TB on-board disk storage and 2PB maximum storage. Must be deployed with cPacket Extensible Storage (CES) ordered separately. Maintenance not included.
CP_CSTOR_40_240_288TB_SED	cPacket cStor 40 packet capture appliance in 4RU, 40Gbps sustained capture-to-disk rate, 2x40GbE QSFP+ ports and 288TB self-encrypting drive (SED) on-board disk storage, expandable through non-SED cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_40_240_288TB	cPacket cStor 40 packet capture appliance in 4RU, 40Gbps sustained capture-to-disk rate, 2x40GbE QSFP+ ports and 288TB on-board disk storage, expandable through cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_40_410_288TB	cPacket cStor 40 packet capture appliance in 4RU, 40Gbps sustained capture-to-disk rate, 4x10GbE SFP+ ports and 288TB on-board disk storage, expandable through cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_25_240_44TB	cPacket cStor 25 packet capture appliance in 2RU, 25Gbps sustained capture-to-disk rate, 2x40GbE QSFP+ ports and 44TB on-board disk storage. Maintenance not included.
CP_CSTOR_25_410_44TB	cPacket cStor 25 packet capture appliance in 2RU, 25Gbps sustained capture-to-disk rate, 4x10GbE SFP+ ports and 44TB on-board disk storage. Maintenance not included.
CP_CSTOR_15_410_96TB	cPacket cStor 15 packet capture appliance in 2RU, 15Gbps sustained capture-to-disk rate, 4x10GbE SFP+ ports and 96TB on-board disk storage, expandable through cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_15_210_96TB	cPacket cStor 15 packet capture appliance in 2RU, 15Gbps sustained capture-to-disk rate, 2x10GbE SFP+ ports and 96TB on-board disk storage, expandable through cPacket Extensible Storage (CES). Maintenance not included.
CP_CSTOR_10_110_88TB	cPacket cStor 10 packet capture appliance in 2RU, 10Gbps sustained capture-to-disk rate, 1x10GbE SFP+ port and 88TB on-board disk storage. Maintenance not included.
CP_CSTOR_10_110_44TB_SED	cPacket cStor 10 packet capture appliance in 2RU, 10Gbps sustained capture-to-disk rate, 1x10GbE SFP+ port and 44TB self-encrypting drive (SED) on-board disk storage. Maintenance not included.
CP_CSTOR_10_110_44TB	cPacket cStor® 10 packet capture appliance in 2RU, 10Gbps sustained capture-to-disk rate, 1x10GbE SFP+ port and 44TB on-board disk storage. Maintenance not included.
CP_CSTOR_10_110_22TB	cPacket cStor 10 packet capture appliance in 2RU, 10Gbps sustained capture-to-disk rate, 1x10GbE SFP+ port and 22TB on-board disk storage. Maintenance not included.
CP_CES_CSTOR_1696TB	cPacket extensible storage unit (CES) 1.6PB disk storage in 4RU for cPacket cStor 40 and cStor 100 packet capture appliances. Maintenance not included.
CP_CES_CSTOR_1024TB	cPacket extensible storage unit (CES) 1PB disk storage in 4RU for cPacket cStor 40 packet capture appliance. Maintenance not included.
CP_CES_CSTOR_512TB	cPacket extensible storage unit (CES) 512TB disk storage in 4RU for cPacket cStor 40 packet capture appliance. Maintenance not included.

CP_CES_CSTOR_96TB	cPacket extensible storage unit (CES) 96TB disk storage in 2RU for cPacket cStor 40 and cStor 15 packet capture appliances. 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.