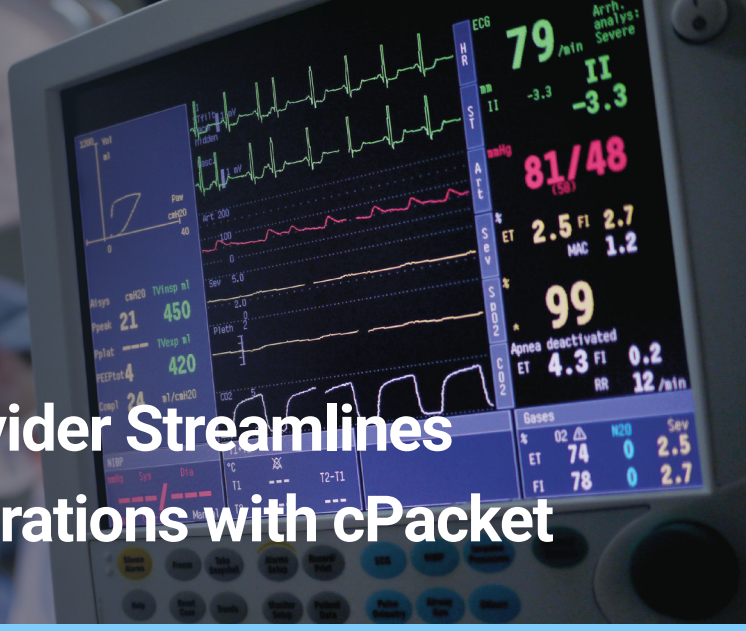
cPacket

CASE STUDY

Leading U.S. Healthcare Provider Streamlines Large-Scale Data Center Operations with cPacket



Overview

Nationally ranked as one of the top U.S. hospitals, this healthcare provider and insurer offers critical care medicine, neurosurgery, organ transplantation, and cardiothoracic surgery. The organization operates various academic, community, and specialty hospitals and employs over 100,000 employees. They are a recognized leader in healthcare IT and renowned for their excellence in electronic health record implementation.

With over $24 billion in annual revenue and millions of patients nationwide and globally, the organization's networks continue to grow in complexity, with large amounts of data constantly flooding into the network. The ability to have immediate access to medical data and imaging is vital for this organization to provide exceptional service to its patients and physicians.

Continued growth due to multiple acquisitions resulted in a substantial increase in patient data as hundreds of thousands of new patients were now under the organization's umbrella. Digital transfer of high-resolution data from x-rays and MRIs greatly increased the amount of data in the network. The healthcare provider was also consolidating multiple geographically separate datacenters into one, which required deployment of hundreds of 400Gbps links in a spine-leaf architecture.

To meet stringent compliance requirements, the healthcare organization needs to have 2 parallel internet circuits that don't overlap. If either of the circuits go down, the organization has to report to industry regulators. Latency is also a major concern, as the organization's high-bandwidth EPIC environment needs to be available at all times to serve the needs of the entire health system. And with new services being added all the time, like next-gen surgery centers that require two 100Gb circuits for advanced procedures, the organization's data requirements were growing beyond their legacy infrastructure.

Challenges

The organization quickly realized that their continued growth through acquisition and the increased need for real-time access to patient data called for a more advanced monitoring, packet broker, and packet capture solution. They were lacking a scalable monitoring architecture that could handle higher network speeds while achieving pervasive visibility and centralized management to ensure accurate analytics across all links.

Additionally, with the sheer volume of sensitive data in the network, the organization required dynamic packet slicing to reduce packet volume along with high-speed flexible pre filtering to avoid tool oversubscription. They needed advanced analytical tools to provide more pervasive real-time insights into network traffic to have visibility to all that traffic across hundreds of links. Previously, all traffic needed to be backhauled to other tools which resulted in oversubscription and limited visibility.

"Not only do we need to monitor the performance of our environment, but it's critical to have a high-performance, feature-rich packet broker solutions to monitor and secure our data. Our challenge was how to handle the deluge of traffic, get real time visibility, and integrate them into the rest of the monitoring infrastructure," said the Senior Systems Engineer.

Key Issues

- Compliance requirement for parallel, non-overlapping internet circuits
- Previous monitoring solutions were unable to provide complete network visibility at higher speeds and low latency required by EPIC
- Next-gen surgery centers require two 100Gb circuits with zero downtime
- Unable to capture packet data
- Large increase in volume of patient data
- Needed to inspect traffic at speeds up to 400G

Solutions

- Advanced Packet Broker (cVu 3240NG)
- TapAgg Packet Broker (cVu 32400AG)
- Packet Capture (cStor100S + CES)
- Control Center (cClear®)

Results

- Reduced MTTR by 80%
- Substantial cost savings
- Improved network efficiency and observability footprint

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– Senior Systems Engineer

Solution

The healthcare provider evaluated and tested multiple vendor solutions, but only one offered the pervasive visibility and advanced monitoring tools to meet their specific requirements. cPacket's high-speed header stripping capabilities for encapsulated protocols like VxLAN solved the visibility challenges as most encapsulation methods hide traffic between data centers.

"As we progressed more into higher density and higher speeds, we needed to have the right tools in place that would provide full scalability, flexibility, and optimal visibility into our networks," explains the Senior Systems Engineer. "With so much at stake, we couldn't settle for anything less than a best-in-class solution for our data center needs."

To facilitate their data center upgrade, the company chose cPacket and its purpose-built cVu 3240NG, cVu 32400AG, cStor 100S, and cClear devices to provide them with real-time capture and end-to-end visibility to better manage, analyze, and secure its network at speeds up to 400Gbps.

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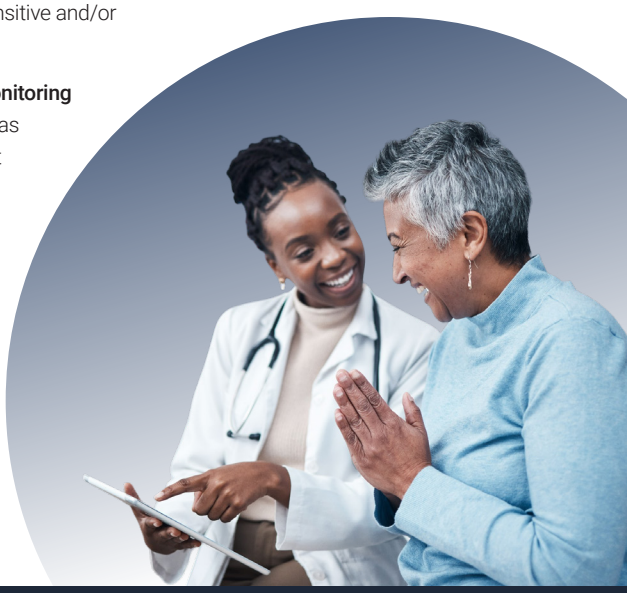
cPacket Networks deployed a two-tier solution that combined a high-performing, powerful 400Gbps front-end packet broker that could effectively strip encapsulated traffic. cPacket's advanced packet broker performs smart filtering and dynamic packet slicing for packets ranging from 9kb to 192kb in size. The solution combines cPacket's custom-built cVu 3240NG which offers 32x40G ports in a 2U form factor, the cVu 32400AG with flexible port rate capabilities, and cPacket's cClear, the visualization dashboard for performance analytics and simplified management.

Benefits

cPacket's solutions give the healthcare provider the ability to anticipate network bottlenecks in a more granular way. Better accuracy enables the organization to manage its large data center consolidation with more precision.

cPacket's packet slicing and complete packet inspection/capture capabilities provide additional value by inspecting all packets, reducing the size of packets when appropriate through slicing, and removing sensitive and/or unneeded information from packets and only forwarding relevant traffic to tools.

Deploying cPacket's solutions **saved the organization the cost of purchasing additional monitoring tools** by extending the life of their existing ones and making them more efficient. Not only was the organization able to reduce the costs from not having to purchase new equipment, but it also substantially increased its visibility footprint while simultaneously **reducing the space needed in the data center for those products by 50%**. In addition, cPacket's solutions provided the organization a more robust and highly secure method of transferring and storing their patient's data.



"With cPacket, you get a full suite of advanced solutions that can do it all and scale as new tools get added. We now have the power to manage our networks more efficiently and with less cost and this has been the biggest payoff for us."

– Senior Systems Engineer

About cPacket

cPacket powers hybrid-cloud observability through its Intelligent Observability Platform. It reduces service outages through network-centric application analysis, strengthens cyber security through high-resolution network data for threat detection, and accelerates incident response through network forensic analysis. The result is increased service agility, experience assurance, and transactional velocity for the business. Find out more at cpacket.com.