

cCloud[®] Visibility Suite

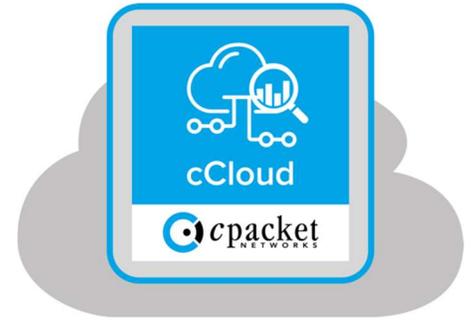
Cloud-Native Brokering, Flow Generation, Packet Capture, and Analytics

The cCloud tools enable you to:

- Access full network traffic frames/packets in virtualized and public cloud environments
- Have reliable visibility and real-time network intelligence in cloud, on-premises, and hybrid environments within a single-pane-of-glass
- Perform deep packet inspection on every packet to search for specific hosts, threats, and network policy deviations
- Flexibly a pay-as-you-consume with no strings attached that includes full service and support
- Maintain operational efficiency at scale by adding tool instances where your production workloads and storage needs migrate and/or grow
- Simply manage all instances of the suite installed in on-premises and/or cloud environments using the same user interface and workflows

Overview

The cCloud visibility suite is a set of cloud-native virtual appliances that provide visibility for assuring network-aware application performance and security. The suite is fully integrated and collaboratively validated with these leading public clouds: Amazon Web Services (AWS), Google Cloud, and Microsoft Azure. cCloud tools provide a visibility service chain that consists of the services listed in the table below. The suite of virtual appliances interoperates with similar physical appliances to provide seamless visibility for hybrid environments.



cPacket cCloud [®] Visibility-as-a-Service Tool Suite			
cVu-V [®]	cProbe-V [®]	cStor-V [®]	cClear-V [®]
Cloud Packet Broker+ - consolidates, processes, and brokers mirrored packets to multiple targets, tools and/or storage	Cloud Flow Generator and Exporter - transforms packet data into industry standard flow data for consumption and analysis by other tools	Cloud Packet Capture - records, tags, and replays cloud network traffic for forensic analysis, regulatory compliance, and session analysis	Cloud Analytics - correlates, analyzes, and visualizes data, plus provides the administration for all cPacket products from within a single-pane-of-glass

Industries such as financial services, healthcare, technology, retail, manufacturing, education, utilities, transportation, government/public, defense, and service providers are implementing cloud-first and cloud-smart strategies and need deeper, contextual, and actionable network intelligence for business continuity, service/experience assurance, security forensics, incident response, regulatory compliance, and capacity planning. However, moving workloads to the cloud without comprehensive visibility increases security, operational, and business risk. The cCloud suite provides necessary visibility to key network analytics, metadata, packet data, and flow data that empowers the AppOps, SecOps, NetOps, CloudOps, and SRE teams to ensure optimal system performance and operational continuity.

The entire cCloud suite is consistently simple to manage using either a physical or virtual instance of cClear. From within a single-pane-of-glass the same user interface and workflows are used to onboard and configure all cPacket Networks' tools and appliances in on-premises, cloud, and hybrid environments.

The Solution

The cCloud suite products are tightly integrated. The cornerstone of the solution is cVu-V, a cost-effective solution for traffic monitoring, packet processing, and brokering services that reliably delivers cloud network traffic to dashboards, network analytics, security solutions, and performance monitoring tools.

cVu-V delivers the right data to the right tools at the right time by processing packets prior to delivery. Processing options include intelligent filtering, replication, and load-balancing that multiply and relay source feeds to multiple destinations. Its flexible operating modes support Virtual Private Cloud (VPC) environments that do and do not provide VPC traffic/packet mirroring services:

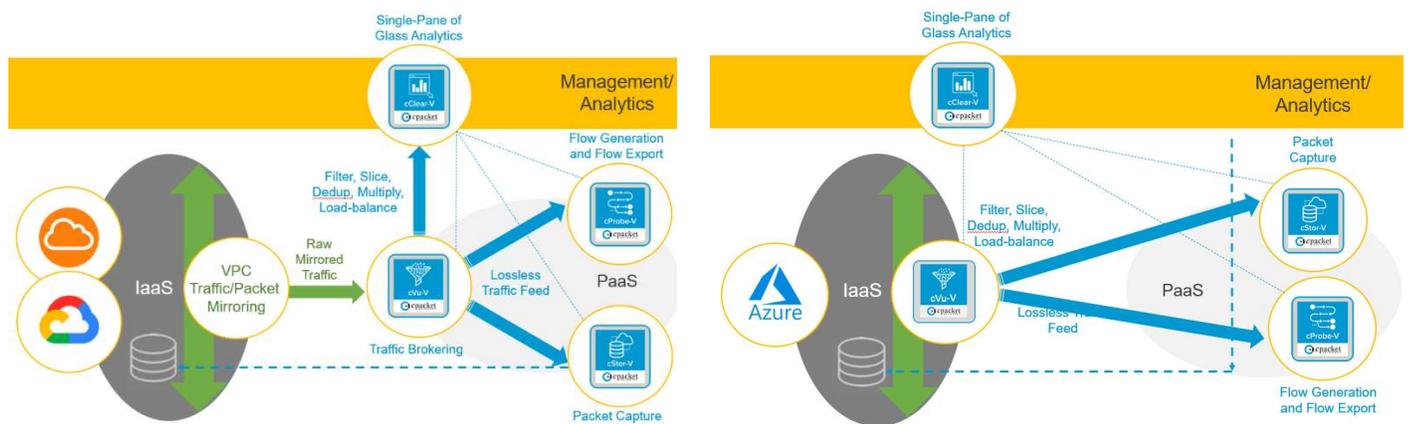
End-Point Mode - that receives packets from VPC traffic/packet mirroring services, processes the packets, and forwards the processed packets to specific destinations

Inline Mode – that acquires, processes, and mirrors packets to multiple destinations from strategic points and subnets. Because cVu-V instances can easily be launched, inserted, and removed, this option can be used for temporary and permanent granular monitoring in any VPC.

cStor-V captures, stores, and analyzes cloud network traffic. The data is enriched with time stamps and metadata that increases the effectiveness of Network Detection and Response for cybersecurity threat detection and mitigation, behavioral analytics, and application performance monitoring tools.

cProbe-V converts packet data into NetFlow version-5, version-9, and IPFIX formatted flow data for consumption by flow collectors and tools that operate on flow data such as security tools, application and network performance monitoring tools, and SD-WAN gateways.

cClear-V provides analytics and dashboards with rich visualizations plus unified management for all physical and virtual cPacket appliances, all within a single-pane-of-glass. cClear-V provides a high-level of visibility for every critical link and progressive drilldown to the packet-level view. Use predefined and custom dashboards for detailed performance monitoring, security forensics, and proactive alerts. Fast real-time search helps to quickly identify problems and root causes. These powerful yet easy-to-use features let IT work smartly and efficiently: single-click access to network analytics and data, an open platform for easy customization and data extraction to other tools, deep packet inspection on every packet on every port, and the ability to search for specific hosts, threats, network policy deviations, and microburst occurrences with details.



Cloud Visibility Service-Chain

Benefits

The cCloud suite builds upon cPacket Networks' industry-leading monitoring pedigree to deliver the following benefits:

End-to-End Coverage for Hybrid, Single-Cloud, Multi-Cloud, and On-Premises

cCloud offers the flexibility to be used for all environments including one or more public clouds to seamlessly provide visibility within a single-pane-of-glass for branch offices, campuses, and data centers.

Pay-as-you-Consume Flexibility

cCloud is offered as Visibility-as-a-Service (VaaS), so you can scale as needed and pay for what you consume. cCloud component instances can be instantiated on-demand for timed use (e.g., hourly, weekly, monthly, etc.) or you can bring your own usage license. Flexible licensing plus using cVu-V to multiply mirrored packets to multiple destinations will contain your packet mirroring costs.

Consistent Workflow Simplicity

The access to packet/flow data on-premises and now in the cloud allows IT instrumentation teams to leverage consistent workflows for the NetOps, SecOps, CloudOps, and AppOps related transactional and data mining. With cCloud, it does not matter where the workloads or service components are hosted because you get a consistent experience in collecting, analyzing, and reporting the data.

Open Architecture Integration

The open architecture is designed to be easily interface with third party analytics and security applications. Additionally, other applications can run alongside the cCloud tools and virtual appliances, leveraging existing infrastructure and maximizing flexibility. This is particularly useful to augment virtual security tools such as firewalls, IPS, IDS, DDoS, and SIEM to capture and retain packet data associated with important IOC for investigation.

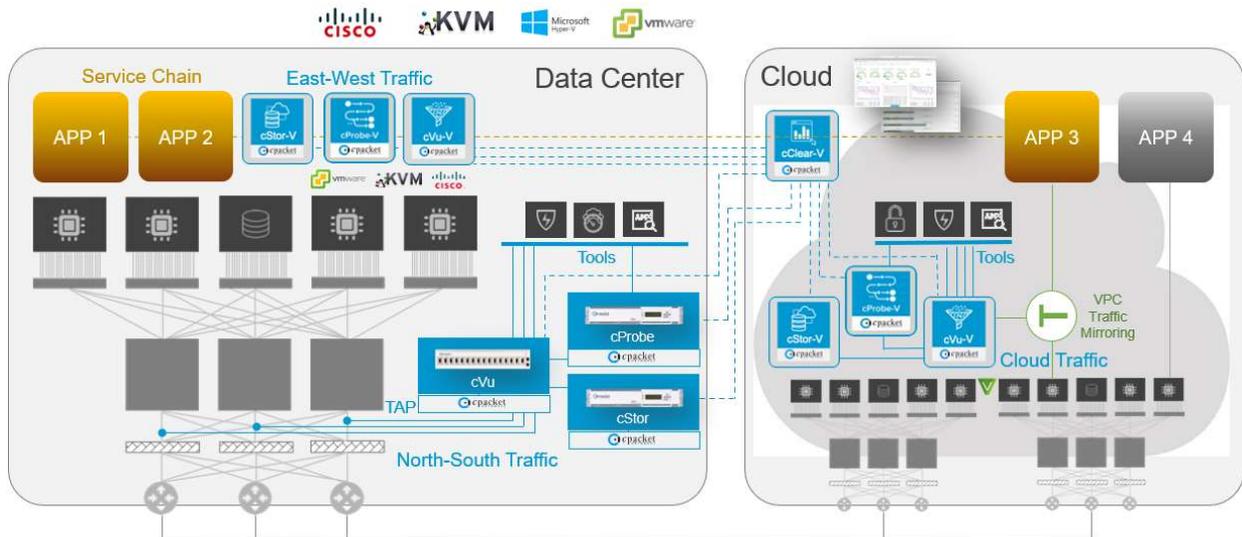
Comprehensive Visibility from Packet and Flow Data

The combination of flow data and packet data provides comprehensive visibility, maximizes tool effectiveness, and provides broad support for commonly used and industry standard tools.

Deployment and Use Case

Any or all the cCloud components can be deployed in a public cloud with support for Cisco NFVIS, VMware ESXi and KVM environments. You can Bring Your Own License (BYOL) or choose consumption-based CapEx/OpEx licensing.

Traffic Mirroring from Amazon Elastic Compute Cloud (Amazon EC2) or Packet Mirroring from Google Cloud compute instances within a VPC is directed to one or more instances of cVu-V for scalable and cost-effective brokering.



Reference design using physical and virtual appliances and cVu-V in end-point mode to provide full visibility across hybrid on-premises and cloud environments

Technical Specifications

Key Features:

	cCloud			
	cClear-V	cVu-V	cStor-V	cProbe-V
Dashboards & Analytics in a Single-Pane-of-Glass	Yes			
Fully Integrated Workflows	Yes			
Millisecond Resolution for Analytics	Yes			
Global Search	Yes			
Data Correlation with Baselining	Yes			
Open API	Yes			
End-Point Mode/DPDK Brokering		Yes		
Inline Mode Brokering		Yes		
Traffic Aggregation and Replication		Yes		
Packet Slicing/Truncation		Yes		
VXLAN/MPLS/VNTag Stripping		Yes		
VLAN Tag with Inner VLAN Filtering		Yes		
Packet Filtering		Yes		
Packet Deduplication		Yes		
MAC-in-MAC DC Decapsulation		Yes		
Role-Based Administration		Yes		
Software Upgrade/Restore		Yes		
GUI, Serial Console and CLI		Yes		
SNMPv2c and MIB		Yes		
TACACS+/RADIUS Authentication		Yes		
Time Stamping		Yes	Yes**	
Packet Indexing			Yes	
Fast Querying			Yes	
Flow Information			Yes	
Latency and Jitter Characterization			Yes	
TCP Analysis			Yes	
Real-Time Analysis			Yes	
Multicast Video Analysis			Yes	
Financial (HFT) Protocols Analysis			Yes	
Multiple Capture Merge			Yes	
cClear-V Analytics Engine Integration		Yes	Yes	
cProbe-V Flow data in NetFlow v5, v9, IPFIX formats				Yes
IPFIX with Private Enterprise Numbers (PEN) and variable length encoding				Yes
IPv4 and IPv6 support				Yes
Web based GUI for system management				Yes
Integration with cClear/cClear-V for management				Yes

* Projections only. Final specs available by General Availability (GA) and subject to change

** With cPacket cVu-V integration

Performance Tiers and Specs:

Supported on any AWS nitro-enabled instances and GCP instances with VPC Traffic-Mirroring feature:

	cCloud				
	cClear-V	cVu-V 1	cVu-V 10	cStor-V 1	cStor-V 10
Tools/Targets/Ports	N/A	10*	25*	N/A	N/A
Captures per Instance	N/A	N/A	N/A	1*	1*
Monitoring/Capture Rate	N/A	Up to 1Gbps	Up to 10Gbps	Up to 1Gbps*	Up to 10Gbps*
Cloud Compute	m5.xlarge	m5.xlarge	m5.2xlarge	m5.xlarge	m5.2xlarge
vCPU	4	4	8	4	8
Memory	16GB	16GB	32GB	16GB	32GB
Bandwidth	Up to 10Gbps				
Default Cloud Storage	N/A	N/A	N/A	50GB	50GB
Maximum Cloud Storage	N/A	N/A	N/A	8TB	16TB

Ordering Information

Refer to public cloud marketplaces (e.g., AWS, Google Cloud) for availability via that channel and the corresponding usage/consumption-based pricing. Below is the ordering information for BYOL subscription SKUs:

Service Instance	Description
CP_CVU_V_1_10_SUB	cVu-V virtual appliance 1-year subscription license (single instance) supporting 10 virtual ports at up to 1Gbps aggregate monitoring throughput. Gold level maintenance included.
CP_CVU_V_10_25_SUB	cVu-V virtual appliance 1-year subscription license (single instance) supporting 25 virtual ports at up to 10Gbps aggregate monitoring throughput. Gold level maintenance included.
CP_CSTOR_V_1_8TB_SUB	cStor-V virtual appliance 1-year subscription license (single instance) supporting up to 1Gbps capture-to-disk rate and up to 8TB virtual storage space (upgradable). Gold level maintenance included.
CP_CSTOR_V_10_16TB_SUB	cStor-V virtual appliance 1-year subscription license (single instance) supporting up to 10Gbps capture-to-disk rate and up to 16TB virtual storage space (upgradable). Gold level maintenance included.
CP_CCLEAR_V_SUB	cClear-V virtual appliance 1-year subscription license (single instance). Gold level maintenance included.
CP_CCLEAR_CON	Annual license to connect with cClear appliance or cClear-V software instance at 3% of the list price of the connected device

About cPacket Networks

cPacket Networks delivers visibility you can trust through network monitoring and packet brokering solutions to solve today's biggest network challenges. Our cutting-edge technology enables network and security teams to proactively identify issues in real-time before negatively impacting end-users. Only cPacket inspects all the packets delivering the right data to the right tools at the right time and provides detailed network analytics dashboards. Whether you need greater network visibility for security tools or performance monitoring tools, our solutions are designed to overcome scalability issues and reduce troubleshooting time. The result: increased security, reduced complexity, with lower costs, and a faster ROI.

Based in Silicon Valley, CA, cPacket enables organizations around the world to keep their business running. Leading enterprises, service providers, healthcare organizations, and governments rely on cPacket solutions for improved agility, higher performance, and greater efficiency. Learn more at www.cpacket.com, the cPacket [blog](#), or follow us on [Twitter](#), [LinkedIn](#), and [Facebook](#).

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