Increasing interdependencies between users, networks, distributed applications, and data centers create a complex and dynamic system that is hard to control and manage. Successful network operations rely on the situational awareness of IT professionals, who need to observe the network behavior, pinpoint issues, and take corrective actions. Disruptions, intermittencies, or performance degradation of critical applications can negatively impact business productivity; the need for better network intelligence and situational awareness is growing rapidly. In particular, there is a need for real-time network performance metrics and application health indicators, which are coupled with effective mechanisms for drill down and trouble shooting.

Typically, administrators struggle with limited visibility into their network's behavior. They test network connectivity with pings, examine log files, and drill down into captured packet traces. The fundamental process has not changed over the decades, but it does not scale effectively to complex networks with high speed links that carry mixed data, video, and voice traffic. For example, capturing 10 gigabits per second and analyzing the vast amount of data retroactively, or reactively, does not provide real-time situational awareness.

cPacket’s cTap performs Complete Packet Inspection (CPI) of every bit in every packet on-the-fly. It provides granular visibility into critical network links by classifying the traffic and allowing selective duplication of specific profiles to four independent mirror ports – two 10G and two 1G. The cTap provides real-time performance measurement and visibility into spikes and bursts. By default, it generates a breakdown of bandwidth and packet rate per second for built-in and user-defined profiles. Profiles can be defined according to any combination of packet header fields and pattern searches anywhere in the payload.

The cTap provides accurate to the bit measurements of bandwidth, packet rate, and cumulative totals per profile. It can replace switch mirror ports and dumb taps with more granular selective duplication and bandwidth reduction. Users can configure the mirror ports to forward the duplicated packets to a remote destination. In addition, the cTap can attach microsecond-accurate timestamps to facilitate analysis of latency and jitter.

Deployment of the cTap is transparent and requires no changes to existing network topology. An integrated fiber bypass means there is no disruption to traffic even when the device is powered off. Multiple cTaps can be distributed in the network and feed information to an aggregation host. cPacket provides software utilities for aggregation, correlation, and visualization of information from multiple cTaps. Reports can be accessed remotely from a web browser and imported into spreadsheets and databases. Users also have the option of implementing triggers for behavioral anomalies and undesired conditions.
### Use Case | Scenario
---|---
Performance Monitoring | Granular visibility into critical links by providing breakdown of bandwidth and packet rate per second for built-in and user-defined profiles. Profiles are defined according to a combination of packet header fields and patterns anywhere in the payload.
Behavioral Health Indicators | Real time behavioral network and application health indicators by observing critical ratios between specific events and deviations from acceptable thresholds.
Troubleshooting | User defined selective mirroring of only relevant traffic to enable drill down and root cause analysis. Interactive elimination. Simple browser access to individual packets from selected profiles.
Bandwidth reduction | Reduce workload on monitoring and intrusion detection probes by reducing the bandwidth with pre-filtering according to specific profiles, with optional hardware rate limits.
Latency and Jitter Measurement | Jitter and latency impact networked applications, from choppy video conferencing to undesired delay of financial transactions. cTap can attach microsecond-accurate timestamps to the duplicated packets to enable accurate analysis of latency and jitter.
Correlation and Visualization | Multiple cTaps in the network can feed information to a central aggregation host. cPacket provides software utilities for aggregation, correlation, and visualization of information from multiple cTaps.

### Aggregation, Correlation, Visualization

![Graphs and tables showing data analysis]

### Distributed Deployment

![Diagram illustrating cPacket network deployment]

### Specifications

<table>
<thead>
<tr>
<th>Interfaces</th>
<th>2 x 10G data, 2 x 10G selective mirroring, 2 x 1G selective mirroring, 1 management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>60W</td>
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<tr>
<td>Dimensions (H x W x D)</td>
<td>1.7” x 15.3” x 13.1”</td>
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<tr>
<td>Weight</td>
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<tr>
<td>Operating Requirements</td>
<td>0 to 40° C, 32 to 104° F</td>
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<tr>
<td>Certifications</td>
<td>FCC Class A, EN 55022 Class A</td>
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</tbody>
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