Application Aware CANOPUS Network Analytics at Scale.

Overview.

CANOPUS offers an AI-based, Terabit-scale, application-aware network traffic analytics platform. It provides telecommunications operators with the ability to visualise and generate actionable intelligence for their fixed and mobile networks in real-time to improve customer experience, create new value-add services, and reduce operational costs.

CANOPUS has developed patented FlowPulse[™] technology to extract millisecond-level behavioural patterns of (encrypted) data flows in the network; apply machine learning models to identify applications such as streaming video, gaming, conferencing, and file-sharing; and measures user experience such as rebuffering, lag spikes, stutters, and throughputs. CANOPUS allows network operators to forecast and dimension capacity in an application-aware manner, create new revenue-generating consumer and enterprise services, and rapidly resolve performance degradation issues. Operating in real-time and at Terabit speeds using P4 technology, CANOPUS allows network operators to efficiently manage and monetize their costly infrastructure assets.



Why CANOPUS?

Telecommunications providers today are typically 'flying blind'. For example, they do not know when a user experiences a glitch in a game, or a spinning wheel in a video stream, yet they bear the costs of bandwidth provisioning, customer complaints, and churn. Unlike traditional traffic analysis solutions, CANOPUS uses Terabit speed commodity hardware and AI to provide full visibility into encrypted traffic streams, so the network can be continually optimised to maximise user experience. It does all of this via out-of-line deployment thereby having no impact on the actual traffic itself.



Application Awareness at Scale.



Encryption



Real-Time Data





Identifies every Streaming Video, Gaming, Conferencing, Live Sport, Software Download, File Sharing and many other application flows at millisecond granularity at Terabit speeds. Built using patented AI-based application behavioural profiles that are agnostic to packet encryption. Real-time export of per-flow data using industry-standard APIs to third-party elements for inline action or off-line analysis.

PRODUCT USE CASES





Better Forecasting for Optimising Infrastructure.

Fine-grained application usage data enables development of sophisticated forecasting models that are used for short-term bandwidth dimensioning and long-term capacity planning. Coupled with optimisation of caching, peering, and transit traffic, the CANOPUS platform has demonstrated substantial savings in infrastructure and operational expenditure.



User Experience Assurance.

Data from the CANOPUS platform helps customer support personnel identify the root cause of poor user experience on streaming, gaming, conferencing, and downloading applications, which can arise from local network contention, access congestion, content server/cache location, or poor wiring/WiFi. The data is also available for historical diagnostics and pre-emptive actions to avoid repeat degradations in performance, thereby reducing churn, improving NPS scores, and protecting brand reputation.



Understanding Customer Segments for Premium Services

Unprecedented fine-grained visibility into performance across all applications and platforms (PC, Mobile, IoT, PlayStation, Cloud Gaming, etc) allows network operators to identify customer segments such as gamers, streamers, downloaders, remote workers, etc. This helps better align products and services with customer priorities, while also informing creation of new offerings such as gaming packages.



Wholesale and Managed Services.

The CANOPUS platform is multi-tenant ready for SaaS resale to smaller carriers and enterprises, and is already pre-deployed in various Data Centres. It can be packaged with cross-connect and transit carriage as a managed service, providing differentiation from competitor offerings.



Client Engagement and Value Capture.

CANOPUS equips network operators with vital data to better engage directly with clients, and to capture mindshare that has traditionally been dominated by over-the-top (OTT) providers of streaming, gaming, and other applications. Real-time data also enables the development of actionable intelligence paving the way to autonomous networks of the future.



Technology.

CANOPUS uses state-of-the-art P4-programmable switch technology to track each traffic stream at millisecond-level granularity. This fine-grained per-flow telemetry, FlowPulse[™], is processed by patented Artificial Intelligence (AI) engines to detect the application type (e.g. streaming video, gaming, conferencing, file-sharing, download, etc.) and provider (e.g. Netflix, Zoom, Xbox, etc.). Patented AI engines estimate application-specific user experience, such as streaming video resolution and rebuffering, game lag spikes, conference stutters, and file sharing throughputs. The CANOPUS technology offers:

- Low-cost commodity multi-vendor hardware scaling to Terabit-per-second speeds;
- AI engines future-proofed against packet encryption;
- Zero risk to network availability by virtue of out-of-line deployment;
- Real-time integration into any third-party action element using industry-standard APIs.

FLOWPULSE TECHNOLOGY







AI-powered application traffic signature detection.



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