Ribbon Analytics: Data Capture Engine (DCE)

Communication Service Providers are continually evolving their networks and operations to deliver high quality user-experience, gain a competitive edge and attract new customers. To support the increasing demands of devices, users, complexity, and cost in their networks, operators require Intelligent Analytics applications to provide deep down insights into their network infrastructure and subscribers usage. The Ribbon Analytics Data Capture Engine (DCE) is a next-generation packet capture probe which has been developed to provide granular end-to-end visibility of operators network infrastructure and subscribers data flow.

Data Capture Engine (DCE)

The Ribbon Analytics' DCE is unlike traditional probes or DPI boxes; it performs real-time layer 2-7 deep packet analysis simultaneously across both the signaling and data planes for 2G/3G/4G networks, performs analytics within the DCE, and generates unique metrics and KQIs at source avoiding post processing and timing inaccuracies. This enables accurate end-to-end visibility of every subscriber data flow 24/7 and unique measurements that reflect true customer experience and usage.

The DCE enables end-to-end visibility from subscriber (UE) through to the VoLTE services consumed. This includes the signaling plane metrics (i.e. IMSI, MSISDN, IMEI, user location, RAT, APN, QoS, serving eNodeB, serving gateway's), data plane metrics (i.e. volumes, throughputs, RTT's, retransmissions, congestion, durations, drops, timeouts, failures, errors) and data plane inspection (HTTP/HTTPs and non-HTTP for URL and application identification etc.)
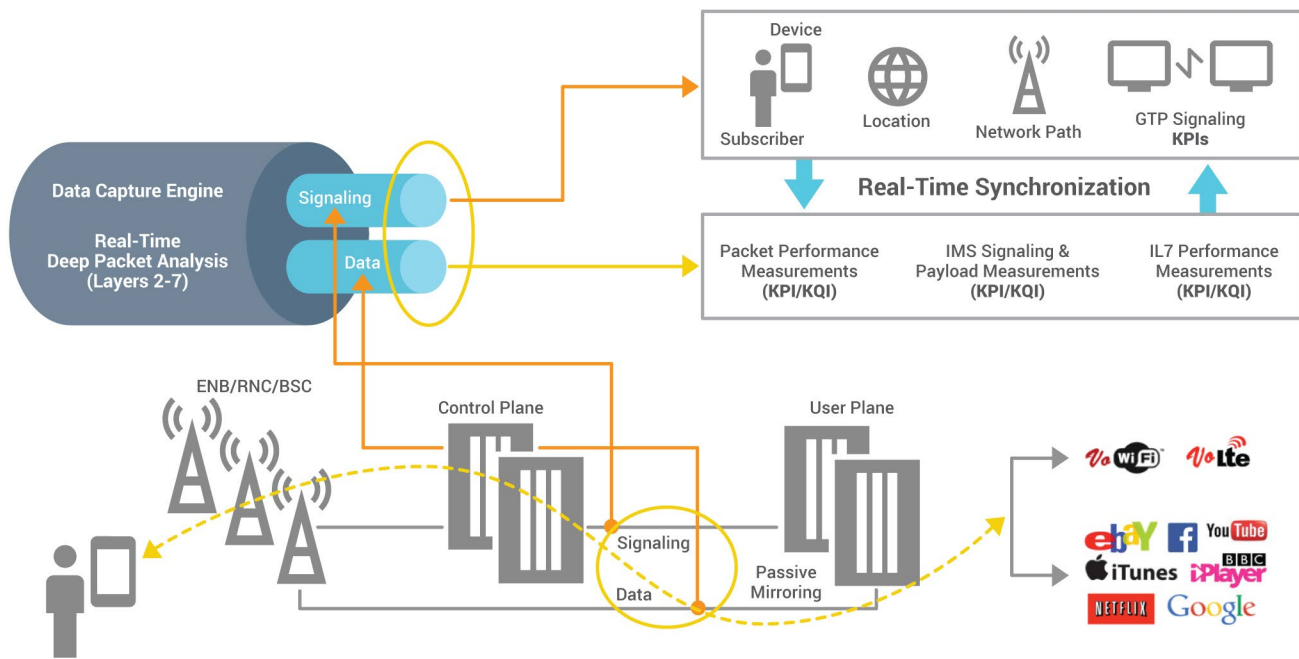

Figure 1 - Data Capture Engine (DCE)

The DCE can also run in an IP mode to monitor Internet/IP traffic. In this mode, the signaling plane is based on the source IP address, rather than the GTP sessions. In the IP mode, the data metrics, HTTP, and flow metrics are the same.

The unique visibility the DCE provides can act as a single source of input to Ribbon Analytics to enable the valuable business insights (use cases). The DCE can also export raw HTTP and flow logs to third party systems if required.

DCE Unique Value

Industry Unique Measurements
- Non-intrusively analyzes 100% of the packets in real time
- Measurements reflect true customer experience
- Unique accuracy of measurements synchronized (time & location) to network flow-path topology (no other probe in industry can provide this)

100% Visibility
- 100% visibility of every subscriber data flow 24/7 with synchronized data & signaling plane analysis.
- Complete visibility without compromise (no need to sample or filter).
- Provide the accuracy to understand end-to-end usage and QoE across multiple dimensions: subscriber, location, device, APN, service, RAT, and serving network elements

Real-time Deep Packet Analysis
- Simultaneous layers 2-7 Deep Packet Analysis (DPA)
- VoLTE and M2M monitoring
- HTTP and Non-HTTP identification and capture
- Real-time KPIs/KQIs with millisecond precision
- Avoid capture & post process delays/inaccuracy

Central (Simple and Secure) Source of Monitoring
- Single source for end-to-end visibility (passive tapping GTP interfaces)
- Reduces the need for multiple network probes
- Allows simplification of monitoring architecture

Software Solution
- Software based solution (can be centralized and virtualized - leverages Intel DPDK)
- Industry's highest capacity monitoring per software instance
- Runs on off the shelf hardware
- Self-configures and scales to provided hardware resources

Broad Set of Interface and Protocol Support
- GTP mode - Gn/Gp, S4/S12, S11/S1, S5/S8, S2a/S2b, Sv, SIP, RTP
- IP mode - IP, SGi/Gi, S6a/S6d/D/Rx (DIAMETER), Gr (MAP), Mw (SIP)

Contact Us We are here to help. Let us know if you are interested in a quote or if you have any questions.

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