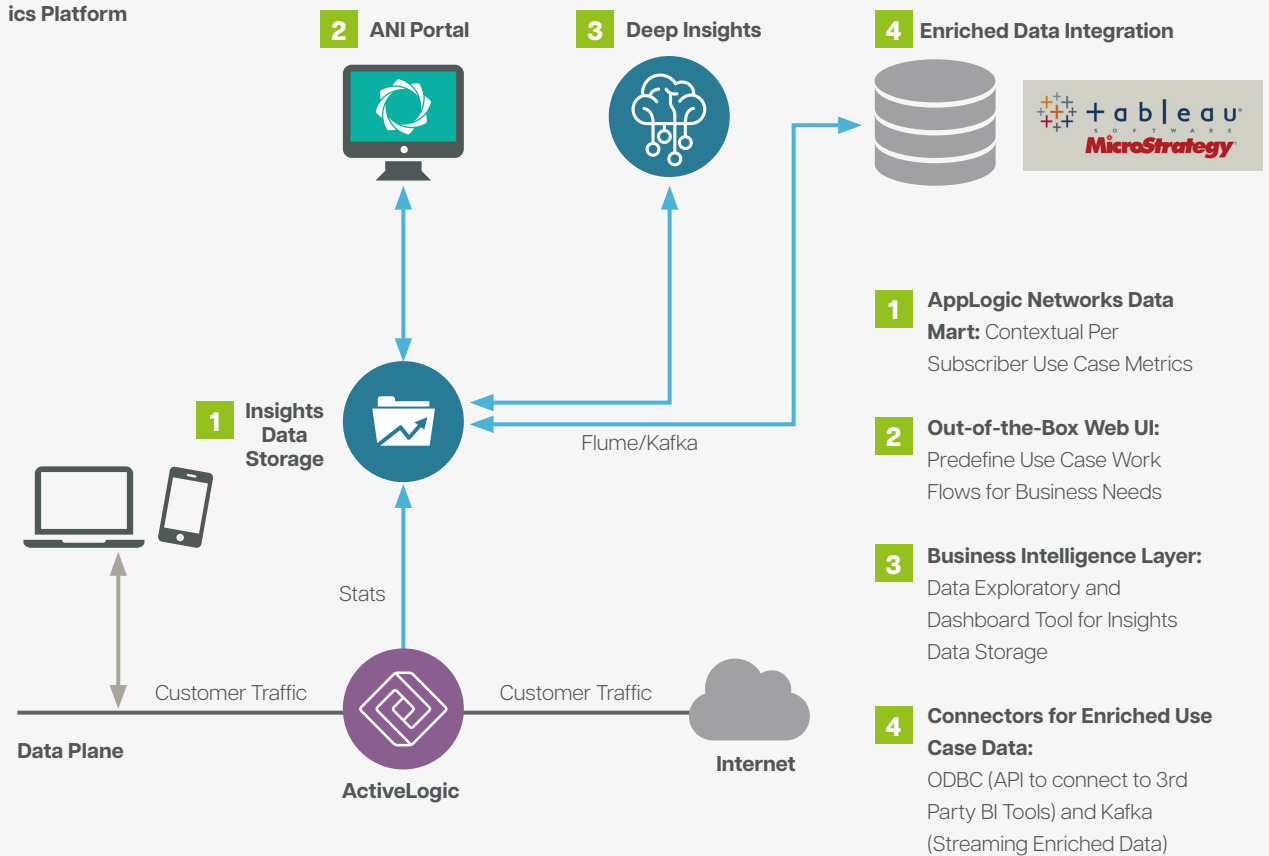# AppLogic NETWORKS

ActiveLogic Analytics Transition

AppLogic Networks introduced new App QoE portfolio capabilities with the introduction of the latest generation of Insights products, including:

- New data features with lower data granularity
- Per subscriber and per application network metrics, including quality of experience (QoE) metrics
- Improved data consumption layer and usability

In addition, Insights Data Storage, ANI Portal, and Deep Insights were introduced.

Figure 1

AppLogic Networks ANI Analytics Platform

2 ANI Portal **3** Deep Insights **4** Enriched Data Integration

1 Insights Data Storage

Flume/Kafka

Stats

Customer Traffic   Customer Traffic

Data Plane

ActiveLogic   **Internet**

1 **AppLogic Networks Data Mart:** Contextual Per Subscriber Use Case Metrics

2 **Out-of-the-Box Web UI:** Predefine Use Case Work Flows for Business Needs

3 **Business Intelligence Layer:** Data Exploratory and Dashboard Tool for Insights Data Storage

4 **Connectors for Enriched Use Case Data:** ODBC (API to connect to 3rd Party BI Tools) and Kafka (Streaming Enriched Data)

ActiveLogic Analytics Transition

With the introduction of ActiveLogic, AppLogic Networks introduces an enhanced capability to understand exact customer experiences across the network with real-time per subscriber metrics that are enriched with network, application, and quality statistics. ActiveLogic lowers the lower total cost of ownership of network-wide ANI Analytics – with improved ease of use and scalability.

Function	ActiveLogic	Network Policy Control (NPC)
Traffic classification	ActiveLogic	PTS
Signature package	Datastream Recognition Definition Language (DRDL)	Loadable Traffic Identification Package (LTIP)
Subscriber learning and mapping	Maestro Policy Engine	SDE and SPB
Real-time connection monitoring	LiveView	PowerView
Rules and action	ActiveLogic Client	Control Center
Backend DB platform	PIC	SPB
Backend database product	Insights Data Storage	SPB Data Store
Visualization portal platform	PIC	SPB and SDE
Visualization product	Deep Insights	Network Analytics Network Demographics Server
Data export source	ActiveLogic, Insights Data Storage	SDE

AppLogic Networks' Analytics architecture supports the data plane from both the Network Policy Control platform and ActiveLogic, providing the ability to insert data into the same Insights Data Storage. With the ability to publish into the same data mart, key differences exist between ActiveLogic and PTS with the data published.

Insights Data Storage: AppLogic Networks Data Mart

Insights Data Storage, part of the Insights Product Family, is a requisite component of AppLogic Networks' ANI solutions and provides long-term data storage for network measurements
and usage data. AppLogic Networks' network intelligence, foundational to all use cases, is organized
in a fixed schema, supplying easy-to-use data for a network operator's analytics requirements with enrichment for actionable intelligence without complex integration projects.
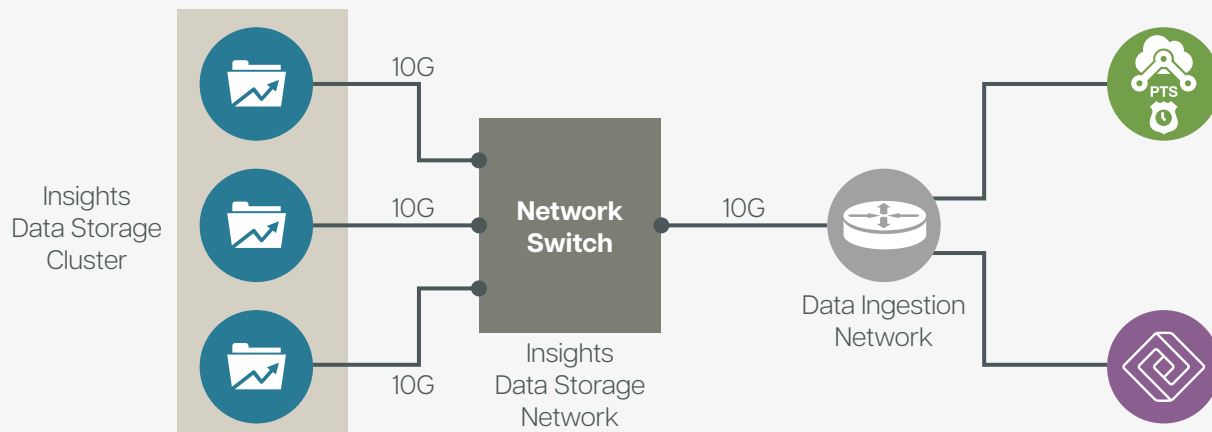
It acts as a common data storage component for both PTS and ActiveLogic data plane elements.

ActiveLogic Analytics Transition

Figure 2

Typical deployment of Insights Data Storage using a dedicated network switch for the Insights Data Storage cluster, with 10 Gbps physical links for data ingestion and cluster communication

ActiveLogic Transition Key Enhancements

As part of transitioning to the ActiveLogic platform, legacy PTS data plane elements can concurrently publish data to the same Insights Data Storage cluster. ActiveLogic introduces key enhancements that will show differences on how certain KPIs are computed across the two platforms.

Publishing Granularity
Per Subscriber - QoE Data Granularity

ActiveLogic	PTS
Network QoE metrics available at 1 second interval (can be configured to 250ms)	Network QoE metrics available at 5 minute interval
Conclusion: Enables ActiveLogic to report more accurate QoE metrics	

Figure 3

Higher granularity measurements result in more defined QoE score which can be seen in the case of ActiveLogic. The center of the circle indicates the average score for the duration, and the size of the circle depicts the variation in the sample.
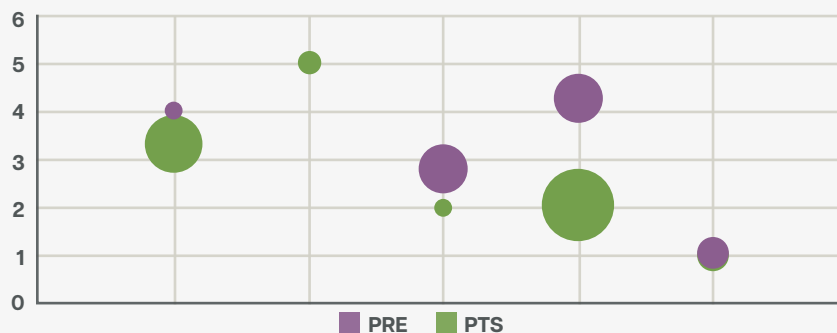
ActiveLogic Analytics Transition

5 Minute Timestamp

ActiveLogic	PTS
Timestamp in the database represents the beginning of 5 minute interval	Timestamp in the database represents the end of 5 minute interval
Conclusion: This is not an issue, but the customer should be aware for which time period the timestamp in the data is referring to	

Metrics
Signature Classification

ActiveLogic	PTS
DRDL library frequently updated using more advanced machine learning-based detection techniques with regard to encrypted traffic	LTIP only has some of the machine learning enhancements
Conclusion: ActiveLogic has a more comprehensive machine learning module for classifying encrypted traffic. ActiveLogic works on asymmetric deployments while the PTS requires the traffic to be symmetric.	

Byte Counts

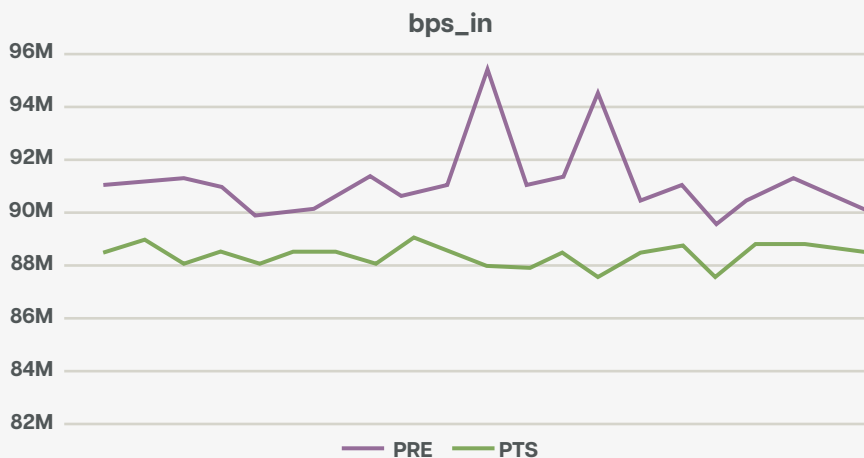| ActiveLogic	PTS
Does **not** include FCS bytes from L2 headers	Does include FCS bytes from L2 headers
Conclusion: The PTS reports ~0.3% more bytes than ActiveLogic. Optionally, the PTS can be configured to skip FCS bytes. As a result, byte counts between ActiveLogic and PTS will be exactly the same.	

QoE Network Metrics

ActiveLogic	PTS
• RTT is derived from the TCP handshake and 5 second samples taken throughout the life of the flow • Throughput is sampled every 250ms	• RTT is derived only from TCP handshake • Throughput is sampled every 1 second
Conclusion: ActiveLogic takes 4x the number of throughput samples than PTS. This enables ActiveLogic to report more accurate peaks in bandwidth, where PTS is less granular and smooths them out. ActiveLogic also takes more RTT samples, which results in more accurate measurements of latency. As a result, ActiveLogic tends to produce more accurate scores than PTS based on more precise values of throughput and accuracy of RTT. Optionally, the ActiveLogic sampling rate may be increased to 1 second making it the same as the PTS.	

ActiveLogic Analytics Transition

ActiveLogic reports higher band-
width value as it can capture higher
granularity peaks.

bps_in

KPI	ActiveLogic ANI	PTS ANI-ready	PTS Legacy
Throughput	250 msec	1 sec	1 sec
Latency (RTT)	5 sec	At the time of TCP handshake	At the time of TCP handshake
Packet Loss	5 sec	5 sec	
Connections	Available	Available	Available
Unestablished connections	Available	Available	
Per service, subscriber QoE	Available	Available	No Scoring
Measurements	Per subscriber, per service	Per subscriber, per service	Volumetric and event-driven

Increased Use Case Coverage

Use Case	ActiveLogic ANI	PTS ANI-ready	PTS Legacy
Performance and Operational Monitoring	✔	✔	✘
Service and Subscriber Analysis	✔	✔	✔*
Real-Time Subscriber Insights	✔	✘	✘
Performance Analysis	✔	✔	✔*
Capacity Planning	✔	✔	✔*
User Behavior and Demographics Analysis	✔	✔	✔*
VoIP and VoLTE QoE Analysis	✔	✘	✘
Cyber Threat Analysis	✔	✘	✘
Video QoE Analysis	✔	✘	✘
Gaming QoE Analysis	✔	✘	✘
Automation Use Cases	✔	✔	✘

* Use cases can be implemented using legacy dashboards with limitations and no roadmap

ActiveLogic Analytics Transition

ActiveLogic introduces new use cases on the ANI Portal and their associated metrics:

Improved Big Data Integration Capabilities

Supporting big data integration is a growing need for network operators. ActiveLogic introduces flexible integration capabilities:

Feature	ActiveLogic ANI	PTS ANI-ready	PTS Legacy
Flow-records via IPFIX	IPFIX flow records	Not Available	Available through Record Generator *
Flow-records via Kafka	Available	Not Available	Available through Record Generator *
ODBC access to generic schema	Available	Available	Not Available
ODBC access to application-specific schema	Available	Available	Not Available
Export mechanisms	CSV, Kafka/Flume	Not Available	Record Generator
Data plane integration	Python and WebSocket APIs allow direct real-time data extraction from ActiveLogic	Not Available	Not Available

Conclusion

ActiveLogic builds on the features that are available within AppLogic Networks' ANI Analytics platform to provide further value to operators. As operators transition, there will be a slight variance in KPIs, which need to be clearly understood and discussed.

ActiveLogic will be providing more granular KPIs, and network/application performance will now be able to be reported with near real-time accuracy. Further product features are introduced to enable new use cases, flexible data exporting options, and improving overall platform scalability.

USA
5800 Granite Parkway
Suite 170
Plano, TX 75024
USA

EUROPE
Neptunigatan 1
211 20, Malmö
Skåne
Sweden
T. +46 340.48 38 00

CANADA
410 Albert Street,
Suite 201, Waterloo,
Ontario N2L 3V3,
Canada
T. +1 519.880.2600

ASIA
Arliga Ecoworld,
Building-1, Ground Floor,
East Wing Devarabeesanahalli,
Bellandur, Outer Ring Road,
Bangalore 560103, India
T. +91 80677.43333