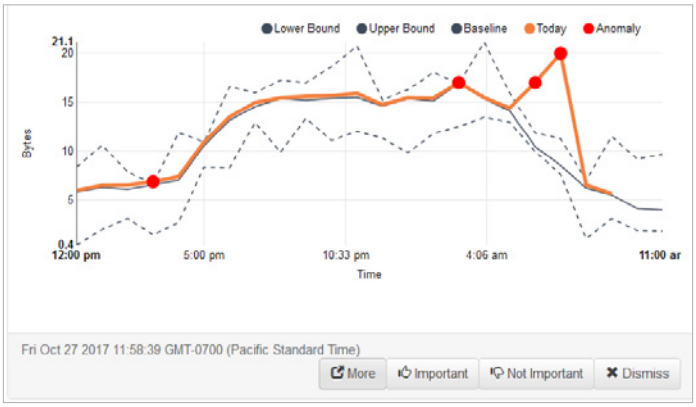
Predictive Insights Powered by Machine Learning

LiveInsight is a cloud-based, add-on software module that integrates with the scalable tiered architecture of LiveNX to collect, analyze and generate Insights to help operators manage the performance of the network, applications and user experience.

Descriptive and Predictive Insights

LiveInsight samples real-time flow data from LiveNX nodes and sends the data to LiveAction's analytics cloud for processing and insight generation. The data is sent via secure HTTPS , following industry best practices, and is encrypted before being stored in LiveAction's analytics cloud. Insights are presented to operators through the existing LiveNX Operations Dashboard.

There are a number of different insights and they are generated based on learned behavior from your network. Examples include: anomalies in network bandwidth utilization; multi-site path changes; utilization summaries, and more. The learnings are presented to the engineering and operations teams as insights to support decisions affecting network, application and user experiences.

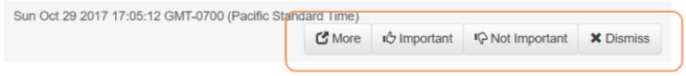


LiveInsight – anomaly behavior

Human-in-the-Loop Operations

LiveInsight enables you to train the system as to what knowledge is important to prioritize and which type of patterns the machine learning should optimize for.

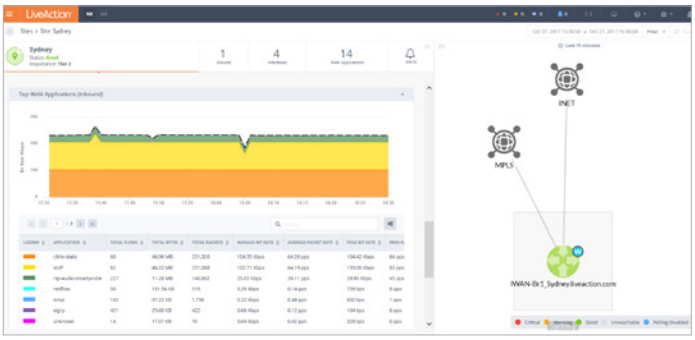
Operators can provide LiveInsight feedback by marking insights as 'important' or 'not important', which helps the system learn how to prioritize the insights it generates based on the particular operator's needs. Over time, this helps LiveInsight learn what the operator regards as normal network behavior, which results in personalization to ideally suit the operator's needs.



LiveInsight – teaching the machine to learn

For example, in the case of bandwidth anomalies illustrated above, clicking 'not important' will relax the learned anomaly thresholds; whereas clicking 'important' will tighten them.

From the action buttons, the LiveInsight 'more' options provides context sensitive drill-down to relevant information to enable further investigation in the root cause of the situation.

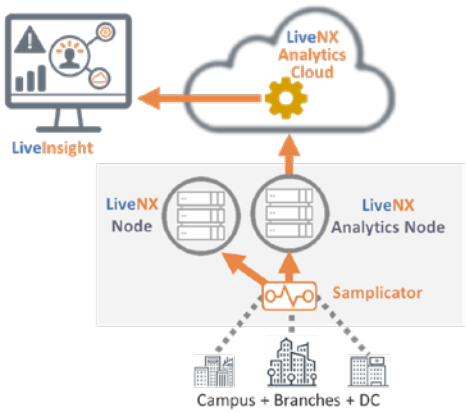


Scalable Tiered Architecture

LiveInsight tightly integrates with the LiveNX platform across the three-tiered architecture:

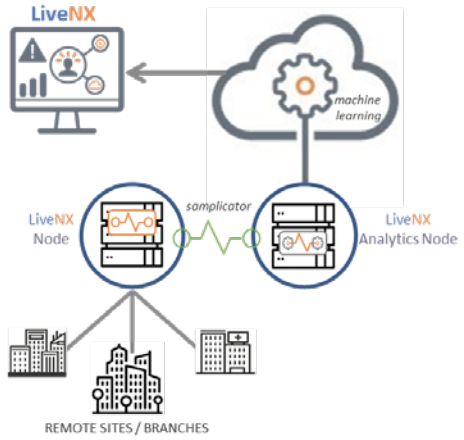
- Applications
- Servers
- Nodes

The LiveInsight Analytics node is a software OVA that is deployed alongside existing LiveNX nodes. The operator enables the flow Samplicator – a packet flow copier already built into LiveNX nodes – and flow is copied and forwarded to the LiveInsight Analytics node. The Analytics node then samples this flow before uploading to the LiveInsight Cloud, where the data is fed through Machine Learning models to generate insights. The flow is uploaded securely using HTTPS. This architecture has the benefit of not impacting the performance of existing LiveNX deployments by cleanly separating workloads.



LiveInsight Architecture

LiveNX 7 Integrations and Component Architecture



LiveNX Distributed Architecture

Deployment Models:

- Single Server/Node deployed as single system
- Multi-Server with nodes deployed anywhere there is IP connectivity

LiveNX

LiveNX is a network performance analytics platform with patented end-to-end visualization for a global view of the network and the ability to drill-down to individual devices. Using LiveNX, enterprises gain real-time and continuous insight into network traffic based on application and user level activity while offering the ability to gather and analyze volumes of network data at scale from every device, application and user to reduce mean time to repair, and it performs exploratory and explanatory analysis.

LiveInsight Predictive Alerts

Daily Bandwidth Summary: Past 24 hours of bandwidth data presented across: Egress, Ingress, and Combined with different views and groupings of key metrics. Key metric could be leveraged for capacity planning, network sizing or baselining application behaviors.

Application Bandwidth Anomaly: Raised when an application's traffic exceeds historical bounds across WAN interfaces. Rapid changes in bandwidth could signal a DDoS or other kinds of malicious attacks.

Path Change – DSCP Class: Raised when traffic of a certain DSCP marking (e.g. EF, BE) changes site-to-site across WAN interfaces.

LiveUX

LiveUX monitors end-user experience of web applications. By combining the end-user experience metrics with the network performance monitoring information, you can quickly triage performance issues.

- Integrated LiveNX and LiveUX dashboard for instant visibility of site health, network devices, application usage and application performance.
- Quickly identify the sites that are experiencing performance degradation and the applications impacted.
- From the site, drill down to examine network conditions including bandwidth utilization, link errors, QoS metrics and applications that are competing for the bandwidth.

LiveInsight System Requirements

All-in-One Server and Platform OVA, Node OVA and Analytics OVA

- Custom—Less than 25 devices or less than 25k flows/sec; targeted at small laptop deployments or starter platform, customer able to configure additional data disks
  - 2 vCPU Xeon or i7
  - 4 GB RAM
  - 250 GB data disk
- Small—Less than 100 devices or less than 100k flows/sec
  - 8 vCPU Xeon or i7
  - 16 GB RAM
  - 2 TB data disk
- Medium—100 to 500 devices or less than 200k flows/sec
  - 16 vCPU Xeon or i7
  - 32 GB RAM
  - 4 TB data disk
- Large—500 to 1,000 devices or greater than 200k flows/sec
  - 32 vCPU Xeon or i7
  - 32 GB RAM
  - 8 TB data disk
- LiveInsight
  - Currently supported for up to 150k flows/sec per LiveNX node

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