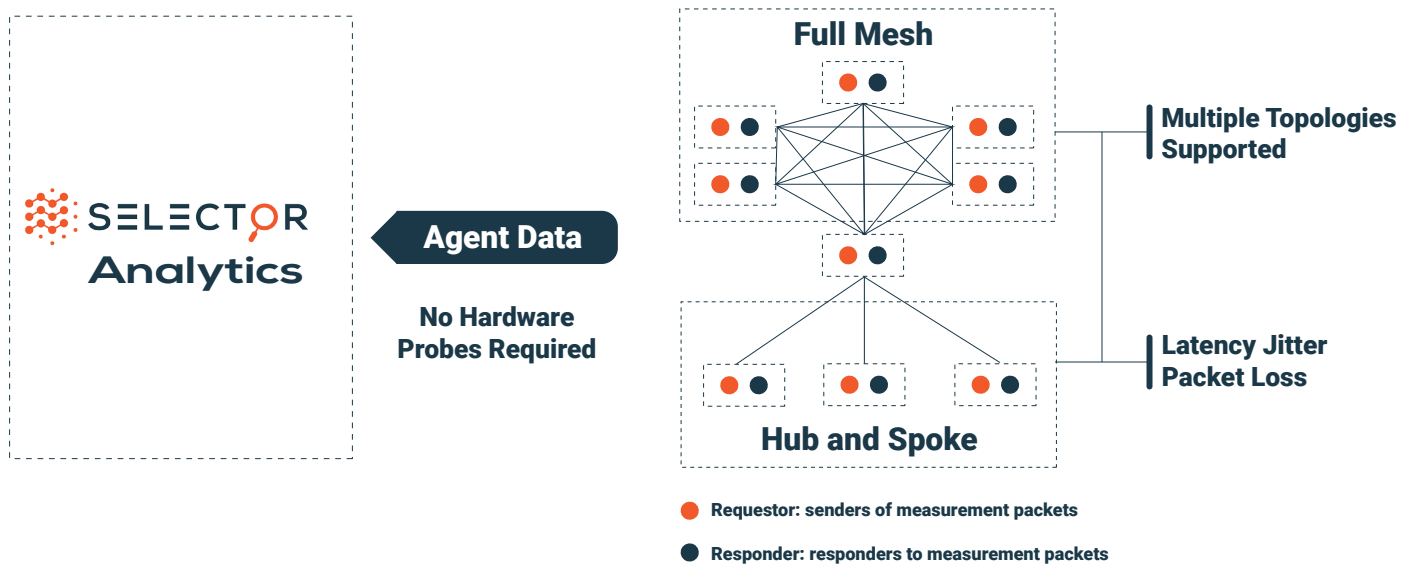# Synthetic Analytics

A Complete Solution for Rapidly
Validating Network Impact on
Application Performance

Introduction

Synthetic testing is the ultimate way to rapidly validate if the network is impacting application performance.

Availability and performance expectations are increasing, as is complexity. Both application and operations groups need to rapidly determine when and if the network is impacting application performance. Synthetics Analytics rapidly isolates and identifies any contribution the network is making to application anomalies. Combined with other analytics, operations teams can rapidly determine network innocence or triage network anomalies.

The Selector Synthetic Analytics solution supports multiple topologies including Hub & Spoke and Mesh. ICMP, UDP and TCP are used to measure latency, jitter, packet loss and path changes. In addition, Selector Analytics correlates synthetic measurements with other data sources types to provide a total view of incidents and correlations.

Analysis

Synthetic testing rapidly determines if the network is contributing to application anomalies

Synthetic testing uses active measurement to assess abnormal conditions, along the actual path taken by application flows.

Active measurement is essential, because other measurements do not focus on end-to-end path conditions.

Analysis is available in a variety of different quick-view formats, including matrix, honeycomb and sunburst.
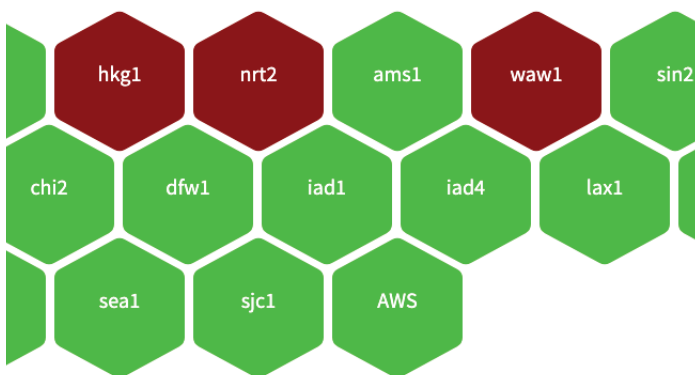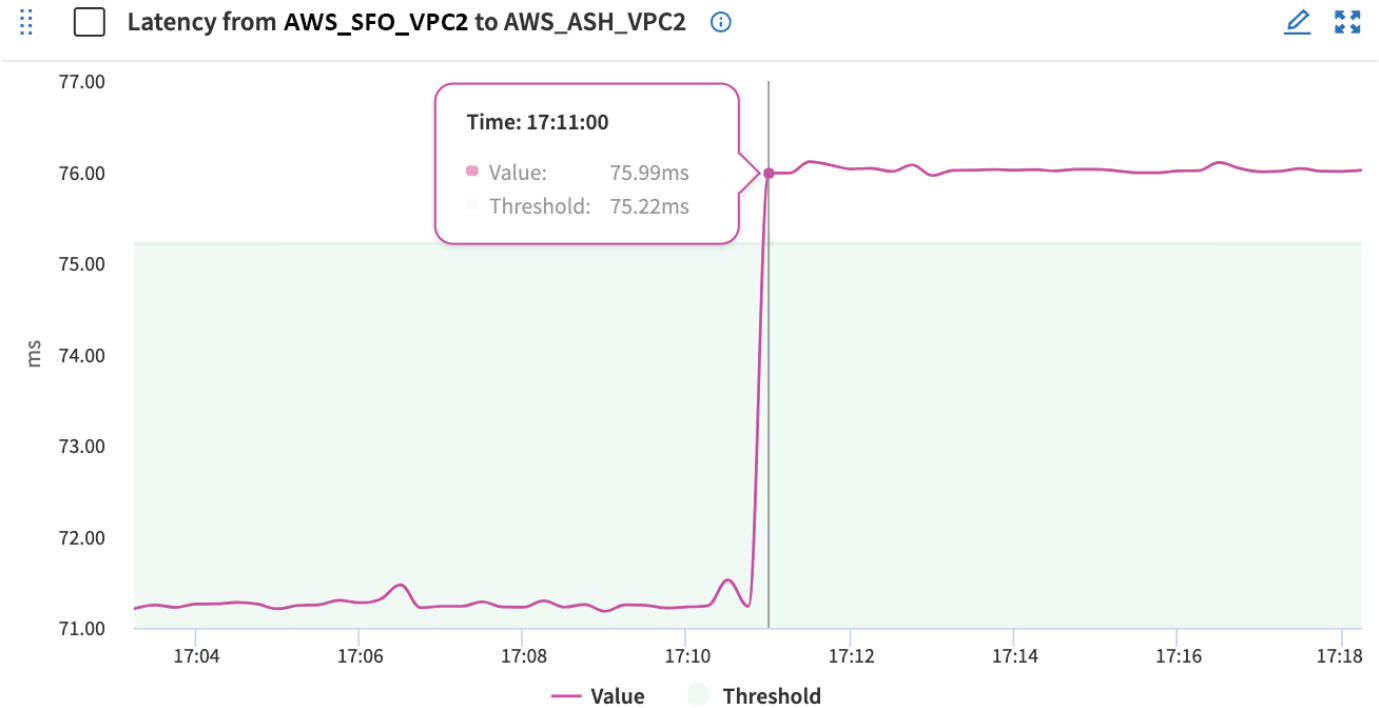

For more information, please reach out to info@selector.ai or visit www.selector.ai

Automated Thresholding

Selector Analytic's machine learning module learns "normal" behavior and generates alerts when abnormal conditions occur.

Synthetic threshold types are automatically selected based on the metric

Because latency and jitter always vary from one measurement pair to another, thresholds are learned dynamically for those measurements.

Packet loss uses fixed baselining because violation thresholds are similar across all measurement pairs.

Correlation with other network data

The combination of synthetic testing and network alert data in the same system provides the best, actionable insights when correlated with machine learning algorithms.

Synthetic active measurements are essential for understanding the condition of the actual path being taken between two endpoints. When synthetic measurements detect anomalies, correlation with passive measurements are essential for understanding what infrastructure anomalies may have caused the change in performance. Infrastructure anomalies cover a broad range of issues, including equipment failures, circuit failures/changes, configuration changes, and BGP session flaps. Correlation with underlying network anomalies, changes, and events provides the best, actionable insights.
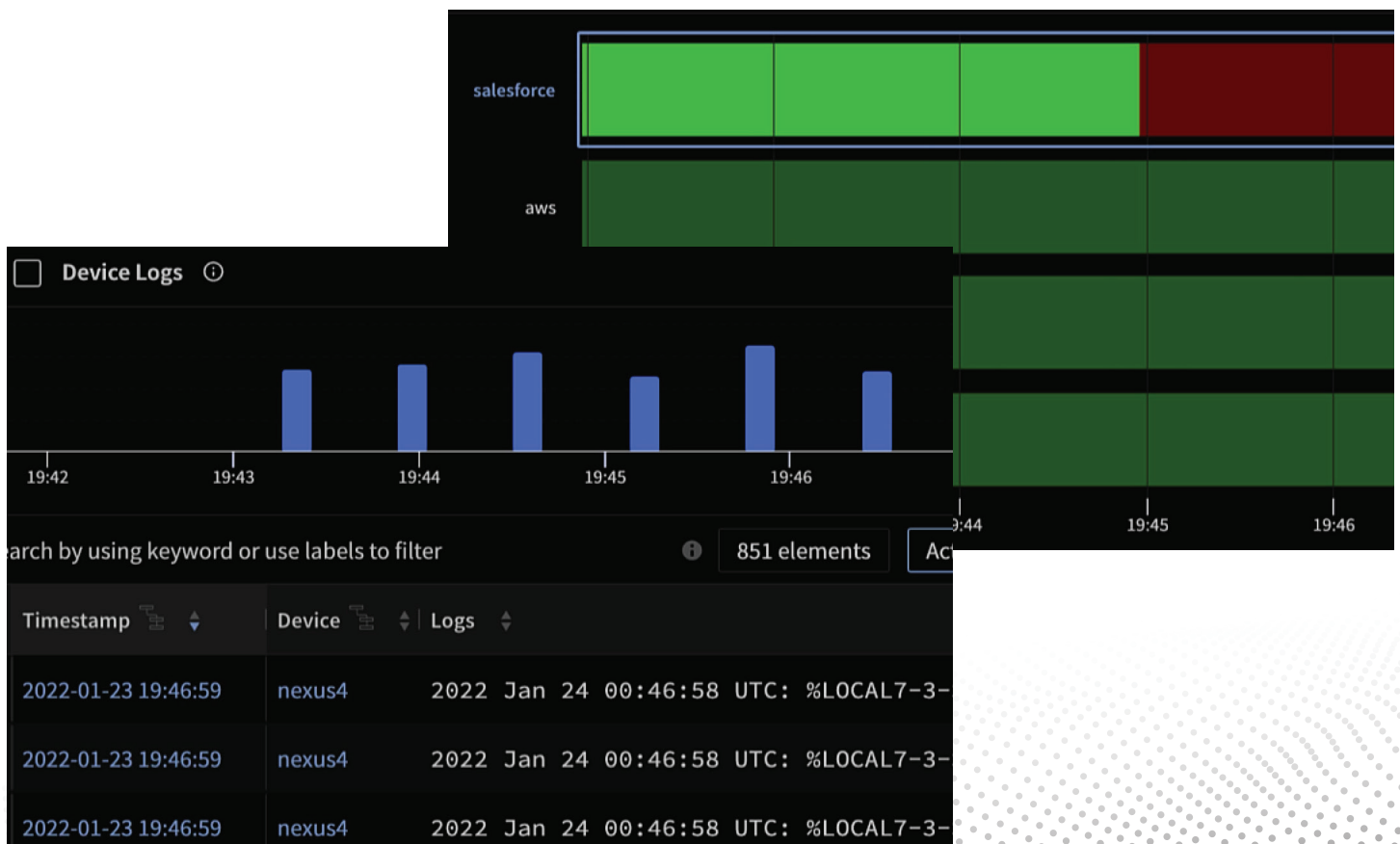
The Selector Synthetic Analytics solution can use:

- Your existing agents
- Selector provided agents
- A data feed
- Liveliness tests when there are no agents (Jitter and Latency not supported)

Conclusion

Synthetic testing is complementary to application performance monitoring (APM).

While APM measures the full application performance, including such things as database query latency, network synthetic testing is intended to isolate the network component of APM.

By isolating the network component, network and application teams can work collaboratively, through tools such as Slack and Microsoft Teams, to rapidly determine where triage resources should be deployed, eliminating time wasting interactions between different operations groups.

Only active measurements follow the same path through the network as application flows, and rapidly determine if the network is contributing to application flow anomalies.

For more information on the Selector Synthetic Testing solution contact Selector Sales at info@selector.ai