SOLUTION BRIEF

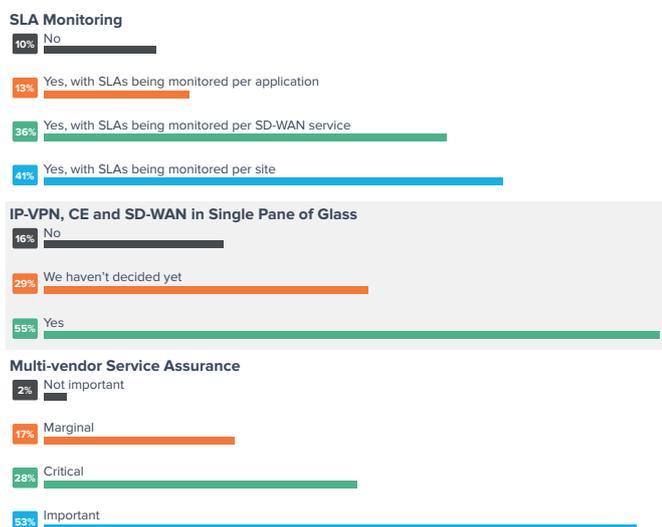# Assuring Intelligence for the Edge

Service Assurance for hybrid SD-WAN/MPLS networks

As SD-WAN rolls out across service provider and enterprise networks, the need to support multiple SD-WAN vendors while managing existing IP/MPLS network quality is important. Correlating SD-WAN overlay with the supporting underlay infrastructure can yield important data for assuring an end to end SD-WAN service in a complex hybrid MPLS/SD-WAN environment. Service providers need to meet key performance requirements for the SD-WAN network and provide visibility and reporting data to demanding end customers, driving intelligence to the edge.

A recent Heavy Reading Survey for Infovista revealed that:

- Service Assurance is critical to operators offering SD-WAN services. 41% of operators surveyed believe that SLA monitoring per site is needed for their SD-WAN services, while 36% believe SLA monitoring per SD-WAN service is needed, and 13% want SLA monitoring per application.

- 55% said they prefer VNF-based SD-WAN but also offer appliance-based. 24% said that, they are offering appliance-based SD-WAN today.

SLA Monitoring

10%	No
13%	Yes, with SLAs being monitored per application
36%	Yes, with SLAs being monitored per SD-WAN service
41%	Yes, with SLAs being monitored per site

IP-VPN, CE and SD-WAN in Single Pane of Glass

16%	No
29%	We haven't decided yet
55%	Yes

Multi-vendor Service Assurance

2%	Not important
17%	Marginal
28%	Critical
53%	Important

Figure 1. Growing Need for SD-WAN Service Assurance.
Source: Heavy Reading Survey 2018 (110+ Tier 1 CSPs)

16%	Marginal
27%	Critical
57%	Important

Figure 2. Importance of correlating SD-WAN overlay with underlay infrastructure.
Source: Heavy Reading Survey 2018 (110+ Tier 1 CSPs)

Service Providers plan to provide customers with service assurance that offers customers reporting over traditional connectivity services, and with a single management view between traditional and SD-WAN. More than half of the respondents plan to offer a "single pane of glass" reporting ability between service types. Another large group – 28% of operators surveyed – plan to develop or enhance their current monitoring solutions to meet the multi-vendor performance visibility requirements.

Using a single automated service assurance solution across multiple SD-WAN vendors is a means to reduce opex as SD-WAN services scale, and as new SD-WAN vendors are brought in. A single, automated service solution is considered critical by over 80% of respondents to achieve this.

Finally, correlating SD-WAN overlay with the supporting underlay infrastructure can yield important data for understanding – and assuring – an end-to-end SD-WAN service. In our survey, 84% of respondents reported that such correlation is at least "important," with 27% of the survey group reporting that overlay/underlay correlation is "critical."

In addition, Service provider and enterprise customers want network KPIs of throughput, response time, bandwidth, availability, latency and jitter as high priority metrics to report on network performance for SD-WAN services.

Our Solution

VistaInsight hybrid SD-WAN /MPLS Service Assurance solution from Infovista solves these emerging SD-WAN network issues by measuring and correlating SD-WAN overlay and infrastructure underlay performances, in a multi-vendor, hybrid network, thus ensuring:

- Performance of SD-WAN services between different customer locations

- Support for hybrid (virtualized and non-virtualized) underlays

- End to end performance management and SLA management

- Streaming of computed KPIs and alarms to big data lakes

- Customization of SD-WAN service model as per customer need

- SD-WAN multi-vendor model.

The VistaInsight solution also allows users views of the SD-WAN service through multiple high-level dashboards with drill-down for troubleshooting. The dashboards include:

- Multiple views of
  - Service components
  - Locations
  - Location events

- Contextual drilldown from dashboard to detailed reports/KPIs for troubleshooting

- Security configuration visibility of the SD-WAN overlay

Figure 3. Correleting SD-WAN overlay and underlay performance.

VistaInsight hybrid SD-WAN/MPLS solution from Infovista offers:

- **Visualization and management** of new SD-WAN overlay infrastructure

- **Service Assurance modelling** to correlate SD-WAN overlay and underlay performances in a multi-vendor hybrid network

- **SD-WAN Service Health Status Dashboard**, offering SD-WAN service at high level with drilldown for troubleshooting

- **E2E Service Topology view** to offer a map of service status for all locations

- **Health status** per location per link using MEF CE 3.0 specifications

- **Security Configuration Visibility** of the SD-WAN overlay

Infovista SD-WAN network KPIs, such as throughput, bandwidth, availability, response time, latency and jitter follow the MEF CE 3.0 industry standards

HOW IT WORKS

DATA COLLECTION

VistaInsight collects data from a number of SD-WAN EMS from various SD-WAN vendors. To generate precise performance KPIs, data acquisition is based on real-time and secure data-flow methods, such as mediation data buses, telemetry and REST based open APIs. Data buses, such as Kafka allow VistaInsight platform to acquire and share data quickly, and to direct it to the SD-WAN orchestrator or data lakes.

VISTAINSIGHT SCALABLE MULTI-VENDOR PLATFORM

VistaInsight Service Assurance platform is an extensible, highly scalable and resilient platform, which is designed to accelerate the service provider's digital transformation programs, using fast data management flows for agile ingestion of multi-source data, telemetry, a high performance database and a visualization system, offering automated analysis.
It offers:

- Automated processing and correlation of information
- Dynamic real-time synchronization with network topology
- Analytics capability

How Overlay/Underlay correlation works

Since the configuration of the SD-WAN overlay can have an impact on the infrastructure underlay, the Infovista solution correlates the service configured in the overlay with the service in the underlay and quickly identifies any issues. Infovista's service modeling capabilities are used to create the relationship model between the underlay and the overlay for an end to end visibility of the service. Infovista Open APIs are used to collect inventory information or get information from the SD-WAN controller and orchestrator over a Kafka bus. Relationships are created between the different layers that can be unique per site using a common service model.
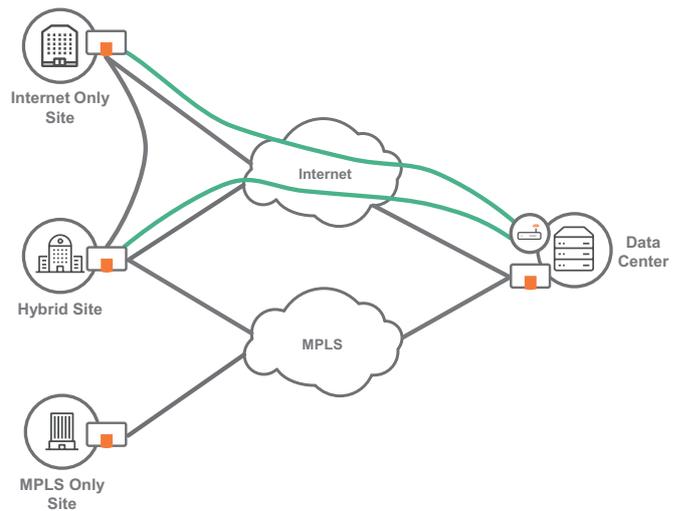
Figure 4. Hybrid SD-WAN network with SD-WAN overlay.

How the SD-WAN dashboards work

The SD-WAN dashboards operate in an intuitive way; the KPIs and KQIs are normalized to hide the complexity and variance of the different customer deployments. In addition, the dashboards allow template-driven drill-downs to see details to support the Tier 2 and Tier 3 teams in troubleshooting network problems.

The E2E service topology dashboard includes a status map for all locations, and color codes for service status, configurable by the user.
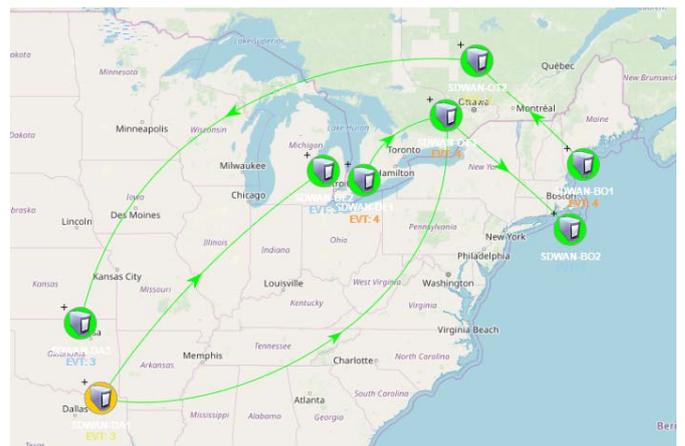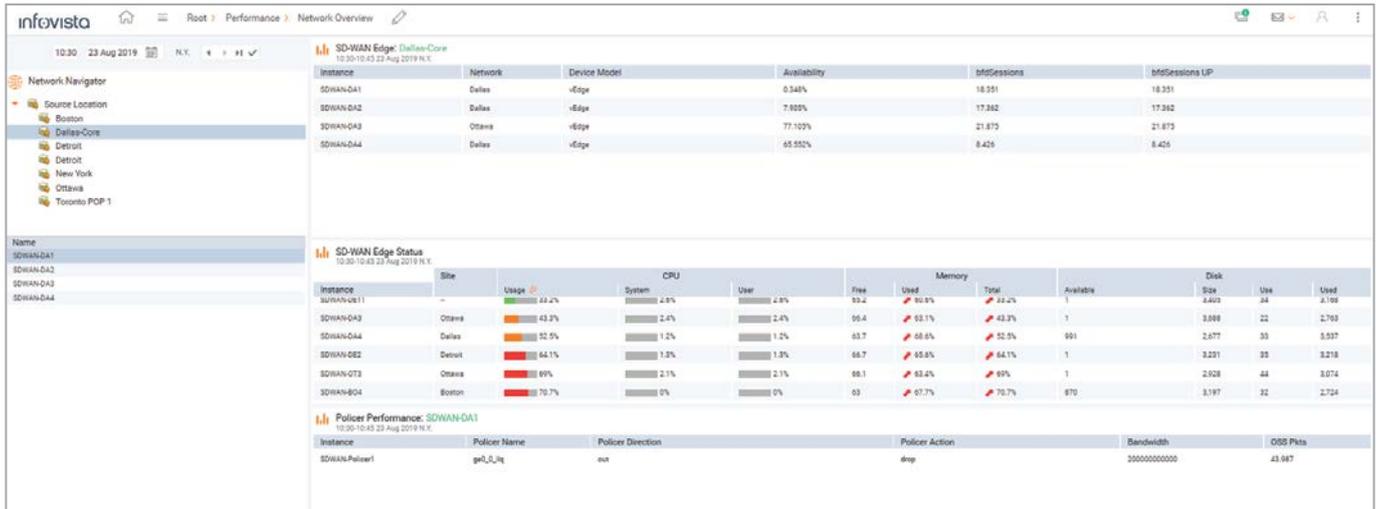
Figure 5. End-to-end topology dashboard.

Figure 6. Location dashboard.

In the location dashboard, the health status per location can be viewed, showing the key KPIs/KQIs, such as availability and tunneling KPIs. In the detailed link dashboard view, link KPIs can also be visualized.

In the location event dashboard, the user can visualize alarms/events per location based on assurance policies.
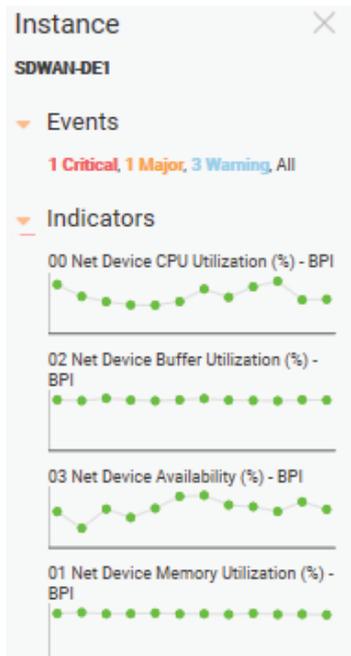

Figure 7. Location event dashboard.

Only VistaInsight ensures E2E SD-WAN Status map on a real-time, per session basis.

VistaInsight Service Assurance Solution for Business Services offers:

- Carrier-grade capacity, scale and flexibility
- Multi-tenant collection and reporting
- Customizable to needs of customer/market segment
- Creation and packaging of reports into service tiers
- Extensible support for CE 3.0 network equipment and CPEs
- Carrier Ethernet/SD-WAN expertise and MEF best practices
- 20 years of Service Provider and Enterprise experience

VistaInsight SD-WAN solution is offered within the umbrella of VistaInsight Service Assurance for Business Services. Unlike other SD-WAN Service Assurance solutions, Infovista leverages its expertise as an SD-WAN vendor. Infovista's Ipanema SD-WAN offers unrivalled application visibility and control, enabling businesses to guarantee user quality of experience and optimize the allocation of their network resources in alignment with business intent. Ipanema is the only solution to offer a flexible, non-invasive pathway to SD-WAN for service providers and enterprises.

For more information,
please visit **http://www.infovista.com**

About Infovista

Infovista, the leader in modern network performance, provides complete visibility and unprecedented control to deliver brilliant experiences and maximum value with your network and applications. At the core of our approach are data and analytics, to give you real-time insights and make critical business decisions. Infovista offers a comprehensive line of solutions from radio network to enterprise to device throughout the lifecycle of your network. No other provider has this completeness of vision. Network operators worldwide depend on Infovista to deliver on the potential of their networks and applications to exceed user expectations every day. Know your network with Infovista.

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