

Monitor SD-WAN with IBM SevOne Network Performance Management

Enable MSP success with the new realities
of network connectivity

Realizing the importance of building greater flexibility and resilience into their operations, many companies began digital transformation initiatives well before 2020. When the COVID-19 pandemic hit, it rapidly and profoundly changed business conditions, putting an even greater premium on operational agility. Supporting the work-from-home model became a major focus and was, in most cases, a major success.

Though the permanence of this very different model remains to be seen, long-standing questions about its efficacy have been put to rest. Simply put, it works. Going forward, organizations will need to support a new hybrid model of corporate, branch office and home network connectivity. Facilitating this new arrangement requires more flexible and affordable connectivity.

Many enterprises are striving to meet these needs with a software-defined wide area network (SD-WAN) delivered through managed services providers (MSPs). Yet SD-WANs create new challenges for MSPs, particularly with network monitoring, that must be resolved before they can deliver the more flexible and less costly connectivity their customers need. Traditional WAN monitoring systems fall short. What MSP engineering and operations teams need are monitoring capabilities that can keep up with fast and dynamic SD-WAN links, but also the value-added services running across these new networks.

As an industry-leading provider of network monitoring solutions to top MSPs, IBM knows what it takes to successfully monitor next-generation networking technologies at scale. Our experts focused on addressing the unique monitoring challenges associated with SD-WAN deployments. The result is [IBM® SevOne® Network Performance Management \(NPM\)](#), a highly effective solution for MSPs to mitigate the transitional risk of moving from traditional WANs to SD-WANs.



SD-WAN upside

Given the scope and pace of change happening in their networks, IT and NetOps teams need more nimble and cost-effective ways to provision and manage their hybrid WAN environments. SD-WAN introduces new software layers that can automate WAN configuration across Multiprotocol Label Switching (MPLS), internet and cellular data links based on predefined policies. Whether the WAN is managed by an enterprise operations team or is outsourced to their WAN provider, these SD-WAN policies can drive significant cost savings and performance improvements. The main way they gain those benefits is through rapid and automated WAN configuration based on the performance and availability of primary and secondary WAN links.

The policy-driven and software-powered automation of SD-WAN can deliver significant improvements in connectivity performance, reliability and cost-effectiveness.

Issues and challenges

SD-WANs typically don't replace old MPLS-based WANs in one fell swoop. Instead, organizations usually go with phased SD-WAN deployments. That puts IT and NetOps teams in the untenable position of needing to manage their network holistically, with a mix of MPLS and SD-WAN links in different segments, all while trying to watch over it all with a mix of their SD-WAN controller management and existing monitoring tools. This "swivel chair" monitoring often results in problems such as:

- **Lack of end-to-end visibility.** Quickly gauging the overall health and performance status of a heterogeneous WAN environment isn't easy.
- **Troubleshooting and problem resolution.** Having to stitch together performance data from MPLS and SD-WAN segments to find, diagnose and fix problems is slow and error-prone.
- **Performance optimization.** Understanding the performance of highly dynamic SD-WAN in the context of the rest of the network and network services it connects to is a complex undertaking.
- **Monitoring and managing the user experience.** Too often, with their existing monitoring tools, IT teams learn about branch office connectivity problems by way of complaints that users have already made to the help desk. Instead, teams need to detect and address issues before they impact users.

As organizations grow and change, they need to be able to provision and deprovision connectivity services with speed and agility. WANs based solely on MPLS links won't get today's job done because they are too inflexible and costly.

SD-WAN is clearly the future. For most shops, however, the hybrid model will be their reality for the near-term to medium-term. So, they have to make that model work.

To do that, they need next-generation monitoring capabilities precisely like those provided by SevOne NPM.

Monitoring SD-WANs with SevOne NPM

SevOne NPM complements the management capabilities delivered with SD-WAN controllers by delivering continuous visibility into WAN infrastructure. Users now have greater insight into the network services running on them, helping their teams:

- **Ease the transition to SD-WAN.** Monitor traditional MPLS WAN and new SD-WAN segments from a single unified dashboard. Automatically monitor new SD-WAN infrastructure as soon as it's deployed.
- **Automate path and class data correlation.** Automated, dynamic and correlated analysis of Cisco (Viptela) and Versa SD-WAN controller data provides easier visualization of the traffic transmitted and at what class and path as assigned by the SD-WAN controller.
- **Visualize SD-WAN tunnels.** Create visualizations to show traffic, alerts and availability, with drilldowns to tunnel data to help simplify access to key performance indicators (KPIs) for troubleshooting.
- **Extend visibility.** Expand visibility to other critical network assets, such as enterprise campus and branch office wifi, software-defined data centers and public clouds.
- **Gain service-level insight.** Understand how infrastructure performance affects the customer's applications and services with user-configurable single tenant and multitenant dashboards that provide service-level insight.
- **Align with the business.** Take advantage of customizable persona-based dashboards and KPIs that align to specific roles in MSPs, including network operations and engineering, product owners and business leaders.
- **Create and share dashboards.** Modify any of the SevOne NPM dashboards to create and share operational and business views, and then combine them as workflows across teams to better fit into operational models.

The heart of the offering: tracking KPIs

Using one or more bundled data collectors for SD-WAN, SevOne NPM collects and analyzes a series of multivendor KPIs that enable users to:

- Learn business application usage and asset use for cost-savings analysis
- Understand the impact of SD-WAN policies on application behavior and performance
- Monitor events and identify the root causes that led to them
- Provide actionable intelligence for mitigating risks and correcting problems
- Create customized, aggregated KPIs of SD-WAN services by customer, business group, path and more

SD-WAN performance data collected

Using a single SD-WAN data model, SevOne NPM collects SD-WAN performance data for Cisco, Versa and Nuage SD-WAN, enabling users to visualize a series of multivendor dashboards.

Total interface object indicators

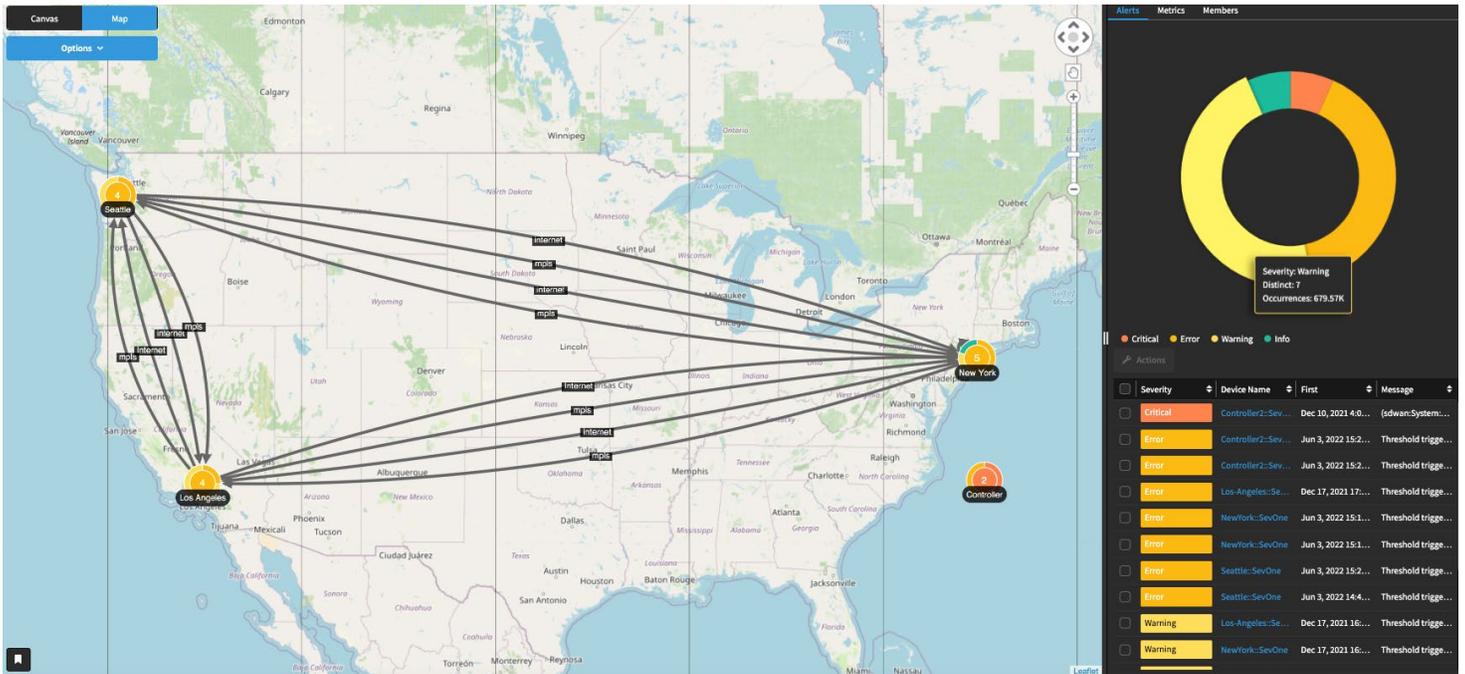
- bw_down
- bw_up
- down_capacity_percent
- interface_speed
- oper_status
- rx_drops
- rx_errors
- rx_kbps
- rx_octets
- rx_pkts
- total_mbps
- tx_drops
- tx_errors
- tx_kbps
- tx_octets
- tx_pkts
- tx_pps
- up_capacity_percentage

Total tunnel object indicators

- destination_interface
- jitter
- latency
- loss
- loss_percentage
- rx_octets
- rx_pkts
- rx_utilization
- source_interface_speed
- total_utilization
- tx_octets
- tx_pkts
- tx_utilization

Total device health object indicators

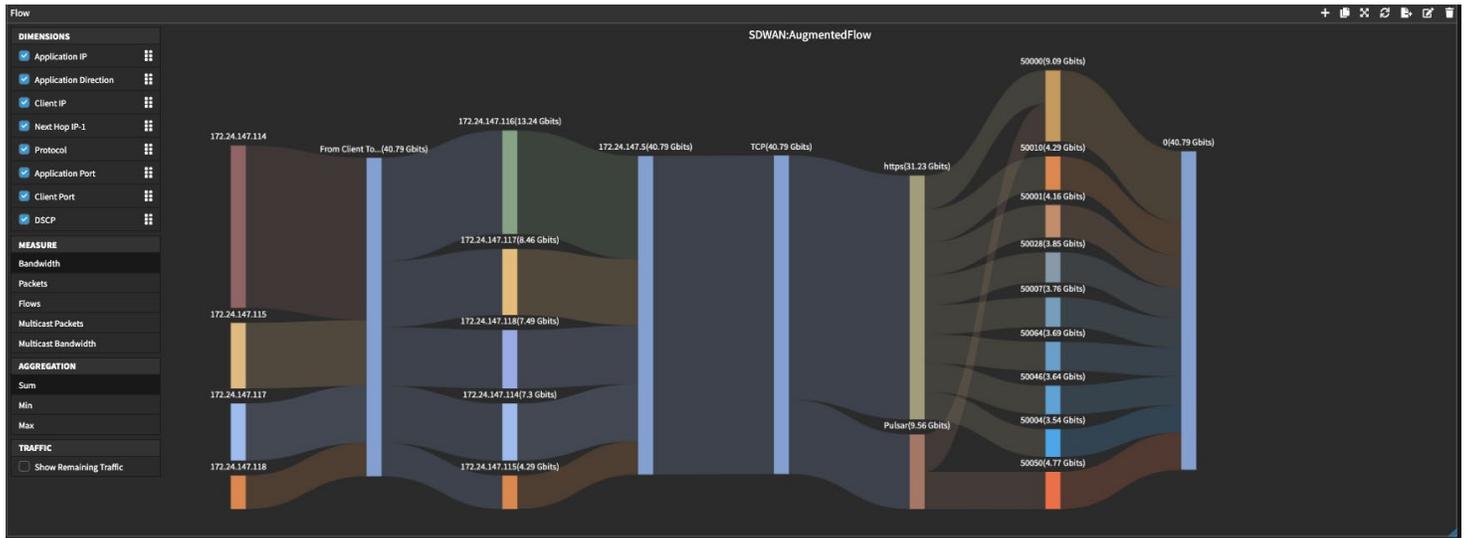
- cpu_utilization
- disk_utilization
- fan_status
- memory_utilization
- temperature_status



SevOne NPM helps users quickly see network status across large, complicated networks.

Powerful mapping

Users can quickly visualize SD-WAN topology with the specific devices, ports and interfaces that make up the service. Network operations teams can view specific sites and monitor interface port assignments to validate their SD-WAN topology while viewing KPI data in the same dashboard. Users can drill into the transmission performance of edge router interfaces and WAN links by class of service (CoS). By viewing the trends of traffic dropped by CoS priority queues and WAN links, network planners can provision the optimal WAN link bandwidth.



SevOne NPM helps users easily visualize flow data across their networks.

Flexible flow visualization

SevOne NPM users can visualize network flows with SD-WAN paths along with the service level agreement (SLA) class assigned by the SD-WAN controller. Users can automatically identify flows originating from specific sites and validate SLA class and the WAN path taken by the flow from one dashboard. Additionally, support for deep packet inspection capabilities allows users to identify applications beyond port-based applications.

Professional services, support and training

IBM offers a complete set of SevOne NPM consulting services designed to ensure that customers maximize the value of their investment. These service offerings include:

- Quick start program
- Post-implementation services
- Customized integrations
- Customer training

Conclusion

Your organization's networking and connectivity needs have changed dramatically over the past couple years and undoubtedly will continue to evolve. Transitioning to an SD-WAN-based approach can be your most viable option for meeting those needs. SevOne NPM eliminates worries about management complexity and tool proliferation. With SevOne NPM, your organization — and your team — will have the next-generation monitoring capabilities it needs to support any connectivity requirements now and into the future.

Why IBM?

IBM SevOne Network Performance Management (NPM) provides a single source of truth to help assure network performance across multivendor, enterprise, communication and MSP networks.

[Learn more](#) about SevOne NPM and how it can help your organization monitor and manage the performance of both your existing and next-generation network and infrastructure resources more effectively.

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