

# Spirent **SD-WAN Validation**

Assure SD-WAN integrity and service delivery in a multi-vendor environment

## Spirent: Global Technology, Innovation and Market Leadership



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## SD-WAN Challenges

SD-WAN has emerged into a multi billion (USD) market, allowing enterprises to optimize performance and costs for the WAN services already deployed. However, the lack of a common definition and standards has resulted in a rapidly fragmented market resulting in confusion, complexity, and and costs.

While some enterprises are deploying SD-WAN on their own, an increasing number are turning to their trusted service provider for managed services instead. Outsourcing allows enterprises to focus on their business priorities instead of IT, and greater agility to respond to changing business needs, tailoring based on the needs at individual sites, and expense predictability.

Digital transformation underway at many operators has resulted in widespread adoption of Software Defined Networking (SDN) and Network Functions Virtualization (NFV), and rapidly growing adoption of cloud services by enterprises large and small. This in turn has resulted in SD-WAN and security, Virtualized Network Functions (VNF), deployed in NFV infrastructure (NFVi).

NFVi performance varies widely, and are highly dependent upon virtualized workloads simultaneously deployed. The degree of non-determinism rises the further from the enterprise and carrier data center, especially as VNFs are deployed at the edge, or in uCPE.

Thus, additional testing and validation is essential to address NFVi variability, but traditional, hardware-centric tools and platform are themselves inadequate. Ability to initiate testing on demand is essential when onboarding new VNFs, adding or modifying sites, or especially prior to an upgrade.

## A New Methodology is Required

A comprehensive SD-WAN testing/validation approach is required to ensure delivery of SD-WAN, as well as all dynamic services, in the virtualized environment. While the ultimate goal is Closed Loop Automation, most service providers have embarked upon a more deliberate journey with a number of milestones along the way to mitigate risks.

As the global leader in SDN/NFV validation, Spirent has introduced the Lifecycle Validation & Assurance (LVA) methodology that paves the way towards the automated service delivery lifecycle. For SD-WAN, automated validation is provided in the Lab for the design and onboarding stages, while automated assurance is provided for the deployment, operation and maintenance stages of the "live" production network.

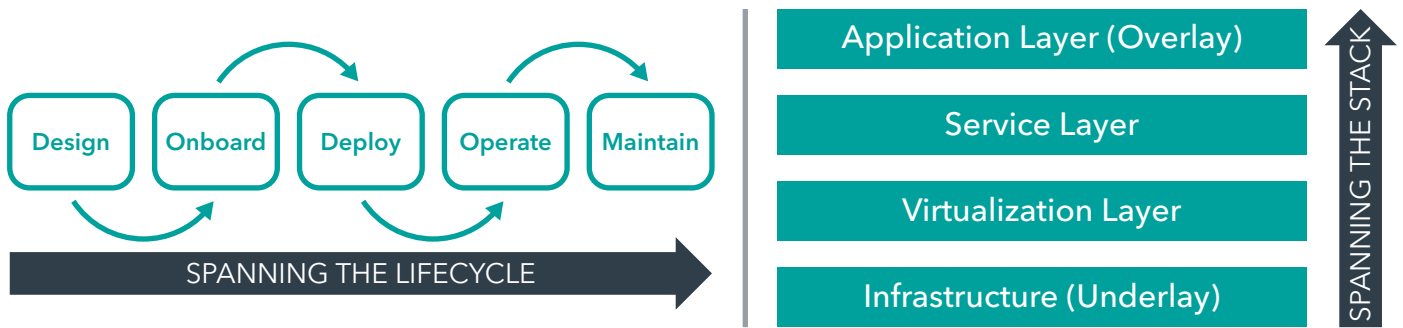


Figure 1: Spirent's comprehensive Lifecycle Services Assurance (LSA) methodology

An extensive test suite validates the performance of the infrastructure layer, characterizes the performance of VNFs and Service Function Chains (SFC) in the virtualization layer, and provides service-layer visibility for policies, SD-WAN functions, as well as the applications being supported, as indicated in Figure 1.

## Benefits

Spirent's SD-WAN capabilities fit into a broader portfolio of network virtualization solutions that have been targeted towards emerging SDN/NFV deployment scenarios.

- Neutral, testing authority- enabling validation of SD-WAN capabilities that vary widely among vendors, VNF and SD-WAN vendor performance claims to enable multi-vendor services
- Validate and assure both the underlay WAN services, SD-WAN overlay, and end-to-end application behavior for both physical and virtualized environments
- Active testing complements passive monitoring to enhance service assurance, offering end-to-end visibility from the end-user's perspective
- Exclusive MEF SD-WAN Partner authorized to certify compliance with the industry's first SD-WAN standard (MEF70)
- Readily allow 'What If' testing to optimize SD-WAN Configuration and Policies, as well as deployment options
- Characterize the configuration and deployment for protection and security solutions, to ensure they behave as expected in the face of ever-changing threats
- Highly automated, virtualized portfolio enables rapid deployment, configuration, and updates in the dynamic virtualization environment, offering agility, scalability, and reduced TCO

For more information about Spirent SD-WAN solutions, visit:

<https://www.spirent.com/SD-WAN>

<https://www.spirent.com/products-for/cloud-infrastructure-validation>

For more information about MEF's SD-WAN Standard, visit: <https://www.mef.net/mef-3-0-SD-WAN>

## Contact Us

For more information, call your Spirent sales representative or visit us on the web at [www.spirent.com/ContactSpirent](http://www.spirent.com/ContactSpirent).

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