NFV Test Framework
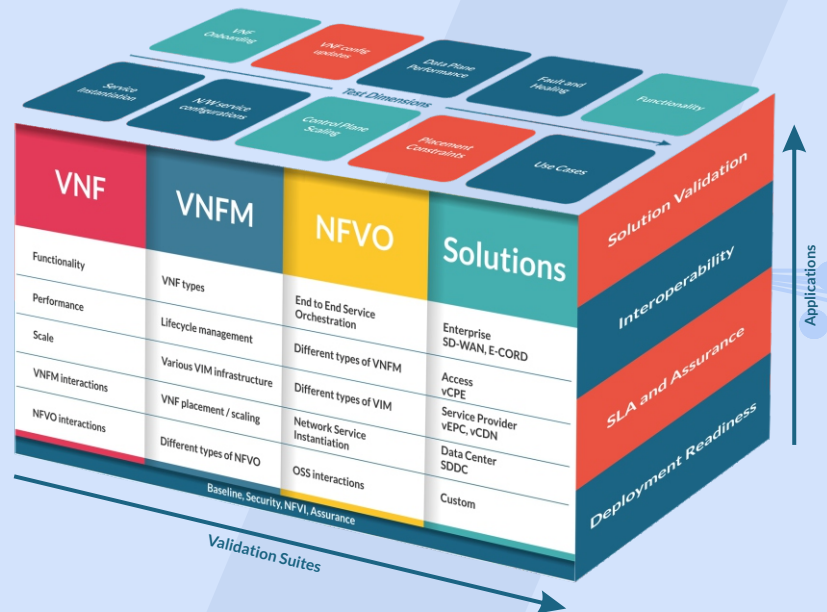
CNLabs NFV Test Framework is an on-demand customizable self-test environment for functional and solution testing of Virtual Network Functions. The SAAS based test platform enables Network product vendors to evaluate multi-vendor VNF with open source and commercial MANO orchestrators. The platform can also be used by Enterprises and Network operators to test interoperability and integration testing of vendor VNFs.

Dynamically configurable NFVI templates, core test suites for functional and system testing, support for on-prem or off-prem NFV Infrastructure and compatibility with external or virtual traffic generators make it easy to undertake testing for different type of NFV solutions.

Pre-integration with popular open source MANO products like OSM, ONAP, Tacker, RIFT.io, support for container and VM infrastructure base on OpenStack, Kubernetes and integration with different hypervisors are available. The product is customizable to meet customer needs.

The multi-vendor NFV Test Framework is built on Criterion SDCloud® Platform and supports virtual / bare metal deployments, cloud infrastructure anywhere, suspend/resume solutions, user management and other features.
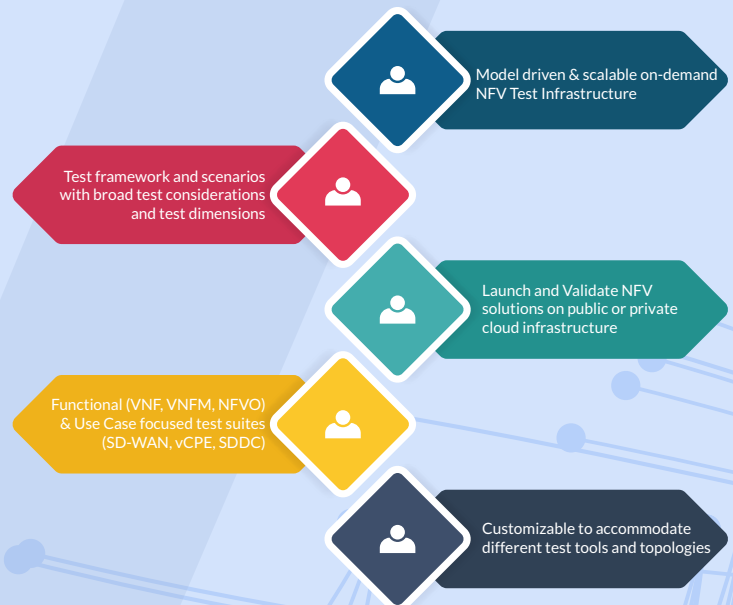

The Need

To deliver agile and cost-effective network services through orchestration and chaining of virtualized network functions, network operators and product vendors have a choice of deployment models. They can additionally choose open source or vendor specific products to develop and deploy these solutions.

Continuously evolving standardization efforts and phased adoption by different product vendors makes it hard for customers to adopt new cloud solutions that meet their near term and long-term needs.
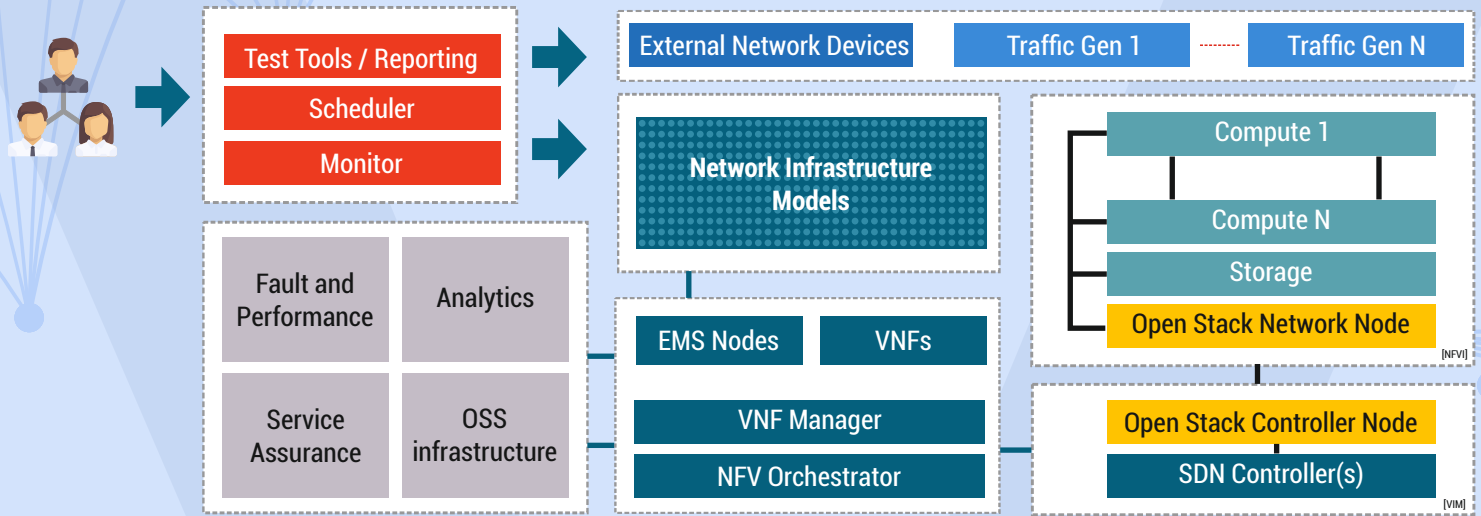
For comprehensive testing of complex NFV deployments, a scalable, flexible and model driven test framework is necessary. Among other needs, customers must be able to validate VNFs on different types of virtualization environments (VM, containers etc.), compare performance with different service orchestrators, VNF managers and test integration with vendor specific components in the test-bed.

- Model driven & scalable on-demand NFV Test Infrastructure
- Test framework and scenarios with broad test considerations and test dimensions
- Launch and Validate NFV solutions on public or private cloud infrastructure
- Functional (VNF, VNFM, NFVO) & Use Case focused test suites (SD-WAN, vCPE, SDDC)
- Customizable to accommodate different test tools and topologies
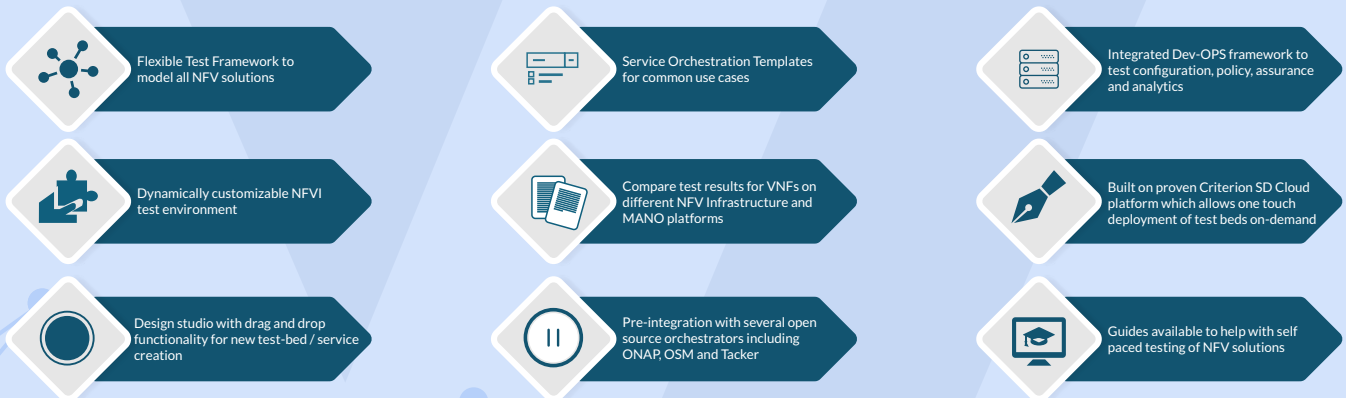
> "CNLabs is an ONF and IPv6 Forum approved test laboratory. The lab provides certifications, interoperability and independent test programs for Programmable Networks, Virtualization and Service Automation using SDN/NFV. CNLabs participates and leads several open source community forums and drives initiatives like plug test events for virtualized network solutions"
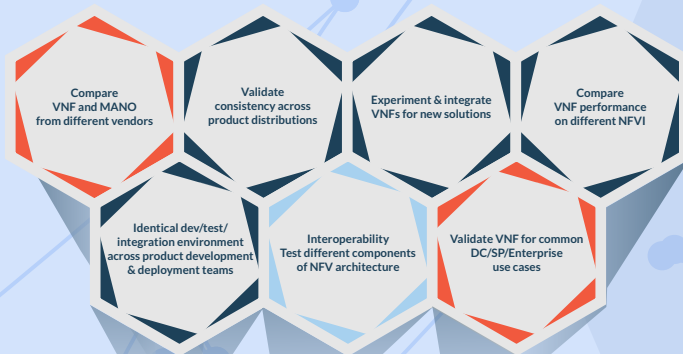
NFV SOLUTION VALIDATION TESTBED

The NFV test framework is delivered on a SAAS platform and allows users to create test scenarios based on various test considerations. All the nodes in the test bed are configured and deployed using customizable test-bed configurations on a choice of NFV Infrastructure. The product comes complete with how-to guides, an integrated test orchestrator & management system, repository of test suites, and ability to integrate traffic generators & network hardware external to the cloud test-bed. Customers can additionally engage expertise from CNLabs based on their needs.

Test Tools / Reporting
Scheduler
Monitor

External Network Devices | Traffic Gen 1 | Traffic Gen N

Network Infrastructure Models

Fault and Performance | Analytics
Service Assurance | OSS infrastructure

EMS Nodes | VNFs
VNF Manager
NFV Orchestrator

Compute 1
Compute N
Storage
Open Stack Network Node
[NFVI]

Open Stack Controller Node
SDN Controller(s)
[VIM]

Key Product Features

- Flexible Test Framework to model all NFV solutions
- Service Orchestration Templates for common use cases
- Integrated Dev-OPS framework to test configuration, policy, assurance and analytics
- Dynamically customizable NFVI test environment
- Compare test results for VNFs on different NFV Infrastructure and MANO platforms
- Built on proven Criterion SD Cloud platform which allows one touch deployment of test beds on-demand
- Design studio with drag and drop functionality for new test-bed / service creation
- Pre-integration with several open source orchestrators including ONAP, OSM and Tacker
- Guides available to help with self paced testing of NFV solutions

Applications

Compare VNF and MANO from different vendors
Validate consistency across product distributions
Experiment & integrate VNFs for new solutions
Compare VNF performance on different NFVI
Identical dev/test/ integration environment across product development & deployment teams
Interoperability Test different components of NFV architecture
Validate VNF for common DC/SP/Enterprise use cases

The NFV Test Framework benefits the entire eco-system of product vendors that develop VNFs, NFVI hardware, Virtual Infrastructure Managers, Orchestrators, Hypervisors, operating system providers and helps validate integration, performance, scale & interoperability of complex NFV solutions.

The product also benefits operators who develop and orchestrate new network services based on virtualization products and helps them easily evaluate and compare different products and solutions.