# Service Assurance for Network Functions Virtualization

Network functions virtualization (NFV) can reduce infrastructure costs and increase business agility, but assuring service levels and performing root cause analysis when issues occur becomes far more complex with its introduction. Since most NFV projects occur in stages over long periods of time, many organizations run NFV infrastructure alongside legacy hardware simultaneously. Providing service assurance in these mixed environments introduces new challenges. While significant time and effort have been spent on NFV orchestration, automating NFV service assurance alongside legacy infrastructure is as important, or even more important, for resolving issues rapidly and preventing outages.

An up-to-date, dynamic resource tracking technology is required for real-time awareness of virtual network function (VNF) locations and for correlating network functions virtualization infrastructure (NFVI) health — availability and performance — to the network functions software layer, which is critical for rapid issue isolation and resolution.

Zenoss offers a single fault and performance management platform that covers both NFVI and VNF layers communicating with all compute, storage, hypervisor, operating system and virtual functions.

The platform monitors and interoperates with multiple NFV orchestrators, virtual infrastructures managers such as OpenStack, VMware and Red Hat, VNF managers, and VNFs alongside legacy infrastructure assets of every type — enabling a single view into infrastructure and service health.

By modeling each device and technology and identifying all physical and logical interdependencies, Zenoss is able to correlate fault and performance information across all NFV layers. Zenoss also includes a patented root-cause analysis engine to determine the most probable underlying event, dramatically reducing troubleshooting time. **Zenoss NFV automatically provides service assurance across the entire service chain by identifying service-impacting fault and performance events.**
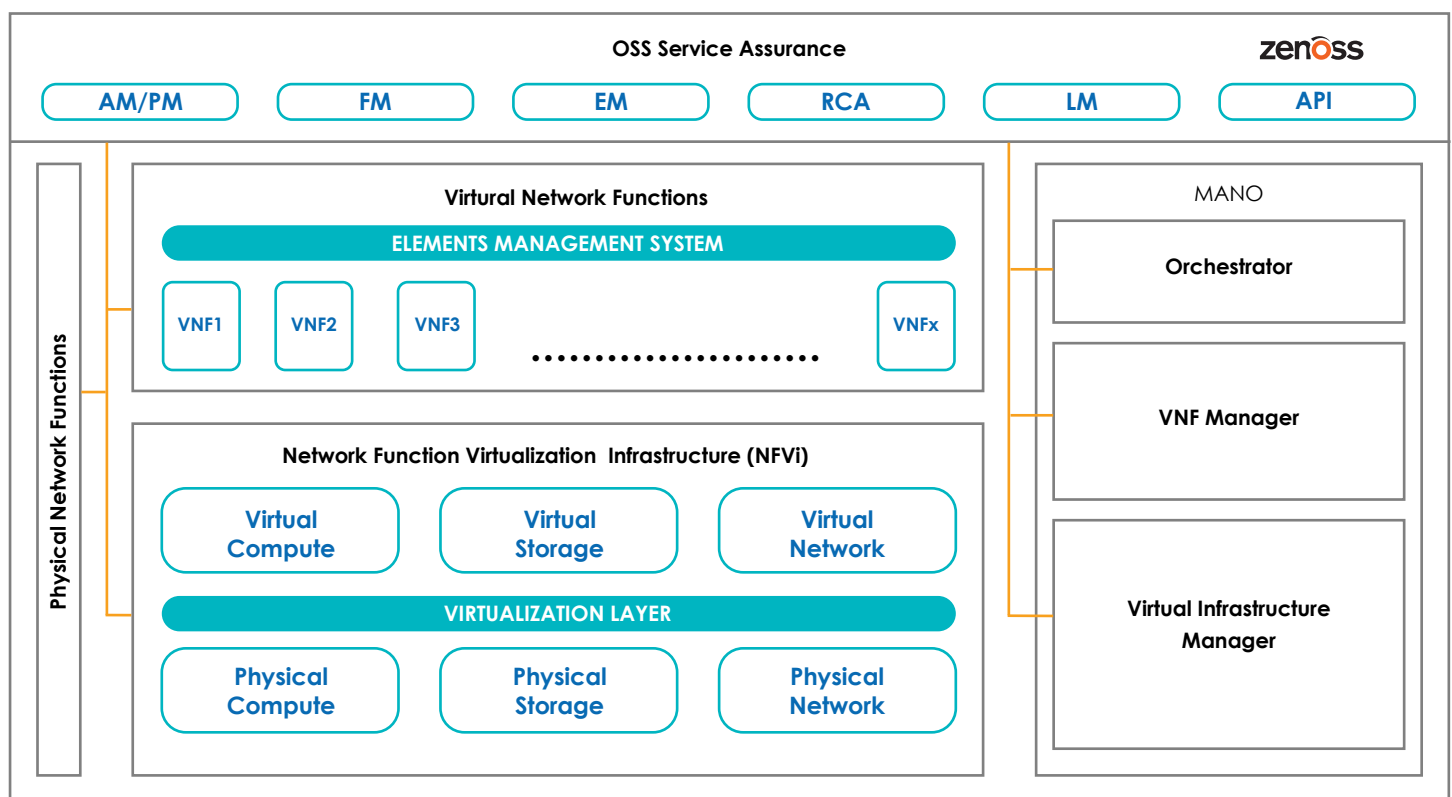
5G Service Assurance

Zenoss is designed for ephemeral data sources and scale. For enterprises and providers looking at 5G and IoT applications, Zenoss' data and visualization, real-time fault and performance management, and closed-loop integration and automation capabilities enable service providers to take full advantage of 5G networks with greater speed, flexibility and visibility into network performance.

Here are just some of the benefits Zenoss provides.

Intelligent Insights Into Network Services

Zenoss includes capabilities for metrics streaming and the use of open-source agents like collectd and statsd to pull in data from telecom operations support systems and business support systems (OSS/BSS), NFV, containers, microservices and other ephemeral resources. We can then combine this data with the infrastructure modeling data we already collect, enabling you to correlate reduced application and service quality with problems in the underlying infrastructure. Zenoss provides network and service operations teams with a single pane of glass for managing and monitoring services, end to end.

Improved Agility With an End-to-End Network Orchestration

Deploy network services in minutes, and enable automated service assurance through Zenoss. NFV/SDN employ closed-loop automation capabilities to deliver intelligent, policy-based networks. Zenoss' open and extensible APIs support the automation to assure multidomain services spanning legacy, new and emerging network technologies.

Complete Network Visibility Without Blind Spots

Zenoss ingests, audits and contextualizes your network service topology data and provides network and service operations teams with a real-time, end-to-end view of all of your network services. With predictive analytics, you can anticipate problems or forecast capacity demand.

Scaling for the Future of Networks

Zenoss provides virtually unlimited platform scale, including streaming and analytics capacity for machine data volumes and scalability required to support the massive volumes of IoT, NFV, SDN and 5G data.

Reduced Event Noise

Zenoss consolidates network events from multiple devices and locations through a unified console. It deduplicates streams of identical events from the same components into a single event. Zenoss provides automatic network topology-based event suppression for layer 3 networking to prevent event floods from devices downstream.

Service Context is Everything

Modern networks (including 5G) can support multiple and varied applications and services — from IP telephony to traffic cameras to smart meters — and understanding the context and impact of a service to the consumer is essential. Zenoss isolates problems and service risks, understands key trends and anomalies, and forecasts capacity issues before the service consumer is impacted.

Improved Network Insights With Integrated Log Monitoring, Metric and Flow Data

Providers and enterprises need multiple data sources to effectively monitor their network services. Zenoss integrates metrics and data, including syslog, proprietary logs, flow, RTCP, SDN data, CMR/CDR, SQL queries, SNMP and more. These different facets of service provide actionable insights and help you reduce time to repair.

To learn more, visit our website at **www.zenoss.com**.
Zenoss is the global leader in Software-Defined IT Operations.