VMWARE SMART ASSURANCE

Automated Service Assurance for Virtual and Physical Networks

AT A GLANCE

Proven, carrier-scale network and digital infrastructure management for today's and tomorrow's CSP networks

- **Holistically monitor and manage** networks at the service, virtual, physical and transport layers

- **Automate root-cause analysis** of issues across all layers including NFV and SD-WAN environments

- **Trigger closed-loop actions** and remediation of problems via API integration with orchestration and OSS tools

- **Prioritize issues** based on correlation of service and tenant impact

- **Manage multiple tenants** with multi-vendor solutions in a unified view

- **Drive SLA management** with historical and real-time views, trending, forecasting and adaptive alerting

Holistic Approach to CSP Operations Intelligence

As CSPs prepare for the rollout of 5G networks, new tailored services and continued NFV deployments, the ability to monitor and immediately manage both the traditional physical infrastructure and the new virtual networks which overlay them as one seamless entity becomes increasingly imperative. Multi-cloud environments and new IoT devices and services further increase the complexity of today's networks. It is no longer scalable to rely on simplistic, heterogeneous management tools. An intelligent and integrated approach to service assurance is needed. VMware Smart Assurance meets this exact need.

Real-time Actionable Insights

VMware Smart Assurance provides an automated approach to operational intelligence to reduce service impact and operations expenses. Its automation maintains a stable configuration to prevent network incidents, proactively detecting abnormal patterns. When incidents cannot be prevented, it automatically identifies the root cause of the problem and generates an alert or triggers a remediation workflow. As a result, network operators can focus on delivering service QoS guarantees, meet stringent SLAs, and provide a high-quality customer experience, rather than spend their time troubleshooting network problems.
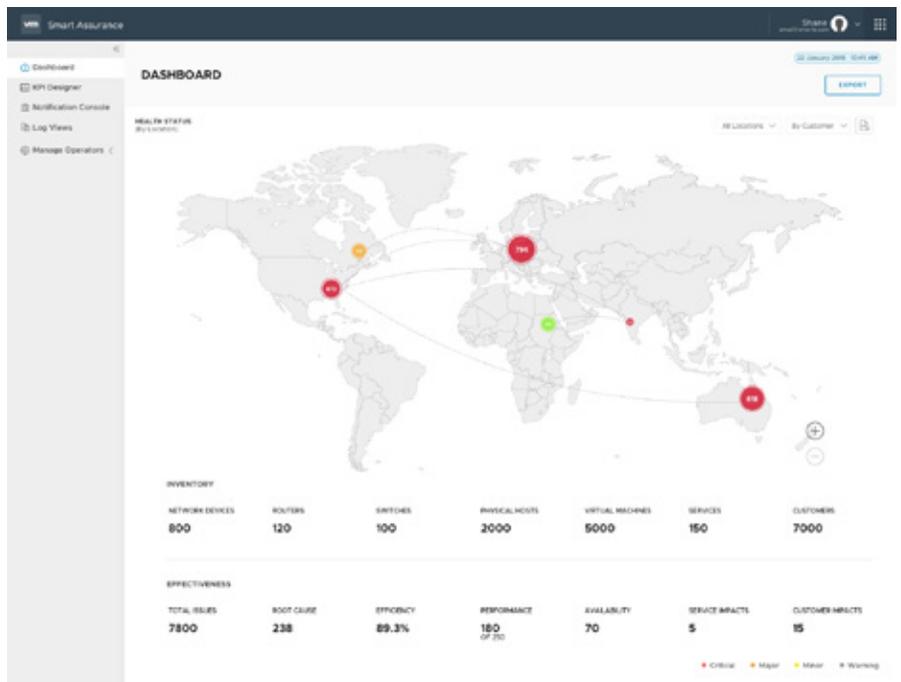
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Proven, carrier-scale network and digital infrastructure management for today's and tomorrow's CSP networks

Holistic view of entire network
• Correlated fault and performance management across all layers

• Single view multi-vendor monitoring and management

• vRealize Operations analytics integration

Reduced spending in OPEX
• Up to 95%+ reduction in alarms

• Prioritization based on impact

• Automated actions and remediations

• Auto-discovery of digital network

• Bulk config & compliance management

Improved Customer Experience
• Proactive discovery of incidents

• Maintain SLAs

Prioritization based on both Business and Service Impact
• Prioritization based on tenants and services

Auto-Discovery Capabilities

VMware Smart Assurance automatically discovers the topology of an entire multi-vendor network - including the transport, physical, virtual and services layers - within hours and presents the user with a comprehensive, graphical topology view. As changes happen, the topology and relational map automatically update. Over 4000 physical and virtual devices are supported today.

Automated Root Cause Analysis with Service Impact Correlation

Enabling the move to intelligent operations, VMware Smart Assurance provides operators with the ability to immediately identify real problems rather than symptoms for rapid remediation. Instead of presenting thousands of separate alarms and alerts from a plethora of tools to the user, Smart Assurance correlates all of the active, inactive and unknown alarm statuses together with the network topology to rapidly identify the root cause of the problem. It then relates the root cause to both the services impacted and the tenant & customers affected, issues notifications and triggers actions. This allows the operator to prioritize their responses, in real-time, according to the business impact and prioritize those tenants who have contracted higher-value services and SLAs.

Self-adapting Engine

Rather than using a rules-based engine that needs to be continuously updated, VMware Smart Assurance uses an advanced multi-dimensional deterministic model-based engine, known as Codebook, that intelligently and automatically adapts to managed systems. Collecting millions of events & alarms per minute, Codebook correlates these with auto-generated computer signatures and immediately identifies where the root of the problem lies. All extraneous alarms are suppressed, eliminating 100,000's of alarms per day and reducing alarms by up to 95%+.

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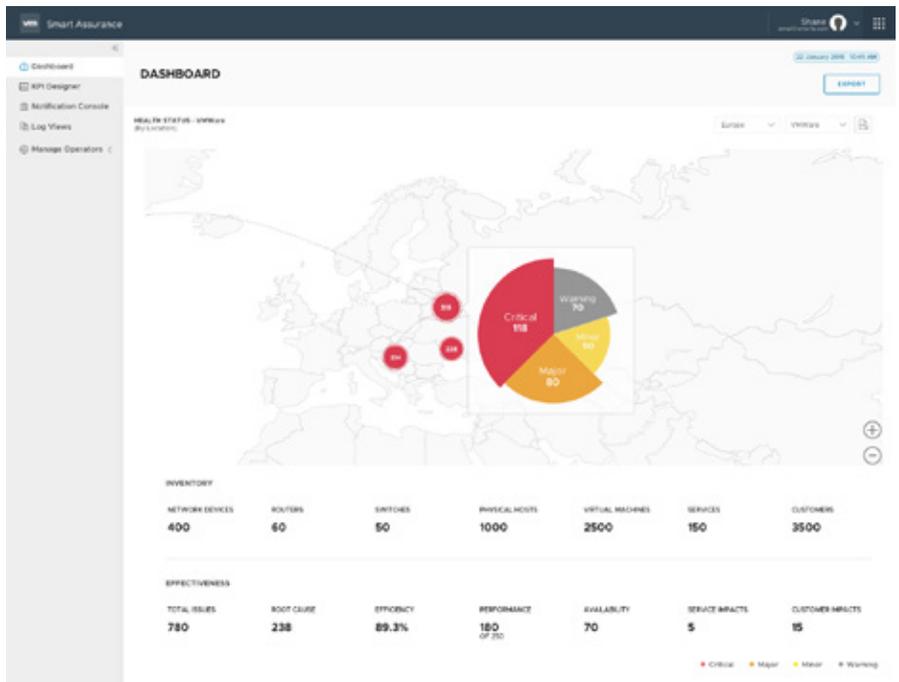
Increased uptime & reduced MTTD and MTTR
- Visibility into relationship between services, protocols and infrastructure
- Prescriptive diagnosis of root cause of problems
- Integration with orchestration tools (e.g. OSS, VNF-M, NFV-O)
- Proactive management of underlying hardware and virtual functions
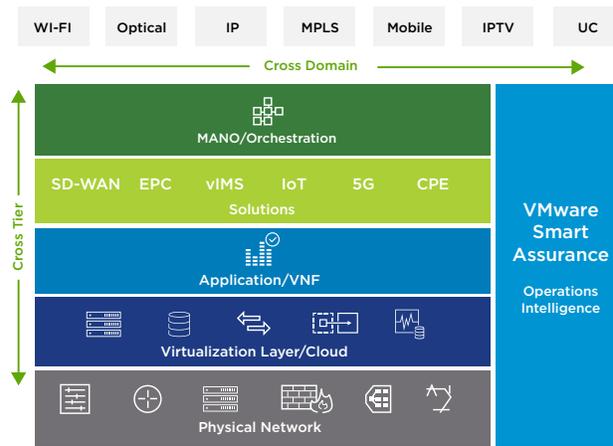
Rapid operationalization of new services
- Dynamic discovery of physical devices, virtual functions and services
- Intelligent, yet simplified operations

Prioritized Multi-tenant Support for Managed Services

VMware Smart Assurance provides CSPs with the automated management capabilities needed to monitor and maximize service availability and efficiency for their managed services customers. With multi-tenant support, CSPs gain comprehensive insights across network environments and can address issues proactively before services and users are affected. VIP customers and tenants can automatically be prioritized based on characteristics determined by the Operator such as the SLA and contract.

NFV Assurance

VMware Smart Assurance integrates with VMware's extensive Telco and Cloud portfolio for an intelligent, comprehensive approach to NFV Assurance, providing real-time root cause analysis of issues across virtualized and legacy environments. It integrates with VMware vCloud NFV, supporting virtual compute (vSphere), virtual networking (NSX-T), and both of VMware's Virtual Infrastructure Managers (VIMs): VMware Integrated OpenStack (VIO) and vCloud Director (vCD). It performs NFV service discovery and automated VNF and network discovery using OpenStack or vCD standardized blueprints including TOSCA and HEAT, correlating and isolating faults and performance issues. In addition, VMware Smart Assurance fully supports other OpenStack distributions such as RedHat OpenStack.

WI-FI	Optical	IP	MPLS	Mobile	IPTV	UC

Cross Domain

Cross Tier

MANO/Orchestration

SD-WAN   EPC   vIMS   IoT   5G   CPE
Solutions

Application/VNF

Virtualization Layer/Cloud

Physical Network

VMware Smart Assurance

Operations Intelligence

Virtual IMS Assurance

VMware Smart Assurance extends a new common information model for vIMS, correlated across several layers such as VNF components, VIM Tenancy, Cloud Infrastructure, and Physical Network, providing effective Performance Monitoring, Root Cause Analysis and Issue Isolation. Through API integration with vIMS orchestrators, workflows to remediate the service impacts can be automatically triggered without the need for human intervention.
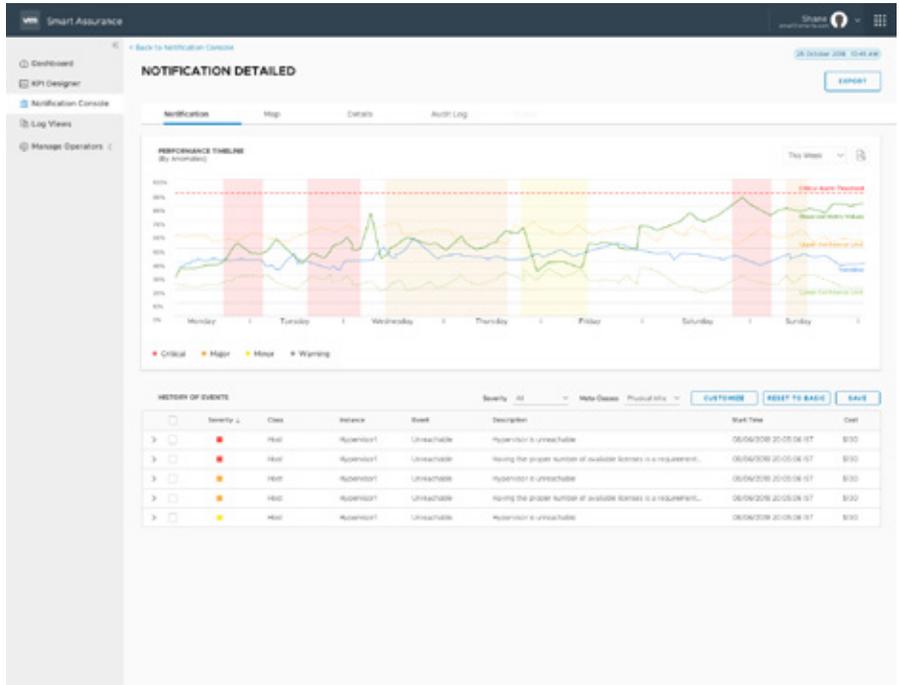
Multi-vendor SD-WAN Assurance and SD Services

VMware Smart Assurance supports the monitoring of multi-vendor SD-WAN enterprise services including VMware SD-WAN by VeloCloud, Viptela and Versa Networks and supports Cisco ACI software defined networking. It is fully integrated with VMware SD-WAN by VeloCloud for multi-tenant support and fault management and provides the auto-discovery of tenants and services along with issue isolation and impact assessment across central and branch sites, gateways, and networks.

"Advanced automation makes it possible for us to quickly restore networks when an issue occurs. With automated Root Cause Analysis, 99.7% of alarms can be identified in real-time, which reduces time-to-repair, helps us consistently meet our industry-leading SLAs, and delivers the levels of network availability and performance our customers demand."

– Verizon Business

"With the implementation of VMware Smart Assurance, we have increased operational efficiency and accuracy, and we've also seen improvements in compliance and security – all while controlling costs. Our customer satisfaction levels have increased as well."

– Global Cloud Xchange
   (Reliance Communications)

LEARN MORE:
For additional information about VMware Smart Assurance:

1-877-VMWARE (outside North America, dial +1-650-427-5000)

http://telco.vmware.com

Integrated Analytics & Performance Management with vRealize Operations

vRealize Operations virtual operations management is extended with a single pane of glass visibility across service, virtual and physical domains and includes powerful features such as capacity planning, performance monitoring, cost analysis, and compliance monitoring. The integration with VMware Smart Assurance auto-discovers and collects performance statistics from telco services and physical networks enabling vROps to provide correlated health visibility across VNFs, virtual machines, hosts, logical networks, and physical networks and includes anomaly detection with dynamic thresholding based on Machine Learning.

Automated Assurance

VMware Smart Assurance provides a rich, integrated approach to managing your every-changing network. It goes beyond traditional service assurance and infrastructure monitoring to provide a holistic approach to physical, virtual and service-based network management. The transformation to cloud native networks and services will not happen overnight. CSPs today need a comprehensive management tool that can integrate all the various networks they must manage today and interlink them to ensure the highest possible experience for their customers. With VMware Smart Assurance's advanced Root Cause Analysis, multi-tenant capabilities and unification framework for the virtual and physical worlds, CSPs can now confidently ensure high performance of the both the networks and the applications and services their customers care about.

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