Assure1

Federos Software Assure1™ Unified Service Assurance

Enabling automation through intelligence

Assure1 Unified Service Assurance for NFV

Service- and network-aware automation for virtualized environments

Managed service providers (MSPs) need to improve service profitability, reduce capital expenditures and expand their customer base. Virtualization is the means by which they can economically provide services at the network edge, offering fully-managed, enterprise-class services, routing functions, and equipment, such as centrally managed servers, firewalls, Exchange servers, Active Directory Servers, routers or switches.

Through SDN/NFV platforms, MSPs will offer dynamic networks adroit enough to accommodate multi-vendor, best-of-breed services and applications tailored to individual enterprise customers' needs. More and more, those needs will revolve around data-driven decision making capabilities that can help improve customer experience, streamline operations and relieve financial pressures.

As enterprises look to MSPs for managed networks, network monitoring, managed VPNs and other services, they will expect to accelerate the creation and instantiation of complex services. They will also expect to streamline the onboarding of customers — an increasingly critical step in defining and shaping the overall customer journey in the digital era. And they will continue to rethink OpEx and CapEx in a cloud-centric world where the network edge moves into the cloud and mobile continues to transform the ways in which organizations balance productivity demands with information security requirements.

As MSPs address these challenges for both thriving and resource-constrained enterprise customers, they must keep an eye toward the future, where the demands for IoT and unified, context-driven connectivity will give rise to more stringent SLAs around performance, scalability and flexibility.

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The 'Brains' Behind Automation and Self-Organizing Networks

Meeting the demands of real-time, always-on service delivery will require automation for more service- and network-aware management capabilities. Automation will be imperative to helping MSPs immediately recognize which functions are performing as needed and which are not throughout extremely complex virtual and hybrid environments.

Federos' Assure1 Unified Service Assurance is designed to intelligently capture, normalize and analyze data from what is becoming an extremely complex and intricate universe of resources. With rich data collection plug-ins, advanced visualization and open APIs, data can flow seamlessly across applications, fault management, performance management and topology graphs. This enables Assure1 to act as the "brain" that drives automation and sets the stage for self-healing and self-optimizing networks.

With Assure1, MSPs will be able to both understand and facilitate automation of event-driven processes, which will ultimately feed orchestrators for what can become automatic reconfiguration and hence optimal service delivery through just-in-time resource management. This simplification means that service chain creation can go from months to days; onboarding services can go from weeks to hours; instantiating complex services can go from days to minutes.

This is a departure from silo'd "manager-of-manager" point solutions, rules-based engines and other static root cause analysis systems that manage only individual parts of the network — making them incapable of relating data across domains in hybrid environments.

Critical in these hybrid environments will be a foundation of robust topology graphs rich with insight and clarity derived from the knowledge and awareness hidden in data sets spanning myriad network domains. Assure1 topology is rich with insight because it leverages a single, unified code set, database and presentation interface, providing an end-to-end view of both physical- and virtual network function domains (PNF and VNF). Only with that unified view can there be enforceable QoS across the dynamic landscape of hybrid networks. Assure1's ability to traverse both virtual and physical environments means MSPs can collect and present data from all sources, such as tools, EMSes and databases. They can also combine fault, performance, service management, and topology components in one unified GUI.

Closed-Loop Automation

Closed-loop automation refers to the constant assessment of network traffic and performance to ensure service quality, as well as detect threats and drive innovation. For example, it means a network should automatically add layers of a firewall if a network comes under a DDoS attack, or that it should automatically make adjustments when latency issues for a service arise. Such

capabilities can set the stage for constant improvement, optimization and remediation in terms of security, performance and fault management.

Closed-loop automation is invaluable, but difficult to achieve because of the dynamic and constant movement of resources as PNFs and VNFs are stitched together in service chains comprising increasingly complex interdependencies and diverse topologies.

Assure1's Discovery Engine can accelerate the evolution toward closed-loop automation, as it is designed specifically for layer-2 and layer-3 PNFs. And because it works with a variety of commercial orchestration systems, it can expedite the move toward virtual and hybrid networks — performing discovery of the "normal network" in the layer-2 and layer-3 topology, and using a "hybrid stitch" to gain awareness of how provisioning systems are chaining together VNFs and PNFs in the topology. This is accomplished through an API layer that accepts connections from a variety of network orchestrators.

Architecting for Scale

To accommodate the constant fluctuation and change, Assure1 boasts a modular and componentized product set so that MSPs and enterprises can evolve from base-level topology graphs to more robust capabilities.

At the orchestration level, Assure1's topology graph and object model have been built out to monitor service instantiation and provisioning, and to report back on which services are turned up and running. Rich data modeling enforces the common object model, into which data and objects can be abstracted and aligned for runbook automation (RBA). As that evolution takes place, Assure1 will enable next-gen discovery and polling, which can set the stage for ML in Elastic Stack and other advancements.

The importance of this RBA approach cannot be understated, as it codifies service characteristics, interdependencies and policies, eliminating the need for hard coding service behaviors into workflows — an important step in operationalizing best practices and intellectual property so that automation can become a reality for MSPs.

For a greater degree of automation, Assure1's Knowledge-driven Operational Automated Learning Agents bridge the gap between knowledge management engines and RBA tools, which empowers runbook developers to insert a knowledge base into a wiki-based runbook process. That allows knowledge to flow among all users. For example, administrators can develop, test and deploy new automation policies, which can then be leveraged by operators to reduce or eliminate mundane tasks.

And to further augment flexibility and agility, Assure1 leverages RabbitMQ, an open source message broker software that converts scalable components into microservices. This will help MSPs and enterprises scale on demand, as the individual components (products, for example) will automatically report back on how busy they are, becoming self aware.

With each of these capabilities, Assure1 future-proofs its customers' investments, addressing not only today's vital service-assurance challenges but looking to the future and what will be critical to NFV deployments as virtualization initiatives continue to mature.

CASE STUDY: TELE2 AUSTRIA'S OSS TRANSFORMATION USING ASSURE1

In planning to expand its customer base, Tele2 Austria needed to accelerate the speed and efficiency with which it could roll out innovative services and provide proactive, customer-centric service visibility.

To achieve those goals, the company set out to replace its patchwork of legacy systems and disparate tool sets with a unified, scalable platform that would readily support its managed service business, comprising 10,000 devices across 900 customer user groups. Its external customers wanted complete visibility into their respective device metrics, as well as the ability to provide custom monitoring as required, including customized ping polices and threshold monitoring of metrics.

And its internal users have full access to event lists, filters, policies, device metrics, and reports, thus empowering them to exceed customer requirements and expectations.

THE SOLUTION

The enabling platform has been Federos' Assure1, which unifies fault, performance, topology, and service-level monitoring in a single scalable environment.

Assure1 replaced Tele2 Austria's legacy network management environment of Netcool Omnibus, Impact, and Proviso, Nagios, Cramer and Remedy through a "like-for-like" replacement of its NetCool and Nagios implementations with a single Federos implementation, but maintaining a connection to Cramer for event enrichment and to Remedy for ticketing.

Federos software partner Eirteic provided a fixed-price implementation project that took fewer than 100 days of services work for a complete replacement of the Netcool, Proviso and Nagios systems.

Central to the open architecture is an open-source driven LAMP model, which includes a single database and open rules management. The open architecture simplified the process of replacing Netcool Omnibus event processing with Federos rules files. This eliminated the need for multiple Omnibus probes and custom application sockets. The Omnibus ping probes were replaced with Federos metric (performance) manager pollers. All core devices are pinged at intervals of three minutes, customer devices at two minutes, and edge devices at five minutes.

The Netcool Impact implementation and five Impact policies were replaced

with standard Federos event correlation and enrichment capabilities.

As for the Remedy integration, a Federos generic database connector was used to implement the same event flow format to synchronize and enrich Remedy tickets.

Tele2 Austria required some customization with regard to the flow of events generated from the Federos metric manager to Remedy and the consequent updates that are propagated back to Federos. These were easily accommodated using Federos rules and mechanizations.

Event enrichment and right-click integration was accomplished through a generic database connector to Cramer.

The Netcool Proviso implementation was replaced with Federos metric manager capabilities, including polling core and customer devices for health metrics, network interface metrics, and customized QoS metrics at five-minute intervals. Further, to maintain the "like-for-like" requirements, custom Nagios scripts were replaced with Federos threshold monitoring capabilities.

THE RESULTS: Increased Agility, Enhanced CX

With the implementation of the single, unified service assurance solution from Federos, Tele2 Austria slashed its network management costs and introduced a new level of business agility, as its customer-centric, service assurance process ensures Tele2 can proactively identify developing customer demand and deliver new services before its competitors do.

In making this OSS transformation, Tele2 Austria dramatically reduced operating expenses and increased efficiency during growth periods, as well as speed time to market for new service offerings, with enhanced customer experience through sophisticated service visibility.

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ABOUT

Federos

Federos provides a next generation, service assurance solution that unifies fault, performance, topology and service level management in a single scalable platform. With the product suite from Federos, you can drive IT and OSS transformation to service-oriented operations and accelerate delivery of new services to increase revenue, while consolidating disparate and legacy tools to significantly reduce operations costs.

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