

VistaInsight® for Networks

Proven customer reporting and performance assurance solution designed for CSPs' Carrier Ethernet and IP-based network and IT services

VistaInsight for Networks assures the delivery of Carrier Ethernet and IP-based services for communications service providers (CSPs). Using VistaInsight for Networks, CSPs can provide usage and forecasting to engineering, enable service exception alerts for their operations, and demonstrate and monetize their services' quality with multi-tier reporting services for customers.

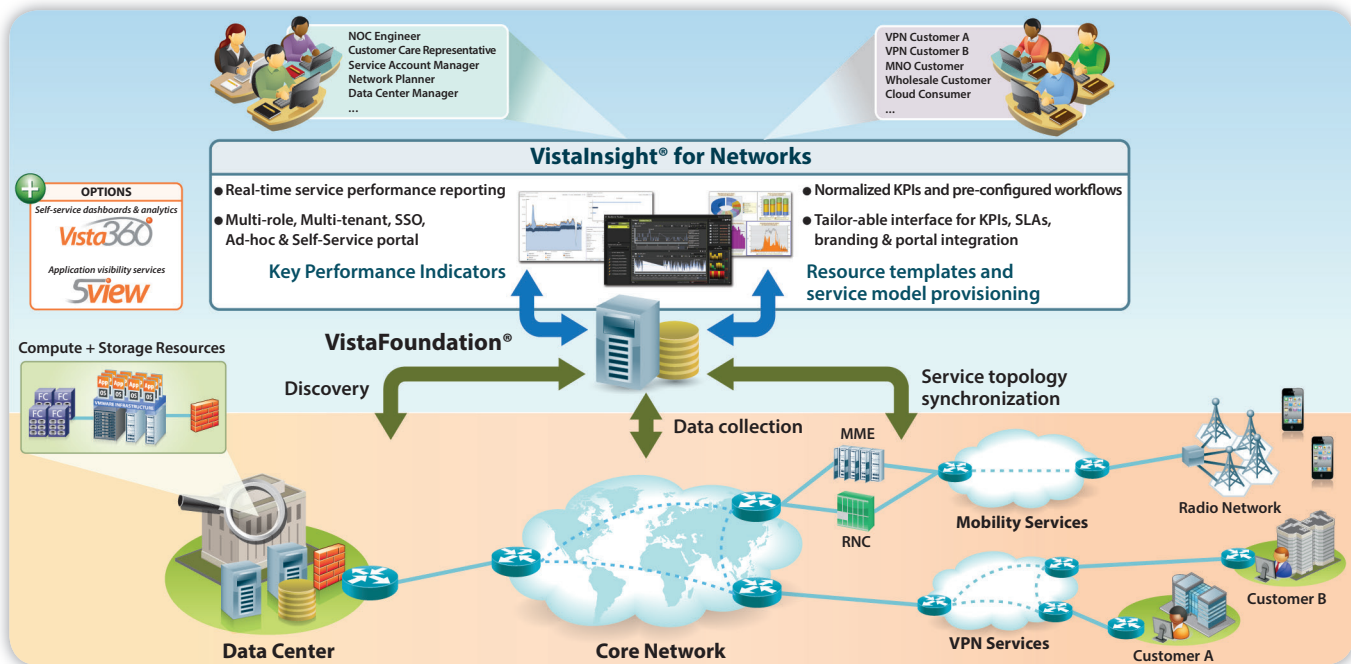


Figure 1. VistaInsight for Networks model for network and IT performance assurance

Maximizing the service value for your customer

Providing customers with actionable visibility of their services communicates the service value to the customer, proves that SLAs are being met and empowers them to improve their own problem detection/resolution times. InfoVista's solution delivers this visibility using a web-based, multi-tenant interface to best retain existing customers and acquire new ones.

Enabling MEF best practices for Carrier Ethernet 2.0 services

VistaInsight for Networks is the first solution of its kind to incorporate the Metro Ethernet Forum (MEF) Service OAM SNMP MIB for Performance Monitoring (MEF 36), which uses the ubiquity of SNMP to satisfy the service OAM requirements for Carrier Ethernet 2.0 services including MEF 35, the Service OAM Performance Monitoring Implementation Agreement. CSPs are able to begin incorporating MEF best practices into their service assurance frameworks, SLAs and customer reporting, to capitalize on widespread adoption of Carrier Ethernet 2.0 services.

Practical OSS integration that drives meaningful visibility

VistaInsight for Networks is a standalone performance assurance solution that easily integrates with fault, inventory and provisioning systems without requiring software development. InfoVista's solution can provide the performance assurance component for the latest Carrier Ethernet and IP-based service offerings, or consolidate performance assurance tools and data sources to optimize costs and deliver a comprehensive, cross-silo OSS framework.



Solution Overview

VistaInsight for Networks is a pre-built service assurance solution providing the benefits of off-the-shelf software, while enabling rapid configuration and tailoring to meet CSPs' unique needs. Built upon InfoVista's scale-as-you-grow, distributed collection and reporting platform, VistaFoundation, VistaInsight for Networks provides CSPs with the ability to rapidly support new revenue-generating services by offering:

- Premium and standard SLA reporting for customers with business calendaring
- MEF performance monitoring best practices for Carrier Ethernet 2.0 services
- Capacity reporting, trending, base-lining and forecasting
- Operations support and workflows, troubleshooting, on-demand polling and real-time reports
- Proactive and predictive service impact alerts
- Optional customer self-service dash-boarding
- Optional application-aware network performance intelligence (usage and QoE)

VistaInsight for Networks can be easily extended to deliver differentiated service offerings such as Application Visibility Services by adding the pre-integrated application performance capabilities from InfoVista's 5View™ products. Together with Vista360®, VistaInsight for Networks enables self-service, web 2.0-based dashboards and analytics for network operations staff as well as advanced customer reporting that include self-service capabilities, to maximize the customer experience.

When combined with the power of InfoVista's VistaFoundation® platform for distributed data collection and reporting in a multi-tenant, multi-vendor and multi-service environment, VistaInsight for Networks seamlessly integrates with CSPs' NGN OSS frameworks to ensure high-value, high-quality network and IT service delivery to customers, while increasing operational efficiency.



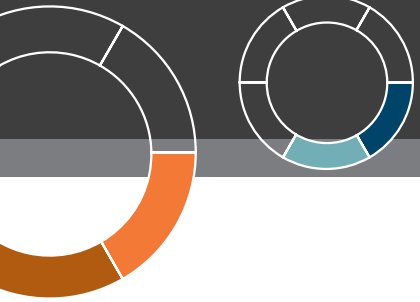
Benefits

Proactive performance assurance ensures the successful deployment of and service excellence for competitive IP-MPLS/Carrier Ethernet VPNs, mobility and wholesale services (e.g. mobile backhaul), managed services and cloud-based services (e.g. IaaS). VistaInsight for Networks enables users to:

- Monitor resource utilization and error levels for provisioned services and logical/physical resources
- Highlight opportunities for up-selling
- Provide meaningful visibility to increase customer intimacy and partnership especially in strategic new markets (e.g. cloud services)
- Navigate using simple and organized workflows within a web-based portal
- Detect problematic performance conditions and avoid SLA violations
- Optimize resource utilization (e.g. bandwidth) based on long-term trends
- Detect sudden and long-term deviations from normal operating conditions
- Prevent outages and efficiently diagnose transient conditions, typical in a packet-switched environments
- Configure on-demand data collection and reporting as well as ad-hoc reporting to support operational analysis and performance troubleshooting
- Manage IPv6-based networks (both as the collection protocol as well as IPv6 data sources)

VistaInsight for Networks improves operational efficiency by:

- Streamlining service activation and performance reporting processes
- Enabling service-level context for performance management
- Automating IP-VPN discovery using Virtual Routing & Forwarding (VRF) data
- Accelerating time-to-market for service offerings with pre-configured key performance indicators (KPIs), pre-configured vendor/resource support and built-in reports and workflows
- Providing easy and configurable SLA reporting
- Supporting branded, online, single-sign-on (SSO)-compatible reporting
- Creating/modifying KPIs to address specific market, customer or internal needs
- Delivering automated notification of forecasted capacity limits and abnormal performance
- Adding application layer performance from flow data and deep-packet inspection (e.g. NetFlow, Cisco AVC, Alcatel-Lucent 5670 RAM) with InfoVista's 5View product set
- Providing self-service dashboards with rich analytics and intuitive web 2.0 interfaces with free-hand, map-based and list-based dashboards with InfoVista's Vista360



Delivering differentiated Carrier Ethernet services

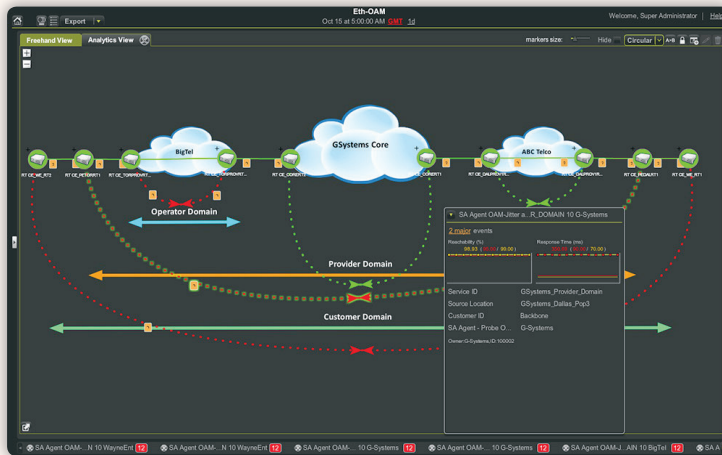


Figure 2. Carrier Ethernet 2.0 performance assurance

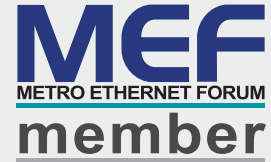
The fastest growing segment for business data services (both wholesale and retail) continues to be Carrier Ethernet. Vistalsight for Networks' service model uses the building blocks of Carrier Ethernet services and fully incorporates MEF 35 and 36, the performance monitoring specification and related SNMP MIB, so that CSPs can provide:

- Service delivery cost reduction to drive more price-competitive Ethernet offerings
- Guaranteed performance levels to attract new customers and curb price erosion during contract renewals
- Sophisticated Carrier Ethernet 2.0 offerings using MEF-aligned, service-level specifications with branded, on-demand customer reporting

Vistalsight for Networks' service model includes EVCs, CoS, VLANs, queues, pseudowires, MPLS LSPs, Customer Edge and Provider Edge device relationships as well as maintenance entity groups and their endpoints.

MEF expertise

Carrier Ethernet 2.0 services have garnered significant industry support and respective revenues for CSPs.



InfoVista was the first service assurance software member of the MEF and is the first to support MEF 35/36. InfoVista's commitment to the MEF is demonstrated by the platform's embedded Ethernet service model and its integration of network equipment vendors that enable MEF-aligned service delivery (Accedian, Adva, Alcatel-Lucent, Brocade, Ciena, Cisco, Huawei, Juniper, RAD, Telco Systems, Tellabs and others). CSPs are able to take full advantage of the flexibility and differentiated offerings enabled by MEF standards, and provide the ability to manage and showcase those offerings while serving as the service quality proof-points to customers.

Addressing mobile backhaul challenges

Vistalsight for Networks contains the device support and KPIs for managing backhaul performance, be it IP-based, Ethernet-based, fixed-line or microwave. CSPs are then able to provide wholesale access customers with the visibility to verify their backhaul services. Mobile operators are able to alert, troubleshoot, forecast and right-size their critical backhaul infrastructure. Whether a Tier 1 mobile operator or a local alternative access vendor, InfoVista's support for Cisco's MWR 2941, Alcatel-Lucent's 7705 SAR, Huawei's PTN and RTN, Adva's FSP 150 and Ciena's CN 3911, among others, provides the actionable performance intelligence to ensure the best use of today's backhaul investments, including the infrastructure health, transport utilization of EVCs, pseudowires, queues and classes-of-service, and the end-to-end QoE indicators based on Y.1731 OAM.

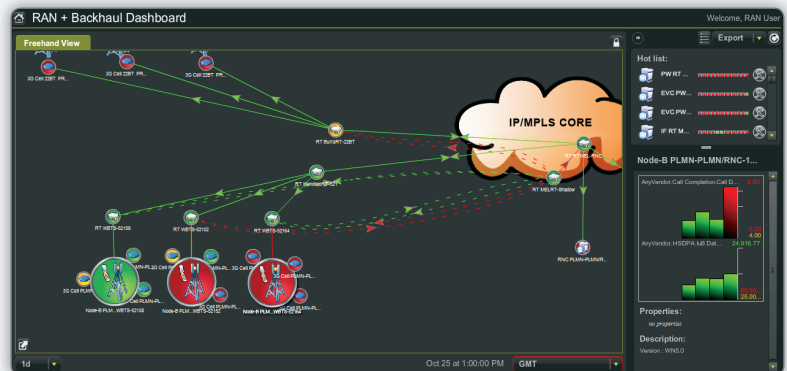
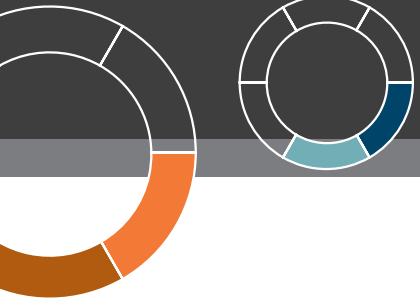


Figure 3. Mobile backhaul performance dashboard with personalized thresholds



Optimizing the IP/MPLS core and VPN services

VistaInsight for Networks has had a long history of providing packaged performance assurance for IP VPNs. Engineering can maintain and plan their IP VPNs using built-in base-lining, forecasting, time-to-impact notification and 95th percentiles. Operations can proactively monitor services with early-warning alerting integrated with fault management systems; from simple TCAs to more complex, multi-element, multi-variable performance events.

VistaInsight for Networks' pre-configured support for constructs such as LDPs, LSPs, OSPF/BGP routing, port and queue performance, CoS as well as automated IP-VPN discovery using VRF data from the network devices, ensures that CSPs have the capabilities to deliver the most value out of their MPLS-based core networks and the services they support.

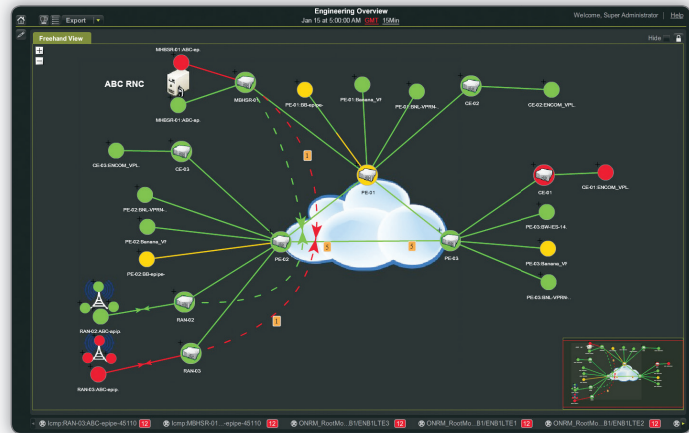


Figure 4. Layer 2/3 MPLS-based service dashboard for engineering

Cloud computing and data center services

VistaInsight for Networks includes both network-based and server-based resource templates with full support for cloud-enabling, data center infrastructure. Virtual entities such as VMware virtual machines, server hosts, data stores, clusters, UCS elements, SAN switches, storage devices from EMC and NetApp, storage arrays, controllers, disks, LUNs and disk volumes as well as data center network gear, such as load balancers, firewalls and high-end switches like Cisco's Nexus, Juniper's EX Series and Alcatel-Lucent's Omniswitch, are all part of VistaInsight for Networks.

Application visibility and performance are available as a pre-integrated option with InfoVista's 5View product set with intuitive web 2.0 dashboards using the optional Vista360 interface.



Figure 5. Online storage via IaaS for retail customers with end-to-end performance visibility

Going Green

Power has become one of the most expensive resources to manage in the data center. With Cisco's EnergyWise technology, VistaInsight for Networks enables monitoring power consumption per device and per port within a compatible Cisco device.

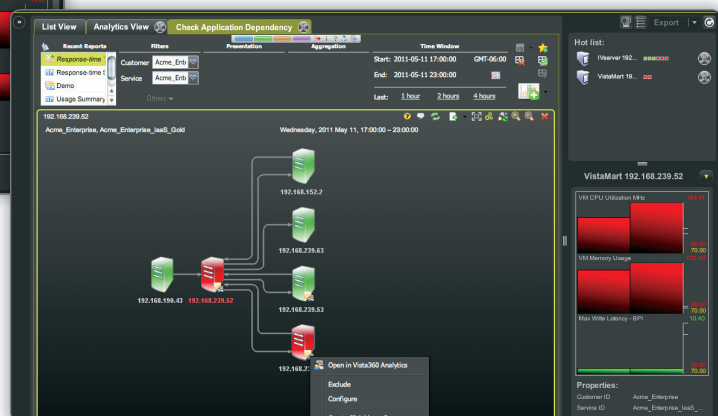


Figure 6. Application dependency mapping with 5View add-in

Key Features of Vistalnsight for Networks

Service-centric modeling

InfoVista's solution provides the service-centric approach that delivers top-down, actionable visibility from the service to the underlying usage, infrastructure and end-to-end KPIs. The solution provides proactive analysis and pre-emptive alerting that can map customers to service levels and deliver visibility into relationships between end-to-end performance and network and IT resources.

Configurable KPIs for differentiated services and VIP customers

As customers demand more for less, being able to tailor services to meet specific customer needs enables differentiation and increases the number of customer wins.

Vistalnsight for Networks provides an open and flexible report definition environment to suit specific organizational and customer reporting requirements without customer development. The GUI allows the solution's administrator to create KPIs, real-time and historical reports and related workflows and drill-downs, and assign them to specific roles internal to the CSP or external customers.

Built for multi-tenancy

Vistalnsight for Networks is built to support multiple customers and services while ensuring customers can only see their own services. A single VistaFoundation instance can grow to support the converged, multi-service core across multiple customers and services. Each customer can have a tailored view on service performance and SLAs without the cost of building and maintaining separate systems for each customer.

Scales as you grow

With Vistalnsight for Networks, when the monitoring load increases, one may simply add more distributed data collectors, which gather data, compute resource-level KPIs, and provide distributed, real-time data reporting, on-demand polling and

automated load balancing and management.

Reference testing and more than a decade of experience in Tier 1 CSP networks has verified the solution's ability to support tens of thousands of data samples per second across tens of thousands of elements on low-cost, virtualized Intel-based Linux systems.

SSO, web-based reporting

All reporting and analysis is done through a web browser. Coupled with built-in SSO, the reports and pages can be easily integrated into larger portal projects.

Monetizing both resources and time

CoS, performance tiers and committed bandwidth enable a CSP to better monetize their fixed assets. In addition using business calendars, CSPs can develop SLAs for all hours and/or tweak the performance objectives for the key business hours required by their customers, to ensure the customers only pay for what they need. CSPs can then better optimize the investments required to meet those needs.

Optional self-service reporting

Whether CSPs are ensuring operational efficiency in the NOC or providing differentiated service offerings for their customers, true end-user enablement via service quality visualization is the solution. When combined with Vista360, Vistalnsight for Networks allows end users (engineers, account managers, customers) to work with the performance assurance solution and analytics more intuitively. The end user can easily navigate and/or search for the critical service, associated resources and KPIs required, set custom thresholds uniquely or globally, and analyze detailed metrics. With graphical views, maps, collaborative dashboards and analytical drilldowns, CSPs can add another dimension to Vistalnsight for Networks.



Service Quality Visualization

We understand carrier-class

As of 2011, there were 2.1 billion Internet users worldwide ^{1,2}.

Imagine asking each of those 2.1 billion users how they were feeling on a scale of 1 to 10. Now imagine doing that every day, storing the result. A single instance of Vistalnsight for Networks running on our latest platform delivers just that - 2.1 billion transactions per day.

¹ <http://royal.pingdom.com/2012/01/17/internet-2011-in-numbers/>

² <http://www.internetworldstats.com/stats2.htm>



Solution Pre-requisites and compatibility

Prerequisites

VistaFoundation Kit v4.3

Included Components

InfoVista Products	Description
VistaLink® for Huawei iManager U2000	Pre-built integration with Huawei iManager U2000

Optional Components

InfoVista Products	Description
Vista360	Web 2.0, self-service, collaborative reporting dashboards
VistaLink for Alcatel-Lucent 5620 Service Aware Manager (SAM)	Pre-built integration with Alcatel-Lucent 5620 SAM
VistaBridge®	Adapter for loading batch-oriented data at regular intervals



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