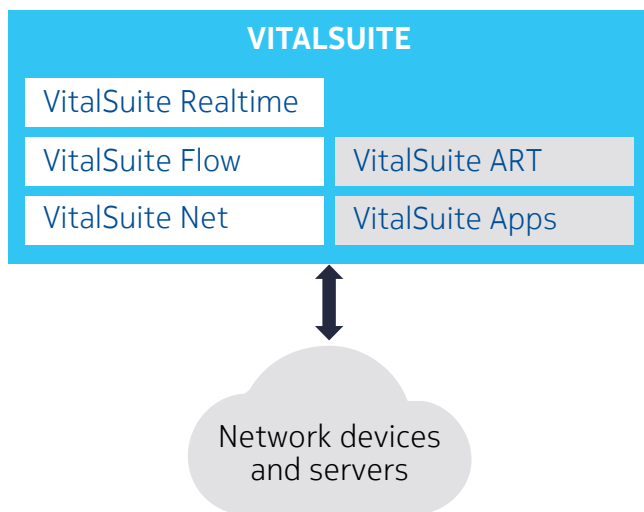


Nokia VitalSuite® Network Performance software

Release 14.2

Nokia VitalSuite® Network Performance Management software (VitalSuite Net) provides the critical network information you need to monitor network performance, preempt problems, optimize resources, and plan ahead for maximum return on network investments. VitalSuite Net provides end-to-end visibility of all kinds of networks - multivendor, multi-technology, and geographically dispersed, including routers, switches, servers, VMWare, Hyper-V, and Citrix hosts, VoIP devices, LAN, WAN, IP, ATM, and many other types of network devices. It enables network managers to monitor, analyze, manage and predict network performance from a single powerful easy-to-use Web 2.0 Graphical User Interface (GUI).

Figure 1. VitalSuite Modules



VitalSuite Net can be deployed by itself, or together with other modules of the Nokia VitalSuite software portfolio, including VitalSuite Real-time Event Analysis software (VitalSuite Realtime) and VitalSuite Flow Analysis software (VitalSuite Flow) to provide a powerful end-to-end performance management solution. VitalSuite Net can also be integrated with other management systems. Easy installation, configuration, and an easy-to-use Web-based GUI make the system quick to deploy and able to deliver immediate benefits out of the box. A powerful feature set, extensibility, and scalability mean the VitalSuite system will grow with you as your network management needs continue to expand.

Features

- Powerful multivendor and multitechnology support monitors 700+ different device types from leading vendors such as Cisco, Juniper, Nokia, and dozens more
- Industry-leading scalability supports today's largest, most widely distributed networks from a single easy-to-use Web 2.0 GUI with custom portal views
- Versatile reporting provides real-time statistics for efficient, on-target troubleshooting, high-level performance summaries and long-term trends for capacity planning and quality of service (QoS) monitoring
- Out-of-the-box and configurable threshold alarms and reports
- Unique Quality Index displays – high level displays show problems at a glance, with easy drill down to detailed reports
- Web 2.0 GUI – easy-to-use GUI with powerful reporting, filtering, and searching capabilities for users and administrators; internationalized to support multiple languages
- Fully automated monitoring continuously gathers and aggregates network-wide performance data using a wide variety of device collector types
- Integrated with VitalSuite – seamless integration with key VitalSuite components, allowing you to configure a complete performance management solution to meet your individual needs
- Receives and analyzes incoming SNMP Traps from network devices
- Manages IPv4 and IPv6 network devices as well as mixed mode environments

VitalSuite Realtime – advanced thresholds and alarms applied to data collected by VitalSuite Net

- Instantaneous notification through autoupdate GUI screens, e-mail, or trap messages
- Powerful visualization of real-time performance data using 2D 3D Topology Maps and end-to-end network paths

VitalSuite Flow – collection and analysis of Netflow, CFlow, or sFlow records directly from flow-enabled network routers

- Powerful Top N analysis reports based on flow data reveal how your network capacity is being used.



Benefits

Network-wide visibility – monitor performance across the entire IT infrastructure

- Works out of the box – fast and easy deployment, with automatic network discovery and default configurations and a rich set of built-in data collectors
- Immediate return on investment (ROI) – quickly identify overutilized and underutilized network resources
- Cost effective – implement carrier-class management capabilities at a price that suits enterprise IT budgets
- Protects your investment – extensive configuration options and customizability so it easily integrates with existing management systems and emerging technologies
- Enhanced end-user satisfaction – resolve network problems before they impact users
- Proactive monitoring – identify problems quickly in real time, reduce time needed to manage the network

Lower operations and ownership costs – minimize help desk calls and trouble tickets, and reduce the need for expensive hardware upgrades

Functions

Performance monitoring

Personalized web portal monitors quality of services being delivered.

- Heat charts provide intuitive, at-a-glance indicators of network performance problems, with efficient drill downs to additional performance details such as:
 - Quality Index, CPU/memory/file system utilization, logical disk space, free memory and availability, projected CPU utilization, highest utilized CPUs, highest memory resources

- Extensive set of access control mechanisms provide customizable views of network performance to a broad range of users
- Automatic discovery, update and inventory change identification of networked SNMP and RMON enabled devices
- Allows users to be proactive in requesting bandwidth and service requirement changes before performance is impacted

Trap Management

- Receives and Analyzes SNMP Traps from network devices
- Maps Traps to Alarm Events for detailed analysis and reporting

Executive reports

- Reports may be generated for the entire network, particular resource types (routers, servers, WANs, frame relay, ATM, wireless, VoIP, RMON2 probes or LANs), or specific functional or regional groups
 - View reports in the Web browser, or export to CSV, PDF or TXT formats
 - Network overview reports summarize networkwide performance
 - Group comparison reports contrast performance by functional or regional groups
 - Custom reports enable tailored performance reporting for individual users
 - Best/Worst charts identify resource exceptions
 - Historical alarm reports provide detailed and summary views of alarm information
- Reports can be scheduled to run at various times and output sent to e-mail aliases

Capacity planning

- Summarize network usage trends
- Planning view projects future utilization based on past performance for upgrade planning

- Trend graphs indicate predicted utilization for a single resource based on a configurable period of historical usage (six months by default)

Service level management

- Service level agreement (SLA) reports readily identify performance indicators to verify compliance
- Customizable Key Performance Indicators (KPIs)

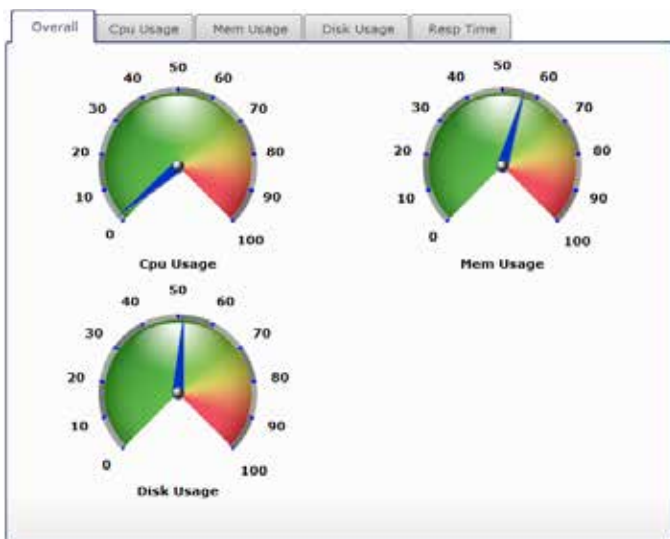
Virtualization Monitoring

- Dashboard displays for VMWare ESXi Virtual Server hosts and Virtual Server instances
- Support for Citrix XenServer and XenApps
- Support for Microsoft Hyper-V
- Service quality alarms indicate when network performance falls below QoS thresholds; can be sent to network management systems (that is, HP OpenView)
- WAN service reports empower network managers to better manage service providers

Network Operations

- Network summary charts immediately expose network trouble spots, based on specific Quality Index settings

- Real-time Live Diagnostics provides detailed rapid troubleshooting features for specific devices
- Detailed graphs offer extensive visibility into the performance of individual managed resources - view up to 33 days of stored data in a single graph; powerful interactive graphs
- Flexible auto-discovery to import a device information file, specify a list of or initiate controlled device discovery
- Powerful dashboard displays for Citrix, and VoIP QoS Performance
- Powerful Flexible Percentile Analysis function with configurable inclusion and exclusion periods
- 95th percentile utilization data collection/calculation for LAN MIB2, high-capacity LAN, WAN MIB2, and high-capacity WAN resource types - reports available through VitalSuite ART
- Stores over a year of performance data in a relational database management system allowing SQL access
- Quick drill-down access to both current and historical performance data, without waiting for reports to run
- Automatic built-in aggregation by time periods, groups, and domains for quick and easy access to useful reports



Scalability

- Three-tier architecture for unsurpassed scalability
- Manages small to very large networks (millions of polled objects and thousands of devices)
- Supports dozens of simultaneous active users
- Efficient polling and data collection minimizes network load

Flexibility

- Domains and groups – powerful features for dividing large networks into easy-to-manage groups
- MIBWorks Utility for creating new SNMP based collectors
- DataWorks Utility for creating new bulk data collectors
- Flexible Data Model feature for creating custom KPIs

Network administration

- Automatic discovery of network devices, ports, resources
- Role-based global and domain administration interfaces
- Domain policy profiles define configurations that can be applied to multiple domains
- Secure SSL (HTTPS) 128-bit encryption between client/master
- Busy hour period definition per device/resource

Redundancy/Failover options

- Poller Hot Standby – backup poller takes over if primary fails
- Reporting server – cold standby option for VitalSuite Net master server

Monitored Devices/Resource types/Applications

- Supports over 700 device types from dozens of leading vendors
- Routers and switches: Cisco, Juniper, Nokia, Redback™, 3Com, Foundry, Riverbed, f5, Palo Alto, HP, and others
- Nokia devices - 7x50 Service Routers via 5620 SAM, ISAM/ASAM (DSL)
- Alcatel-Lucent devices - PSAX, OmniSwitch, OmniAccess WLAN, OmniStack
- WAN: Circuits, frame relay PVCs, ATM PVCs, ATM trunks, logical ports on WAN switches, Cisco WAN Manager, RMON2 ATM probes and routers
- LAN: Interfaces, Ethernet, token ring, switches/hubs, SMON VLAN
- Servers: Microsoft® WMI, 2003/2008/2012, Exchange, Linux, SNMP Research, BMC, Cisco, CNT, Net-SNMP, Sun
- VitalSuite Server Agent: process and service monitoring for popular server platforms

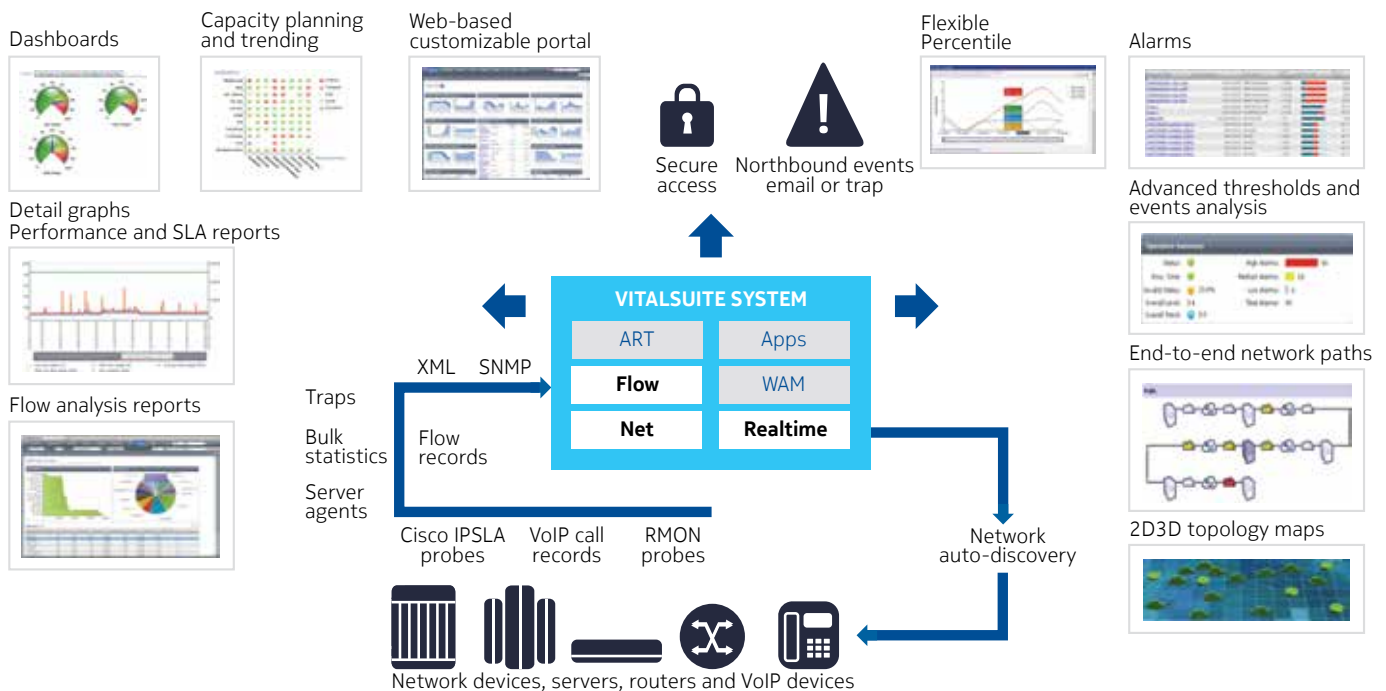


- Cisco CSS, Brocade, Nishan and McData SANs, Nokia VitalQIP DNS and DHCP and VitalSuite AAA, Riverbed, Cisco WAAS, Cisco UBE, BlueCoat, F5, Palo Alto, ACME Packet
- Firewalls: Nokia, Cisco, and Juniper devices
- Supports SNMPv1/v2/v3, RMONI/II IPv4 and IPv6 standards
- Other applications: PostgreSQL DBMS, Apache Web Server, VMWare ESXi, VCenter, Citrix XenServer, XenApps, Netscaler
- MPLS Data and Tunnel Virtual Interface (TVI), LSP topology
- VoIP QoS: Alcatel-Lucent OmniPCX Enterprise™ (v10), Cisco VoIP CUCM (v8); Cisco IP SLA VoIP Jitter; BroadWorks application, media, network servers; Brix Networks SCCP, RTP, H323 Active Test Suites; Kagoor VF series, RTCP-XR VoIP records via SIP publish
- VitalSuite Net VoIP Agent: Active VoIP QoS monitoring using optional VitalSuite Net VoIP Agent feature – Conversation quality, MOS, SIP server call setup performance
- Active probes: Supports Cisco SAA/IP SLA including VoIP Jitter; supports Juniper RPM probes
- Genesys Contact Center – Genesys GVP, SCS, T-Server, SIP Server, Contact Center application and platform monitoring
- Unified Communications: Alcatel-Lucent Open Touch, Microsoft Lync
- Wireless LANs (802.11 MAC MIB), Cisco WLAN, Aruba, WiMax Alvarion BreezeMax, WMAN – WiMax

VitalSuite Flow – flow data collection and analysis

- Collects flow records directly from flow-enabled routers in the network
- Powerful, visual reports – Top N reports, analysis reports and custom reports
 - Top endpoints, conversations, autonomous systems
 - Top talkers, listeners, conversations, overall
 - Top applications, protocols, ports, QoS settings

Figure 2. Input and Output of VitalSuite Net and Related Modules.



- Report time frames – flow data is available for hourly, daily, weekly and monthly aggregate views
 - Up-to-the-minute data is available on charts
 - Alerts – users can configure Vital Real-time alarms on flow data to generate alarms for unusual flow traffic (Note: VitalSuite Realtime is a required module for VitalSuite Flow)
 - Custom reports – flow data records are also available for custom reports using VitalSuite ART
 - Supports several flow record formats – Netflow v1, v5, v7, v9 and IPFIX, sFlow version 5 Flow Sample types (Raw Packet Header, IPv4 Data, IPv6 Data, Extended Switch Data), CFlow
 - Scalable data collection – simply add VitalSuite Flow collectors to your existing VitalSuite Net deployment
 - Provides detailed information on how your network capacity is being used
- VitalSuite Realtime** – advanced thresholds and analysis
- Flexible threshold capability (includes default, user-configurable and automatic adaptive thresholds) with multiple Alarm severity levels
 - Customizable “business-aware” thresholds can be set for different times of the day or week
 - Rate-based thresholds enable alerts based on multiple occurrences of an event over a time period
 - Exception conditions configurable per Domain or Reporting group-ideal for SLA monitoring
 - E-mail notification of threshold alarms; configurable for specific conditions or device groups
 - SNMP traps with alarm details for generated alarms can be sent to multiple northbound destinations such as SMARTS, Aprisma, HP OpenView, NetCool®, or other systems
 - Users can suppress events and annotate Alarms
 - Flexible configuration options allow specific messages (or messages about specific devices) to go to specified individuals
 - Event Index feature automatically ranks multiple network events in order of severity
 - Powerful 2D 3D Topology maps shows devices and subnetwork connections with realtime alarm status auto-updates.
 - Supported Map layers include Layer 3, Layer 2, MPLS, Virtualization, and VoIP.
 - Rich feature set for Map navigation, drill-down, configuration, and map publishing
 - Switch between 2D and 3D views with navigation
 - Automatic (IP) and manual path and subnetwork generation and analysis, maps display route paths through the network
 - Device/Alarm summary with drill-down expansion



Specifications

User/Administrator interface requirements

- Microsoft Internet Explorer® 10, 11 or Firefox 43 or Firefox ESR 38.2.0

System requirements

- Red Hat Linux 7.x (7.1 or later) / Oracle 12.1
- Red Hat Linux 6.x / Oracle 11.gR2 or Oracle 12.1
- Windows Server 2012 R2 / SQL Server 2014 64-bit
- Windows Server 2012 or 2012 R2 / SQL Server 2008 R2 64bit
- Windows Server 2012 or 2012 R2 / SQL Server 2012
- Windows Server 2008 R2 64-bit / SQL Server 2008 R2 64-bit or SQL Server 2008 64-bit
- Windows Server 2008 R2 64-bit / SQL Server 2012
Note that VitalSuite Flow servers require SQL Server Enterprise Edition

VitalSuite Net Server Agent requirements

- Windows Server 2012 or 2012 R2
- Red Hat Linux 7.x (7.1 or later)
- Red Hat 6.x (6.3 or later)
- Open SUSE 13.1

The VitalSuite Performance Management software portfolio-Designed to Optimize network, application, and business performance

The VitalSuite Performance Management portfolio is used today by medium and large enterprises and service providers worldwide. The portfolio leverages key innovations from Bell Labs and experience and expertise from Nokia Worldwide.

Services to provide robust and scalable solutions that increase IT staff productivity, ensure optimal network and applications performance, and improved service availability. The VitalSuite product team partners with world-class business partners to deliver proven solutions that maximize the return on IT investments.

VitalSuite Network Performance Management software (VitalSuite Net) provides on-demand access to the critical network performance information necessary to preempt problems, optimize resources and plan for maximum return on investment (ROI). This market-leading tool gives end-to-end, Web-based visibility into geographically dispersed, multivendor networks, including routers, switches, servers, virtualization platforms, and VoIP. It provides a single centralized location to monitor, analyze, manage and predict performance.

VitalSuite Applications Performance Management software (VitalSuite Apps) provides detailed application performance analysis using agent software deployed on user desktops or servers in the network. It captures actual end-user experience and monitors individual applications for response time and number of transactions.



VitalSuite Real-time Event Analysis software (VitalSuite Realtime) helps optimize multivendor packet data and voice networks with powerful real-time and topology mapping capabilities that traditional management products cannot match. It offers technically advanced tools to monitor, measure, analyze and visualize performance data

and immediately identify network resources that have exceeded defined network service levels.

To learn more about these and other management solutions, contact your Nokia sales representative, authorized reseller or sales agent, or [visit our web site](#).



Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

Nokia Oyj
Karaportti 3
FI-02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Product code: PR1605019897EN (May)