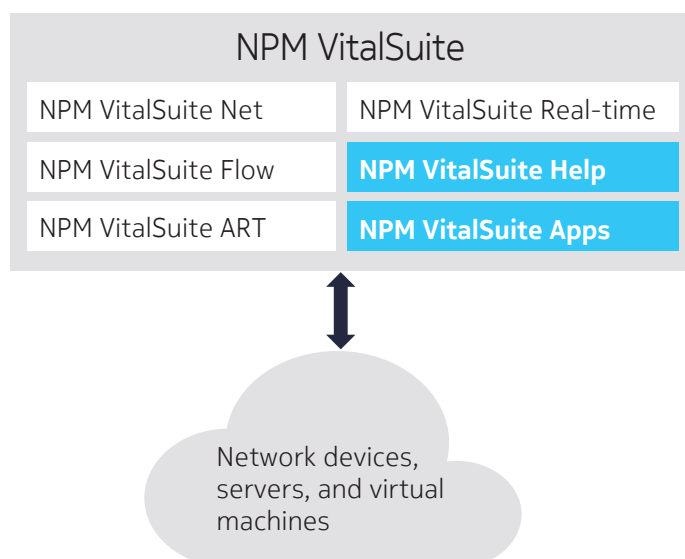


Nokia Performance Manager VitalSuite Apps software

Nokia Network Performance Management (NPM) VitalSuite Apps software provides real-time visibility for tracking, analyzing and predicting the behavior of business-critical IP-based and Web-based applications network-wide. This versatile performance optimization and fault management system monitors user transactions from the desktop or web browser to the network/Internet to the destination server. It provides executive management with essential overview information for infrastructure investment decision making. And it allows operations and help desk staff drill down to quickly identify, diagnose and resolve application performance problems.

Figure 1. NPM VitalSuite



NPM VitalSuite Apps can be deployed by itself, or together with other modules of the Nokia NPM VitalSuite software portfolio, including Network Performance Management software, Real-time Event Analysis software and Advanced Reporting Tool software that generates custom presentation-quality reports and graphs. With a powerful feature set, extensibility, and scalability, NPM VitalSuite positions IT organizations to support business requirements today and tomorrow.

Features

- MyVital Web-based portal delivers personalized views of end-to-end application and network performance
- Embedded VitalAgent™ client software pinpoints application-related problems on desktops, notebooks and servers
- Patented passive flow analysis provides real-time demarcation of every application transaction by client, network and server time

- Powerful fault detection and management
 - Unique summary charts and reports isolate trouble spots at a glance
 - Centralized alarm console receives alarms for application and network faults and performance problems
 - Web 2.0 interactive GUI – easy to use yet powerful
 - Industry-leading scalability – monitors service quality across today's largest network environments MyReports – flexible customizable drilldown reporting tool focuses on specific applications and users
 - Integrated with NPM VitalSuite – seamless integration with key NPM VitalSuite components, allowing you to configure a complete performance management solution to meet your individual needs:
 - NPM VitalSuite Net – Network Performance Management component
 - NPM VitalSuite ART – Advanced Reporting Tool – wizard-based custom reporting
- from the desktop, across local and remote links, through hubs, switches and routers, to the server and back again
 - Choice of Agent data upload types: hourly performance data upload, or Rapid Data Agents (5 minute performance data upload with auto-update real-time reports).
 - Provides Web-based customer-specific account assessment reports on demand
 - Four-tier transaction reporting provides high-level visibility into where a problem occurred along with the specific tier and component that led to the poor performance
 - Segments performance information by service, domains and/or groups to quickly determine how pervasive a problem is within an organization
 - Heat charts provide an intuitive, at-a-glance indicator of application performance problems, with efficient drilldowns to additional performance details such as:
 - Number of transactions, transaction time, server time, server load time, network time, client time, transaction throughput, average transaction size, transaction errors, total traffic volume, application availability, number of connections, connection errors, response time, latency, retransmissions
 - Statistical analysis of performance data reveals unusual or exceptional events that might otherwise escape detection
 - Collects, aggregates and reports historical network and application performance data for measuring corporate service level agreements (SLAs)
 - Monitored events and parameters include Web-based applications, performance and availability of applications, clients, networks, servers, and remote access, plus PC and network configuration data

Benefits

- Enhanced user satisfaction – resolve application and network faults and problems before they impact users
- Lower operations and ownership costs—minimize help desk calls and trouble tickets, save on software maintenance costs and reduce the need for expensive hardware upgrades

Operation and specifications

Performance monitoring

- Measures end-user experience of mission-critical applications and services across the IP infrastructure
- Powerful aggregation algorithms developed by Bell Labs merge thousands of transactions into meaningful reports on overall system health and potential trouble spots
- Monitors system performance end-to-end —

Fault analysis

- Automatically detects and reports application performance problems in real time, providing instant, complete analysis of every fault

- Correlates specific network device problems (using NPM VitalSuite Network Performance Management software) and application problems through a sophisticated fault correlation feature that groups events related to a common source, enabling quick treatment of the problem rather than the symptoms
- Root cause analysis pinpoints problems and delays
- Provides technical specialists with a full summary of alarms, users who are experiencing problems, and customizable diagnosis and prescription
- Simple displays reveal if the frequency of events/alarms is falling or rising to help understand network trends and forecast imminent problems
- Allows front-line help desk staff to detect, address and even resolve problems before they are ever reported, so phones stay on the hook—and users stay online
- After a problem is resolved, the software automatically closes the event and provides an updated status report that eliminates the need to manually track problems
- MyReports provides a flexible customizable tool that allows focus on specific applications and users
 - Best/Worst performer reports identify exceptions and give visibility into the performance experienced by end users for all applications or a specific server running a critical application
 - Trending reports on single and multiple parameters, for busy hours or days, with critical and warning thresholds display up to 12 months of rolling performance history, to proactively ensure that the IP infrastructure can deliver the performance required by an application
- Daily or weekly reports track alarms and their resolution over time, showing how fast events are coming in, how fast they are being cleared, and where they are coming from

Scalability

- Distributed architecture makes it easy to implement global policies throughout an organization and offers unparalleled scalability for the largest customer environments
- Scalable to thousands of agents

Reports

- Custom reports to tailor performance reporting to the needs of individual users
- Heat cell drill down provides detailed reports that identify the nature and source of specific problems. Reports may be generated for:
 - Overall network quality, response time, transaction comparisons, clients, application comparisons, application availability, latency, application throughput
- Rapid Data reports show agent performance at up to the minute frequency.

Service level management

- SLA alarm reports empower network managers to better manage service and application providers
- Assess quality of services delivered to end users against SLAs using service level alarms
- SLA reports readily identify the application, the server and the violated performance parameter to SLA thresholds
- Network quality displays show performance details about specific client-server paths. These reports verify SLAs and accurately assess capacity planning requirements. Critical performance measurements include: Total traffic volume, server retransmissions, client retransmissions, packet loss, network latency, and throughput

Network operations

- An extensive set of access control mechanisms provides customized views of application performance for a broad range of users
- Allows users to be proactive in requesting bandwidth and service requirement changes before performance is impacted
- Application statistics for individual clients and servers to support usage-based accounting

- Application heat charts by varying color and intensity immediately expose application trouble spots, based on availability indexes
- Detailed views and reports offer extensive visibility into the performance of individual applications and transactions within an application from daily, weekly to monthly data for up to six months of specific business transactions activity within an application

Flexibility

- Data Source Integration (DSI) API exposes application transaction data to other tool sets
- Supports multiple simultaneous users
- GUI Gateway alarm configurator interfaces with third-party ticket generation systems (SNMP trap, e-mail, remedy)
 - Transact Toolkit, a key component of the Business Transaction Management System, delivers the ability to identify, isolate and capture the characteristics of specific business transactions activity within an application
- Transact Toolkit identifies patterns in the network packets to demarcate transactions within custom applications

Carrier-grade synthetic monitoring – Automon

- Automon can regularly connect to servers both inside and outside an organization to test availability, response and retrieval times, throughput, delays, and congestion levels. Automon:
 - Automatically performs synthetic background analysis to simulate the action of end users
 - Automatically monitors the availability of key application servers
 - Automatically retrieves Web (HTTP and HTTPS) pages
 - Automatically inputs form data on Web pages to monitor eCommerce applications
 - Provides integrated scripting capability to customize Automon monitoring

- Synthetic monitoring is a scalable, remotely manageable test generation tool that when coupled with the VitalAgent is capable of generating and monitoring performance of thousands of network tests per minute
- Standard tests include:
 - Web Get URL
 - SMTP Echo Test
 - Pop3 Echo Test
 - DNS Resolve Test
 - Database Query Test
 - Command Line Test
 - TCP Echo Test

Administration

- Role-based global and domain administrative interfaces provide user account administration, domain and group definition and creation of policies
- Single step domain policy profiles define a configuration that can be applied to multiple domains
- Robust default behavior and configurability provide out-of-the-box functionality
- Secure SSL (HTTPS) provides 128-bit encryption between client and master
- Protects group-specific data through fully integrated grouping and access control
- Allows sort, search, and filter of data by specific business unit, location or technology
- Administrative changes are tracked via log files for the previous 30 days
- VitalAgent manageability and deployment –easy manageability reduces total cost of ownership;
- Agents can be deployed and updated automatically via Agent Configuration Server
- Agents can be deployed through SMS package definitions

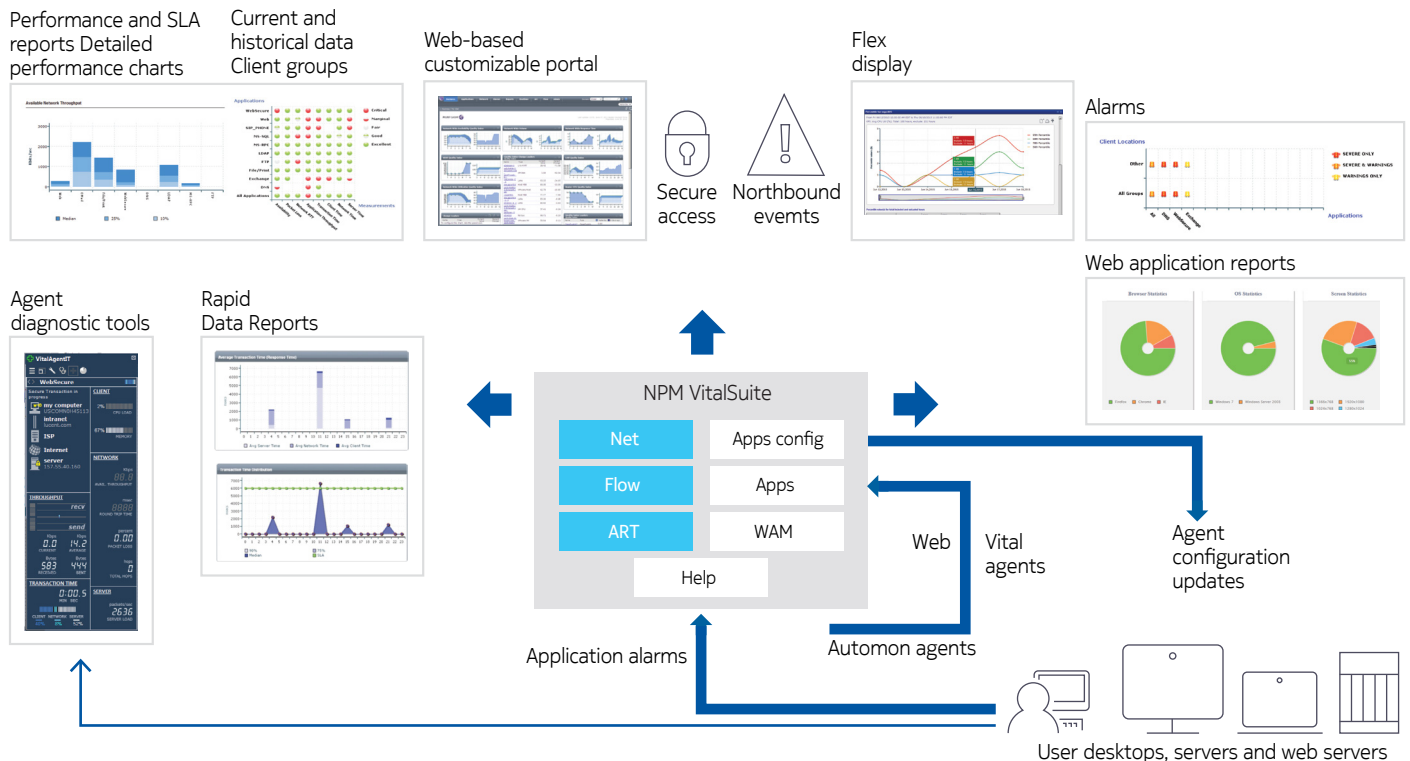
Monitored applications

- Internet (HTTP, HTTPS, and Web-based applications such as DNS and RealPlayer)
- Groupware (e-mail, MS Exchange, Lotus Notes, file and print services)
- Genesys Contact Center solution
- SIP server
- Database (Oracle®, MS-SQL, Sybase® and LDAP)
- Infrastructure (VPN, DNS and security)
- Custom in-house applications including Javabased applications
- SMB2 protocol messages, including 18 individual transaction types

NPM VitalSuite WAM – Web Applications Monitoring

- Monitors web application performance actually seen by web users without installing agent software
- Powerful Dashboard reports and detail graphs
 - Web page views, visitors, visitor locations
 - Page load time, Network Latency, Ajax metrics
 - Timing breakdown for sending, receiving, changing, connection, waiting, creating the web page
- OS and browser types used to access the page
- Supports popular web servers: Apache HTTP 2.x, Nginx 1.4.x, Microsoft IIS 7.0 and 8.5, Node.js
- Supports Javascript-capable browsers with cookies enabled: Firefox, MSIE, Chrome, and Safari
- Scalable solution—automatic load balancing of incoming Web stats among multiple WAM servers

Figure 2. Input and output of NPM VitalSuite Apps



Specifications

NPM VitalSuite

NPM VitalSuite Module	Latest supported OS version/DB version
NPM VitalSuite Net	MS Windows 2012 R2/MS SQL 2014 Linux Red Hat 7.1 or later/Oracle 12cR1 Linux Red Hat 7.1 or later/MariaDB 10.1
NPM VitalSuite Apps	MS Windows 2012 R2/MS SQL 2014
NPM VitalSuite ART	MS Windows 2012 R2/MS SQL 2014 Linux Red Hat 7.1 or later/Oracle 12cR1 Linux Red Hat 7.1 or later/MariaDB 10.1

NPM VitalSuite Agents	Latest Supported OS version
VitalNet Server Agent	MS Windows 2012 R2 Linux Red Hat 7.1 or later
VitalNet VoIP Agent	MS Windows 7
VitalApps VitalAgent	MS Windows 7, 8.1 (64-bit) and 10
VitalApps Mid-Tier Agent	MS Windows 2012 and 2012 R2
NPM VitalSuite WAM	Client Web Browser: must support JavaScript and cookies Application Web Server Apache HTTP 2.x Nginx 1.4.x MS IIS 7.0 or 8.5 Node.js

User and Admin Interface	Latest Supported Browser
NPM VitalSuite	MS IE 10, 11 Firefox 48 or Firefox ESR 45.3.0

To learn more about these and other management solutions, contact your Nokia sales representative, authorized reseller or sales agent.

About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry's most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience. networks.nokia.com

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