WebNMS Framework 5 is a scalable, application-centric platform that makes extensive use of state-of-the-art graphical displays to provide an intuitive and powerful network management dashboard for operations staff. By automating a number of complex, tedious, and error-prone tasks, the management application raises productivity, improves accuracy, simplifies training, and reduces costs for operation centers.

WebNMS Framework 5 offers a comprehensive set of FCAPS functions and provisioning, along with bundled customizable interfaces to most popular network elements, OSS systems, and other management applications.
WebNMS Framework Features

**Event Collection**
Simultaneous receipt of events from any intelligent device, resource, or software entity. Supports the reporting of alarm conditions in a near real-time or scheduled manner.

**Alarm Correlation and Filtering**
Efficiently handles lengthy alarm lists with robust capability to correlate and filter alarms.

**Resource Status Displays**
A single window provides an efficient graphical overview of the status of all managed resources.

**Active Alarms Display**
A consolidated list of active or “open” alarms compiled across all managed resources provides an overview of fault localization and correction tasks that are currently in progress.

**Automatic Discovery**
Using industry standard protocols (e.g., SNMP, TL1) or customer-specific messaging adapters, managed resources are automatically discovered and polled for updates to their configuration attributes.

**Managed Resource Domains**
Administrator can conveniently group the discovered managed resources into a set of managed resource domains using a point-and-click interface.

**Containment Tree View**
Rapid browsing through the entire inventory is supported through the containment hierarchy display.

**Graphical Topology View**
This powerful consolidated view displays the configuration and status of the entire managed resource inventory.

**Resource Provisioning**
Through a convenient, single-click operation, managed resources can be placed in one of several service states such as “working,” “unavailable,” or “standby.” This high-impact operation confirms that the requestor has appropriate permissions before fulfilling the request.

**Software Image Downloads**
Provides a powerful facility to orchestrate the organized download of software images.

**Data Collection**
Scalable application architecture powers the simultaneous collection of measurements from multiple managed resources across the network using distributed pollers.

**Resource Configuration**
Managed resources typically support a number of settable attributes including alarm thresholds, logical addresses, and device-specific parameters like data rates. The user can set such attributes for a single managed resource or a group of managed resources.

**Performance Computation**
Collected data is analyzed, filtered, and aggregated to produce performance metrics that are relevant to the operations staff such as user-oriented transaction response time or service availability.

**Real-time Graphical Displays**
Intuitive line charts and bar charts provide operations staff with quick snapshots of the performance metrics over time.

**Security Domains**
Fine-grained control of access to critical managed resources is accomplished through carefully defined security domains.

**Audit Log**
A detailed log of all access permission requests and responses supports the analysis of resource usage patterns as well as attempts to breach access control.
WebNMS Framework 5

WebNMS Framework Benefits

For Operations Centers

- Continuously monitors the status of network devices such as hubs, routers, firewalls, cross-connects, add-drop multiplexers, and SAN switches.

- Monitors status of IT resources such as servers, storage sub systems, and disk controllers.

- Records and maintains network configuration and updates to ensure normal network operation.

- Data collection with distributed polling architecture enables performance trend and analysis of the entire network or sub networks through graphical or table form.

- Supports root cause analysis of events by correlating alarms and enabling drill down to malfunctioning sub systems.

- Enables efficient management of operations staff by supporting organization of network and IT assets into regions or domains and providing filtered domain views of received alarms.

- Supports problem resolution management of malfunctions through the life cycle tracking of alarm status.

- Supports seamless integration with OSS/BSS, EMSs, NMSs, trouble ticketing systems, and other infrastructure applications in Operations Centers.

For Developers

- Feature-rich WebNMS Framework allows OEMs and system integrators to roll out first releases of enterprise or network management systems within weeks.

- Comprehensive WebNMS Framework platform drives dramatic improvements in application development process, specifically in the areas of Rapid development, Risk Avoidance, and ROI Improvement.

- WebNMS Framework is based on a proven architecture and is purpose-built to be scalable, reliable, and secure.

- Support rapid customization through XML-driven data model.

- Provide “plug-and-play” integration with managed resources and external applications through compliance with open industry standards such as ITU-T, SNMP, CORBA, XML, TL1, etc.
Inside WebNMS Framework

Productivity Tools - WebNMS Framework Studio

WebNMS Framework Studio tools enable complete lifecycle management of WebNMS Framework applications—from design and development to packaging, branding, deployment, and upgrades.

WebNMS Framework Studio offers multiple benefits for rapid and simple development:

- Project-based approach for segregating development and deployment of projects
- Tools to package, install, uninstall, and upgrade projects
- Integrated version control system, build automation, and command line tools
- XML editor for managing WebNMS Framework configuration files; JMac editor for managing non-XML files
- Intuitive and rapid modeling of managed resources
- Troubleshooting tools
- Chassis and Configuration wizards as part of client-side customization

Framework Architecture - Deployment Flexibility

WebNMS Framework is architected to support varying deployment needs ranging from a single server to multi-server deployment.
WebNMS Framework 5

High Availability - Multi-server Deployment

The WebNMS Framework server consists of three tiers of server components: the management server (mediation) tier, which provides protocol mediation with the managed systems; the back-end server tier, which provides database transaction and encapsulation service; and the front-end server tier, which provides client session management services.

There can be more than one deployment of the back-end and front-end servers to achieve massive scalability. The servers can be deployed with redundancy so that any failure results in failover to other server components. This feature is crucial in high-availability applications.

Persistent Data Model

High availability for managed services and operational support is achieved through a persistent RDBMS data model. WebNMS Framework leverages the benefits of transaction support, database synchronization, and object locking.

Core WebNMS Framework modules like Topology, Fault Management, Map, Performance Management, and Storage Server use Hibernate persistence to provide enhanced object modeling and database constraints like foreign key, surrogate key, etc.

The database Tier in the WebNMS Framework architecture incorporates persistent data management support with failover capability.

WebNMS Framework offers seamless integration with Oracle, MySQL, PostgreSQL, and other popular databases.
**WebNMS Framework 5**

**WebNMS Framework 5 Editions**

**WebNMS Framework Features**

<table>
<thead>
<tr>
<th>Features</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size of managed networks</strong></td>
<td>Small to medium, and large carrier-grade networks</td>
</tr>
<tr>
<td><strong>Maximum number of managed objects</strong></td>
<td>Millions of MOs</td>
</tr>
<tr>
<td><strong>Maximum number of concurrent clients</strong></td>
<td>Hundreds of clients (can be scaled higher based on the number of front-end servers)</td>
</tr>
<tr>
<td><strong>Supported Databases</strong></td>
<td>Oracle, MySQL, PostgreSQL</td>
</tr>
<tr>
<td><strong>JRE/JDK</strong> [supported versions]</td>
<td>JRE - 1.6.0, JDK - 1.6.0</td>
</tr>
</tbody>
</table>

**Supported Operating Systems**

- **RedHat Linux** 9.0, 5.0, AS 4.0, Fedora Core 9
- **Solaris** 10, 11
- **Windows** Vista, XP, Server 2008

**Standard Features**

- Discovery Policy
- Topology SNMP Southbound
- MAP CLI Southbound
- Fault Management WebNMS Framework Eclipse Plugin
- Configuration Management Reporting
- Performance Management HTML Client
- Security Management Java Client

**Advanced Features**

- Provisioning Failover
- TL1 Northbound Distributed Front End | Load Balancing
- TL1 Southbound Distributed Poller
- CORBA Northbound & Southbound EJB Deployment
- JMX Agent (Systems and Application Monitoring Feature Pack and Syslog Monitoring Feature Pack licensed separately)

**System Features**

| Application Servers | JBoss |
| Web Servers | Tomcat |
| Choice of Clients | Java application client |
| | Applet client |
| | Web (HTML) client |
| | Java WebStart client |
| Web Browsers | Internet Explorer, Mozilla, Firefox, Chrome |
| Java Runtime Environments [JRE] | JRE 1.6 (All Editions) |
| | JDK 1.5 (All Editions) |
| XML Parsers | Any JAXP 1.4 compliant parser |
| Language support | JDK 1.6 Internationalization API |

**Hardware Requirements**

| CPU | 2.0 MHz for Windows/Linux 1.2 MHz for Solaris |
| Memory | 1 GB RAM or Higher |
| Disk Space | 400 MB + 200 MB Swap |

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