



# OpenScape Fault Management V8

Monitor the operating condition of your communications network at a glance. Immediately process any system and error messages that occur and helps to remedy errors quickly.

No company is able to operate competitively with restricted internal and external communication. Even minor faults in a company's communication network can seriously affect its business. It is essential, therefore, to monitor the operating status of this communication technology on a permanent basis, to follow up the slightest signs of trouble, and to initiate remedial action immediately.

OpenScape Fault Management dramatically reduces your workload. The OpenScape Management Suite comfortably and efficiently supports the many management tasks in a voice and data network.

## OpenScape Management applications

As data and voice networks converge and complexity increases, uniform and simple administration is becoming particularly important. OpenScape Management applications are essential architectural building blocks that meet this need.

### Fault Management

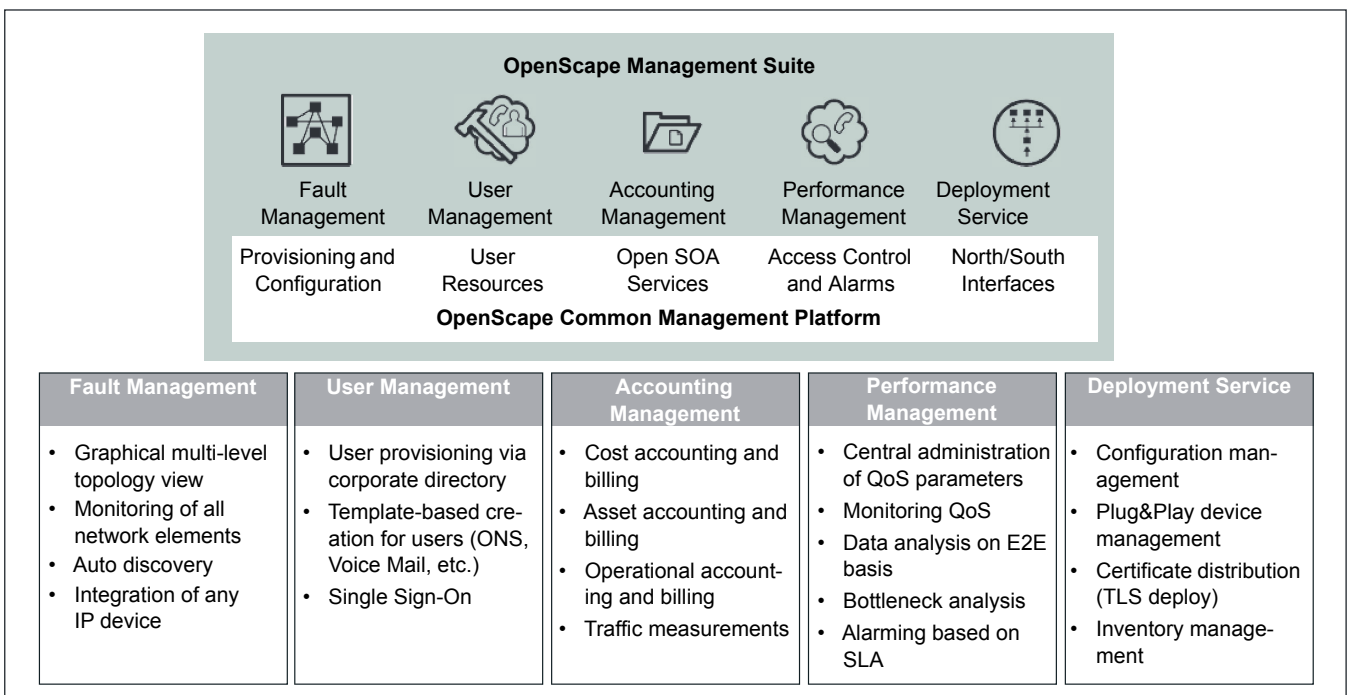
Fault Management increases the availability and operational reliability of the communication systems and network components, and offers a multitude of functions that economically safeguard operation.

Existing HiPath FM systems can be upgraded at a reasonable cost and other network components can be integrated in the monitoring concept.

OpenScape Fault Management is the only network monitoring product that supports the HiPath product family, OpenScape Voice, and any hardware and software products from other vendors.

### User Management

User Management supports the administration of communication resources and ensures data consistency. An object-oriented and modular structure, access via a web browser, and standard interfaces make it possible to deal with transactions quickly from



**Unified Management solution for automation, transparency, and control**

any location. It means response times are fast, administration costs are lower, and tasks are performed quickly and, most importantly, error-free.

### Accounting Management

Accounting Management determines and calculates the communication costs on the basis of call data from the different communication systems in the network and assigns them to their originators. Traditional voice and voice over IP connections are handled alike. In addition, OpenScope Accounting Management offers statistics for monitoring communications traffic. This makes corporate communications transparent in terms of traffic load and costs.

### Performance Management

Performance Management is a management application that provides comprehensive functions to administer and monitor all VoIP components for QoS in a voice and data network. The application is used to monitor all communication systems and network components that are integrated in real-time communication (voice, fax, video) and use the voice and data network.

Performance Management provides extensive evaluation options for QoS parameters (Quality of Service) in IP-based telephony networks. Based on the QoS data sent from various end points, reports can be drawn up that provide information on voice quality in the IP network. In addition, Service Level Agreements (SLA) can be monitored with the aid of configurable SLA criteria.

### Deployment Service

As a central component, Deployment Service manages devices, QoS parameters and the software distribution of IP devices. Because the Deployment Service is integrated in the customer network, the entire IP device structure can be inventoried and administrated.

## Fault Management

OpenScope Fault Management ideally supports the primary need for fault-tolerant communication. The operating states of the individual elements of the communication and data network are permanently recorded and clearly displayed.

The modular concept ensures that applications and features are appropriately combined for every configuration of the voice and data network and thereby protects communication infrastructure investments on a long-term basis.

OpenScope Fault Management signals the first signs of a fault in a clear graphical network reflection with the priority and location of the error. It provides much additional information that helps clear the trouble without delay. And it will do this long before network users even notice any effects.

OpenScope Fault Management also enables the communication resources to be monitored without extensive expert knowledge through a simple graphical user interface and comprehensive support functions.

OpenScope Fault Management is programmed in Java, which means it can be used on almost all common operating systems and computer platforms. Users are offered mobility through Internet access via a web browser.

OpenScope Fault Management will therefore make a major contribution toward ensuring your communication network's reliable operation and your company's continuing competitiveness.

OpenScope Fault Management can be integrated into higher-level management systems (e.g. HP OpenView, IBM Netcool) and Trouble Ticket Systems (e.g. Remedy ARS, OS Service Workbench) via optional gateways.

OpenScope Fault Management monitors voice and data management via lines, LAN and wireless, even in different domains. The status of systems, networks and critical operating equipment can be viewed quickly on a graphical display.

OpenScope Fault Management finds and integrates any elements of the IP network with the Auto Discovery function and the adjustable filter.

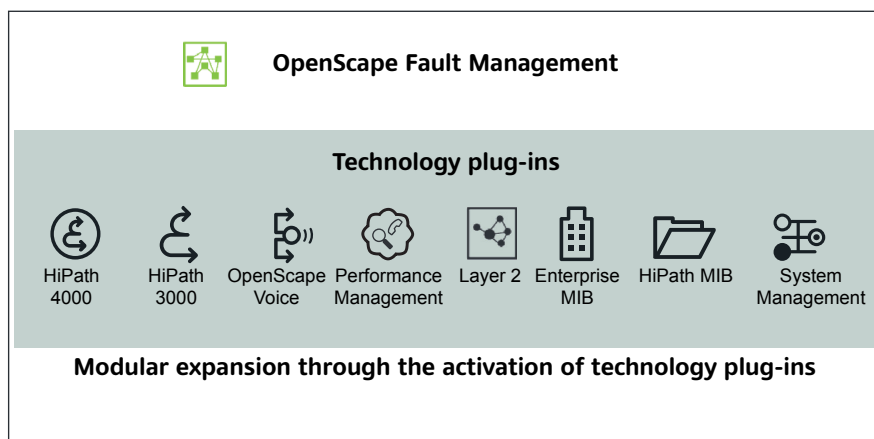
OpenScope Fault Management performs intelligent preanalyses of events, automatically responds to SNMP traps and provides time-controlled reports on events and system parameters.

OpenScope Fault Management permits the monitoring of branch offices in a distributed configuration.

### Performance Management

The Performance Management plug-in extends OpenScope Fault Management. Data that are relevant for VoIP performance and quality are collected and evaluated online. If the VoIP performance in the network degrades, Performance Management generates alarms and events.

In addition, the Performance Management plug-in provides reporting of performance and QoS data, and detailed E2E consideration of calls.



OpenScope Fault Management V8 – expandable with plug-ins

## System functions

### Client-server architecture

The server administers all the information as well as the logged-on clients. It monitors accessing of the Managed Objects. The client presents the information administered in the server in graphical form.

### Client access

The OpenScope Fault Management client can be accessed either as a Java standalone application or with a web browser. This means the application can be operated from virtually anywhere.

### Single point of access

This makes it possible to access other applications of the individual element managers in order, for instance, to make changes to the communication systems' configuration.

### Platform independent

Based on Java, the software of the OpenScope Fault Management allows it to be operated on a variety of hardware and operating system platforms.

## System administration

### Managed objects

After automatic identification of the network elements in a network domain, it is possible to select which of the elements should be monitored by OpenScope Fault Management.

The network elements to be monitored by OpenScope Fault Management are administered by selected attributes as Managed Objects in the server.

Administration encompasses not only the different network nodes but also the connections between them.

### User/Resource link

User access to the information stored in the server is log-in and password protected. Graphical user administration allows users to be conveniently set up, modified, and deleted.

### Administering access rights

Users can each be assigned individual access rights or a customizable user group, depending on the specific work they perform. For further simplification, six user profiles are predefined with fixed permissions.

## Topology management

### Autodiscovery

The topology of a network is automatically recognized by OpenScope Fault Management and arranged in a hierarchical tree structure.

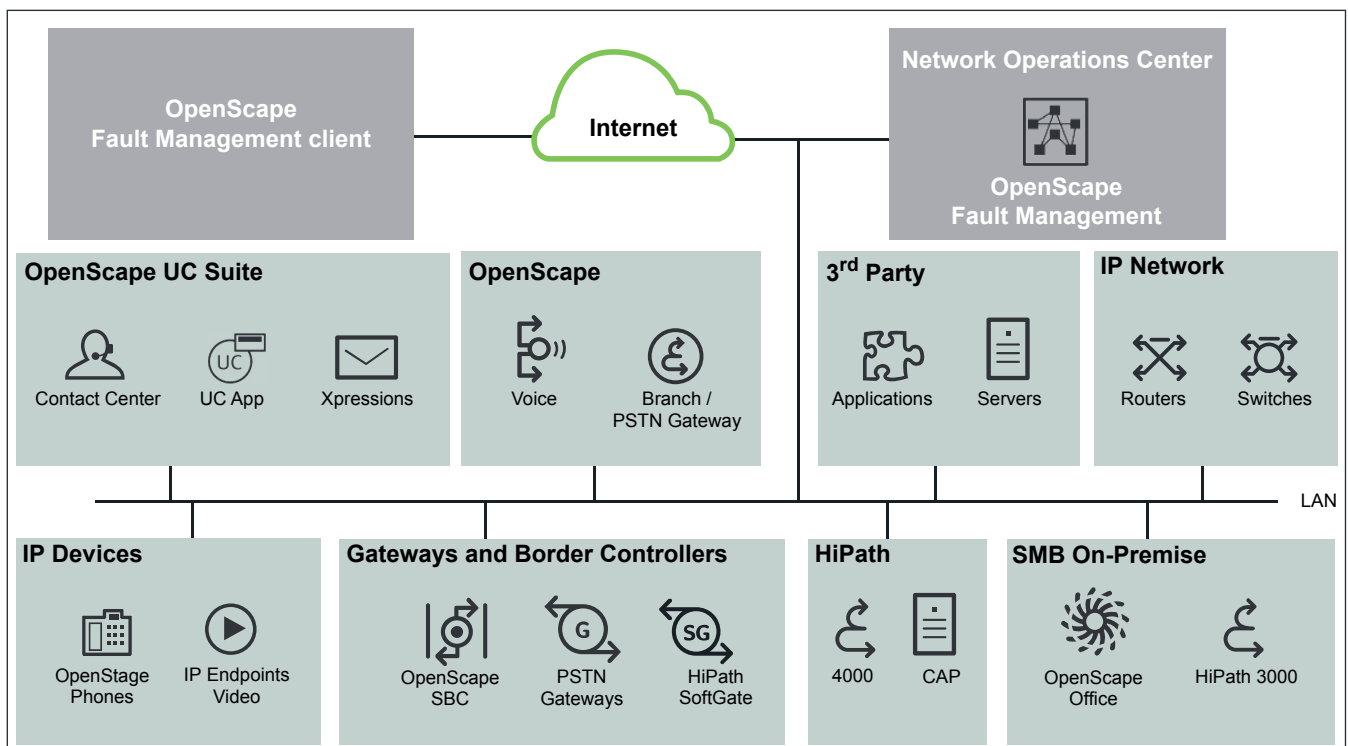
If new data are available due to "Discoveries", these are automatically imported and the topology adjusted accordingly.

Adjustable filters define the object groups, network segments, or IP address ranges to be discovered.

### MIB integration

The optimum support of various network components by OpenScope Fault Management is ensured by different plug-ins. Standard IP elements are integrated by the "IP Manager" preferably based on SNMP MIB II, servers and applications through "Host Resources". Extensive functions are available for HiPath/OpenScope products based on their specific MIB.

All MIBs exceeding the standard, HiPath MIB and SharedService MIB can be described in Enterprise MIB Definition Files (EMDF) and individually activated in the "Enterprise MIB" plug-in.



OpenScope Fault Management V8 – configuration example

Even hard disk space, CPU-load, etc., of the network components without or with only insufficient own MIB can be monitored via System Management in the OpenScope Fault Management.

## Topology viewer

The network topology in your hierarchical structure is presented both in the form of maps and submaps as well as in the form of a navigation tree by the topology viewer. Each node, in other words each object, is displayed in the submaps in the form of a symbol.

The logical connections between the objects and interworking points to external systems are also shown with details of the number of physical connections.

The topology viewer allows the symbols to be placed anywhere in the submaps and background images to be selected.

## Map/submap administration

A map is a collection of submaps showing the hierarchical structure of an administered object such as a network. Several maps with a large number of submaps can exist simultaneously. Various views can be generated with the aid of a network of submaps. A map defines the appearance of all the views (submaps) contained here.

## Personal submaps

Beyond the automatically generated maps and submaps, it is also possible to set up individual submap hierarchies and tree structures. A representation optimized to the respective task of the network topology is therefore guaranteed.

## Symbol administration

Each object type is identified by a unique symbol. As a result, it is possible to differentiate quickly in the network representation e.g., between networks and subnetworks, between network nodes such as systems and routers, between applications, 3<sup>th</sup> part systems, and logical connections and lines. The appearance of these symbols can, of course, be individually adapted.

## Layer 2 Manager Plug-in

In-depth knowledge of the physical network topology is essential to achieve rapid fault analysis and troubleshooting.

The Layer 2 Manager Plug-in is used to expand the Layer 3-structure of networks – which is determined and displayed by the IP manager – by an additional view from the perspective of the network access layer (OSI layer 1-2).

## Context-sensitive pop-up menu

Clicking on a symbol or a submap causes context-sensitive pop-up menus to be offered whose contents are produced individually through the respective object, the respective submap or also through the access permissions of the user.

## Zoom selection

The representation of the symbols/networks is automatically optimally matched to the relevant window size.

By employing the zoom function, users can also adjust the representation in large areas to suit individual requirements.

## Cooperative working

Any changes a user makes to a submap setting are immediately visible to all other logged-on users.

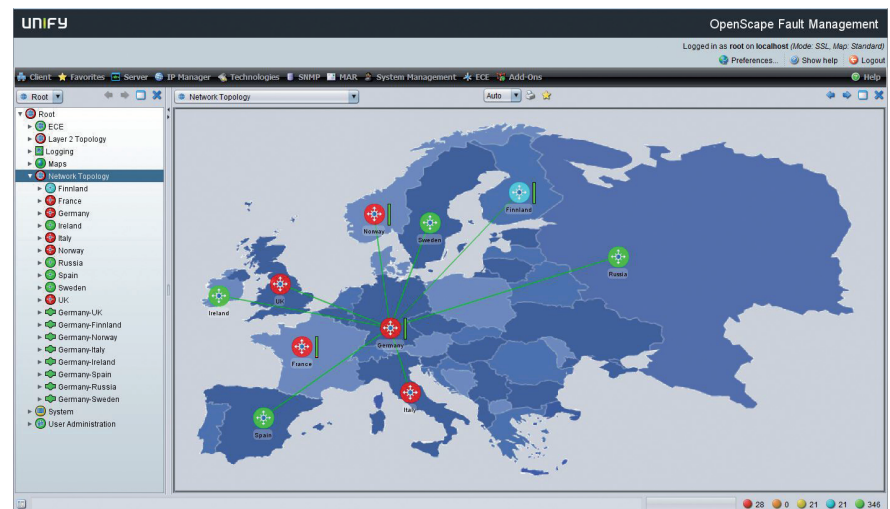
## Mobile client

The Mobile client provides access to vital management information within the OpenScope Fault Management. It allows access to events and browsing to IP nodes of OpenScope Fault Management. It supports Apple iOS phones.

## VMware Monitoring

The VMware Monitoring is part of the system management and appears as a VMware Performance monitor. The VMware Performance monitor is based on the open-source VMware Virtual Infrastructure (vSphere) Java as interface for communication with the vCenter server. In particular, the monitoring solution addresses the following aspects:

- Brief overview of the vCenter inventory
- Status of the host system
- Status of the virtual machine



Navigation tree and topology viewer

## Alarm management

### Status display

The relevant status of the network elements can be finely signaled by the color of the symbol. Up to six different states can be displayed for each object. The status of an object can be transferred to the maps above it so that it is then also possible to immediately react to high-priority alarm messages. This is possible even if the impaired object is not directly indicated as such in the topology, but by the network symbol.

### Summation status indication

With the aid of the overall status display of a network symbol, it is possible to tell how many subsystems within this network have the relevant alarm status.

### Threshold monitoring

Exceeding definable thresholds while collecting MIB values results in internal events. In this way, exceeding of CPU load or up-times, for example, can be reported.

### Application monitoring

OpenScope Fault Management can also monitor the operation of applications on servers and workstations in the network.

### Mobile alarm reaction

Predefined actions are automatically carried out when specific alarms are received. Even different time zones can be taken into account.

The following actions are available:

- Send SMS
- Send e-mail notification
- Start any program on the OpenScope Fault Management server.

## Fault management

### Event logging

Important system, fault, and alarm messages, and other events from the network, are recorded and stored as an event log even when the user is not logged on.

### Event Correlation Engine

The Event Correlation Engine examines the relationships between all events and groups sets of events into a new, explicit event.

The rules for the event correlation can be created graphically and permit the definition of automatic responses, e.g. for troubleshooting.

### Event browser

Logged events are clearly displayed by the event browser, with their level of urgency indicated.

Further information about the object which registered the event can be requested via the pop-up menu.

Filtering according to event type or urgency provides additional clarity.

### Distributed fault management

The OSc FM-2-OSc FM gateway makes it possible to build a hierarchical, distributed FM Manager configuration. Different slave FM systems, for example systems that are located in the separate branch offices of a customer, can be connected via the OSc FM-2-OSc FM gateway to a central Master-FM Manager.

## Service Workbench

Service Workbench is an efficient, powerful service process management solution for OpenScope Fault Management. Events can automatically be transferred in tickets of the Service Workbench. In cooperation with the ECE, it is possible to define ticket-specific workflows that can also access the automation functions offered by the ECE.

### Event Gateway

Event Gateway is an efficient and simple tool for connecting OpenScope Fault Management with Umbrella Management Systems and Service Tools.

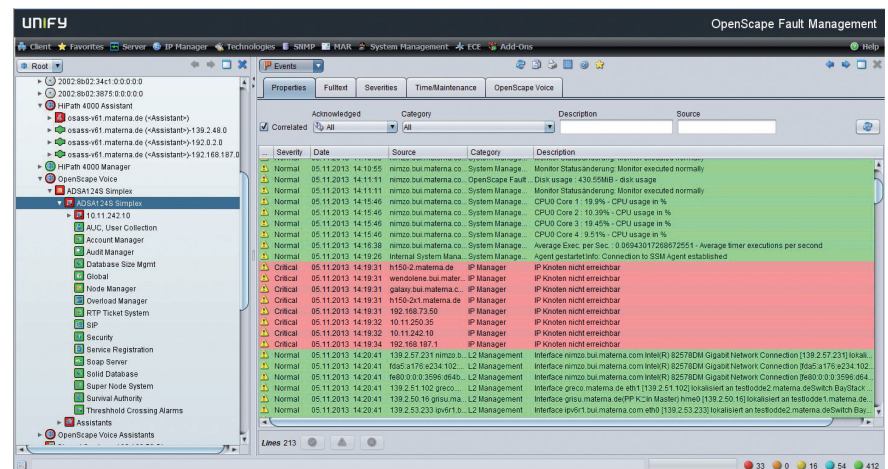
### Trap Forwarder

Different structured event types are automatically converted into an SNMP trap format and are forwarded to one or more management systems.

### ARS Ticket Creator

Via the ARS Ticket Creator module, the Event Gateway integrates the OpenScope Fault Management in the Workflow Automation Tool Remedy Action Request System.

The Action Request Ticket Creator combines fault and service/process management through the specific automatic creation of Action Request System Tickets from events.



Event Browser

## System Management

System Management makes it possible to specifically monitor critical operating facilities such as applications, systems and system resources.

System Management is designed as an open platform into which customer-specific monitoring functions can be integrated as well.

## Control Center

The Control Center provides a clear representation of the overall status of a customer network, or illustrates the customer configuration at a glance in the form of charts and dynamic object lists.

## Online Data Export

The Online Data Export Module (ODEM) can be used to export specific data of the OpenScope Fault Management to an external database where it can be further processed for customer-specific analyses.

## Report Manager

The Report Manager creates reports on the events that occurred in Fault Management, i.e. status changes of objects and measurement series of monitored system parameters.

## Hardware/software management

## Information retrieval/search

If the elements in the network deliver the information, queries of the activated functions or of the hardware, for example, can be performed via OpenScope Fault Management.

## Supported systems

### Communications servers

- OpenScope Voice
- OpenScope Branch
- OpenScope SBC
- HiPath/OpenScope 4000
- HiPath 3000
- OpenScope Office

### Gateways

- HiPath HG 3550
- RG 8300
- RG 8700
- Mediatrix 1400/1600/2400/4400
- Comdasys 1600/2600/3600/4600

### Access points

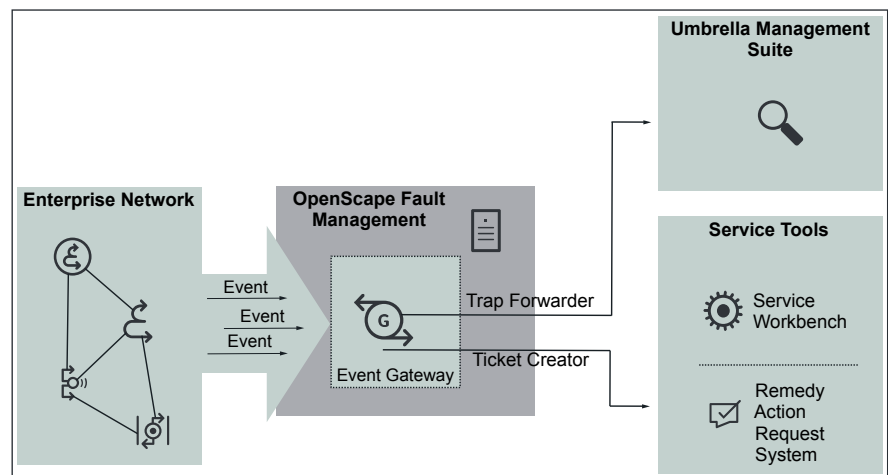
- AP 1100/3300/3700
- HiPath 4000 SoftGate

## Applications

- OpenScope Common Management Portal
- OpenScope UC Application
- OpenScope Media Server
- OpenScope Deployment Service
- OpenScope Xpressions
- OpenScope Xpert
- OpenScope ContactCenter
- OpenScope Alarm Response
- OpenScope Accounting
- HiPath Accounting Management
- HiPath QoS Data Collection
- HiPath User Management
- HiPath CAP

## Clients & devices

- optiPoint 410 family
- optiPoint 420 family
- OpenStage family



**Event Gateway**

## Hardware and software requirements

### OpenScope Fault Management V8 server

#### Standard PC

- Equivalent to 2 GHz Intel CPU
- Main memory: at least 4 GByte RAM
- Resolution:  
min. 1024 x 768 pixels
- Hard disk:  
free capacity of at least 600 MByte  
for application and 1 MByte for each  
administered system
- LAN: TCP/IP

#### Interfaces

- SNMP V1, V2c and V3
- IP V4 and IP V6
- http and https
- VMware

#### Software requirements

Operating system	Service package	32-bit	64 bit
Microsoft Windows 2008	SP1	X	X
Microsoft Windows 2008 R2			X
Microsoft Windows 7	SP1	X	X
Microsoft Windows 8		X	X
Microsoft Windows 2012			X
Linux Suse Enterprise Server 10		X	
Linux Suse Enterprise Server 11			X

### OpenScope Fault Management V8 client

#### Standard PC

- Equivalent to 1.5 GHz Intel CPU
- Main memory:  
at least 512 MByte RAM
- Resolution:  
min. 1024 x 768 pixels
- Hard disk:  
free capacity of at least 10 Mbyte
- LAN: TCP/IP

#### Software requirements

Client	Service Package	32-bit	64 bit
Microsoft Windows 2008	SP1	X	X
Microsoft Windows 2008 R2			X
Microsoft Windows 7	SP1	X	X
Microsoft Windows 8		X	X
Microsoft Windows 2012			X

