

HiPath 4000 Management

HiPath 4000 Assistant
HiPath 4000 Manager

Do you find your communication network easy and cost effective to operate?

Are you able to make modifications quickly from any point within your company?

Communication is a decisive aspect when it comes to the success of any company.

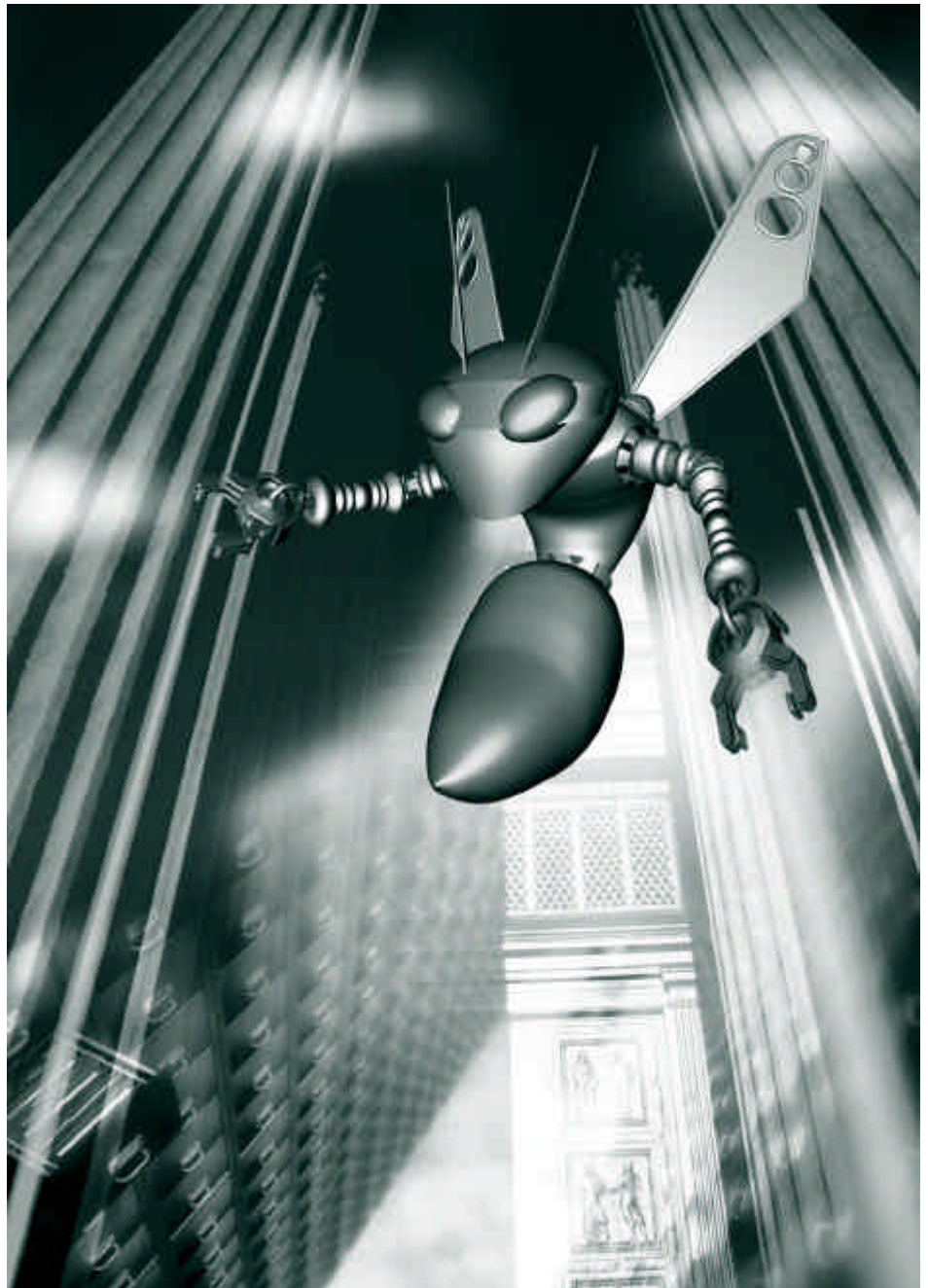
HiPath 4000 Management helps guarantee a high level of availability for communication resources and enables the necessary changes to be made quickly during operation. It was developed specially for the requirements of HiPath 4000 and also supports systems from the Hicom 300 family. The migration of your current Hicom 300 network to HiPath 4000 is thus supported in an exemplary way and therefore safeguards investments.

HiPath 4000 Management is a key element in

HiPath MetaManagement and consists of 2 components:

- **HiPath 4000 Assistant**
the management tool for standalone HiPath 4000 systems.
- **HiPath 4000 Manager**
for HiPath 4000 and Hicom 300 standalone systems and networks with wide-ranging applications and extended functions.

High availability of communication resources and fast, mobile access to all applications through Web access make a key contribution to the cost-effective operation of the communication network.



HiPath 4000 Management System Concept

HiPath 4000 Management

Concept

Increasing convergence of data and voice networks, along with a simultaneous increase in complexity, place the focus on the need for the uniform and convenient administration of these networks.

As part of HiPath architecture, **HiPath MetaManagement** offers solutions that facilitate cost-effective management for convergent HiPath networks.

As Element Manager for HiPath 4000 and for Hicom 300, **HiPath 4000 Management** is an important component of HiPath MetaManagement. It consists of 2 modules:

HiPath 4000 Assistant, which facilitates the administration of standalone systems as an integral part of every HiPath 4000 system.

HiPath 4000 Manager, with extended functions through additional applications and networkwide services. Depending on the size of the network and the associated transactions, it is operated on different server platforms.

HiPath 4000 Manager provides the following with networkwide functionality:

- Configuration Management (CM)
- Performance Management (PM)
- Collecting Agent (COL)
- Application Program Interface (API)
- SNMP Interface (SNMP)

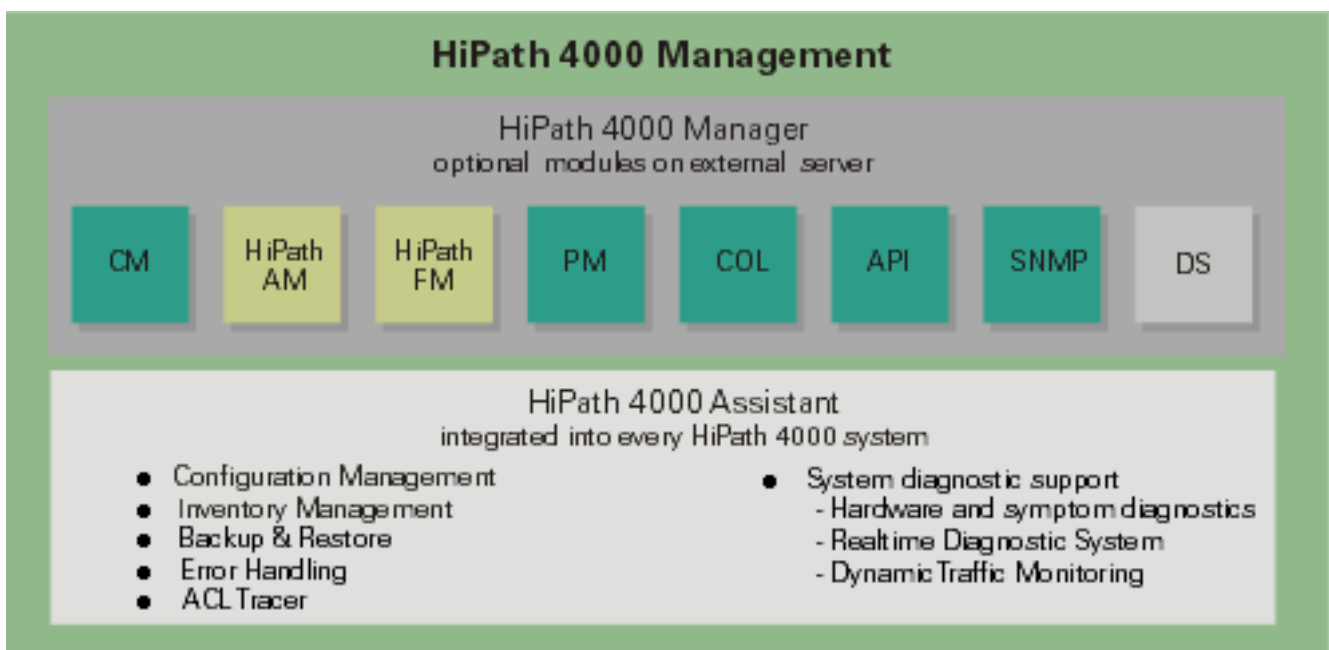
In addition, the following HiPath Management applications can be integrated:

- **HiPath Fault Management** (HiPath FM)
- **HiPath Accounting Management** (HiPath AM)

In addition to HiPath 4000 and Hicom 300, these two applications support other systems. (For details see the separate data sheets for the various products)

Access via Web Access for all applications in HiPath 4000 Assistant, HiPath 4000 Manager and HiPath Management offer users mobility as they go about their tasks.

The modular concept allows applications and functions to be combined correctly for every HiPath network expansion and thereby safeguards communication infrastructure investment in the long term.



Modular structure of the HiPath 4000 Management

HiPath 4000 Management System Concept

System functions

Client/server architecture

The server is used to administer the central database, the authorized and registered users and the registered clients. Central functions are used to monitor access to applications and stored data.

The HiPath 4000 Assistant server is an integrated processor of HiPath 4000.

HiPath 4000 Manager and HiPath Management applications HiPath FM and HiPath AM are run on external servers.

Client Access

Web browsers provide client access to all applications of HiPath 4000 Management and HiPath Management applications.

The applications can be used by every standard PC from almost any location by means of a Web browser.

System backup

HiPath Backup & Restore enables configuration data or software from operating systems and applications to be saved in backup copies. This means that correct, backed-up data and/or software can be accessed in the event of system malfunctions, so that normal operations can be restored in the shortest possible time.

User/rights administration

Depending on his tasks, every user can be assigned individual access rights. The user IDs are administered by the system with their graded classes of service and passwords.

Security

HiPath 4000 Management offers a broad range of security solutions:

- authentication
 - user name & password
 - single sign-on for all HiPath Management applications
- authorization
 - user profiles (configurable access rights)
 - client capability
- data integrity
 - encrypted password
 - encrypted data transport (SSL/TSL, Strong Encryption)
- logging
 - start and end of a session
 - illegal logon attempts
 - creation and deletion of rights
 - modification of security settings
- encrypted storage of sensitive data

Online help

Context-sensitive online help offers the user wide-ranging support during transactions.

HiPath 4000 Management HiPath 4000 Assistant

Area of application

HiPath 4000 Assistant is the management solution for all HiPath 4000 standalone systems.

As an integral component of each HiPath 4000, it offers fundamental management functions which are required in order to configure and monitor standalone systems.

It doesn't matter whether users move or numbers are changed, or whether trunk lines or modules are to be configured - HiPath 4000 Assistant provides the same support for these administration tasks as for error diagnostics and debugging and load checks on the system.

HiPath 4000 Assistant can be used both on the standalone system in direct access by means of a client PC with Web access, and also in networks by means of the external server of the HiPath 4000 Manager.

Functions

Configuration Management

Wide-ranging configuration management makes it possible to configure the system, set up users and configure terminals, including the programming of the individual key layout. Up to 85% of all possible managed objects can be administered with a simple, Windows-based interface. Additional configuration tasks can be executed in expert mode through the direct use of operating commands.

Collecting Agent

The Collecting Agent is used to collect the connection data in HiPath 4000, filter it according to application, accounting or performance data and store it for access by appropriate evaluation applications (e.g. HiPath AM and HiPath 4000 PM) in separate files.

This tool is also used to administer the necessary parameters and filters for the output format.

In association with HiPath 4000 Manager, the task of the collecting agent is carried out by means of a separate application.

Inventory Management

This tool contains information about installed hardware, software and loadware of HiPath 4000.

Backup & Restore

Automatic, time-controlled archiving of configuration data and software on the hard disk of the server or on a backup server in the network.

System diagnostic support

Hardware and symptom diagnostics (HSD) for finding and eliminating hardware errors and for pinpointing problems.

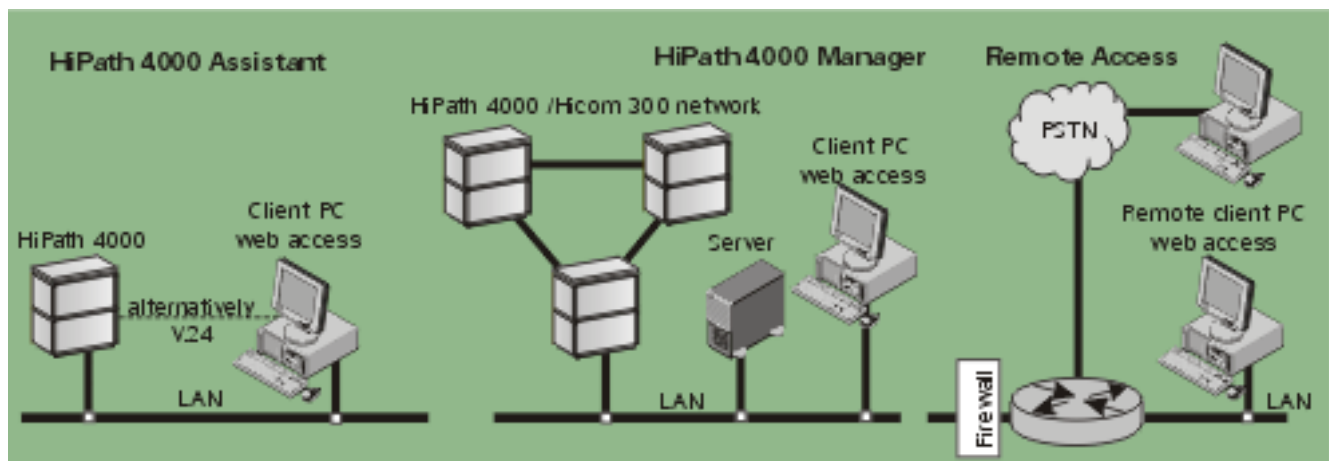
Realtime Diagnostic System (RDS) for monitoring and troubleshooting on lines. Dynamic Traffic Monitoring (DTM) for monitoring the load on lines.

Error handling

Error messages can be interpreted quickly and clearly as they arise through direct access to the online service manual.

Automatic data synchronization

The configuration changes made via HiPath 4000 Assistant are synchronized with the database of the relevant HiPath 4000 system and are therefore immediately effective.



Configuration of HiPath 4000 Assistant and HiPath 4000 Manager

HiPath 4000 Management

HiPath 4000 Manager

Area of application

HiPath 4000 Manager is designed for use

- on HiPath 4000 standalone systems in order to extend the functions of the HiPath 4000 Assistant by further applications, such as Accounting Management, Fault Management, comprehensive Performance Management, or in order to permit access to current communication data (API) or to report faults to hierarchically higher fault management (SNMP)
- in HiPath 4000 networks in order to enable administration and monitoring tasks for the entire network
- in Hicom 300 networks in order to manage the network as a successor to the previous Hicom Domain Management Service (HDMS)
- in HiPath 4000 / Hicom 300 mixed networks.

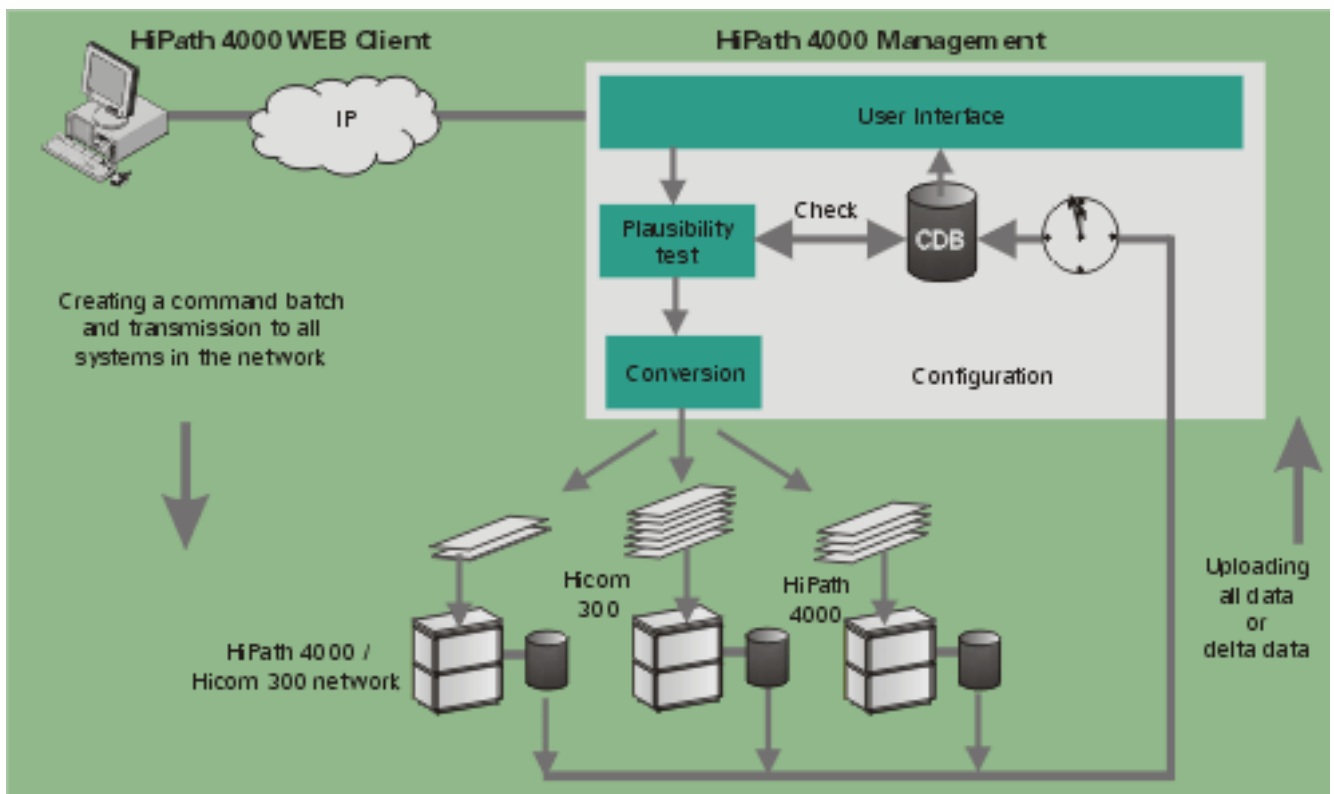
Depending on the size of the network to be administered, HiPath 4000 Manager is available on three different server platforms of graded capability. This achieves a scalability that permits the cost-effective use of the HiPath 4000 Manager from standalone systems up to networks of 200 systems.

Existing installations with HDMS can be upgraded to HiPath 4000 Manager. This safeguards investments made in the past.

Data synchronization

The HiPath 4000 Manager offers a considerable advantage for the user through its networkwide database. The user does not need to know which user is connected to which system in the network or which numbers have been assigned; this information is supplied automatically by HiPath 4000 Manager. When changes are necessary, e.g. moves or network expansions, HiPath 4000 Manager checks the plausibility and feasibility of the entries before executing administration jobs.

Only then will the HiPath 4000 Manager supply every system in the network with individual configuration jobs. The networkwide database is updated as soon as all systems have acknowledged execution. For the user, this leads to a dramatic reduction in effort, and also enables administration errors to be avoided.



HiPath 4000 Manager data synchronization

HiPath 4000 Management

HiPath 4000 Manager Applications

Configuration Management

In terms of operation and user interface, Configuration Management is largely identical with the Configuration Management of the HiPath 4000 Assistant.

The CM uses a familiar Windows user interface to enable HiPath 4000 and Hicom 300 to be administered in a convenient, easy-to-learn way. On stand-alone systems and in the network.

User administration

User administration enables the properties assigned to a user and his devices to be set, for example

- user data
(name, display text, etc.)
- classes of service
- features
- group relations
- subscriber lines
- device parameters
- key layout on terminals

This also includes the administration of HiPath cordless users.

Changes in the network can be made quickly and easily in this way, irrespective of whether they involve relocation within a system or system changes.

Table administration

Administration of tables, such as routing tables or tables for speed dialing numbers.

License Management Tool (LMT)

The license management tool checks the permissible configuration limits of the entire network. This enables the purchased line licenses within the network to be moved as required between the systems without violating a license.

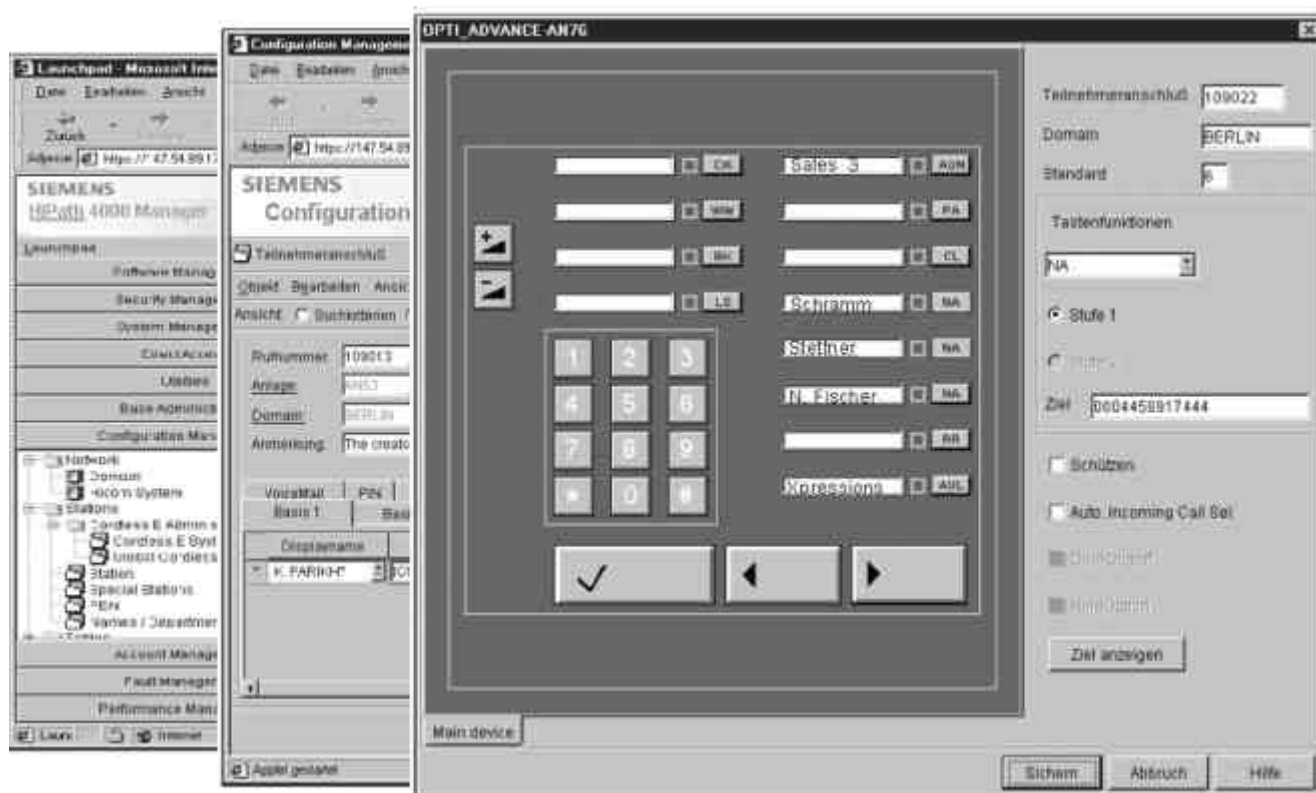
A warning only appears indicating that more licenses should be ordered after the total for all licenses in the network has been exceeded. This makes the administration of a whole network very flexible.

Administration of ACD agents Lines and line trunks and modules

For line and trunk administration, it is possible to access the HiPath 4000 Assistant of the relevant system directly by means of HiPath 4000 Manager.

The specific parameters for ACD agents are administered and modules are configured as necessary in the same way, for example.

The user does not need to change either his place of work or his familiar user interface.



Configuration Management of HiPath 4000 Manager – user interface

HiPath 4000 Management

HiPath 4000 Manager Applications

Performance Management

For Performance Management, three different variants are provided for selection.

Standard reports are made available for the required analyses and these can also be created on an individual basis using an optional report generator.

The basis for analyzing the performance data is the provision of a measurement value file by the Collecting Agent application.

Performance Management-N (PM-N)

This is used to measure and analyze the traffic load on lines and trunk groups.

Analysis can be carried out for all HiPath 4000 systems in the network. The data entered can be represented in diagrams, for example, for

- time/trunk load
- overview of peak traffic times
- availability

Overloaded or superfluous connections in the net can be detected very quickly in this way and can be optimized in line with the requirements of the company.

Performance Management-E (PM-E)

In addition to the analysis options of PM-N, Performance Management Enhanced (PM-E) can also be used to record the load situation for a number of other objects.

These are, for example

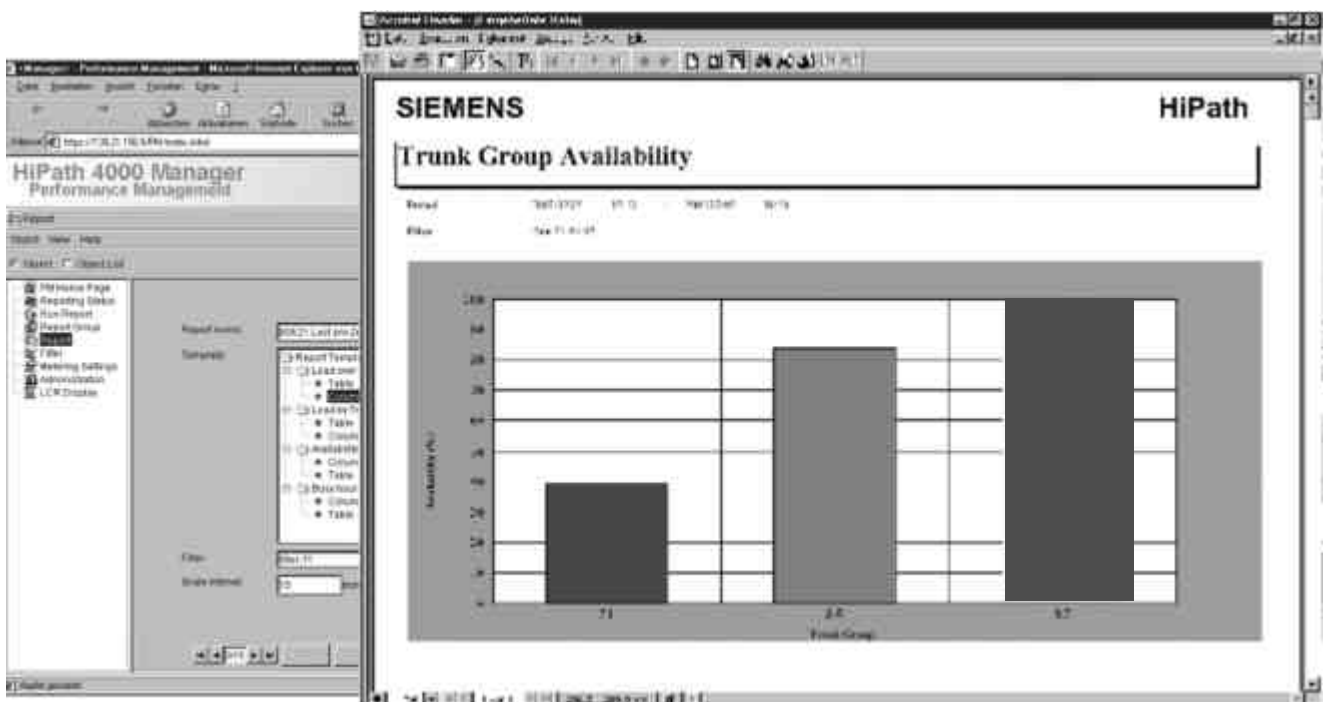
- users
- hunt groups
- attendant consoles
- feature utilization
- processor load
- system load

The wide range of measurement options, such as ringing times, hold times, call times, etc. permit further adaptation to the individual needs of a company.

Performance Management-ASC (PM-ASC)

PM-ASC is a special type of Performance Management. It provides the necessary statistical analyses, as required when using an Attendant Supervisor Console (ASC) to control the attendant console groups.

One special feature of this application is the fact that it can run on the integrated processor of the HiPath 4000, irrespective of the need for a HiPath 4000 Manager. In the case of standalone systems with attendant console groups and ASC, no additional external server is required for statistical evaluation by PM-ASC.



HiPath 4000 Manager – Performance Management, user interface and example of a report

HiPath 4000 Management

HiPath 4000 Management Applications

Concept

The aim of HiPath MetaManagement is to facilitate the uniform administration of all products belonging to the HiPath product family.

The existing standard interfaces can be used to integrate HiPath Management applications

- HiPath Fault Management
 - HiPath Accounting Management
- in the HiPath 4000 Manager.

HiPath Fault Management

HiPath Fault Management (HiPath FM) enables the whole network to be monitored.

In addition to HiPath 4000 and Hicom 300 systems, HiPath FM is also capable or recognizing the operating status of a large number of other HiPath systems and applications, such as HiPath 3000, Hicom 150 H and HiPath AllServe and all network components that support SNMP and MIB II standards.

HiPath FM uses the Auto-Discovery function to find objects that conform to standard in the network and represents them in a shared network topology.

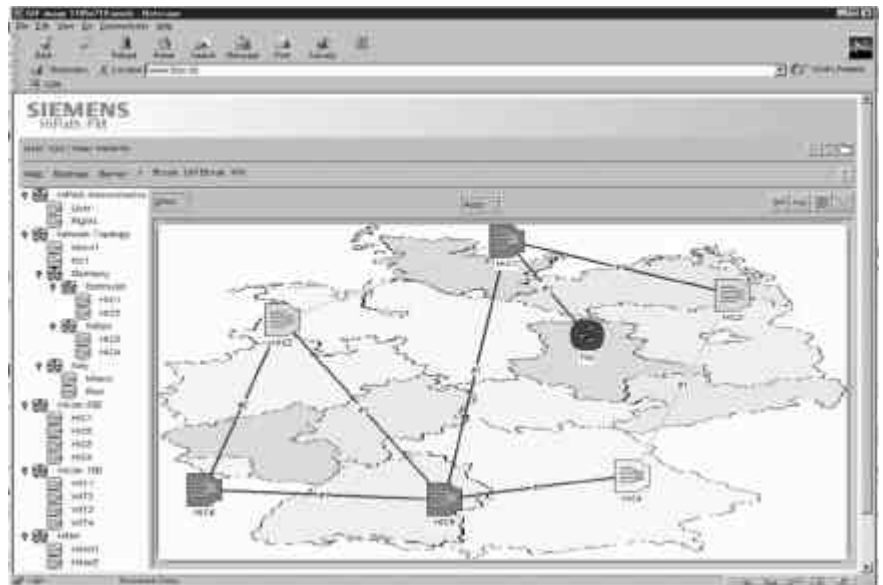
Further supported products are described in a separate data sheet.

HiPath Accounting Management

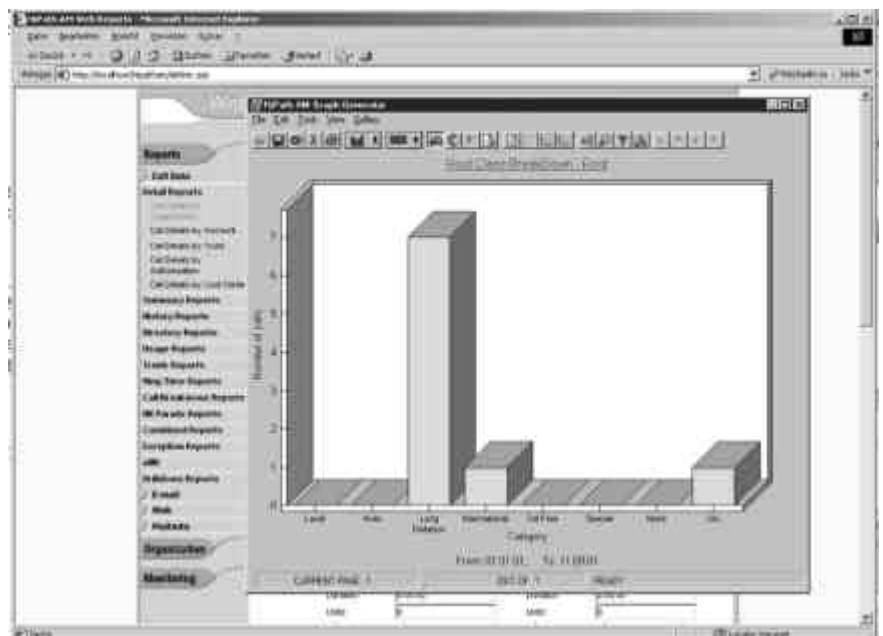
HiPath Accounting Management (HiPath AM) provides transparency in relation to communication costs within the company. Both communication in the conventional voice sector and speech communication in the IP sector, e-mail and Internet are recorded and prepared. This is irrespective of whether communication originates within HiPath 4000, Hicom 300, HiPath 3000, Hicom 150 or HiPath 5000.

Naturally, each authorized user has access to the individual reports on the Web.

Further supported products are described in a separate data sheet.



HiPath Fault Management
Navigation tree and topology viewer



HiPath Accounting Management
Report drafting and graphical presentation

HiPath 4000 Manager Technical Data

Supported systems

HiPath 4000 Assistant

- HiPath 4000 V1.0

HiPath 4000 Manager V1.0

- HiPath 4000 V1.0
- Hicom 300 H V1.0
- Hicom 300 E V1.0 or later
- Hicom 300 V3.4 or later
- Hicom 300 rel 6.5 (US) or later

HiPath Fault Management V2.0

- HiPath 4000 V1.0
- Hicom 300 H V1.0
- Hicom 300 E V1.0 or later
- Hicom 300 V3.4 or later
- Hicom 300 rel 6.5 (US) or later
- HiPath 3000
- Hicom 150 H V1.0 or later
- HiPath AllServe
- HiPath 5000 V 3.0T

Further supported products are described in a separate data sheet.

HiPath Accounting Management V1.0

- HiPath 4000 V1.0
- Hicom 300 H V1.0
- Hicom 300 E V1.0 or later
- Hicom 300 V3.4 or later
- HiPath 3000 V3.0 or later
- Hicom 150 V1.0 or later
- HiPath AllServe
- HiPath 5000 V 3.0 or later

Further supported products are described in a separate data sheet.

Hardware and software requirements

HiPath 4000 Assistant Server

- Integrated in HiPath 4000
- Operating system: UnixWare 7

HiPath 4000 Manager Server

Hardware platforms from Fujitsu-Siemens Computers are used

- Small networks
(max 8 systems, 5,000 ports)
Pentium 4 processor, 1.5 GHz
RAM: 512 MB
Hard disk: 20 GB
- Medium networks
(max 30 systems, 10,000 ports)
Pentium III processor, 1.26 GHz
RAM: 1024 MB
Hard disk: 18 GB SCSI
- Large networks
(max 200 systems, 100,000 ports)
Pentium III dual processor, 1.4 GHz
RAM: 2048 MB
4 18 GB SCSI hard disks
RAID controller
2 power supply modules
Uninterruptible power supply

For all HiPath 4000 Manager servers

- Operating system: UnixWare 7
- Connection technology:
LAN, S₀, S2, V.24 MSV1

HiPath FM server

- Pentium III, Pentium 4 processor
- Clock frequency: at least 600 MHz
- RAM: at least 256 MB
- Hard disk:
at least 60 MB free space for application and 1 MB per administered system
- Operating systems Windows NT 4.0, Windows 2000, Reliant Unix 5.45, UnixWare 7
- Software: Java Runtime Environment (JRE) 1.3
- Other: TCP/IP

HiPath AM server

- Pentium III, Pentium 4 processor
- Clock frequency: at least 600 MHz
- RAM: at least 256 MB
- Hard disk:
at least 40 MB free space for application and 2 MB per 10,000 connection data records
- Operating systems Windows NT 4.0 (SP 6 or later), Windows 2000 (SP 1 or later)
- Other: TCP/IP

Web client for HiPath 4000 Assistant, HiPath 4000 Manager, HiPath FM, HiPath AM

- Pentium III, Pentium 4 processor
- Clock frequency: at least 600 MHz
- RAM: at least 256 MB
- Hard disk: 10 GB
- Operating systems Windows NT 4.0 (SP 6 or later), Windows 2000 (SP 1 or later)
- Browser software:
Microsoft Internet Explorer 5.5 or later
- Netscape Navigator 4.73 or later (not for HiPath AM)
- Other: TCP/IP

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.