

HiPath System Management

The global HiPath convergence architecture employs management applications that span all HiPath solutions and reduce system management effort and associated costs.

As with all HiPath solutions, HiPath system management applications (HiPath Management) offer customers:

- **Choices:** Robust basic feature set with comprehensive optional applications
- **Evolution:** Modular design that facilitates expansion when appropriate
- **Value:** Integrated HiPath platform and third-party SNMP-compliant systems

The following provides an overview of each of the available management applications.

Manager C

HiPath 3000 Manager C allows the customer to administer customer-specific data using a PC. HiPath 3000 Manager C provides basic system administration. HiPath Manager C is a PC-based software tool that uses a Windows GUI based on the Manager E administration tool (see below).

The GUI, consisting of easy-to-follow drop down menus and dialogue boxes with full "Drag & Drop" capabilities, allows basic system administration changes (see table below):

HiPath 3000 Manager C Administrative Capabilities	
User names	Queued calls to the attendant
Directory numbers	Call Detail Recording
Station key assignments	Speed calling destinations and numbers
PIN numbers and departments	Customer database
Account codes	Customized text messages
Display languages for telephones	Hotline destinations
Pickup groups	Password protection

IP connectivity is supported with the V24/E Serial/Ethernet option card or the LIM (LAN Integration Module) or the HiPath HG 1500 card on any HiPath 3000 server. Support for access speeds up to 64 kbps (14.4 kbps for analog dial-up by modem, 19.2 kbps for direct serial connection and 64 kbps for remote or local ISDN access) is also provided.

A customer-provided client PC meeting minimum specifications is required.

Manager E: Requires Additional Training of On-Site System Administrator

HiPath 3000 Manager E provides easy-to use administration tools, as well as automated backup of critical database information. You can manage multiple systems remotely using password-controlled access. Diagnostic tools are also available to assist in identifying and correcting issues before they affect operations.

Manager E is a PC-based GUI software tool for performing administrative tasks and basic monitoring. Manager E provides the following features to assist in administration of the HiPath 3000:

- Support for cut/paste of data from Windows-based spreadsheets

- Context-sensitive online help
- An electronic manual on CD-ROM
- Tool bar icons that allow users to activate desired functions quickly by clicking a button
- Station use list, which provides an overview of configured terminals with directory numbers and name references
- Multiple language (15) support
- Support for access speeds up to 64 kbps (14.4 kbps for analog dial-up by modem, 19.2 kbps for direct serial connection and 64 kbps for remote or local ISDN access)
- IP-based access via an Ethernet interface for administration, maintenance, diagnostics and SNMP fault management
- Remote maintenance from a central location
- Password protection

Manager E's functions allow an administrator access to administer:

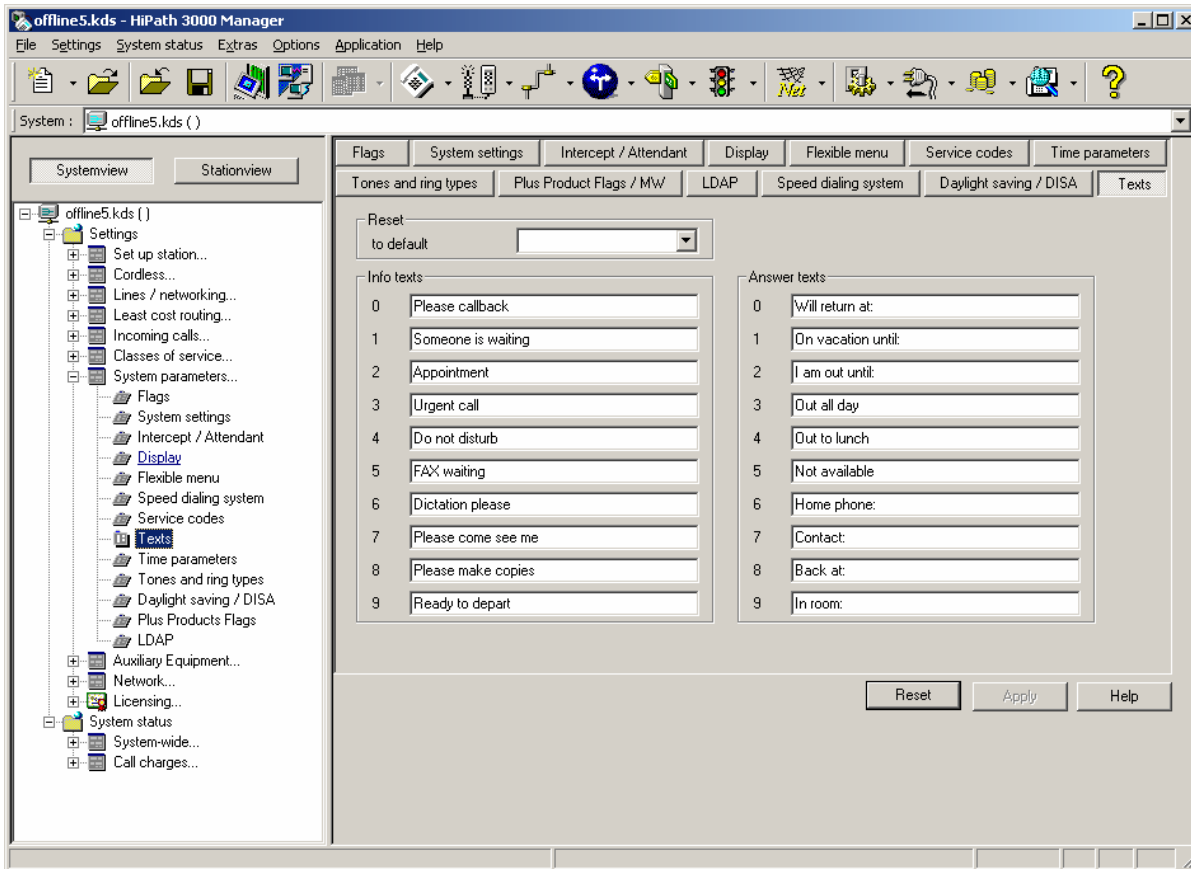
- User database
- Station key assignments
- Class of Service
- PSTN and private network trunk configuration
- IP network and SNMP fault management parameters
- Peripheral card placement and configuration
- Error detection, signaling and clearance
- Database backup
- Configuration of call management functions including LCR (least cost routing), UCD (uniform call distribution), etc.

Manager E enables administrators to download, maintain, test and store configurations on a Windows-based PC. It also supports manual entry of new databases. The customer-specific parameters database can then be uploaded to a system or saved and sent to a customer's site. Changes take effect immediately after download.

Basic user changes are accomplished quickly through a user friendly GUI and include:

- User names
- Directory numbers
- Account codes
- Display languages for telephones
- Pickup groups
- Call Detail Recording
- Speed calling destinations and numbers
- Customized text messages
- Hotline destinations
- System date and time

Please refer to HiPath 3000 Management GUI below for configuration of text messages.



Manager E Example GUI

Diagnostics include:

- Viewing current status of peripheral boards (not inserted, defective, locked out, idle, busy and clock source)
- Viewing current status of trunks (inactive, incoming call, outgoing call, trunk-to-trunk connection, trunk disabled using lockout switch or HiPath 3000 Manager E and trunk failure)
- Viewing current status of stations (connection and forwarding status and features activated)
- Viewing current status of V.24 interface (to identify connection errors and cable damage)
- ISDN trace (ISDN telephones and trunks)

All of the information created using Manager E can be printed out on a printer attached to the customer-provided administrator PC.

Manager E can be used locally, when connected to the LAN or an RS232 port, or remotely connected via an analog, digital, ISDN trunk, or LAN interface to support each HiPath 3000.

Each HiPath 3000 being administered can support a maximum of 16 administrative user ids. HiPath 3000 software allows only one system administration session at a time.

A customer-provided client PC meeting minimum specifications is required.

Centralized Administration

Centralized administration is the core element for managing the HiPath 5000 integrated applications and HiPath 3000 distributed nodes. Centralized administration provides a single overlay database with a single point of administration for the HiPath 3000 network within a single location and throughout a

multi-node network. All of the networked nodes and endpoints are all centrally managed through one user-friendly database.

With Centralized administration, system administrators can perform Moves, Adds and Changes anywhere in the HiPath 3000 network. Unlike the basic Manager E solution, where the administrator is required to connect to multiple components to make system configuration changes, HiPath 5000's centralized administration streamlines and simplifies administration tasks to save time and money, and increases administration accuracy.

The enhanced HiPath 3000 Manager E tool, which runs on the HiPath 5000 RSM industry-standard server, enables centralized administration from a single location throughout a HiPath 3000 network. The HiPath 5000 RSM server is designed to provide scalability and supports the following.

- 1,000 users and up to 32 HiPath 3000 nodes (2,000 users and 64 nodes on a project specific basis)
- Database synchronization among HiPath 3000 nodes over LAN/WAN
- Network services functions
- Single system image for multiple locations
- Centralized management of all HiPath 3000 nodes

The HiPath 5000 RSM server enables the administration and configuration over the IP network via the HG 1500 integrated gateway cards in the HiPath 3000. There is no practical limit on the number of administrative terminals, but for practical purposes and to maintain a single system image, you would not want more than one active session on the HiPath 5000 RSM server. The server should also include a modem and pcAnywhere to allow remote access to Manager E, if necessary, and as an alternative method should the IP network have problems.

Once the various HiPath 3000 nodes have been integrated in a shared database, data can only be accessed using the HiPath Manager E program installed on the HiPath 5000 application server. Plus, local access to the communication platforms is restricted to protect database consistency.

HiPath 5000 RSM administration features include:

- Central administration for each node within the database, saving data as a network file and adding/deleting nodes from the network
- Central administration of user data and passwords for all networked communication platforms and network-wide data (users, call numbers, CDR)
- External destinations for group ringing, group calls and hunt groups
- Permissions per extension for central busy signaling
- Alignment of all codes in the networked communication platforms
- Differentiation of the call number information from the dialing user to the destination user for networking.
- External destinations in Call Management
- Consistency Check within Least Cost Routing
- Configuration of the central attendant console
- Synchronization of the node customer databases (transfer of individual settings such as key programming, network-wide dial plan for example)
- Node registration and transfer of customer database information to the nodes
- Transfer of Call Address Resolution table information to the gateway
- Network-wide consistency check

- Extension of the "Check" function to include network-wide data (call numbers and codes)
- Configuration of B-channels of the gateway as network lines
- Inventory Management
- Software Management
- Backup and Restore Capabilities
- Server settings (identification of the application server)
- Enhanced VoIP diagnosis using HiPath Fault Management

The HiPath Fault Management Desktop Application is provided with the HiPath 5000 RSM. This provides the user with desktop functions to view HiPath 3000 nodes connected to the network. HiPath Fault Management allows you to monitor the status of the HiPath 3000 nodes and to inform the administrator in case of state changes. The graphical network map shows the HiPath 3000 network topology and the current status of the nodes. Features include:

- A hierarchical mapping of the network topology, presented in different abstraction levels (HiPath 3000/5000 network view, subnet view, etc.).
- Possibility to fine-tune the network view by grouping HiPath 3000 nodes together and putting them into different networks and sub-networks.
- Representation of HiPath 3000 node events by graphical state change of HiPath 3000 node icons (color change).
- Detailed event descriptions in the form of textual Browser Windows.
- Detailed HiPath network topology description and of installed hardware.

A user may have one or multiple maps. Within a map, a user can arrange the graphical representation of a network by creating sub-maps and positioning the nodes on these sub-maps.

HiPath Fault Management will flag up the very first signs of trouble on a clearly arranged graphical network image, showing the priority of the fault and its location.

A customer-provided server and client PC is required. Minimum requirements for the PC and server are dependent on the number of HiPath 3000 nodes supported and applications implemented.

Optional Advanced Applications

The HiPath 3000 also supports optional traffic reporting and accounting applications including external call accounting applications. Siemens can provide optional HiPath Accounting Management call accounting applications, as well as the Traffic Analyst applications, which supports traffic reporting and optional additional CDR reporting.

