

TELES.iMNP



Software version 14.0

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1 ABOUT THIS MANUAL

This manual is set up to guide you through the step-by-step installation of your iMNP, so that you can follow it through from the front to the back. Make sure you familiarize yourself thoroughly with the safety and security precautions detailed in Chapter 2 ⇨ before you begin to install your iMNP. TELES is not liable for any damage or injury resulting from a failure to follow these safety and security instructions!

1.1 ORGANIZATION

This manual is organized into the following chapters.

- **Chapter 1, "About this Manual"** introduces the iMNP Systems Manual and how it is set up.
- **Chapter 2, "Safety and Security Precautions"** describes the safety and security measures necessary for smooth operation of your TELES.iMNP.
- **Chapter 3, "System Overview"** briefly describes the iMNP and its implementation scenarios.
- **Chapter 4, "iMNP Installation"** contains information on basic installation and configuration of your iMNP.
- **Chapter 5, "Routing and Configuration"** describes the iMNP's individual configuration files and parameters.
- **Chapter 6, "iMNP User Interface"** contains a description of the iMNP's user interface.
- **Chapter 7, "Additional Routing Options"** contains a description of additional routing options to enable you to expand or fine tune the functionality of your iMNP.
- **Chapter 8, "The iMNP Database"** describes how to create and update the iMNP's database.

1.2 CONVENTIONS

This document uses the following typographic conventions:

- **Bold** – items from the GUI menu.
- **Halfbold** – items from the GUI and the menu.
- **Code** – file names, variables and constants in configuration files or commands in body text.
- "conventions" on page 4 ⇨ – cross-references can be accessed in the PDF files by a single mouse click.

Configuration data or extracts are written in single-column tables with a gray background.

1.3 SAFETY SYMBOLS

The following symbols are used to indicate important information and to describe levels of possible danger.

	Note Useful information with no safety implications.
---	--

SAFETY SYMBOLS

	<p>Attention</p> <p>Information that must be adhered to as it is necessary to ensure that the system functions correctly and to avoid material damage.</p>
	<p>Warning</p> <p>Danger. Could cause personal injury or damage to the system.</p>
	<p>Dangerous voltage</p> <p>Could cause injury by high voltage and/or damage the system.</p>
	<p>Electrostatic discharge</p> <p>Components at risk of discharge must be grounded before being touched.</p>

2 SAFETY AND SECURITY PRECAUTIONS



Please be sure and take time to read this section to ensure your personal safety and proper operation of your TELES infrastructure system.

To avoid personal injury or damage to the system, please follow all safety instructions before you begin working on your TELES infrastructure system.

TELES infrastructure systems are CE certified and fulfill all relevant security requirements. The manufacturer assumes no liability for consequential damages or for damages resulting from unauthorized changes.

This chapter applies for all TELES systems. Information that applies only for individual TELES systems specifies the system for which it applies.

2.1 SAFETY MEASURES

Danger of electric shocks - the power supplies run on 230 V. Unplug the TELES infrastructure system from its power source before working on the power supply or extension socket.

Make sure to install the system near the power source and that the power source is easily accessible.



Do not open the TELES infrastructure system except to install an additional TELES component. Changes in the device are not permitted.

Wire your system using only the cables included in the package contents. Use only proper ISDN and Ethernet cables.

Be sure to respect country-specific regulations, standards or guidelines for accident prevention.



Bear in mind that telephone and WAN lines are also energized and can cause electric shocks.

Do not insert foreign objects into openings in the device. Conductible objects can cause short circuits that result in fire, electric shock or damage to the device.

2.2 TIPS FOR EMC PROTECTION

- Use shielded cables.
- Do not remove any housing components. They provide EMC protection.

SAFETY AND SECURITY PRECAUTIONS

2.3 SYSTEM SECURITY

This section describes all points crucial to the TELES infrastructure system's system security.

The system's location must support normal operation of TELES infrastructure systems according to EN ETS 300 386. Be sure to select the location with the following conditions in mind:

- **Location:** Make sure you install the system in a clean, dry, dust-free location. If possible, the site should be air-conditioned. The site must be free of strong electrical or magnetic fields, which cause disrupted signals and, in extreme cases, system failure.
- **Temperature:** The site must maintain a temperature between 0 and 45°C. Be sure to guard against temperature fluctuations. Resulting condensation can cause short circuiting. The humidity level may not exceed 80%. To avoid overheating the system, make sure the site provides adequate ventilation.
- **Power:** The site must contain a central emergency switch for the entire power source. The site's fuses must be calculated to provide adequate system security. The electrical facilities must comply with applicable regulations. The operating voltage and frequency may not exceed or fall below what is stated on the label.
- **Antenna:** iGATE contains no provision or protective device against power surges or lightning strikes. The installation of the antenna must fulfill all necessary safety requirements. Employ the services of a professional antenna installer.

2.4 SYSTEM SECURITY

Regular servicing ensures that your TELES system runs trouble-free. Servicing also includes looking after the room in which the system is set up. Ensure that the air-conditioning and its filter system are regularly checked and that the premises are cleaned on a regular basis.

2.4.1 REPLACING COMPONENTS

If your TELES system contains any of the following components, replace them according to the following table:

Table 2.1 Component life span

Component	Life Span
Filter pads	6 months
Power adapter	5 years
Fan	5 years

SAFETY AND SECURITY PRECAUTIONS

2.4.2 PROTECTING THE OPERATING SYSTEM

Changing configuration data may lead to malfunctions and/or misrouting, as well as possible consequential damage. Make changes at your own risk. TELES is not liable for any possible damage resulting from or in relation to such changes. Please thoroughly check any changes you or a third party have made to your configuration!

Make sure your hard disk or flash disk contains enough storage space. Downloading the log files and deleting them from the system on a regular basis will ensure your system's reliability.

Be careful when deleting files that you do not delete any files necessary for system operation.

Do not perform queries on the database. This can result in damages to the database. Do not use any MySQL tools, such as MySQL-Front to make changes in or perform tests on the database.

2.5 NETWORK SECURITY

Every day hackers develop new ways to break into systems through the Internet. While TELES takes great care to ensure the security of its systems, any system with access through the Internet is only as secure as its user makes it. Therefore, to avoid unwanted security breaches and resulting system malfunctions, you must take the following steps to secure your TELES system if you connect it to the Internet:

- Use an application gateway or a packet firewall.
- To limit access to the system to secure remote devices, delete the default route and add individual secure network segments.
- Access to the system via Telnet, FTP, HTTP, iGATE Manager or remote vGateDesktop must be password protected. Do not use obvious passwords (anything from sesame to your mother-in-laws maiden name). Remember: the password that is easiest to remember is also likely to be easiest to crack.

The firewall must support the following features:

- Protection against IP spoofing
- Logging of all attempts to access the system

The firewall must be able to check the following information and only allow trusted users to access the TELES system:

- IP source address
- IP destination address
- Protocol (whether the packet is TCP, UDP, or ICMP)
- TCP or UDP source port
- TCP or UDP destination port
- ICMP message type

SAFETY AND SECURITY PRECAUTIONS

For operation and remote administration of your TELES system, open only the following ports only when the indicated services are used.

Table 2.2 Default Ports Used for Specific Services

Service	Protocol	Port
For all systems except vGATE		
FTP	TCP	21 (default, can be set)
Telnet (for TELES debug access only)	TCP	23
SMTP	TCP	25
DNS forward	UDP	53
HTTP	TCP	80 (default, can be set)
SNTP	UDP	123
SNMP	UDP	161
H.225 registration, admission, status	UDP	1719 (default, can be set)
H.225 signaling	TCP	1720 (default, can be set)
Radius	UDP	1812 (default, can be set)
Radius accounting	UDP	1813 (default, can be set)
GATE Manager	TCP	4445 (default, can be set)
SIP signaling	UDP / TCP	5060 (default, can be set)
RTP	UDP	29000-29120 (default, can be set)
vGATE Control Unit	TCP	57343
vGATE tunneling	TCP	4446
For vGATE Control Unit and iMNP		
FTP	TCP	21
Telnet	TCP	23
MySQL database	TCP	3306
iGATE or TELES.VoIPBOX GSM/CDMA 4FX to vGATE	TCP	57342
vGATE tunneling to iGATE or TELES.VoIPBOX GSM/CDMA 4FX	TCP	4446

SAFETY AND SECURITY PRECAUTIONS

Table 2.2 Default Ports Used for Specific Services *(continued)*

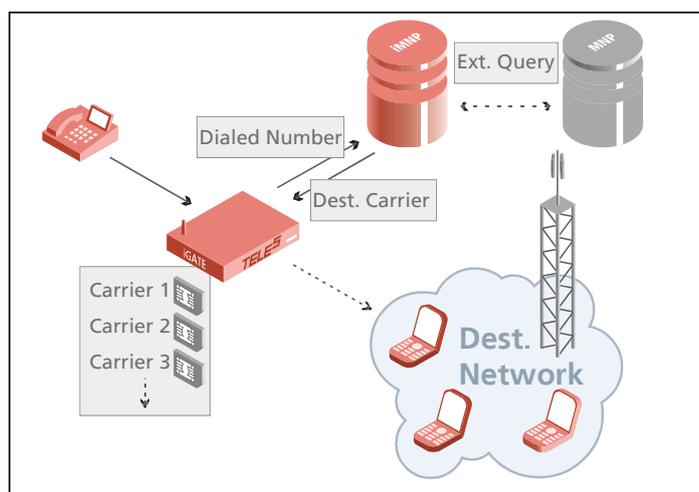
Service	Protocol	Port
iGATE or TELES.VoIPBOX GSM/ CDMA 4FX to iMNP	TCP	9003
Remote vGateDesktop	TCP	57344
Remote vGateDesktop (read only)	TCP	57345
iMNP	TCP	9003
For vGATE SIM Unit		
vGATE Control Unit plus iGATE or TELES.VoIPBOX GSM/CDMA 4FX	TCP	51500
For NMS		
FTP	TCP	21
Telnet	TCP	23
MySQL database	TCP	3306
NMS protocol	TCP	5000
NMS update	TCP	5001
NMS task	TCP	5002
NMS task	TCP	5003
NMS Listen	TCP	4444
For vGATE Call Manager		
Radius authentication	UDP	1812
Radius accounting	UDP	1813



Connection from a vGATE Control Unit to an iGATE requires ICMP access. The TCP filters listed above are activated in the default configuration of the vGATE Control Unit or the NMS server.

3 SYSTEM OVERVIEW

In most of the countries in the world, mobile carriers each have their own prefix. For end customers, this means that they would have to change their mobile phone number when they switch to another carrier. Since this would mean a significant reduction in competition, most countries require that carriers offer number portability. The result is that many mobile phone users have numbers with prefixes for carriers other than their own.



Ported Number LCR Extension is a function that enables you to map defined destination call numbers to other destination numbers or networks. This function is used to allow telecommunications subscribers to change carriers without having to change their telephone numbers.

Number portability is used in the fixed network, as well as in the mobile network. Usually the numbers are mapped in their respective networks. Implementation of this information and the corresponding routing processes result in significant cost savings, as tariff differences between calls to 'normal' and ported subscribers are eliminated.

The database of ported numbers runs on the iMNP, which provides the data online for the entire network.

The system automatically routes calls through specific ports or to defined numbers, so that all calls through the same carrier (including ported numbers) are routed through the port containing that carrier's SIM card as defined.

The iMNP can also access an external database to search for numbers it does not find in its own database. The iMNP automatically enters new numbers in its own database, so that the next call to the number will be routed accordingly without having to access the external database.

SYSTEM OVERVIEW

3.1 FEATURES

- Simple database generation and administration
- iMNP in proxy mode: communicate with an additional external database
- Numbers found in external database automatically entered in iMNP
- One database for all systems in the network
- Unlimited number of database entries
- No format restrictions for database entries
- Gateway whitelists
- Generation of statistics
- Automatically imports contents of text files to the database

3.1.1 SYSTEM REQUIREMENTS

Ported number screening requires the following:

- iGATE/VoIPGATE running second generation software 11.4 or higher, or first generation software 6.00f or higher and iLCR VoIP Board driver version 184 or higher
- An active license package for number portability
- A iMNP server
- A static IP address

4 iMNP INSTALLATION



Implementation of individual scenarios requires adjustments to the appropriate interfaces.

Use a UPS to avoid possible damage resulting from power interruptions.

4.1 NETWORK AND FIREWALL REQUIREMENTS

Before installing your iMNP, make sure you can fulfill the following network and firewall requirements:

- Message round-trip time must be less than 500 ms. You can use PING to measure the round-trip time.
- The iMNP may be behind a PAT (Port Address Translation) firewall, as port 9003 may not be changed.
- Connection setup must be possible from iGATEs/VoIPGATEs to the iMNP at all times.

4.2 iMNP HARDWARE INSTALLATION

The iMNP runs on a 1HU, 19" PC. iMNP is a background server process with an attached MySQL V. 4.0.22 database that communicates with VoIPGATEs, iGATEs and with an optional external server.

Figure 4.1 provides a rear view of the iMNP. Connect the iMNP to the Ethernet LAN1 Interface.

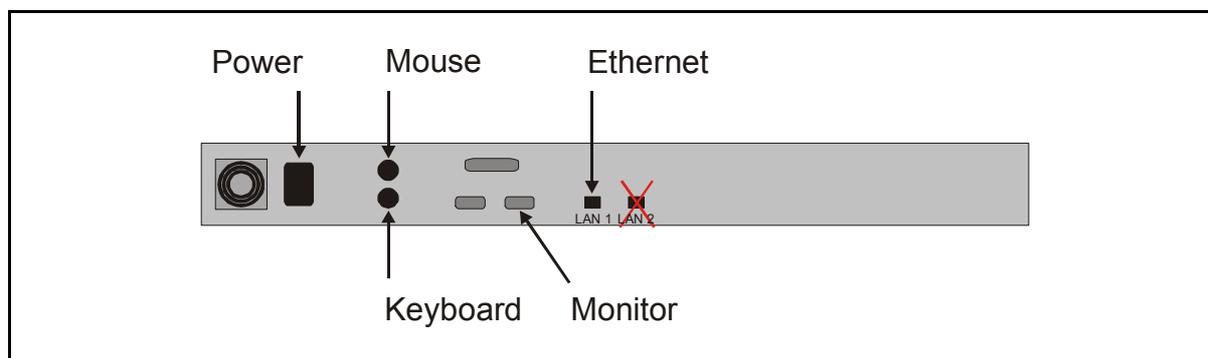


Figure 4.1 iMNP - Rear view

5 ROUTING AND CONFIGURATION

5.1 CONFIGURATION OF THE iGATE AND/OR VoIPGATE

Before you get started, you must enter the following settings in the connected iGATEs and/or VoIPGATEs.

5.1.1 SECOND GENERATION CONFIGURATION

The following configuration applies only for iGATE and VoIPGATE systems running second generation software version 11.4 or higher. For a description of the configuration of first generation systems, see Chapter 5.1.2 on page 15 ⇨.

The **NumberPortability** section of the `pabx.cfg` file includes the parameters necessary for communication with the iMNP.

Table 5.1 Overview of the NumberPortability parameters

Parameter	Description
<code>MNPQAddress=<ip addr></code>	Enter the iMNP server's IP address.
<code>MNPQPort=<port></code>	Enter port 9003.
<code>MNPQAddress2=<ip addr></code>	Enter the IP address to which the second number portability query is to be sent when "!" appears in the mapping entry. A second iMNP will then be queried, for example if the first one is not online.
<code>MNPQPort2=<port></code>	Enter port to which the second number portability query is to be sent.
<code>MNPQSum=<mode></code>	This parameter must be activated (Yes) if a iMNP is used.

Example 5.1 NumberPortability parameters in the `pabx.cfg`

```
[NumberPortability]
MNPQAddress=172.16.0.100
MNPQPort=9003
MNPQSum=Yes
```

5.1.2 FIRST GENERATION CONFIGURATION IN THE TIB.CFG

The following configuration applies only for iGATE and VoIPGATE systems running first generation software 6.00f and iLCR VoIP Board driver Version 184. For a description of the configuration of second generation systems (cf. Chapter 5.1.1 on page 14 ⇨).

The **System** section of the tib.cfg file includes the parameters necessary for communication with the iMNP..

Table 5.2 Overview of the System parameters

Parameter	Description
MNPQ:<mode>	Enter Yes to activate the iMNP.
MNPQAddress:<ip addr>	Enter the iMNP server's IP address.
MNPQPort:<port>	Enter port 9003.
MNPQSum:<mode>	This parameter must be activated (Yes) if a iMNP is used.

Example 5.2 System parameters in the tib.cfg

```
[System]
MNPQ:Yes
MNPQAddress:172.16.0.100
MNPQPort:9003
MNPQSum:Yes
```

5.1.3 CONFIGURATION IN THE ROUTE.CFG

The configuration described here is for all compatible iGATE and VoIPGATE systems.

The following routing entry in the route.cfg file is required to activate an iMNP query:

MapAll<num>=|D@<num><<01

If you use digit collection, it must appear before the database request in the routing configuration (for a description of digit collection, see the chapter "Digit Collection" in the iGATE/VoIPGATE Systems Manual). A \$ placeholder mapping results in a subsequent iMNP query:

MapAll<num>=|\$ph<<<count>

MapAllph=|D@<num><<01

The routing entries for the iMNP results contain the keyword QN, followed by the query result, an equal sign and the controller:

MapAllQN<query>=<controller>

The following example uses digit collection (11 digits plus \$ph). Every incoming call with a leading digit of 0 results in an iMNP query. The SIM-card LAINs are used instead of controller numbers. All numbers that come back from the iMNP with the LAIN for Carrier_1 (26211) are then routed through Carrier_1's SIM card with CLIR. The same applies for Carrier_2 (26212), Carrier_3 (26213) and Carrier_4 (26214). Numbers that the iMNP sends back as non-existing in the iMNP database (00000) are rejected. Numbers that are not found in the external database or numbers that could not be found because of a failed connection to the external server (99999) are routed as they come in (normal). If the iMNP does not respond within two seconds (D@0), the call is routed as it comes in, whether it is ported or not:

Example 5.3 Parameters in the route.cfg

```
DTMFWaitDial=5
MapAll0=|$ph<<14
MapAllph=|D@0<<01

MapAllQN26211=#26211
MapAllQN26212=#26212
MapAllQN26213=#26213
MapAllQN26214=#26214
MapAllQN00000=&81
MapAllQN99999=$normal
MapAllD@0=$normal1
; not in Database
;Carrier_1
MapAllnormal0151=#262110151
MapAllnormal0160=#262110160
MapAllnormal0170=#262110170
MapAllnormal0171=#262110171
MapAllnormal0175=#262110175
;Carrier_2
MapAllnormal0152=#262120152
MapAllnormal0162=#262120162
MapAllnormal0172=#262120172
MapAllnormal0173=#262120173
MapAllnormal0174=#262120174
;Carrier_3
MapAllnormal0155=#262130155
MapAllnormal0163=#262130163
MapAllnormal0177=#262130177
MapAllnormal0178=#262130178
;Carrier_4
MapAllnormal0159=#262140159
MapAllnormal0176=#262140176
MapAllnormal0179=#262140179
```

5.2 SETTING UP AND MAINTAINING THE iMNP DATABASE

iMNP entries are maintained in text files. Each entry appears on a separate line containing the dialed number, a comma followed by the new five-digit ported carrier prefix (referred to in this document as LAIN) and destination numbers. You can either repeat the number after the LAIN or simply enter a +. The iMNP will interpret both entries in the same way. iMNP entries can appear in any order and be of any length:

```
<num> ,<LAIN><num>
or: <num> ,<LAIN>+
```

ROUTING AND CONFIGURATION

The iMNP is divided into two tables. One contains individual direct numbers that are to be ported to a defined LAIN. The other table contains partial numbers; all numbers beginning with the digits entered here will be ported to the defined LAIN. These two tables are maintained in separate files.

In the following example of direct portability, only the carrier is ported. No call-number conversion occurs:

Example 5.4 iMNP entries for direct portability

```
11721234567,26211+
11712345671,26212+
11775671234,26212+
11546712345,26217+
11743456712,26213+
11734567123,26217+
...
```

In the following example of partial portability, all calls beginning with the defined digits are ported as configured:

Example 5.5 iMNP entries for partial portability

```
11721234,26211+
1171234567,26212+
117756,26212+
1154671,26217+
...
```

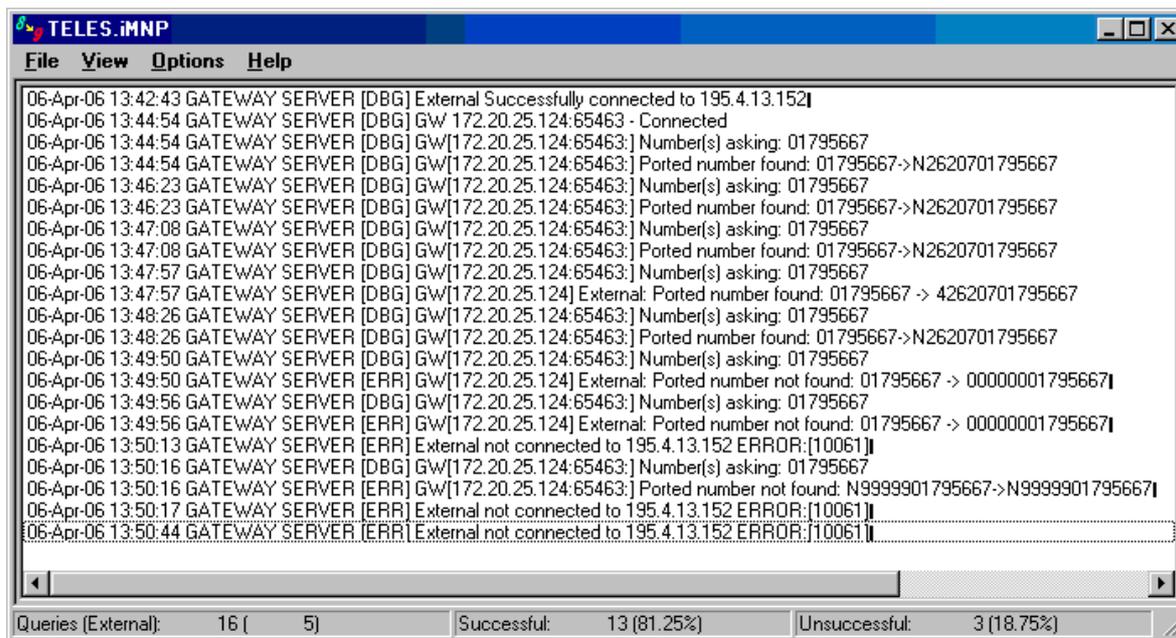
You can import and export the tables to and from the text files from the File menu. You can import partial tables that contain only individual new or changed entries. In this case it is not necessary to export the tables first.

By selecting **Settings** from the **Options** menu, you can also set the iMNP to import the files automatically (cf. Table 6.1 on page 19 ⇒).

6 iMNP USER INTERFACE

The iMNP application is used to record and display a log of activity and for administration of the server.

The file `iNumPortCtrl.exe` is located in the folder `D:\NumberPortability`. The Windows desktop contains a link to this file. Double-click this link to start the iMNP.



If you close the interface, you can then open the iMNP user interface by double- or right-clicking the  icon on the right side of the taskbar.

The log contains up to 2500 lines describing all activity on the iMNP. After the log has reached 2500 lines, the oldest entries are deleted. All entries are written into the log file, which is generated every day at midnight.

The file is then saved here: `D:\NumberPortability\logfiles`.

iMNP USER INTERFACE

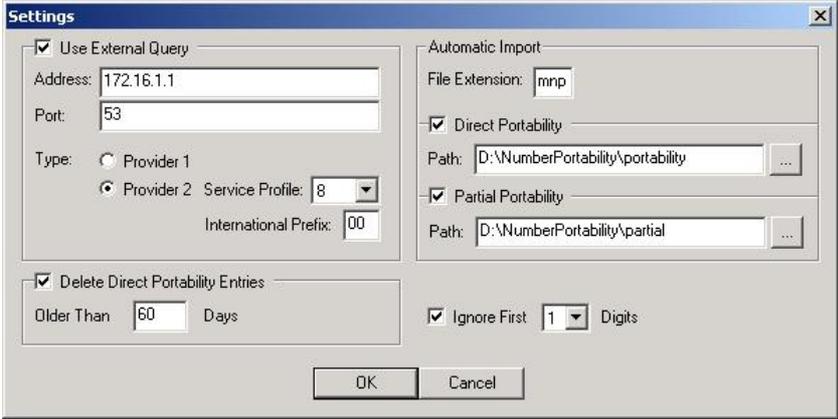
The menu bar contains the following:

Table 6.1 iMNP user interface menu bar

Item	Description
File Menu	
Export Database	Select one of the following to export iMNP entries to a text file: Direct Portability Click here to export the table of complete individual numbers. Partial Portability Click here to export the table of partial numbers.
Import Database	Select one of the following to import entries from a text file to the iMNP: Direct Portability Click here to import the table of complete individual numbers. Partial Portability Click here to import the table of partial numbers.
Exit	Click here to close the iMNP.
View Menu	
Query Statistics	Click here to open a window containing statistics about all gateway queries. Click Query Statistics in the View menu to select the dates you want to display. If you click Show Sums Only , only sums will be shown. Statistics are generated daily at midnight. Statistics from the current and previous month are saved in the database. The following statistics appear in the window: IP Address Lists the gateway's IP address Date Lists the date the statistics were generated Queries Lists the total number of queries for the day Successful Lists the total number of successful queries, followed by the percentage Unsuccessful Lists the total number of unsuccessful queries, followed by the percentage Internal Successful Lists the total number of successful queries to the iMNP, followed by the percentage Internal Unsuccessful Lists the total number of unsuccessful queries to the iMNP, followed by the percentage External Successful Lists the total number of successful queries to an external provider, followed by the percentage External Unsuccessful Lists the total number of unsuccessful queries to an external provider, followed by the percentage Last Query Lists the time for last query was made by the gateway
Status Bar	Click here to display or hide the status bar.

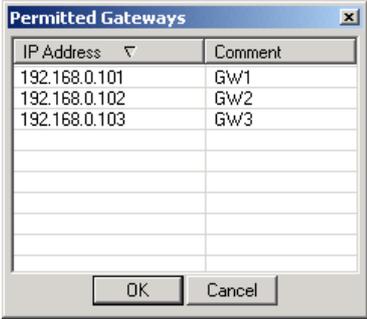
iMNP USER INTERFACE

Table 6.1 iMNP user interface menu bar

Item	Description
Options Menu	
Log Settings	This option allows you to select what kind of log entries you would like. Default settings are Error and Debug . Select Detail to receive detailed entries.
Settings	 <p>Check Use External Query to query external databases when the corresponding checkbox is active. Any new numbers found in the external database are automatically entered in the iMNP. Enter the external server's IP Address and the Port used for the connection. Provider 1 queries occur via TCP interface. Provider 2 queries occur via DNS interface. If you select Provider 2, you must set the Service Profile defined by the provider. Queries to Provider 2 must include the country code. Enter the prefix for international numbers in the International Prefix box. The iMNP will automatically enter any numbers that result from these queries in the database.</p> <p>If you activate the checkbox Delete Direct Portability Entries, the resulting entries will be deleted following the number of days entered in the corresponding box. This option can also be activated by right-clicking the iMNP icon on the right side of the taskbar.</p> <p>In the Automatic Import group box, you can define the path to a directory that contains a file with the extension .mnp (default) or .txt. Depending on which checkbox(es) are activated, the iMNP will import the contents of the file in the directory to the Direct Portability and/or the Partial Portability database(s) (cf. Chapter 5.2 on page 16 ⇔). If you activate both, you must create different folders for direct portability and partial portability. After that, the files will be renamed as follows: <name>_<date>_<time>.old. The iMNP checks for a new file in the directory every ten minutes.</p> <p>If you activate the option Ignore First Digits, the iMNP will ignore the first 1-5 digits in its search, depending on the number of digits you define.</p>

iMNP USER INTERFACE

Table 6.1 iMNP user interface menu bar

Item	Description
Gateway Whitelist	<p>Click here to define gateways you want to allow to query the iMNP server. Double-click or right-click to open the editor, from which you can add, edit or delete gateways from the list. Leave the Gateway Whitelist empty to allow queries from all gateways.</p> 
Reset Statistics	Select this option to reset the statistics in the status bar.
Delete Direct Portability Table	When you select this option, you will delete all of the entries in the direct portability table.
Delete Partial Portability Table	When you select this option, you will delete all of the entries in the partial portability table.
Delete Entries in Direct Portability Table	When you select this option, you can enter individual numbers in the dialog that appears to delete them from the iMNP.
Help Menu	
About iMNP	Click here to open a window with iMNP version information.

7 ADDITIONAL ROUTING OPTIONS

7.1 BACKUP iMNP

Enter the following additional parameter in the pabx.cfg to query a backup iMNP if the first iMNP does not respond:

```
MNPQAddress2=<ip addr>
MNPQPort2=<port>
```

Example 7.1 Parameter for iMNP backup

```
[NumberPortability]
MNPQAddress=172.16.0.100
MNPQPort=9003
MNPQAddress2=172.16.0.101
MNPQPort2=9003
MNPQSum=Yes
```

An exclamation point (!) in the ROUTE.CFG is the keyword for sending the request to the second iMNP:

```
MapAllD@<num>=|D@!<num><<01
```

The following example uses digit collection (11 digits plus \$ph). Every incoming call with a leading digit of 0 results in a database query to the iMNP with the IP address 172.16.0.100. The SIM-card LAINs are used instead of controller numbers. All numbers that come back from the iMNP with the LAIN for Carrier_1 (26211) are then routed through Carrier_1's SIM card with CLIR. The same applies for Carrier_2 (26212), Carrier_3 (26213) and Carrier_4 (26214). Numbers that the iMNP sends back as non-existing in the iMNP database (00000) are rejected. Numbers that are not found in the external database or numbers that could not be found because of a failed connection to the external server (99999) are routed as they come in (normal).

ADDITIONAL ROUTING OPTIONS

If the iMNP does not respond within two seconds (D@!0), a backup iMNP will be queried. The routing entries for the second iMNP also contain an exclamation point "!" and follow the same syntax as those for the first iMNP.

Example 7.2 Sample configuration for iMNP backup

```
MapAll0=|ph<<14
MapAllph=|D@0<<01

MapAllQN26211=#26211
MapAllQN26212=#26212
MapAllQN26213=#26213
MapAllQN26217=#26214
MapAllQN00000=&81
MapAllQN99999=$normal
MapAllD@0=|D@!0<<01

MapAllQ!N26211=#26211
MapAllQ!N26212=#26212
MapAllQ!N26213=#26213
MapAllQ!N26217=#26214
MapAllQ!N00000=&81
MapAllQ!N99999=$normal
MapAllD@!0=$normal

;Carrier_1
MapAllnormal0151=#262110151
MapAllnormal0160=#262110160
...
```

7.2 DIFFERENT QUERY DESTINATIONS FOR DIFFERENT CALL NUMBERS

Enter the following additional parameter in the pabx.cfg to query one iMNP for some prefixes and another iMNP for others:

```
MNPQAddress2=<ip addr>
```

```
MNPQPort2=<port>
```

Example 7.3 Parameter for different query destinations for different call numbers

```
[NumberPortability]
MNPQAddress=172.16.0.100
MNPQPort=9003
MNPQAddress2=172.16.0.101
MNPQPort2=9003
MNPQSum=Yes
```

You can also use the exclamation point "!" in the route.cfg to send some numbers to one iMNP and others to a second iMNP.

ADDITIONAL ROUTING OPTIONS

In the following example, all numbers beginning with 00 (international) are sent to the first iMNP (172.16.0.100). Numbers beginning with 0 (national) are sent to the second iMNP (172.16.0.101). Calls with numbers that come back from the first iMNP with 11111 are routed through controller 40 to the VoIP carrier Carrier_1. Calls with numbers that come back from the first iMNP with 22222 are routed to the VoIP carrier Carrier_2. All international numbers that are not found are routed unchanged through the PSTN controller (9). National calls that are sent to the second iMNP are terminated through the PSTN using the carrier prefix 12345 if 12345 comes back from the iMNP. If 54321 comes back, the carrier with the prefix 54321 is used. If 99999 comes back, national calls are terminated unchanged through the PSTN. All local calls are routed unchanged through the PSTN.

Example 7.4 Sample configuration for different query destinations for different call numbers

```
MapAll00=| $ph<<14
MapAll0=| $sh<<14
MapAll1=91
MapAll2=92
MapAll3=93
MapAll4=94
MapAll5=95
MapAll6=96
MapAll7=97
MapAll8=98
MapAll9=99

MapAllph=|D@00<<01
MapAllsh=|D@!0<<01

MapAllQN11111=40Carrier_1:
MapAllQN22222=40Carrier_2:
MapAllQN00000=&81
MapAllQN99999=$normal
MapAllD@0=900

MapAllQ!N12345=912345
MapAllQ!N54321=954321
MapAllQ!N00000=&81
MapAllQ!N99999=$normal
MapAllD@!0=90

MapAllnormal=9
```

8 THE iMNP DATABASE

8.1 UPDATING THE iMNP DATABASE

To update the database NumPortDB, you must first close the program `iNumPortCtrl.exe`.

The following instructions update Version 1.0 to 14.0. If you are updating to or from another version, enter the relevant version numbers in the appropriate places.



iMNP Version 14.0 is compatible only with MySQL Version 4.0.X.

- Stop the **WinMySQLAdmin Service** by right-clicking the  icon in the right-hand corner of the taskbar and selecting **WinNT | Stop the Service** from the context menu. The traffic light will then turn red.
- Restart the WinMySQLAdmin Service by selecting **WinNT | Start the Service** from the same context menu, so that the traffic light turns green.
- Start the MSDOS command prompt at **Start | Programs | Accessories | Command Prompt**
- Enter `D:` and press Return
- Enter `cd mysql\bin` and press Return
- Enter `mysql -u simdbuser -p` and press Return
- Enter `password:simdb` and press Return
- Enter the command `\.` (backslash period space) and enter the path to the script (in this example, on the E: drive):
- `E:\NumPort-Files\V14.0\NumPort_DIFF_V10_V140.sql`
- Press Return
- Enter `exit` to exit mysql
- Stop the WinMySQLAdmin Service by right-clicking the  icon in the right-hand corner of the taskbar and selecting **WinNT | Stop the Service** from the context menu. The traffic light will then turn red.
- Restart the WinMySQLAdmin Service by selecting **WinNT | Start the Service** from the same context menu, so that the traffic light turns green.
- Remove the old file `iNumPortCtrl.exe` from the installation folder `D:\NumberPortability`, as well as the shortcut from the Windows Desktop. You can also delete the folder `D:\NumberPortability` if you like.
- Run the file `Setup.exe` from the folder that contains the new Version (`E:\NumPortFiles\V14.0`).
- In the Setup Wizard, click **Browse** and select the installation folder `D:\NumberPortability`. Select installation for **Everyone**. Continue by clicking **Next** until you have the option to **Close** the Setup Wizard. A shortcut to `iNumPortCtrl.exe` will automatically appear on the Windows Desktop.
- You can now start `iNumPortCtrl.exe`.

8.2 CREATING A BACKUP OF THE iMNP DATABASE

To secure your database, we strongly recommend that you create a backup.

To create a backup of the database, create a directory `E:\BackupDB` and copy the database `F:\mysql\data\NumPortDB` into the new directory.

To distinguish between different database versions, rename the database to include the version number in the name. To find the version number, select About iMNP from the Help menu of the iMNP.

Example:

You want to create a backup for Version 1.0. The path for the backup database will be:

`E:\BackupDB\NumPortDB10`



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