ActFax Server

User's Manual

Sixth Extended Edition

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Table of Contents

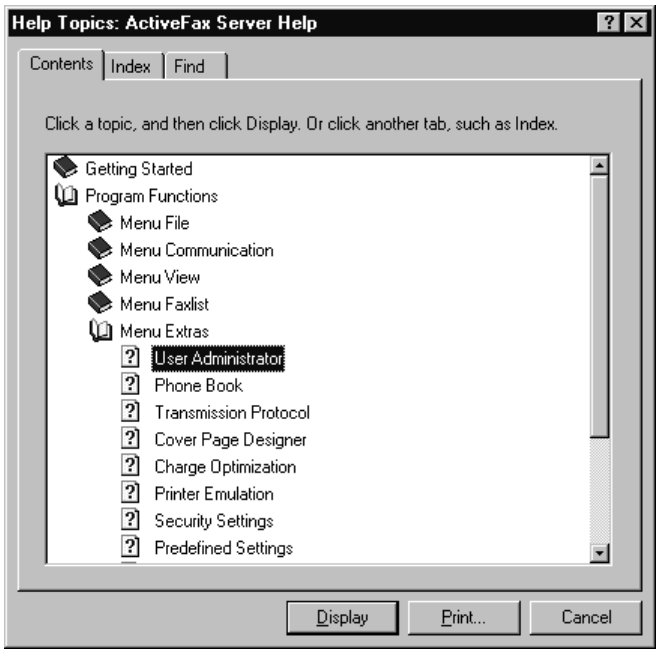
1. Introduction

1.1. Using the Manual

This manual describes how to install, configure and use ActiveFax. The topics of the manual are subdivided into different chapters. The first two chapters give an overview of the program features and the installation of the software. The other chapters contain information about the configuration of the software and a description of routine tasks. The addendum at the end of the manual includes the glossary, an overview of useful keyboard shortcuts, the frequently asked questions (FAQ), a troubleshooting guide, sample applications and the index.

1.1.1. Help System

In addition to the contents of this manual, further help and information can also be found in ActiveFax' help system. Through the context sensitive online help of ActiveFax, detailed assistance is available for all functions and program options. The help system can be activated either with the menu option *Help / Contents and Index* or with the *Help* button.



1.1.2. Information Symbols

This manual uses picture symbols to direct your attention at important text passages. These symbols are used to highlight links to additional information about specific topics, critical settings or other specialties referring to a previously discussed topic.

The "*Information" symbol* is used to direct your attention to additional information of the same topic. This symbol is also used to highlight useful tips simplifying daily work.

The "*Attention" symbol* is used to direct your attention to common misunderstandings, sources of error and critical settings.

1.2. What is ActiveFax?

ActiveFax is one of the most powerful network fax solutions currently on the market. The ActiveFax software enables you to manage all your fax documents with just a few mouse clicks, without complicated and extensive administration work. Messages can be transmitted either by **fax** or as an **email**. The sophisticated user and security concept guarantees straightforward document management and protection against unauthorized access. Network wide access to all fax messages is available from any workplace through the fax client program.

Of course ActiveFax also supports all features and functions one can expected from a state-of-the-art network fax solution, like detailed transmission protocols, global and private phone books, cover pages and overlays, as well as automatic transmission time optimization, least cost routing and inbound fax routing. Beside that, ActiveFax can also be used as a fax-on-demand server.

In addition to creating fax messages with any Windows application, ActiveFax can also be used to generate faxes from non-Windows operating systems like **UNIX** or **Linux**. The support of the network printer protocol **LPD/LPR** and printer commands of HP-LaserJet (PCL), Epson-LQ and optionally Postscript and PDF guarantees simple and quick integration of fax and email services also in UNIX and Linux environments.

1.3. System Requirements

When running ActiveFax, it is recommended to use a system with at least the following minimum requirements: The operating system can be Windows 95 / 98 / ME, Windows NT (Server or Workstation) or Windows 2000 / XP / 2003 / Vista / 2008 (32-bit or 64-bit). You also need a **fax modem**, an **ISDN adapter** or a fax board from **Brooktrout** or **Intel/Dialogic**. To use the software on multiple computers, there also needs to be a network connection (LAN) available. The server computer should be at least an 80486 model with 66 MHz and 64 MB RAM. The display adapter should be configured to a resolution of at least 800x600 and 256 colors.

Keep in mind, that these values are just approximate values. ActiveFax can also be installed on hardware equipment that does not meet these requirements; however performance of the software decreases significantly then.

1.3.1. System Requirements Fax Server

Resource	Minimum Requirement	Recommended Requirement
Processor (CPU)	80486 / 66 MHz	Pentium / 300 MHz
Working Memory (RAM)	64 MB	512 MB
Available Disk Space	80 MB	1000 MB
Display Adapter	640x480, 16 colors	1024x768, 65536 colors
Operating System	Windows 95	Windows 98/ME 2000/XP/2003/Vista/2008
Network	TCP/IP or NetBeui	TCP/IP

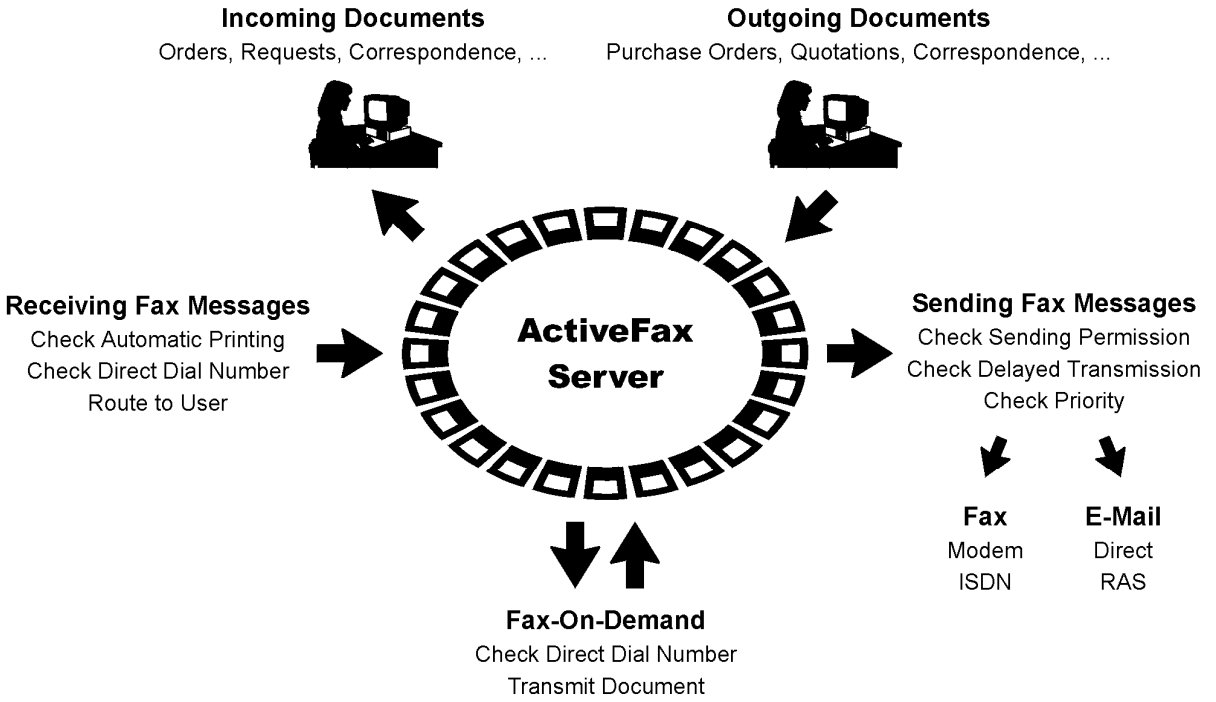
1.3.2. System Requirements Fax Client

Resource	Minimum Requirement	Recommended Requirement
Processor (CPU)	80846 / 33 MHz	80486 / 66 MHz
Working Memory (RAM)	32 MB	256 MB
Available Disk Space	10 MB	100 MB
Display Adapter	640x480, 16 colors	800x600, 256 colors
Operating System	Windows 95	Windows 95/98/ME NT/2000/XP/2003/Vista/2008
Network	TCP/IP or NetBeui	TCP/IP

1.4. Software Concept

The primary idea behind ActiveFax is making all tasks as automatically as possible. This has been consequently realized in all parts of the software. The automation already starts at the installation of the software. According to the slogan “unpacking and starting”, all connected hardware is detected and configured fully automatically. Thus there is almost no need for administrative work. To ensure high flexibility, all parts of the software can be individually configured to meet your requirements and preferences.

The core part of ActiveFax is the fax server. The fax server stores and manages all fax and email messages and controls all communication tasks (communication to the outside world through modems, ISDN adapters and fax boards and internal communication through the LAN). The fax client part of ActiveFax is used to access the single fax documents from any computer in the network. The fax services supported by ActiveFax can be subdivided into three main categories: Outgoing fax messages (sending), incoming fax messages (receiving) and fax-on-demand (fax polling).



1.4.1. Outgoing Faxes (Sending)

Outgoing fax documents can be created in various ways with ActiveFax. The easiest way to create a new fax messages is printing a document from a **Windows application** (i.e. WinWord). ActiveFax also supports numerous communication services, so fax messages can also be created from **UNIX**, **Linux** and other non-Windows operating systems. Especially when using UNIX or Linux, the **LPD/LPR** printer service can be used to create new fax messages; with LPD/LPR, ActiveFax is accessed exactly the same way as every other physical printer in the network.

Especially when sending fax messages from own (self-programmed) applications (i.e. purchase order programs) the fax parameters (recipient, subject, priority, ...) can already be specified from within the application. That way, the fax transmission can be done fully automatically without user interaction (the user does not need to enter the recipient of the fax message twice in that case). When using that way of server connection, the fax parameters are transmitted to the fax server through so-called **data fields**. Since data fields are embedded directly into the fax document, there is no need to deal with complex programming techniques like DDE (you just add the parameters as normal text directly to the document).

The transmission of the pending fax documents is done fully automatically by the fax server. Depending on the preferred transmission time and the priority of the fax messages, documents will be transmitted according to their chronological order. Fax messages for unreachable recipients (i.e. because of a busy line) will be automatically repeated periodically. The period between the call attempts can be individually configured. If a fax message cannot be delivered within a pre-configured number of attempts, the message will be marked as “undeliverable”. Such fax messages are listed separately by ActiveFax. Beside that, the permission for the single users can also be configured in a way that sending clearance is required for outgoing fax messages.

1.4.2. Outgoing Emails

Transmission of emails is done exactly the same way as sending fax messages. The only difference is that you have to enter the email address of the recipient instead of the fax number. Depending on the configuration of the fax server, ActiveFax tries to convert documents to text format whenever possible to send the message directly in the body of the email. If the con-

version to text format cannot be done, the document is sent as an email attachment in **PDF**, **TIFF** or **GIF** format. Delivery of the emails through the Internet is done fully automatically through a direct connection to an **SMTP server** (mail server) or a dialup connection with RAS (Remote Access Service).

1.4.3. Incoming Faxes (Receiving)

One of the main advantages of a fax server is the capability of routing inbound fax messages to the different users. ActiveFax supports various methods of inbound fax routing. The most reliable method is using a dedicated **direct dial number** for each user. That way fax messages can be sent directly to individual users; the number of misrouted messages normally tends to zero with that type of routing. Due to technical reasons, direct dial numbers are only available when using an ISDN adapter or a DID (Direct Inward Dialing) capable modem or fax board. Another way of inbound fax routing is **CSID routing** (sender identification). When using that routing method, a phone book entry with the senders fax number (CSID) is mapped to a specific user. Inbound fax routing can also be done based on the modem (fax number) a fax is received on. When using that method, specific user entries are mapped to the available modems (fax numbers).

Notification of new fax messages can be done in multiple ways. When using the fax client, the receipt of new fax messages can be signaled with a popup window on the client computer. Beside that it is also possible to **automatically print** incoming fax messages. The automatic printing function can be configured to different printers for the single users, so it would be possible to print inbound fax messages directly on a user's workplace printer. To save paper and expenses it is also possible to print fax messages in compressed format. That way, multiple pages of a fax messages will be scaled down and printed on a single sheet of paper. Additionally it is also possible to automatically forward fax messages to multiple **email** addresses or to automatically **export** the faxes to a predefined directory.

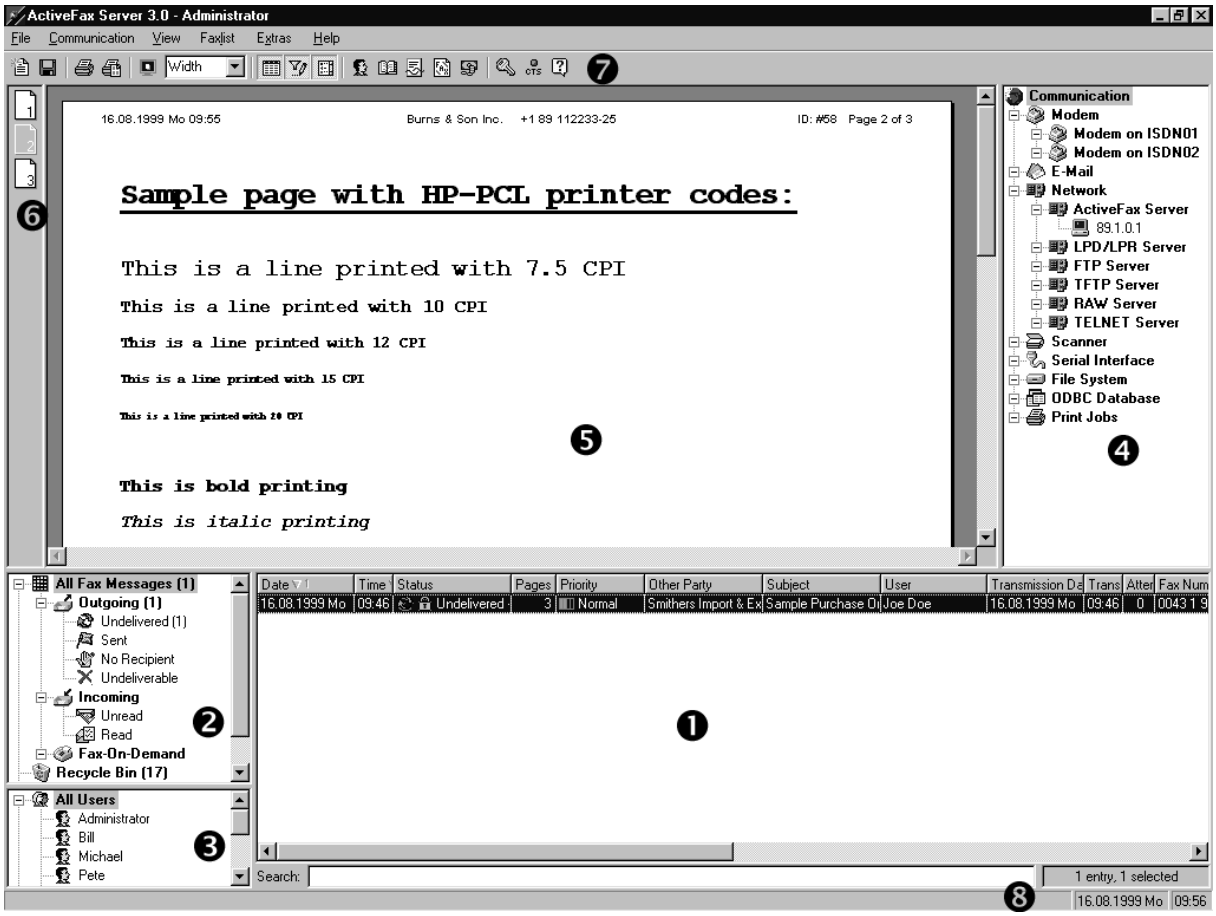
1.4.4. Fax-On-Demand

ActiveFax also includes a fax-on-demand server. "Fax-On-Demand" means, that documents are made available to be requested from other fax machines. That way, different types of documents (i.e. price lists, data sheets, ...) can be made accessible to a large number of people. A fax-on-

demand document is either mapped to a specific fax modem (fax number) or when using an ISDN adapter to a direct dial number. The steps required to create fax-on-demand documents are exactly the same as for creating normal fax messages.

Beside the possibility of using ActiveFax as a fax-on-demand server, the software can also be used to request documents from other fax-on-demand systems. This means that ActiveFax can be used to receive a fax document by calling the number of a different fax-on-demand system.

1.5. Screen Description



❶ The **Faxlist** contains a list of all available fax messages. By selecting an entry of the faxlist, the selected fax message is automatically loaded and displayed. By double-clicking or using the *Faxlist* menu, the settings of a faxlist entry can be displayed and modified.

❷ The **Fax Selection Window** is used to select the type of fax message that should be displayed in the faxlist. Beside that, the **recycle bin** and **archive** are also included in that window.

❸ The **User Selection Window** is used to select the user or group that should be displayed in the faxlist.

❹ The **Communication Window** displays the status of all communication services controlled by ActiveFax. By double-clicking or with the *Communication* menu, the settings for the single communication services can be configured.

❺ The **Fax Window** displays the fax message currently selected in the faxlist. The size of the fax message can be changed with the left and right mouse button or with the zoom field of the toolbar.

❻ The **Page Selection Window** is used to change between the pages of a multi-page fax message.

❼ The **Toolbar** contains buttons for important and often used functions to make sure that these functions can be called very fast.

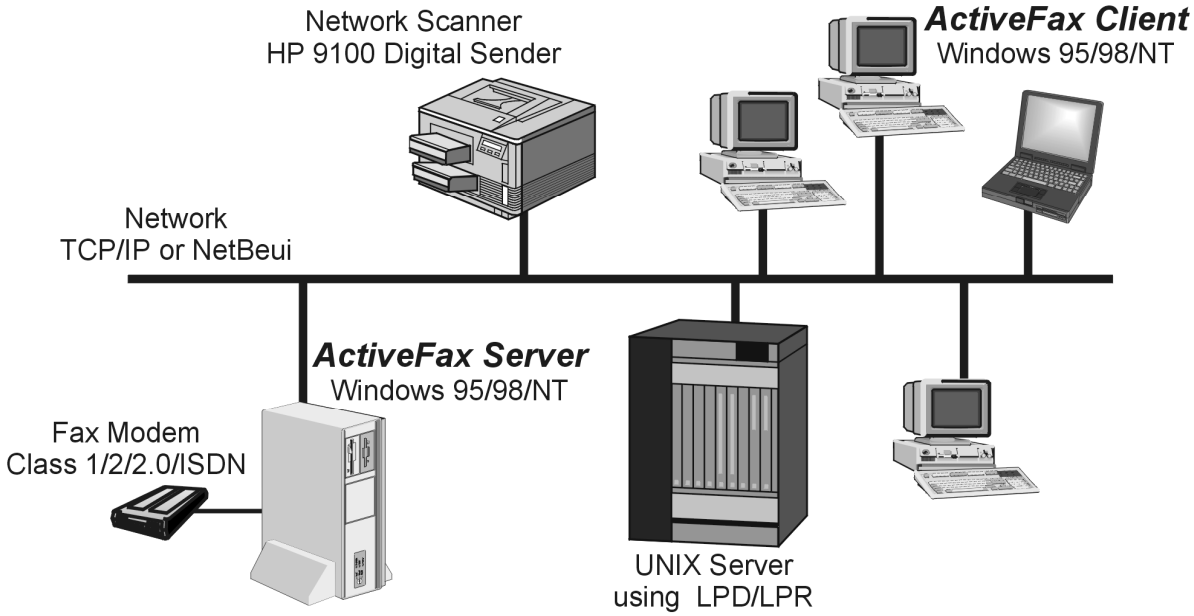
❽ The **Status Line** displays the date and time as well as other status information of the fax software.

2. ActiveFax Installation

2.1. Program Overview

ActiveFax mainly includes two programs, the fax server and the fax client program. The installation of the fax server needs to be done only once on a single computer; all other computers in the network have the fax client installed to automatically load the fax documents directly from the fax server. The fax client needs to be installed on all computers where fax messages need to be created or processed.

It is recommended to install the fax server part of ActiveFax on a system designed for server operation. Especially when using **delayed fax transmissions** you should also take care that the fax server computer is not turned off during night hours.

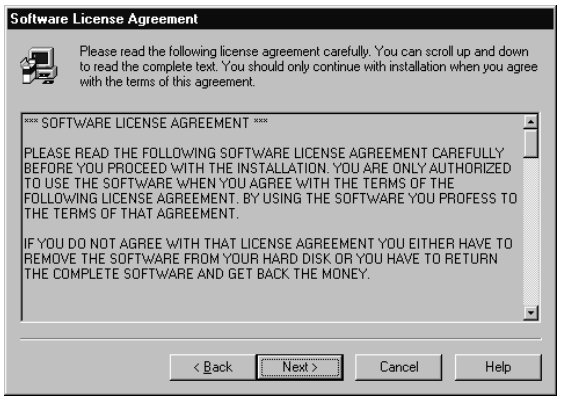


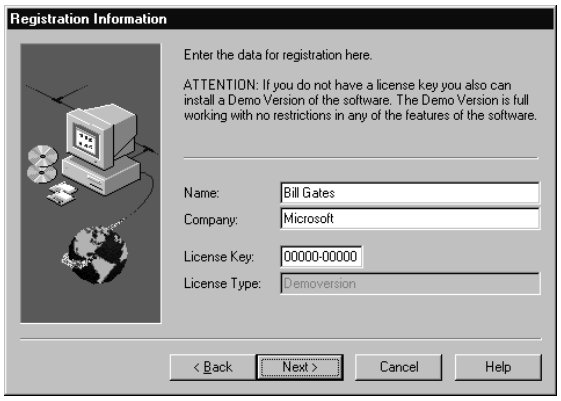
The sample configuration above shows a typical installation with ActiveFax. This configuration is composed of the fax server as the core part of the faxing system, several fax clients and a UNIX server that has been integrated using the network protocol LPD/LPR. Fax messages on paper are scanned and faxed with the HP Digital Sender network scanner.

2.2. Running the Setup

Before you start with the installation of ActiveFax, you should clarify on which computers you want to install the fax client and which computer should be used for the installation of the fax server. It is recommended to first install the fax server and after that the single fax clients. To perform the installation of ActiveFax, follow these steps:

1) Insert the program CD into the CD-ROM drive and start the **Setup program** or run the setup from the download file actfax_setup_en.exe. Follow the instructions of the Setup program that guides you through the installation.
2) Enter your **name** and **license key**. If you do not have a valid license key, use the key **00000-00000** to register a fully functioning **demo version** of ActiveFax. There are no restrictions or limitations in program features when you register a demo version of ActiveFax.
3) Choose the directory for the installation of the software. The default directory for the installation is the default Windows program directory. The “Search” button can be used to change the preferred target directory or drive.
4) Choose the **installation procedure** now. You can choose between a complete installation





(server and client), a server-only installation or a client-only installation. Take care that the fax server is normally only installed on a single computer in the network. If the fax server has already been installed, you typically choose a client installation here.

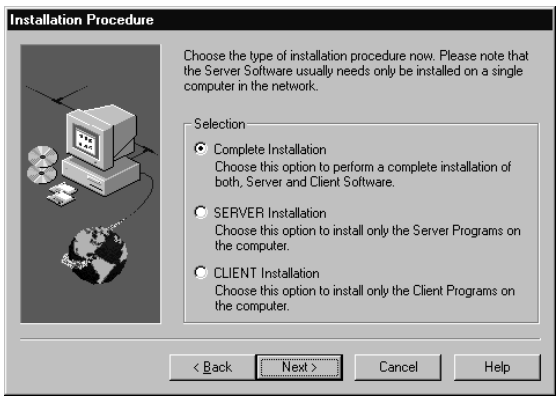
5) Select the program components that should be installed. According to the previously selected installation procedure, the correct settings are already preset here. Make sure there is enough disk space available on the installation drive.

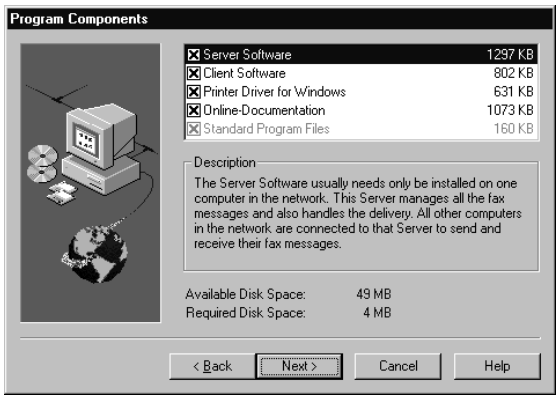
6) Choose the program group that should be used to create the program icons.

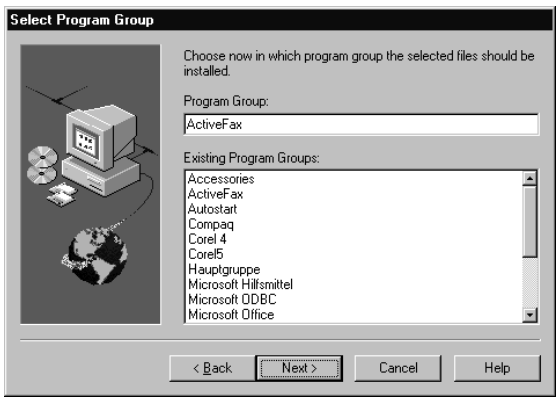
7) Specify if the fax server (or fax client) should be **automatically started** during system startup. Especially when running Windows NT / 2000 / XP / 2003 / Vista / 2008, it is strongly recommended to automatically start the fax server; the fax server is started as a **service** in that case and is running right after the computer has been booted, also when nobody is logged on to the system.

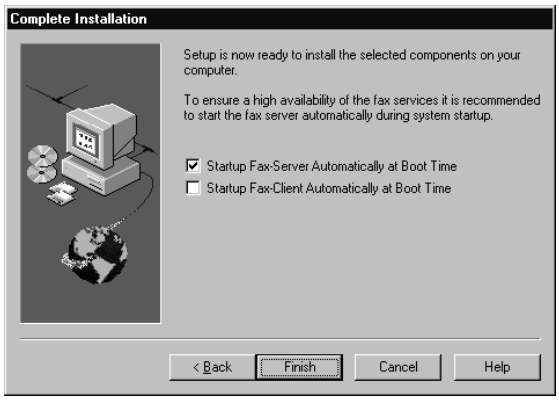
8) Turn on all connected **modems** and start the fax server. ActiveFax now scans the system for available modems and ISDN adapters and configures them.

9) Enter your name (company

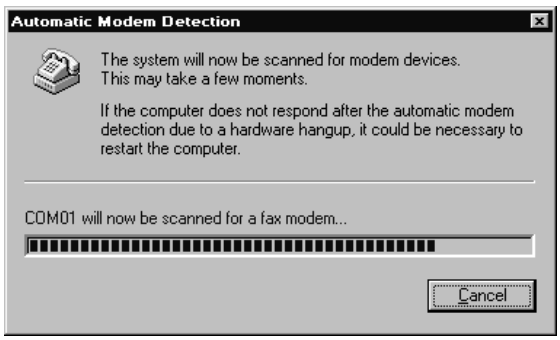


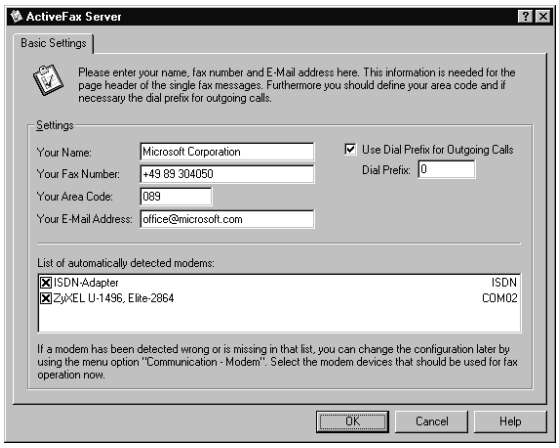






name) and fax number and your area code. This information is displayed in the header of the fax messages. If you plan to also send emails with ActiveFax, you should enter your email address. If there is a dial prefix needed for outgoing calls, specify the dial prefix in the next step. Especially when using phone systems (PBX), you normally have to specify a dial prefix to get an outside line.





After the setup program has been finished, ActiveFax is completely installed and ready for a first test fax message. To create a test fax, just start any Windows application (i.e. WinWord or WordPad) and print a document to the **ActiveFax printer**. When the fax dialog window appears, enter the fax number of the recipient (yellow input field) and confirm the fax with “OK”. The fax message is now automatically transmitted by the fax server as soon as a modem becomes available.

Please note that it is not required to **restart** the computer after the installation of ActiveFax. All configuration settings are already activated right after the setup program has been finished.

2.3. Customizing Settings

Most settings and parameters of the fax server are already initialized by the setup program with default values. These default values reflect the most common settings that normally do not need to be changed. However if you need to change some settings of the fax server, this can be done with the relating menu options directly on the fax server. The table below shows a listing of common settings:

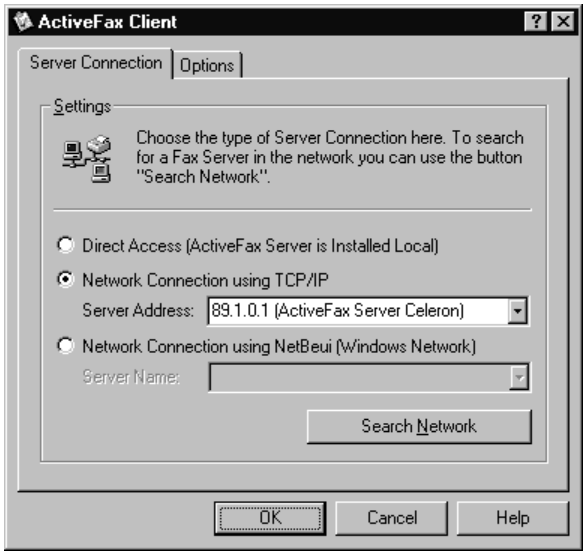
Setting	Menu
Modem Configuration	Communication – Modem
Email Configuration	Communication – E-Mail
Default Sender	Extras – Predefined Settings
Fax Resolution	Extras – Options – Modem
Archive Settings	Extras – Options – Archive
Automatic Printing	Extras – Options – Printing
Fax Title	Extras – Options – Fax Title
Next Fax ID Number	Extras – Options – General
Automatic Startup	File – Automatic Startup

Please note that the above table is only a short summary of the most common configuration settings of ActiveFax. A detailed description of all settings can be found in the related chapters of this manual or in the online help of ActiveFax.

When using **Brooktrout fax boards** (i.e. TR114, TR1034 or Trufax series), it is recommended to install the Brooktrout drivers before you install ActiveFax. Since Brooktrout itself does not offer any drivers for their products, the drivers are available for free download at www.actfax.com.

2.4. Establishing a Client Connection

The first time the fax client (or ActiveFax printer driver) is started, it tries to find the fax server in the network to establish a connection. ActiveFax supports three different ways how the client can connect to the fax server.



Normally the connection between the fax server and the fax client is done through one of the network protocols TCP/IP or NetBeui (Windows Network). If the fax server and fax client are installed on the same computer, it is also possible to use a direct connection (without network). Since the fax client automatically scans the network for all available fax servers, there is no need to remember any network or IP addresses. The first fax

server found by the automatic detection will be displayed and used as the default server.

3. How to ...

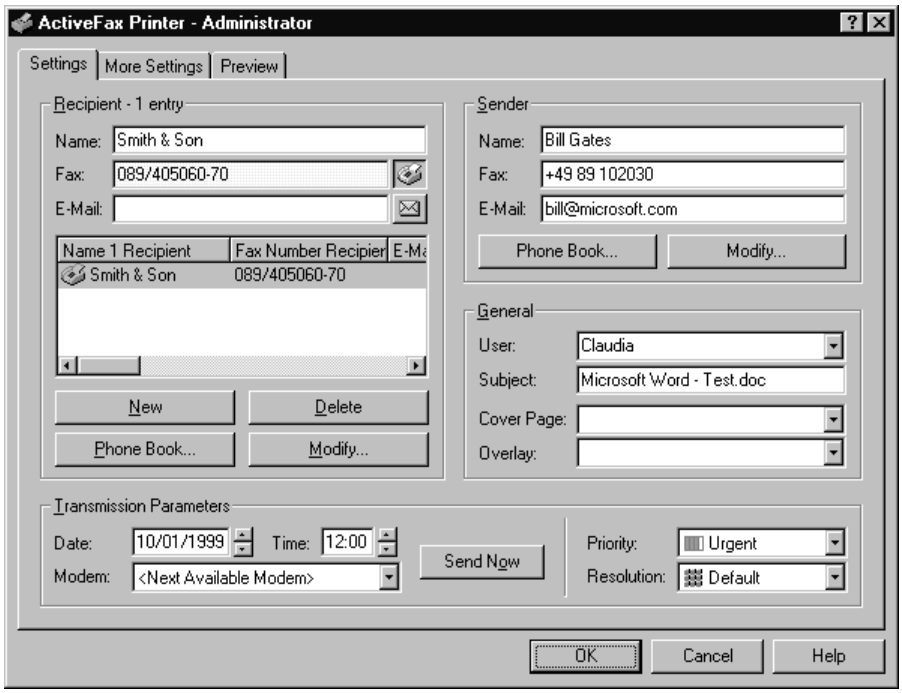
3.1. create a new fax message

New fax messages can be created in various ways with ActiveFax. The easiest and most common way to create new fax messages is the printing function of a Windows application. Beside that, it would also be possible to create so-called “Instant Fax Messages” with ActiveFax.

With Named Pipes or RAW Sockets it is possible to create fax messages without using the Windows printer driver (no GDI interface). That way, fax messages can be created directly from inside an application without using the Windows printing subsystem.

3.1.1. Faxing from Windows Applications

- Start the Windows application from which you want to create the fax message (i.e. WinWord).
- Select the printing function of the application and print the document to the **ActiveFax printer**.
- A dialog box appears. Enter the fax number of the recipient (yellow input field) there.
- Confirm the fax with OK.



After the document has been “printed” that way, it will be automatically transferred to the fax server. Depending on the preferred transmission time and priority, the fax message is then automatically transmitted as soon as a modem becomes available.

3.1.2. Instant Fax Messages

Fax messages often only contain just a few lines of text. If you do not want to create a Word document for such small messages, it is also possible to create the fax as an instant fax messages directly within the fax client program. An instant fax message is built by an optional cover page and the text of the fax message itself.

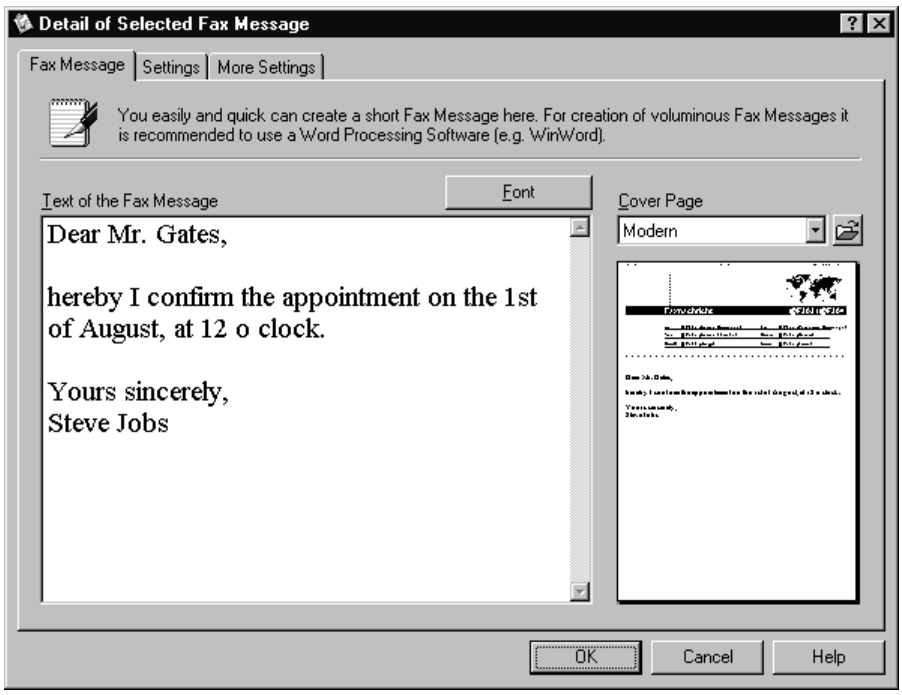
⚠ It is not recommended to use instant fax messages for faxes longer than a single page or faxes that require extensive formation. In such cases, it is recommended to write the message with traditional text processing software and to print the document to the ActiveFax printer.

The formation limitations of instant fax messages only allow the same font to be used for the complete message. A preview window shows the appearance of the fax message in minimized view.

To create a new instant fax message, follow these steps:

- Choose the menu option *File* / *New Instant Fax Message*.
- Optionally select a cover page.
- Write the text of the fax message.
- Specify the recipient of the fax message.
- Confirm the fax with OK.

The main advantage of instant fax messages is that it is possible to subsequently modify the text of the message through the fax dialog window. That way it is not required to create a completely new document if you encountered any mistakes after the fax has been created.



3.1.3. File System

Another powerful method of sending fax jobs to ActiveFax is the file system method. With that method, the files to be faxed just need to be stored in a predefined directory. ActiveFax automatically scans this directory for new fax jobs and imports them for further processing. When using the file system method, it is also possible to use data fields directly as part of the file name, which makes it very simple to set the recipients fax number. The file system method can be configured with the menu *Communication / File System* on the fax server.

3.1.4. Named Pipes

Using so-called “Named Pipes” it is possible to easily create fax messages directly from within applications without using the ActiveFax printer driver. If the ActiveFax printer driver is not used, the main difference is, that the fax message is sent in plain text format in that case. Quite similar to fax transmissions from UNIX systems, printer commands of HP-LaserJet (PCL), Epson-LQ and optionally Postscript and PDF can be used to format the document. Data fields can be added the same way as printer commands and will also be written directly to the document. Named pipes can be used, if you do not want to work with the Windows graphic subsystem (GDI).

⚠ Take care that named pipes are only available on fax servers running on **Windows NT / 2000 / XP / 2003 / Vista / 2008** systems.

To use named pipes, a few small modifications have to be done in your application. Follow these steps to integrate the communication with named pipes with your application:

- The named pipe needs to be configured on the fax server. To do so, choose the menu option *Communication* / *RAW Server* and create a new entry for a NetBeui connection. The name of the named pipe can be individually chosen (the default pipe name is "ActiveFax").
- Open the named pipe with writing permission in your application. This can be done with normal API file functions. The file name is built in the format "\\servername\pipe\pipename" (i.e. \\pcjoe\pipe\activefax). To open a named pipe, use the API function call **CreateHandle()** or any corresponding function of your programming language.
- Send the fax message directly to the previously opened file. You can use the API function call **WriteFile()** or any corresponding function of your programming language to write the data to the file. It is also possible to use printer commands and data fields in that case.
- Close the named pipe with the API function call **CloseHandle()** or any corresponding function of your programming language. By closing the file (named pipe), the fax server automatically gets a signal that the fax message has been finished and can be transmitted.

ℹ The function calls for opening, writing and closing files (named pipes) could have different names, depending on your programming language. More information about implementation of files and named pipes can be found in the documentation of your development tool (i.e. Visual-C, Visual Basic, Delphi, Power Builder, ...).

3.1.4.1. Example in Programming Language C

```
#include <windows.h>

HANDLE      hFile;
DWORD       dwError;
BYTE        szText[1024];
BYTE        szFax[128];
DWORD       dwWritten;

int main(void)
{
```

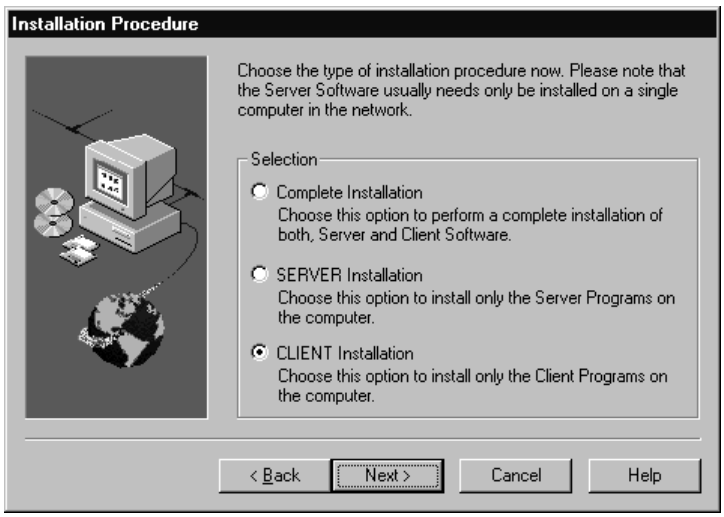
```
   hFile = CreateFile("\\\\pcjoe\\pipe\\activefax",
                      GENERIC_READ | GENERIC_WRITE,
                      FILE_SHARE_READ | FILE_SHARE_WRITE,
                      NULL,
                      OPEN_EXISTING,
                      0,
                      NULL);

   if (hFile == INVALID_HANDLE_VALUE) {
      dwError = GetLastError();
      return 1;
   }

   lstrcpy(szFax, "800-123-4567");
   wsprintf(szText, "This is a testfax@F211 %s@", szFax);
   WriteFile(hFile, szText, lstrlen(szText),
             &dwWritten, NULL);

   CloseHandle(hFile);

   return 0;
}
```

3.2. display fax messages on other computers

The fax client can be used to display and control fax messages from other computers in the network. Through a network connection to the fax server, access to all fax messages is available from any computer with the fax client program installed.

3.2.1. Fax Client Installation

The fax client needs be installed on every computer that should be used to display, create or control fax messages. The installation of the fax client is done with the same setup program as the installation of the fax server. When running the setup, take care to choose the option for a **Client Installation**, since a complete installation takes more disk space than required and the fax server part of ActiveFax should not be installed on client systems.



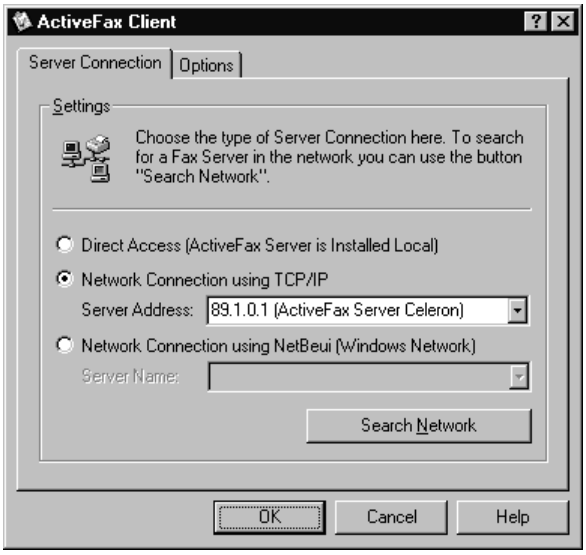
3.2.2. Establishing a Client Connection

The first time the fax client is started the network is automatically scanned for all available fax servers and you can choose the preferred fax server from the list (normally there only exists a single fax server in a network).

⚠ Take care that it could be possible that not all fax servers are automatically detected if there is a router between the fax server and the fax client. This is because routers often filter broadcast packages, which are used to iden-

tify the fax servers in the network. In that case you have to manually enter the IP address or hostname of the fax server.

The connection between the fax server and the fax client is established with one of the network protocols **TCP/IP** or **NetBeui** (Windows Network). Take care that connections with NetBeui are only possible when the fax server has been installed on Windows NT / 2000 / XP / 2003 / Vista / 2008. If you have both of these network protocols available, it is recommended to always use the TCP/IP protocol, since TCP/IP takes up less resources and is a bit faster compared to NetBeui.



Please note that the connection settings can be subsequently changed with the menu option *Communication* / *Network Settings*.

The update of the data on the fax client is done automatically. Every time the configuration of the fax server changes or when a fax message is created or modified, the data on the fax client is automatically refreshed on all client computers in the network. All clients have the same data set at any time that way.

Take care that the number of fax clients allowed to connect to the fax server is limited by the license. If you exceed the number of registered users, a message is displayed on the fax client; it is recommended to upgrade the license in that case, so more users are allowed to connect to the fax server.

3.3. send a fax message from UNIX / Linux

Beside the capability of sending fax messages from Windows applications using the ActiveFax printer driver, it is also possible to create fax messages from other operating systems, like UNIX or Linux. Normally the connection between the UNIX / Linux server and ActiveFax is done through the LPD/LPR (Line Printer Daemon) protocol. Since this protocol is based on the TCP/IP standard and is therefore included with all UNIX systems and Linux, it is the preferred method for sending fax messages from UNIX.

When using LPD/LPR, ActiveFax is accessed exactly the same way as any other network printer. The configuration of the printer in UNIX is done the same way as the configuration of any other printer server (i.e. Extended Systems, AXIS, Emulex, etc.). The host name of the remote printer is the address of the computer where ActiveFax has been installed. The queue name can be individually chosen, since it is ignored by ActiveFax when using default settings. By default the queue name "fax" is used.

3.3.1. Configuring LPD/LPR Printers in UNIX

3.3.1.1. IBM RS/6000 (AIX)

- Login as user "root".
- Start the system administrator program "smit" .
- Choose the menu options *Devices*, *Printer/Plotter*, *Manage Remote Printer*, *Client Services*, *Remote Printer Queues* and *Add a Remote Queue*.
- Fill in the dialog box. In the *Destination Host* field enter the host name of the computer where ActiveFax has been installed. The field *Queue Name* can be filled with any queue name (i.e. "fax").

3.3.1.2. HP-9000 (HP/UX)

- Login as user "root".
- Start the system administrator program "sam".
- Choose the menu option *Printers and Plotters*, *Actions* and *Add Remote Printer*.
- Fill in the dialog box. In the *Remote Printer Name* field enter the host name of the computer where ActiveFax has been installed. The field

Queue Name can be filled with any queue name (i.e. “fax”). You should also enable the option *Remote Printer is on a BSD System*.

3.3.1.3. Other UNIX Systems

To configure an LPD/LPR printer for other UNIX systems, it is recommended to consult your system documentation. Usually an LPD/LPR printer is created with an entry in the “/etc/printcap” file. Printer entries in the /etc/printcap file are created based to the following scheme:

```
printername:\
  :rm=hostname:\
  :rp=queuename:
```

```
fax:\
  :rm=89.1.0.1:\
  :rp=fax:
```

With some UNIX systems (i.e. SCO UNIX) it could also be required to activate the LPD/LPR protocol. In the case of SCO UNIX this can be done with the command “*mkdev rlp*”.

3.3.2. Sending Fax Messages with LPD/LPR

After the network printer has been created on the UNIX system, the “*lp*” command can be used to send print jobs to ActiveFax. To create a new print job with “*lp*”, use one of the following commands:

```
lp -dprintername filename
cat filename | lp -dprintername
```

Using the “*lpstat –t*” command or “*lpstat –oprintername*” the current printer status can be displayed.

3.3.3. Alternatives to LPD/LPR

The LPD/LPR protocol is the simplest and most powerful method to send fax messages from UNIX systems. If it is not possible to use an LPD/LPR printer, ActiveFax also supports numerous other protocols to be used instead of LPD/LPR.

3.3.3.1. FTP, TFTP and RAW Sockets

Using the TCP/IP network protocol it is also possible to send fax messages with FTP, TFTP and RAW sockets. When using the FTP or TFTP protocol, the files to be faxed just need to be transferred to the virtual FTP

server built-in with ActiveFax. The steps are exactly the same as for copying normal files through FTP or TFTP. More information about FTP and TFTP can be found in the online help of ActiveFax and the documentation of your operating system. When using RAW sockets, a direct TCP/IP connection to the fax server is established on a well-known TCP/IP port. The fax data is sent directly through that connection without any underlying protocol. The fax message is finished by simply closing the TCP/IP connection.

3.3.3.2. Serial Connection

If there is no network connection available, data exchange with ActiveFax can also be done through a serial interface. With that method the UNIX system is connected through a serial cable to the fax server PC. On the UNIX system it is just required to configure a printer that sends the data to ActiveFax through the serial interface (RS-232).

3.3.3.3. File System (NFS, Samba)

Another way to send fax data to ActiveFax is using the file system. When using that method of data exchange, a predefined directory of the UNIX system is mounted (shared) on the fax server computer. This can be done quite easily with software tools like NFS or Samba. The mounted directory is automatically scanned for new fax files to be processed in that case.

3.3.3.4. Formation (HP-LaserJet PCL, Epson-LQ, Postscript, PDF)

Fax jobs sent from UNIX systems can also contain printer commands of HP-LaserJet (PCL and HPGL), Epson-LQ and optionally Postscript and PDF. That way the printer output does not need to be modified and you can send exactly the same output to the fax server you normally send to physical printers. For direct processing of Postscript and PDF files it is required to have the add-on software **Ghostscript** installed on the fax server.

3.3.3.5. Data Fields

To specify the recipients fax number or other parameters of a fax messages (i.e. subject, priority, etc.) already from within an application, it is possible to use so-called data fields. Just like printer commands, data fields are embedded directly in the document to be faxed.

More information about data fields and how to add them to applications can be found in a subsequent chapter of this manual and in the online help of the fax server.

3.4. enter valid fax numbers

There is no special format required for fax numbers processed by ActiveFax. It is permitted to use special characters like spaces, slashes, dashes or dots to format a fax number. Such characters are ignored by the fax server and are automatically removed before dialing. In general, fax numbers can be entered in **international format** as well as in **national format**. Depending on the local area code of your location the fax server automatically optimizes the number dialed by the modem. It makes no difference if the fax number is entered as a local number or as a complete number including country code and local area code. For uniform appearance, it is recommended to enter fax numbers always in the same format.

ActiveFax also supports internal fax numbers that do not use the dial prefix for dialing. By default, such numbers are marked with an "X" character at the beginning of the number. The character used to mark internal numbers can be changed in the modem configuration.

3.4.1. Examples for valid Fax Numbers

Own Country Code: 1 (USA)
Own Area Code: 712

Entered Fax Number	Dialed Fax Number
+1 934 431 7633	19344317633
365-874-1297	13658741297
712.887.3274	8873274
+49 89 102030-40	011498910203040
X125	125 (no dial prefix!)

Own Country Code: 49 (Germany)
Own Area Code: 089

Entered Fax Number	Dialed Fax Number
+49 40 102030-40	04010203040
+43 1 98765	0043198765
0043/1/987-65	0043198765
0049 89 102030-40	10203040
089/102030-40	10203040

3.5. select an entry in the faxlist

3.5.1. Selecting Entries

Entries in the faxlist can be selected either with the left mouse button or with the arrow keys on the keyboard. To perform a function (i.e. locking or deleting a fax) on more than one faxlist entry, it would be possible to select multiple entries at the same time. The **Ctrl key** and the **Shift key** are used to select more than one entry in that case. When using the **Ctrl key**, individual entries are selected, when using the **Shift key**, entries in a from/to range are selected. To select all entries of the faxlist, the menu option *Faxlist* / *Select all Entries* can be used.

3.5.2. Sorting Entries

By default, the faxlist is sorted by creation date and time in descending order (latest entries displayed first). Sorting can be individually changed to meet your requirements. The field selection as well as the sort order (ascending or descending) can be separately configured for each column. To change the sort order for the faxlist, follow these steps:

- Use the left mouse button to click at the header of column in the faxlist. The faxlist is now sorted by this column.
- If you click at the same column header again, the sort order changes from ascending to descending and vice versa.
- To add additional sort criteria (i.e. first sort by date, then by time), press and hold the **Shift-Key** and click on the next column header to be added as a sort criteria.

The number of columns that can be used to sort the faxlist is not limited. Columns currently used as sort criteria are marked with an arrow symbol in the column header. Sort criteria settings are automatically stored when the program is closed.

3.5.3. Searching for Entries

When having thousands of fax messages in the faxlist, finding a certain document could become very cumbersome. ActiveFax offers various func-

tions that help finding fax messages again very quickly. To search for a specific document, follow these steps:

- Enter a known search term in the search field of the faxlist (i.e. subject, recipient name, fax number, ...). It is also possible to enter multiple search terms, separated with the pipe sign (|).
- Select the user or group of the owner of the fax message in the user selection window.
- Select the fax status of the fax message in the fax selection window (i.e. undelivered, sent, ...).
- Change the sort order of the faxlist by clicking on the column headers of the faxlist.

The most efficient way to search for a fax message is to enter a search term. When entering meaningful search terms the faxlist is normally reduced to just a few matching entries.

Please note that you do not need to enter the exact phrase when searching for a specific entry. Usually it is sufficient to just enter a small part of the term you are searching for. For example if you want to search for a fax message that was sent to "*George Simpson"*, you can enter just "*Simps*" or "*george sim*". The search function is not case sensitive. It is also possible to search for more than one search term. In that case you have to separate the single search terms with a pipe sign (|). For example to search for the search terms *"Simpson"* and *"Los Angeles"*, enter *"Simpson|Angeles"* in the search field.

3.6. automatically print fax messages

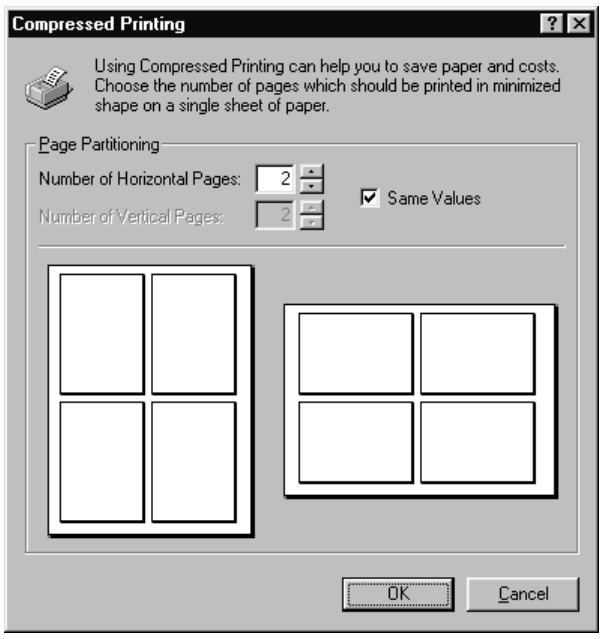
Automatic printing of fax messages can be done in various ways with ActiveFax. Fax messages can be printed either on a specific printer or in dependence of the owner of the fax to individual printers.

3.6.1. Sending Report

The automatic printing function can be configured to either print the complete fax message in original format or as a sending report. The sending report is made up of status information of the fax transmission and a preview of the first pages of the fax message printed on a single sheet of paper. The number of fax pages printed on the sending report can be configured with the menu *Extras* / *Options* in the *Printing* tab.

3.6.2. Compressed Printing

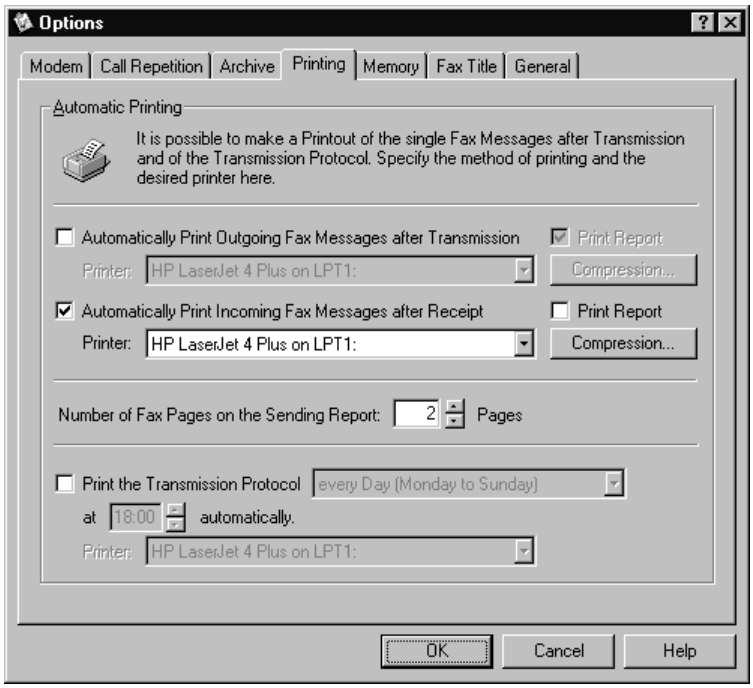
Compressed printing of fax messages helps to protect the environment and also reduces printing expenses. When using compressed printing, multiple pages of a fax message are printed on a single sheet of paper in compressed format. The number of fax pages to be printed on a single page can be individually configured.



3.6.3. General Settings

To activate automatic printing of inbound fax messages, follow these steps:

- Choose the menu *Extras* / *Options*.
- Choose the *Printing* tab.
- Enable the option *Automatically Print Incoming Fax Messages after Receipt* and select the preferred printer.
- Optionally choose the option *Compression* to print multiple pages on a single sheet of paper.
- Optionally activate the selection *Print Report* to print a sending report instead of the complete fax message.
- Complete the configuration with OK.

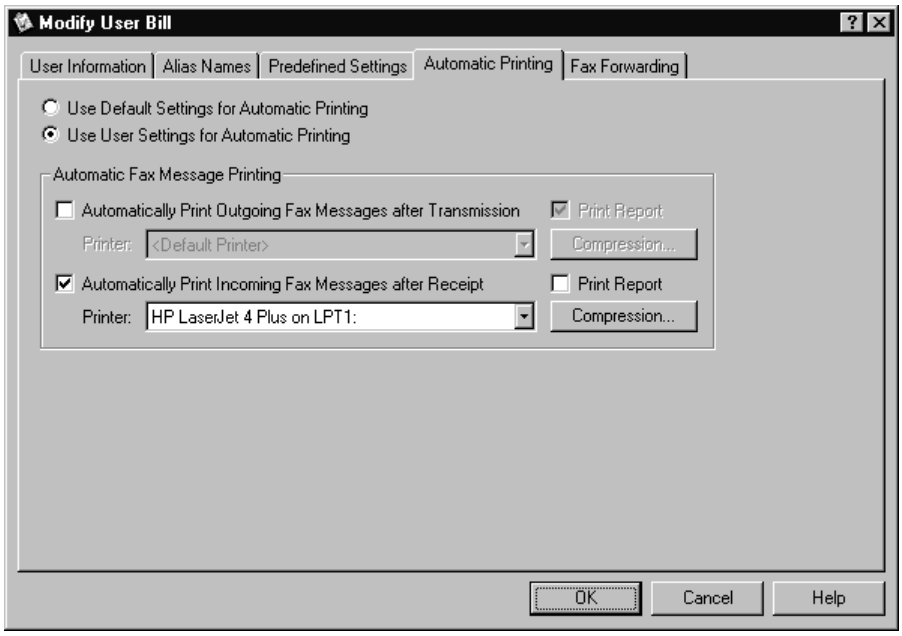


Automatic printing of the transmission protocol can also be configured through the *Printing* tab in the menu *Extras* / *Options*.

3.6.4. User-dependent Settings

Automatic printing can also be individually configured for the single users. Depending on the owner of a fax message, printing can be done on different printers that way. To configure user-dependent printing, follow these steps:

- Choose the menu option *Extras* / *User Administrator* or use the corresponding button in the toolbar.
- Select the user entry and press the *Modify* button.
- Change to the *Automatic Printing* tab.
- Enable the option *Use User Settings for Automatic Printing* and select the preferred printer.
- Optionally choose the option *Compression* to print multiple pages on a single sheet of paper.
- Optionally activate the selection *Print Report* to print a sending report instead of the complete fax message.
- Complete the configuration with OK.



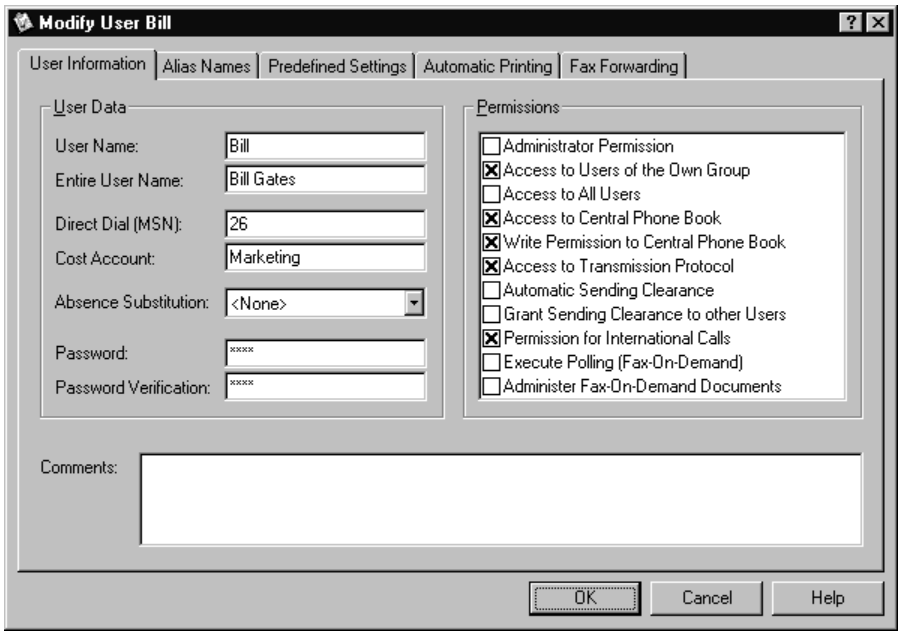
Routing of inbound fax messages to individual user entries can be done in various ways. More information about inbound fax routing is available in the chapter **User Administrator** in this manual.

3.7. protect faxes against unauthorized access

Since fax messages often contain sensible information that should not be read by unauthorized users, ActiveFax supports security features to protect privacy of the documents. That way fax messages can be reliably protected against unauthorized access.

3.7.1. User Administrator

The foundation of every reliable security concept should be a deliberate user structure. It is recommended to create a separate user account for every person working with the software and to only grant those permissions necessary for daily work. Each user account should also be protected with a reliable password that is only known to the owner of the user account.

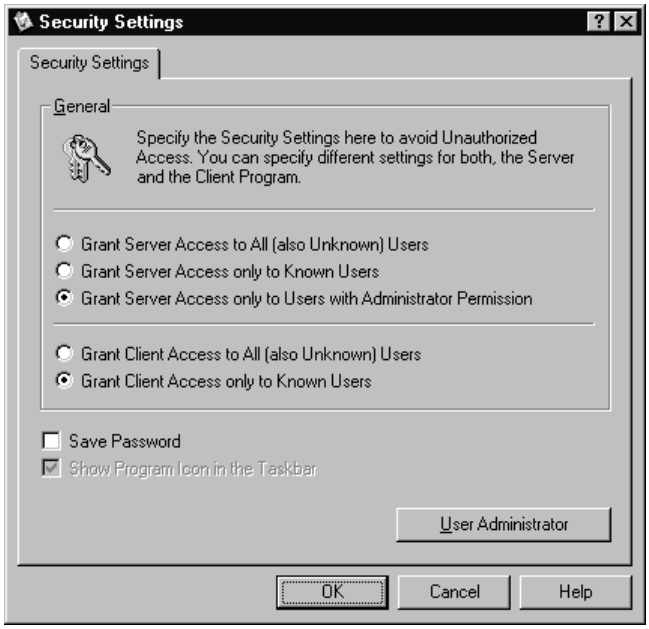


ActiveFax also supports groups of users. Each user can be a member of multiple groups (i.e. purchasing department, sales, ...). The main advantage of building groups of users is that all members of a group have access to each others fax messages (depending on permission settings).

3.7.2. Security Settings

To activate access verification, security settings need to be activated on the fax server. Follow these steps to enable security settings:

- Choose the menu option *Extras* / *Security Settings* or use the corresponding button in the toolbar.
- Selected the preferred security level for server access and for client access.
- Complete the configuration with OK.



Please note that security settings for the fax server and the fax client can be individually configured. To guarantee a high security level it is recommended to grant access to the fax server only to users with Administrator permission. This assures that the fax server configuration cannot be modified without knowing a valid Administrator password.

3.8. use the fax-on-demand server

The fax-on-demand capabilities of ActiveFax can be used in two ways. It would be possible to receive documents from other fax-on-demand servers and to also use ActiveFax as a fax-on-demand server to make fax documents available to others.

3.8.1. Fax Polling

A fax polling request (this means to receive a fax document from a fax-on-demand server) can be done when you follow these steps:

- Choose the menu option *Communication* / *Execute Polling (Fax-On-Demand)*.
- Enter the fax number of the fax-on-demand server or use the phone book to import an existing phone book entry.
- Complete the request with OK.

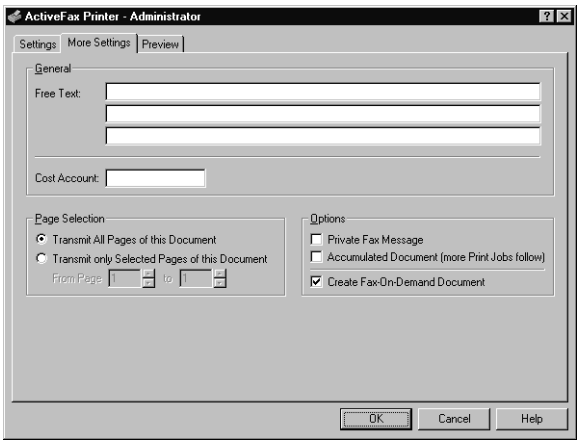
The polling request is executed as soon as a modem becomes available. After the polling request has been successfully completed, the document is available in the faxlist as a received fax message.

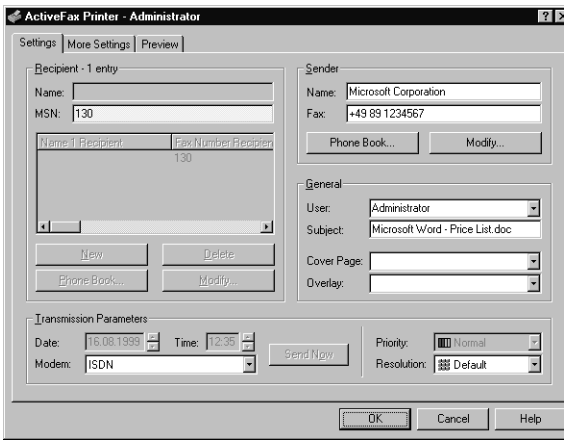
3.8.2. Creating Fax-On-Demand Documents

ActiveFax can also be used to make fax documents available for polling to other fax machines. In that case, the document gets an individual fax mo-

dem or extension number (when using ISDN) assigned. Especially when using ISDN adapters the number of documents that can be made available for polling is not limited, since every document is identified by its own direct dial number. To create a new fax-on-demand document, follow these steps:

- Create the fax-on-demand document with a Windows application of your choice (i.e. WinWord).
- Choose the printing function of the application (i.e. the menu *File* / *Print* in WinWord).
- Select the ActiveFax printer to start the print job.
- Change to the *More Settings* tab in the fax dialog window and activate the ***Create Fax-On-Demand Document*** option there.
- Change to the *Settings* tab and select the modem to be used for the document. When using ISDN it is also recommended to enter a direct dial number (MSN) to be used for the document.
- Complete the document with OK.





After the document has been "printed" that way, the fax-on-demand message is automatically transferred to the fax server and is available for requests then. Take care that any existing fax-on-demand document for the same modem and direct dial number (MSN) is automatically moved to the archive when a new fax-on-demand document is created.

A counter with the number of accumulated requests for the fax-on-demand document is available through the fax dialog window of the document. A complete list of fax numbers that already requested the document can also be found in the transmission protocol.

3.9. create a cover page or overlay

3.9.1. What is a Cover Page / Overlay?

In general, cover pages and overlays are created exactly the same way with ActiveFax. A cover page is a separate page added as the first page of a fax message. Cover pages normally contain information about the sender, recipient, subject and additional information like date, time and the number of pages of the document.

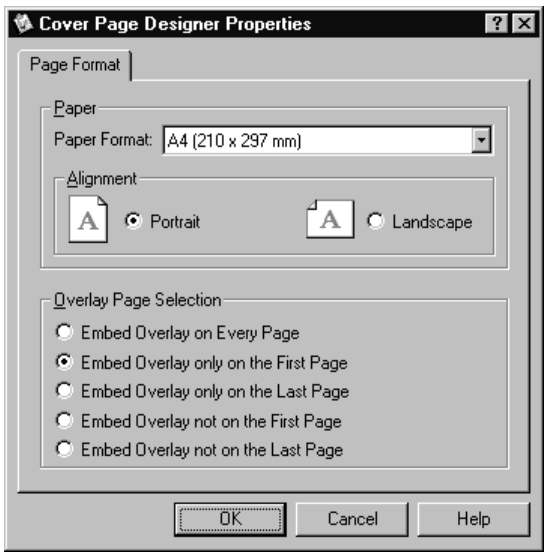
Compared to cover pages, overlays are not added as a separate page at the beginning of a fax message. Overlays are always displayed at the same page as the fax message (the image is overlaying the fax page, just as when you print on a form). That way it is possible to add bitmaps (i.e. company logos, order forms, …) to fax messages in a very simple way.

3.9.2. Creating Cover Pages / Overlays

When a cover page or overlay is created, there is no difference between cover pages and overlays. They are both created exactly the same way with the Cover Page Designer of ActiveFax. Just the way how a cover page or overlay is added to a fax messages determines whether it will be used as a cover page or an overlay. To create a new cover page or overlay, follow these steps:

- Start the Cover Page Designer with the menu *Extras* / *Cover Page Designer* or use the corresponding button in the toolbar.
- Select one of the design tools (i.e. text, graphics, data field, …) and design the cover page or overlay.
- Save the cover page and close the Cover Page Designer with the menu *File* / *Close Cover Page Designer*.

Please note that the menu *Extras* / *Page Format* can be used to configure the pages on which an overlay should be visible. That way it would for example be possible to specify that an overlay should only be displayed on the first page or on the last page of a fax message.



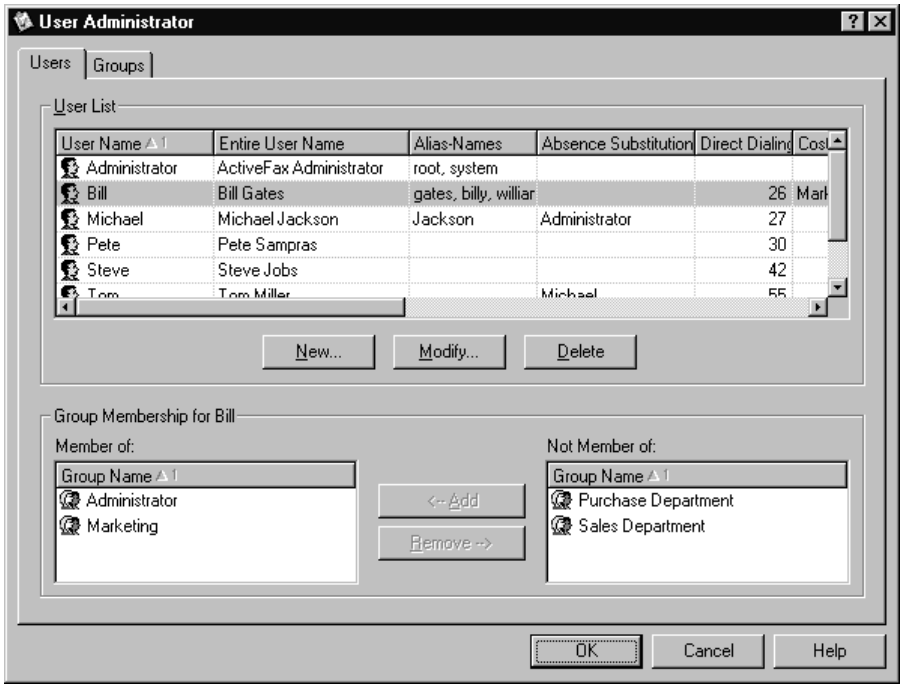
3.9.3. Using Cover Pages / Overlays

Cover pages and overlays can be added to fax messages in various ways. One method is to choose the cover page or overlay in the fax dialog window of the ActiveFax printer. With the menu *Extras* / *Predefined Settings* or *Extras* / *User Administrator* / *Modify* / *Predefined Settings* it would be possible to configure default cover pages and overlays that are automatically added for new fax messages. Another way to add cover pages and overlays to fax messages is using data fields. More information about cover pages, overlays and data fields can be found in the online help of the fax server and subsequent chapters of this manual.

4. Configuration

4.1. User Administrator

The User Administrator of ActiveFax is used to manage the accounts for the single users and to grant individual permissions to different users. Users can also be part of a group; each user can be a member of multiple groups in that case. There are two predefined users in the User Administrator, the **Administrator** and the **Unknown** user; these user accounts cannot be deleted.

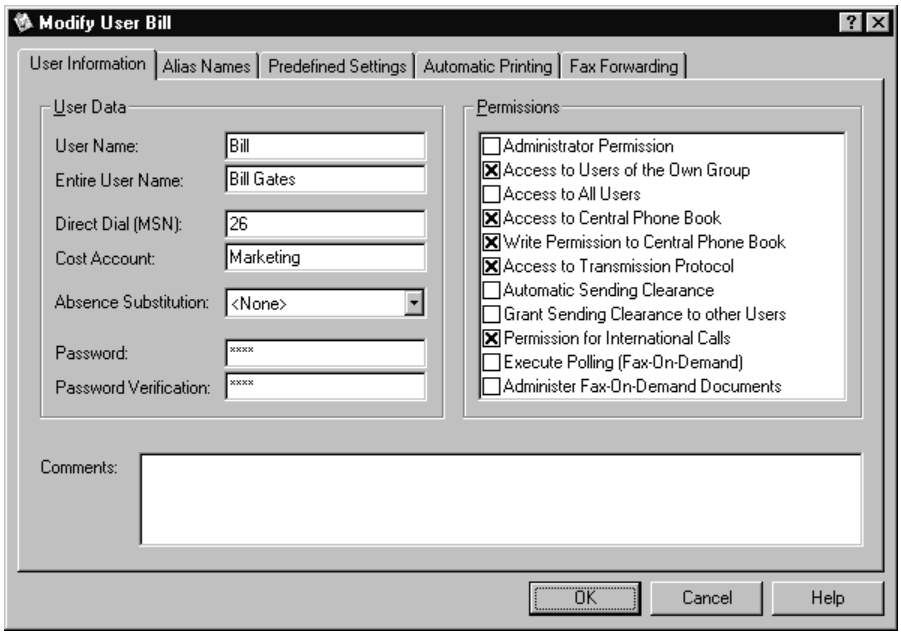


Each entry in the User Administrator is identified by a unique user name. It is recommended to use the first name or some kind of nickname for the users to make sure the user names are short and easy to remember.

Each user entry can also have a unique direct dial number (MSN) assigned. With that direct dial number it is possible to automatically route inbound fax messages directly to the specific person. Direct dial numbers are only available with **ISDN adapters** or DID (Direct Inward Dialing) capable modems and fax boards. When using normal fax modems, direct dial numbers are not available due to technical reasons.

To avoid that fax messages are not handled during longer absence of a user, it is possible to configure absence substitutions. The user defined as

the absence substitution has full access to all fax messages of the absent user. Permission settings are not transferred when specifying absence substitutions.



To clearly set competencies and increase security, it is recommended to only grant those permissions to a user that are absolutely necessary for the work.

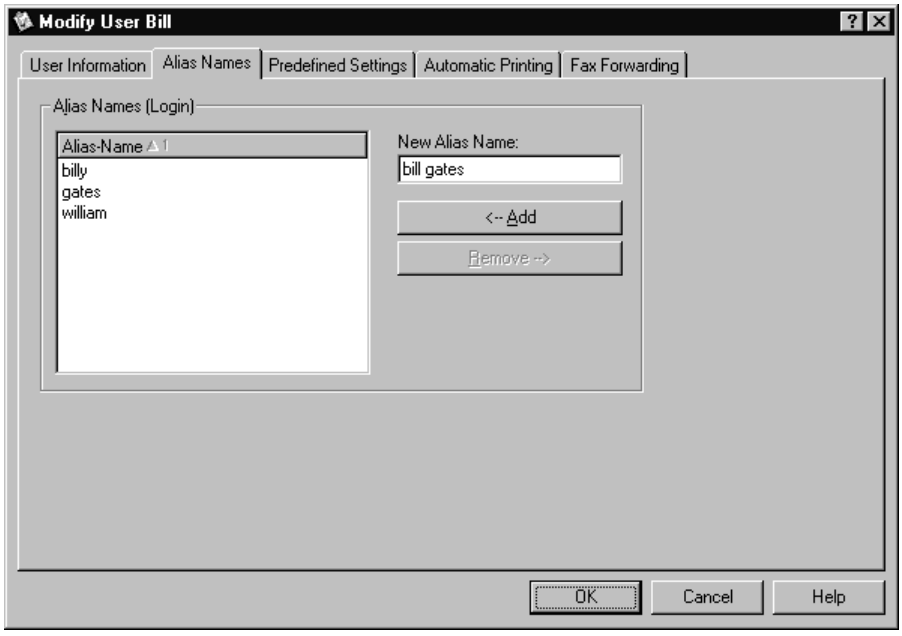
4.1.1. User Permissions

Permission	Description
Administrator Permission	Enables the user to modify important configuration settings of the fax server.
Access to Users of the Own Group	Enables the user to access all fax messages of users that are members of the same group (exception: private fax messages).
Access to All Users	Enables the user to access all fax messages (exception: private fax messages).
Access to Central Phone Book	Access permission for the central phone book.
Write Permission to Central Phone Book	Write permission for the central phone book.
Access to Transmission Protocol	Access and write permission for the

	transmission protocol.
Automatic Sending Clearance	Enables the user to send fax messages without confirmation of a supervisor.
Grant Sending Clearance to other Users	Enables the user to grant sending clearance to other users.
Permission for International Calls	Enables the user to send fax messages to recipients with international fax numbers.
Execute Polling (Fax-On-Demand)	Enables the user to request fax-on-demand documents from a fax-on-demand server.
Administer Fax-On-Demand Documents	Enables the user to create and manage fax-on-demand documents of the fax server.
Access to Folder Manager	Permission to create, rename and delete individual user folders.

4.1.2. Alias Names

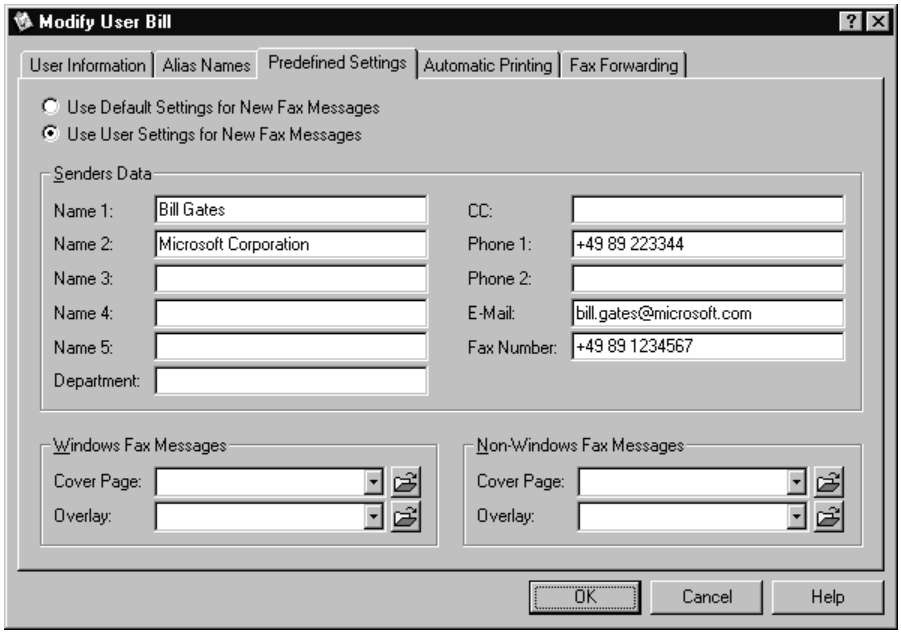
Many users are known under different names or have multiple logins or user accounts (i.e. on UNIX systems). In that case it is possible to configure all alias names for a user with the *Alias Names* tab. ActiveFax automatically checks for alias names and replaces them with the main user name, so it does not matter which name is used to create a fax message.



4.1.3. Predefined Settings

With the *Predefined Settings* tab it is possible to individually configure different settings for each user. You can decide whether default sender settings or user defined sender settings should be used. Beside that it is also possible to specify default cover pages and overlays to be used for new fax messages.

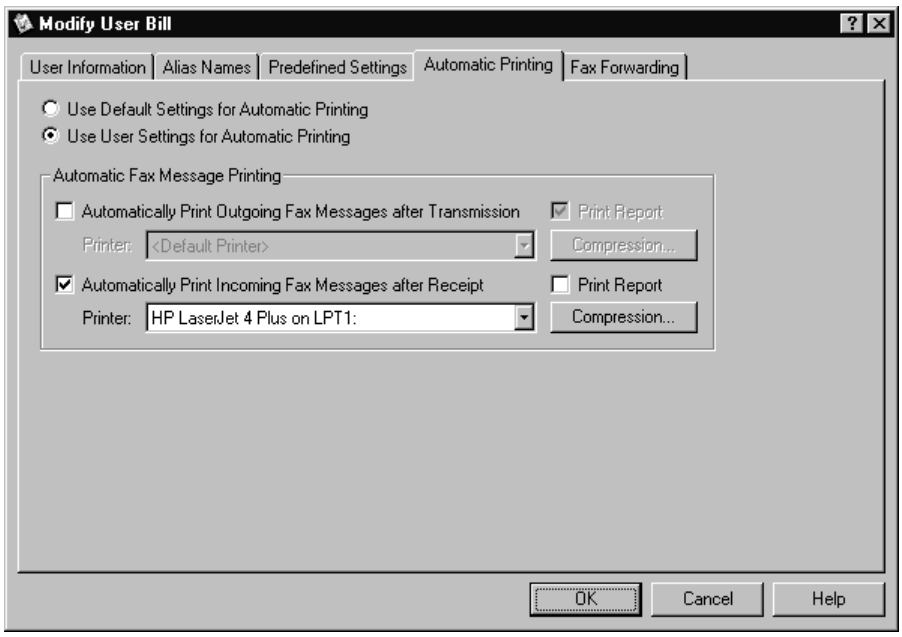
The default sender settings can be configured with the *Extras* / *Predefined Settings* menu.



4.1.4. Automatic Printing

The settings for automatic printing can be individually configured for each user. That way it is possible to automatically print fax messages or sending reports directly on the workplace printer of a user. Decide whether you want to use default settings or the user-dependent settings for automatic printing.

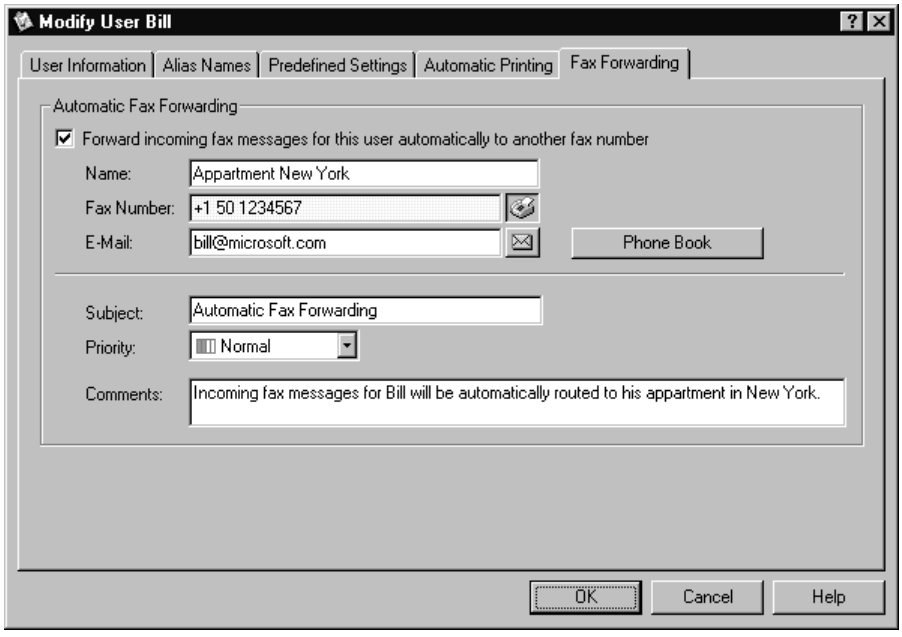
The default settings for automatic printing can be configured in the *Printing* tab of the menu *Extras* / *Options*.



4.1.5. Fax Forwarding

Fax forwarding is used to automatically send inbound fax messages to other fax numbers or email addresses. That way it is possible to forward fax messages received for a specific user to other fax machines or email addresses.

To ensure economical forwarding of fax messages to other fax machines, it is possible to automatically set the priority of forwarded faxes to *Unimportant*. In dependence of the charge optimization settings, fax messages are forwarded during night hours that way.



4.1.6. Routing of Inbound Fax Messages

Routing of inbound fax messages can be done in various ways. Depending on the technical capabilities of the modem or ISDN adapter and the phone line, not all routing methods are supported. ActiveFax uses the routing methods in the following order.

4.1.6.1. Routing using Direct Dial Numbers (MSN, DDI, DID, DTMF)

This method of inbound fax routing is the most reliable way to route faxes, since every user has its own unique fax number in that case. Due to technical reasons, this routing method is only available with **ISDN adapters** or DID (Direct Inward Dialing) capable fax modems or fax boards. It is not possible to use direct dial numbers with normal fax modems. To use direct dial capabilities of an ISDN adapter, it is required that the ISDN line supports either the **MSN** (Multiple Subscriber Number) or **DDI** (Direct Dial In) service. Activation of these services is normally done by the phone network provider.

The direct dial numbers for the single users can be configured in the *Direct Dial (MSN)* field when you modify the settings for a user in the User Administrator. You just need to enter the direct dial number there; it is not required to enter the complete fax number.

When using a phone system (PBX) it could be required to configure the ISDN line (S0 bus) to support direct dial numbers. Contact the vendor of your phone system to get more information about direct dialing capabilities with ISDN adapters in that case.

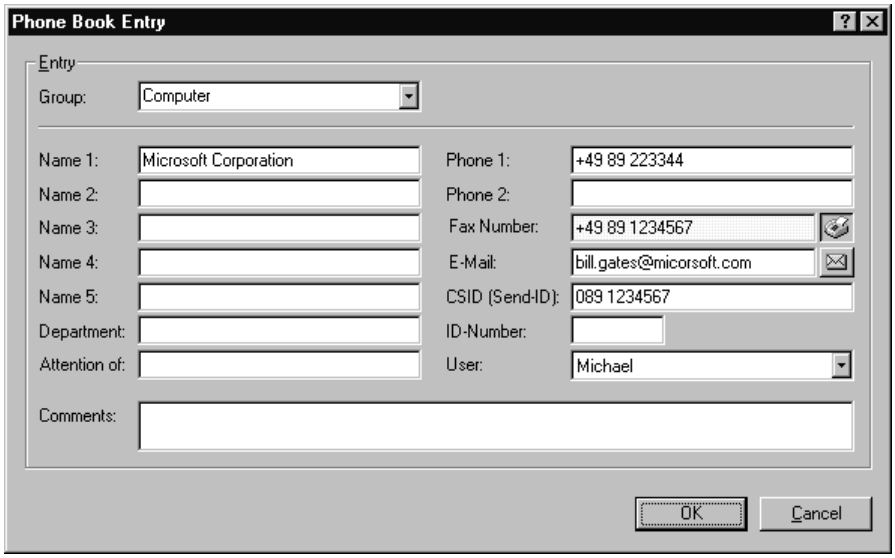
4.1.6.2. Routing using CSID (Sender Identification)

This way of inbound fax routing is based on the sender identification (CSID) of a fax message. Based on user names mapped to phone book entries, faxes received from known fax numbers are automatically routed to individual users. To map a user to a phone book entry, follow these steps:

- Open the phone book with the menu *Extras* / *Phone Book* or use the corresponding button in the toolbar.
- Create a new phone book entry or select an existing entry.
- Modify the entry with the *Modify* button or double-click on the entry.
- Enter the sender identification in the *CSID* field. Please note that it is not required to fill in the *CSID* field if the CSID and the fax number are

identical. Special characters, like spaces, slashes, dashes or dots are ignored when the fax number and CSID are compared.

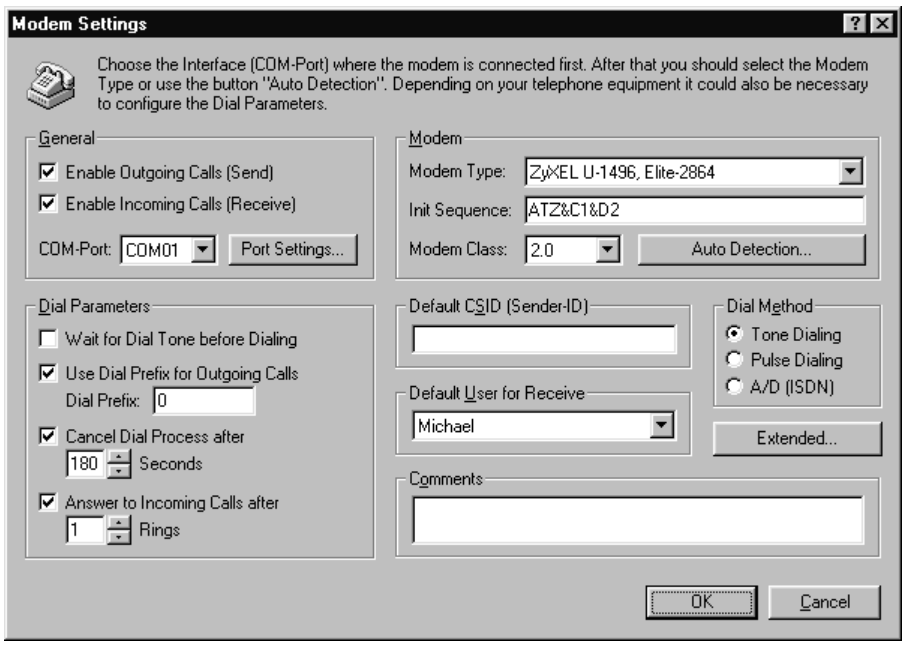
- Select the *User* that should be mapped to the phone book entry.
- Complete the phone book entry with OK.



4.1.6.3. Routing using Modem

When using that way of inbound fax routing, a user is mapped directly to a modem (fax number). The limitation of that routing method is that it can only be used for a limited number of users, since a dedicated modem (fax line) is required for each user that should be routed. To configure modem routing, follow these steps:

- Choose the menu *Communication* / *Modem* or double-click on the corresponding icon in the communication window.
- Select the modem and press the *Modify* button or double-click on the selected entry.
- Select the user name that should be mapped to the modem in the *Default User for Receive* field.
- Complete the configuration with OK.



4.1.6.4. Manual Routing

Manual routing is used when none of the above routing methods can be used. When using manual routing, the fax document needs to be manually opened on the fax client to find out to which user the fax message belongs. The user has to be manually entered through the fax dialog window in that case. To specify the user for a fax message, follow these steps:

- Select the fax message with the left mouse button and find out to which user the fax messages belongs.
- Double-click on the faxlist entry to display the fax dialog windows and select the user name.
- Complete the fax dialog window with OK.

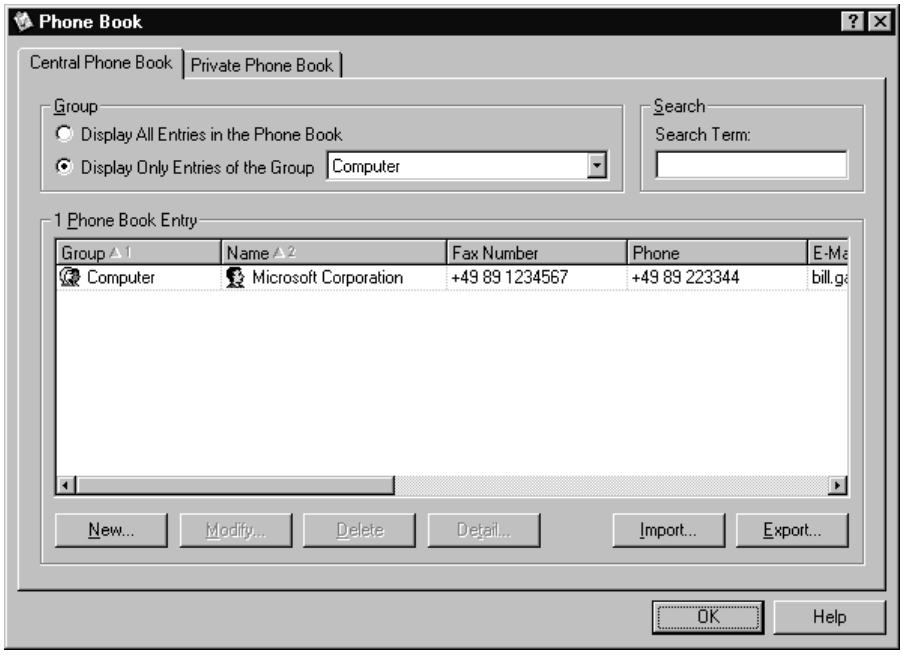
4.1.6.5. Order of Routing Methods

The user for inbound fax messages is identified according to the following order of routing methods:

- Check of direct dial numbers (if available).
- Check of sender identification (CSID) using the phone book.
- Check of default user mapped to the modem (default user is Administrator).

4.2. Phone Book

Phone book entries in ActiveFax can be stored either in a global or local phone book. The **central phone book** (global) is shared by all users and can be accessed from any client computer in the network. The **private phone book** is stored directly with a user account and can only be accessed by the owner of the phone book. Phone book entries that should be visible to all users should be added to the central phone book; for confidential or private phone book entries, the private phone book of the user would be the preferred choice.



It is recommended to organize phone book entries in groups, for example grouped by branch or department. That way it will be much easier to find phone book entries again. To search for a specific phone book entry, the search function of the phone book can be used.

It is also possible to select more than one phone book entry at the same time by using the *Ctrl* or *Shift* key. Especially for fax mailings, faxes often need to be sent to a complete group of recipients. Using the right mouse button and the menu *Select All* it would be possible to select all entries displayed in the phone book.

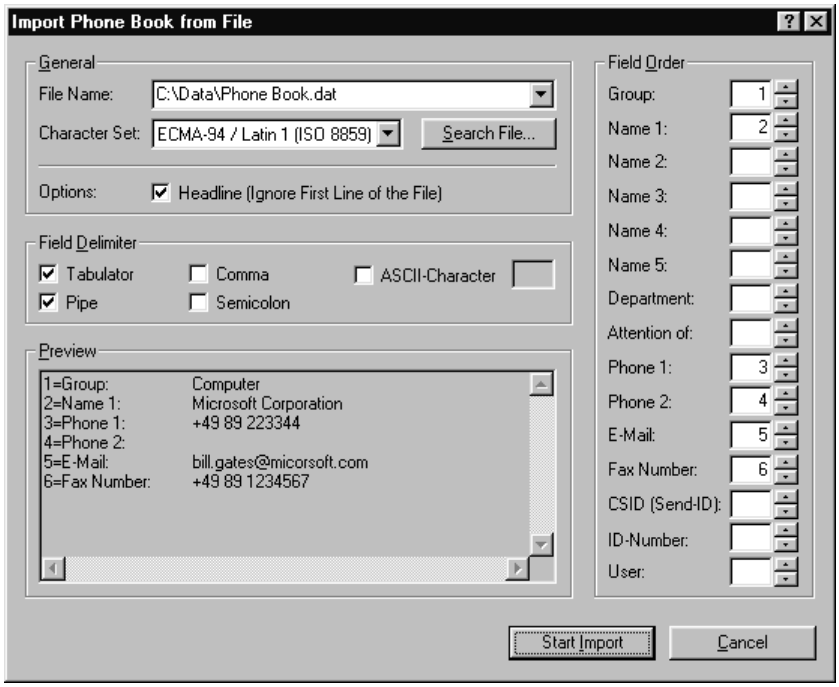
4.2.1. Import the Phone Book

Phone book entries can be imported in two ways with ActiveFax. One method is to import the phone book entries from an external ASCII file (text file). The other method is to import the phone book entries from an external database using the ODBC standard.

4.2.1.1. Import from ASCII File

To import phone book entries from an external ASCII file, follow these steps:

- Press the *Import* button.
- Enter the *File Name* of the import file or use the *Search File* button.
- Specify the *Character Set* and the *Field Delimiter* for the import file.
- Specify the field order for the import file. Fields not included in the import file are automatically left empty.
- Check the settings in the preview window and start the import of the phone book entries.



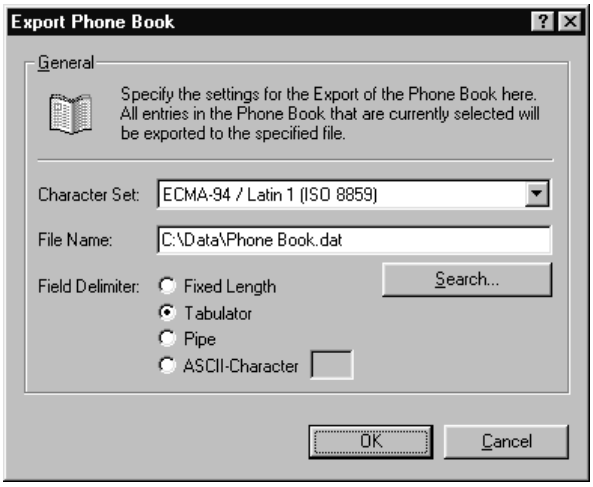
During the import of the phone book entries the field *ID-Number* (i.e. customer or supplier number) and the fields *Name 1* and *Fax Number* are compared. If there is a matching entry found in the phone book for these fields, the phone book entry is updated; otherwise a new entry is created in the phone book.

4.2.1.2. Import from ODBC Database

Another method to import phone book entries is to bind the phone book to an ODBC data source. An external database is automatically checked for new and modified phone book entries in that case. More information about the import of phone book entries from an ODBC data source can be found in the chapter **ODBC Database** of this manual.

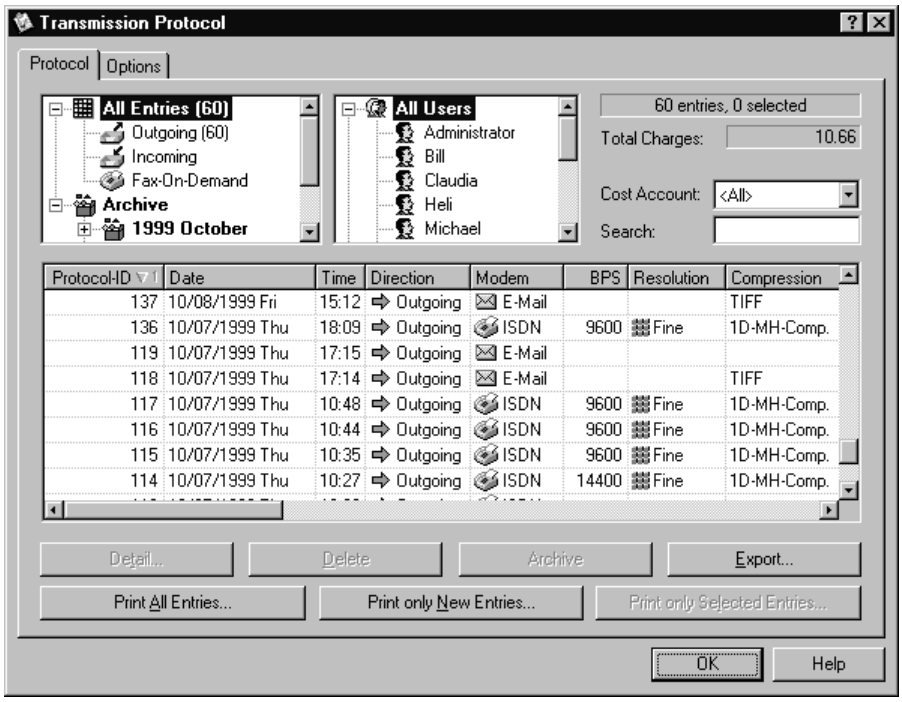
4.2.2. Export the Phone Book

Phone book entries can be exported to an ASCII file (text file) with the *Export* button. The export file always includes all data fields of the selected phone book entries. Before the phone book is exported, make sure to configure the correct character set and field delimiter.



4.3. Transmission Protocol

The transmission protocol stores information about all outbound, inbound and fax-on-demand fax transmissions. This includes successful transmissions as well as status information for incomplete or failed transmission attempts. When using ISDN adapters with the ISDN service AOC (Advice of Charge) activated, the transmission protocol also includes charging information. That way it would be possible to calculate the total charges for a user or cost account code.



Detailed information for an entry in the transmission protocol can be displayed with the *Details* button or when you double-click at the selected protocol entry.

4.3.1. Printing the Transmission Protocol

The transmission protocol can be printed in three different ways. Use one of the buttons described below to print the protocol entries.

Print Option	Description
Print All Entries	All entries currently displayed in the transmission protocol list are printed.
Print only New Entries	Only new entries that have not yet been printed

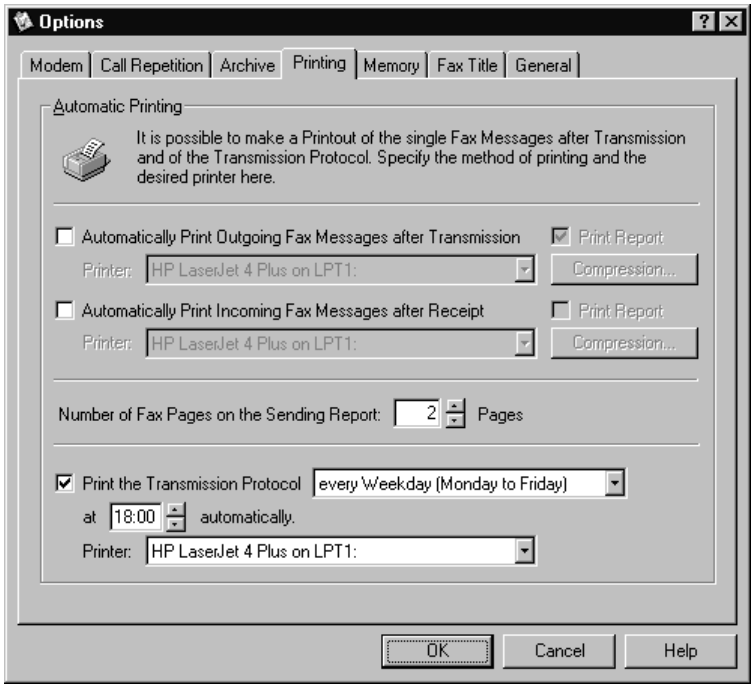
	are printed.
Print only Selected Entries	Only selected entries of the transmission protocol list are printed.

4.3.1.1. Layout

With the *Options* tab the sort order and layout for the printout of the transmission protocol can be changed. You can change between single-line and double-line layout there.

4.3.1.2. Automatic Printing

The transmission protocol can also be automatically printed. Use the *Printing* tab in the menu *Extras* / *Options* to configure automatic printing of the transmission protocol.



4.3.1.3. Sending Report

As an alternative to printing transmission protocols it is also possible to automatically print a sending report for each fax message. Sending reports are automatically printed right after a fax message has been transmitted. The configuration for sending reports is done with the *Printing* tab of the menu *Extras* / *Options* or with the User Administrator if you need to configure individual printers for each user.

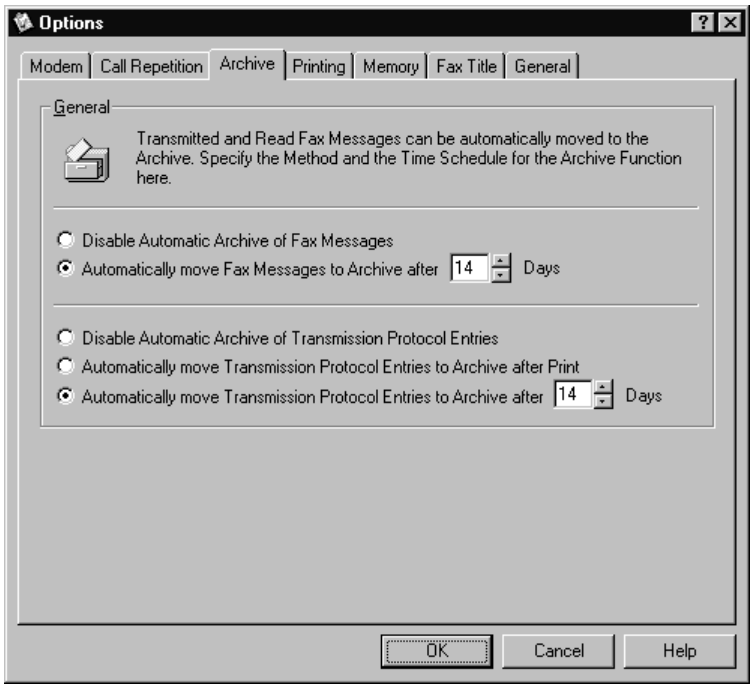
4.3.2. Exporting the Transmission Protocol

The entries of the transmission protocol can be exported in three different ways. Use one of the methods below to do the export:

- Use the *Export* button to export all selected protocol entries to an external ASCII file (text file).
- Use **ODBC** data exchange to automatically export the transmission protocol entries to an external database.
- Use **FTP** to retrieve the transmission protocol from other computers in the network (i.e. UNIX or Linux).

4.3.3. Archiving the Transmission Protocol

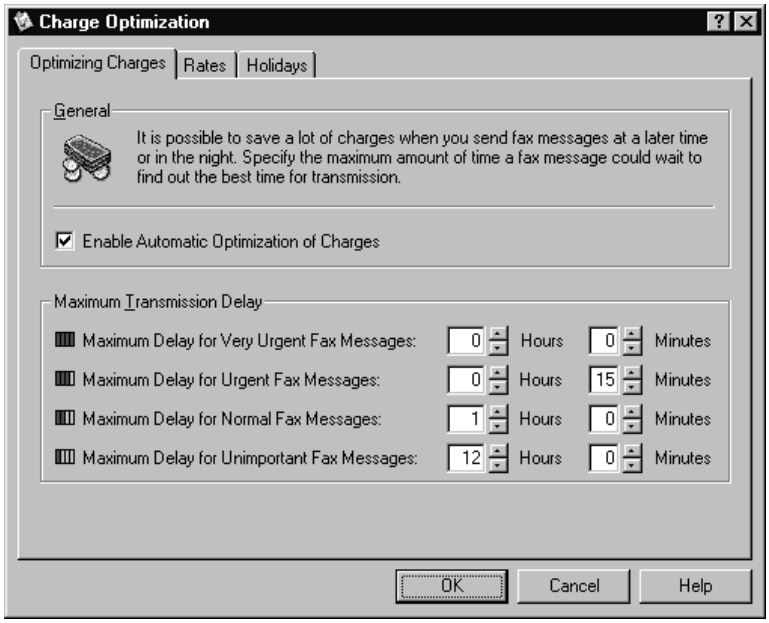
The entries of the transmission protocol can be automatically moved to an internal archive to avoid that the protocol fills up with old entries. Automatic archiving can be configured with the *Archive* tab in the menu *Extras / Options*. Old protocol entries are moved to the archive after 14 days by default.



4.4. Charge Optimization

4.4.1. Delayed Transmissions

Depending on fax volume and the location of the recipients it would be possible to reduce phone charges by using delayed transmissions. When using automatic transmission delays, the best (cheapest) transmission time is automatically calculated based on the priority of a fax message and the phone rates of your phone network provider.

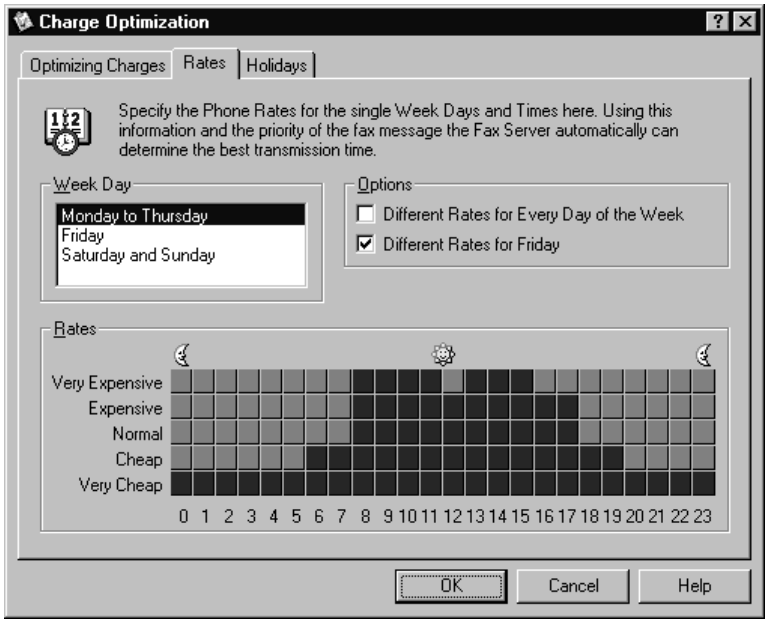


To activate automatic optimization of the transmission time, follow these steps:

- Choose the menu *Extras* / *Charge Optimization* or use the corresponding button in the toolbar.
- Activate the option *Enable Automatic Optimization of Charges*.
- Configure the maximum transmission delay admitted for the single priority levels.
- Change to the *Rates* tab and configure the rates for the single days of the week and times of the day.
- Complete the configuration with OK.

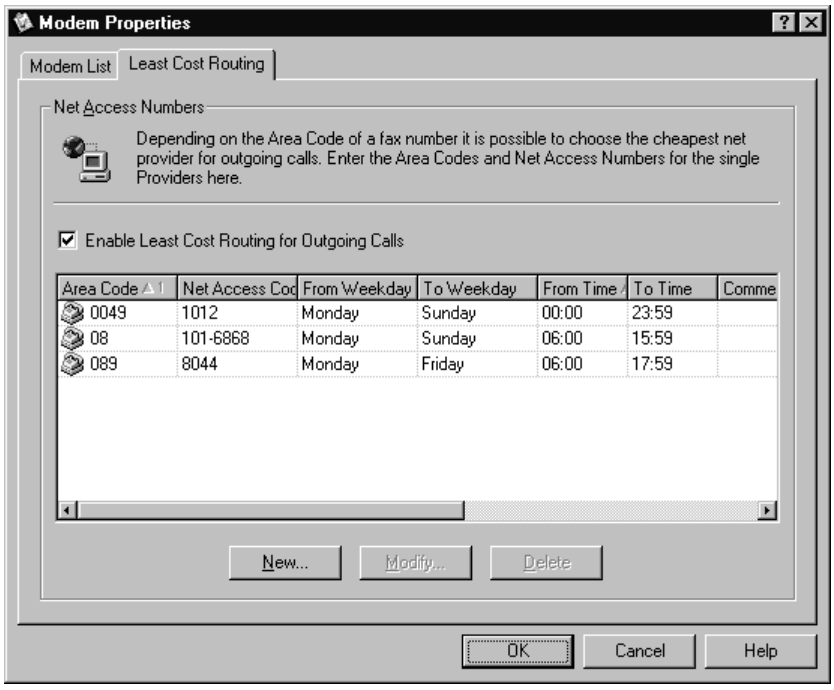
Take care that automatic charge optimization is mainly affected by the priority of the fax messages. This makes it absolutely necessary to set the

priority level of low-priority fax messages to “unimportant”. As an alternative it would also be possible to manually change the preferred transmission time for a fax message. That way large fax mailings can be sent during night hours or at the weekend.



4.4.2. Least Cost Routing

Another way to reduce phone charges is using least cost routing. Least cost routing can be used if you have more than one phone network provider; based on the area code of the fax number and the time of the day, ActiveFax automatically uses the best (cheapest) provider for the transmission.



To activate least cost routing, follow these steps:

- Choose the menu *Extras* / *Modem* or double-click on the corresponding icon in the communication window.
- Change to the *Least Cost Routing* tab.
- Activate the option *Enable Least Cost Routing for Outgoing Calls*.
- Add an entry for each area code / time combination. Enter the area code first, followed by the weekday, time and net access number.
- Complete the configuration with OK.

Please note that it is not required to enter the complete area code for least cost routing. “8” for example covers all fax numbers beginning with “8” (i.e. 89, 873, ...).

4.5. Modem & ISDN

ActiveFax supports fax modems of all fax class standards, ISDN adapters compatible with the CAPI 2.0 standard as well as dedicated fax boards from Brooktrout and Intel/Dialogic. See the summary below for an overview of all fax standards supported by ActiveFax.

Modem Class	Standard	Description
Fax Class 1	TIA/EIA 578	This fax standard is supported by virtually all modems.
Fax Class 2	SP-2388, TR-29.2	This standard is normally only supported by old modems and has been replaced with Fax Class 2.0.
Fax Class 2.0	TIA/EIA 592	This standard is supported by most modern modem types.
ISDN	CAPI 2.0	This standard is supported by virtually all ISDN adapters. Take care that the ISDN adapter also needs to support the Fax Group 3 (T.30) service.
BFAX	Brooktrout Fax and Voice API (BfvAPI)	This standard supports Brooktrout TR114, TR1034 and Trufax fax boards.
GFAX	Intel/Dialogic Gammalink API	This standard support Intel/Dialogic fax boards of the CPi series.

The number of modems, ISDN adapters and fax boards supported by ActiveFax is not limited. It is also possible to use different modems, ISDN adapters and fax boards in a single system.

Please note that the term “modem” is used for fax modems as well as ISDN adapters and fax boards. Otherwise explicitly noted, there is no difference between fax modems, ISDN adapters and fax boards when talking about “modems”.

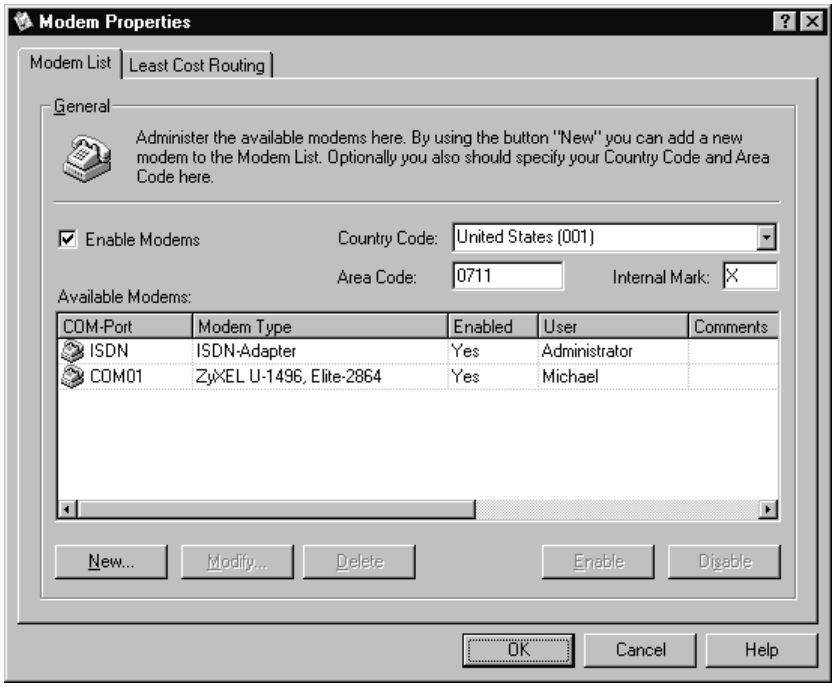
4.5.1. Advantages of ISDN Adapters

Compared to normal analog fax modems, using ISDN adapters involves several advantages. ISDN adapters could also be slightly cheaper compared to fax modems, especially when using ISDN adapters built with passive technology.

- Availability of direct dial numbers (individual fax number for each user). Required ISDN service: MSN (Multiple Subscriber Number) or DDI (Direct Dial In).
- Recording of the transmission charges. Required ISDN service: AOC (Advice of Charge).
- Simultaneous fax transmissions on multiple phone lines (channels). When using BRI (Basic Rate Interface) 2 channels are supported by default; when using PRI (Primary Rate Interface) up to 30 channels are available with a single ISDN controller.

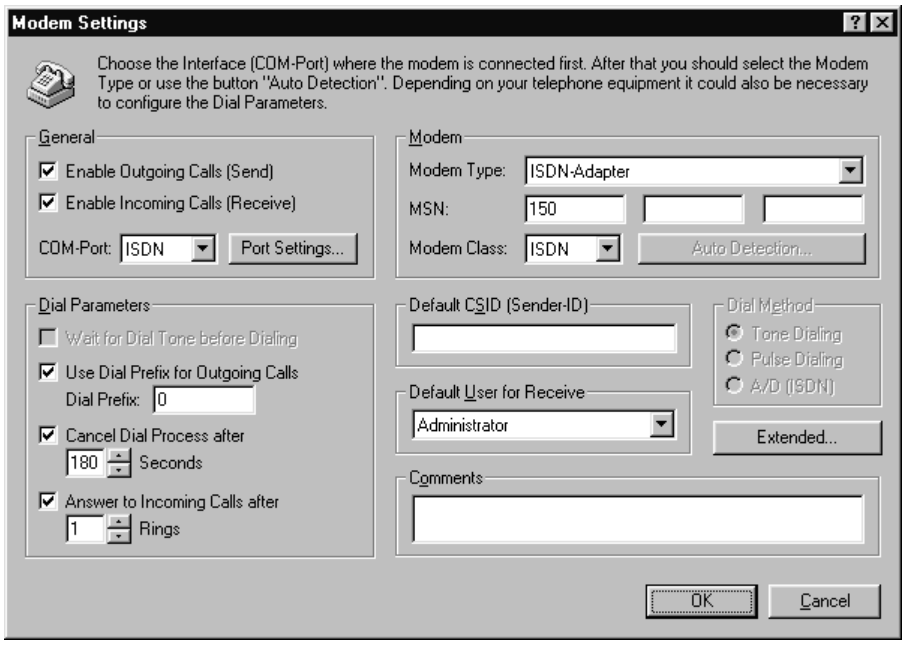
4.5.2. Modem Configuration

The setup program of ActiveFax automatically detects and configures all modems, ISDN adapters and fax boards connected to the system. To subsequently add or modify modems, use the menu option *Communication* / *Modem* or double-click on the modem icon in the communication window.



- Use the *New* or *Modify* button to create a new entry or to modify an existing entry in the modem list.
- Select the *COM-Port* (interface) the modem is connected to (i.e. COM01, COM02, ISDN, etc.). Optionally use the *Port Settings* button to change the configuration of the COM port.
- Set the *Modem Type* or use the *Auto Detection* button to automatically detect the modem type.

- When using an ISDN adapter, it is also recommended to enter at least one MSN (direct dial number) in the *MSN* field. It is possible to configure up to three MSN here. Additional MSN for the single users can be added with the User Administrator. Please note that ActiveFax answers to all incoming calls (also global calls), if you do not configure at least one valid MSN either in the modem configuration or the User Administrator.
- Depending on the settings of your phone system (PBX) it could also be required to configure additional parameters (i.e. dial prefix, dial method, etc.).
- Complete the configuration with OK.



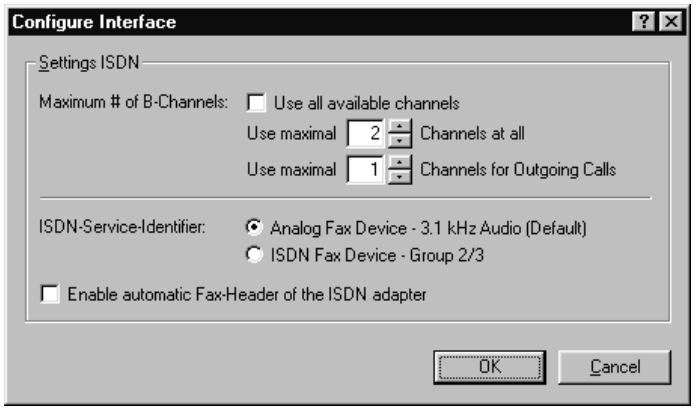
⚠ When using an old phone system (PBX) or the modem is connected to an analog phone system, it could be required to use **pulse dialing** instead of tone dialing. Take care to choose the correct dialing method in that case, since otherwise outgoing calls cannot be successfully dialed.

⚠ When using an ISDN adapter, you should take care to configure a valid MSN (direct dial number) either in the modem configuration or the User Administrator (at least for one user). If there is no MSN configured for the fax server, ActiveFax answers to all incoming calls (also global calls).

ℹ The *Least Cost Routing* tab can be used to automatically select the best (cheapest) phone network provider. Depending on the transmission time and area code of a fax message, net access numbers are searched based on routing tables. More information about least cost routing can be found in

the chapter **Charge Optimization** of this manual or in the online help of ActiveFax.

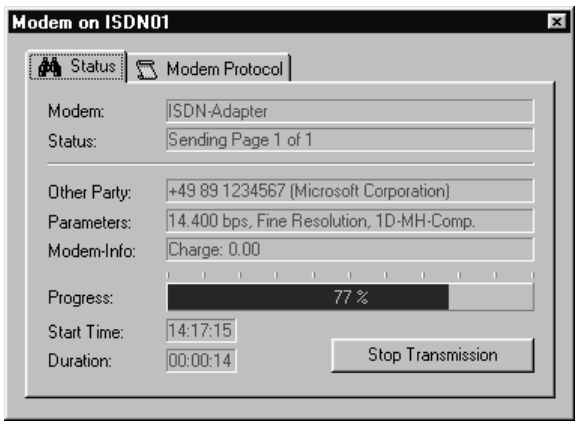
When using an ISDN adapter, multiple phone lines (B-channels) are available. To avoid that ActiveFax uses all available channels for fax transmissions, the number of channels used for faxing can be limited with the *Extended* button. Specify the total number of channels and the number of channels used for outgoing calls here. That way it would be possible to keep some channels in spare for other purposes (i.e. phone calls, Internet connections, ...).



4.5.3. Modem Status

To display the current status of a modem, click on the modem icon in the communication window. The status window displays the following information about the fax transmission:

- Current status (waiting, sending, receiving, error, etc.).
- Other party (fax number and name).
- Transmission parameters (transmission rate, resolution, compression).
- Additional modem information (direct dial code, charges).
- Transmission progress for the current page.
- Start time of the transmission.
- Duration of the transmission.


Modem on ISDN01
Status
Modem Protocol
Modem:
ISDN-Adapter
Status:
Sending Page 1 of 1
Other Party:
+49 89 1234567 (Microsoft Corporation)
Parameters:
14.400 bps, Fine Resolution, 1D-MH-Comp.
Modem-Info:
Charge: 0.00
Progress:
77 %
Start Time:
14:17:15
Duration:
00:00:14
Stop Transmission

4.6. E-Mail

As an alternative to sending documents by fax, ActiveFax can also be used to send any document by email. Depending on the configuration of the fax server, ActiveFax tries to convert the document to text format whenever possible. If the conversion to text format cannot be done, the document is sent as an email attachment in **PDF**, **TIFF** or **GIF** format.

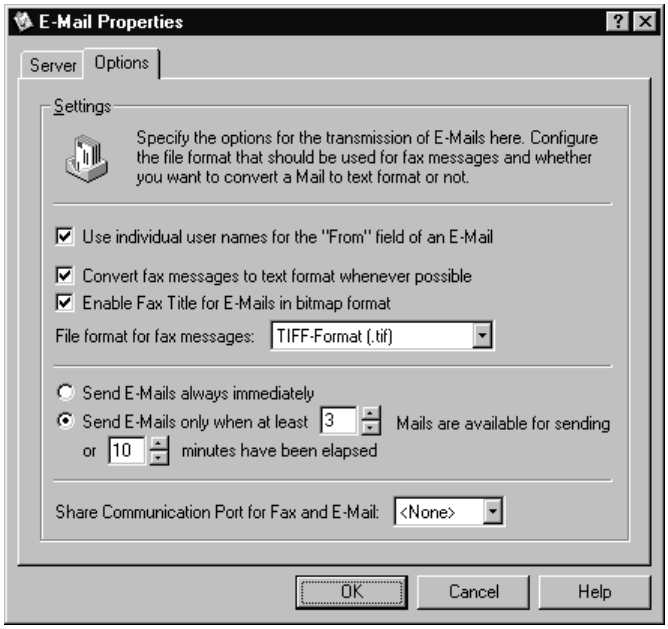
4.6.1. SMTP Server (Mail Server) Configuration

Delivery of emails is done through an SMTP server (Simple Mail Transfer Protocol). To configure the email service in ActiveFax, you just need to specify the address of your SMTP server and the type of Internet connection for the fax server PC. If you do not know the address of your SMTP server, ask the administrator of your mail system or your ISP (Internet Service Provider).

- Enter the hostname or IP address of the SMTP server.
- Specify whether you have direct access to the Internet or if you need to use dialup connections.
- If you need to use dialup connections, configure the settings for the Remote Access Service (RAS).

4.6.2. E-Mail Options

The settings of the email service can be individually configured to set the default attachment format and other parameters.



- The option *Use individual user names for the "From" field of an E-Mail* is used to specify if the complete user name should be used in the "From" field of the email. If this option is disabled, the **Name** field (company name) is used instead.
- The option *Convert fax message to text format whenever possible* controls if the fax server should try to convert documents to text format (ASCII or HTML) whenever possible. If the conversion cannot be done, the document is sent as an email attachment in PDF, TIFF or GIF format.
- The option *Enable Fax Title for E-Mails in bitmap format* controls if the header of the fax message should be added to emails.
- The *File format for fax messages* sets the file format for email attachments. Documents are sent as an email attachment whenever it is not possible to convert a document to text format. The default file format is PDF.
- The option *Send E-Mails always immediately* is used to configure whether an email should be delivered immediately (as soon as it is received by the fax server) or if the fax server should wait for a predefined number of emails to be in the transmission queue. Especially when using dialup connections for Internet access, this option can be very useful to reduce phone charges.

- The setting *Share Communication Port for Fax and E-Mail* has to be activated if you share the same modem for fax transmissions and dialup connections for Internet access. The fax server automatically disconnects the modem connection in that case to give the Windows RAS manager the chance to do a dialup connection to the Internet.

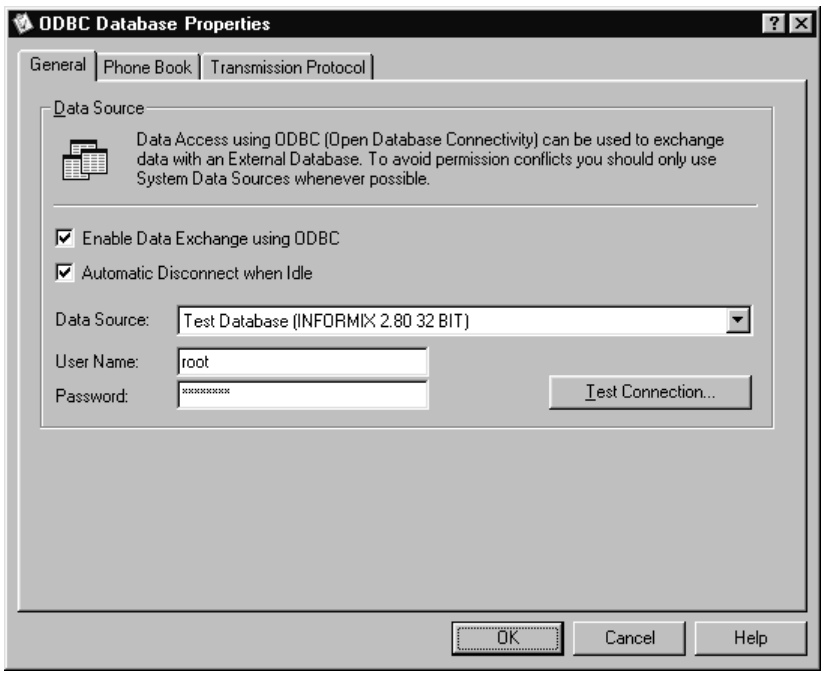
4.7. ODBC Database

Using the ODBC data exchange standard, data can be exchanged between ActiveFax and external databases. Since ODBC drivers are available for virtually all database products, ActiveFax can be easily integrated with such databases. ActiveFax supports the automatic import of the phone book data as well as the automatic export of the transmission protocol through ODBC.

4.7.1. Selecting a Data Source

To use ODBC data exchange with ActiveFax, a data source has to be selected first. Follow these steps to select an ODBC data source:

- Choose the menu *Communication* / *ODBC Database* or double-click on the corresponding icon in the communication window.
- Selected a *Data Source* from the list of available data sources.
- Enter the *User Name* and *Password* for the database connection. Please note that this information is not needed for all database types.
- Test the database connection with the *Test Connection* button.



Take care that the data source first needs to be created through the Windows Control Panel. For more information about creating an ODBC data

source for your database, have a look at the manual of your database product.

⚠ Some ODBC drivers (i.e. some version of INFORMIX CLI) fail to release allocated system resources after a database connection has been closed. To save system resources, it is recommended to disable the option *Automatic Disconnect when Idle* in that case.

⚠ The ODBC drivers of some database products are not fully compatible with the ODBC data exchange standard. When using such drivers, it could happen that data exchange with ActiveFax does not work as expected. In such cases you should try to get the latest ODBC driver version for your database.

4.7.2. Importing the Phone Book

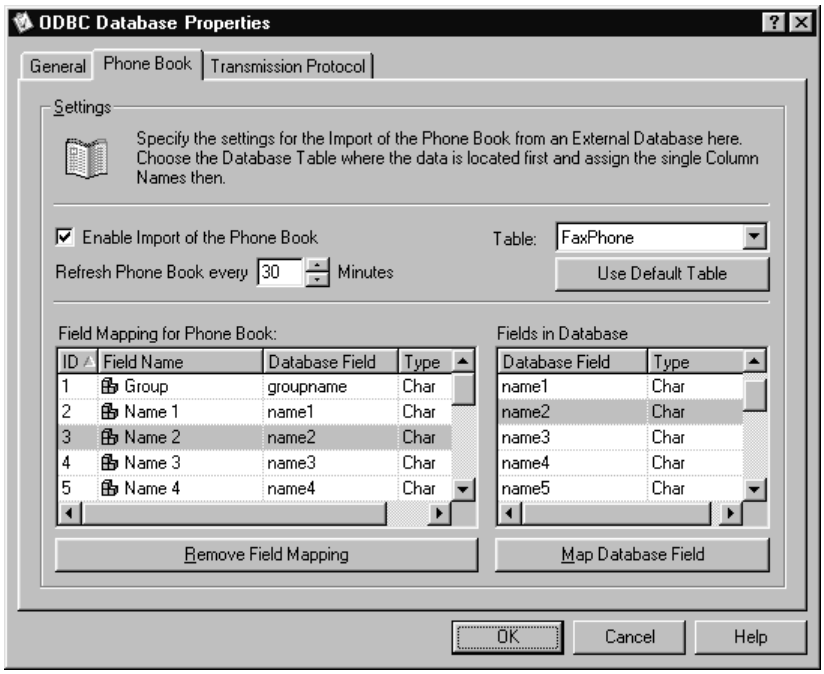
The import of the phone book is done fully automatically; the fax server checks the database in predefined time intervals for new and modified phone book entries in that case. The import function compares the fields *ID-Number* (i.e. customer or supplier number), *Name 1* and *Fax Number* to find existing phone book entries. If an existing entry is found, the entry is updated; otherwise a new entry is created in the phone book.

ℹ Please note that the import of the phone book from an ODBC data source is always done for the **Central Phone Book**.

To configure the automatic import of phone book entries from an ODBC data source, follow these steps:

- Change to the *Phone Book* tab.
- Set the time interval to be used for the automatic update of the phone book data.
- Select the *Table* that contains the phone book entries from the list of available database tables. A default table can be created with the *Use Default Table* button. The default table is created with all fields available in the phone book.
- Configure the field mapping to set the relationship between database columns and phone book fields. Fields not included in the database table are automatically imported with default or empty values. If you use the default table to import the phone book entries, the field mapping is automatically configured by ActiveFax.

- Complete the configuration with OK.



Please note that conversion of different data types is automatically done by the fax server whenever possible.

An alternative way to import phone book entries is to import the phone book data from an external ASCII file (text file). More information about that can be found in the chapter **Phone Book** of this manual.

4.7.3. Exporting the Transmission Protocol

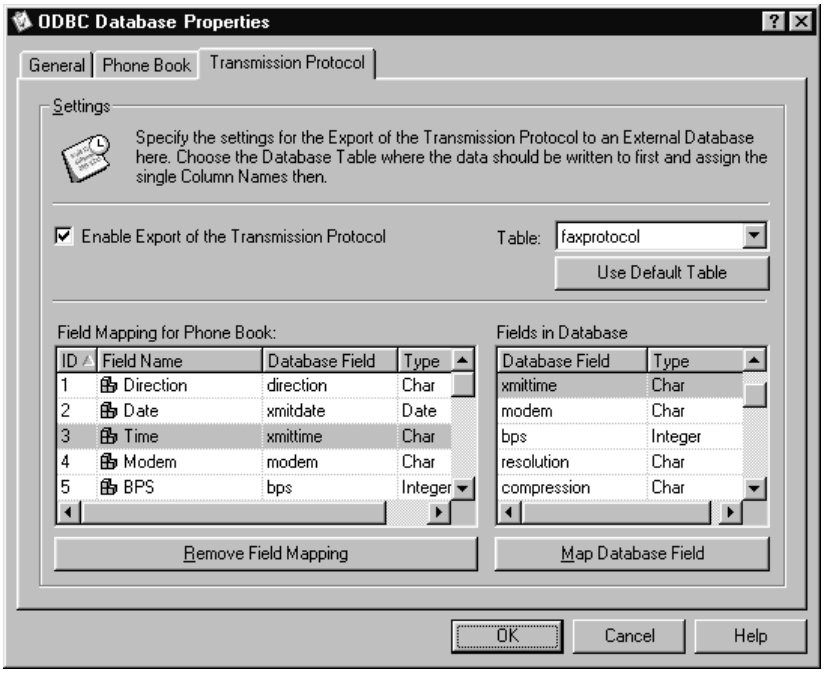
Transmission protocol entries are automatically exported right after a fax transmission completes. As soon as a new entry has been added to the transmission protocol, ActiveFax automatically connects to the database and exports the new entry.

If the database connection should be unavailable, the transmission protocol entries are automatically stored in the background and are exported as soon as the database becomes available again.

To configure the automatic export of the transmission protocol to an ODBC data source, follow these steps:

- Change to the *Transmission Protocol* tab.

- Select the *table* to be used for the export of the transmission protocol entries. A default table can be created with the *Use Default Table* button. The default table is created with all fields available in the transmission protocol.
- Configure the field mapping to set the relationship between the database columns and the transmission protocol fields. Fields not included in the database table are automatically ignored. If you use the default table for the export of the transmission protocol entries, the field mapping is automatically configured by ActiveFax.
- Complete the configuration with OK.



Please note that conversion of different data types is automatically done by the fax server whenever possible.

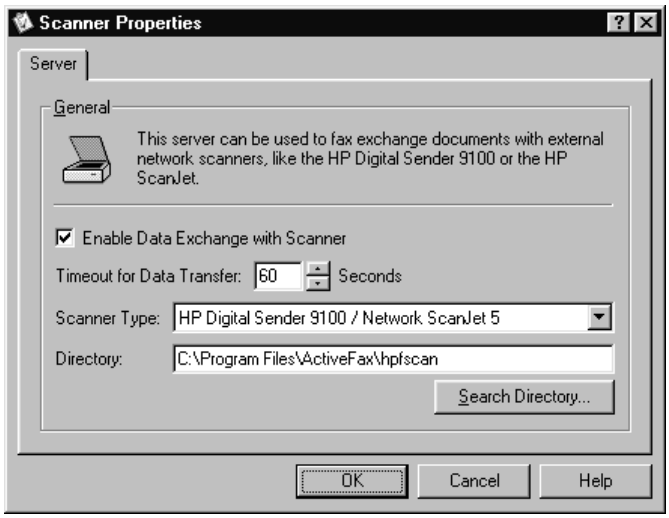
An alternative way to export the transmission protocol is the export to an ASCII file (text file). More information about that can be found in the chapter **Transmission Protocol** of this manual.

4.8. Network Scanners

Documents in paper format can be automatically transmitted using special network scanners. ActiveFax supports the scanner models *HP Digital Sender 9100C*, *HP Network ScanJet 5* and *Xerox Workcentre*. As an alternative it would also be possible to use any other type of scanner (i.e. *TWAIN compatible scanners*) to send faxes in paper format when you scan the document with a graphics program and print the scanned image to the ActiveFax printer.

4.8.1. Installation

ActiveFax is already pre-configured to connect to network scanners, so you only have to do the installation and configuration of the network scanner in that case. Due to technical reasons, the fax service of HP network scanners can only be used when the *HP Digital Sender Service* has been installed on a Windows NT / 2000 / XP / 2003 / Vista / 2008 system. More information about the HP Digital Sender Service can be found in the administration manual of the scanner in the chapter *LAN Fax-Products*.



For the installation and configuration of HP network scanners you should take special care of the following settings:

- The permission ***Logon as Service*** has to be enabled in the User Administrator of Windows NT / 2000 / XP / 2003 / Vista / 2008, otherwise the *HP Digital Sender Service* cannot be started. Take care that this permission is not granted on some systems by default.

- The data exchange directory of the scanner (default directory is ***hpfscan)*** is automatically created during the installation of ActiveFax in the ActiveFax base directory (i.e. C:\Program Files\ActiveFax\hpfscan). Take care to configure this directory when you install the network scanner software.
- The Data Exchange File Format for HP network scanners needs to be configured to ***PCL5 Packbits***.

More information about the HP Digital Sender 9100C can be found at Hewlett Packard's website at http://www.hp.com.

5. Data Fields

5.1. Why do I need Data Fields?

Each parameter of a fax message (i.e. fax number, priority, subject, ...) is stored by the fax server in data fields with unique field numbers. That way it is possible to set the value for such data fields (i.e. the recipients fax number) already from within an application. The user does not need to enter this information again when the fax is created.

⚠ Data fields are normally added to documents by simply adding them as normal text directly in the document or as part of the document name. For some applications data fields only make sense if you have access to the source code of the application to modify the application to automatically print data fields with a document. The integration of data fields into existing applications normally only requires a few small modifications to the program.

5.2. Syntax of Data Fields

Data fields are always formed using the same syntax and can always be written in plain text. The following pages describe how data fields are used and include a reference for all available data fields.

Syntax: `@F`*`nnn xxxxxx`*`@`

Examples:
```
@F307 Purchase Order 123456@
@F211 800-123-4567@
```

Each data field always starts with the characters **@F** followed by the 3-digit field number (***nnn***). The field number is followed by an optional space character and the content of the data field (***xxxxxx***). The end of a data fields is always marked with the **@** character. The character set used for data fields (i.e. ISO Latin 1, IBM PC8, etc.) depends on the character set used in the fax message and is automatically set by ActiveFax.

5.2.1. Masking Data Fields

⚠ If the content of a data field contains the @ character, you have to "mask" the @ character with a backslash (\). Otherwise the @ character would be treated as the end of the data field and the content of the data field would be garbled. It is not necessarily required to mask the @ sign for the email data fields @F111 and @F212, since ActiveFax automatically detects the @ sign of the email address.

Example: `@F203 john.gates\@aol.com@`

Please note that it is only required to mask the @ character. For other characters (including the backslash itself) no masking is needed.

5.3. Overview of the Data Fields

Since ActiveFax supports a total number of more than 50 different data fields, the fields have been subdivided into three groups (*sender fields*, *recipient fields* and *common fields*). Depending on the group, the single data fields start with different field numbers.

ℹ Please note that only fields that contain data need to be integrated with your application. Data fields not specified by the application are automatically filled with default values by the fax server. The most important data field in that case is the data field for the recipients fax number (field *@F211*), since this field is at least required to automatically deliver a fax message. It is recommended to also set other data fields with additional information, like the recipients name (field @F201) or the subject (field @F307).

A detailed summary of all data fields can be found on the following pages. More information about data fields is also available through the online help of ActiveFax.

5.3.1. Sender Fields

This group of data fields contains all parameters for the sender of a fax message. It is recommended to specify at least the fields *Name 1* and *Fax Number*, since this information is printed on the fax title of a message.

Please note that default values for the sender parameters can be specified with the menu *Extras* / *Predefined Settings* or with the User Administrator (menu *Extras / User Administrator*).

Field Number	Field Name	Description
@F101	Name 1	Name 1 of the sender
@F102	Name 2	Name 2 of the sender
@F103	Name 3	Name 3 of the sender
@F104	Name 4	Name 4 of the sender
@F105	Name 5	Name 5 of the sender
@F106	Department	Department of the sender
@F107	CC	CC of the sender
@F108	Phone 1	Phone number 1 of the sender
@F109	Phone 2	Phone number 2 of the sender
@F110	Fax Number	Fax number of the sender
@F111	E-Mail	Email address of the sender

5.3.2. Recipient Fields

This group of data fields contains all parameters for the recipient of a fax message. It is recommended to specify at least the field *Fax Number*, since this field is always needed to automatically delivery a fax message.

Field Number	Field Name	Description
@F201	Name 1	Name 1 of the recipient
@F202	Name 2	Name 2 of the recipient
@F203	Name 3	Name 3 of the recipient
@F204	Name 4	Name 4 of the recipient
@F205	Name 5	Name 5 of the recipient
@F206	Department	Department of the recipient
@F207	Attention Of	Attention-of of the recipient
@F208	CC	CC of the recipient
@F209	Phone 1	Phone number 1 of the recipient
@F210	Phone 2	Phone number 2 of the recipient
@F211	Fax Number	Fax number of the recipient
@F212	E-Mail	E-Mail address of the recipient
@F213	Communication Service	Communication service Fax or Email (F=Fax, E=Email). Only needed if the fields @F211 and @F212 are both set
@F299	Next Recipient	Delimiter for the next recipient

5.3.3. Common Fields

This group of data fields contains all parameters affecting neither the sender nor the recipient of a fax message.

Field Number	Field Name	Description
@F301	Priority	Priority of the fax message (1=very high, 25=high, 50=normal, 99=low)
@F302	Transmission Attempts	Number of transmission attempts so far (this field is automatically filled)
@F303	Transmission Date	Preferred transmission date of the fax message
@F304	Transmission Time	Preferred transmission time of the fax message in the format HH:MM
@F305	Cover Page	Cover page for the fax message
@F306	Overlay	Overlay for the fax message
@F307	Subject	Subject of the fax message
@F308	Free Text 1	Text for free use
@F309	Free Text 2	Text for free use
@F310	Free Text 3	Text for free use
@F311	User Name	User name of the fax message
@F312	Modem	Preferred modem (i.e. COM1, COM2, ISDN)
@F313	Resolution	Preferred resolution (0=standard, 1=normal, 2=fine)
@F314	Lock	Lock status of the fax message (0=not locked, 1=locked)
@F315	Cost Account	Cost account code for the fax message
@F316	Cover Page Text	Text on the cover page. Line breaks can be added with \n
@F317	Cover Page Text (cont.)	This field is used in combination with @F316 to split long text to multiple data fields. The text in the @F317 field is always appended at the end of the text. The data field @F317 can be used as often as required
@F320	ID-Number Phonebook	Complete recipient's data from the phone book entry with the specified ID number
@F350	From Page	Send from page n
@F351	To Page	Send to page n
@F360	Private Fax Message	Mark fax message as private (0=public, 1=private)
@F370	Fax-On-Demand	Create a fax-on-demand document

		(0=normal Fax, 1=fax-on-demand document)
@F500	Reference File	This file will be evaluated for additional data fields and is deleted then. If you do not use this field, ActiveFax tries to search for data fields in the file Fields.dat in the installation directory (usually C:\Program Files\ActiveFax)
@F501	Automatic Printing	No dialog box to enter the recipient is displayed. Optional parameter (0=never display dialog window, 1=only display dialog window for incomplete recipients, 2=always display dialog window)
@F502	Ignore Pages	This data field is used to ignore pages at the end of a fax message. A positive parameter sets the total number of pages (without the cover page) that should be displayed. A negative parameter is used to set the number of pages that should be ignored at the end of the message
@F503	Print Fax	This data field can be used to automatically print a fax after it has been received by the server. As an optional parameter you can specify the printer name and, separated with a comma, the options D to delete the file after it has been printed and the option H, to ignore the fax header for printing. Example: @F503 Laserjet,D@
@F504	Number of Copies	This data field sets the number of copies when a fax message is automatically printed
@F505	Export Fax	This data field can be used to automatically export a fax after it has been received by the server. As an optional parameter you can specify the file name for the export file and, separated with a comma, the options D to delete the file after it has been exported and the option H, to ignore the fax header for the export. Example: @F505 c:\export\test.tif,D@
@F555	Control Command	Send control command to ActiveFax. @F555 DELETE Fax-ID@ @F555 RESEND Fax-ID@ @F555 LOCK Fax-ID@ @F555 UNLOCK Fax-ID@

		@F555 PRINT Fax-ID [printername]@ @F555 EXPORT Fax-ID [filename]@ Example: @F555 DELETE 1234@
@F599	New Fax Job	Start a new fax job within the document. This command is used for mail merge letters, when the single pages of a document should be sent to different recipients. Each time you use that field on a page, a new fax job is started at the beginning of that page

@F600	E-Mail Bitmap Format	The email is always sent as an attachment. ActiveFax does not try to convert the message into text format
@F601	E-Mail Line Break	Number of characters after which ActiveFax forces an automatic line break when converting an email to text format (20-999). Normally this value is automatically calculated according to the width of a page
@F602	E-Mail Attachment	The email is always sent as an attachment, even when the original message is in text format. Optionally it is also possible to specify the attachment name with this data field
@F603	E-Mail Body Text	Body text for emails that are sent as an attachment. If this field is not used, the standard text is used instead. Line breaks can be added with \n
@F604	E-Mail Body Text (cont.)	This field is used in combination with @F603 to split long text to multiple data fields. The text in the @F604 field is always appended at the end of the text. The data field @F604 can be used as often as required
@F605	E-Mail Format	Specify the email file format (tif, gif, bmp, pdf) and/or the resolution. Example: @F605 gif,150@
@F606	E-Mail Attachment	Append files in original format to an e-mail. Multiple files can be separated with a comma (,). The files need to be located on the fax server. As optional parameters you can use D (Delete = delete file after transmission) and R (Required = file is required, otherwise the message is not sent). Example: @F606 c:\dat\prices.pdf, c:\word\mailing.doc, D@

@F700	Accumulated Document	This data field creates an accumulated document with the given reference number. If an accumulated document with that reference number already exists, the print job is added. As an optional parameter you can also specify a timeout in seconds after that the accumulated document is automatically terminated. Examples: @F700 1234@, @F700 1234,60@
@F701	Accumulated Doc End	This data field terminates an accumulated document with the given reference number. Example: @F701 1234@
@F702	Attachment	Append files to the fax. The file format for the attachment needs to be either a text file or a file created through the ActiveFax printer driver. Multiple files can be separated with a comma (,). The files need to be located on the fax server. Example: @F702 c:\data\pricelist.prn@
@F703	Overlay on/off	Turns an overlay on/off (0=off, 1=on). When using 0+ or 1+, the overlay is turned on/off on the following page rather than on the current page

@F000	Import Image	Embed a bitmap into the document

5.3.4. Special Data Fields

Please note that not all of the above data fields are data fields in the literal sense. Special fields are for example @F299, @F500, @F501, @F599 and @F000. The special meaning of these fields is described on the following pages.

5.4. Examples for Data Fields

It is recommended to have a look at the sample file "**sample.txt**" to see how data fields are used. This file is automatically copied to the installation directory of the fax server. The file demonstrates how data fields, bitmap files and document formation with HP-LaserJet (PCL) printer commands can be done. Especially when sending fax messages from UNIX or Linux systems, this file would be a good point to start when integrating data fields.

5.4.1. Example 1

Recipient..... +43 1 1122 3344-12
Subject..... Purchase Order 123456

```
@F211 +43 1 1122 3344-12@
@F307 Purchase Order 123456@
```

5.4.2. Example 2

Sender..... Burns & Son Inc., +1 89 112233-25
Recipient..... Brown Import & Export, 0043 1 9072544

```
@F101 Burns & Son Inc.@@F110 +1 89 112233-25@
@F201 Brown Import & Export@@F211 0043 1 9072544@
```

5.4.3. Example 3

Sender..... Burns & Son Inc., +1 89 112233-25
Recipient 1..... Microsoft Redmond, Fax: 040 102030
Recipient 2..... Intel Corp., Fax: 050 607080
Recipient 3..... SAP AG, E-Mail: office@sap.com
Subject..... Catalogue
Xmit Date 31.08.2005
Xmit Time 20:15
Priority..... Low

```
@F101 Burns & Son Inc.@@F110 +1 89 112233-25@
@F201 Microsoft Redmond@@F211 040 102030@@F299@
@F201 Intel Corp.@@F211 050 607080@@F299@
@F201 SAP AG@@F212 office\@sap.com@
@F307 Catalogue@@F303 31.08.2005@@F304 20:15@
@F301 99@
```

The data field **@F299** has been used as a delimiter between the single recipients in that example. Since this data field is only used as a delimited, no content is required for that field.

5.4.4. Example 4

This example demonstrates how to embed bitmaps into a fax message using the special data field **@F000**. More information about adding bit-

maps to a fax message can be found in the following section of this chapter.

```
Yours sincerely
@F000 signature.bmp@
```

5.5. Embedding Bitmaps with Fax Messages

ActiveFax can be used to embed bitmaps at any position of a fax message. That way it would be possible to easily implement individual company logos or signatures. Embedded bitmaps are normally only used for fax messages that have been created on UNIX systems or other non-Windows operating systems.

Quite similar to the use of data fields, bitmaps can be embedded into fax documents using the following syntax:

Syntax:	`@F000 Filename[,Width-mm[,Height-mm]]@`
Example:	`@F000 Signature.bmp,50@`

The parameters *Width-mm* and *Height-mm* are optional. If you do not specify these parameters, the size of the bitmap is automatically calculated. ActiveFax uses a default resolution of 300 dpi when calculating the size of the bitmap in that case. It is recommended to only use bitmaps of the type Uncompressed Windows Bitmap (.bmp). If you do not specify a path for the bitmap file, the file is automatically searched in the installation directory of the fax server (normally C:\Program Files\ActiveFax\Server).

5.5.1. Example 1

Bitmap with a default resolution of 300 dpi.

```
Yours sincerely
@F000 mike.bmp@
```

5.5.2. Example 2

Bitmap located in the directory C:\SCAN with a width of 50 mm (height calculated automatically).

```
Yours sincerely
@F000 c:\scan\mike.bmp,50@
```

5.5.3. Example 3

Bitmap with a width of 50 mm and a height of 30 mm.

```
Yours sincerely
@F000 mike.bmp,50,30@
```

The number of bitmaps that can be embedded into a single fax document is not limited. For an example of embedded bitmaps, have a look at the enclosed sample file "**sample.txt**". This file is automatically copied to the installation directory of the fax server and is a good point to start when adding bitmaps to documents.

5.6. Embedding Data Fields into Applications

5.6.1. Windows Applications

The easiest way to specify data fields from within Windows applications is to add them to the document name when printing. You just need to add the data fields at the end or at the beginning of the document name in that case.

Example:

Document Name .....Purchase Order
Recipient .....Burns & Co
Fax Number .....+49 222 102030

```
Purchase Order@F201 Burns & Co@@F211 +49 222 102030@
```

As an alternative it would also be possible to embed data fields directly in the document (i.e. with WinWord). When using this method, it is important to format the data fields with the **"ActiveFax"** font. If you do not format data fields with that font, the data fields are ignored and printed as visible text on the document. Take care that the "ActiveFax" font is a printer internal font and is only visible in the font selection window when the **current printer** has also been set to "ActiveFax".

5.6.1.1. Reference File for Data Fields

Another way for specifying data fields is using an external reference file. The advantage of this method is that you do not have to set all data fields directly in the document name or the document itself. Using that method you just have to add a single data field, which is a reference to the file with the other data fields. The link to the reference file is done with the data field @F500 filename@ in that case. Take care that the reference file uses unique file names. After the print job has been processed, the reference file is automatically deleted by the fax server.

Example:

Document Name .....Purchase Order
Reference File .....c:\tmp\ref251173.dat

```
Purchase Order@F500 c:\tmp\ref251173.dat@
```

In that example the data fields are located in the file c:\tmp\ref251173.dat. There is no special format required for the data fields in the reference file. It would be possible to write each data filed to a separate line or to write all data fields in a single long line.

5.6.1.2. Split Print Jobs (Mail Merge Documents)

Under certain circumstances it could be required to split a single print job into multiple fax jobs (i.e. when using the mail merge function of Win-

Word). In that case the data field **@F599@** can be used to start a new fax job within a print job. When using the data field @F599@ on a page, a new fax job is started on that page including all following pages up to the next @F599@ data field. This data field is necessarily required when printing mail merge documents from WinWord, since WinWord generates a single huge print job for all fax pages of the mail merge document.

5.6.1.3. Example in Programming Language C

```
DOCINFO     DocInfo;
BYTE        szText[1024];
BYTE        szName[128];
BYTE        szFax[128];

lstrcpy(szName, "Burns & Co");
lstrcpy(szFax, "+49 222 102030");
wsprintf(szText, "Purchase Order@F201 %s@@F211 %s@",
                 szName, szFax);
DocInfo.cbSize = sizeof(DOCINFO);
DocInfo.lpszDocName = szText;
DocInfo.lpszDatatype = NULL;
.....
```

5.6.2. UNIX, Linux and other Operating Systems

To embed data fields in UNIX, Linux or other non-Windows operating systems, you can insert the data fields directly into the document as normal text (no special font is needed). The fax server automatically filters and evaluates the data fields, so they are not visible on the fax message. Such data fields can be added at any position of the document.

Have a look at the enclosed sample file "**sample.txt**" for an example of data fields added to documents in UNIX and Linux. This file is automatically copied to the installation directory of the fax server and would be a good point to start for own projects. Please note that it is also possible to use printer commands of HP-LaserJet (PCL), Epson-LQ and optionally Postscript and PDF to format fax messages.

5.6.2.1. Example in Programming Language C

```
char     szName[128];
char     szFax[128];
int      nPriority;
char     szSubject[128];
```

```
char     szText[1024];

lstrcpy(szName, "Burns & Co");
lstrcpy(szFax, "+49 222 102030");
nPriority = 1;
lstrcpy(szSubject, "Purchase Order");

wsprintf(szText, "@F201 %s@@F211 %s@@F301 %d@@F307 %s@",
                 szName, szFax, nPriority, szSubject);
.....
```

5.6.2.2. Example in Programming Language INFORMIX 4GL

```
DEFINE faxdata RECORD
          name         CHAR(128),
          fax          CHAR(128),
          priority     SMALLINT,
          subject      CHAR(128)
       END RECORD

faxdata.name = "Burns & Co"
faxdata.fax = "+49 222 102030"
faxdata.priority = 1
faxdata.subject = "Purchase Order"

PAGE HEADER
   PRINT "@F201 ", faxdata.name CLIPPED, "@";
   PRINT "@F211 ", faxdata.fax CLIPPED, "@";
   PRINT "@F301 ", faxdata.priority USING "#&", "@";
   PRINT "@F307 ", faxdata.subject CLIPPED, "@"
.....
```

6. Appendix

6.1. Glossary

16-bit: The term “16-bit” is used for applications that are designed for the operating system Windows 3.x. 16-bit applications can also be executed on newer Windows version, but they do not fully use the new features of these operating systems.

32-bit: The term “32-bit” is used for applications that are designed for one of the operating systems Windows 95 / 98 / ME, Windows NT / 2000 / XP / 2003 / Vista / 2008. A 32-bit application is using the functions of the operating system more efficient than a 16-bit application and is therefore running faster and more stable. 32-bit applications cannot be executed on Windows 3.x.

Analog: The opposite of “digital”. Analog numbers can have any values, whereas digital numbers can only have values of a defined scale. For fax transmissions the term “analog” is usually used for the common phone network, whereas the term “digital” is used as a synonym for ISDN.

ANSI: Abbreviation for “American National Standard Institute”. The ANSI standard for example defines the *ANSI character set* or the programming language *ANSI C*.

API: Abbreviation for “Application Programming Interface”. The API defines a group of functions that is used for the processing of specific tasks.

ASCII: Abbreviation for “American Standard Code for Information Interchange”. This code defines unique numbers for characters, numbers and other special and control characters. The values of the ASCII code are between 0 and 255 (at 7-bit between 0 and 127).

Baudrate: Unit for the step rate of a modem. Baudot, who is giving the Baudrate its name, was a French engineer, who developed the Baudot-Code, which was used prior to the ASCII-Code. Please note that the terms *Baudrate* and *Bitrate* do not identify the same unit.

Bit. A bit is the smallest possible information unit on a computer. A bit can have two different conditions (0 or 1). By concatenating multiple bits, every kind of information can be stored. In computers, 8 single bits usually build one so called Byte. Therefore a byte can store 256 different values.

Bitrate: Unit for the data bits that are transferred in a given time period. This unit usually describes the numbers of transferred bits within one second. Please note that the term *Baudrate* and *Bitrate* do not identify the same unit.

Broadcast: The term “Broadcast” means a sending method that accesses all devices in a network. Broadcast calls are mainly used to search for resources in a network.

CAPI: Abbreviation for “Common ISDN API”. This defacto standard of the German company AVM is defining a programming interface for ISDN adapters of different manufacturers. ISDN adapters, which support at least CAPI version 2.0, can be used for the transmission of fax messages.

CCITT: Abbreviation for “Comité Consultatif International Téléphonique et Télégraphique”. This committee is responsible for the standardization of telecommunication standards. See also *ITU*.

Class 1/2/2.0: Standard for fax modems. Depending on the modem type, usually at least one of these standards is supported by a fax modem.

Client: A Client is a software program that is used to retrieve and process data from a so called Server.

COM-Port: Other name for a serial interface (Communication Port) of a personal computer.

CSID: The term “CSID” is used for the sender identification of a fax message. The CSID is transmitted with every fax messages and usually contains the fax numbers of the sender in international format.

DCE: Abbreviation for “Data Communication Equipment”. The term “DCE” is usually used for modem devices.

DLL: Abbreviation for “Dynamic Link Library”. Other than EXE files, DLL files cannot be directly executed. A DLL usually contains program code that is dynamically loaded by other executable programs.

DTE: Abbreviation for “Data Terminal Equipment”. The term “DTE” is usually used for a computer.

Digital: The opposite of “analog”. Digital numbers can only have values of a specified scale, whereas analog numbers can have any values. For fax transmissions the term “analog” is usually used for the common phone network, whereas the term “digital” is used as a synonym for ISDN.

EIA: Abbreviation for “Electrical Industry Association”, the Association of the American Electronic Industry. The EIA for example, has standardized the serial interface (RS-232).

Fax: A fax or also called facsimile is used to exchange image data between two fax machines. The images are usually compressed according to the compression standard “G3”.

Fax-On-Demand: The term "Fax-On-Demand" means, receipt of a document from a so called Fax-On-Demand Server.

FTP: Abbreviation for "File Transfer Protocol". This protocol is mainly used for copying files. The FTP protocol, which was initially only used on UNIX system, is nowadays also used on the Internet. In ActiveFax, the FTP protocol can also be used for the creation of fax messages.

G3 Fax Mode: The fax mode usually used for fax transmissions. The "G3" standard is specifying the compression method, the transfer speed (maximum 14.400 bps) and other parameters.

GDI: Abbreviation for "Graphics Device Interface". Under Microsoft Windows, the GDI is used for painting the contents of a window and for printing purposes.

Handshake: At the beginning of each fax transmission, the transmission speed has to be negotiated between the two fax devices (modems). This synchronizing phase is also called handshaking phase.

HDLC: Abbreviation for "High Level Data Link Control", the protocol used for synchrony data exchange.

ISDN: Abbreviation for "Integrated Services Digital Network". Using ISDN, all data and speech information is transmitted in digital format. Since this way of data exchange is usually much more stable and faster than analog data exchange, it is perfect for computer use. Other than the "normal" phone network, ISDN offers a lot of extra services, like direct dial information or charging information.

ITU: The new name of CCITT.

Least Cost Routing: Least Cost Routing is used to automatically identify the cheapest possible phone connection for a specific destination.

LPD: Abbreviation for "Line Printer Daemon". This protocol is usually used on UNIX systems for print jobs on network based printers.

Modem: Abbreviation of the two words **MO**dulator and **DEM**odulator. A modem is transforming the digital signals of a computer into analog signals (sounds). The other modem device is reconverting these sounds back to digital signals

MSN: Abbreviation for "Multiple Subscriber Number". A MSN is used in ISDN and specifies different unique phone numbers for a single phone line.

Named Pipe: Named Pipes are used in the NetBeui network protocol for data exchange. Named Pipes can be used in ActiveFax to directly send fax messages to the Fax Server. Named Pipes have to be specified using the format "\\server\pipe\pipename".

NetBeui: The NetBeui protocol, also called *Windows Network*, is used for the data exchange between two computers. The NetBeui protocol is only compatible with the Windows operating system and can also be used with ActiveFax when the Fax Server has been installed on either Windows NT / 2000 / XP / 2003 / Vista / 2008.

ODBC: Abbreviation for "Open Database Connectivity". This standard is used for the data exchange between applications and database servers.

Offline: The condition of a modem or other device, which means, that the device do not have an active connection.

Online: The condition of a modem or other device, which means, that the device is having an active connection.

Other Party: The term "Other Party" identifies the other fax device or fax modem.

Overlay: An Overlay is used in ActiveFax to fade in some text or bitmaps (i.e. logos) into a fax message.

PC: Abbreviation for "Personal Computer". This term is usually used for all computers that are compatible to IBM Personal Computers.

Polling: The term "Polling" is used for the receipt of a document from a so called Fax-On-Demand Server.

Processor: The processor is often called the *brain* of a computer. All important tasks are controlled by the processor of a computer.

Queue: The term "Queue" is usually used in the LPD protocol. A unique queue name is used to identify a single printer on LPD.

RAM: Abbreviation for "Random Access Memory". The RAM is the so called working memory of the computer. The content of the RAM is lost as soon as the computer is turned off, so the RAM can only be used to temporary store information.

Serial Interface: Communication interface, where the data is sent one bit after the other. With serial data exchange, you only need to have one data line for sending and one line for receiving.

Server: A Server is a software program that stores data which is made available to so called Client applications.

Service: A service is used at the operating system Windows NT / 2000 / XP / 2003 / Vista / 2008 and means an application that is already executed during the boot time of the computer. One of the big advantages of a service is that it is always active, even when there is no user logged on.

SMTP: Abbreviation for “Simple Mail Transfer Protocol”. This protocol is used in the Internet for E-Mail transmissions.

Stream Socket: A data connection that is based on the TCP/IP network standard.

T.4: Standard for the compression of fax data.

T.30: Standard for the transmission of fax data.

TCP/IP: The TCP/IP protocol is a network protocol which is mainly used on the UNIX operating system and on the Internet. Nowadays TCP/IP is also widely used on Windows systems.

TFTP: Abbreviation for “Trivial File Transfer Protocol”. This protocol is mainly used on the UNIX operating system and its primary use is the transfer of files. Nowadays the TFTP protocol is only used for some special reasons. In ActiveFax, TFTP can also be used for the creation of fax messages.

Thread: A thread is a part of an application which is usually executing independently from the rest of the application.

Timeout: A timeout is a specified amount of time, a given task may last. If a task is not completing within the timeout period, the specific task usually will be aborted.

UNC: The default format of a path on the Windows network. The format of an UNC is “\\server\export\path\filename”.

Unicode: A 16-bit character set, which can be used to code all currently existing characters. The operating system Windows NT is using Unicode only on system level.

UNIX: An operating system, which has been developed by AT&T. UNIX is mainly used for multi user systems. Nowadays there exist a lot of UNIX derivatives; the operating system LINUX is one of the most famous UNIX derivatives. Other important UNIX derivatives are HP/UX, AIX and SCO-UNIX.

Web Browser: A Web Browser is a software, that is used to display so called web pages on the local computer (i.e. Netscape, Internet Explorer, ...).

Windows: The term “Windows” usually means the operating system of Microsoft. During the years, a lot of different Windows versions has been released. The most important versions are Windows 3.x, Windows 95 / 98 / ME and Windows NT / 2000 / XP / 2003 / Vista / 2008.

World Wide Web: Also known as “the Web”. The World Wide Web is the global part of the Internet. Web Pages and other resources are linked together by so called Hypertext-Links. Therefore it is possible to access every web page

from any location. Web Browsers are used to display the pages of the World Wide Web.

WWW: Abbreviation for “World Wide Web”.

WYSIWYG: Abbreviation for “What you see is what you get”. This means, that the document displayed on the screen is exactly of the same shape than the printout.

XON/XOFF: Software method that is controlling the flow of the data transmission over a serial interface. The XON/XOFF protocol is using the ASCII codes 17 and 19 to control the flow of the transmitted data.

6.2. Keyboard Hotkeys

Hotkey	Function
F3	User Administrator
F4	Phone Book
F5	Transmission Protocol
F6	Charge Optimization
F7	Execute Polling (Fax-On-Demand)
F10	Cover Page Designer
Ctrl 1	Rotate incoming fax message by 90°
Ctrl 2	Rotate incoming fax message by 180°
Ctrl 3	Rotate incoming fax message by 270°
Ctrl A	Select all entries of the faxlist
Ctrl C	Show or hide the communication window
Ctrl F	Show or hide the faxlist
Ctrl N	Create a new Instant Fax Message
Ctrl O	Create a new fax message from a file
Ctrl P	Print
Ctrl S	Save
Ctrl Z	Suspend outgoing fax messages
Ctrl Page-down	Display next page
Ctrl Page-up	Display previous page
Alt Enter	Display fax dialog
Alt F4	Close a window or the entire application
Cursor down	Scroll the fax view down one line
Cursor up	Scroll the fax view up one line
Cursor left	Scroll the fax view to the left
Cursor right	Scroll the fax view to the right
Page-down	Scroll the fax view down one page
Page-up	Scroll the fax view up one page
Ctrl & Left mouse button	Select multiple entries of a list view
Shift & Left mouse button	Select a from/to range of a list view

6.3. Frequently Asked Questions - FAQ

This part of the manual answers the most frequent questions about ActiveFax. The answers to the questions are kept short, since detailed information about specific topics is also available in the corresponding chapters of this manual and in the online help of ActiveFax.

Question: Is it possible to automatically start the fax server when the computer is booting?

Answer: Using the menu option *File* / *Automatic Startup*, ActiveFax can be configured to automatically start during boot time.

Question: Is it possible to select multiple entries of the faxlist at the same time?

Answer: Using the *Ctrl-Key* and *Shift-Key* it is possible to select more than one entry of any list (not just the faxlist).

Question: Is it possible to change the sort order of the faxlist?

Answer: Clicking with the left mouse button on a column header changes the sort order of the faxlist. The *Shift-Key* can be used to specify multiple columns for sorting.

Question: How can I quickly find a fax message again?

Answer: The fastest way to find a specific fax message is to specify a search term in the search field of the faxlist.

Question: How can I send a fax message from UNIX systems?

Answer: Usually fax messages from UNIX systems are sent using the LPD/LPR protocol. When using LPD/LPR, ActiveFax is accessed exactly the same way as any other network printer.

Question: Is it possible to change the default resolution used for outgoing fax messages?

Answer: Using the *Modem* tab of menu option *Extras* / *Options* it is possible to change the preferred resolution (fine or normal) for outgoing as well as for incoming fax messages.

Question: Is it possible to change the time interval for redialing?

Answer: Using the *Call Repetition* tab of the menu option *Extras* / *Options* it is possible to specify an individual delay for each transmission attempt.

Question: How can I archive a fax message?

Answer: Fax messages are normally automatically archived by ActiveFax. Using the *Archive* tab of menu option *Extras* / *Options*, the settings for the archive function can be individually configured. Please note that it is also possible to manually move fax messages to the archive.

Question: Is it possible to automatically print fax messages or sending reports?

Answer: Using the *Printing* tab of the menu option *Extras* / *Options* the settings for the automatic printing function and the sending report can be configured. Please note that the settings for automatic printing can also be individually configured for each user with the User Administrator.

Question: Is it possible to automatically print the transmission protocol?

Answer: Using the *Printing* tab of the menu option *Extras* / *Options* the settings for automatic printing of the transmission protocol can be configured.

Question: Is it possible to change the information printed in the fax title?

Answer: Using the *Fax Title* tab of the menu option *Extras* / *Options* the appearance of the fax title can be individually changed.

Question: Is it possible to display a notification message upon receipt of a new fax message?

Answer: Using the *General* tab of the menu option *Extras* / *Options* it is possible to activate this feature with the option *Display Notification Message upon Receipt of New Fax Messages*.

Question: Is it possible to automatically use the best (cheapest) transmission time for a fax message?

Answer: Using the menu option *Extras* / *Charge Optimization* it is possible to configure the settings for the automatic optimization of transmission times.

Question: Where can I specify the default parameters for the sender of a fax message?

Answer: Using the menu option *Extras* / *Predefined Settings* the default parameters for the sender of fax messages can be configured. Please note that it is also possible to individually configure different settings for each user with the User Administrator.

Question: Is it possible to protect fax message against unauthorized access?

Answer: Using the menu option *Extras* / *Security Settings* it is possible to activate the security settings of ActiveFax.

Question: Is it possible to create private fax messages only visible to the owner of the fax?

Answer: Using the fax dialog window and the *More Settings* tab you can activate the option *Private Fax Message* to mark a fax message as private.

6.4. Problem Solutions

Problem: The modem is dialing, but the connection cannot be established.

Solution: Check whether tone or pulse dialing has to be used with the phone line. You should also make sure that you do not have to use a dial prefix for outgoing calls. When using a phone system (PBX) you should take care, that the option *Wait for Dial Tone before Dialing* is turned off. You should also try to dial the number with a different communication program (i.e. HyperTerminal) to check if the modem is ok.

Problem: During the transmission of fax messages I often get transmission errors.

Solution: Go to the modem configuration (menu *Communication* / *Modem*) and press the *Extended* button to change the settings for the modem. Disable the options *Enable MR-Compression*, *Error Correction Mode* and *Allow Transfer Rates faster than 9.600 bps* there.

Problem: The connection between the fax server and the fax client cannot be established using the TCP/IP protocol.

Solution: Use the PING command to make sure that the connection between the server and the client computer is ok. Make sure that the TCP/IP protocol is properly installed on the client and server computer. It could also help to reboot the system.

Problem: The connection between the fax server and the fax client cannot be established using the NetBeui protocol (Windows Network).

Solution: Check if the computer name of the server PC is listed in the Windows network list or use the Windows search function to check if the computer can be found in the network. Make sure that you have permission to connect to the server computer. It could also help to reboot the system.

Problem: The TCP/IP port for the LPD server is already in use by another application.

Solution: Close the other application or stop the service of that application. Please note that ActiveFax can also be used to redirect LPD print jobs to local printers.

Problem: The printout of fax messages takes very long on laser printers.

Solution: Use a maximum resolution of 300 dpi for printing in that case. Especially when using HP laser printers with insufficient memory installed you should disable the option *Page Protection* in the printer properties to save resources.

Problem: Not all serial interfaces (COM ports) are listed in the modem configuration.

Solution: The automatic port detection of Windows is not working correctly in that case. It is recommended to disable automatic COM port detection using the *General* tab of the menu option *Extras* / *Options*.

Problem: Received fax messages and fax messages from Windows applications are displayed incompletely.

Solution: Choose the menu option *Extras* / *Options* and disable the option *Enable Processing of Bitmaps above the 64K-Limit* in the *General* tab.

Problem: The system is very slow during transmission of fax messages.

Solution: Choose the menu option *Extras* / *Options* and disable the option *Enable Realtime Communication with the Modem Devices (Realtime-Priority)* in the *General* tab.

Problem: Data exchange with an ODBC database is not working and the program is terminating with a “General Protection Fault” message.

Solution: This is usually caused by a bug in the ODBC driver. In such case, you should try to get the latest version of the ODBC driver from the manufacturer of the database.

Problem: When sending fax messages using an ISDN adapter, it sometimes happens, that fax messages are transmitted twice as long as the original document.

Solution: The ISDN adapter ignores the fax parameter for the resolution of the remote fax machine in that case and it is recommended to install the latest version of the ISDN driver (CAPI driver).

Problem: I have forgotten the Administrator password and cannot access the fax server anymore.

Solution: Contact us in that case for further instructions to unlock access to the fax server

6.5. Sample Applications

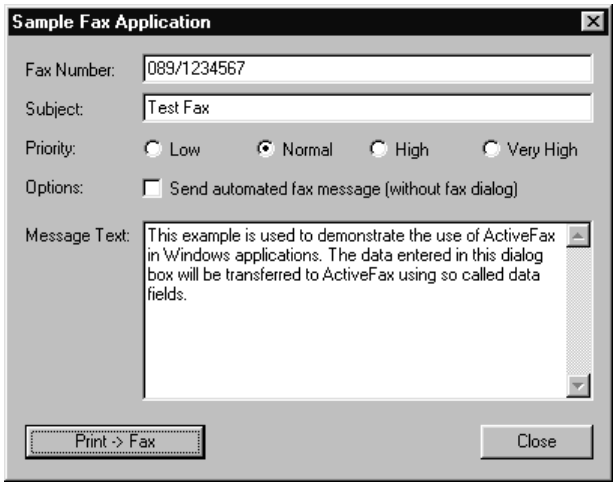
Integration of ActiveFax in other applications is very simple. Using so called data fields, it is possible to specify the fax parameters (i.e. recipients fax number, subject, priority, etc.) already from within an application. Especially applications not running on Windows based operating systems (i.e. UNIX, Linux, DOS, etc.) can take advantage of the support of HP-LaserJet and Epson-LQ printer commands for fax formation.

This chapter includes two examples that demonstrate how data fields can be embedded with applications. The examples have been designed as simple as possible to point out how data fields are added to the program code.

Please note that the source codes for the sample applications as well as the executable files are available in the ActiveFax installation directory on the fax server. The sample files are located in the *Server\Samples* directory on the fax server in that case.

6.5.1. Windows Application (WinApp.exe)

This example in programming language C is used to demonstrate how data fields can be used with Windows applications. This sample application uses normal Windows API calls for printing.



6.5.1.1. Program Summary

- Program starts at WinMain()

- Open the dialog box IDD_MAIN with DialogBox()
- Initialize the dialog box with WM_INITDIALOG
- Call the function PrintDocument() in WM_COMMAND
- Evaluate the dialog box fields with SendDlgItemMessage()
- Generate the document name for printing (add data fields)
- Check if we want to print without displaying the fax dialog
- Open the "ActiveFax" printer with CreateDC()
- Create a new document with StartDoc() and StartPage()
- Write the message text with DrawText()
- Close the document with EndPage() and EndDoc()
- Close the printer with DeleteDC()

6.5.1.2. Source Code

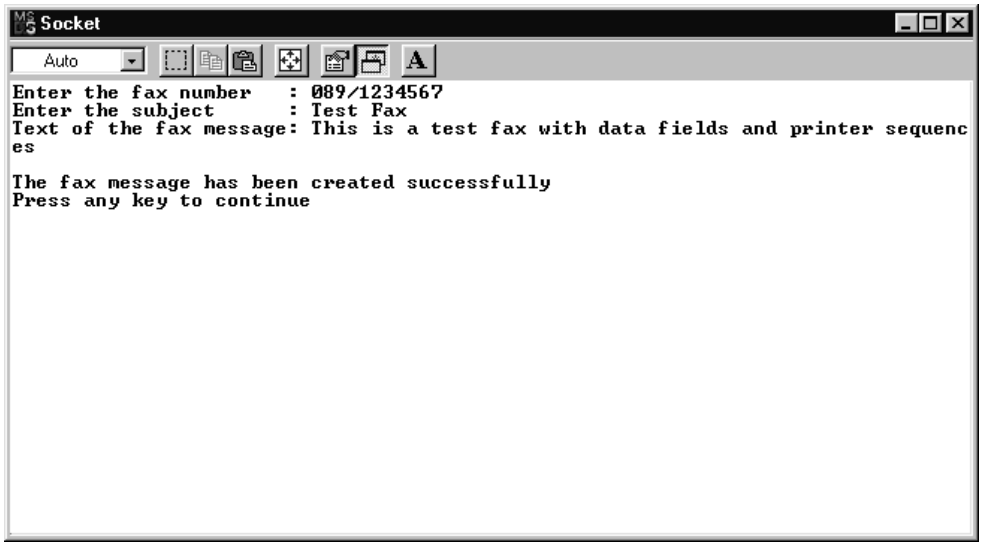
```
#include <windows.h>
#include "resource.h"

// This font is used for the message text
LOGFONT  LogFontText = {150, 0, 0, 0, FW_NORMAL, 0, 0, 0, DEFAULT_CHARSET,
                        OUT_DEFAULT_PRECIS, CLIP_DEFAULT_PRECIS, DEFAULT_QUALITY,
                        DEFAULT_PITCH | FF_DONTCARE, "Times New Roman"};

// Function prototypes
LRESULT WINAPI DialogProcMain(HWND, UINT, WPARAM, LPARAM);
BOOL PrintDocument(HWND);

//-----------------------------------------------------------------------------------------
// This is the main Windows function
//-----------------------------------------------------------------------------------------
int WINAPI WinMain(HINSTANCE     hInstance,
                   HINSTANCE     hPrevInstance,
                   LPSTR         lpCmdLine,
                   int           nCmdShow)
{
   // Create the main dialog window
   DialogBox(hInstance, MAKEINTRESOURCE(IDD_MAIN), NULL, DialogProcMain);

   return 0;
}

//-----------------------------------------------------------------------------------------
// This function handles the messages of the dialog box
//-----------------------------------------------------------------------------------------
LRESULT WINAPI DialogProcMain(HWND        hWnd,
                              UINT        uMsg,
                              WPARAM      wParam,
                              LPARAM      lParam)
{
   switch (uMsg) {
      case WM_INITDIALOG:
         // Initialize the dialog box items
         SendDlgItemMessage(hWnd, ID_PRIORITY_NORMAL, BM_SETCHECK, BST_CHECKED, 0);
         SendDlgItemMessage(hWnd, ID_MESSAGE_TEXT, WM_SETTEXT, 0,
                            (LPARAM) "Enter the text of the fax message here!");
         return TRUE;
         break;

      case WM_COMMAND:
         switch (LOWORD(wParam)) {
            case ID_PRINT:
               // Execute the printing routine
               PrintDocument(hWnd);
               break;

            case ID_CANCEL:
               // Terminate the application
```

```
                EndDialog(hWnd, FALSE);
                break;
            }
            break;
    }

    return FALSE;
}

//-----------------------------------------------------------------------------------------
// This function is used to print (fax) the message
//-----------------------------------------------------------------------------------------
BOOL PrintDocument(HWND hWnd)
{
    BYTE        szMessageText[1024];
    BYTE        szDocumentName[512];
    BYTE        szFaxNumber[128];
    BYTE        szSubject[128];
    int         nPriority;
    BOOL        bAuto;
    RECT        rRectText;
    DOCINFO     DocInfo;
    HDC         hDC;
    HANDLE      hFontText;
    HANDLE      hFontOrig;

    // Retrieve the message text
    SendDlgItemMessage(hWnd, ID_MESSAGE_TEXT, WM_GETTEXT, sizeof(szMessageText),
                       (LPARAM) szMessageText);

    // Retrieve the fax number
    SendDlgItemMessage(hWnd, ID_FAX_NUMBER, WM_GETTEXT, sizeof(szFaxNumber),
                       (LPARAM) szFaxNumber);
    // Retrieve the subject
    SendDlgItemMessage(hWnd, ID_SUBJECT, WM_GETTEXT, sizeof(szSubject), (LPARAM) szSubject);
    // Retrieve the priority and set the correspond priority value (1, 25, 50 or 99)
    if (SendDlgItemMessage(hWnd, ID_PRIORITY_LOW, BM_GETCHECK, 0, 0) == BST_CHECKED) {
       nPriority = 99;
    }
    if (SendDlgItemMessage(hWnd, ID_PRIORITY_NORMAL, BM_GETCHECK, 0, 0) == BST_CHECKED) {
       nPriority = 50;
    }
    if (SendDlgItemMessage(hWnd, ID_PRIORITY_HIGH, BM_GETCHECK, 0, 0) == BST_CHECKED) {
       nPriority = 25;
    }
    if (SendDlgItemMessage(hWnd, ID_PRIORITY_VERY_HIGH, BM_GETCHECK, 0, 0) == BST_CHECKED) {
       nPriority = 1;
    }
    // Retrieve the options
    bAuto = (BOOL) (SendDlgItemMessage(hWnd, ID_AUTO, BM_GETCHECK, 0, 0) == BST_CHECKED);

    // Create the document name. The document name itself is "Testfax",
    // the rest are data fields
    wsprintf(szDocumentName, "Testfax@F211 %s@@F307 %s@@F301 %d@",
                             szFaxNumber, szSubject, nPriority);
    // Check whether we want to see the fax dialog
    if (! bAuto) {
       lstrcat(szDocumentName, "@F501 2@");
    }

    // Open the printer
    hDC = CreateDC(NULL, "ActiveFax", NULL, NULL); // The printer name is always ActiveFax

    if (hDC == NULL) {
       MessageBox(hWnd, "The printer 'ActiveFax' cannot be found!", "Error",
                  MB_OK | MB_ICONSTOP);
       return FALSE;
    }

    // Set the document information structure
    ZeroMemory(&DocInfo, sizeof(DocInfo));
    DocInfo.cbSize = sizeof(DOCINFO);
    DocInfo.lpszDocName = szDocumentName;

    // Start a new document
    StartDoc(hDC, &DocInfo);
    // Create a new page
    StartPage(hDC);
```

```
   // Create and select an object for the font
   hFontText = CreateFontIndirect(&LogFontText);
   hFontOrig = SelectObject(hDC, hFontText);

   // Draw the message text
   SetRect(&rRectText, 50, 100, 2300, 3000);
   DrawText(hDC, szMessageText, lstrlen(szMessageText), &rRectText,
            DT_NOPREFIX | DT_WORDBREAK);

   // Unselect and delete the font
   SelectObject(hDC, hFontOrig);
   DeleteObject(hFontText);

   // Finish the page
   EndPage(hDC);
   // Finish the document
   EndDoc(hDC);

   // Close the printer
   DeleteDC(hDC);

   return TRUE;
}
```

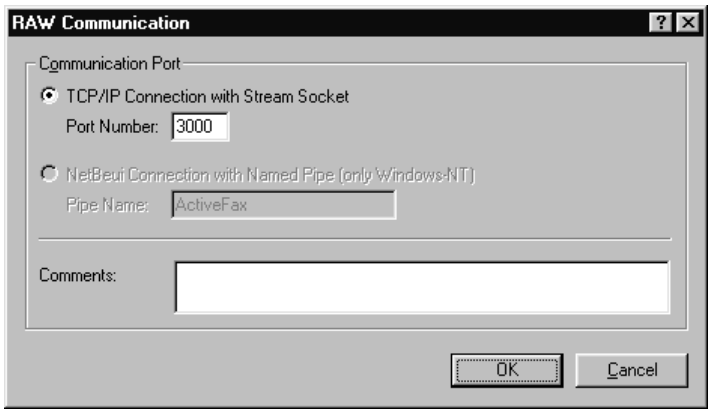
6.5.2. Socket Application (Socket.exe)

This sample application in programming language C demonstrates how data fields can be used in a program that uses TCP/IP Sockets to connect to the fax server. Since sockets are available in virtually all programming languages and operating systems (Windows, DOS, OS/2, UNIX, Linux, etc.) this would be a simply way to send faxes if no other connection to the fax server is available.



⚠ The connection to the fax server is done through stream sockets in that example. Please note that you first have to configure a RAW socket with the TCP/IP port number 3000 on the fax server; otherwise the connection to the fax server cannot be established. Follow these steps to configure a RAW socket on the fax server:

- Choose the menu option *Communication* / *RAW Server* or double-click on the corresponding icon in the communication window.
- Press the *New* button.
- Set the option *TCP/IP Connection with Stream Socket* and enter the *Port Number* 3000.
- Complete the configuration with OK.



6.5.2.1. Program Summary

- Program starts at main()
- Data input with gets()
- Creating the fax message text with sprintf()
- Initialization of the socket library WinSock with WSAStartup()
- Create a new socket with socket()
- Establish a connection to the fax server (IP address 89.1.0.1, port 3000) with connect()
- Send the fax message with send()
- Close the socket with shutdown() and closesocket()
- Release the socket library with WSACleanup()

6.5.2.2. Source Code

```
#include <stdio.h>
#include <winsock.h>

// Function prototypes
int SendFax(char *);

//--------------------------------------------------------------------------------------------
// Main function of the program
//--------------------------------------------------------------------------------------------
int main(void)
{
   char     szFaxNumber[128];
   char     szSubject[128];
   char     szMessageText[512];
   char     szData[1024];
```

```
   // Enter the data
   printf("Enter the fax number   : ");
   gets(szFaxNumber);

   printf("Enter the subject      : ");
   gets(szSubject);

   printf("Text of the fax message: ");
   gets(szMessageText);
   printf("\n");

   // Create a string for the fax message
   sprintf(szData, "\033(s5H"
                   "\033&d0D"
                   "%s\n\n"
                   "\033(s10H"
                   "\033&d@"
                   "%s"
                   "@F211 %s@@F307 %s@",
                   szSubject, szMessageText, szFaxNumber, szSubject);

   // Send the fax message
   return SendFax(szData);
}

//---------------------------------------------------------------------------------------------
// Send the fax message
//---------------------------------------------------------------------------------------------
int SendFax(char *MessageData)
{
   SOCKET         Socket;
   WSADATA        WSAData;
   SOCKADDR_IN    NetAddress;
   int            nResult;

   // Initialize Windows Sockets
   nResult = WSAStartup(0x0101, &WSAData);

   if (nResult != 0) {
      printf("Error %d at WSAStartup()\n", nResult);
      return 0;
   }

   // Create a new socket
   Socket = socket(PF_INET, SOCK_STREAM, IPPROTO_TCP);

   if (Socket == INVALID_SOCKET) {
      printf("Error %d at socket()\n", WSAGetLastError());
      return 0;
   }

   NetAddress.sin_family = AF_INET;
   NetAddress.sin_port = htons(3000); // Port number 3000
   NetAddress.sin_addr.s_addr = inet_addr("89.1.0.1"); // IP address 89.1.0.1

   // Establish a new connection
   nResult = connect(Socket, (LPSOCKADDR) &NetAddress, sizeof(NetAddress));

   if (nResult == SOCKET_ERROR) {
      printf("Error %d at connect()\n", WSAGetLastError());
      return 0;
   }

   // Send fax data
   nResult = send(Socket, MessageData, strlen(MessageData), 0);

   if (nResult == SOCKET_ERROR) {
      printf("Error %d at send()\n", WSAGetLastError());
      return 0;
   }

   // Close the socket
   shutdown(Socket, 1);
   closesocket(Socket);
   WSACleanup();

   printf("The fax message has been created successfully\n");
```

```
   return 1;
}
```

6.6. Index

Notes

Notes