
ActFax Server

User's Manual

26th Extended Edition

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1. Introduction

1.1. ActFax vs. ActiveFax

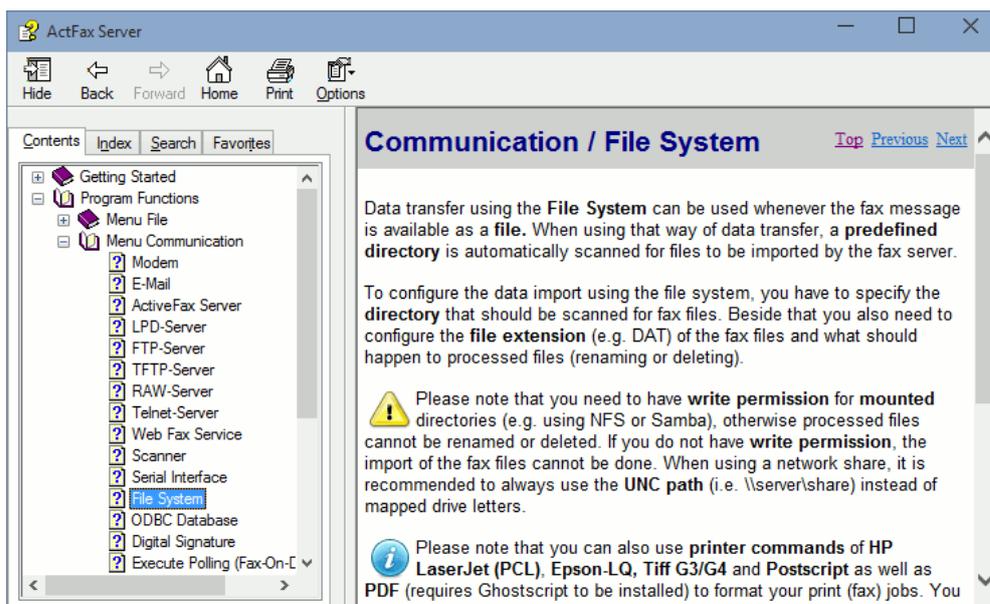
The terms “**ActFax**” and “**ActiveFax**” are used synonymously in this manual and also in the software itself. Both terms refer exactly to the same software. The reason why the software is known under **ActFax** and under **ActiveFax** is due to historical reasons. To preserve highest backward compatibility with existing installations, no adjustments to the names have been made in the software. Whenever this manual or the software refers to **ActFax** or **ActiveFax**, the same software product is addressed.

1.2. 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.

1.2.1. Help System

In addition to the contents of this manual, further help and information can also be found in ActiveFax’ help system. Using the context sensitive online help of ActiveFax, detailed information 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.



1.2.2. Information Symbols

This manual uses graphical symbols to direct your attention to important text sections. These symbols are used to highlight cross references to additional information about specific topics, critical settings or other notes 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, error sources and critical settings.
-  The “*Stop*” symbol is used to direct your attention to very critical settings that might cause loss of data.

1.3. 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 you can expect 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. Furthermore, 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 Postscript as well as PDF guarantees simple and quick integration of fax and email services in UNIX and in Linux environments.

1.4. 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 XP / 2003 / Vista / 2008 / 7 / 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022 (32-bit or 64-bit). You also need a **fax modem**, an **ISDN adapter**, a fax board from **Brooktrout** or **Intel/Dialogic** or an account of a **Web Fax Provider**. To use the software on multiple computers, there also needs to be a TCP/IP network connection (LAN) available. The server computer should be at least an Intel® Pentium model with 300 MHz and 256 MB RAM. The display adapter should be configured to a resolution of at least 1024x768 and 64k 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.

1.4.1. System Requirements Fax Server

Resource	Minimum Requirement	Recommended Requirement
Processor (CPU)	Intel® Pentium/ 300 MHz	Intel® i5 / 2 GHz
Working Memory (RAM)	128 MB	4 GB
Available Disk Space	100 MB	10 GB
Display Adapter	800x600, 256 colors	1024x768, 16M colors
Operating System	Windows XP / SP3	Windows 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022 (32-bit or 64-bit)
Network	TCP/IP or NetBeui	TCP/IP

1.4.2. System Requirements Fax Client

Resource	Minimum Requirement	Recommended Requirement
Processor (CPU)	Intel® Pentium/ 300 MHz	Intel® i3 / 1 GHz
Working Memory (RAM)	64 MB	1 GB
Available Disk Space	20 MB	5 GB
Display Adapter	800x600, 256 colors	1024x768, 16M colors
Operating System	Windows XP / SP3	Windows 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022 (32-bit or 64-bit)
Network	TCP/IP or NetBeui	TCP/IP

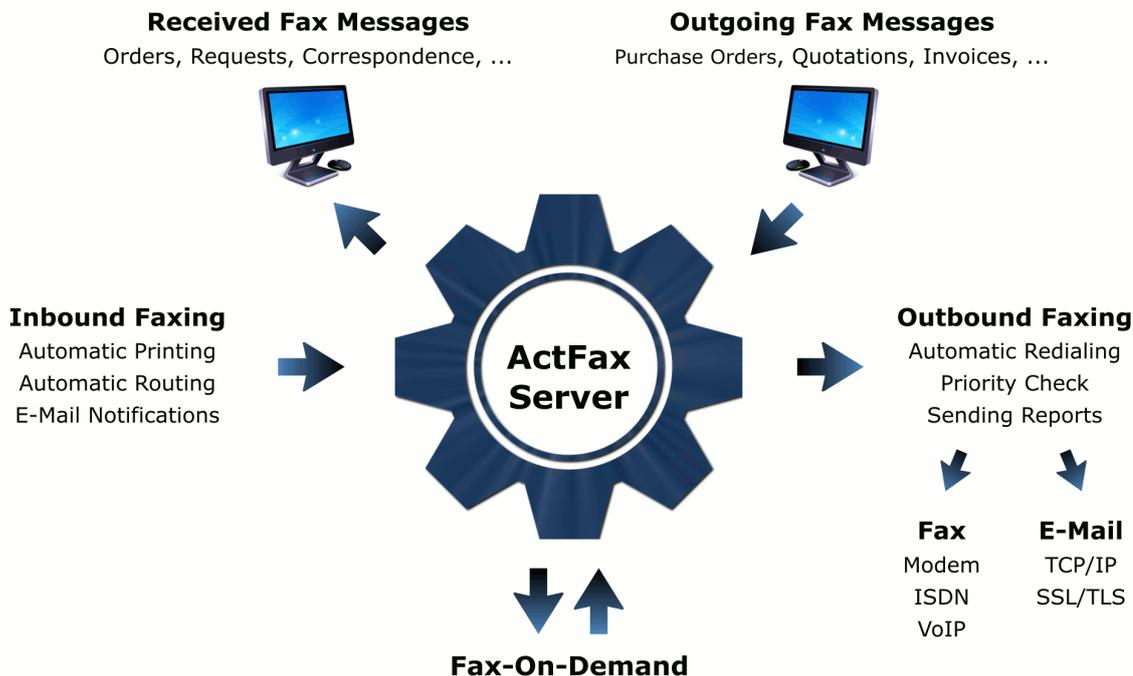
 Support for the **ActiveFax Color printer driver** requires at least Windows 8 or 2012 or .NET Framework 4.5 for Windows Vista / 7 / 2008.

1.5. Software Concept

The primary idea behind ActiveFax is making all tasks as automated as possible. This has been consequently implemented in all parts of the software. The automation already starts at the installation of the software. According to the slogan “unboxing and starting”, all hardware connected to the system is fully automatically detected and configured. 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 component of ActiveFax is used to access the fax documents from any computer in

the network. The fax services provided by ActiveFax can be subdivided into three main categories: Outgoing fax messages (sending), incoming fax messages (receiving) and fax-on-demand (fax polling).



1.5.1. 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. Microsoft® Word). ActiveFax also supports a large number of 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. ERP programs) the fax parameters (recipient, subject, priority, ...) can already be defined inside 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 **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 the same way as normal text directly to the document).

The transmission of pending fax documents is fully automatically processed 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 unreach-

ble recipients (i.e. because of a busy line) will be automatically repeated periodically. The period between the redial 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. Furthermore, the permission for the individual users can also be configured to request sending clearance from an authorized user to start transmission of outgoing fax messages.

1.5.2. Outgoing E-Mails

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 conversion 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).

1.5.3. Incoming Faxes (Receiving)

One of the main advantages of a fax server is the capability of routing inbound fax messages to individual users. ActiveFax supports different 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 automatically displayed on the client computer. As an alternative it is also possible to **automatically print** incoming fax messages. The automatic printing function can be configured to use an individual printer for each user, so it would be possible to print inbound fax messages directly on a user’s workplace printer. To save paper and costs 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. What would also be possible is to automatically forward fax messages by **email** or to automatically **export** the faxes to a predefined directory. When forwarding faxes to multiple email addresses, separate the email addresses with a **semicolon**.

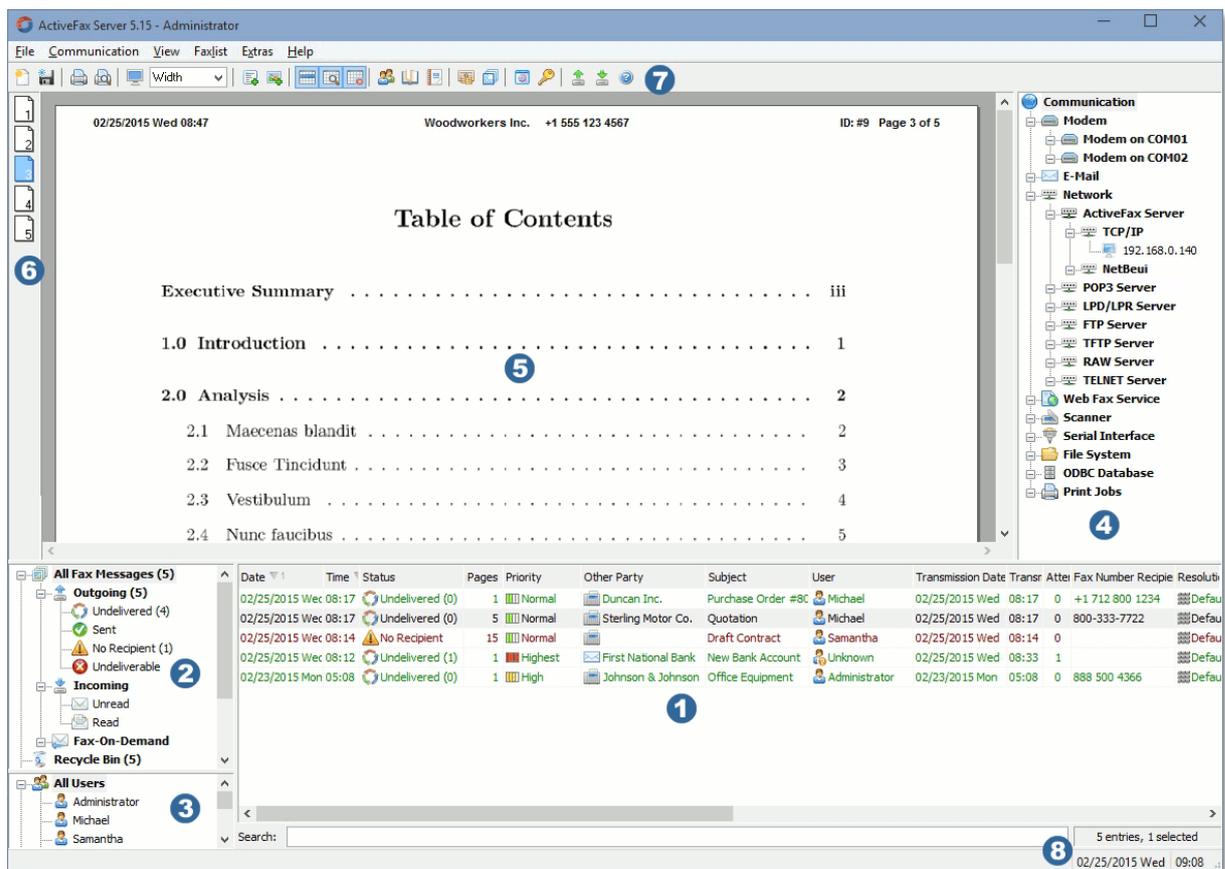
1.5.4. Fax-On-Demand

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.

i Beside the function 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.

1.6. Screen Description



- 1 The **Faxlist** contains a list of all fax messages stored on the system. 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.
- 2 The **Fax Selection Window** is used to select the type of fax message that should be displayed in the faxlist. The fax selection window also includes the **recycle bin** and the **archive**.
- 3 The **User Selection Window** is used to select the user or group that should be displayed in the faxlist.

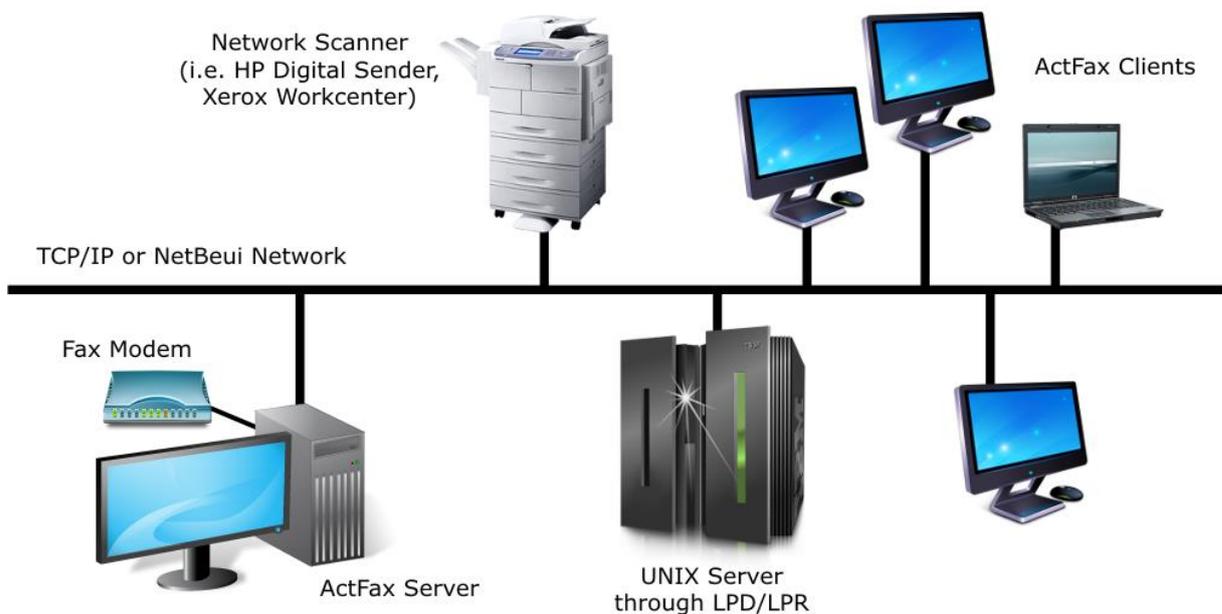
- ④ The **Communication Window** displays the status of all communication services controlled by ActiveFax. With a mouse double-click or with the *Communication* menu, the settings for the individual communication services can be configured.
- ⑤ The **Fax Window** displays the fax message currently selected in the faxlist. The zoom factor of the fax message can be changed with the left and right mouse button or with the zoom field of the toolbar. The number of fax pages displayed in the fax window can be changed with the menu *View / View Properties*.
- ⑥ The **Page Selection Window** is used to change between the pages of a multi-page fax message.
- ⑦ The **Toolbar** contains buttons for important and frequently used functions for fast and direct access to such functions.
- ⑧ 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 consists of two components, 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 fax documents directly from the fax server. The fax client needs to be installed on all computers in the network that should be able to create or access fax messages.

- i** It is recommended to install the fax server part of ActiveFax on a powerful system designed for server operation. Especially when using **delayed fax transmissions** you should also take care that the fax server computer is running 24 hours, 7 days a week and that the computer is not turned off during night hours.



The above sample configuration shows a typical ActiveFax installation. This configuration contains 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. Documents on paper are scanned and submitted to the fax server with the HP Digital Sender network scanner.

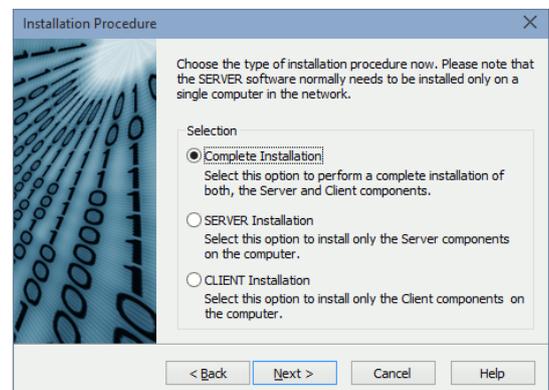
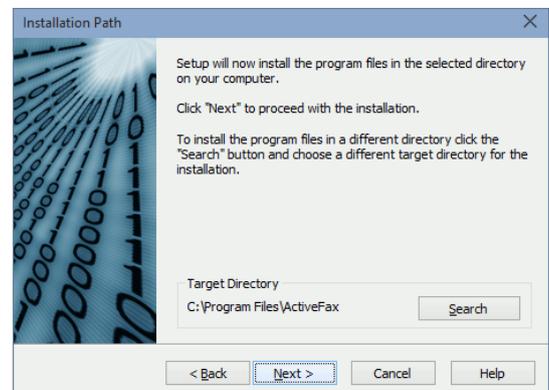
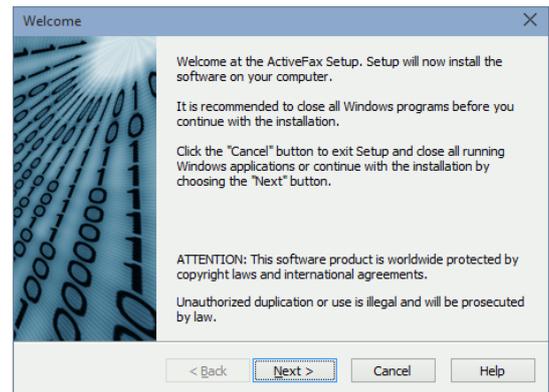
2.2. Running the Setup

Before you start with the installation of ActiveFax, you should define which computers in the network should have the fax client software installed and which computer should be used for the installation of the fax server software.

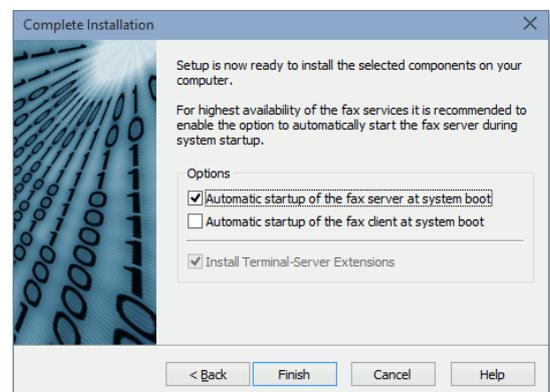
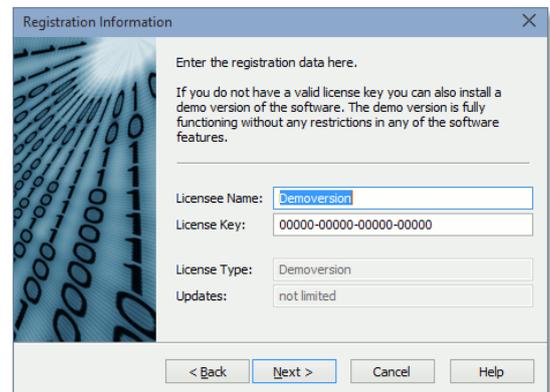
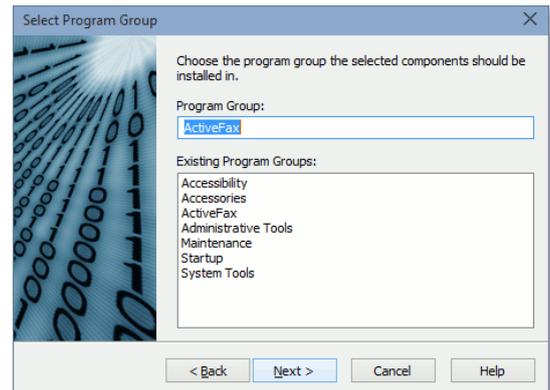
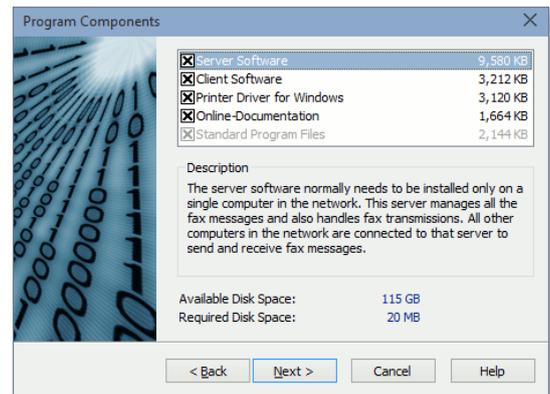
ActiveFax is available in a **32-bit** and in a **64-bit** version. If the installation is done on a 64-bit Windows system, it is recommended to use the 64-bit version of ActiveFax for the installation. If it is required to communicate with other 32-bit programs (i.e. Microsoft® Exchange or Outlook) from within the fax server or fax client, you need to use the 32-bit ActiveFax version also for installations on 64-bit Windows systems. You can mix any combination of 32-bit and 64-bit ActiveFax installations throughout the network.

It is recommended to install the fax server first. After the installation of the fax server has been successfully completed install the fax clients. To execute the installation of ActiveFax, follow these steps:

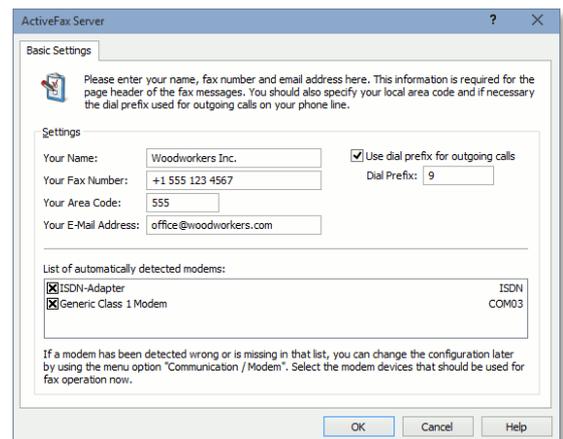
- 1) Insert the program CD into the CD-ROM drive and start the **Setup program** or run the setup directly from the download file `actfax_setup_en.exe` (32-bit version) or `actfax_setup_x64_en.exe` (64-bit version). Please note that most PCs automatically start with the setup when the CD is inserted into the CD-ROM drive. Follow the instructions of the Setup program that guides you through the installation procedure.
- 2) Choose the directory for the installation of the software. The default directory for the installation is the default Windows program directory (C:\Program Files\ActiveFax). The "Search" button can be used to change the target directory or drive for the installation.



- 3) Choose the **installation procedure** now. You can select 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.
- 4) 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.
- 5) Choose the program group that should be used to create the program icons.
- 6) Enter the name of the **licensee** and the **license key**. If you do not yet have a valid license for ActiveFax, use the license key **00000-00000-00000-00000** 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, but there is a “Demoversion” watermark printed on the faxes.
- 7) Specify if the fax server (or fax client) should be **automatically started** during system startup. 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 no user is logged on to the system.
- 8) Turn on all **modems** connected to the system and start the fax server. ActiveFax now scans the system for available fax modems, fax boards 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 also 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. Microsoft® Word or WordPad) and print a document to the **ActiveFax printer**. When the fax dialog window appears, enter the fax number of the recipient (light-blue 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.

- i For an **automatic installation** of ActiveFax it is also possible to run the setup with **command line parameters**. A complete list of all command line parameters can be displayed when you run the setup with the parameter `-?` (i.e. `actfax_setup_en.exe -?`). More information about running the setup with command line parameters can also be found in the ActiveFax Knowledge Base at <https://www.actfax.com/en/kbase.html?id=6822>.
- i Please note that it is not required to **restart** the computer after the installation of ActiveFax. All configuration settings are already active right after the setup program has been finished.
- i When using **Brooktrout fax boards** (i.e. TR114, TR1034 or Trufax) you should install the drivers for the fax board before doing the installation of the fax server. Because Brooktrout does not directly provide drivers for their fax boards, drivers for Brooktrout fax boards are available at <https://www.actfax.com/en/download.html> for free download.

2.2.1. MSI Installation Package (Deployment through Group Policy Objects)

The setup for ActiveFax is available as a normal executable setup program and as a **MSI installation package**. Both setup options contain the same program components. It makes therefore no difference which setup option you choose to install the software.

In environments with many workstations it makes sense to automatically install or uninstall the fax client through Windows Group Policy Objects (GPO). To deploy ActiveFax through Group Policy Objects, you always need to use the MSI installation package. When the MSI installation package is used in a Group Policy Object, the setup automatically selects the **fax client** component for the installation.

-  When installing ActiveFax through a MSI installation package, it is not possible to directly submit command line parameters, but you can use a text file with the file extension *.ini* and the same name as the *.msi* file to set command line parameters to be used for the installation. For example, when the file name of the installation package is *actfax_setup_x64_en.msi*, the command line parameters can be written to the file *actfax_setup_x64_en.ini*. That way you can set the IP address of the fax server or other parameters directly at installation time.

2.3. Customizing Program 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 the most common settings:

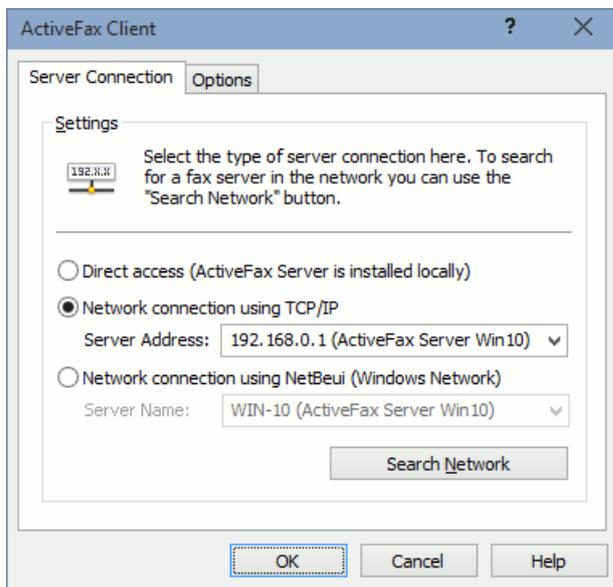
Setting	Menu
Modem Configuration	Communication / Modem
Email Configuration	Communication / E-Mail
Users and Groups	Extras / User Administrator
Access Rights	Extras / Security Settings
Default Sender	Extras / Predefined Settings
Fax Resolution	Extras / Options / Modem
Archive Settings	Extras / Options / 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.

2.4. Establishing a Client Connection

When the fax client (or ActiveFax printer driver) is started for the first time, it tries to find the fax server in the network to establish a connection. ActiveFax supports three different ways 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 recall network or IP addresses. The first fax server found by the automatic detection will be displayed and used as the default server.



-  The IP address of the fax server can also be set directly at the installation of the fax client when you run the setup with the command line parameter **-IP IP address**.

Example:

```
actfax_setup_en.exe -Client -IP 192.168.0.1
```

3. How to ...

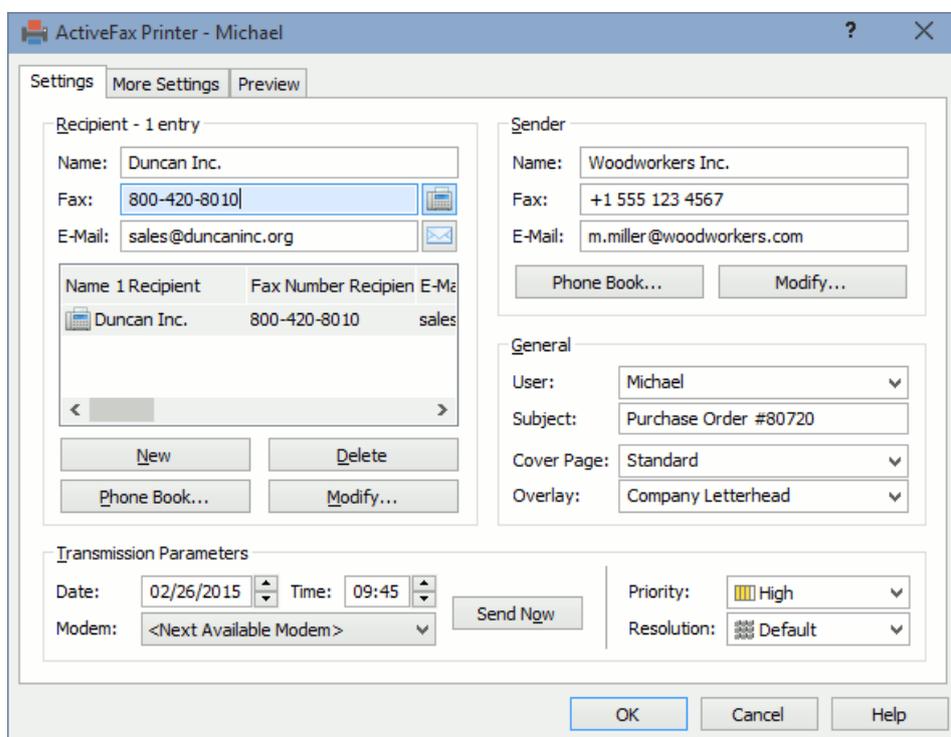
3.1. Create a New Fax Message

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. As an alternative it would also be possible to create “Instant Fax Messages” with ActiveFax. Instant fax messages are used for short messages with just a few lines of text.

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 that should be used to create the fax message (i.e. Microsoft® Word).
- 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 (light blue input field) there.
- Confirm the fax with OK.



After the document has been “printed” that way, it is 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.

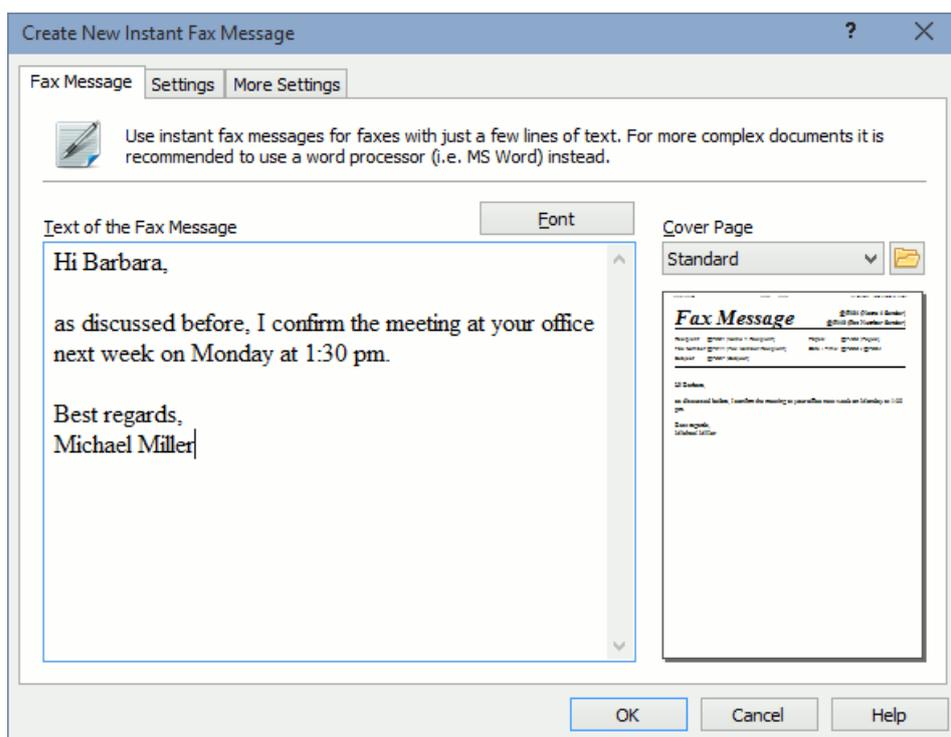
 It is not recommended to use instant fax messages for faxes larger than a single page or for faxes that require complex formatting of the text. In such cases, it is recommended to write the message with traditional text processing software and to print the document to the ActiveFax printer.

Formatting 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 when you encounter spelling mistakes after the fax has been created.

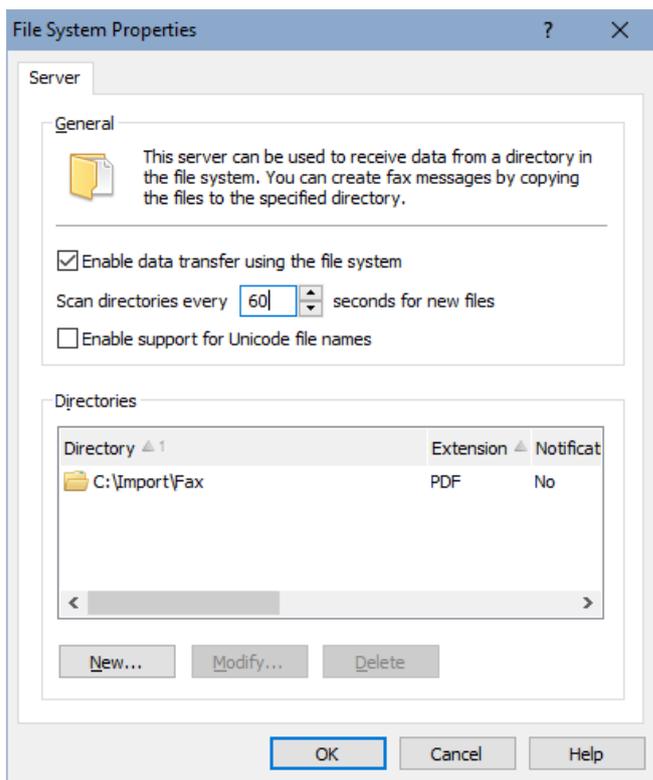


3.1.3. File System

Another powerful method of sending fax jobs to ActiveFax is the file system method. Using 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.

Sample File Name:

C:\Import\Fax\Doc12345@F201 Duncan Inc.@@F211 555-123-4567@.pdf



-  Take care to use only files with data types directly supported by the fax server. **PDF, TIF** (G3/G4 format), **Postscript, PCL** (HP-Laserjet) or **TXT files** are preferred. For example, Word (.doc, .docx), Excel (.xls, .xlsx), OpenOffice (.odt, .ods) or images (.jpg, .gif, .png) are not directly supported by the fax server and are therefore not displayed correctly.
-  When importing files from a network share, take care to always use the complete **UNC path** for the network share (i.e. \\server\share). Do not use mapped drive letters, since mapped drive letters are normally not visible to processes running as a service.
-  If you need to use special characters not allowed in a file name (i.e. * or ?) as part of the data fields used in the file name, it would be possible to code such characters with a % sign, followed by the ASCII code of the character in hexadecimal format (i.e. * can be coded as %2A).

 When using file names that contain **Unicode characters**, the option *Enable support for Unicode file names* should also be enabled to ensure the files are correctly processed by the fax server.

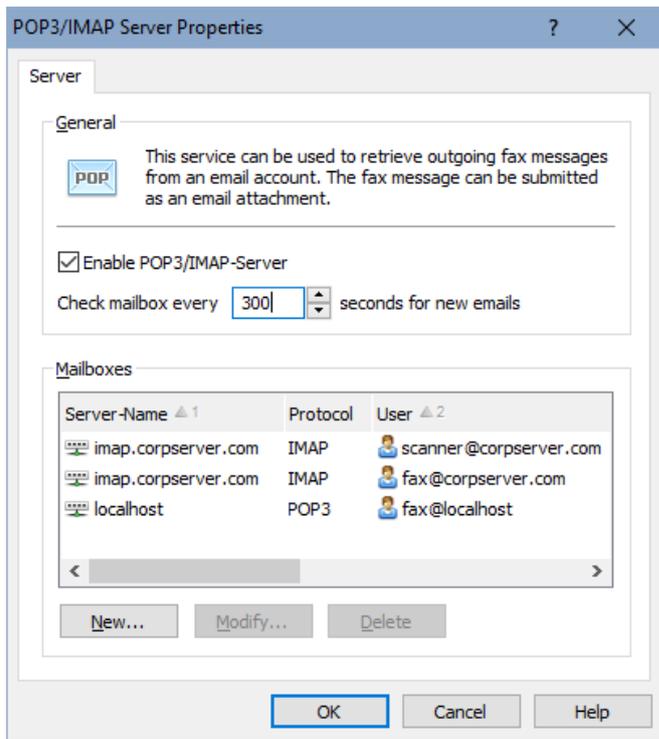
3.1.4. POP3/IMAP Mailbox (E-Mail)

The fax server can also be used to receive outgoing fax jobs from an email account. To send a fax, you just need to send an email to a predefined email address. The fax message can be submitted either directly in the body text of the email or as an attachment. When the email contains multiple attachment files, all attachments are sent as a single fax job by default.

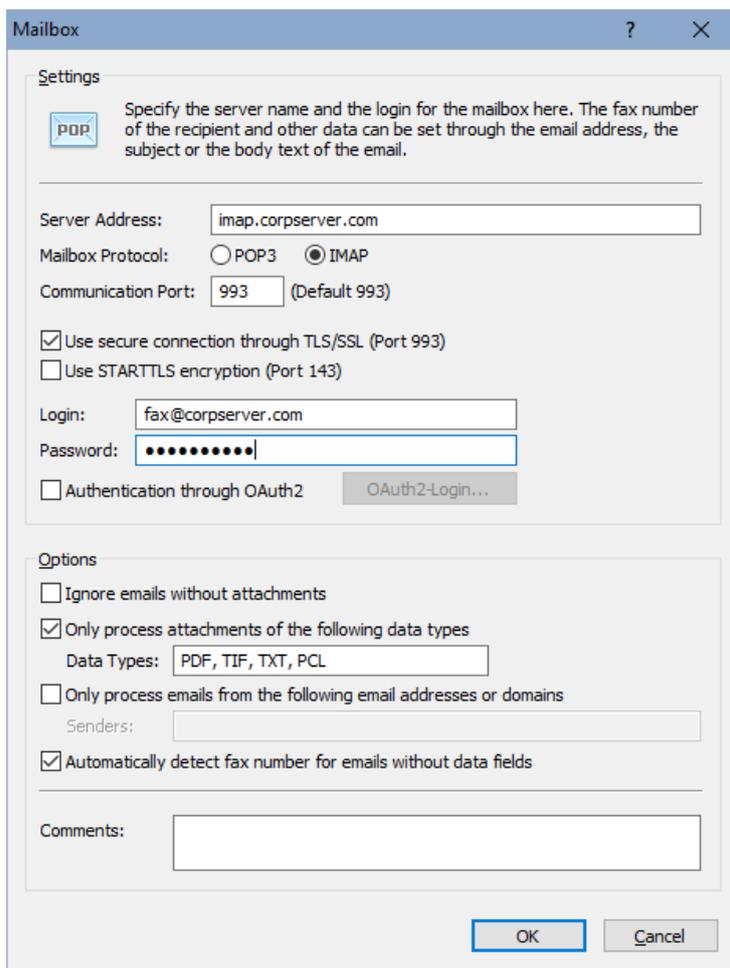
The fax number of the recipient and other data can be set through data fields directly in the body text of the email, in the subject, the email address or any other MIME header field. If it is not possible to use data fields in the email, the recipients fax number can also be automatically detected by the fax server. When the fax number should be automatically detected by the fax server, the email address of the sender and the recipient, the subject and the body text of the email is scanned for a valid fax number. It would be important to only specify the fax number without any additional text in that case, because otherwise the fax number cannot be clearly identified.

The import of fax jobs from an email account can be configured through the menu *Communication / POP3/IMAP Server* on the fax server. The number of mailboxes that should be monitored for new emails is not limited.

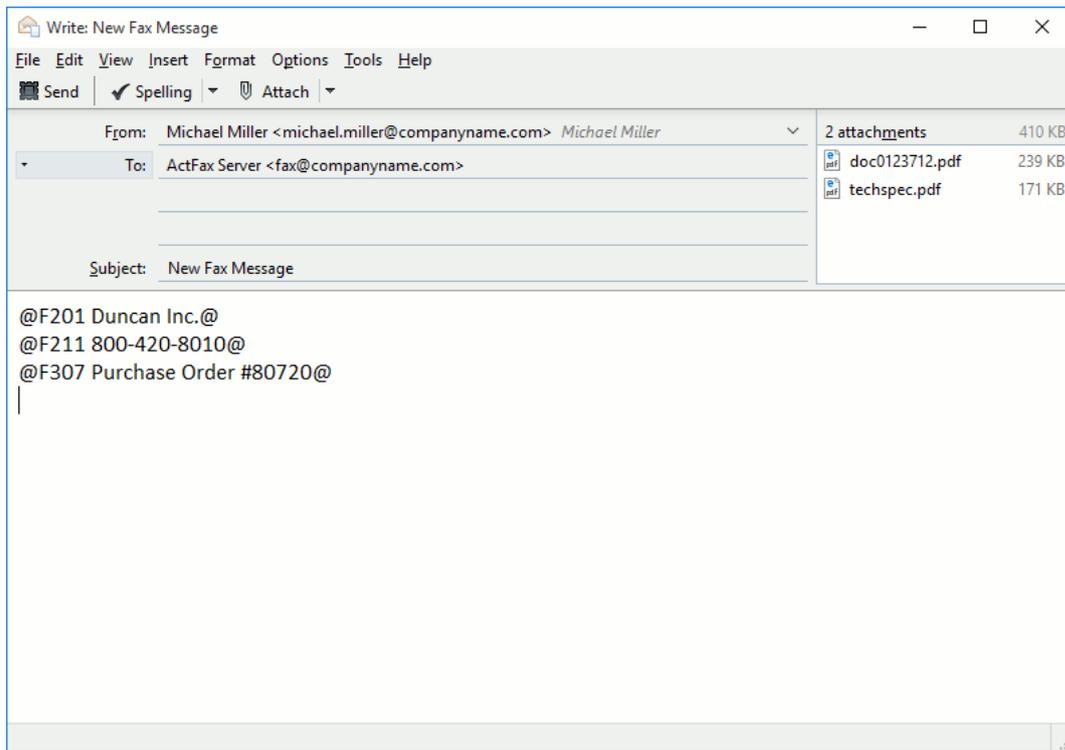
The fax server supports the protocols **POP3** (Post Office Protocol) and **IMAP** (Internet Message Access Protocol) for connections to the mail server. If the mail server supports **IMAP**, this protocol should be preferred, because IMAP supports immediate access to incoming emails and generates less network load.



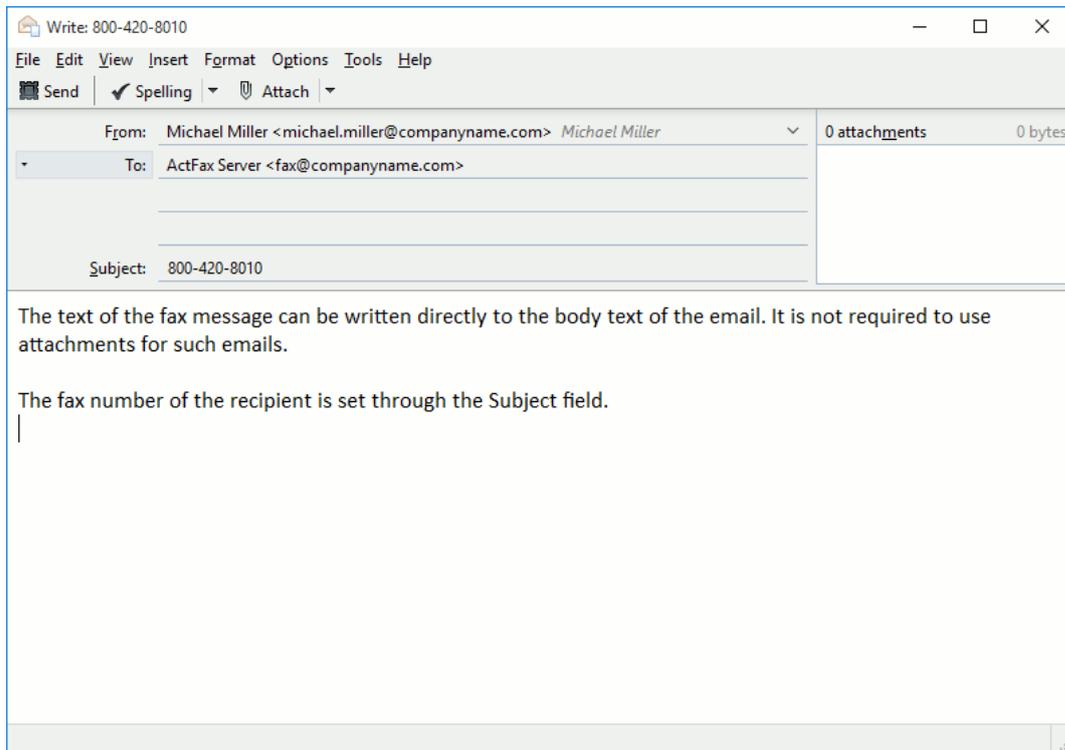
Example for monitored email accounts.



Example for the configuration of an IMAP account.



Example for an email with a fax job consisting of two PDF files and with the recipient set through data fields directly in the body text of the email.



Example for an email with the fax message written directly to the body of the email and the fax number set through the Subject without data fields.

- 1 Take care to use only attachments with data types directly supported by the fax server. **PDF**, **TIF** (G3/G4 format) or **TXT** files are preferred. For example, Word (.doc, .docx), Excel (.xls,

.xlsx), OpenOffice (.odt, .ods) or images (.jpg, .gif, .png) are not directly supported by the fax server and are therefore ignored when used as an attachment.

 When accessing an external POP3 or IMAP server through an Internet connection, it is recommended to enable encryption through **TLS/SSL** or **StartTLS**, to guarantee privacy of the submitted emails.

 Please note that emails are **automatically deleted from the mailbox** after they have been downloaded from the mail server, to avoid that the emails are processed again with the next connection to the mail server. You should therefore use a specific mailbox to just submit fax documents to the fax server.

3.1.5. Named Pipes

When using “Named Pipes” it is possible to easily create fax messages directly from within applications without using the ActiveFax printer driver. When not using the ActiveFax printer driver, the main difference is, that the fax message is sent in plain text format in that case. Quite similar to fax transmissions from UNIX or Linux 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; they are written directly to the document. Named Pipes can be used as an alternative when 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 XP / 2003 / Vista / 2008 / 7 / 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022** systems.

To use Named Pipes, just a few small modifications have to be done in your application. Follow these steps to integrate the communication through 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\pipe-name” (i.e. \\faxserver\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.

 The function calls for opening, writing and closing files (Named Pipes) may be known under 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, ...).

3.1.5.1. 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("\\\\faxserver\\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, "555-123-4567");
    wsprintf(szText, "This is a testfax@F211 %s@", szFax);
    WriteFile(hFile, szText, lstrlen(szText), &dwWritten, NULL);

    CloseHandle(hFile);

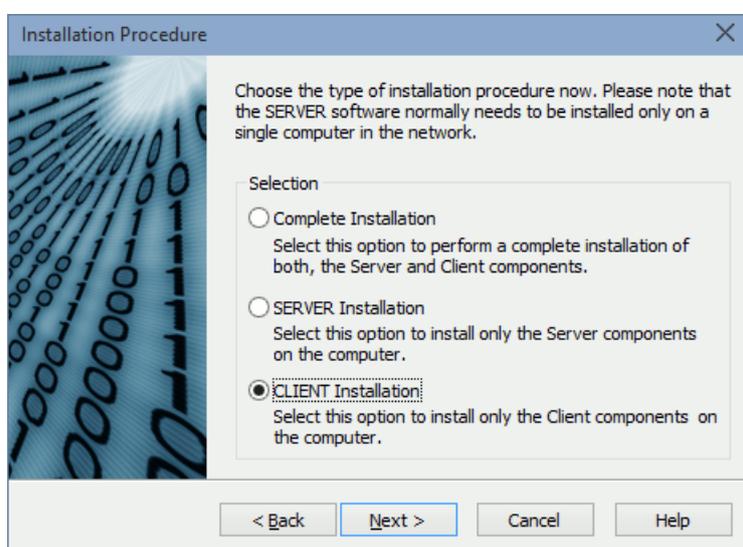
    return 0;
}
```

3.2. Access Fax Messages on other Computers

The fax client can be used to display and access 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 in the network 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 as required and the fax server part of ActiveFax should not be installed on client systems.

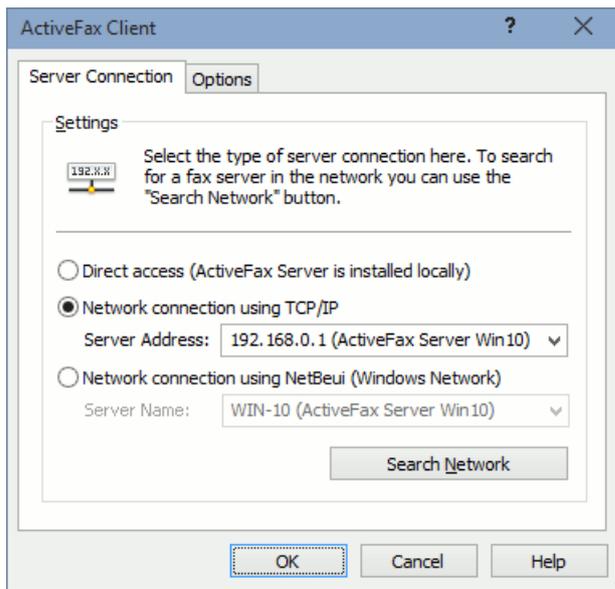


3.2.2. Establishing a Client Connection

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

 When using a router for the network connection of the fax client, it could happen that the fax server cannot be automatically detected by the fax client because of blocked broadcast packages used to identify the fax server 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 a XP / 2003 / Vista / 2008 / 7 / 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022 system. If you have both of these network protocols available, it is recommended to always use the TCP/IP protocol, since TCP/IP requires 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. Whenever 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 **total number of fax clients** allowed to connect to the fax server is limited by the license. If you exceed the number of users registered with the license, a message is displayed on the fax client that exceeds the license limit; fax clients exceeding the license limit cannot connect to the fax server. Fax clients that connected to the fax server before the license limit has been reached are not affected.

3.3. Send Fax Messages from UNIX / Linux

In addition to 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:\                               fax:\
  :rm=hostname:\                             :rm=192.168.0.1:\
  :rp=queueName:\                           :rp=fax:
```

On some UNIX systems (i.e. SCO UNIX) it could also be required to activate the LPD/LPR protocol. For 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 for sure the easiest 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. A short overview about these protocols can be found in the following sections.

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 pre-set 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 (RS-232)

If there is no network connection available, data exchange with ActiveFax can also be done through a serial interface. Using 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.

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. POP3/IMAP Server (Mail Server)

By sending an email to a predefined email address it is also possible to submit fax jobs to the fax server. The fax message can be submitted either directly in the body text of the email or as an attachment in that case.

3.3.3.5. Printer Commands (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 that is normally sent to physical printers.

3.3.3.6. Data Fields

To set 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 data fields. Just like printer commands, data fields are embedded directly in the document to be faxed.

-  More information about data fields and the best way to add them to applications can be found in this manual in the chapter **Data Fields** 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 for 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 adjusts 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 a 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

3.4.2. Post-Dialing

When using **ISDN** or **XCAPI**, information that needs to be sent after the initial dial information when the call is proceeding or already connected, can be added as post dial information to the fax number. Post dial information is not part of the main fax number and is sent as **DTMF digits**. This can be used to set extension numbers or authentication information.

- Use **commas (,)** to add a delay before dialing post dialing information. A single *comma* is a delay of 1 second.

- ❑ The **&-character** can be used to wait for the call to be established before sending post dial information. Since this is the default behavior, the **&-character** only needs to be used when no delay should be added before dialing post dial information.
- ❑ When using the **\$-character**, transmission of post dial information starts when the main fax number has been dialed and call establishment is proceeding.

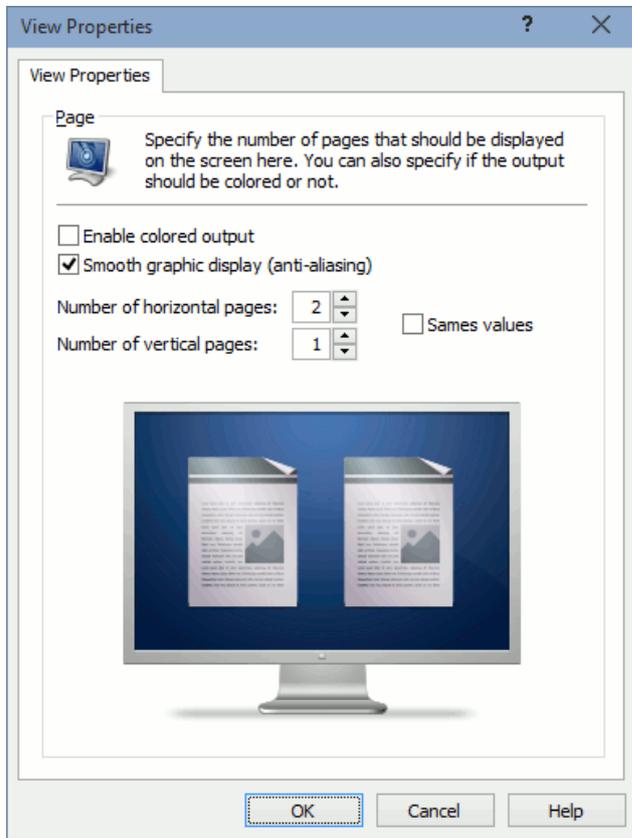
3.4.2.1. Examples for Post-Dialing

Fax Number	Comment
800-123-4567,,,,,9876	Wait for the call to be connected and then send 9876 after a delay of 5 seconds.
800-123-4567&9876	Wait for the call to be connected and then immediately send 9876.
800-123-4567\$,,,9876	Do not wait for the call to be connected and send 9876 after a delay of 3 seconds.

-  When using **analog** fax modems or fax boards, post dialing information is dialed as part of the main fax number. You can append post dialing information directly at the end of the fax number in that case. A delay can be added with **commas (,)**. A single *comma* is a delay of 2 seconds. On analog fax modems and fax boards, the modem does not wait for a call to be connected before post dialing information is sent.

3.5. Adjust the Screen View

Through the menu *View / View Properties* you can change the number of pages to be displayed on the screen. You can set the number of pages to be displayed horizontally and the number of pages to be displayed vertically.

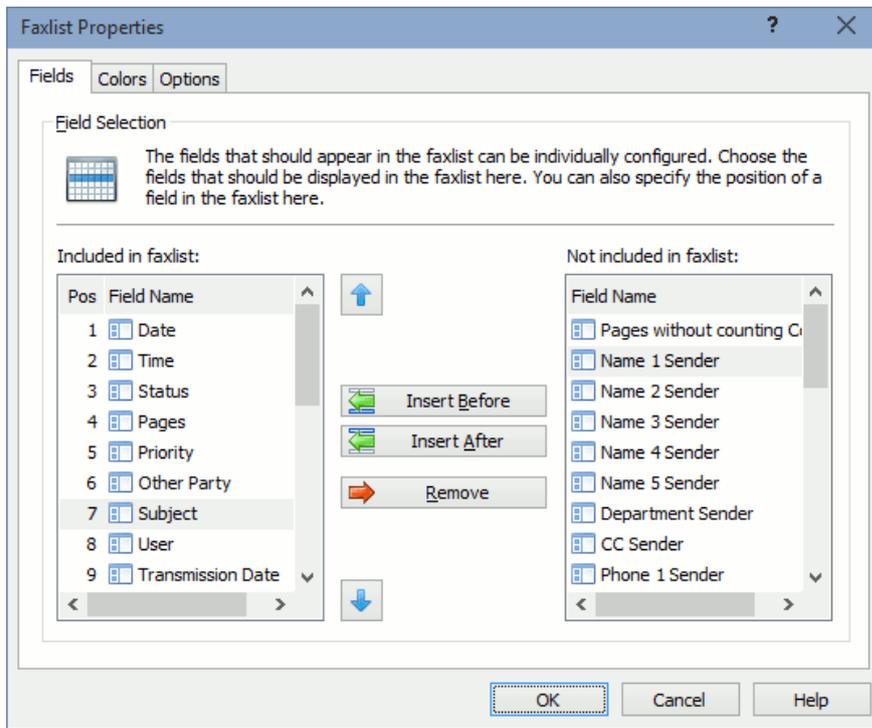


- i** Especially when using wide screens (16:9 aspect ratio) it makes sense to configure the number of pages to be displayed on the screen to 2 or 3 pages, because the space on the screen is used more efficiently in that case and fax pages in portrait format fit better on the screen.

3.6. Change the Faxlist Columns

3.6.1. Columns

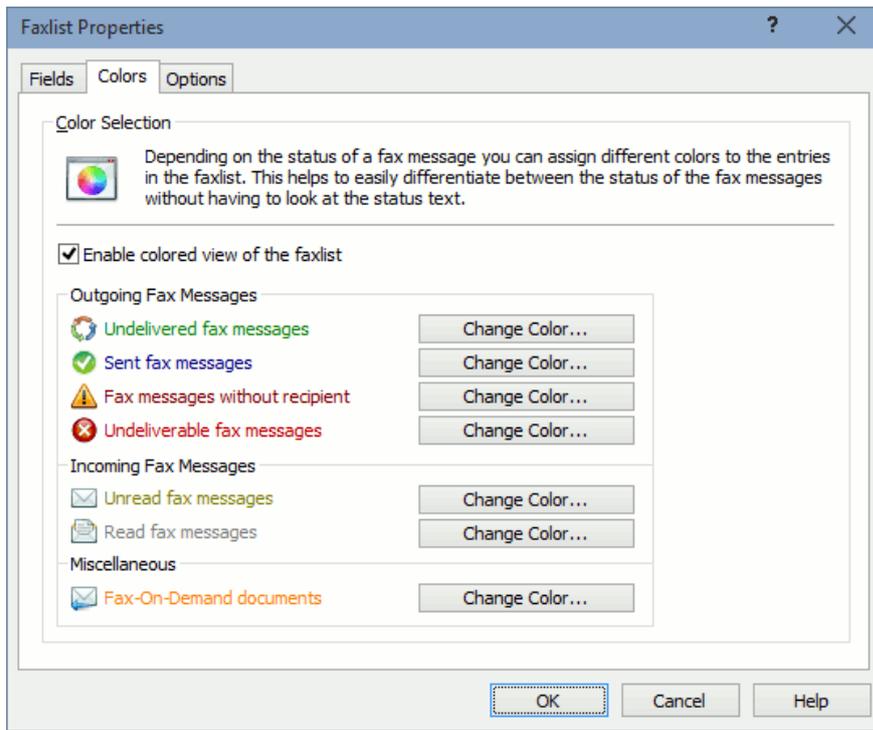
The columns displayed in the faxlist can be individually changed through the menu *Faxlist / Faxlist Properties*. You can configure the set of columns to be displayed in the faxlist as well as the position of each column within the faxlist.



-  Please note that these settings can be individually configured for every fax client and for the fax server.
-  Through the *Options* tab it is also possible to force the settings from the fax server for the appearance of the faxlist to be automatically used for all fax clients. The options can be globally set at the fax server or individually at each fax client.

3.6.2. Colors

In ActiveFax every status has a different color assigned to differentiate between the current status of the fax messages without having to read the status text. The color mapping for the fax status can be individually changed through the menu *Faxlist / Faxlist Properties*.



- i** Please note that these settings can be individually configured for every fax client and for the fax server.
- i** Through the *Options* tab it is also possible to force the settings from the fax server for the appearance of the faxlist to be automatically used for all fax clients. The options can be globally set at the fax server or individually at each fax client.

3.7. Select an Entry in the Faxlist

3.7.1. Selecting Entries

Entries in the faxlist can be selected either with the left mouse button or with the arrow keys on the keyboard. To execute 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.

3.7.2. Sorting Entries

By default, the faxlist is sorted by creation date and time in descending order (latest entries displayed first). The sort order 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 a 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. sort by date first, 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.

3.7.3. Searching for Entries

On systems with thousands of fax messages in the faxlist, finding a specific document can be very difficult. ActiveFax offers various functions that help finding fax messages again very fast. 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 a 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, read, ...).
- Change the sort order of the faxlist by clicking on the column headers of the faxlist.

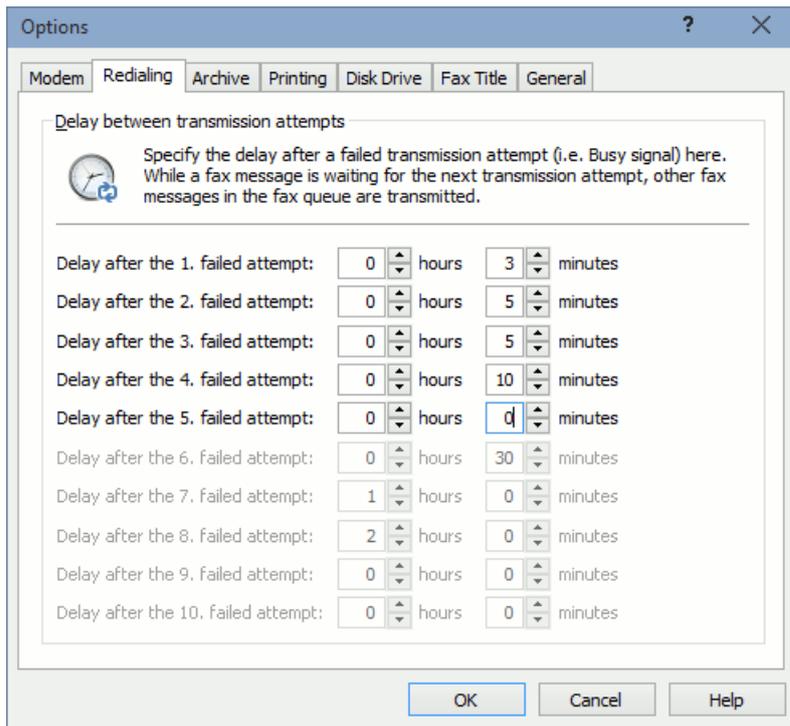
The most efficient way to search for a fax message is entering a search term. When entering significant search terms the faxlist is normally reduced to just a few matching entries.

 Please note that you do not need to enter the exact phrase when searching for a specific entry. It is normally 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 Smith*, you can enter just *Smi* or *george smi*. 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 different search terms with a pipe sign (|). For example to search for the search terms *Smith* and *Los Angeles*, enter *Smith|Angeles* in the search field.

3.8. Automatically Redial failed Fax Transmissions

3.8.1. Automatic Redialing

Failed fax transmissions are automatically redialed by the fax server. You can individually configure the number of attempts and the delay after each failed attempt through the menu *Extras / Options / Redialing*. If the number of transmission attempts should be set to less than the default number of 10 attempts, you need to configure a delay of 0 hours and 0 minutes for one of the attempts.



- i** The delay between the redial attempts should increase with each failed attempt, because it is very likely that there is a long-lasting interruption on the receiving fax machine when several consecutive transmission attempts fail. By choosing an increasing delay for each failed attempt, you can avoid that all redialing attempts are done within a short period of time.

3.8.2. Send a Fax Message again

If the transmission of a fax messages fails with all transmission attempts, the status of the fax messages changes to **Undeliverable**. No further transmission attempts are done for that fax message then. You should check if the fax number is correct in that case and change the fax number as required. When changing the fax number of an undeliverable fax message, Active-Fax automatically asks the user if the message should be sent again. As an alternative it would also be possible to manually send the fax message again through the menu *Faxlist / Send again*.

 If a user should be informed about the status of a fax transmission by email, you can configure this through the menu *Extras / User Administrator / Modify / Notification*.

3.9. Automatically Print Fax Messages

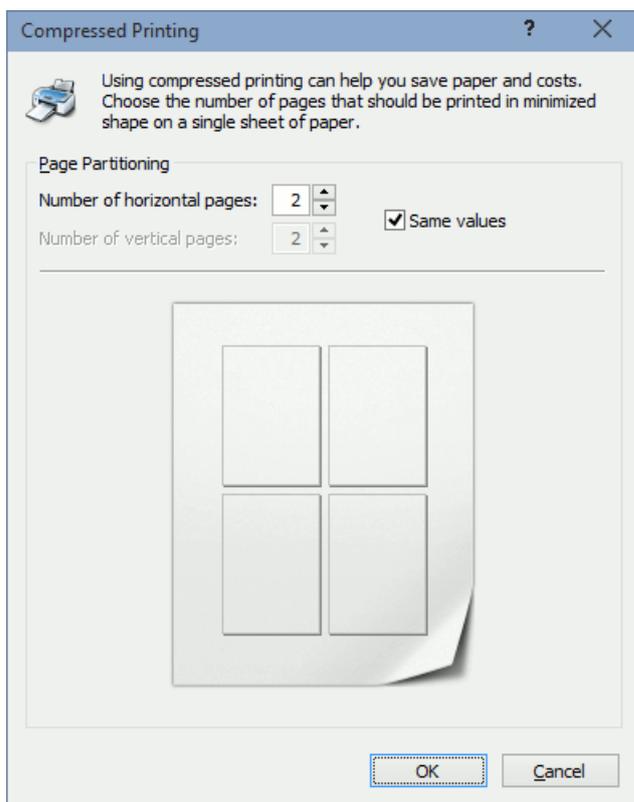
Automatic printing of fax messages can be done in various ways with ActiveFax. Fax messages can be printed either on a specific printer or in dependence of the owner of the fax to individual printers.

3.9.1. 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.

3.9.2. Compressed Printing

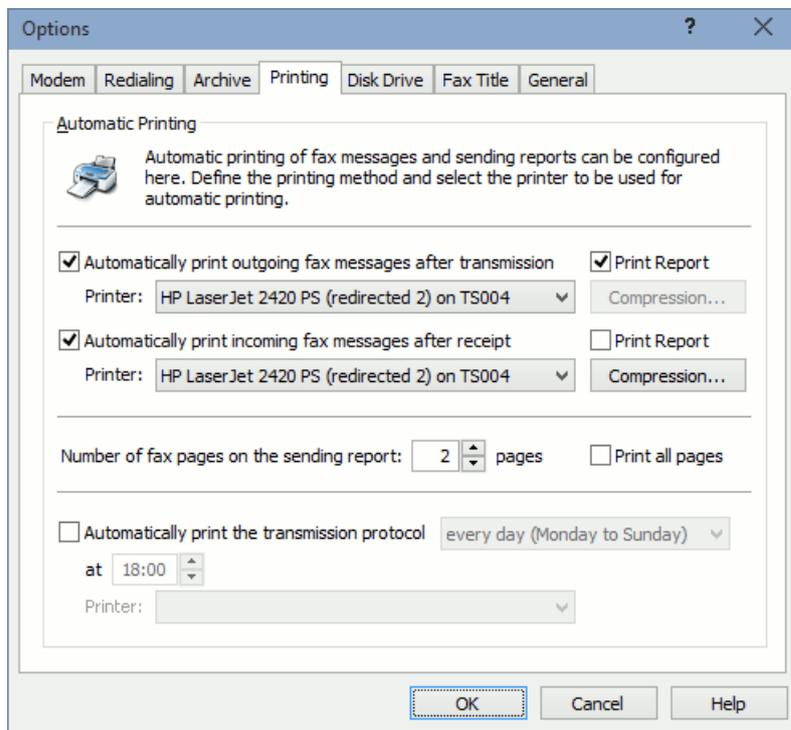
Compressed printing of fax messages helps to protect the environment and also reduces printing costs. When using compressed printing, multiple pages of a fax message are printed on a single sheet of paper in compressed format. The number of fax pages to be printed on a single page can be individually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



3.9.3. 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 *Compression* option to print multiple pages on a single sheet of paper.
- Optionally activate the *Print Report* parameter to print a sending report instead of the complete fax message.
- Complete the configuration with OK.



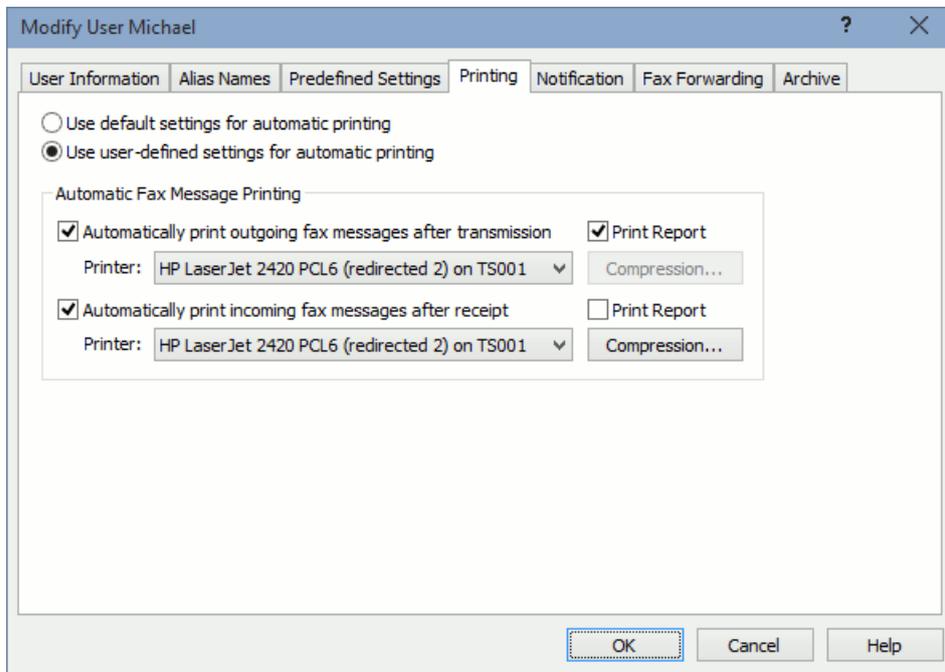
-  Please note, that automatic printing of the transmission protocol can also be configured through the *Printing* tab in the menu *Extras / Options*.

3.9.4. User-dependent Settings

Automatic printing can also be individually configured for each user. 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-defined settings for automatic printing* and select the preferred printer.
- Optionally choose the *Compression* option to print multiple pages on a single sheet of paper.
- Optionally activate the *Print Report* parameter to print a sending report instead of the complete fax message.
- Complete the configuration with OK.



i 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.

3.10. Protect Faxes against Unauthorized Access

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

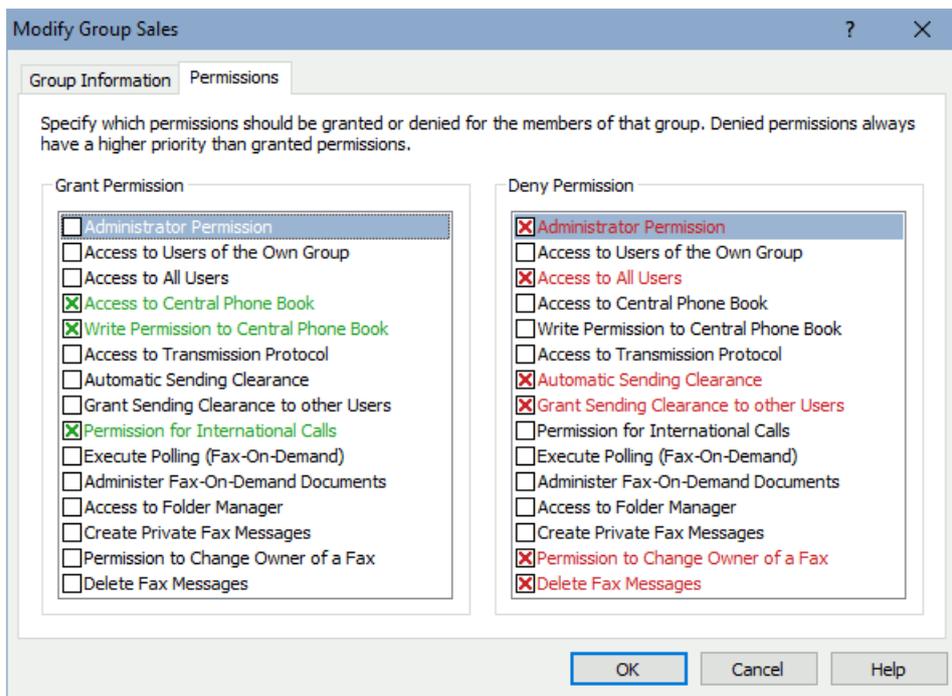
3.10.1. User Administrator

The base of every reliable security concept should be a well-considered user structure. It is recommended to create a separate user account for every person working with the software and to only grant those permissions necessarily needed 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.

The screenshot shows the 'Modify User Barbara' dialog box. It has a title bar with a question mark and a close button. Below the title bar are several tabs: 'User Information', 'Alias Names', 'Predefined Settings', 'Printing', 'Notification', 'Fax Forwarding', and 'Archive'. The 'User Information' tab is selected. The 'User Data' section contains the following fields: 'User Name' (text box with 'Barbara'), 'Entire User Name' (text box with 'Barbara Benson'), 'Direct Dial (MSN)' (text box with '410'), 'Cost Account' (dropdown menu with 'Sales'), 'Absence Substitution' (dropdown menu with 'Samantha'), 'Password' (password field with 7 dots), and 'Password Verification' (password field with 7 dots). The 'Permissions' section is a list box containing the following items: 'Administrator Permission' (checkbox), 'Access to Users of the Own Group' (checkbox checked), 'Access to All Users' (checkbox), 'Access to Central Phone Book' (checkbox checked), 'Write Permission to Central Phone Book' (checkbox), 'Access to Transmission Protocol' (checkbox checked), 'Automatic Sending Clearance' (checkbox), 'Grant Sending Clearance to other Users' (checkbox), 'Permission for International Calls' (checkbox checked), 'Execute Polling (Fax-On-Demand)' (checkbox checked), and 'Administer Fax-On-Demand Documents' (checkbox checked). At the bottom left is a 'Comments' text area. At the bottom right are three buttons: 'OK', 'Cancel', and 'Help'.

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 to grant all members of a group access to each other's fax messages (depending on permission settings).

It is also possible to use **group based permissions** to grant or deny permissions for all members of a group. That way you can easily manage permissions for many users. Important to know is that permissions that have been denied for the members of a group always have a higher priority than permissions that are granted for a user or a group. Permissions that have been denied for the members of a group therefore clear a permission granted directly for a user.

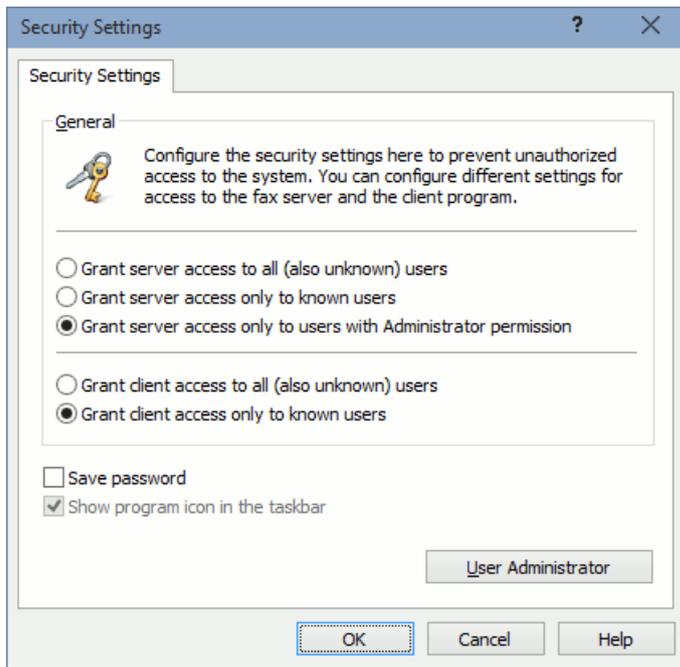


i The administration of users and groups can also be bound directly to the Windows directory service **Active Directory**. The users and groups are automatically imported by the fax server from Active Directory that way. When using the automatic import of users, the login of the fax clients is done directly through the user name from Active Directory, so you do not need to configure passwords for the users in ActiveFax, because the authentication of the user has already been done with the Windows login.

3.10.2. 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.

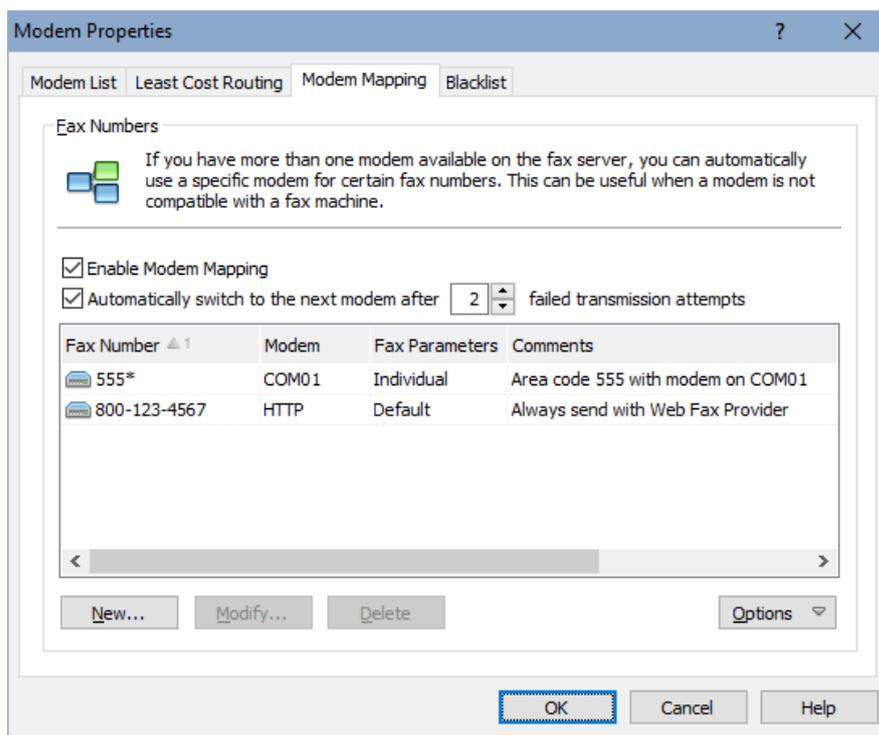


- i** Please note that security settings for the fax server and the fax client can be individually configured. To guarantee a high security level it is recommended to grant access to the fax server only to users with Administrator permission and access to the fax client only to known users. This ensures that the fax server configuration cannot be modified without having a valid Administrator password and access to the fax client is only possible with a valid user account.

3.11. Map Fax Numbers to a Modem

If fax messages for certain fax numbers should be sent through a specific modem, you can configure a modem mapping list with the menu *Communication / Modem / Modem Mapping*. Fax messages sent to such fax numbers are automatically sent through a specific modem by the fax server.

This can be useful when there is a compatibility issue between a modem and a specific fax machine. Based on the modem mapping, the fax server automatically switches to an alternative modem when sending fax messages to the number of that fax machine.



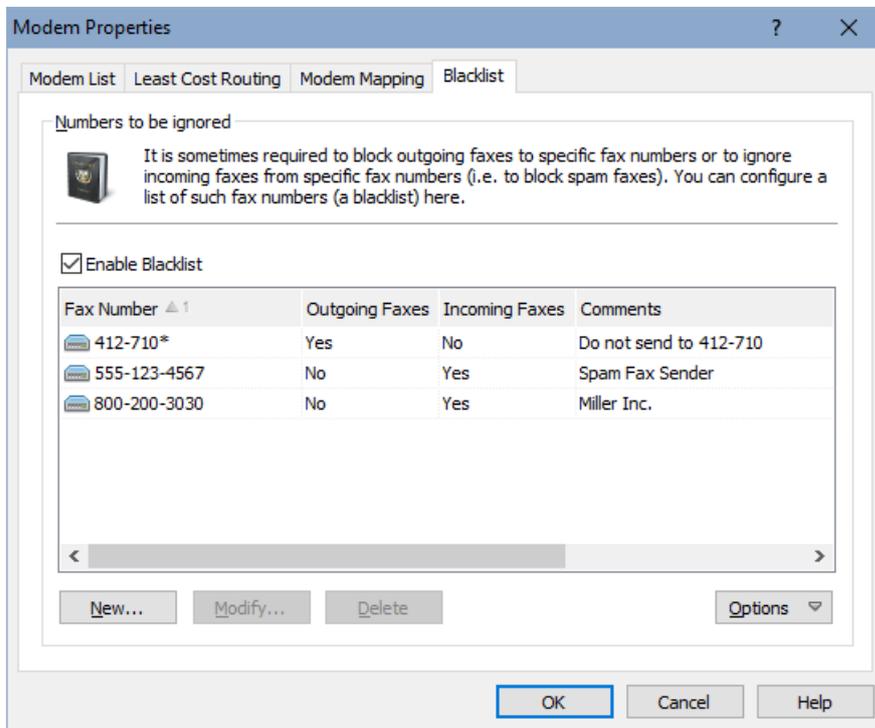
- i** Please note, that ActiveFax also supports wildcards (*) when you enter the fax number. When using wildcards, it would be possible to map a complete range of fax numbers with just a single entry. For example, to map all fax numbers starting with 555, enter 555* in the fax number field.
- i** The modem mapping also offers the option of defining individual fax parameters for fax numbers or ranges of numbers. For example, if you often have transmission problems with faxes to certain fax numbers, the transmission rate can be limited to 9,600 bps for such numbers.

3.11.1. Automatic Modem Switching

If the fax server should automatically switch to the next modem in the modem list after a predefined number of failed transmission attempts, activate the option *Automatically switch to the next modem after x failed transmission attempts*.

3.12. Block Fax Numbers (Blacklist)

To avoid that ActiveFax answers fax calls from certain fax numbers or that outgoing fax messages are sent to specific fax numbers, it would be possible to create a **blacklist** through the menu *Communication / Modem / Blacklist*. The blacklist contains all fax numbers that should be blocked by the fax server.



3.12.1. Block Outgoing Fax Calls

If outgoing fax calls should be blocked by the fax server, take care to enable the option for outgoing faxes when you create the entry for the blacklist. When a user creates a fax message for a fax number stored in the blacklist, the fax message is automatically locked by the fax server. Sending such fax messages is still possible, when the fax is manually unlocked.

-  Please note, that ActiveFax also supports wildcards (*) when you enter the fax number. When using wildcards, it would be possible to block a complete range of fax numbers with just a single entry. For example, to block all fax numbers starting with 555, enter 555* in the fax number field.

3.12.2. Block Incoming Fax Calls

If incoming fax calls should be blocked by the fax server, take care to enable the option for incoming faxes when you create the entry for the blacklist. When the fax server detects an incoming call from a fax number stored in the blacklist, the call is automatically blocked by the fax server.

-  Keep in mind that incoming fax calls can only be blocked when the sending fax machine also submits a fax number.

-  Please note, that ActiveFax also supports wildcards (*) when you enter the fax number. When using wildcards, it would be possible to block a complete range of fax numbers with just a single entry. For example, to block all fax numbers starting with 555, enter 555* in the fax number field.

3.13. 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 use ActiveFax as a fax-on-demand server to make fax documents available to others.

3.13.1. Fax Polling

A fax polling request (this means to receive a fax document from a fax-on-demand server) can be done with the following 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.

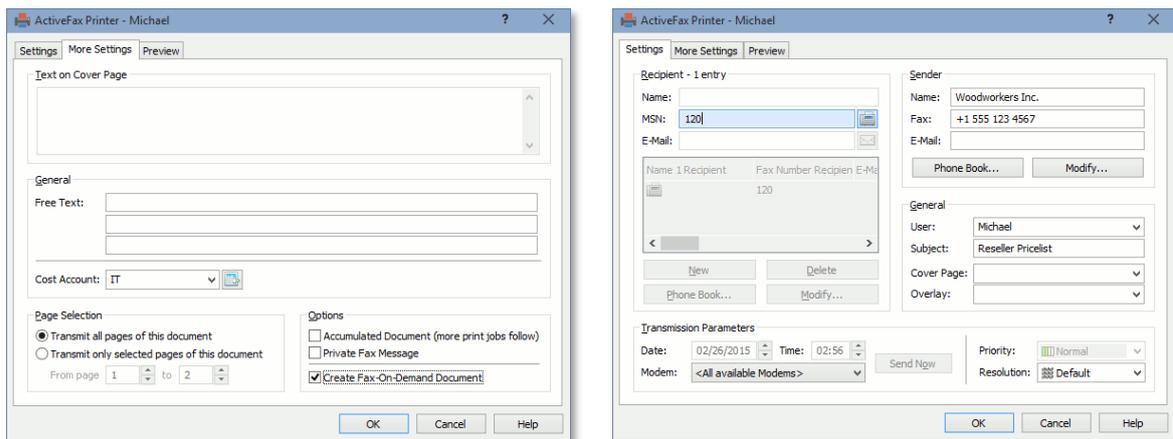
The screenshot shows the 'Execute Polling (Fax-On-Demand)' dialog box. It has a title bar with a question mark and a close button. The main area is titled 'Settings' and contains a green arrow icon and a text box with the instruction: 'Fax polling can be used to receive a fax message from a Fax-On-Demand server. Enter the fax number of the Fax-On-Demand server that should be called here and confirm your input.' Below this are three main sections: 1. 'Recipient (Fax-On-Demand Server)' with a 'Name' field containing 'Western Pacific Bank' and a 'Fax' field containing '555-123-4567'. There are 'Phone Book...' and 'Modify...' buttons below these fields. 2. 'General' with a 'User' dropdown menu set to 'Michael' and a 'Subject' text field containing 'Exchange Rates'. 3. 'Transmission Parameters' with a 'Date' dropdown set to '02/26/2015', a 'Time' dropdown set to '02:28', a 'Modem' dropdown set to '<Next Available Modem>', a 'Priority' dropdown set to 'Highest', and a 'Resolution' dropdown set to 'Default'. There is a 'Send Ngw' button between the 'Modem' and 'Priority' sections. At the bottom of the dialog are 'OK', 'Cancel', and 'Help' buttons.

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.

3.13.2. 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 modem 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. Microsoft® Word).
- ❑ Choose the printing function of the application (i.e. the menu *File / Print* in Microsoft® Word).
- ❑ 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.

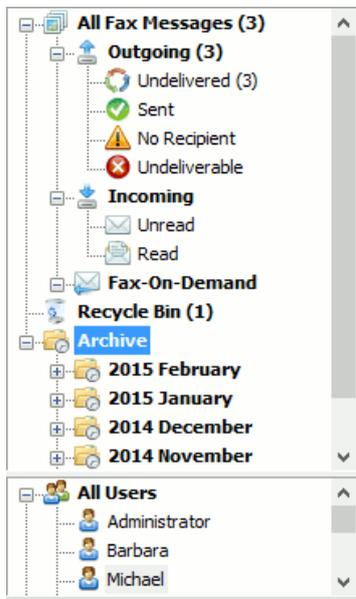


After the document has been “printed” that way, the fax-on-demand message is automatically transferred to the fax server and is available for requests then. Take care that any existing fax-on-demand document for the same modem or direct dial number (MSN) is automatically moved to the archive when a new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

- i A counter with the total number of 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.

3.14. Move Fax Messages to the Archive

To avoid that the faxlist with the fax messages becomes too big and confusing over the years, old fax messages should be moved to the archive. ActiveFax supports an automatic archive method as well as manual archiving. The fax server automatically creates an archive folder for each month.

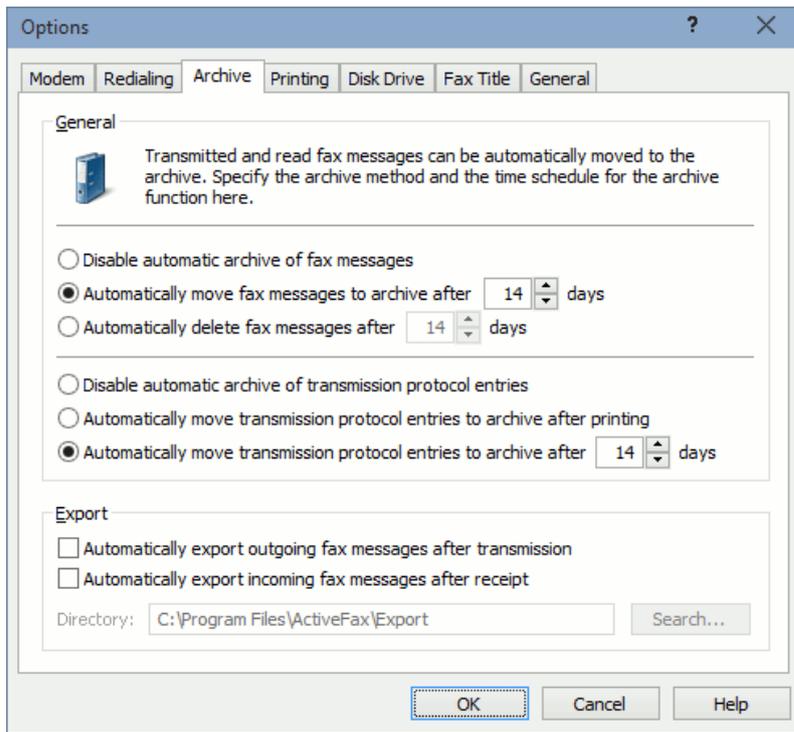


 Please note, that ActiveFax only allows fax messages with the status **Sent** or **Read** to be moved to the archive. This is for security reasons to avoid that fax messages that have not yet been sent or read are moved to an archive folder by mistake. If it should still be possible to also move fax messages with a different status to the archive, you can activate this with the parameter **ArchiveIgnoreStatus** in the options.cfg file.

3.14.1. Automatic Archive

By default the fax server automatically moves fax messages to the archive after 14 days. Only fax messages with the status **Sent** and **Read** are automatically archived in that case. Fax messages that have been locked are also excluded from automatic archiving.

 The settings for automatic archiving of fax messages and transmission protocol entries can be changed with the menu *Extras / Options / Archive* on the fax server.



3.14.2. Manual Archive

Using the menu *Faxlist / Move to archive* or with a right-click at the faxlist entry it is also possible to manually move fax messages to the archive. As an alternative it would also be possible to manually move fax messages to an archive folder using drag-and-drop when moving the faxlist entry over to an archive folder.

3.14.3. Individual Archive Folders

As an alternative to the archive folders automatically created by the system for each month, it would also be possible to create your own individual folder structure for the archive. Individual archive folders can be created with the menu *File / Folders / New Folder* or with a right-click at the Archive icon in the fax selection window. Individual archive folders are organized in a tree structure; the level of subfolders is not limited.

-  Please note, that the permission to create or modify individual folders can be separately configured for each user.

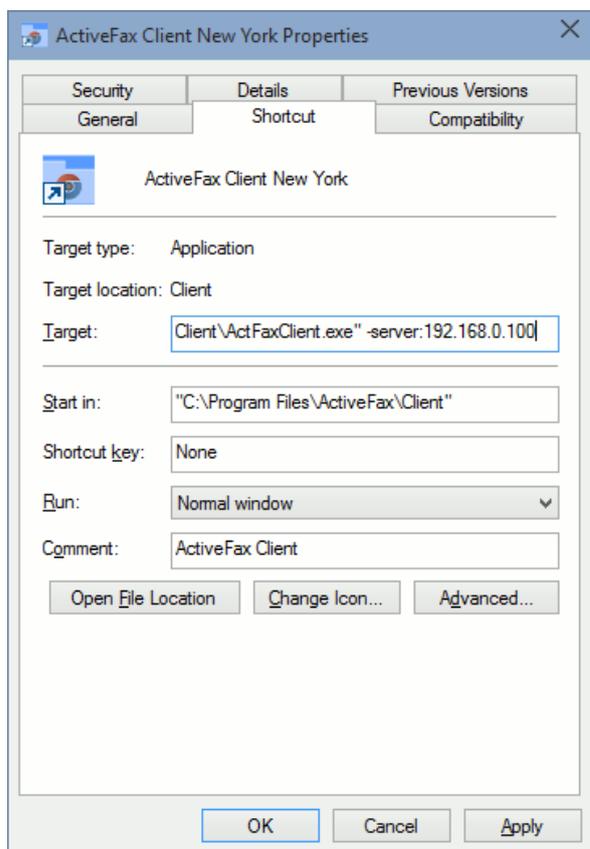
3.15. Use Multiple Fax Servers

When you have more than one fax server installed in the network (i.e. a separate fax server for each branch office), it would be possible to create multiple **ActiveFax printers** and to add multiple **desktop icons for the fax client** on the user's workstations to connect directly to a specific fax server. The address of the fax server does not need to be changed manually to connect to a specific fax server in that case then.

3.15.1. Configure Fax Clients

When running multiple fax servers in the network, it would be possible to create a separate icon for each fax server connection on the Windows desktop. The desktop icon should include the name or the location of the fax server (i.e. *ActiveFax Client New York*). Through the **Location** field in the properties of the fax client icon, you can set the address of the fax server with the parameter *-Server:IP-Address*.

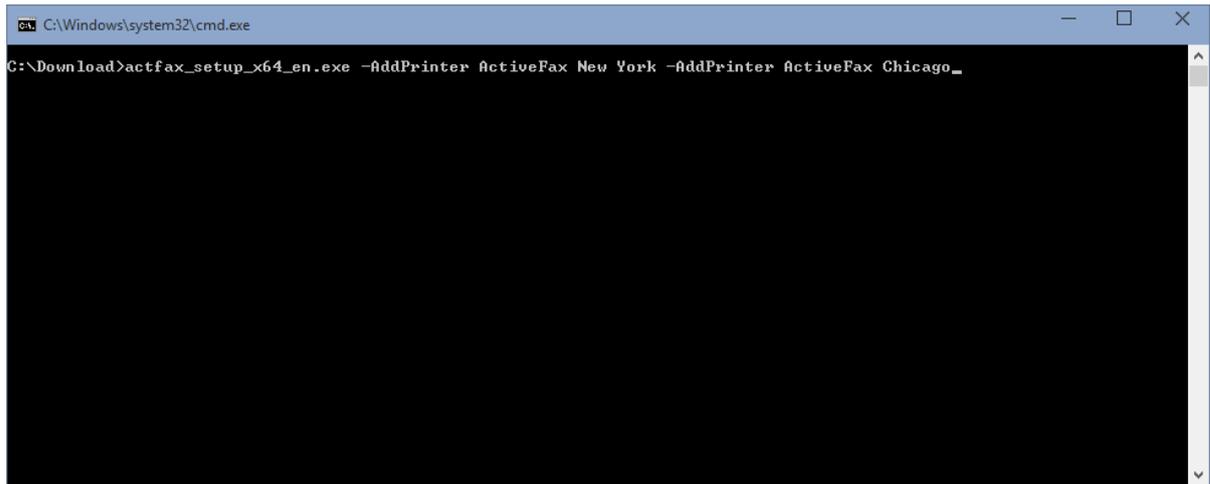
- When the fax client is started with the parameter *-Server:IP-Address*, it is possible to run multiple instances of the fax client. This allows a fax client window to be open for each fax server in the network.



3.15.2. Add ActiveFax Printers

To create new fax jobs directly on a specific fax server, it would be possible to add a separate ActiveFax printer for each fax server. The printer name should include the name or the location of the fax server (i.e. *ActiveFax New York*). The additional ActiveFax printers can be created directly through the ActiveFax Setup when you run the Setup with the command line parameter *-AddPrinter Printername*.

-  It is also possible to use the *-AddPrinter* parameter multiple times to add more than one printer in a single Setup call.

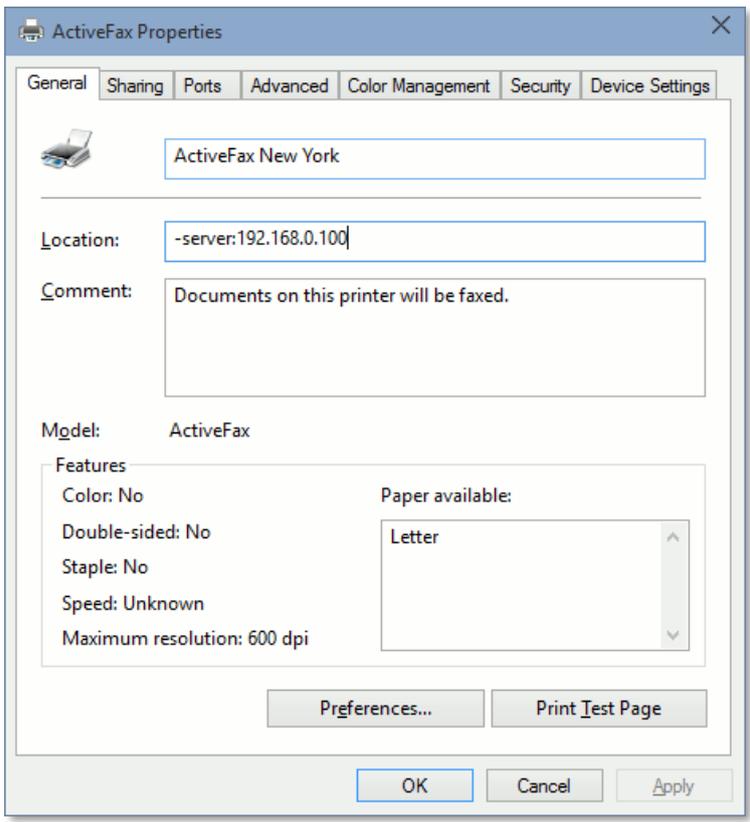


```
C:\Windows\system32\cmd.exe
C:\Download>actfax_setup_x64_en.exe -AddPrinter ActiveFax New York -AddPrinter ActiveFax Chicago_
```

3.15.3. Configure ActiveFax Printers

After an ActiveFax printer has been added for a connection with a specific fax server, you need to configure the address of the fax server. You can configure the address of the fax server through the **Location** field in the properties of the ActiveFax printer with the *-Server:IP-Address parameter*.

-  Take care, that none of the ActiveFax printers is in use when you install an update for ActiveFax at a later time, because otherwise the printer driver cannot be updated.



3.16. Create a Cover Page or Overlay

3.16.1. What is a Cover Page / Overlay?

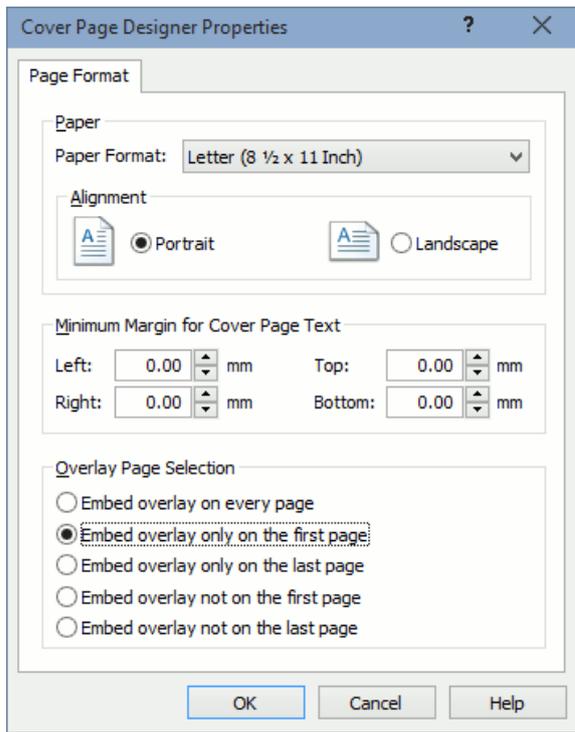
In general, cover pages and overlays are created exactly the same way with ActiveFax. A cover page is a separate page added as the first page of a fax message. Cover pages normally contain information about the sender, recipient, subject and additional information like date, time and the number of pages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

3.16.2. Creating Cover Pages / Overlays

When creating a cover page or overlay, it is not differentiated between both. Cover pages and overlays are both created exactly the same way through 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*.
-  It is recommended to save cover pages and overlays to the fax server main directory (C:\Program Files\ActiveFax\Server by default), because only .cov files stored in that directory are automatically displayed in the dropdown list showing available cover pages and overlays.
-  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.



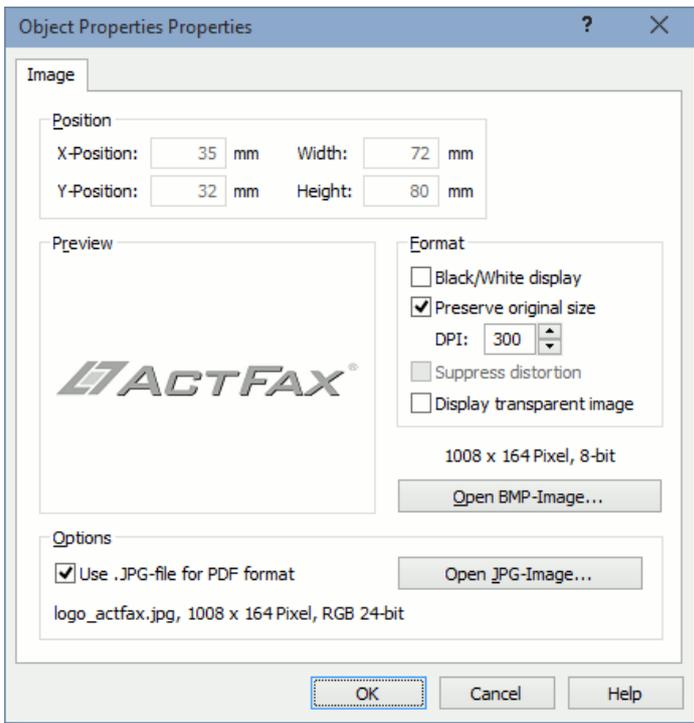
3.16.3. Using Cover Pages / Overlays

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.

3.16.4. Using Color Images

When cover pages or overlays are also sent by email, it is recommended that you also provide a .jpg file of the image. The monochrome .bmp file is used whenever the message is sent by fax; when the message is sent by email, the fax server uses the .jpg file for the PDF document sent with the email. If the .bmp file and the .jpg file have the same file name (i.e. logo.bmp and logo.jpg), the .jpg file is automatically selected when an image is added to the cover page or overlay.

- i** For best quality, you should only use .jpg files in the format **RGB 24-bit** (without alpha channel) and a resolution of 200 dpi or better. The width and height of the .jpg file should be identical with the width and height of the .bmp file.



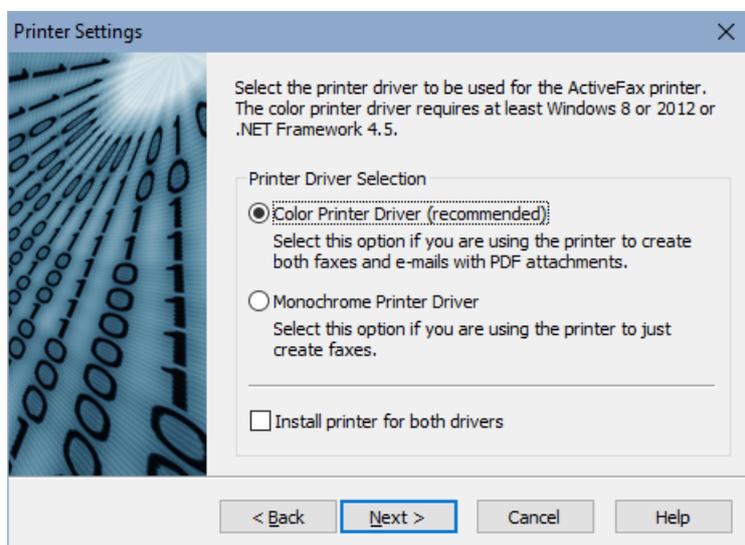
4. Configuration

4.1. PDF Documents and Color Documents

Starting with **ActiveFax version 10.05**, ActiveFax includes both a **color printer driver** and a monochrome printer driver. Starting with this ActiveFax version, the color printer driver is used as the preferred standard printer driver, since this printer driver supports both **color PDF files** and the **monochrome fax format**. The color printer driver offers the following advantages over the monochrome printer driver, among others:

- Creation of color PDF documents
- Creation of text-based, vectorized and searchable PDF documents
- Use of data fields directly in PDF documents
- Use of data fields without formatting in the ActiveFax font
- Use of text fields (simplified data fields)
- Creation of PDF/A compatible PDF files
- Better conversion of color documents to monochrome fax format
- Support of AES-256 bit encryption

During installation, you can select which printer driver is to be installed in the setup. If you want to install both printer drivers, enable the *Install printer for both drivers* option. In this case, the selected printer driver is used for the **ActiveFax printer**, and two additional printers named **ActiveFax Color** and **ActiveFax Monochrome** are installed.



 The support of the **ActiveFax color printer driver** requires at least Windows 8 or 2012 or when using older Windows versions (Windows Vista / 7 / 2008) the installation of at least .NET Framework 4.5.

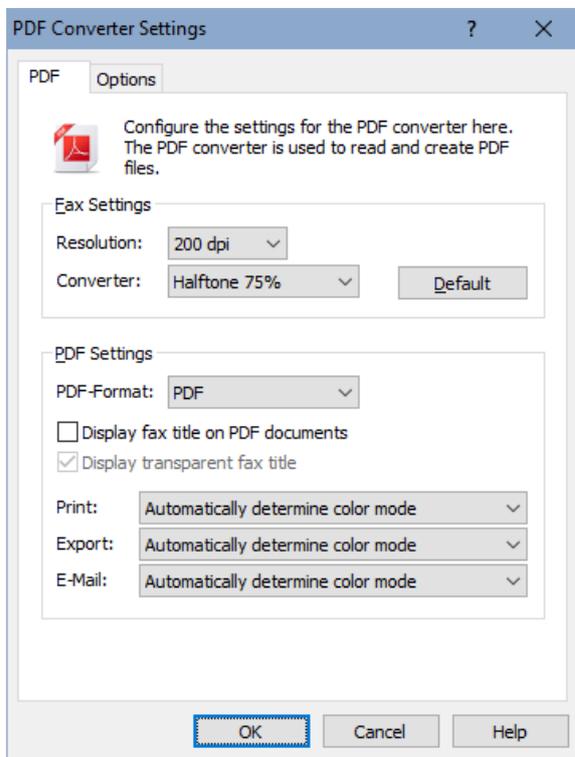
 Documents can be displayed either in the **color PDF-View** or in the **monochrome Fax-View**. The view is switched with the menu *View / Color Mode* or with the corresponding button in the toolbar or using the shortcuts *Ctrl+Tab*, *F11* or *F12*.

- Documents created with the color printer driver are **fully compatible with older ActiveFax versions**. You can also open and display such documents with ActiveFax versions older than version 10.05. In this case, the display is however only in monochrome fax format.

4.1.1. PDF Converter

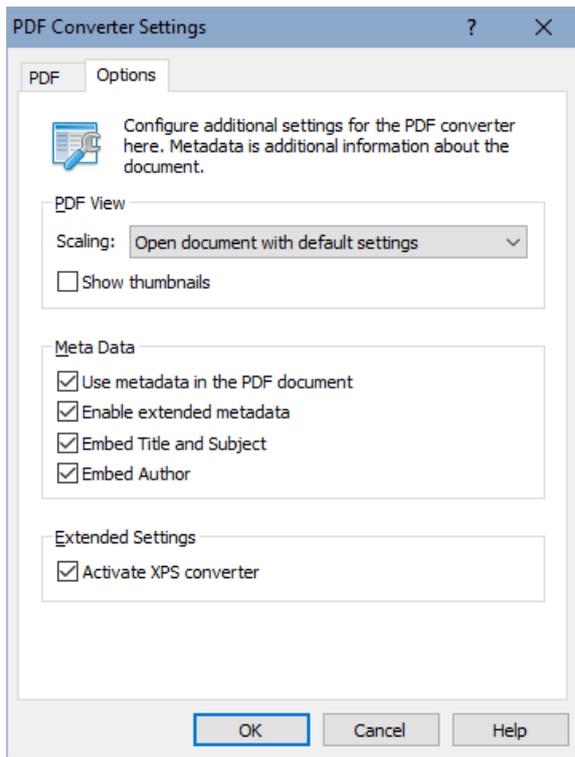
As of **ActiveFax Version 10.05**, the PDF converter for importing PDF and Postscript files is integrated directly into the fax server. The additional installation of an external PDF converter (i.e. Ghostscript) is no longer required to import PDF files.

The settings for the PDF converter can be configured on the fax server with the menu *Extras / PDF Converter*.



Converting PDF documents to **monochrome fax format** requires the color information to be converted to monochrome format. A filter that performs this conversion is used for this. For text-based documents, using the **Halftone filter** with a saturation of 75% is usually the best choice. For documents with images, use one of the filters *Spot*, *Error Diffusion*, or *Ordered Dither*. These filters control the distribution of the pixels when converting from color format to monochrome fax format.

- If the display of fax documents differs from the display with earlier ActiveFax versions when using the color printer driver, the monochrome printer driver can also be installed as an additional printer. This printer driver is identical to the printer driver of older ActiveFax versions.

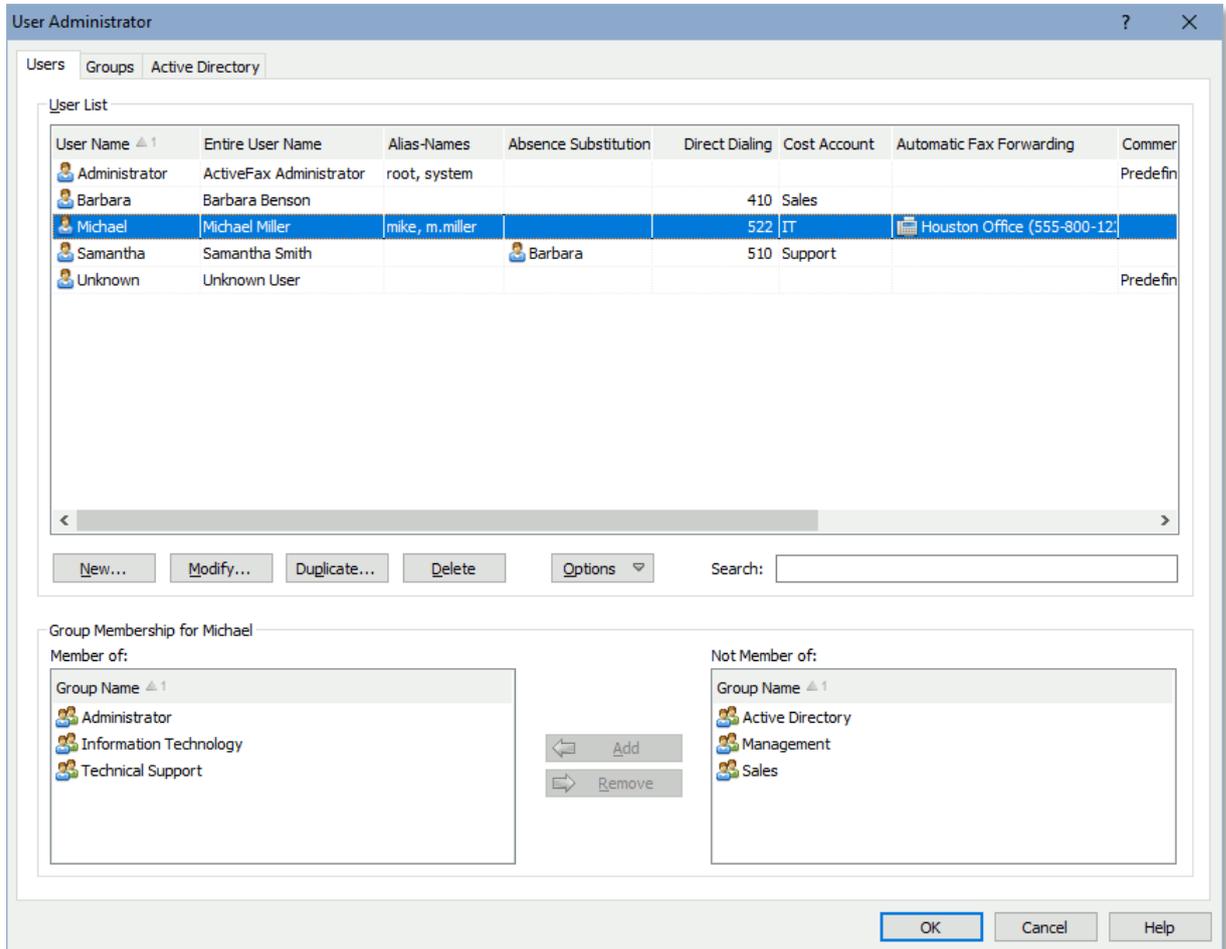


The *Options* tab can be used to control how the PDF document is displayed when it is opened, and which metadata is to be saved in the PDF document.

-  If problems occur when converting PDF documents, it would also be possible to install Ghostscript as an alternative converter.

4.2. User Administrator

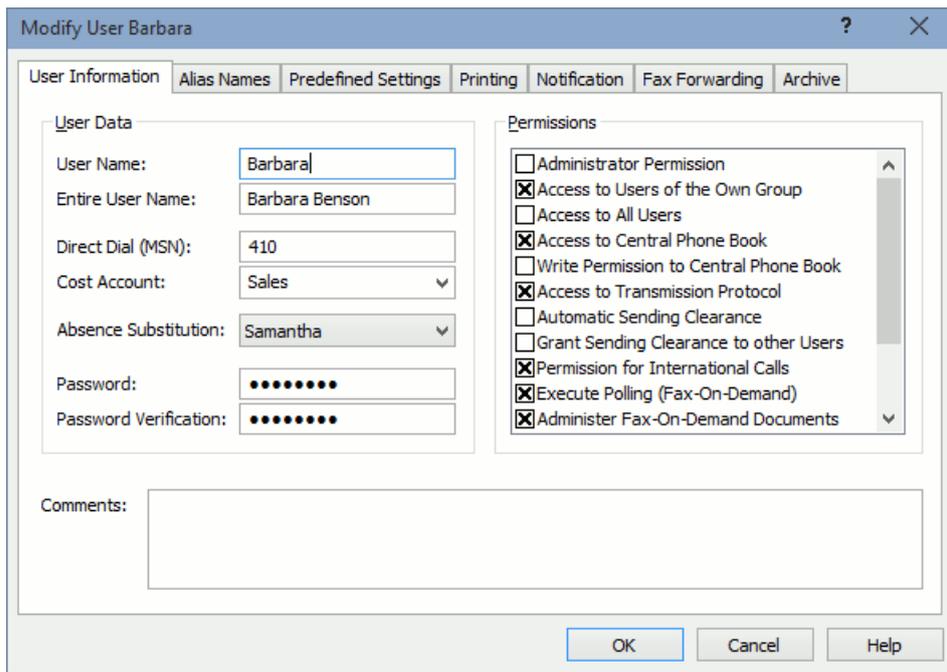
The User Administrator of ActiveFax is used to manage the accounts for the users and to grant individual permissions to different users. Users can also be part of a group; each user can also be a member of multiple groups. There are two predefined users in the User Administrator, the **Administrator** 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 get short user names that are 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 a specific user. 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 processed during a long 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 however not transferred when specifying absence substitutions.

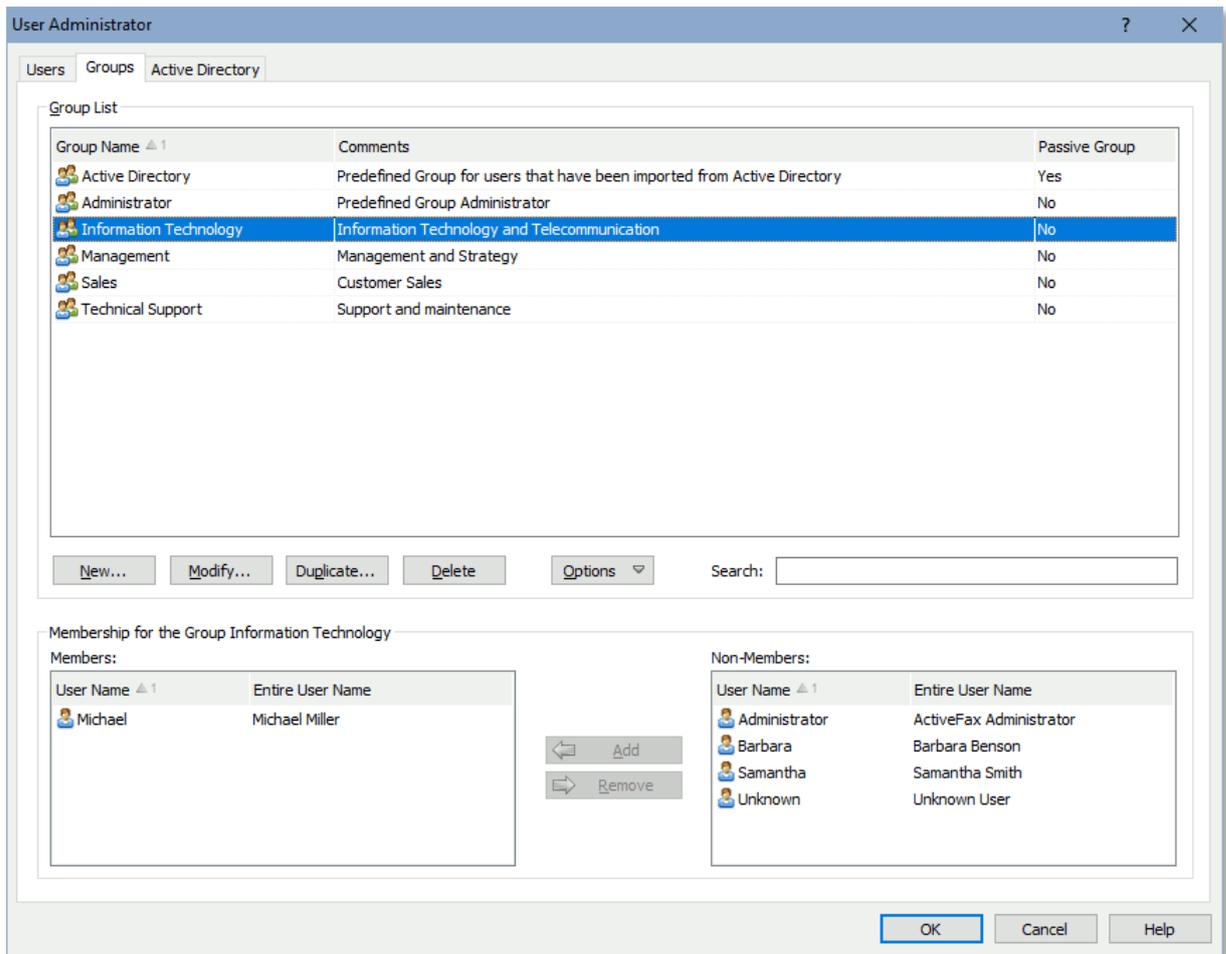


To clearly define responsibilities and to increase security, it is recommended to only grant those permissions to a user that are necessarily needed for daily work.

4.2.1. Group Administrator

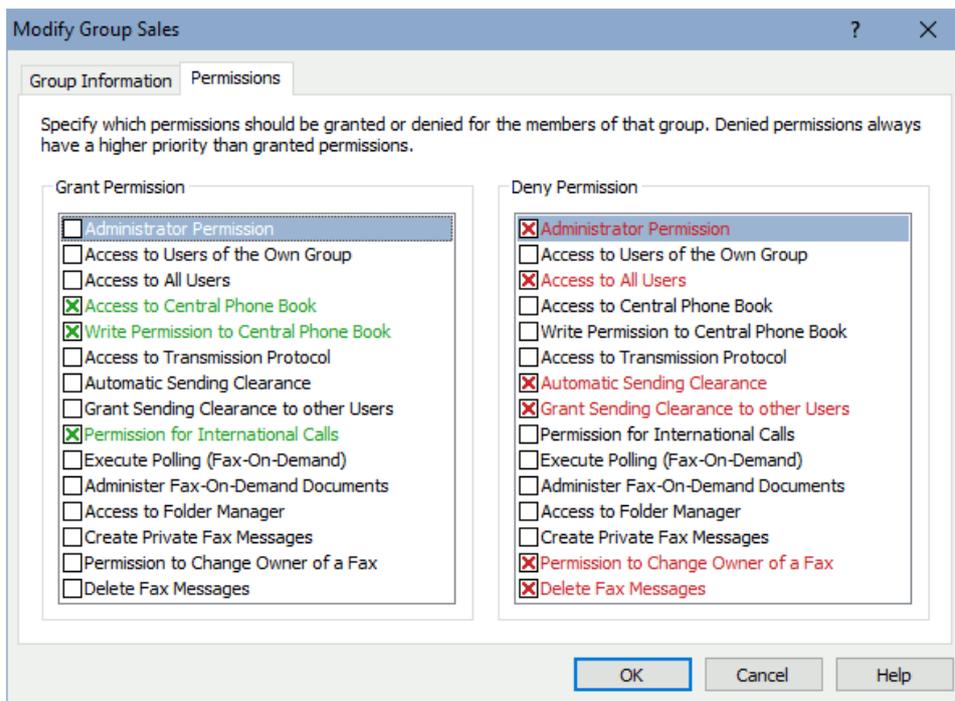
The Group Administrator is used to manage the groups and to map users to different groups. When a user has the permission to access the users of the own group, the members of the group can see each other's faxes (except the faxes of passive group members).

You can also declare a group as a **passive group**. Passive groups are not visible to the users and the members of a passive groups do not see each other. Passive groups are mainly used to configure permissions on group level.



When using **group-based** permission settings to grant or deny permissions to the members of a group, the administration of permissions for a large number of users can be done very easily.

Important to know is that permissions that have been denied for the members of a group always have a higher priority than permissions that are granted for a user or a group. Permissions that have been denied for the members of a group therefore clear a permission granted directly for a user.



4.2.2. Active Directory

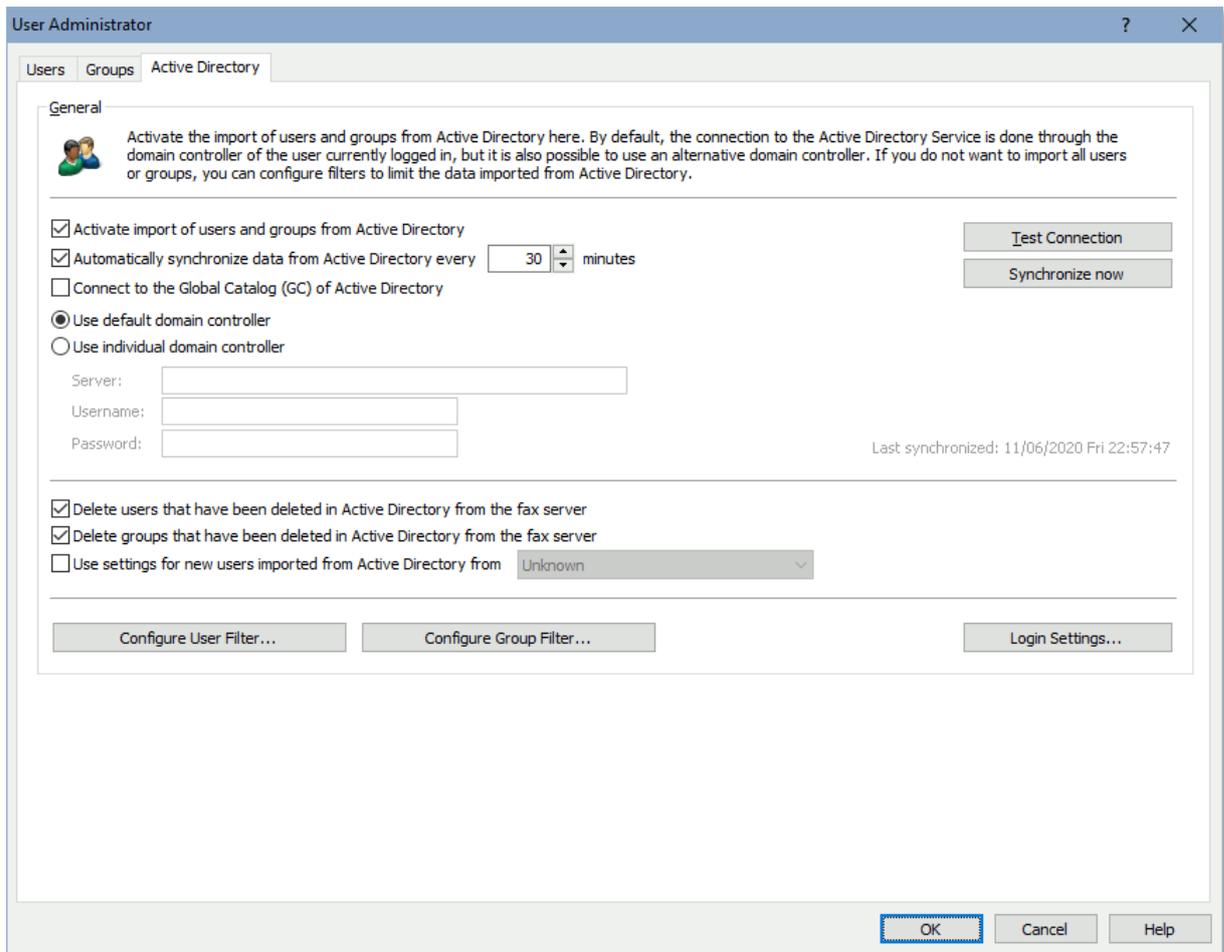
When having installations with many users, it makes sense to automatically import the users and groups from the Windows directory service **Active Directory** instead of manually creating them. By default, the import is done through the Active Directory Service of the default domain controller, but you can also use an individual domain controller for the import instead. To limit the users and groups imported from Active Directory various filters can be configured.

When working in an environment with multiple domains, it is also possible to connect to the **Global Catalog** (GC) of Active Directory. In that case, the users and groups of all domains (not just of the local domain) are imported.

Data fields not included in Active Directory are automatically pre-set with default values. As an alternative it would also be possible to use the values of a template user to pre-set the default values for new users imported from Active Directory.

When importing users from Active Directory it is not required to set passwords for the individual users, because the login of the fax client is done through the Active Directory user that has already been authenticated with the Windows login. The user does not need to manually login in that case when the fax client is started or when a document is printed to the ActiveFax printer.

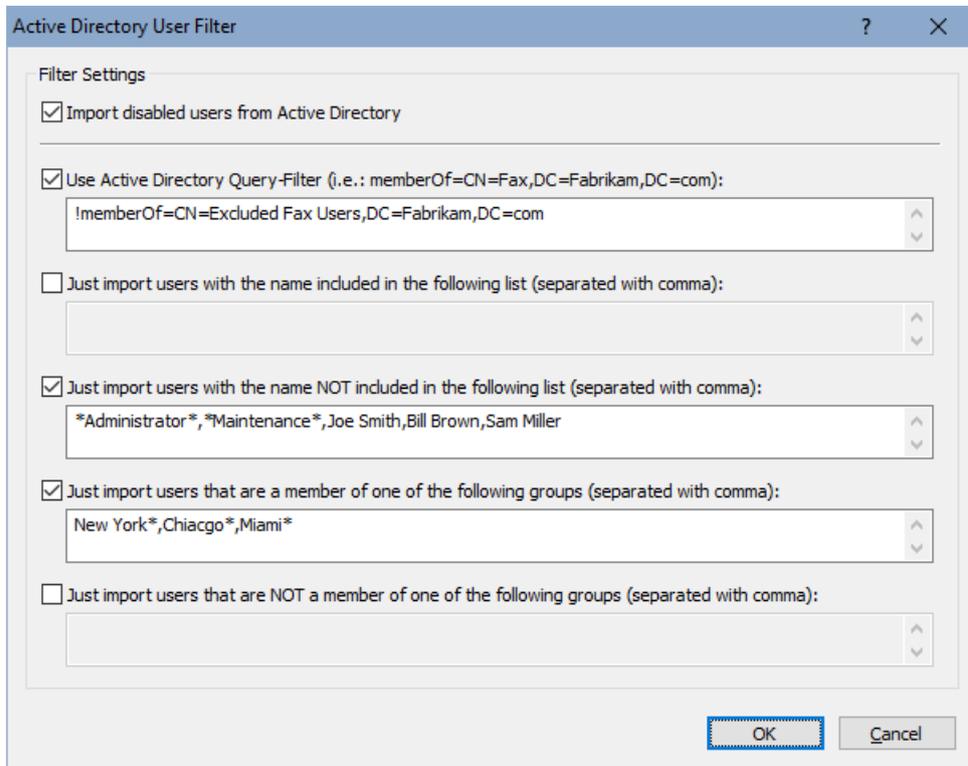
Users and groups that are no longer available in Active Directory are also automatically deleted in ActiveFax by default. If you do not want to automatically delete such users and groups, disable the options to do so in the Active Directory configuration.



- i** If you are unsure if the users and groups imported through Active Directory will be correct, you can manually start the import through the *Synchronize now* button. That way you can check the users and groups that have been imported. If the result is not as expected, close the User Administrator window with the *Cancel* button to discard all changes.
- i** In addition to the users and groups that are automatically imported from Active Directory, it is also possible to manually create your own users and groups. Users and groups that have been created manually and with names not overlapping with users and groups imported from Active Directory are not modified or deleted by the import from Active Directory.
- i** Users that have been imported from Active Directory are automatically added to the group “Active Directory”. The “Active Directory” group is automatically created by the system as a passive group. This group can be used to easily grant and deny permissions for all users that have been imported from Active Directory.
- i** By default, the import of groups from Active Directory just includes distribution groups. If you also want to import security groups, enable the option to import these groups in the group filter settings. Security groups are imported as passive groups by default.

4.2.2.1. Import Filters

If you do not want to import all users or groups from Active Directory, you can use import filters to limit the users and groups imported from Active Directory. When using import filters, it is possible to explicitly include or explicitly exclude a list of user and groups and to filter the users and groups based on group membership. If you are familiar with Active Directory Query Filters (LDAP Search Filters), it is also possible to define your own individual Active Directory Query Filter to control what should be imported from Active Directory.



i When using import filters, the search terms need to exactly match by default. This means that the search term has to be entered exactly as it is stored in the user name or group field in Active Directory. If you want to use search terms to search for a specific phrase at the beginning, at the end or at any position, you can use an asterisk (*) wildcard at the beginning, the end or on both sides of the search term. The search term “abc*” for example covers all entries starting with “abc”, the search term “*xyz” covers all entries ending with “xyz” and the search term “*mno*” covers all entries that have “mno” at any position.

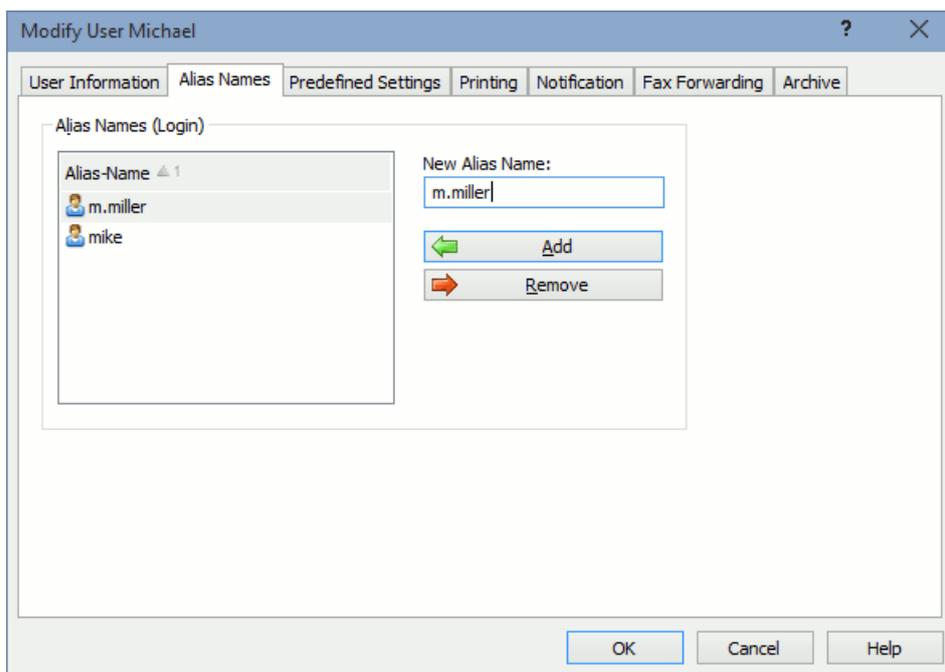
4.2.3. User Permissions

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.
Create Private Fax Messages	Permission to create a private fax message, only visible to the owner of the fax message.
Permission to Change Owner of a Fax	Permission to change the owner of a fax message.
Delete Fax Messages	Permission to delete fax messages.

4.2.4. Alias Names

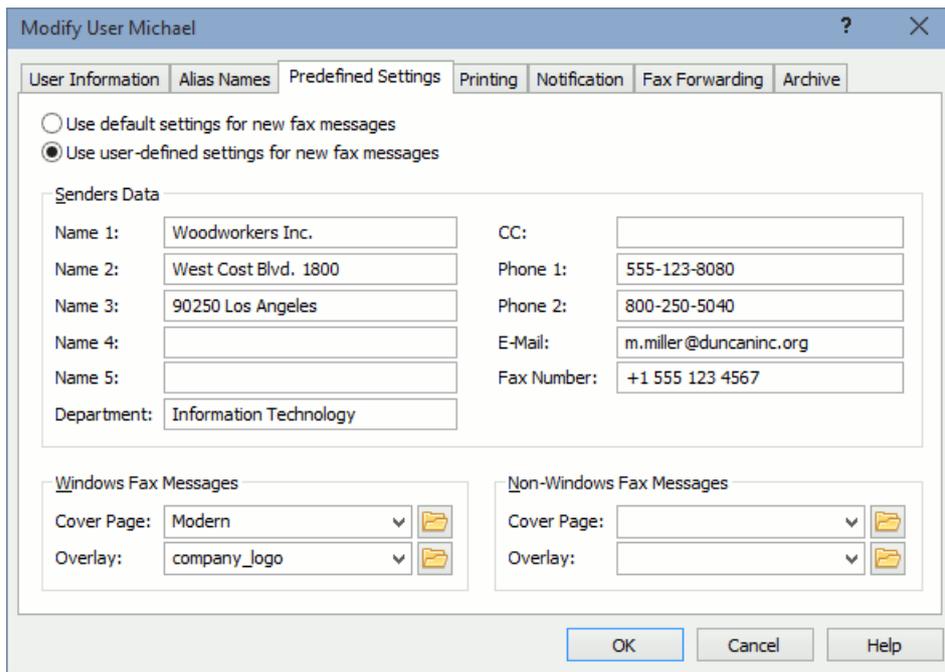
Many users are known under different names or have multiple logins or user accounts (i.e. on UNIX systems). In such a case it is possible to configure all alias names for a user through the *Alias Names* tab. ActiveFax automatically checks for alias names and replaces them with the main user name, so it makes no difference which name is used to create a fax message.



4.2.5. Predefined Settings

With the *Predefined Settings* tab it is possible to individually configure different settings for each user. You can choose between default sender settings and user-defined sender settings. Through that configuration screen it is also possible to specify default cover pages and overlays to be used for new fax messages.

-  The default sender settings (without user reference) can be configured with the menu *Extras / Predefined Setting*.



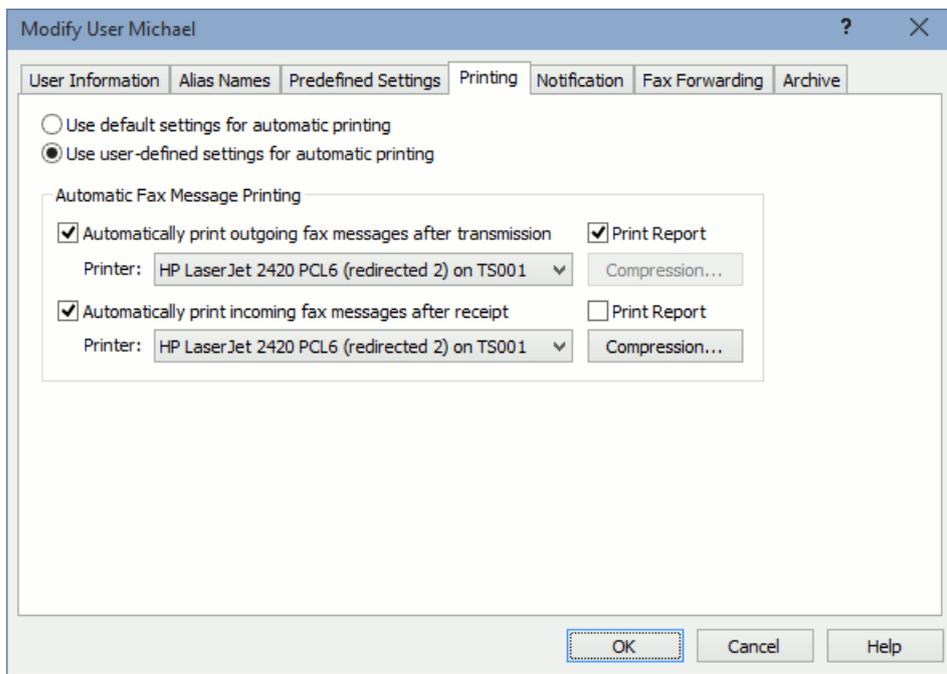
The screenshot shows a dialog box titled "Modify User Michael" with a "Predefined Settings" tab selected. The dialog contains the following elements:

- Two radio buttons: "Use default settings for new fax messages" (unselected) and "Use user-defined settings for new fax messages" (selected).
- A "Senders Data" section with the following fields:
 - Name 1: Woodworkers Inc.
 - Name 2: West Cost Blvd. 1800
 - Name 3: 90250 Los Angeles
 - Name 4: (empty)
 - Name 5: (empty)
 - Department: Information Technology
 - CC: (empty)
 - Phone 1: 555-123-8080
 - Phone 2: 800-250-5040
 - E-Mail: m.miller@duncaninc.org
 - Fax Number: +1 555 123 4567
- Two sections for cover pages and overlays:
 - Windows Fax Messages:** Cover Page: Modern; Overlay: company_logo
 - Non-Windows Fax Messages:** Cover Page: (empty); Overlay: (empty)
- Buttons: OK, Cancel, Help

4.2.6. 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. Select if you want to use the default settings or the user-dependent settings for automatic printing.

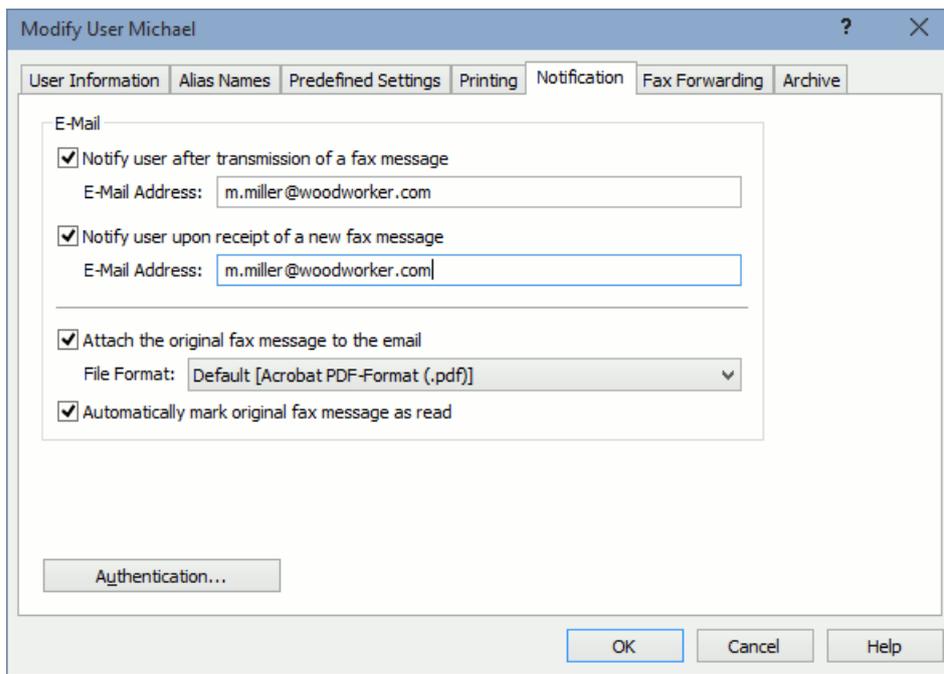
-  The default settings for automatic printing can be configured through the *Printing* tab of the menu *Extras / Options*.



4.2.7. E-Mail Notification

Email notifications are used to notify a user about the status of outbound and inbound faxes. For notifications of outbound faxes, the notification for failed fax transmissions is sent after the last failed transmission attempt (when the status of the fax message changes to “Undeliverable”). As an optional parameter it would also be possible to attach the original fax message to the email as an attachment. For received faxes you can also automatically change the status of the faxlist entry to “read” when the notification email is sent.

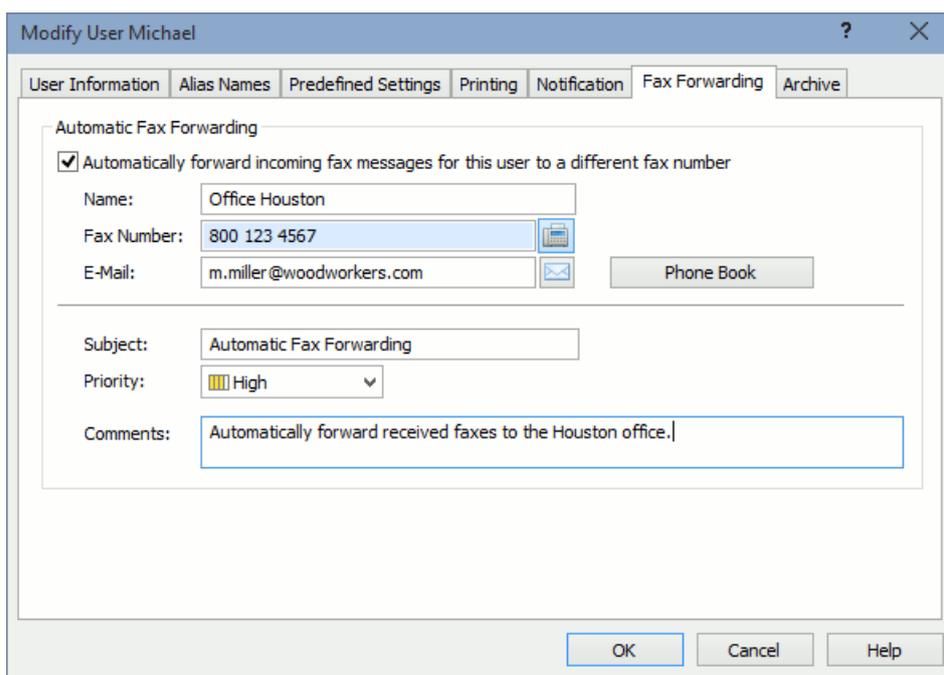
-  Email notifications that should be sent to more than one email address can be entered when you separate the email addresses with a semicolon (i.e. mail1@domain.com; mail2@domain.com; mail3@domain.com).
-  If the user’s email account requires separate credentials for the login at the mail server, you can configure this through the “Authentication” button.
-  If email notifications for outgoing fax transmissions should only be sent for failed fax transmissions, it would be possible to configure this through the menu *Extras / Options / General / Extended Options / Notification*.



4.2.8. 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.

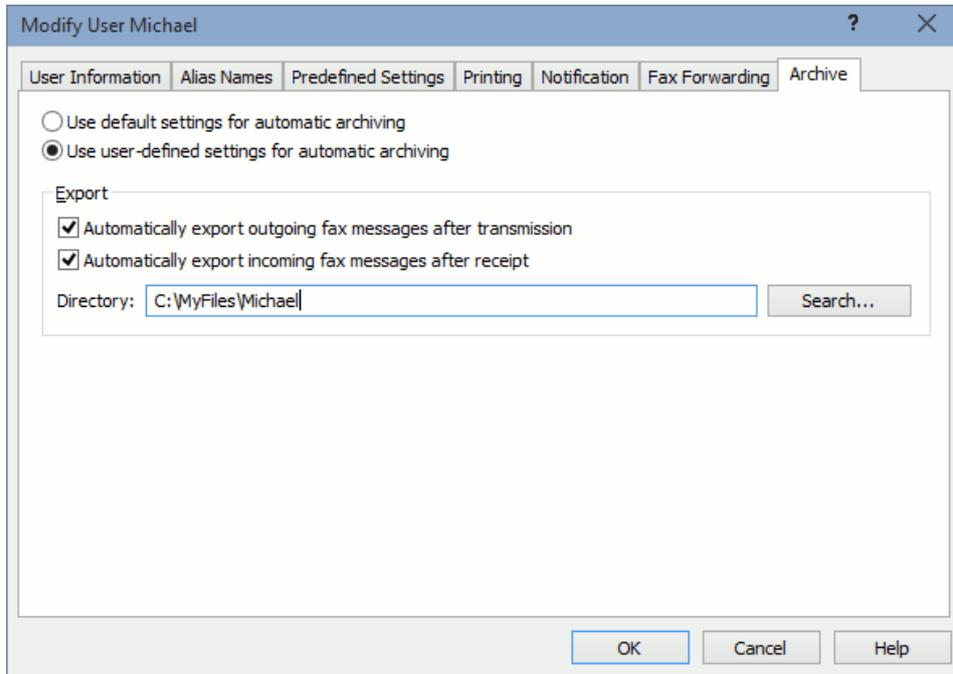
- i For a cost-saving forwarding of fax messages to other fax machines, it is possible to automatically set the priority of forwarded faxes to *Low*. In dependence of the charge optimization settings, fax messages are forwarded during night hours that way.



4.2.9. Archive (Export)

The settings for the archive function (fax export) can be individually configured for each user. That way it is possible to use a different export directory for each user. Select if you want to use the default settings or the user-dependent settings for the archive.

-  The default settings for the archive function can be configured through the *Archive* tab of the menu *Extras / Options*.



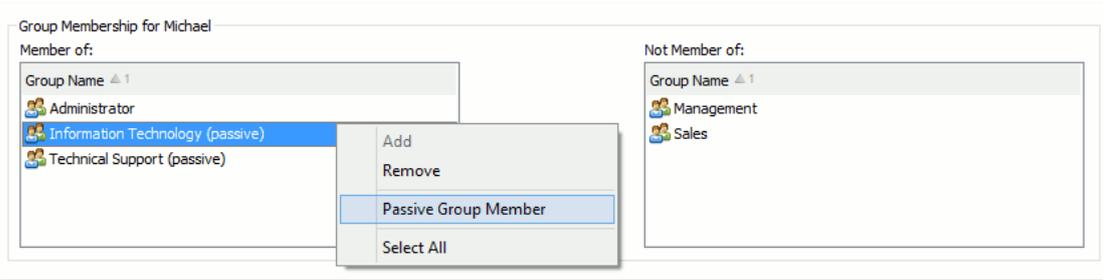
4.2.10. Group of Users

For a better overview about the users stored in the User Administrator, users should be arranged in groups. Every user can be a member of an unlimited number of groups. The group membership of a user also controls access to the fax messages of other group members. By default, a user can only see fax messages of other users of the same group.

-  A user only has access to fax messages of other group members when the permission setting "Access to users of the own group" is enabled. By default, this permission is already enabled.
-  To avoid that a user can see all faxes stored on the system, it is important to have the option "Access to all users" disabled for the user. If this permission is enabled for a user, the user has access to all fax messages, regardless of the group membership.

4.2.10.1. Passive Group Members

If a user should be a member of a group, but other group members should not be able to see that user, you can define the user as a passive group member. To define a user as a passive group member, right-click at the user or group entry in the group selection window and select the option "Passive Group Member" from the menu.



- i When a user is a passive member of a group, the fax messages of that user are not visible to other group members. The user itself however has access to fax messages of all other (non-passive) group members. A passive group membership is typically used for team leaders that should have access to the fax messages of all team members, but the team members should not have access to the fax messages of the team leader.

4.2.11. User Login

By default, the login of a user on the fax client is done through the user account and password stored in the User Administrator of ActiveFax. That way, any user can login with an individual user account from any workstation in the network. As an alternative it would also be possible to use the user name from the Windows login (Active Directory) for the login of the user. You can activate this either with the menu *Extras / User Administrator / Options / Login Settings* or through the Active Directory settings.



- ! Please note, that you still need to create the user accounts in the ActiveFax User Administrator, even when the Windows user name is used for the client login. This is required, because otherwise it would not be possible to configure individual settings for the users (i.e. notifications for fax transmissions). Normally the users are automatically imported from Active Directory in that case.

-  When using the Windows user name for the client login, it is not required to set a password for the users in the User Administrator. Since user authentication has already been done with the Windows login, no further authentication needs to be done by ActiveFax, so no passwords are required for the user accounts.

4.2.12. 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 always supported. ActiveFax uses the routing methods in the following order.

4.2.12.1. 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 directly by the phone network provider.

The direct dial numbers for the different users can be configured through 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.

4.2.12.2. Routing using CSID (Sender Identification)

This kind 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.

4.2.12.3. Routing using Modem

When using this kind 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 based 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 Incoming Faxes* field.
- Complete the configuration with OK.

4.2.12.4. 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 check which user is the recipient of the fax message. 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 or move the faxlist entry over to the new user name in the user selection window left of the faxlist window using drag-and-drop.
- Complete the fax dialog window with OK.

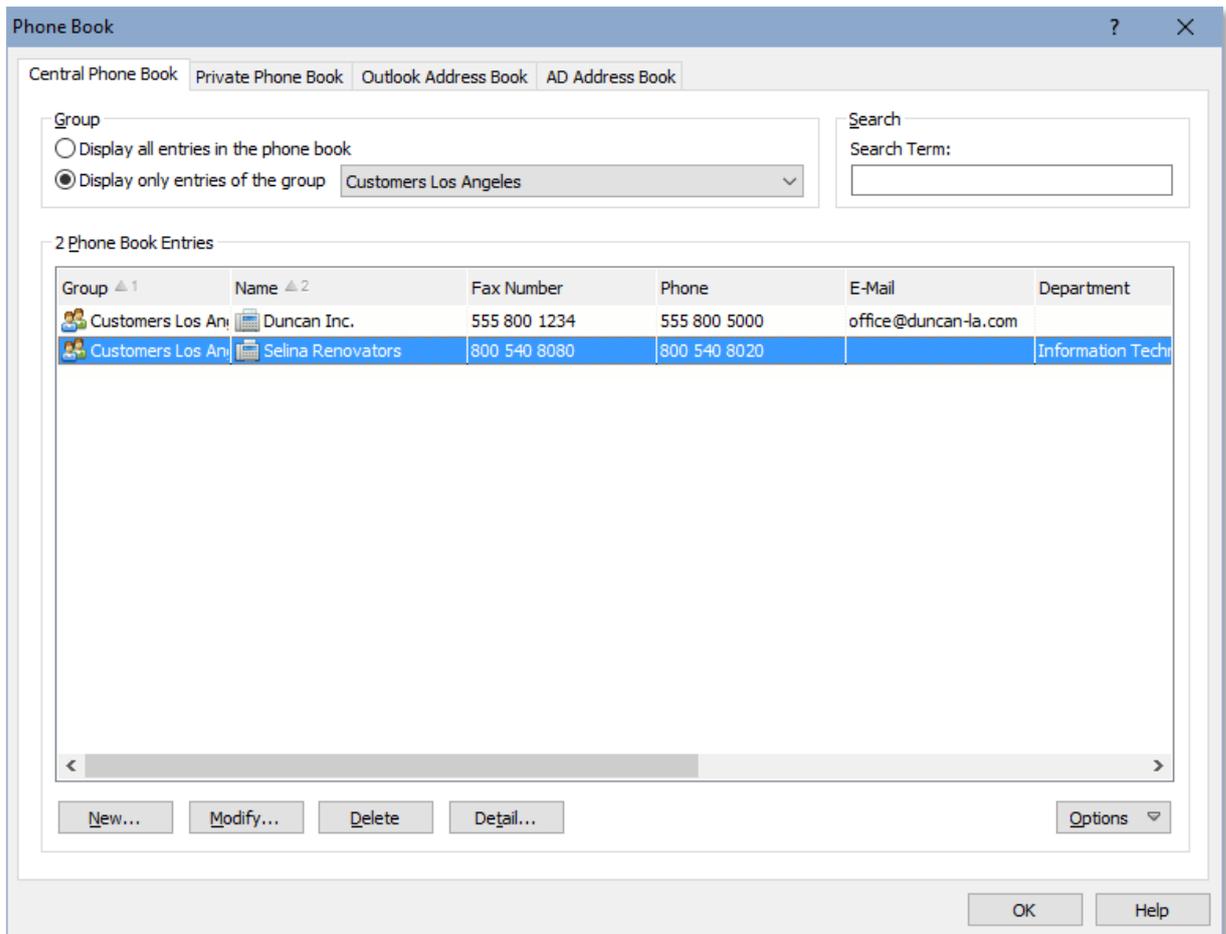
4.2.12.5. Order of Routing Methods

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).

4.3. Phone Book

Phone book entries in ActiveFax can be stored either in a global (central) or local phone book. The **central phone book** 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 user's private phone book should be the preferred choice.



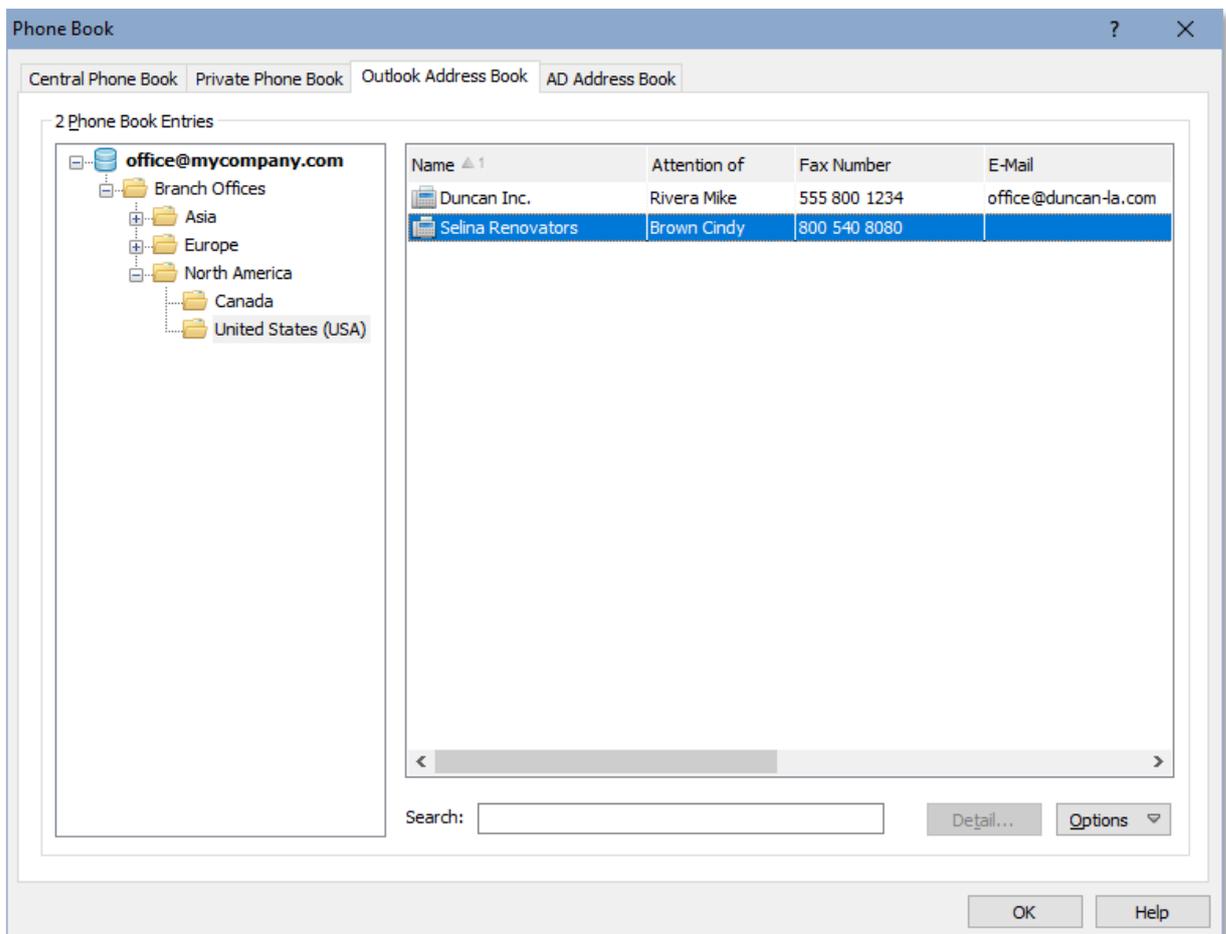
It is recommended to organize phone book entries in groups, for example grouped by branch or department. Doing so makes it much easier to find phone book entries again. To search for a specific phone book entry, the search function of the phone book can be used.

-  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.

4.3.1. Outlook Contacts

In addition to the central and private phone books, it is also possible to access contacts from Outlook of the user currently logged-in to Windows.

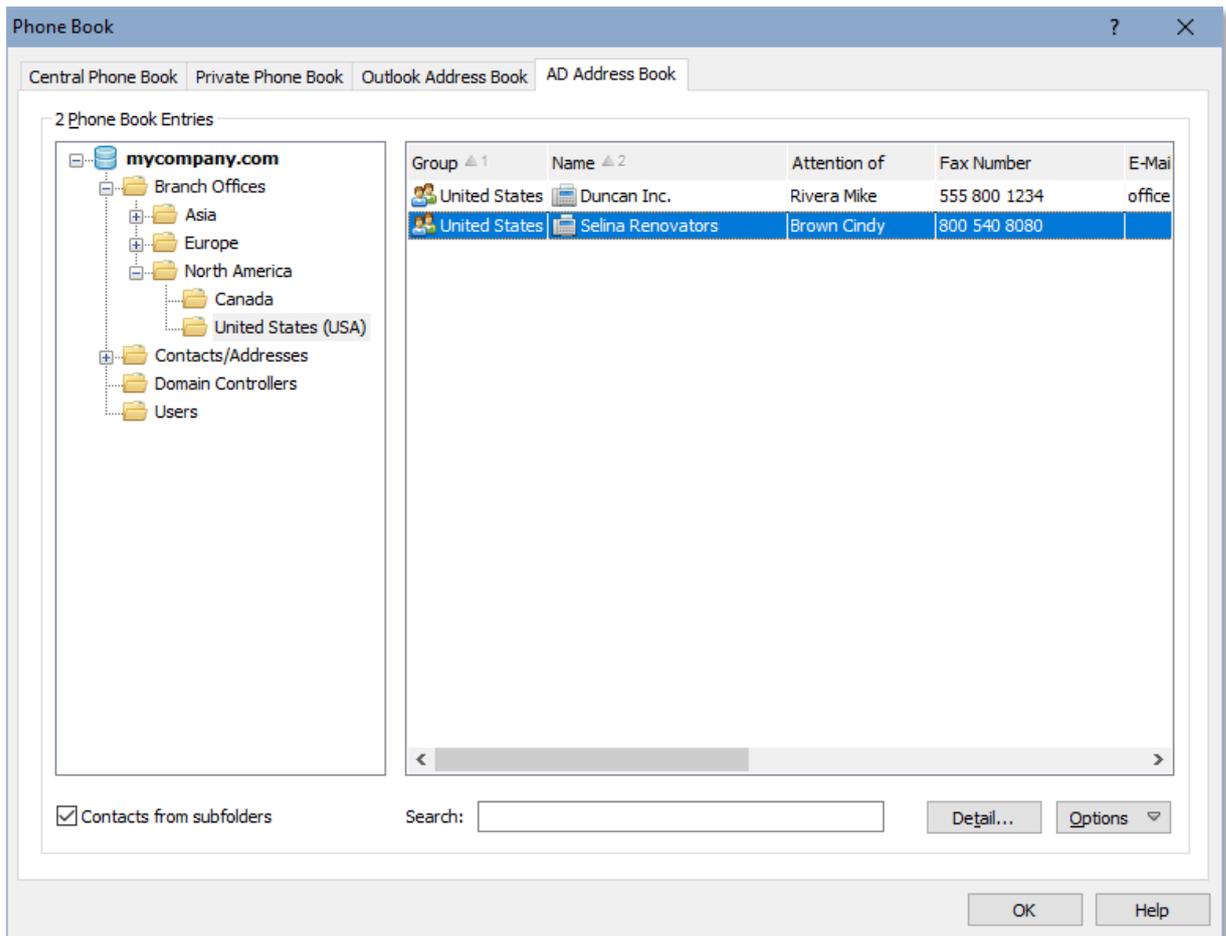
 To access Outlook contacts, it is required that both, ActiveFax and Outlook, are installed either in **32-bit** or **64-bit**. When one of the applications is installed in 32-bit and the other in 64-bit, the communication between the applications is not possible for technical reasons.



4.3.2. Active Directory (AD) Contacts

In addition to the central and private phone books, it is also possible to access contacts from the Windows directory service **Active Directory** (AD). By default, the connection to Active Directory is done through the domain controller of the user currently logged in, but it would also be possible to connect to an individual domain controller.

When working in an environment with multiple domains, it is also possible to connect to the **Global Catalog** (GC) of Active Directory. In that case, the contacts of all domains (not just of the local domain) are imported.



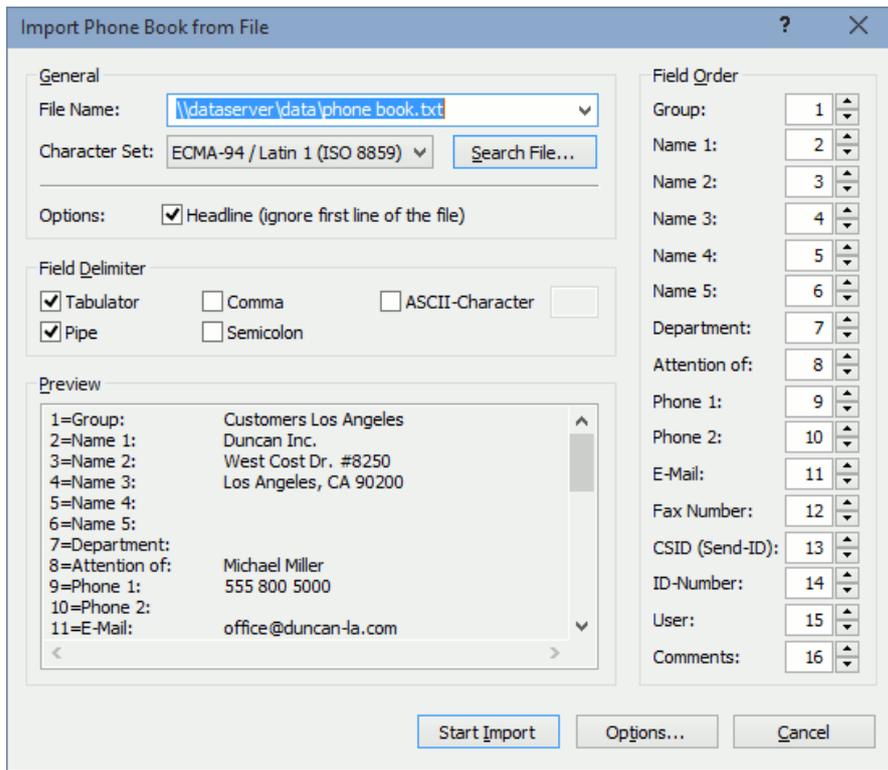
4.3.3. Importing the Phone Book

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 second method is to import the phone book entries from an external database using the ODBC standard.

4.3.3.1. Import from ASCII File

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

- Select the *Options / Import from File* 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 blank.
- Check the settings in the preview window and start the import of the phone book entries.



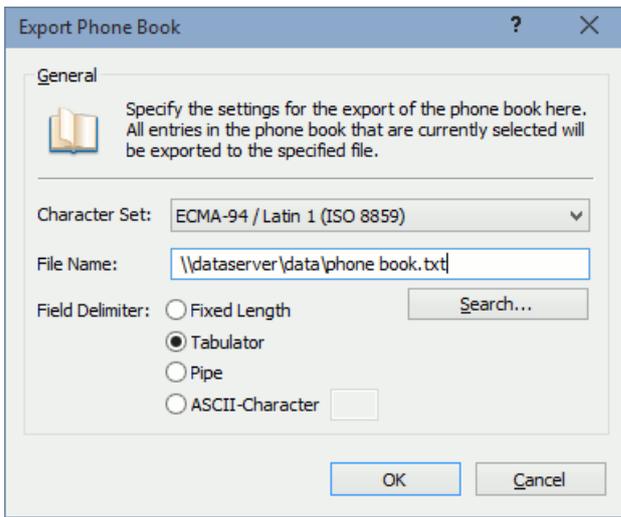
i At the import process of the phone book entries the field *ID-Number* (i.e. customer or supplier number) and the fields *Name 1* and *Fax Number* are compared. If there is a matching entry found in the phone book for these fields, the phone book entry is updated; otherwise a new entry is created in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

4.3.3.2. 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.

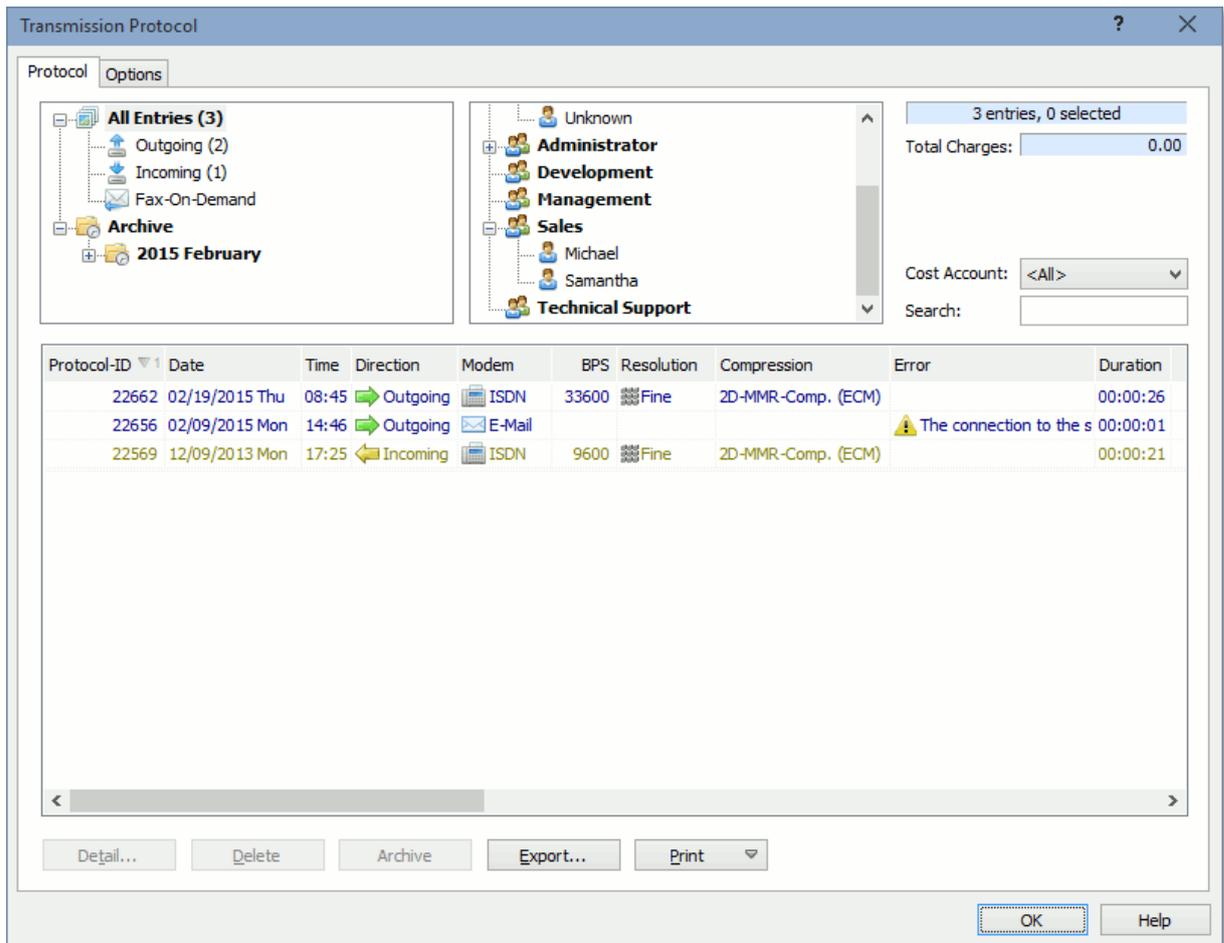
4.3.4. Exporting the Phone Book

Phone book entries can be exported to an ASCII file (text file) with the *Options / Export to File* 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.



4.4. 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.



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

4.4.1. 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.

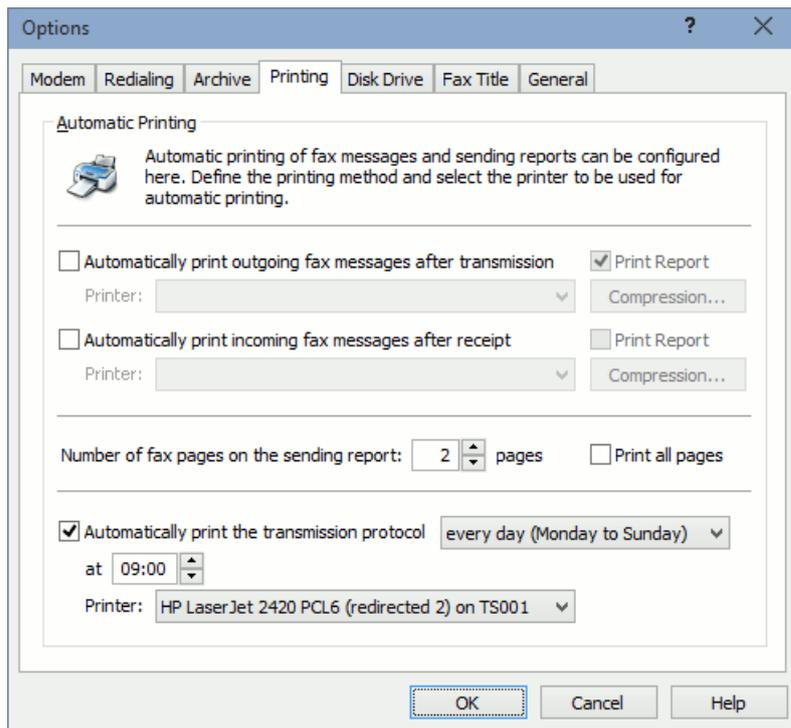
Print Option	Description
Print All Entries	All entries currently displayed in the transmission protocol list are printed.
Print only New Entries	Only new entries that have not yet been printed are printed.

4.4.1.1. Layout

Through 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.

4.4.1.2. 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.



4.4.1.3. Sending Report

As an alternative to the printout of the 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 through the *Printing* tab of the menu *Extras / Options* or with the User Administrator if you need to configure individual printers for each user.

4.4.2. Exporting the Transmission Protocol

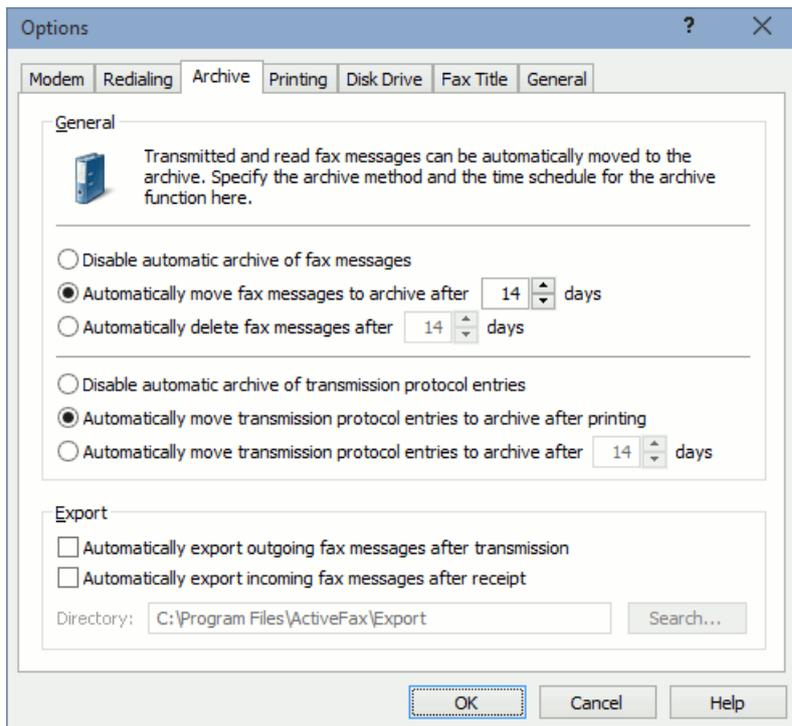
The entries of the transmission protocol can be exported in three different ways. Use one of the methods below to do the export:

- 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).

4.4.3. Archiving the Transmission Protocol

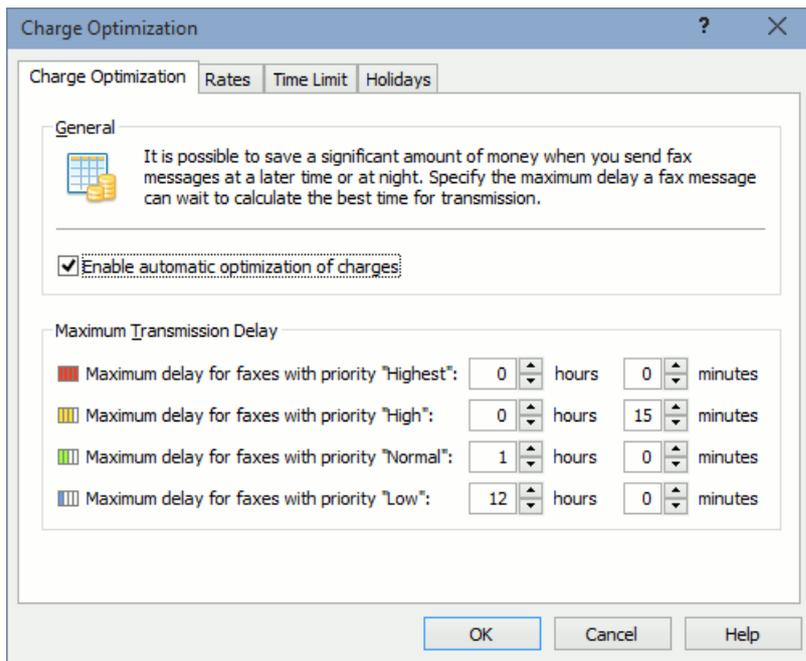
The entries of the transmission protocol can be automatically moved to an internal archive to avoid that the protocol becomes too large over the years. Automatic archiving can be configured with the *Archive* tab in the menu *Extras / Options*. Old protocol entries are automatically moved to the archive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



4.5. Charge Optimization

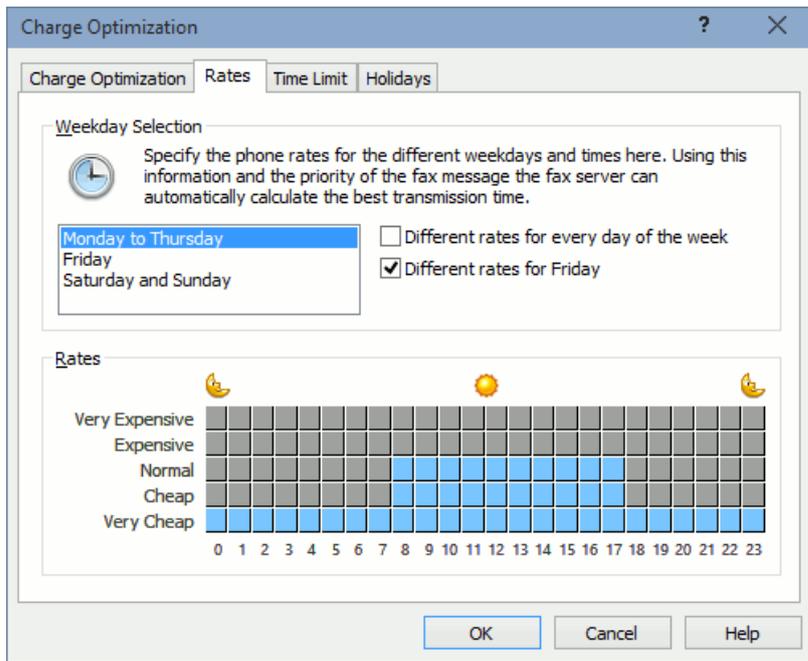
4.5.1. Delayed Transmissions

Depending on the 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.



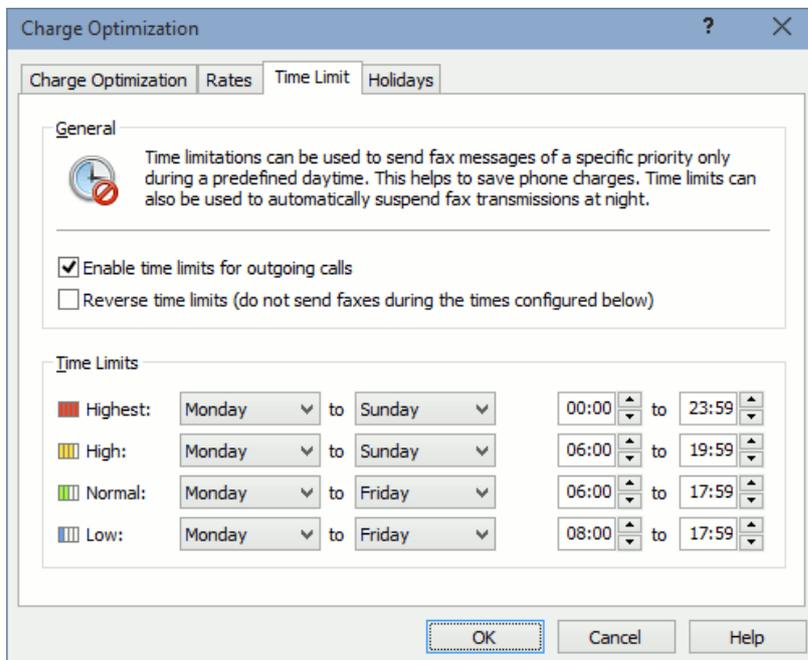
To activate automatic optimization of the transmission time, follow these steps:

- 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 different 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 necessary to set the priority level of low-priority fax messages to “low”. 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.



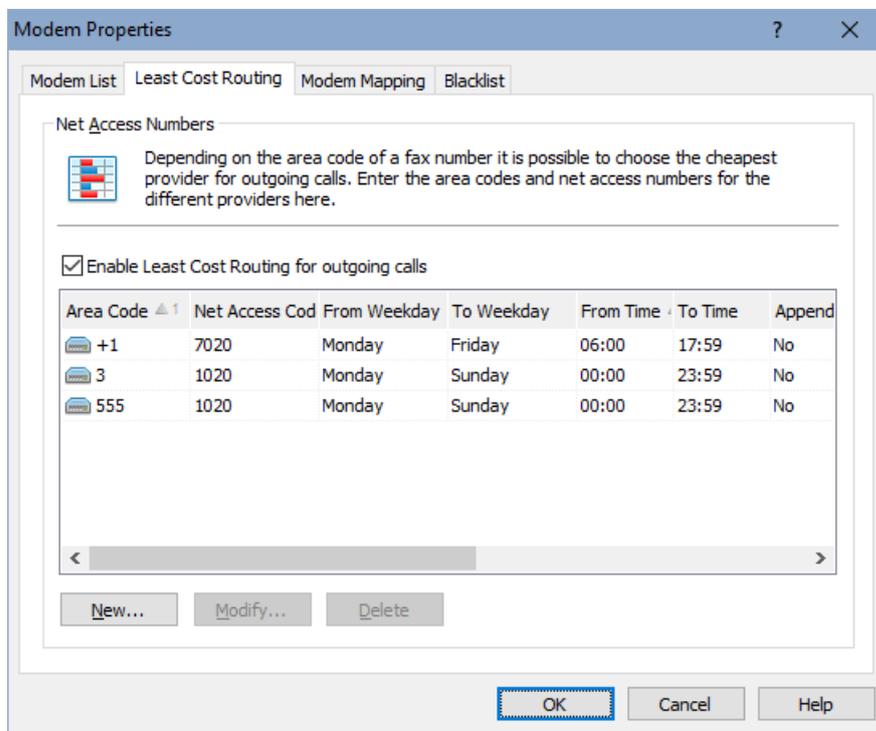
4.5.2. Time Limitation

To avoid that fax messages are sent during specific times of the day or days of the week, it would be possible to configure a time frame for each priority level. Depending on the priority level of a fax, faxes are sent only during these times then. As an alternative it would also be possible to configure time limitations to be used to suspend fax transmissions for a specific time frame.



4.5.3. 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.
- i** Please note that it is not required to enter the complete area code when using least cost routing. “8” for example covers all fax numbers beginning with “8” (i.e. 89, 873, ...).

4.6. Modem / ISDN / Voice over IP / Web Fax Provider

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 / 1.0	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 TR1034, TR114 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 on 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 the term “modem” is used.

4.6.1. Voice over IP (VoIP / T.38)

Instead of using normal phone lines to transmit faxes, it would also be possible to use ActiveFax in combination with **VoIP**. When using VoIP, a special interface software is used instead of the fax modem or fax board. ActiveFax supports the **XCAPI** software from TE-Systems (<https://www.xcapi.com>) and the **SoftIP** software from Dialogic for VoIP integration.

-  When using VoIP for fax transmissions, it is recommended to make sure that the VoIP connection also supports the **T.38** (Fax over IP) standard. VoIP connections without T.38 support are often not reliable enough for solid fax transmissions.

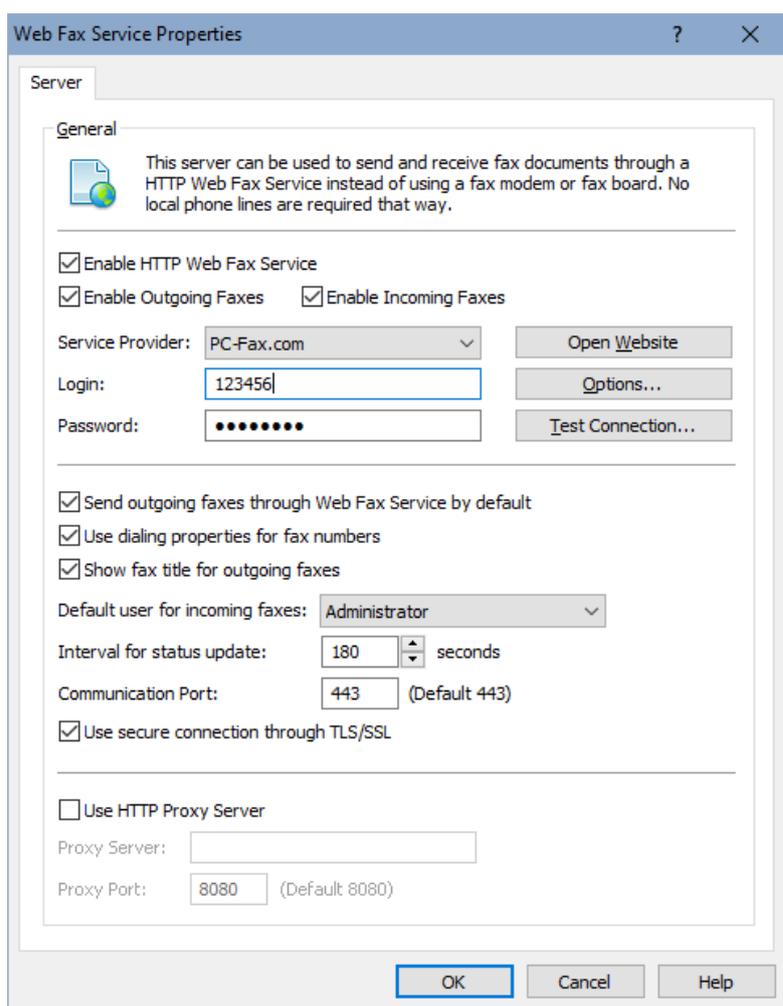
-  The installation of the fax server on a **virtual machine** can be done very easily when using XCAPI, because the communication with XCAPI is done through a normal Internet connection and no additional hardware is required.

4.6.2. Web Fax Provider

An easy and cheap way to connect ActiveFax to the public switched telephone network (PSTN) is using a **Web Fax Provider**. When using such a service, no modems or fax boards and no

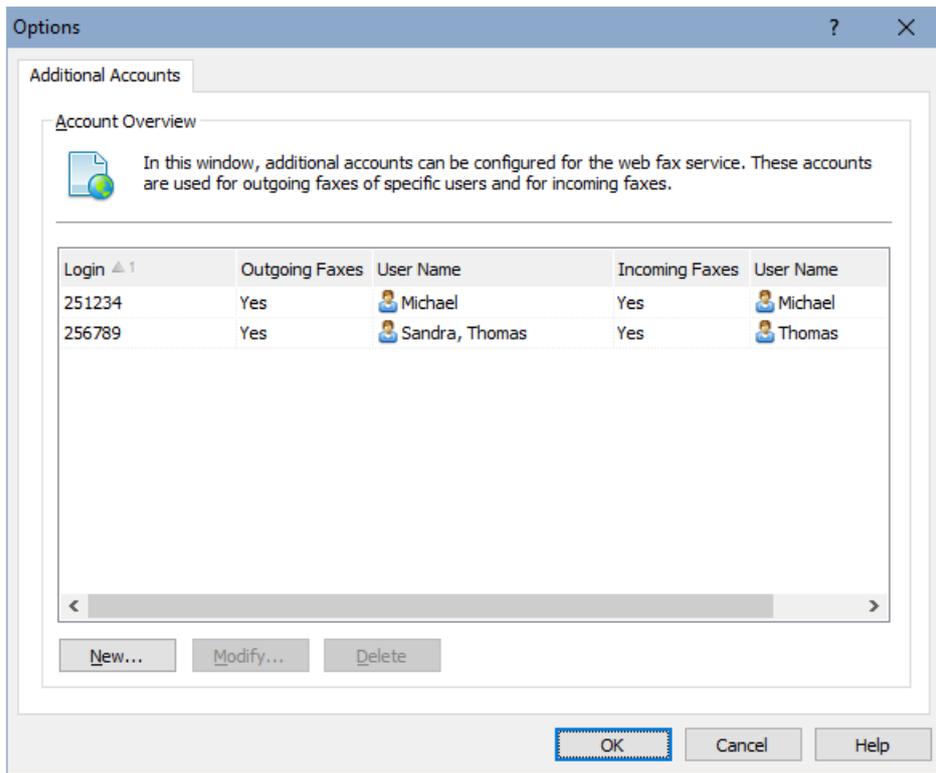
dedicated phone lines are required, because the complete infrastructure to connect the fax server to the telephone network is provided by the Web Fax Provider. Since Web Fax Providers are connected to the public switched telephone network with a very large number of lines, even huge fax volumes can be sent in a short time and dozens of parallel inbound faxes can be received. ActiveFax supports the Web Fax Providers [etherFax](#), [eFax Corporate](#), [RingCentral](#), [InterFax](#), [OpenText](#), [PC-Fax.com](#), [Phaxio](#), [SRFax](#), [Retarus](#) and [ConcordFax](#).

The configuration of the fax server is very simple when using a Web Fax Provider, because it's just required to configure the login credentials of your account (**user name and password**). The connection between the fax server and the Web Fax Provider is done through a normal **encrypted Internet connection**.

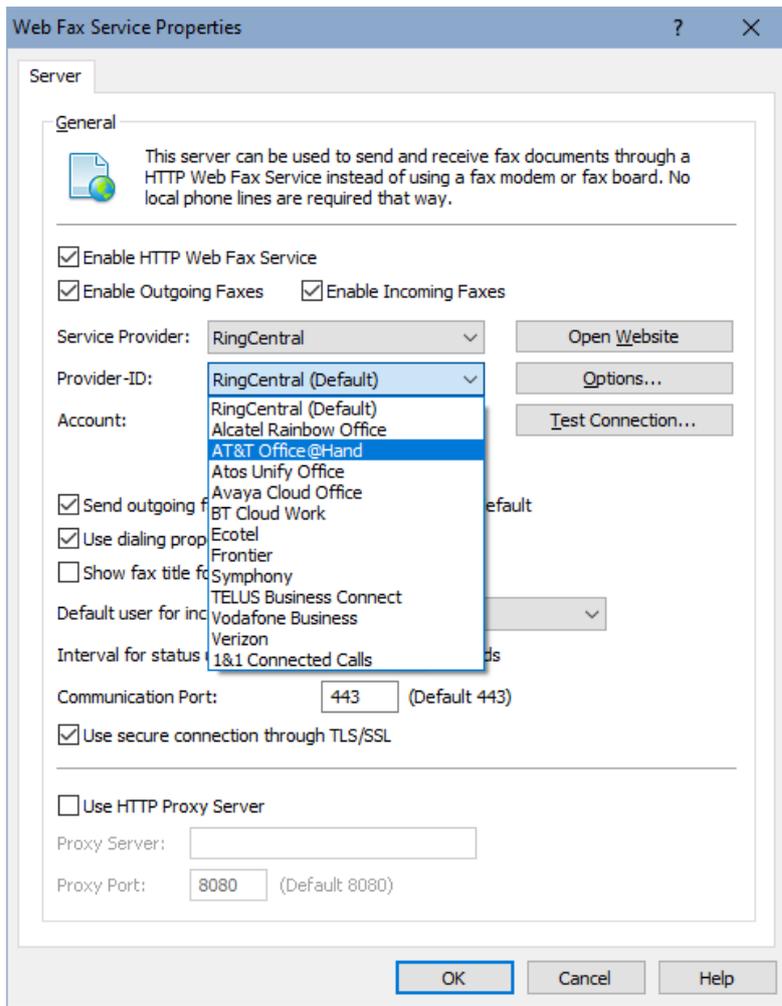


For the highest level of availability and compatibility, we recommend using the Web Fax Provider [etherFax](#), [eFax Corporate](#), [RingCentral](#) or [InterFax](#). For large fax volumes with 1,000 faxes per week upwards and highest demands on the reliability of the fax service, the Web Fax Providers [etherFax](#) and [Retarus](#) are the best choice.

i With the *Options* button, you can configure **additional accounts** to be used for outgoing and incoming fax messages. The number of Web Fax Provider accounts that can be configured in ActiveFax is not limited.



i The Web-Fax Provider [RingCentral](#) also includes support for the partner services [Alcatel Rainbow Office](#), [AT&T Office@Hand](#), [Atos Unify Office](#), [Avaya Cloud Office](#), [BT Cloud Work](#), [Ecotel](#), [Frontier](#), [Symphony](#), [TELUS Business Connect](#), [Vodafone Business](#), [Verizon](#) and [1&1 Connected Calls](#). The configuration of the partner service can be done with the *Provider-ID* field.



- i The installation of the fax server on a **virtual machine** can be done very easily when using a Web Fax Provider, because the communication with the provider is done through a normal Internet connection and no additional hardware is required.
- i When using a Web Fax Provider, you automatically get a fax number that can be used to receive incoming faxes. If you want to continue receiving faxes through your existing fax number, set up **call forwarding** to that number in your phone system. For certain countries, most providers also offer the option of **number porting** to transfer your existing fax number directly to the provider.

4.6.3. Advantages of ISDN Adapters

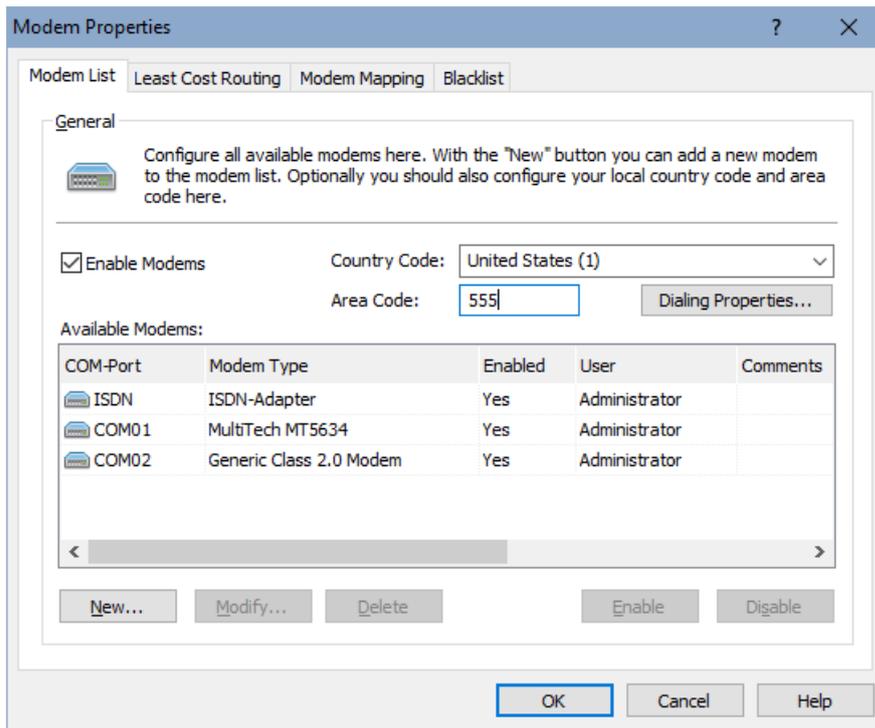
Compared to normal analog fax modems, using ISDN adapters offers several advantages. ISDN adapters might also be slightly cheaper compared to fax modems, especially when using ISDN adapters built in passive technology.

- 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 transmission charges. Required ISDN service: AOC (Advice of Charge).

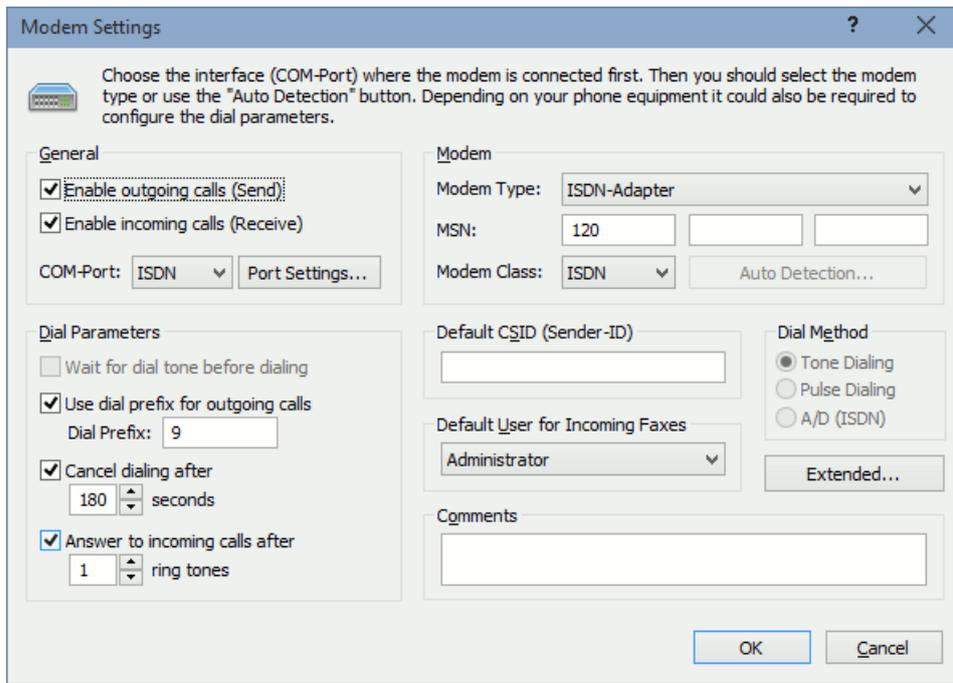
- ❑ Simultaneous fax transmissions on multiple phone lines (channels). When using BRI (Basic Rate Interface) 2 channels are supported by default; when using PRI (Primary Rate Interface) up to 30 channels are available with a single ISDN controller.

4.6.4. 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 different users can be added through 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.

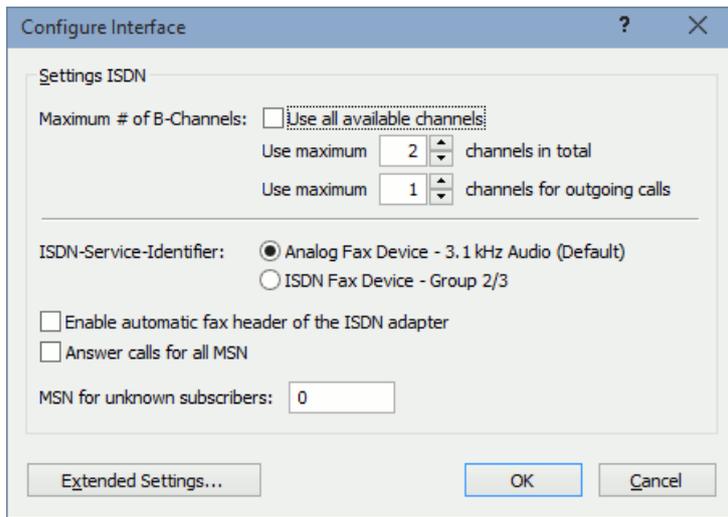


- ⚠ When using an old phone system (PBX) or the modem is connected to an analog phone system, it could be required to use **pulse dialing** instead of tone dialing. Take care to choose the correct dialing method in that case, since outgoing calls cannot be successfully dialed otherwise.

- ✘ 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.

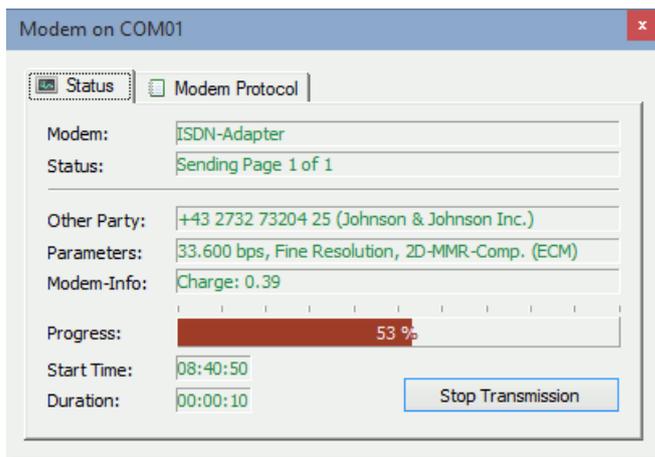
- i When using an ISDN adapter, multiple phone lines (B-channels) are available. To avoid that ActiveFax uses all available channels for fax transmissions, the number of channels used for faxing can be limited with the *Extended* button. Specify the total number of channels and the number of channels 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, ...).



4.6.5. Modem Status

To display the current status of a modem, click on the modem icon in the communication window (i.e. *Modem on ISDN01*). The status window shows 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, charge).
- Transmission progress for the current page.
- Start time of the transmission.
- Duration of the transmission.

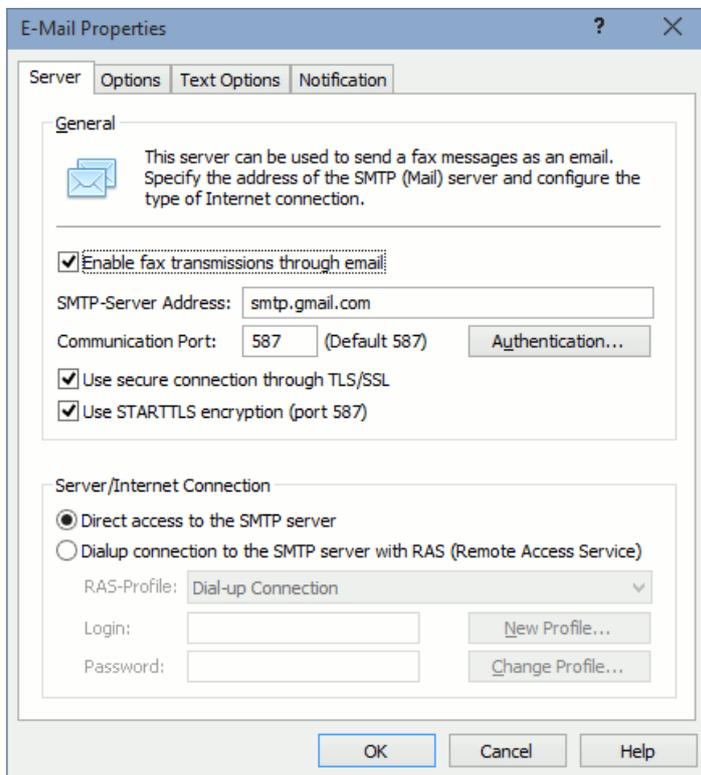


4.7. E-Mail

As an alternative to fax transmissions, 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.

4.7.1. 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).

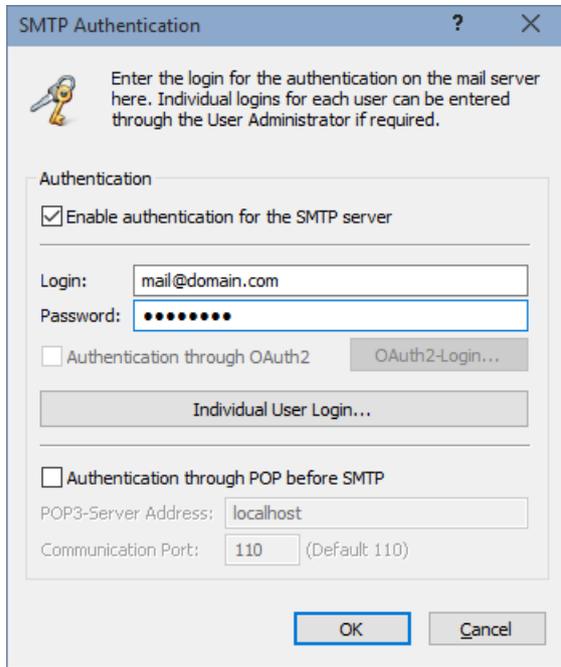


- Enter the hostname or IP address of the SMTP server.
- Specify whether you have direct access to the Internet or if you need to use dialup connections.
- If you need to use dialup connections, configure the settings for the Remote Access Service (RAS).

 If you are using an external mail server (i.e. the mail server from your Internet Service Provider), it is strongly recommended to also enable one of the encryption protocols **SSL/TLS** or **STARTTLS** for encrypted communication between ActiveFax and the mail server.

4.7.2. Mail Server Authentication

Many mail servers require the user to login on the mail server to send emails to protect the mail server from unauthorized access by spam senders. If your mail server requires authentication, you can configure this through the *Authentication* button.



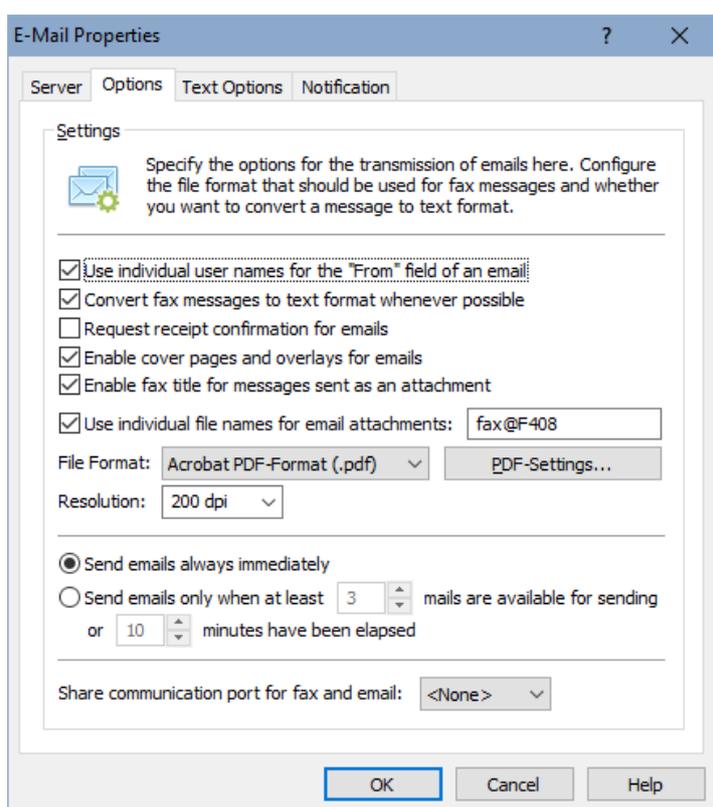
- i If your mail server requires the email address used for authentication to be identical with the email address of the sender, you need to configure individual authentication settings for each user. The user-dependent authentication settings can be configured either through the *Individual User Login* button or through the menu *Extras / User Administrator / Modify / Notification*.
- i Some mail providers (i.e. Google® Gmail® or Microsoft® Office 365®) support authentication through OAuth2 protocol. The option for OAuth2 is therefore only selectable when a provider supporting this authentication method is used.

4.7.3. 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 email* is used to define 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 *Request receipt confirmation for emails* is used to request a confirmation about the successful receipt of the email from the email recipient.
- ❑ The option *Enable cover page and overlays for emails* defines if cover pages and overlays should be activated for messages sent by email.
- ❑ The option *Enable fax title for messages sent as an attachment* 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 emails 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 email* 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.

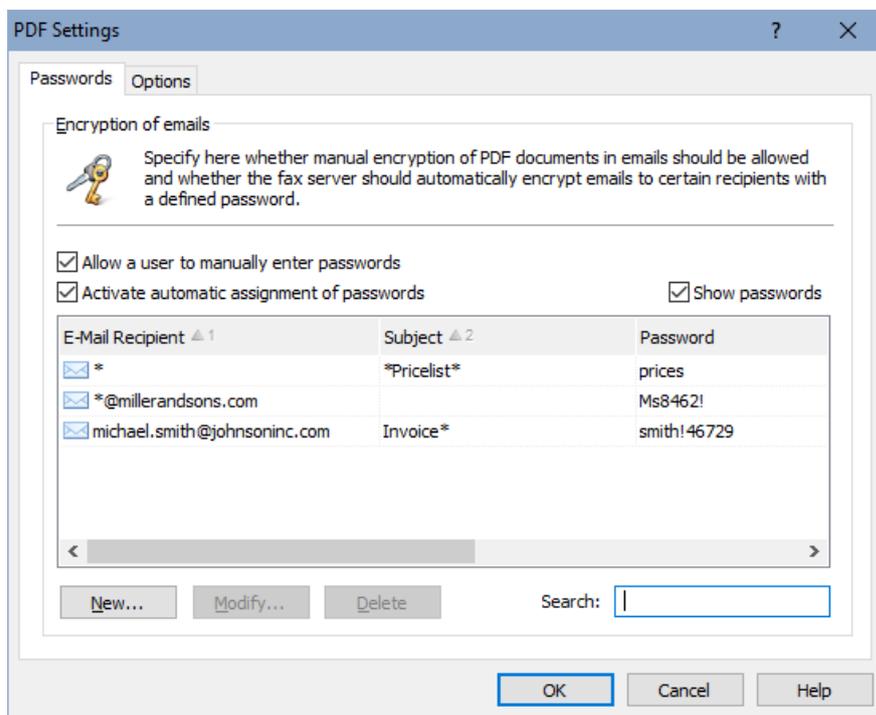


4.7.4. Encryption of PDF Documents

By default, PDF attachments sent by the fax server through email are not encrypted. It is however also possible to encrypt such attachments with a password to protect them from unauthorized access. That way, the PDF document can only be opened after entering the correct password.

The submission of the password can be done either automatically with the data field **@F609**, by manually entering the password in the fax dialog or automatically via an assignment-table of passwords to be used for certain email addresses.

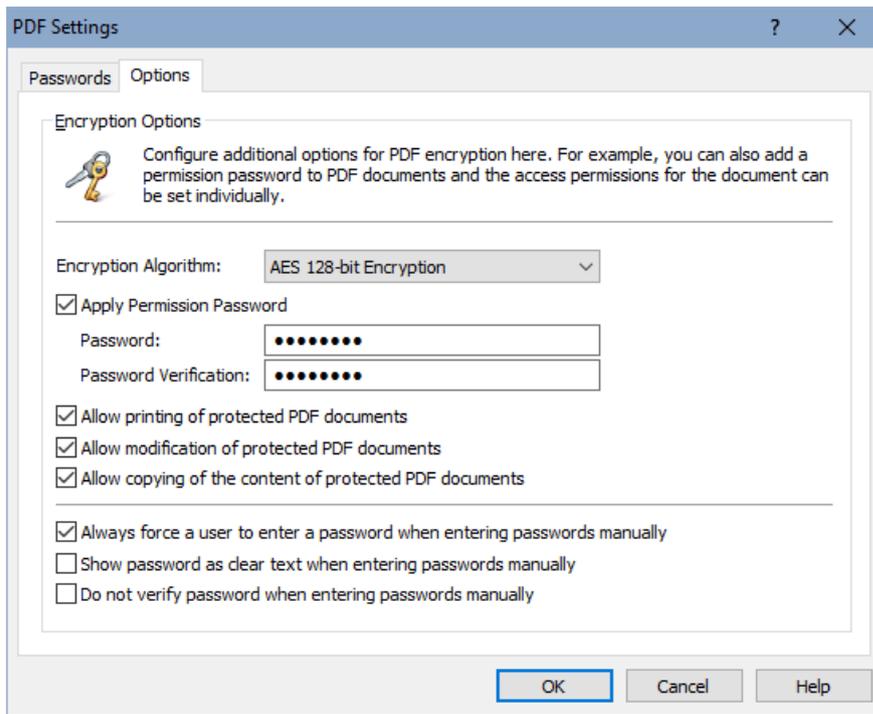
The function for encrypting PDF documents is not activated by default. To use encryption of PDF documents with a password, first activate the encryption feature with the **PDF-Settings** button in the menu *Communication / E-Mail / Options* or right-click at the *E-Mail icon* in the Communication window and select the corresponding menu item



If the option *Allow a user to manually enter passwords* is activated, an additional button is displayed in the fax dialog next to the email address; this button can be used to enter the password to be used for the encryption of the PDF attachment. The button to enter the password is only visible if manual passwords have been activated first.

With the option *Activate automatic assignment of passwords*, it is also possible to create a list of predefined passwords to automatically encrypt messages to specific email addresses or for a specific subject. It is possible to assign passwords to an email address, a subject, or a combination of both. It is also possible to use a * as a placeholder to check the search term only at the beginning, only at the end or at any position. That way it is possible, for example, to encrypt all messages to email addresses of a certain domain with a predefined password (i.e. *@companyname.com, to automatically encrypt all emails sent to the domain companyname.com).

The *Options* tab can be used to define which encryption algorithm should be used and which permissions (i.e. printing or modifying) should be allowed for the PDF document. There is also an option to set a permission password for encrypted PDF documents or, when entering passwords manually, to always force a user to enter a password.



 The encryption of PDF documents is done with the **AES 128-bit or AES 256-bit (Advanced Encryption Standard)** encryption algorithm. This type of encryption can be classified as very secure and is not considered to be vulnerable with current technical means.

 If a **permission password** is stored for the encryption of PDF documents, the encrypted document can be opened with full access permission. If the user does not know the password of a PDF file, it is still possible to open the document with the permission password. This means, that the permission password has the function of a master password. If you assign a permission password, make sure that it remains secret.

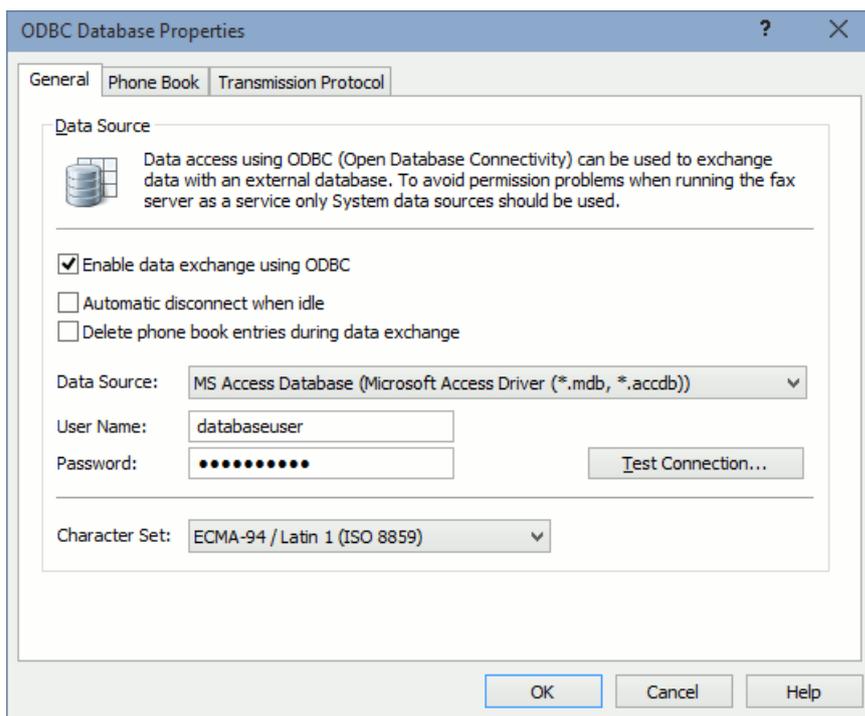
4.8. ODBC Database

Using the ODBC data exchange standard, data can be exchanged between ActiveFax and external databases. Since Windows 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 as well as the automatic export of the transmission protocol through ODBC.

4.8.1. 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 needs to be created through the Windows Control Panel first. For more information about creating an ODBC data source for your database, have a look at the manual of your database product. To make sure the data source can also be accessed when the fax server is running as a service, it is recommended to only use System data sources (no User data sources).

-  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.

4.8.2. 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.

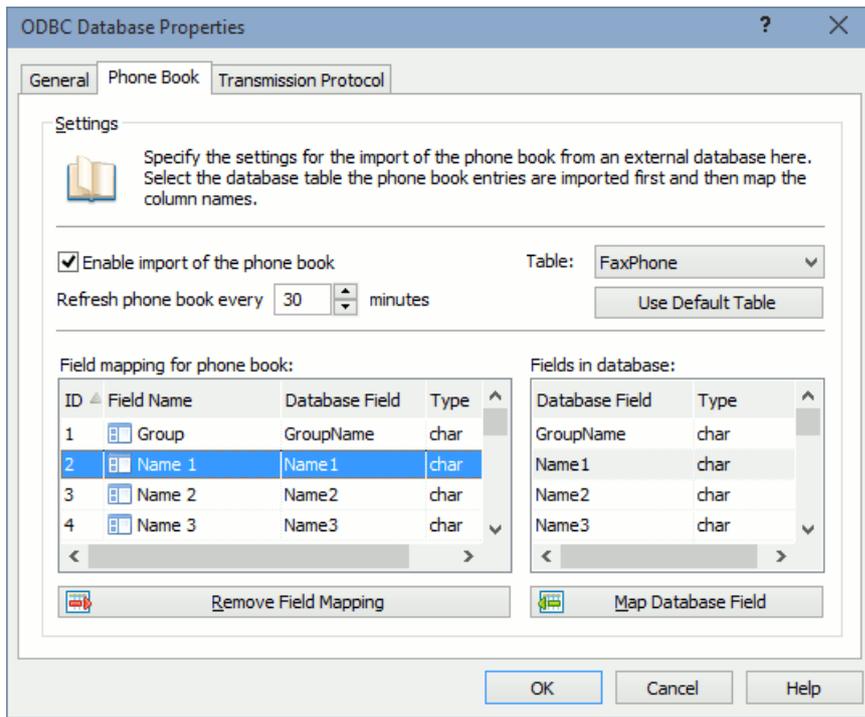
-  Please note that the import of the phone book from an ODBC data source is always done for the **Central Phone Book**.

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 the 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.



4.8.3. 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.

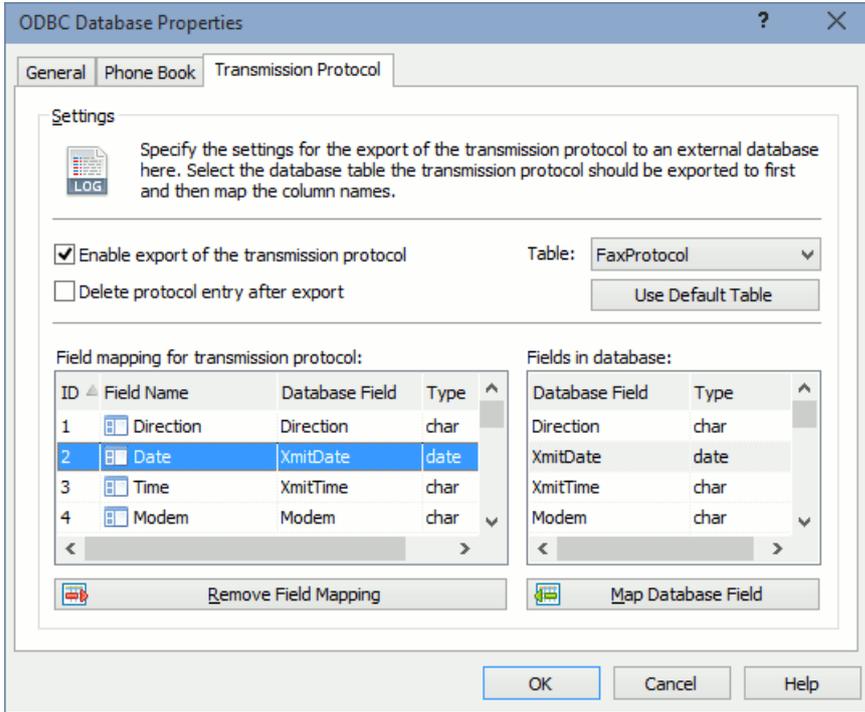
- i If the database connection should be unavailable, the transmission protocol entries are automatically stored in the background and are exported as soon as the database becomes available again.

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.

- i 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 method can be found in the chapter **Transmission Protocol** of this manual.

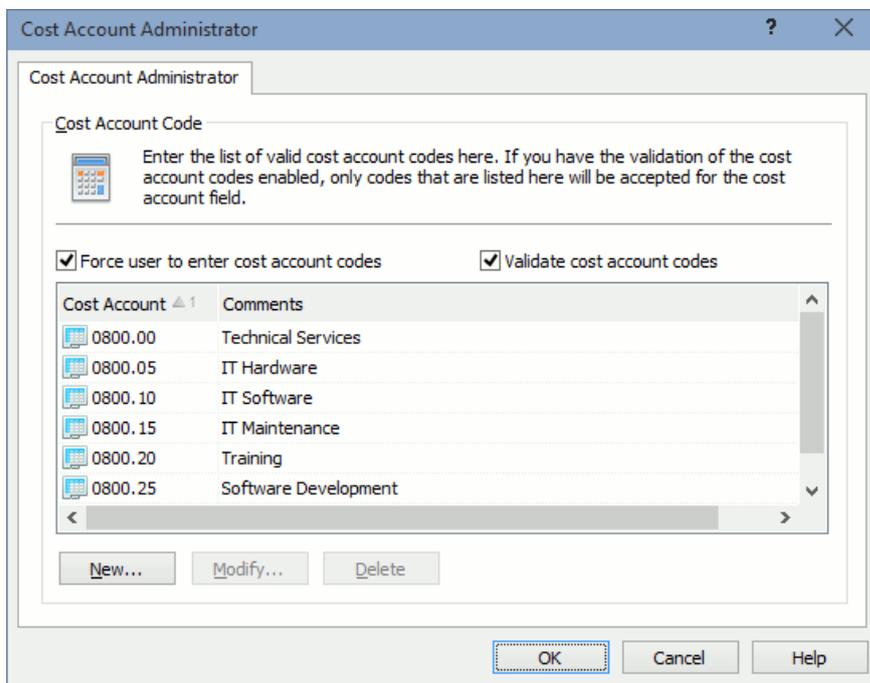


4.9. Cost Account Manager

Use the Cost Account Manager to assign individual cost account codes to fax messages. Cost account codes are mainly used by the accounting department.

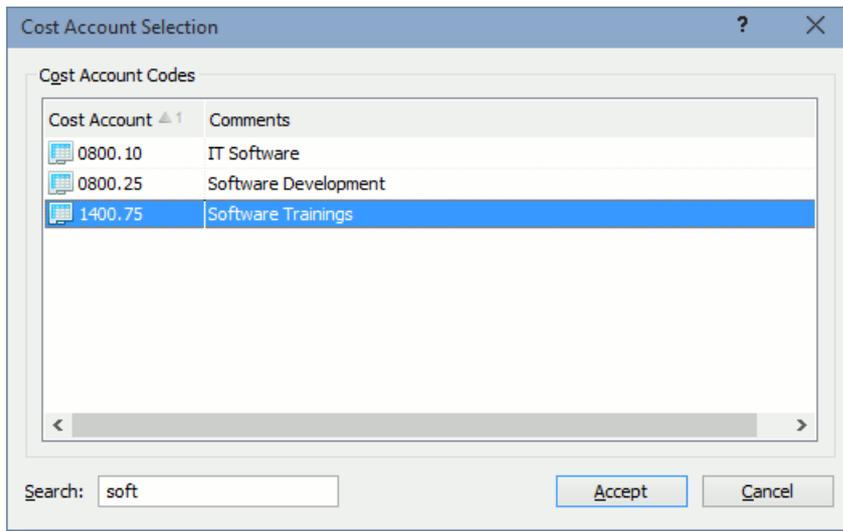
4.9.1. Create Cost Account Codes

Through the menu *Extras / Cost Account Manager* the list of available cost account codes can be created or changed. It would also be possible to enable an option to force users to always enter a cost account code. With this option enabled, fax messages cannot be created by a user without entering a cost account code. It would also be possible to enable an option to validate cost account codes. When having this option enabled, only cost account codes defined in the list of available cost account codes can be entered.



4.9.2. Select Cost Account Codes

The selection of cost account codes can be done either through a dropdown list or through a separate selection window. The advantage of using the selection window is that you also have a search function available. Especially when working with a large catalog of cost account codes, the search function makes it very efficient to search for specific cost account codes.



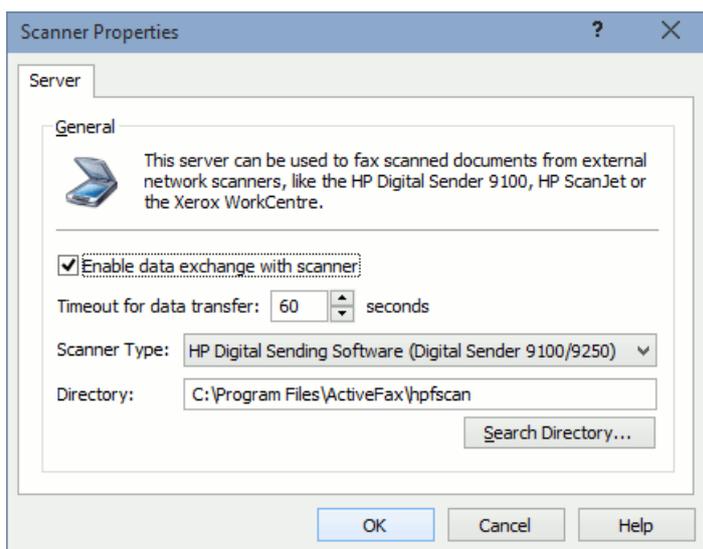
i Please note that the entries displayed in the transmission protocol can also be selected based on cost account codes.

4.10. Network Scanners

Documents on paper can be automatically transmitted using special network scanners. You can use any scanner with ActiveFax that is supported either by the *HP Digital Sending Software* or by the *Xerox Network Fax Server Enablement Kit* (i.e. HP Digital Sender 9250C or 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 on paper when you scan the document with the software shipped with the scanner and print the scanned image to the ActiveFax printer.

4.10.1. Installation

ActiveFax is already pre-configured to connect to network scanners, so you just 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 Sending Software* has been installed on a Windows XP / 2003 / Vista / 2008 / 7 / 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022 system. More information about the HP Digital Sending Software 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:

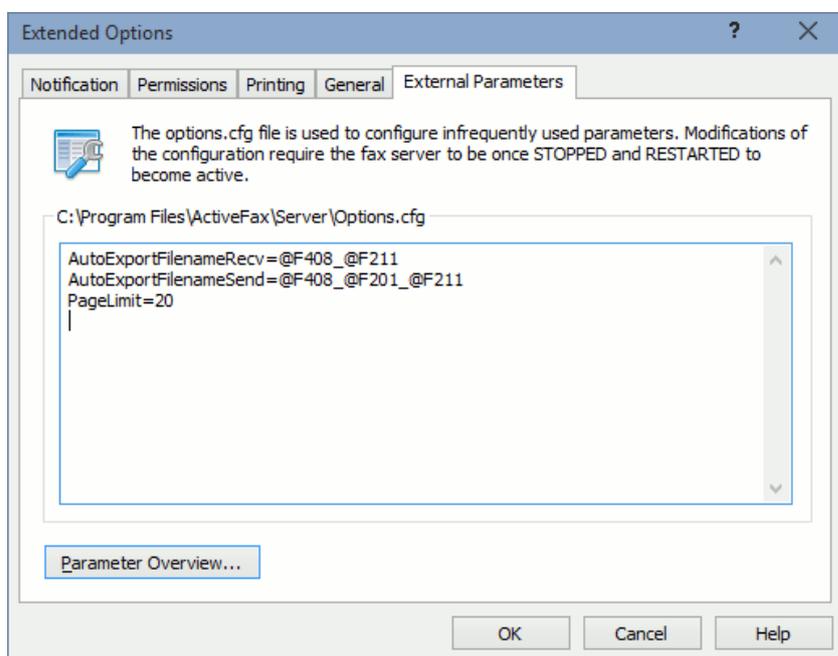
- The data exchange directory of the scanner (default directory is **hpfscan**) is automatically created during the installation of ActiveFax in the ActiveFax base directory (i.e. C:\Program Files\ActiveFax\hpfscan). Take care to also configure this directory in the scanner software when you install 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 Sending Software can be found at Hewlett Packard's website at <https://www.hp.com>.

4.11. External Configuration File options.cfg

Because ActiveFax offers a huge number of configuration parameters, rarely used parameters are configured through an external configuration file to avoid that the user interface of the fax server becomes overloaded with an unmanageable number of settings.

The configuration file **options.cfg** is located in the fax server main directory (C:\Program Files\ActiveFax\Server\options.cfg by default). This file is a normal text file that can be modified with any text editor (i.e. Windows Notepad). It is also possible to modify the options.cfg file directly through the fax server user interface with the menu *Extras / Options / General / Extended Options / External Parameters*.



-  Take care to once stop and restart the fax server whenever the options.cfg file is modified, because modifications on that file only become active when the fax server is restarted.
-  An overview of all parameters supported by the options.cfg file can be found in the fax server help. When modifying the options.cfg file through the fax server user interface, the parameter list can also be displayed through the *Parameter Overview* button.

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.

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 sections describe how data fields are used and include a reference for all data fields made available by ActiveFax.

Syntax: @Fnnn xxxxxxx@
Examples: @F307 Purchase Order 123456@
 @F211 800-123-4567@

A data field always starts with the character sequence **@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 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 truncated. It is not necessarily required to mask the **@** sign for the email data fields **@F111**, **@F212** and **@F607**, since ActiveFax automatically detects the **@** sign of the email address for such data fields.

Example: @F212 michael.miller\@gmail.com@

Please note that it is only required to mask the **@** character. Other characters (including the backslash itself) do not need to be masked.

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 data fields start with different field numbers.

 Please note that only fields containing data need to be integrated with your application. Data fields not specified by your application are automatically filled with default values by the fax server. The most important data field 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 use other data fields with additional information, for example the recipient's name (field @F201) or the subject of the message (field @F307).

A detailed summary of all data fields can be found in the following sections. 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 through 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 addressing 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 messages without a recipient, 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 fax 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 fax after it has been exported and the option H, to ignore the fax header for the export. Example: @F505 c:\export\test.pdf,D@
@F506	Export Format	Specify export file format (tif, gif, bmp, pdf) and/or resolution. Example: @F506 gif,150@
@F507	Automatically Delete Fax	Automatically delete fax after transmission (1=move fax to recycle bin, 2=delete fax). Example: @F507 1@
@F508	Print Control	This data field can be used to control when a printout for an outgoing fax should be done: 1=Print only after successful transmission 2=Print only after failed transmission 3=Print always 4=Never print Example: @F508 2@
@F509	Export Password	Encrypts the PDF document with a password when a message is exported to a PDF file. Example: @F509 mysecret@
@F555	Control Command	Send control command to ActiveFax. @F555 DELETE Fax-ID@

		<p>@F555 RESEND Fax-ID@ @F555 LOCK Fax-ID@ @F555 UNLOCK Fax-ID@ @F555 FAXNUMBER Fax-ID faxnumber@ @F555 EMAIL Fax-ID email-address@ @F555 PRINT Fax-ID [printername]@ @F555 EXPORT Fax-ID [filename]@ Example: @F555 DELETE 1234@</p>
@F599	New Fax Job	Start a new fax job within the document. This command is used for mail merge documents, when the individual 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 (i.e. @F602 quote12345.pdf@)
@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 email. 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), R (Required = file is required, otherwise the message is not sent) and S (Skip = do not attach main fax document). Example: @F606 c:\dat\prices.pdf, c:\word\mailing.doc, D@
@F607	Reply-To E-Mail	This data field is used to specify a reply-to email address that is different from the senders email address
@F608	E-Mail Confirmation	This data field is used to request a confirmation from the recipient of the email that the email has been read
@F609	E-Mail Password	Encrypts the PDF document with a password when a message is sent in PDF format. Example: @F609 mysecret@

@F700	Accumulated Document	This data field creates an accumulated document with the given reference ID. If an accumulated document with that reference ID 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. The reference ID can be any alphanumeric string (except the characters , ; and @) or a number. Examples: @F700 1234@, @F700 1234,60@
@F701	Accumulated Doc End	This data field terminates an accumulated document with the given reference ID. Example: @F701 1234@
@F702	Attachment	Append external files to the fax. The file format for the attachment needs to be either a text file, a file created through the ActiveFax printer driver, a PDF file or a Tiff File. Multiple files can be separated with a comma (,). The files need to be located on the fax server PC. Examples: @F702 c:\data\pricelist.prn@, @F702 \\server\share\techspec.pdf, c:\docs\parts.tif@
@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 Duncan Inc., +1 555-123-4567
Recipient Brown Import & Export, 0043 1 9072544

```
@F101 Duncan Inc.@@F110 +1 555-123-4567@  
@F201 Brown Import & Export@@F211 0043 1 9072544@
```

5.4.3. Example 3

Sender Duncan Inc., 555-123-4567
Recipient 1 Miller Ltd., Fax: 444-110-2020
Recipient 2 Smith Inc., Fax: 333-220-3030
Recipient 3 Brown Corp., E-Mail: office@browncorp.com
Subject Latest Pricelist
Xmit Date 31.01.2015
Xmit Time 20:15
Priority Low

```
@F101 Duncan Inc.@@F110 555-123-4567@  
@F201 Miller Ltd.@@F211 444-110-2020@@F299@  
@F201 Smith Inc.@@F211 333-220-3030@@F299@  
@F201 Brown Corp.@@F212 office@browncorp.com@  
@F307 Latest Pricelist@@F303 31.01.2015@@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 delimiter, 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 bitmaps to a fax message can be found in the following section of this chapter.

```
Yours sincerely  
@F000 Signature.bmp@
```

5.5. Embedding Bitmaps into Fax Messages

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

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

Syntax: @F000 file[,X<pos>][,Y<pos>][,width-mm[,height-mm]]@

Example: @F000 sign.bmp,50@

The parameters *X<pos>* and *Y<pos>* as well as *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. The parameters *X<pos>* and *Y<pos>* can be used to specify the exact position of the bitmap in mm (e.g. X100,Y75) measured from the upper left corner.

It is recommended to only use bitmaps of the type Uncompressed Windows Bitmap (.bmp). It is recommended to use .bmp files in monochrome format (1-bit color depth). 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 at position 100 mm x 75 mm.

```
Yours sincerely
@F000 mike.bmp,50,30,X100,Y75@
```

 When having a .jpg file with the same file name as the original .bmp file stored at the same location as the .bmp file, the .jpg file is automatically used by the fax server whenever PDF documents are generated (i.e. companylogo.bmp and companylogo.jpg). The .jpg file should be of the same size as the .bmp file; the color format of the .jpg file should be RGB 24-bit. That way it would be possible to automatically use color bitmaps and logos for PDF documents generated by the fax server.

 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. Text Fields (Simplified Data Fields)

As of **ActiveFax version 10.05**, it is also possible to insert text fields into a document when using the default **color printer driver**. The advantage of text fields over data fields is that they have a simpler structure and field names are used instead of 3-digit field numbers. It is therefore easier for end users to insert text fields into a document because they are functionally more easily to understand. However, due to the simpler structure, text fields are only available for the most relevant parameters (i.e. recipient name, fax number, etc.).

Because text fields are not distinguishable from normal text in the document, it is required to format text fields with the “**ActiveFax**” font, otherwise they would be ignored and printed as visible text. Text fields can be added anywhere in the document. You can use multiple text fields in one line or start a new line for each text field.

5.6.1. Syntax of Text Fields

The structure of a text field is simple and always the same. No distinction is made between upper and lower case. The field name is always followed by an **equal sign (=)** or a **colon (:)**.

```
Syntax:      FIELDNAME=Value
             FIELDNAME:Value
Example:     SUBJECT=Purchase Order 123456@
             Fax=800-123-4567
             user:miller
```

5.6.2. Text Fields Reference List

Field Name	Field	Description
SENDER	Name Sender	Name 1 of the sender (@F101)
NAME	Name Recipient	Name 1 of the recipient (@F201)
FAX	Fax Number Recipient	Fax number of the recipient (@F211)
MAIL	E-Mail Recipient	E-Mail address of the recipient (@F212)
SUBJECT	Subject	Subject of the fax message (@F307)
USER	User Name	User name of the fax message (@F311)
COVERPAGE	Cover Page	Cover Page for the fax message (@F305)
OVERLAY	Overlay	Overlay for the fax message (@F306)
NEW	Next Recipient	Delimiter for the next recipient (@F299)
DIALOG	Automatic Printing	Dialog box control. Optional parameter: 0=never display dialog window, 1=only display dialog window for invalid recipients, 2=always display dialog window (@F501)
SPLIT	New Fax Job	Start a new fax job (@F599)

5.6.3. Text fields without field name

If just the fax number or the e-mail address is set in a document, it is also possible to omit the field name completely. In this case only the fax number or e-mail address has to be formatted in the ActiveFax font. This is the most intuitive and easiest way to pass the recipient of a message directly in the document.

5.6.4. Mail merge and multiple recipients

When using text fields, ActiveFax usually automatically recognizes mail merges and the use of multiple recipients. The parameters **SPLIT** to start a new fax job and **NEW** to add another recipient can normally be omitted.

 Please note the sample document **Sample2.rtf** included in the fax server's installation directory. This file demonstrates the use of text fields in a document.

 Text fields are only supported by the **ActiveFax color printer driver**. This driver is installed as the default printer driver with **ActiveFax Version 10.05** or newer.

5.7. Embedding Data Fields into Applications

5.7.1. 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 12345
Recipient Duncan Inc.
Fax Number..... 555-123-4567

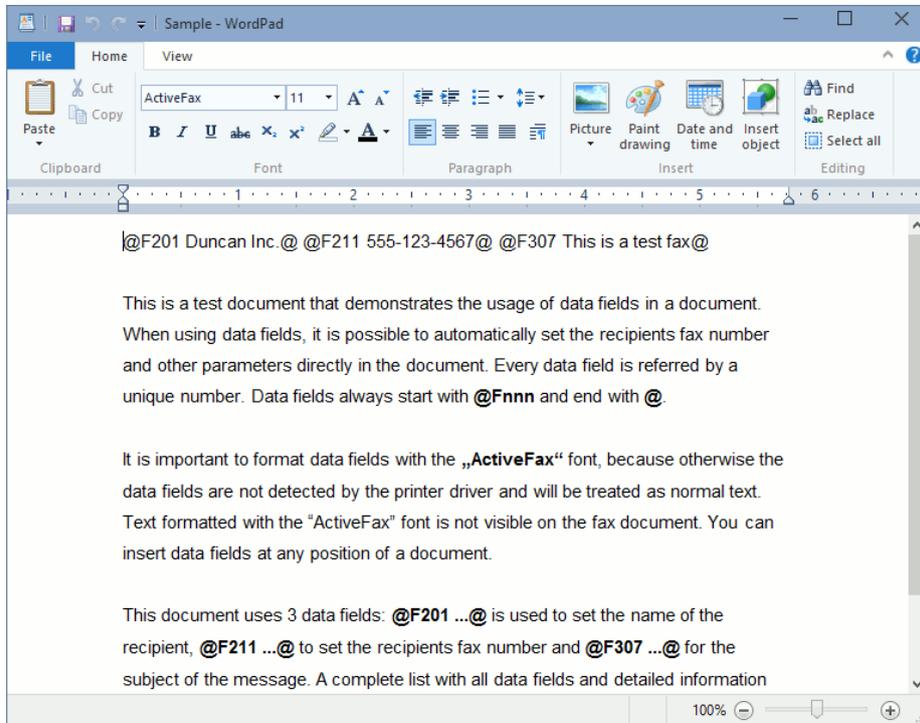
Purchase Order 12345@F201 Duncan Inc.@@F211 555-123-4567@

As an alternative it would also be possible to embed data fields directly in the document. When using this method, it is required 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 no additional text styles (**bold**, *italic*, underline) are allowed when formatting data fields with the **ActiveFax font**.

 Beginning with **ActiveFax version 10.05** it is no longer required to format data fields in the "ActiveFax" font when the default color printer driver is used. You can insert data fields with any font and any text style when using at least this ActiveFax version.

- Have a look at the enclosed sample file “**Sample.rtf**” for an example of data fields used directly in a document. This file is automatically copied to the installation directory of the fax server (C:\Program Files\ActiveFax\Server by default) and is a good point to start when adding data fields to a document. You can open that file with Microsoft® Word or Windows WordPad.



5.7.1.1. Reference File for Data Fields

Another way to specify 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. When using this method you just have to add a single data field, which is a reference to the file with the remaining data fields. The link to the reference file is done with the data field @F500 filename@ in that case. Take care to use a unique file name for the reference file to avoid conflicts with other fax jobs. After the print job has been processed, the reference file is automatically deleted by the fax server to ensure it is not re-used for other print jobs.

Example:

Document Name..... Purchase Order 12345
 Reference File c:\tmp\ref251173.dat

Purchase Order 12345@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 field to a separate line or to write all data fields in a single line.

5.7.1.2. Split Print Jobs (Mail Merge Documents)

Sometimes it can be required to break up a single print job into multiple fax jobs (i.e. when using the mail merge function of Microsoft® 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 Microsoft® Word, since Word generates a single huge print job for all fax pages of the mail merge document.

5.7.1.3. Example in Programming Language C

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

lstrcpy(szName, "Duncan Inc.");
lstrcpy(szFax, "555-123-4567");
wsprintf(szText, "Purchase Order@F201 %s@@F211 %s@", szName, szFax);
DocInfo.cbSize = sizeof(DOCINFO);
DocInfo.lpszDocName = szText;
DocInfo.lpszDatatype = NULL;
.....
```

5.7.2. 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.

5.7.2.1. Example in Programming Language C

```
char        szName[128];
char        szFax[128];
int         nPriority;
char        szSubject[128];
char        szText[1024];

lstrcpy(szName, "Duncan Inc.");
lstrcpy(szFax, "555-123-4567");
nPriority = 1;
lstrcpy(szSubject, "Purchase Order 12345");

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

.....

5.7.2.2. Example in Programming Language INFORMIX 4GL

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

faxdata.name = "Duncan Inc."
faxdata.fax = "555-123-4567"
faxdata.priority = 1
faxdata.subject = "Purchase Order 12345"

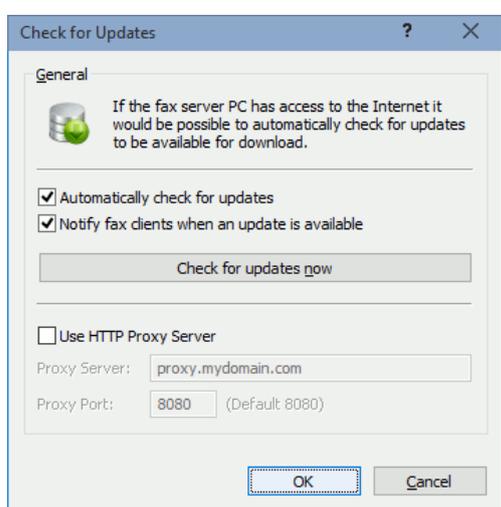
PAGE HEADER
    PRINT "@F201 ", faxdata.name CLIPPED, "@";
    PRINT "@F211 ", faxdata.fax CLIPPED, "@";
    PRINT "@F301 ", faxdata.priority USING "#&", "@";
    PRINT "@F307 ", faxdata.subject CLIPPED, "@"
.....
```

6. Software Updates

6.1. Automatic Updates

ActiveFax can notify you whenever a new software update is released. The automatic notification about new software releases can be configured with the menu *Help / Check for Updates*. By default, the update notification is already enabled. As soon as a new software update is released a notification message will be displayed on the fax server. If you have enabled email notifications in the menu *Communication / E-Mail / Notification* you also get an email notification sent.

Before an update is downloaded from the Internet and installed on the system, you always need to confirm the update process. Under no circumstances, updates are automatically installed without asking the Administrator of the fax server first.



-  Please note, that the check for new updates can only be done when the fax server PC is connected to the Internet. The fax server uses HTTP port 80 to check for updates. If this port is blocked by your firewall, it would be important to configure an exception for that port in the firewall.
-  Please note, that you always only need to install the latest update. Any updates that have been released between your existing ActiveFax version and the latest ActiveFax version do not need to be installed.
-  If your ActiveFax installation is a mixed installation of 32-bit and 64-bit systems or when using an installation with multiple languages, the fax server automatically downloads all files required for the update of the fax server and all fax clients.
-  The automatic check for new software updates is done once a week. The notification about a new software release can therefore be displayed with a delay of a few days compared to the release date of the update.

6.2. Manual Updates

A manual check for new software updates can be done at any time through the menu *Help / Check for Updates*. As an alternative it is also possible to download the latest ActiveFax version from the ActiveFax website at <https://www.actfax.com/en/download.html>.

6.3. Fax Client Updates

As soon as an update has been installed on the fax server, the update is also automatically made available to the fax clients. If the notification about new updates should be displayed on the fax clients can be configured with the menu *Help / Check for Updates*. The notification of fax clients is not enabled by default. The installation of an update on the fax client is always only done when the user confirms the update. Under no circumstances an update is automatically installed on a fax client without asking the user first.

6.4. Update Period

New ActiveFax licenses automatically include free updates for 2 years. If you want to install an update after the update period has been reached, an update package would be required for your license. You can find more information about updates packages on the ActiveFax website <https://www.actfax.com>.

-  Using the menu *File / License Settings* you can check the update period included with your license.
-  The lifetime of a license is not affected by the update period. In general, licenses are always valid **without a time limit**. After the update period of a license has been reached, the license remains valid and the software can still be used without any limitations in the version that is installed on the system.
-  Please note, that the update period of a license does not change when doing a license upgrade (adding users to an existing license).

7. Appendix

7.1. 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 designed for Windows 95 and newer. 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.

64-bit: Starting with Windows XP, Microsoft® offers Windows as a 32-bit and as a 64-bit version. The main advantage of 64-bit Windows is that it can address more physical memory compared to 32-bit Windows. The overall performance of the fax server is almost identical on 32-bit and 64-bit Windows systems.

Active Directory (AD): The directory service of Microsoft® Windows. Active Directory is used to manage the users and groups for a domain.

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 **DE**Modulator. 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 XP / 2003 / Vista / 2008 / 7 / 2012 / 8 / 10 / 11 / 2016 / 2019 / 2022.

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 by the Windows operating system 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.

T.38: Standard for the transmission of fax data over IP networks.

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.

VoIP: Abbreviation for “Voice over IP”. This standard is used for phone calls done through IP networks.

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®.

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.

7.2. 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

7.3. 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.

 Please note that additional FAQ are also available through the official ActiveFax website at <https://www.actfax.com/en/fags.html>.

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 only 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 or Linux systems?

Answer: Usually fax messages from UNIX or Linux 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 *Redialing* 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. Through 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: Through 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 through 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.

7.4. Problem Solutions

 Please note that additional problem solutions are also available through the **Knowledge Base** on the official ActiveFax website at <https://www.actfax.com/en/kbase.html>.

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

7.5. Sample Applications

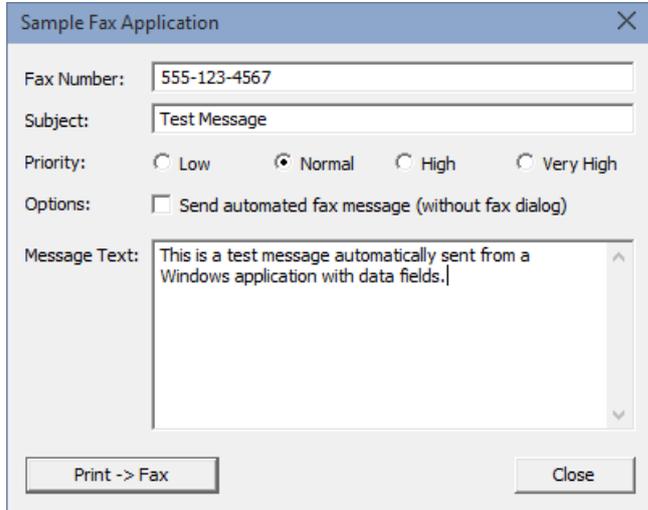
Integration of ActiveFax in other applications is very simple. When using data fields, it is possible to specify the fax parameters (i.e. recipients fax number, subject, priority, etc.) already from within an application. Especially applications not running on Windows based operating systems (i.e. UNIX,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

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.

7.5.1. 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.



7.5.1.1. 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()

7.5.1.2. Source Code

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

// This font is used for the message text
LOGFONT LogFontText = {20, 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(szDokumentname, "@F501@");
    }
    else {
        lstrcat(szDokumentname, "@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, strlen(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;
}

```

7.5.2. 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 is a simply way to send faxes if no other connection to the fax server is available.

```

C:\Program Files\ActiveFax\Server\Samples\Socket\Socket.exe
Enter the fax number : 555-123-4567
Enter the subject   : Test Message
Text of the fax message: This is a test fax with data fields and printer commands.

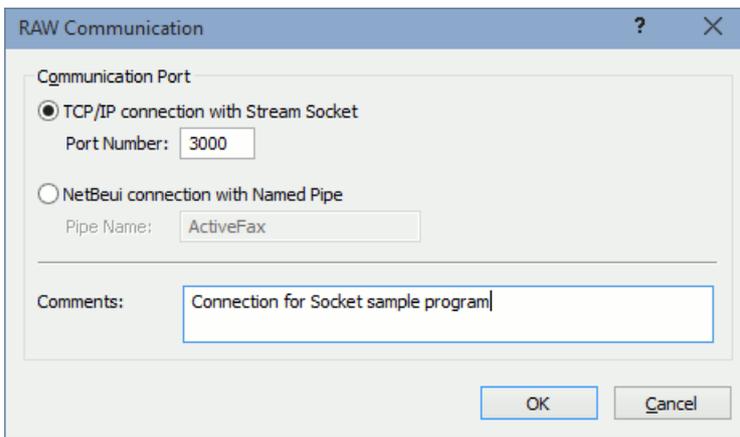
IP address Fax Server : 192.168.0.140
Port number          : 3000

The fax message has been created successfully

```

 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*.



7.5.2.1. Program Summary

- Program starts at main()
- Data input with gets()
- Creating the fax message text with sprintf()
- Initialization of the socket library WinSock with WSASStartup()
- 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()

7.5.2.2. Source Code

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

// Function prototypes
int SendFax(char *, char *, char *);

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

    // Enter the data
    printf("Enter the fax number   : ");
    gets_s(szFaxNumber, 128);

    printf("Enter the subject       : ");
    gets_s(szSubject, 128);

    printf("Text of the fax message: ");
    gets_s(szMessageText, 512);
    printf("\n");

    printf("IP address Fax Server   : ");
    gets_s(szIP, 128);

    printf("Port number             : ");
```

```

gets_s(szPort, 128);
printf("\n");

// Create a string for the fax message
wsprintf(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
SendFax(szData, szIP, szPort);

getchar();
return 0;
}

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

    // Initialize Windows Sockets
    nResult = WSASStartup(0x0101, &WSADATA);

    if (nResult != 0) {
        printf("Error %d at WSASStartup()\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(atoi(Port));
    NetAddress.sin_addr.s_addr = inet_addr(IP);

    // 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, lstrlen(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;
}

```

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