

Traffic

Software

Delivering Enhanced Fax Solutions

O B J E C T

Fax

Installation and Technical Guide

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Chapter 1 - System Requirements

Fax Server

Here is a chart that shows the recommended hardware configuration for the fax server.

<i>Lines</i>	<i>No Converter</i>	<i>PCL5 Converter</i>	<i>PostScript Converter</i>	<i>Memory</i>	<i>HD</i>
1-2	286/16 SX	386/16 SX	386/50 DX	640 KB	30MB
3-4	386/25 SX	386/33 DX	486/33 DX	1 MB	60MB
5-6	386/50 SX	486/25 SX	486/66 DX	4 MB	80MB
7-8	486/25 DX	486/66 DX	Pentium	4 MB	80MB
8-12	486/33 DX	486/66 DX	Pentium	8 MB	80MB
12-32	486/66 DX	Pentium	Pentium	8 MB	80MB

The PCL5 and PostScript converters are optional are not needed to send faxes out of Windows. For high volume faxing we offer a unique hardware converter instead of a software converter that is capable of handling both PCL5 and PostScript at the same time.

Recommended Chassis Manufacturers

If you are looking for PC's that have up to 20 available slots and are capable of holding upto 32 fax lines we recommend the TEXAS MICRO Chassis. For more information please call TEXAS MICRO at 1-800-950-9199.

File Server

You can run Object-Fax on any type of file server, e.g. NT, DOS, UNIX, OS/2, and an AS/400 file server. This is made possible because of Object-Fax network independence.

DOS Workstation.

At least 286 PC, 640Kb RAM, and a Network adapter.

Windows Workstation.

At least 386SX PC with a VGA or better display, a Microsoft mouse or compatible pointing device and a network adapter.

Memory requirements: It depends on what procedures you are going to use. At least 4 Mb, but for the OLE features we recommend 8 Mb, and for the OCR you must have 8 Mb of physical memory and 8 Mb swap file.

DOS and Windows 3.1 must be installed. Windows must be run in enhanced mode.

Fax Cards

<i>Features</i>	<i>PureData</i>	<i>GammaLink</i>	<i>BrookTrout</i>	<i>Intel</i>
Max Lines	32	24	8	1
DID		✓	✓	
DTMF	✓	✓	✓	
T.30 Sub-Addressing	✓			
Max. Speed	14.4	14.4	14.4	14.4
Architecture	16 Bit	8 Bit	16 Bit	8 Bit
Phone:	416-731-6444	408-704-1400	617-449-4100	1-800-538-3373

Networks

Object-Fax does not rely on any particular network protocol. It uses shared directories on the file server to communicate. This means in effect that Object-Fax is network independent.

Object-Fax is currently running in the following environments. Please refer to the technical notes for information about specific networks.

- Novell.
- LAN-Manager.
- Banyan Vines.
- NT Server Advanced
- Digital Pathworks
- Lantastic
- Lan Server
- Windows For Workgroups

Below are some things to keep in mind when installing Object-Fax to a particular network.

Chapter 2 - Installation

Step 1 - General Preparation

1. Remove all unnecessary software from the hard drive. The minimum disk space is 20MB.
2. Run a DOS disk compactor like Norton SpeedDisk to consolidate the disk space.
3. ALL Object-Fax programs and directory structures must reside on a directory accessible by everyone that will be using Object-Fax including the Fax Server. On a client-server network this would be a File Server, but on a peer to peer network this can be any PC on the network.
4. ALL Object-Fax users, including the fax server, must see the Object-Fax directory as the same DOS drive, for example: F:\OBJFAX
5. ALL Object-Fax users must have full access rights to the Object-Fax directory. That means READ/ WRITE/ CREATE /MODIFY and DELETE.
NOTE: On network versions of Windows, it's the area that WIN.COM is running from that must be setup to be READ / WRITE / CREATE/ DELETE / MODIFY.
6. If your network creates Owner's of files then the DRIVE and its files must be setup as PUBLIC, that is, ALL users must have full rights on any file created.
7. Create a user group (network dependant) called FAX and include all fax users that group. The group should then have the earlier explained rights to the Object-Fax directory.

Step 2 - Installing The Fax Cards

Physical Installation

1. Turn off the power and remove the cover of the fax server PC.
2. Keeping the card level, guide it into any slot for add-in cards inside the computer.
3. Insert the connector on the telephone cord into the appropriate jack (marked "Wall").

Software Installation

Install the software that comes with your fax card on the C drive on the fax server.

Please refer to the manual of each individual fax card for software installation, but also make note of the following:

■ GammaLink

1. When installing multiple cards you need to change the SW1 dip switches on the GammaLink cards. Please refer to the GammaLink Installation and Reference Manual for instructions.
2. Do not allow GammaFax to change your AUTOEXEC.BAT nor your CONFIG.SYS file.
3. You need to add the following statement at the end of the C:\FAX\GFAX.\$DC file:

GFXFORM n 3

Where *n* is the channel number (e.g. for channel 1: GFXFORM 1 3). If you are running multiple lines then a GFXFORM statement is needed for all channels with a different *n* for each channel.

■ BrookTrout

A special CAS driver is needed for the BrookTrout cards. This driver is Windows based so the Object-Fax server actually runs under Windows when BrookTrout cards are used. This driver is made by *Better Networking Services, Inc.* and is sold separately. Please call our sales department for more information.

■ Intel SatisFAXtion

1. In the Technical Software Options you should change the following
 - Change # of dialing retries to 0
 - Change Line compensation to 2
 - Do NOT allow CASMGR to use EMS
2. Run **C:\FAX\FAX.EXE** and test the fax card with the Intel SatisFAXtion software.
3. Edit the Autoexec.bat file with a DOS editor and remove the two lines the SatisFAXtion installation routine puts in there.

■ Faxination

Make sure that fax file type is set to **DCX** instead of PCX

Step 3 - Preparing The Fax Server

The fax server needs no Windows, TSR drivers, or memory management software, and you should Load network drivers and all other drivers into HIGH or EXPANDED memory if possible. Below are examples of CONFIG.SYS and AUTOEXEC.BAT:

Config.sys

```
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /E:1024 /p
FILES=100
BUFFERS=40
LASTDRIVE=K
DEVICE=C:\SATFAX\SATISFAX.SYS IOADDR=0350 //only for Intel SatisFAXtion cards
```

Autoexec.bat

```
@ECHO OFF
PROMPT $p$g
PATH C:\WINDOWS;C:\DOS;C:\;C:\FAX;C:\USPC;
SET TEMP=C:\DOS
NET\IPX
NET\NETX
L:
LOGIN FAXSERVER
CAPTURE /S=FileServ /Q=Starlaser /TI=30 NB NFF NT
CASTOFF ALL //Recommended for Novell networks
SET COMSPEC=C:\DOS\COMMAND.COM
F:
CD\OBJFAX
SERVER1
```

Objfax.bat

If you are planning to use the Object-Fax DOS **Hot-Key** program or the Object-Fax API then you need to modify one line in the OBJFAX.BAT file with a DOS editor.

1. Go to the fifth line from the bottom and find OBJFAXG.
2. Add the switch /API behind that line so it will read: OBJFAXG /API
3. Save the changes and exit from the DOS editor.

Step 4 - Installing the Object-Fax Software

From a Windows workstation do the following:

1. Insert Disk 1 into drive A: (or B:)
2. Run Windows and select Program Manager - File - Run (ALT+F, R)
3. In the Run dialog box type: A:\SETUP and press ENTER.
4. From the main installation dialog box enter the directory where you will be installing Object-Fax and your company name.

NOTE: The path you type in here MUST be the same path users will use from their workstations.

Step 5 - Configuring the Fax Server Module

1. Boot up the Fax Server PC and login under the network ID defined for the Fax Server, e.g. FAX. The fax server should have all access rights to the Object-Fax directory except supervisory.
2. From DOS go into the Object-Fax program directory on your file server, e.g. F:\OBJFAX
3. Start the server configuration program by typing OBJCFG, Object-Fax will display the following dialog box (use TAB to move between fields, SPACE BAR to set an option, ALT+LETTER to select a field):
4. Press F5 to get into the Fax Server Configuration.
5. From the list select **Fax Server 1** and you will get this configuration dialog box:



6. Set the following parameters:

Number of retries: (0 to 99 minutes)

Delay between retries: (0 to 99 minutes)

Number of fax lines: Enter the number of fax lines you have installed. The standard version of Object-Fax supports 4 lines, and additional line support is available from Traffic Software.

Fax card path: The path to the fax card software, e.g. C:\FAX

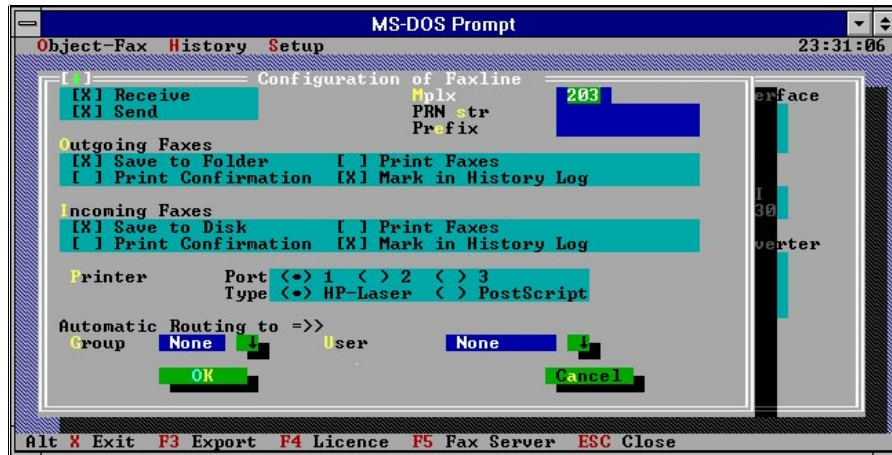
Converter path: The path to the optional converter modules. Optional converters can be used on the fax server to convert PCL5 or PostScript documents to faxes. These converters are not needed when faxing out of Windows.

Type of fax interface: For GammaLink fax cards select GammaFax. For Pure Data's Faxination fax cards select Faxination. For all other cards (i.e. Intel SatisFAXtion, BrookTrout) select CAS.

Routing Method: You can select either Received CSI or DID/DTMF/T.30 - *Optional*. For more information about these routing methods refer to the Glossary in the back..

Type of fax converter. If you are using a converter then select the appropriate converter. Select UltraScript if you are using the Object-Fax PostScript converter; select GammaScript if you are using GammaPage from GammaLink; and select LaserFax if you are using the Object-Fax PCL5 converter.

7. Press Line 1 to configure the first fax line in the fax server. The following dialog box will appear:



8. Here you can custom configure line 1 or accept the defaults (recommended):

Receive and/or Send. If you do not want the fax card to answer any calls then you must set that option ALSO with the software that came with the fax card.

Multiplex number. This number identifies your card through INT2F and should not be changed if you are using a BrookTrout, Faxination, or GammaLink fax cards.

Dialing Prefix. If the telephone line is attached to an internal PBX then enter the dial out sequence (e.g. 9,). One comma “,” is a delay of 1.5 seconds and a semicolon “;” is delay of 15 seconds.

Outgoing faxes. Save to folder should be checked if you want outgoing faxes to be saved after transmission. Print Confirmation should be checked if you want a printed confirmation of all outgoing faxes. Print faxes should be checked if you want to have all outgoing faxes to be printed. Mark in history log will log all outgoing activity.

Incoming faxes. Same as above.

Printer. Select what printer you want faxes and/or confirmation to be printed on.

Group. See “CSI Inbound Routing” on page 29 in the Object-Fax Manual

User. See “CSI Inbound Routing” on page 29 in the Object-Fax Manual

8. Highlight OK and press ENTER. To configure additional lines repeat above steps.
9. Highlight OK in the Fax Server 1 configuration dialog box and press enter.
10. Highlight CANCEL in the Fax Server Setup dialog box and press enter.
11. Press ALT+X to exit from Object-Fax Server Configuration program.

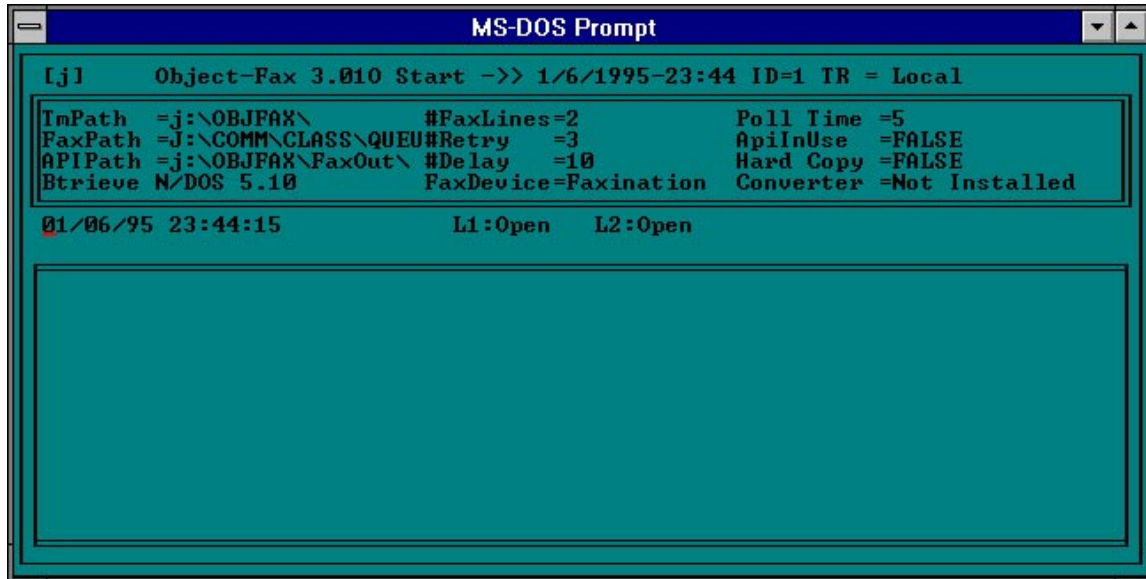
The configuration of the fax server is now complete. Next step is to start the Object-Fax Server.

Step 6 - Starting the Object-Fax Server

To start up the Object-Fax Server Module type from within the Object-Fax directory on you file server (e.g. F:\OBJFAX) type in:

```
F:\OBJFAX\SERVER1 <enter>.
```

The following screen should come up, which is the Object-Fax Server Screen:



If everything is in order the time should be ticking. When faxes start to go out the screen will fill up of messages explaining what is going on there. It is though not easy to understand the messages to begin with, and a new server is coming from Traffic very shortly that should make it much easier to understand what is happening.

Step 7 - Configuring A Windows User

1. Run Windows and select Program Manager - File - Run (ALT+F, R)
2. In the Run dialog box type, for example : F:\OBJFAX\ADDUSER
3. Press OK, and the following dialog box will appear:



4. Type in your full name and press Continue.
5. Before proceeding, check that the User login-name is correct. If the ADDUSER program for some reason is not capable of reading your login name, it prompts for it by inserting "NONAME." Please replace "NONAME" with your correct login-name.

After a short time the user installation is complete and an Object-Fax program group will have been created. This procedure should be repeated on each workstation. If you have a global WIN.INI for all users you can add the following line in the run section of the WIN.INI file: F:\OBJFAX\ADDUSER /S

Step 8 - Starting Object-Fax

To start Object-Fax simply double click on the Object-Fax Icon. Object-Fax becomes an icon at the bottom of your desktop and if you now double click on that icon the Object-Fax Tool Bar will appear. For more information about the usage of Object-Fax refer to the Object-Fax Help. To fax from your Windows applications simply print what you want to fax with the Object-Fax Printer Driver that now has been installed onto your workstation.

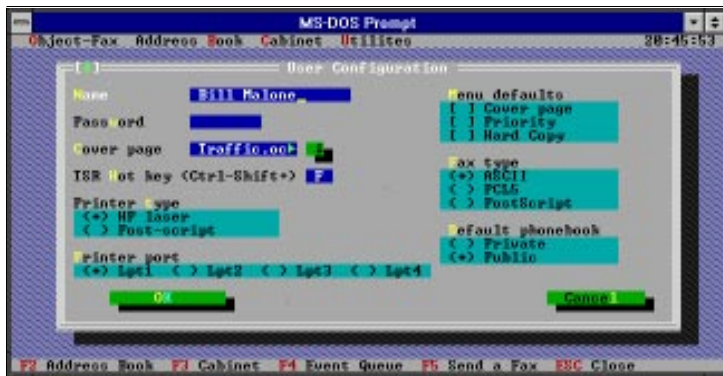


Step 9 - Configuring A DOS User

1. Set the following DOS environment variables for each user:
 SET USERID=<user's network ID>
 SET OBJFAX=<the path to the Object-Fax directory on your file server>

The best way to initialize these fields is by including the set commands in the login script for the fax group you should have created. You can also include the commands in the AUTOEXEC.BAT file for each user.

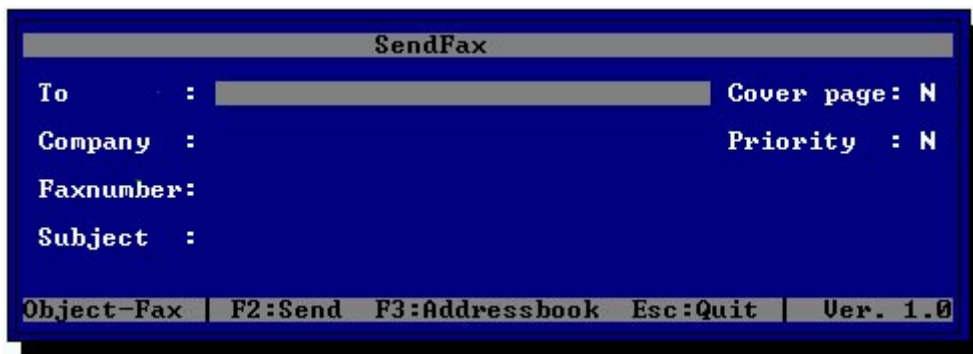
2. Start the Object-Fax Main DOS program by typing OFDOS
3. Go into UTILITIES (ALT+U) and select setup. You should then get this screen:



4. Type in your full name and configure the application to your needs. **IMPORTANT:** If you are using a converter on the fax server you need to specify what type you are using in the **Fax Type** section (ASCII=No Converter; PCL5=LaserFax Converter; PostScript=UltraScript Converter). Without a converter Object-Fax can only send ASCII documents - that is, without any formatting. Both PCL5 and PostScript converters can be obtained from Traffic Software.
5. Highlight OK and press ENTER. You have now completed the installation of this DOS user. You can now either send a fax by pressing F5 and select a file to send or you can send faxes directly out of any DOS application by using the TSRDOS.EXE which is a Hot-Key program that occupies 27Kb of conventional memory.

Setting up the TSRDOS

1. At the DOS prompt type in F:\OBJFAX\TSRDOS. A statement indicating that Hot-Key program is now loaded should appear.
2. Go into any DOS application like WordPerfect and type what you would like to fax.
3. When you are ready to fax press **CTRL+SHIFT+F** to initiate faxing.
4. A dialog box will then appear on the screen asking you print the document.
5. Press ENTER and proceed to print the document as you would normally. **IMPORTANT:** If you are not using a converter on the fax server then you must print to a printer that generates ASCII output (Standard Printer), but if you are using a converter then select a printer that will give you appropriate output (PostScript printer or HP printer).
6. After a moment the following SendFax dialog box will appear:



7. Here you specify the receiver and so on. Please note that the address book must be made available to the Hot-Key program within the address book in OFDOS, but in the OFDOS address book there is a button that says UPDATE TSR.
8. When you are done press F2 to send the fax.

Chapter 3 - Technical Notes

Networks

Novell

Object-Fax runs very well on all versions of Netware. There is one issue that you should be aware of with Netware and that is the Btrieve 6.0 NLM. The file format for Btrieve 6.0 is currently incompatible with the Object-Fax configuration database. These database must be converted to the new format. For a full description of using Btrieve 6.0 with Object-Fax please see the Problembase article titled "Btrieve 6.0 and Object-Fax"

When installing Object-Fax on a Novell network it is a good idea to establish a group called FAX and register each Object-Fax user with this group. By doing this it is very easy to establish the correct environment for each user by adding a few lines to the system login script.

For example Object-Fax requires that a search path be set to point to the Object-Fax directory. DOS users are required to have the Object-Fax environment variables set. This can be easily done from the system login script. Below is a sample login in script that can be used.

```
IF MEMBER OF "FAX" THEN
    DOS SET USERID = "%LOGIN_NAME"
    DOS SET OBJFAX = "O:\\OBJFAX"
    MAP INS S2:=O:\\objFAX
ENDIF
```

NT Advanced Server

Not much experience has been acquired about NT Advanced Server networks because how new they are on the market and few companies are actually using them. They are very similar to LAN Manager networks. If you have any information or tips regarding NTAS then please send it to us and we will update the information here.

LAN Manager

When starting Object-Fax on some LAN Manager networks, the system has reported an Error=25, which is an Create I/O Error. However if the system ignores this error, it can run without any problems. To avoid Error 25 to appear, you must add this line to the TM2.INI file, Traffic section, at each user's workstation:

```
Marel=1
```

Try it first on one workstation. If you get no other error, and you can see that Object-Fax has created appropriate files (ADDRBKS\<userid>.DAT, CABINETS\<userid>.DAT ...), and run's without problem you can add it at other workstations as well. But be aware of that if this was really a Create I/O Error it can be fatal to ignore it.

Banyan Vines

Sometimes the Adduser or the Object-Fax program is unable to find the user's network ID. In that case you must add this line to the TM2.INI file, Traffic section:

```
User=<userid> // User's network ID, up to 8 allowable DOS file characters.
```

If you haven't run Adduser on the workstation, you must create a TM2.INI file and copy it to each user's Window's directory, and change the 'userid' to the appropriate user's network ID.

The TM2.INI file should look like this:

```
[Traffic]
TrafficDirectory=F:\\OBJFAX // Object-Fax main directory
FaxTypePCX=0 // 0=GammaFax card, 1=Cas compatible cards.
User=Peter // User's network ID, up to 8 allowable DOS file characters.
```

Importing Data to Group Files

1. Create an ASCII text file with lines with the following format for each member of the group:
`<tab>name<tab>faxnumber<tab>company<return>`
 The tab characters, including the leading tab are important. The last line should end with a return and no blank lines are allowed.
2. Copy the file to the Object-Fax, Address Book subdirectory, for example to O:\OBJFAX\ADDRBKS*name*.GP, where *name* is the name of the group as it should appear in the list of groups in the Fax Group dialog.
3. Close Object-Fax. (Press Ctrl-Esc to display the Task List. Selecting Object-Fax from the list and then choose **End Task**. Repeat the process if an Object-Fax entry remains in the list).
4. Restart Object-Fax by double clicking on the Object-Fax icon in the Program Manager.

If no error is detected a new group with the name specified will be created in the Public Address Book and the text file will be deleted. If however an error is detected no action will be performed except the name of the file will be changed to *name*.GPE.

NOTE: If a group with the specified name already exists, the existing group will be replaced.

NOTE: Foreign characters should be in Windows format.

Importing Data To An Address Book

General information

The import utility runs under DOS and is a batch file called IMPORT.BAT.

In the command line you should give the complete file specification for the files unless they are at the current location on the default drive. The Address Book files are located in a sub-directory called ADDRIBKS under the Object-Fax directory. Private Address Books are named <user>.DAT where <user> is the name field as in the User Configuration dialog. The Public Address Book is called PHONE.DAT and is protected by the Administrator password.

Importing

To import into any of the Object-Fax Address Books you must have a comma-delimited text file containing records, each ending with a carriage return. Each record must contain fields separated by commas. Data in a field may contain commas, but, to be imported correctly, must be enclosed by quotation marks, e.g. "Smith, Smith & Burns"

Below are the field names imported and the order in which the utility imports them:

Name*, Company*, Fax Number*, Phone Number, Car Phone, Salutation, Street, City, County, Country, Zip Code, Comment, Telex Number, Telex Callback, Telex Cty, Billing Code A+, Billing Code B+, Billing Code C+

*Required field +Billing codes are not implemented in this version.

Although the first three fields are required, other fields may be empty. Empty fields between fields with data must be represented in the text file as commas. However, a carriage return after the last filled field is sufficient regardless of how many empty fields follow.

You run the utility in DOS from the ADDRIBKS subdirectory. To import a text file, do the following:

1. Change to the Object-Fax ADDRIBKS subdirectory
2. Type: IMPORT <text filename><address book filename>[/P:PASSWORD]

Example:

IMPORT CONTACT.TXT PHONE.DAT /P:MYWORD

Import Utility options

The import utility has additional options as follows:

- T** Specifies tab as delimiter.
- Dx** Specifies the character x as delimiter. Any printable character may be used for x
- U** Data with the same key as an existing entry is used to update the entry
- Pxxxx** Specifies the password xxxx for the Public Address Book.

Using Microsoft Excel to prepare an address book import file

If your business contacts are stored in a database it should be possible to extract information for an Object-Fax Address Book. Microsoft Excel has facilities to extract data from a large number of databases using Microsoft Query.

The data can be accessed using the Data - Get External Data menu selection in Excel 5. The address information should be stored in columns in the order specified in the Object-Fax documentation. It is then saved using File - Save As... menu option. In the Save As dialog choose CSV (Comma delimited) or Text (Tab delimited) in the Save File as Type field. Note that if CSV(Comma delimited) is selected the actual delimiter used is determined by the List Separator specified in the International section of the Control Panel.

Exporting Data from an Address Book

This document describes how to export data from an Address Book. The Export Utility exports Address Book data to a text file which can then be used in another application. It can also be edited and then imported back into the Address Book using the Import Utility.

How to export data from a Private Address Book

1. Change to the ADDRDBKS subdirectory under the Object-Fax directory e.g.:

```
C:\WINDOWS\>O:<ENTER>
O:\OBJFAX>CD \OBJFAX\ADDRDBKS<ENTER>
```

2. Load Btrieve:

```
O:\OBJFAX\ADDRDBKS>BTRIEVE /P:2048<ENTER>
```

3. If you are exporting from your private address book type a command of the form:

```
EXPORT <network name>.DAT <text filename><ENTER>
```

For example a user with network name Anna would give the command:

```
O:\OBJFAX\ADDRDBKS\>EXPORT ANNA.DAT ADDRESS.TXT<ENTER>
```

4. Remove Btrieve by typing:

```
O:\OBJFAX\ADDRDBKS>BEND
```

The data from Anna's private address book will then be exported to the text file ADDRESS.TXT on the same subdirectory. The data will be in Comma Delimited form. Each field is surrounded by double quotes and separated by commas.

How to export data from the Public Address Book

The Public Address Book is protected by the Administrator password. This should be specified on the export command line. The following example assumes that the Administrator password is AB123:

1. Change to the ADDRDBKS subdirectory under the Object-Fax directory on your system and load Btrieve e.g.:

```
C:\WINDOWS\>O:<ENTER>
O:\OBJFAX>CD \OBJFAX\ADDRDBKS<ENTER>
O:\OBJFAX\ADDRDBKS>BTRIEVE /P:2048<ENTER>
```

2. Type in the following command:

```
O:\OBJFAX\ADDRDBKS>EXPORT PHONE.DAT PUBLIC.TXT /P:AB123<ENTER>
```

Data will be exported to the text file PUBLIC.TXT.

Full DOS file specifications can be used if desired. It is then unnecessary to move to the Object-Fax, Address Book subdirectory. The following example uses full file specifications:

```
C:\> EXPORT O:\OBJFAX\ADDRDBKS\PHONE.DAT C:\TXT\PUBLIC.TXT
/P:AB123<ENTER>
```

How to use another separator

The export utility has additional options that control which delimiter is used between fields:

/T Specifies tab as delimiter.

/Dx Specifies the character x as delimiter.

Any printable character may be used for x. An option can be preceded by - or by /

Using a batch file

A batch file can be used to load Btrieve, run the import program with any specified options and remove Btrieve:

```
btrieve /P:2048  
EXPORT %1 %2 %3 %4  
bend
```

NOTE: There is a problem when using the batch file to specify delimiters. Semicolons and commas are treated as white space and will not be passed into the Export Utility.

Using exported data with Microsoft Excel

The exported data can be opened directly in Microsoft Excel 5.0 if the Windows List Separator is used as delimiter and the file has extension CSV. (The Windows String Delimiter is specified in the International dialog of the Control Panel).

Btrieve

Object-Fax uses the Btrieve version 5 record management system for accessing its data files. The installation program sets up all the necessary files in sub-directories under the main Object-Fax directory and the Object-Fax server accesses these files through client-based Btrieve. The User Installation program then sets up client-based Btrieve so that each user has access to the required files.

Special Installation Requirements

Some installations may have special requirements about the way Btrieve is installed because Btrieve is used by other applications. In particular there may be a requirement to use server-based Btrieve since client-based Btrieve is not available for Btrieve version 6. In this case I/O requests are not handled by software on the workstation but are passed to the server. The difference between client-based and server-based Btrieve are discussed in the following sections.

Client-based Btrieve

Before a client-based Btrieve application can run, the client-based Btrieve program BTRIEVE.EXE must be run. This is a so called TSR (Terminate and Stay Resident) program and it remains in memory until explicitly removed. A DOS application running on a workstation makes function calls to its Btrieve interface code that is linked into it. This results in a software interrupt that is served by the memory resident program BTRIEVE.EXE. The code in BTRIEVE.EXE provides all the functionality of the Btrieve record management system and accesses the data files either locally through operating system function calls or remotely via the network operating system.

Windows applications make calls to a dynamically linked library WBTRCALL.DLL that provides the record management functionality. This DLL accesses data files through operating system or the network operating system function calls.

Server-based Btrieve

Novell Netware supports server-based Btrieve. Most applications including Object-Fax can operate with server-based Btrieve without changes. For DOS programs the client-based Btrieve program BTRIEVE.EXE is replaced by the Btrieve requester BREQUEST.EXE. All Btrieve requests are then routed to the Btrieve server.

The DOS Btrieve requester BREQUEST.EXE is also required for Windows applications. A server-based version of WBTRCALL.DLL replaces the client-based version. If client-based operation is also required as in the case of Object-Fax then the client-based DLL must be present under the name WBTRLOCL.DLL.

Btrieve Server Configuration

Btrieve server configuration is described in the Novell Netware Btrieve Installation and Operation guide. A minimum requirement is to configure BSPXCOM.NLM that handles incoming requests from workstations and the server-based Record Manager BTRIEVE.NLM.

Object-Fax Installation with Btrieve 6.x

It is assumed that Btrieve has been installed on a Novell Netware server.

Installation of Object-Fax

The Object-Fax software is installed on the Object-Fax directory as described in the Installation Guide in the Object-Fax Documentation. Then the following changes have to be made:

1. Rename the file WBTRCALL.DLL in the Object-Fax directory to WBTRLOCL.DLL.
2. Copy WBTRCALL.DLL from a Btrieve 6.x distribution diskette to the Object-Fax directory.

NOTE: The client-based version of WBTRCALL.DLL can be recognized by its size about 51K instead of 13K for the server-based version. It is important to ensure that no other copy of the client-based DLL can be run by the Fax Server or a workstation accidentally.

Fax Server Configuration

With Btrieve 6.x the Object-Fax server software, a DOS application, will access Btrieve via the requester BREQUEST.EXE. The requester is supplied with the Novell distribution and placed in the PUBLIC directory on the Novell server during Netware installation.

Fax Server Configuration is described in the Installation Guide. Before running the Object-Fax Utility program a change must be made to the standard OBJFAX.BAT file in the Object-Fax directory so that it runs BREQUEST instead of BTRIEVE as follows:

```
rem btrieve /P:2048 /O  
brequest
```

User Installation

User Installation is performed at each users work-station. Before running Adduser as described in the Installation Guide, two changes have to be made to the standard installation.

1. The file AUTOEXEC.BAT should be modified to run the Btrieve requester BREQUEST.EXE before starting Windows. Alternatively the program, which is placed on the PUBLIC directory on the file server during Novell Netware installation, can be run from the network login script.

NOTE: It is very important to ensure that no user has access to the client-base version of WBTRCALL.DLL, for example on the local Windows directory.

2. A file named NOVDB.INI should be created in the Windows directory containing the following two lines:

```
[brequestDPMI]  
Local=yes
```

The second step instructs the Btrieve requester to use client-based files for other applications instead of server-based files.

Configuration for Additional Licenses

Additional licenses are configured as normally.

Btrieve reinitialization

The Object-fax program TM.EXE reinitializes Btrieve by a function call when the program is run. The options used are as follows:

```
/M:48 /P:2048 /F:30
```

This may affect other programs that use Btrieve. Other programs that reinitialize Btrieve with smaller values than those given above may cause problems with Object-Fax. If a conflict is suspected it is suggested that the conflicting programs are not run simultaneously. A version of Object-Fax with a flag that prevents reinitialization may become available in a future release.

Search Paths And Object-Fax

Setting up the Search Path at User Installation

The Object-Fax User Installation program locates the file `autoexec.bat` in order to add the Object-Fax directory to the search path. Before making any changes however it asks the user for confirmation. When user installation is complete the program suggests that the system be rebooted so that the change can come into effect.

The new path may not become available for a number of reasons for example:

1. The user does not confirm the change.
2. The file `autoexec.bat` cannot be found or the wrong copy is found.
3. The path that is set up in `autoexec.bat` is changed before Windows is started for example when logging into the network or running another batch file.
4. The drive letter used in the path is mapped to another location before Windows is started.

To correct these problems the `autoexec.bat` or other batch file that sets up the search path should be manually edited. Novell network managers will probably prefer to set up the appropriate path in the system login script.

Verifying the search path

The simplest way to test that the path has been correctly set up is to go into DOS from Windows and to type "path" at the DOS for example:

```
C:\WINDOWS>path
PATH=C:\DOS;F:\BIN;C:\WINDOWS;F:\OBJFAX
```

and then to ensure that the Object-Fax files are in the correct location by using for example the command:

```
C:\WINDOWS> dir f:\objfax\objfax.drv
```

If the file is found the path has been correctly specified.

Problems caused by missing search path

If the search path has not been correctly set up Object-Fax will still function correctly when it is used from the Toolbar. This is because the Toolbar has an associated Working Directory that is specified in the Program Item Properties dialog in Program Manager. Windows searches the Working Directory for auxiliary files including the Object-Fax driver files and no problem is incurred.

However when an attempt is made to send a fax by printing to the Object-Fax print driver from another application, errors will be encountered because the necessary driver files cannot be located.

If Windows finds an outdated version of the driver for example on the Windows system directory unpredictable results will be obtained.

Installation without a search path

It is possible to set up Object-Fax without using a search path by manually copying the driver files to a location where Windows can find them. Windows applications search for files in the following order:

1. Program directory
2. Working directory
3. Windows directory
4. Windows system directory
5. Locations on the DOS search path

The program and working directories cannot be used because the Object-Fax driver can be used by other applications which have their own working directories.

The Windows directory could be used but it is not recommended because each user has a separate Windows directory and the driver files are then replicated with each user. If Object-Fax is updated new versions have to be copied to each user manually.

When Windows is set up on a network the Windows system directory is usually a common directory to which all users have at least read access. It is possible to copy manually the driver files to this shared directory and then Object-Fax users do not require a search path. However the Object-Fax system manager will have to remember to copy new driver files to this directory if an updated version of Object-Fax is installed.

The driver for Object-Fax 3.x consists of the following files:

tmfax.drv, imgx.dll, imgxdc.del, imgxtif.del

E-Mail Support

MAPI - MS Mail

MAPI is fully supported for manual routing of incoming faxes and for routing of faxes between users. To enable MAPI, add the following section to your WIN.INI:

```
[MAIL]
MAPI=1
```

VIM - CC:Mail

VIM is fully supported for manual routing of incoming faxes and for routing of faxes between users. To enable VIM, add the following section to your WIN.INI:

```
[MAIL]
SMI=1
```

The VIM protocol also requires you have the cc:mail directory in your search path.

MHS

MHS is currently supported through a MAPI to MHS driver that is available from Novell. At this time Traffic Software has not tested this driver.

Converters

Object-Fax can convert both PCL5 and PostScript files into faxable documents on the Fax Server itself. These converters are available in both software and hardware configurations. The hardware converter is very powerful and intended for high end users.

If you are only faxing out of Windows then you do not need any converters, but if you are using the API, DDE, or faxing out of DOS then most likely you would want to use a converter since that will enable you to fax out fully formatted documents including both graphics and text.

Those users that want to have all conversion to take place on the fax server even when they fax out of Windows can use the special Object-Fax PostScript driver for Windows along with a PostScript Converter. In this kind of a setup we highly recommend the hardware converter for performance and full background operation.

Fax Merge Macro for Word 6.0

The following macro performs a faxmerge operation for Word 6.0 documents and Object-Fax 3.0. The record structure must be: FirstName, LastName, Company, and Fax in the database.

The Windows printer driver "PostScript" must be installed as a Windows printer driver at the workstation, and you must also have a Converter running on your Fax Server. PCL5 is also supported.

```

Sub MAIN
MailMergeLastRecord
totRecord = MailMergeGoToRecord()
MailMergeFirstRecord

If totRecord < 1 Then
    MsgBox "ERROR: There are no records in the data source"
Else
    subject$ = InputBox("Subject of the faxes: ")
    Channel = DDEInitiate("TMII", "SendFax")
    DPrn$ = GetProfileString("windows", "device")
    SetProfileString "windows", "device", \
        "PostScript Printer,pscript,LPT1:"

    Direc$ = GetPrivateProfileString("Traffic", \
        "TrafficDirectory", "TM2.INI")
    document$ = "tempdoc.ps" 'dummy name for temporary document'
    worddoc$ = direc$ + "\" + document$

    For numRecord = 1 To totRecord

        name1$ = GetMergeField$("FirstName")
        name$ = name1$ + " " + GetMergeField$("LastName")
        company$ = GetMergeField$("Company")
        fax$ = GetMergeField$("Fax")

        REM *** Merge this record to a temporary postscript file
        MailMerge .CheckErrors = 2, .Destination = 0, \
            .MergeRecords = 1, .From = numRecord, .To = numRecord, \
            .Suppression = 0, .MailMerge
        FilePrint .PrToFile = worddoc$, \
            .AppendPrFile = 0, .PrintToFile = 1

        Print "Faxmerge: " + company$ + ", " + name$ + ", " + fax$ \
            + ". Record no: " + Str$(numRecord) + "/" + Str$(totRecord)
        cmd$ = "[SendFax(" + document$ + "," + name$ + "," + \
            + company$ + "," + fax$ + "," + subject$ + ",1,0,0)]"
        DDEExecute Channel, cmd$

        FileClose 2
        MailMergeNextRecord
    Next numRecord
    SetProfileString "windows", "device", DPrn$
    DDETerminate(Channel)
End If

Print "End"

End Sub

```

System Maintenance

Due to some interruptions on the network, fragmentation of the local hard disk of the fax server, and other complications it is a good idea to make a cleanup of the queue system once a month.

Object-Fax

The Object-Fax queue files are placed on the OBJFAX\INI\ directory and are called EVENT.DAT and EVENT.PRE (temporary file and therefore not always present). These files contain the outgoing queue which shows the faxes that are waiting to be sent.

The event files can be deleted and the system will create new files. The Fax Server should always been taken down by pressing Esc before deleting the queue files, and all outgoing faxes should be deleted from the outgoing queue.

The HISTORY.DAT file is a log file containing information about all outgoing faxes. Since this file grows as more faxes are sent it is a good idea to export the history file from time to time and then deleting it. The HISTORY.DAT file is placed on the OBJFAX\FOLDERS\ directory and is exported with the OBJCFG program.

The TMGATE.LOG file contains error messages from the system but is usually empty so there should only be something in this file if there are some problems with the net. The file is placed on the OBJFAX\INI\ directory.

Because of files getting created and changed and deleted all the time on the fax server local hard disk it is a good thing to defragment the disk from time to time. Norton's SpeedDisk or a similar utility should be used for this purpose.

PUREDATA

To clean up the queue files for the PUREDATA cards simply delete the whole C:\FAXINATE\MFAX directory. Then recreate the MFAX directory and the following two subdirectories: C:\FAXINATE\MFAX\RCV and C:\FAXINATE\MFAX\TRANS

GammaLink

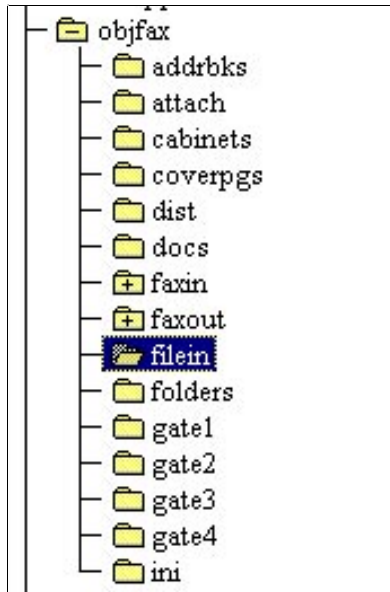
The fax cards themselves also have queue files that can get corrupt. These files are called different names for different fax cards. The Gamma cards queue file is called GFAX.\$QU and is placed on the C:\FAX directory on the Fax Server (The directory where the Gamma software is placed.) This file can also be deleted and the Gamma software will created them again.

Intel

The Intel SatisFAXtion card has 3 queue files called LOG.Q, RECV.Q and TAST.Q. Those files are placed on a directory called C:\FAX\QUEUE\. In the same directory are also some log files that should be prevented to get too big because they slow the system down.

Object-Fax Directory Structure

The Object-Fax Setup program will create a number of sub-directories on the network disk.



ADDRBKS - The public address book , PHONE.DAT and each user's private address book is stored here. The private address books are named after the user, i.e. John.dat etc. All the groups file are stored here also. Each group file has a unique name and there is a tracking database called GROUP.DAT which tracks each of these files.

ATTACH - This directory contains the attachments that can be sent with Object-Fax. Before a file can be sent as an attachment it must be placed in this directory. (See the Attachment section for more details on creating attachments)

CABINETS - Each Object-Fax user is assigned a fax cabinet. The cabinet is used to store all the users folders. The cabinets are named after the users network ID.

COVERPGS - All the cover pages created by the cover page editor are stored here. The cover pages can in fact be stored anywhere on the network or local drives but the Send Fax Dialog will only look in this directory for OCP cover pages.

DIST - This directory contains the distributable components of Windows that we distribute with Object-Fax. The files in this directory are from Microsoft and contain the latest patches and releases of various system software. All the OLE libraries are stored in this directory. The Adduser program will update a users Windows configuration with files from this directory.

DOCS - All faxes sent by Object-Fax are stored in the Docs directory. The files in this directory consist of two types. The first type is the usual TIFF or DCX , depending on the hardware in use, graphics files. These files are created by the fax driver and by the optional PostScript or PCL5 converters. The second type of files consist of OLE compound files. Each user is assigned as single compound file and all OLE faxes sent are stored in this one file. The files have the extension OFL and the root is the User's network ID.

FAXIN - If the Object-Fax gateway is configured to receive faxes then all incoming faxes will be found in this directory. The actual format of the files depends on the hardware installed. The Btrieve database, m_receiv.dat, contains information about the fax transmission.

FOLDERS - The directory consists of Btrieve database that represent each users folders.

GATE_n - These directory are used as working directories for the gateway.

INI - This directory is the home of the event database (Event.dat), the CAS cover pages, the system configuration database (Config.dat), the gateway log file (tmgate.log), the users databases(users.dat and users.\$nr) and other files that are used internally by Object-Fax.

Routing

Manual Routing

Designated Routers can quickly and easily route incoming faxes to any Object-Fax user on the network. Other users can have their faxes routed via any VIM or MAPI compliant e-mail application.

■ Setup

To set up the Router Notify program for the designated router so that he/she gets notified when faxes come into the Incoming Queue please follow these instructions:

1. From Program Manager select the Object-Fax Group and then select File-New
2. From the two options select Group Item
3. Select Browse and go into the Object-Fax main directory
4. From the list box select ROUTER.EXE and press OK
5. A new icon like the one here should now appear in the Object-Fax group:
6. Go back to Program Manager and now select File-Run and type in TM2.INI and select OK. This will bring up the configuration file for that user.
7. Under the Traffic Section add the following line:

`RouterNotify=n` //n is the number of minutes the ROUTER.EXE checks for new faxes.

8. Run the Router Notify Program by double clicking on the icon.

When a fax comes in the router will be notified and then he/she goes into the Incoming Queue and routes the fax to the appropriate user(s). For more information on how to route faxes please refer to the Object-Fax Help.



DTMF Routing

Dual Tone Multi Frequency uses extensions after the regular fax number to identify recipients. After dialing the corporate fax number the sender will hear a tone transmitted by the fax card. This means that the fax card is waiting for the four digit code (extension) to be entered. Once this code is received and Object-Fax has matched it with one of the Object-Fax users the fax will be delivered automatically to the user.

With DTMF routing the sender needs a telephone number and an extension number. This may pose a problem since not all people know how and when to dial in the extension. Some companies have had good success with DTMF while others haven't. What seems to make or brake this method is the quality of the instructions supplied on the fax cover sheet, but it should have good instructions on how to use this method.

If the extension is not entered the fax is diverted to a default central directory for subsequent manual routing by an Administrator.

Fax cards supporting DTMF are: GammaFax CPi and CP4 Lsi, Faxination, and BrookTrout.

■ Setup

1. Make sure you checked the DTMF routing when you configured the Fax Server
2. Some fax cards require you to initialize DTMF recognition also on their software. Please refer to the manual of your fax card for more information.
3. Run Object-Fax and press the Administration button on the Tool Bar.
4. Highlight a user and select Edit. You will then get the following dialog box:



5. In the Routing Code field type in a four digit extension that you have assigned to that user.
6. Repeat steps 4 and 5 for each user.

T.30 Routing

Is similar to DTMF and is the automatic routing method of the future. This is a new standard recently approved by the CCITT, and Object-Fax is the only fax solution that supports this new advanced standard.

The sender dials the fax number plus an extension, separated by a comma, all in one pass before he places the call, e.g. (407)995-5272#1234. The drawback of this standard is that only new fax devices support this standard as of yet, but with time this will become the prevailing standard.

■ Setup

Same as the DTMF setup.

CSI Identification

Each fax machine has its own CSI identification number (most often the senders fax number and appears normally at the very top of the fax) that is exchanged with Object-Fax at the time of transmission as a part of the so called T.30 handshake. What Object-Fax allows users to do is to select which numbers (CSI Numbers) they will automatically get faxes from.

This automatic routing method is intended for use by companies that have a relatively small client base.

■ Setup

1. Make sure you checked the CSI routing when you configured the Fax Server
2. Run OBJCFG and select SETUP
3. Select CSI list and you will get the following dialog box:



1. To make a new routing entry press Add.
2. To select a number to receive faxes from press arrow next to the CSI Name field, but Object-Fax will record all CSI's of received faxes after the CSI has been select as routing method in the Fax Server configuration.
3. You can now decide if to route the fax to a printer, group (must defined before in the Setup-Group List) or a user.
4. Repeat the above steps for each number you want to route.

Channel Routing

You can have several lines come into each Object-Fax Server. You can designate all the faxes that come to line 1 to go to: A) **USER** "John McCallan", B) **PRINTER** on LPT1, or C) **GROUP** of users.

Typical use would be for a company with maybe three departments. Each department could have its own fax number and therefore fax card in the fax server. Line 1 could then be designated to either route all faxes to a person in department 1 (that would then routed to the appropriate person in that department) or to simply print all faxes centrally in that department. The same thing can then be done with other lines.

■ Setup - Outbound

1. If your fax server has a GammaLink or a PUREDATA fax card you can add a new Fax Server and Line section to the Options card in the Send a Fax dialog. You will then be able to choose through which fax server and fax line faxes will be sent.
2. To add this section, with the following into your TM2.INI file:

```
[Channels]
Server=1
Line=1
```
3. If you have a GammaLink fax card, you also need to configure the following commands in the GFAQ.\$DC file:

```
0 GFAX1.01 //For channel 1
1 GFAX1.02 //For channel 2 and so on.
```
4. The next time you open the Send a Fax dialog box the Option tab will contain two new options showing the current fax server and line. You can change both options right in the Send a Fax dialog box.

■ Setup - Inbound

Users with GammaLink cards who want to route inbound faxes automatically to recipients must make the following changes to the GFAQ.\$DC file's GFXRECVPATH:

```
GFXRECVPATH 1 C:\LINE1\A0001P001.TIF //For channel 1
GFXRECVPATH 2 C:\LINE2\A0001P001.TIF //For channel 2 etc.
```

NOTE: The LINE directories have to be created manually.

DID Routing

DID is generally viewed as the best routing choice. This is because, unlike DTMF, it is the telephone company's central office (CO) not the sender that provides the routing information. All the sender does is dial a single telephone number, and the fax goes directly to the recipient's workstation. DID is currently the most foolproof, transparent way of routing.

DID consists of one or more trunk lines between the CO and a customer's premises, and they are one-way trunks. A PBX perceives the DID trunk as one of its single-line phones and can interpret four digit dialing. Therefore, some switching functions usually done at the telephone company's CO, are done at the customer's premises.

When outside callers dial a station on a DID configured PBX, the CO switch signals the PBX for service. An available trunk is activated by the CO by causing a current to flow. The PBX detects the current flow but, rather than responding with a dial tone (which it would have done if it really considered this loop to be a true station-to-PBX loop), it gives the CO a wink-start signal. The wink informs the CO that the PBX is ready to receive the incoming addressing information. The wink signals the CO switch to send the identifying digits dialed by the distant user, which the PBX uses to complete the connection. These last digits provide the data that the system uses for inward routing. After the pulses have been received by the PBX and the desired station has answered the call, the PBX signals the CO that the call and billing can begin, by reversing the polarity of the current as it did for the wink-start signal, but leaving it reversed for the entire duration of the call. When the call is finally disconnected, the DID facility returns to idle state.

Each DID line contains a block of phone numbers, usually in sets of 20 to 100, assigned exclusively to that customer. The cost varies, but averages about \$1.00 to \$2.00 per month per fax number after a one-time installation fee, saves the much greater expense of getting a regular telephone line for each user or having a human router distribute incoming faxes.

DID installation requires an awareness of polarity and power requirements. With standard conventional telephone facilities this is not a consideration, but with DID it is all-important. Any business considering the use of DID should use its in-house resources and invite the participation of its MIS, computer, and telecommunications experts in planning for the company's network fax system. Once the DID system is up and working, no further attention is needed and it will operate transparently for both sender and recipient.

DID also requires the user to maintain line voltage. In the familiar telephone services, the CO maintains the 48 volts necessary for the line to operate, with battery back-ups in case of a blackout. With DID, since the user provides the power source, if line voltage is lost, the telephone company shuts down the line and callers get a busy signal until it is reactivated by the telephone company.

At this point, the advice of the local telephone company technician on how to prevent your DID installation from going down will prove useful.

As a dedicated inbound line, DID cannot dial out and initiate a telephone call to send a fax—that is not its purpose. DID lines can only receive phone calls from the CO. Once a connection is made, however, faxes can be sent as well as received.

When a fax card receives a call on a DID line, it is equivalent to a PBX receiving a call. The telephone company CO passes on the dialed number to the answering fax card, and the Fax card posts the digits into a queue record. Then the Object-Fax server reviews the queue records and checks the assigned digits. If the fax server finds a match in its database, the fax is placed in the appropriate directory and the recipient is notified that fax has been received. At no point in time does human intervention become necessary.

It is also possible to use existing DID lines connected to the PBX. This requires a special box from a company called Exacom. For more information call: (603)228-0706

■ Setup

The setup for DID in regards to Object-Fax is exactly the same as the DTMF setup, but the setup of the phone lines is a different manner. We recommend that you consult with your telecommunications expert, your phone company, and your reseller. We at Traffic will of course also assist you with the setup.

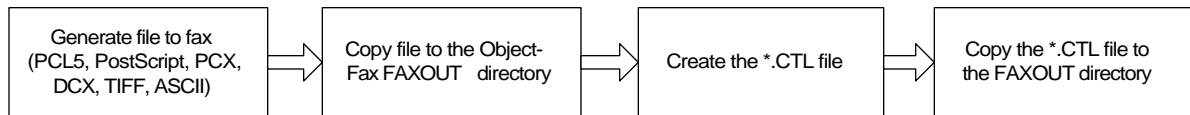
Integration

Object-Fax File API

You can use Object-Fax to send faxes from any platform with the ObjectFax's ASCII based File API. Object-Fax, depending on the configuration of the fax server, can take any ASCII, PostScript, or PCL5 print file and fax it.

■ General Instructions

The file to be faxed is saved under the Object-Fax FAXOUT (e.g. F:\OBJFAX\FAXOUT) directory on the file server. Then, a special control file with the extension .CTL (explained here below) must be created that includes all the information necessary for faxing and saved with the print file in the FAXOUT directory. Object-Fax will immediately open the .CTL file and fax the print file according to the parameters in the control file. Following is the process described graphically:



To activate the API, the /API switch must be added behind OBJFAXG in the OBJFAX.BAT file, e.g. OBJFAXG /API.

■ The Control File

```

TO:<name> | PHONE:<fax#> | ORGN:<company> | COVER:<coverpage> | DELAY:<date>
FROM:<network ID> | NAME:<name> | ORGN:<company> | SUBJECT:<subject>
BDY:<filename> | FAX: or PS: or TXT: or PCL5:
  
```

The last parameter depends on the format of the file to be sent. FAX=fax, PS=PostScript, TXT=ASCII text, and PCL5=PCL5 format. The “|” Character has the ASCII code 124 decimal or 7C hex.

Field name	Meaning	Required
<name>	Receivers name - max: 32 char	Yes
<faxnumber>	Receivers faxnumber - max: 47 char	Yes
<company>	Receivers company name - max: 32 char	No
<coverpage>	Name of coverpage with the extension .CVR	No
<date>	The date and time of transmission (DD/MM/YY HH/MM)	No
<network ID>	The senders network ID	Yes
<name>	Senders name	No
<company>	Senders company name	No
<subject>	Subject of the fax	No
<filename>	Name of the file to fax. (No path)	Yes
<filetype>	Type of the file to be sent (FAX: , PS: , TXT: , PCL5:)	Yes
<CRLF>	Carriage Return Line Feed. After each line	Yes

■ Example

Below is an example of a control file with a minimum of parameters. It is an ASCII file that is sent to a John Smith at (212) 714-1691 from an Object-Fax user named Joe Brown with the Network ID JOE. The filename is TESTAPI.TXT and it is an ASCII file.

```
TO:John Smith |PHONE:2127141691
FROM:JOE|NAME:Joe Brown
BDY:TESTAPI.TXT|TXT:
```

When using API, sending a file with the wrong format can lead to unwelcome surprises. For example, if a PostScript file is sent, but the control file describes it as an ASCII file, the receiver will get many pages of PostScript code.

NOTE: The field names should be UPPERCASE, and pay notice to that there is a difference between a NetworkID with UPPERCASE letters and one with lowercase letters or a mixture of upper- and lowercase letters.

■ Examples of Use

The only limit to the use of the File API is your imagination, but here are some examples that might help you see the possibilities:

1. Faxing a newsletter automatically to a group of people directly from within a database
2. Faxing a custom letter automatically to a group of people
3. Faxing order confirmations from an order application on any platform (e.g. AS/400)
4. Faxing account status and balance from any accounting application.

Dynamic Data Exchange - DDE

Object-Fax has two DDE commands that you can utilize from within any application that supports DDE. The first DDE command enables you to fax files without bringing up the Object-Fax *Send a Fax* dialog box, and the second DDE command enables you to request fax addressing information from the Object-Fax Address Book.

■ Direct Faxing

Command Parameters:

```
Application "TMII"
Topic "SendFax"
Item "<FILENAME>,[ATTENTION],[COMPANY],<FAXNUMBER>,[SUBJECT],
<CONFIRM(0/1)>,<COVERPAGE(0/1)>,<PRIORITY(0/1)>"
```

NOTE: There may not be spaces in front of the fax number.

The file *<FILENAME>* should be stored on the Object-Fax FAXOUT directory (e.g. F:\OBJFAX\FAXOUT\DEMO.TXT) or on the Windows directory. The file must be in a format that the fax server program will understand, such as: PCL5, PostScript, Fax (TIFF or PCX) or ASCII. When faxing PCL5 or PostScript files then a special file-to-fax converter from Traffic Software must be used on and installed on the fax server.

Examples:

1. Word 2.0 and 6.0

The following example is a macro for Word that faxes the PostScript file DEMO.PS:

```
Sub MAIN
    Item$="DEMO.PS,Mr. Jones,XYZ Inc.,1234567,Invoice,1,0,0"
    Channel = DDEInitiate("TMII", "SendFax")
    If Channel = 0 Then
        MsgBox "Unable to contact TM", "Error", 16
    Else
        A$ = "[SendFax(" + item$ + ")]"
        DDEExecute Channel, A$
        DDETerminate(Channel)
    End If
End Sub
```

2. Visual Basic

The following example is a command button code for Visual Basic and would fax the same file as here above:

```
Sub Command1_Click ()
    text1.LinkMode = 0
    text1.LinkTopic = "TMII|SendFax"
    text1.LinkTimeout = 100
    text1.LinkMode = 2
    text1.LinkExecute "[SendFax(DEMO.PS,Mr. Jones,XYZ
        Inc.,1234567,Invoice,1,0,0)]"
End Sub
```

■ Getting data from the Address book through DDE

You can request address information directly from the Object-Fax Address Book:

Command Parameters:

```
Application  TMII
Topic        FindName
Item         Name field in address book
```

Below is a macro for Word 2.0 that prompts for a name and displays the return entry:

```
Sub MAIN
    Channel = DDEInitiate("TMII", "FindName")
    Name$ = InputBox$("Enter name: ")
    Info$ = DDERequest$(Channel, Name$)
    DDETerminate(Channel)
    If Mid$(Info$, 1, Len(Name$)) = Name$ Then
        MsgBox Info$
    Else
        MsgBox Name$ + " not found"
    EndIf
End Sub
```

The returned string will contain the following Address book fields separated by commas:

Name, Company, Street, City, County, Country, Postal code, Comment, Salutation, Phone number, Fax number, Car phone.

■ Sending faxes via OLE 2.0

```

'*****'
'***Before the DDE call -SendOLEFax is executed, the faxfile document
'***must be saved to disk to make it possible to create an OLE object.
'*****'
Sub MAIN
Print "Sending document as an Object-fax..."
ToolsOptionsSave .SummaryPrompt = 0
ActiveDoc$ = FileName$()

'If a new document:
If InStr(ActiveDoc$, "Document") = 0 Then
    If IsDocumentDirty() Then FileSave
Else
    'Give the document a name:
    Doc$ = "Docm" + Right$(ActiveDoc$, 4) + ".doc"
    If Files$(Doc$) <> "" Then
x = MsgBox("Do you want to replace the existing " + UCase$(Doc$) + "?", "Object
Fax", 35)
        Else
            x = - 1
        End If

        If x = - 1 Then
            'Save the new document :
            FileSaveAs .Name = Doc$
        ElseIf x = 0 Then
            Dim dlg As FileSaveAs
            GetCurValues dlg
            On Error Goto LEnd
            Dialog dlg
            On Error Goto LEnd
            FileSaveAs .Name = dlg.Name
        Else
            Goto LEnd
        End If
        ActiveDoc$ = FileName$()
    End If

    lpFileNames$ = FileName$()
    Print "Sending " + lpFileNames$ + " as a fax."
    err = DDECall("TMII", "SendOLEFax", lpFileNames$)
    If err = 0 Then
        Print "DDE call failed"
    End If

LEnd:
End Sub

Function DDECall(App$, Topic$, Item$)
    Channel = DDEInitiate(App$, Topic$)
    If Channel = 0 Then
        MsgBox "Unable to contact TM", "Error", 16
        DDECall = 0
    End If
    Print "Channel is opened"
    A$ = "[SendFax(" + item$ + ")]"
    DDEExecute Channel, A$
    DDETerminate(Channel)
    DDECall = 1
End Function

```

Problems & Solutions

Workstation freezes when trying to run OBJCFG.BAT

The SET OBJFAX statement in the OBJFAX.BAT file is probably pointing to a different directory than you are actually using when running OBJFAX.BAT. The path specified in the OBJFAX.BAT file must be the same path you are in when running OBJFAX.BAT.

If you installed Object-Fax from a Windows workstation using e.g. X:\OBJFAX and then went to the Fax Server PC and ran OBJFAX.BAT from F:\OBJFAX your PC would freeze when trying to load Btrieve.

Open the OBJFAX.BAT file with a DOS editor and change the SET OBJFAX=..... to the DOS path you are using from that PC.

Error messages come up when I try to print with the Object-Fax Print Driver

Most likely you are simply missing a search path to the Object-Fax directory.

The simplest way to test that the path has been correctly set up is to go into DOS from Windows and to type "path" at the DOS for example:

```
C:\WINDOWS>path
PATH=C:\DOS;F:\BIN;C:\WINDOWS;F:\OBJFAX
```

and then to ensure that the Object-Fax files are in the correct location by using for example the command:

```
C:\WINDOWS> dir f:\objfax\objfax.drv
```

If the file is found the path has been correctly specified.

If absolutely do not want to have Object-Fax in your search path then please refer to the **Search Paths and Object-Fax** section here above.

Windows reports "Can not write to DEVICE AUX"

Make sure that you are using the newest TMFAX.DRV

If this still is a problem then put into SYSTEM.INI the Debug section

```
[Debug]
OutPutTo=NULL
```

This will prevent Windows to try to write to the DEVICE AUX

DOS Error 8

If you get this error on the fax server then you do not have sufficient conventional memory. You need to load everything you can high and only use a basic DOS setup.

Faxes don't go out and simply sit in the Outgoing Queue

There are three things that can cause this:

1. The DOS date and time on the Fax Server PC or the workstation the fax was sent from is incorrect.
2. You used the Object-Fax PostScript Print Driver but you do not have a PostScript converter on the Fax Server.
3. The FaxTypePCX=*n* is incorrect in the TM2.INI file that is located on your Windows directory. FaxTypePCX should be equal to 1 when you are using a Faxination or a SatisFAXtion card, but when using a GammaLink card it should be equal to 0.

Whatever the reason, delete the fax from the queue and send another after you have rectified the problem.

Object-Fax printing to a IBM PRO Printer

If not working then change to Epson FX-80

When starting the Cover Page Editor I get a General Protection Fault

Either you do not have SHARE loaded (SHARE /L:500 /F:5100) or Object-Fax was incorrectly registered when you ran ADDUSER. If SHARE is incorrectly installed or not present then change that.

The registration into the Windows registration database might also have failed. To re-register the system run the following files from Windows File Manager by double clicking on them:

F:\objfax\CPField.exe
F:\objfax\CPText.exe

You will get a message saying that this server can only be run from a container application, simply press OK.

Received faxes appear black in the viewer

When using a GammaLink card be sure you add the following to the GFAX.\$DC file for every channel (fax line), so that a correct file format for Object-Fax is generated:

Syntax: GFXFORM < Channel Number > 3

Example: GFXFORM 1 3

Received faxes appear as ASCII characters

This problem would only happen when using a Faxination card. The reason for this is that you specified the file format for incoming faxes as PCX in the Faxination Setup when you should have specified DCX.

To change this simply open the C:\FAXINATE\PDXCAS1.INI file on the Fax Server with a DOS editor. At the end of the SERVER section add a new line and type:

RxImageFormat=1

After saving the changes restart the Fax Server.

Object-Fax and PC's with 4MB or less memory and/or no Swap file

Can cause a timing problem. The PC becomes very slow and the print driver fails to start Object-Fax if not started already when faxing.

Go into the Control Panel - 386 Enhanced - Virtual Memory settings and make the swap file size at least 8MB and if possible permanent. A good rule of thumb for Windows is to have the swap file two times larger than your RAM memory.

The fax server locks up when using a GammaLink card

If the fax server for no obvious reason locks up every *n* hours then probably there is a conflict between your network interface card (NIC) driver and the GammaLink driver.

1. Find out what IRQ your NIC is using. You can use the Microsoft System Diagnostic program (MSD.EXE) to find it out.
2. Open the C:\FAX\GFAX.\$DC file with a DOS editor and add the following line:

GFDSHIELD 0xXX where the XX is a vector number determined by your NIC's IRQ

Here below is a table to find out the correct number to use:

IRQ	2	3	4	5	6	7	8	9	10	11	12	13	14	15
XX	0a	0b	0c	0d	0e	0f	70	71	72	73	74	75	76	77

Here is an example for an IRQ 2 setup: **GFDSHIELD 0X0A**

“No Fax Files Found”

The workstation where this message appeared on is most likely using a different DOS path to the Object-Fax directory than the Fax Server.

For instance: The workstation is using X:\OBJFAX while the Fax Server is using F:\OBJFAX.

This will cause an error when the user tries to, for instance, view an incoming fax because the incoming fax is recorded in the incoming database as F:\OBJFAX\FAXIN\filename while the user doesn't see that directory. As explained in the installation instruction ALL users and the Fax Server must use the same DOS directory.

This system is not correctly updated, please run the Windows Client....

This message will come up when:

1. The file USERS.DAT can't be opened.
2. The RECORD SIZE of the users database does not match the current specification. Can happen when the users.dat belongs to an earlier version of Object-Fax.

Check the SERVER1.BAT file in the OBJFAX directory. See if the statement SET OBJFAX=F:\DIRNAME is valid.

Problems printing on the Fax Server

The available DOS conventional memory is most likely less than 395Kb which is the minimum required to print faxes. Try freeing up more memory by fine tuning your Autoexec.bat and Config.sys.

You can also add the following switch to the OBJFAXG statement in the OBJFAX.BAT file if you are using a GammaLink card:

OBJFAXG /SWAP

The /SWAP switch swaps the OBJFAXG program to disk while printing. Therefore it frees some memory for the printing program FAXP, to make it possible to print if the DOS conventional memory is less than 395 Kb.

Error Codes

The Fax-Server report's either a DOS, a Btrieve or a CAS error codes. For a Btrieve error, it will display a B-Error <code number>, for a CAS error, it will display it as a CAS error. Below are the error codes we need to get closer to the problems:

DOS Errors

DOS code	Meaning
<i>Version 2 file-function errors</i>	
1	Invalid function number
2	File not found
3	Path not found
4	Too many open files (no open handles left)
5	Access denied
6	Invalid handle
7	Memory control blocks destroyed
8	Insufficient memory
9	Invalid memory block address
10	Invalid environment
11	Invalid format
12	Invalid access code
13	Invalid data
14	Reserved
15	Invalid disk drive
16	Attempt to remove current directory
17	Not same device (i.e. reported by <i>Rename</i> if both names are not on the same drive)
18	No more files
<i>Mappings to critical error handler</i>	
19	Disk write-protected
20	Unknown disk unit
21	Drive not ready
22	Unknown command
23	Data error (CRC)
24	Bad request structure length
25	Seek error
26	Unknown media type
27	Sector not found
28	Printer out of paper
29	Write fault
30	Read fault
31	General failure
<i>Version 3 additional error codes</i>	
32	Sharing violation
33	Lock violation
34	Invalid disk change
35	FCB unavailable (File Control Block)
36	Sharing buffer overflow
37-49	Reserved
50	Network request not supported
51	Remote computer not listening
52	Duplicate name on network
53	Network name not found

54	Network busy
55	Network device no longer exists
56	Network BIOS command limit exceeded
57	Network adapter hardware error
58	Incorrect response from network
59	Unexpected network error
60	Incompatible remote adapter
61	Print queue full
62	Print queue not full
63	Print file deleted (not enough space)
64	Network name deleted
65	Access denied
66	Network device type incorrect
67	Network name not found
68	Network name limit exceeded
69	Network BIOS session limit exceeded
70	Temporarily paused
71	Network request not accepted
72	Print or disk redirection paused
73-79	Reserved
80	File already exists
81	Reserved
82	Cannot make directory entry
83	Failure on Int 24H (critical error handler)
84	Too many redirection's
85	Duplicate redirection
86	Invalid password
87	Invalid parameter
88	Network device fault

<i>I/O Errors</i>	<i>Meaning</i>
-------------------	----------------

100	Disk read error
101	Disk write error
102	File not assigned
103	File not open
104	File not open for input
105	File not open for output
106	Invalid numeric format

<i>Critical Errors</i>	<i>Meaning</i>
------------------------	----------------

150	Disk is write-protected
151	Unknown unit
152	Drive not ready
153	Unknown command
154	CRC error in data
155	Bad drive request structure length
156	Disk seek error
157	Unknown media type
158	Sector not found
159	Printer out of paper
160	Device write fault
161	Device read fault
162	Hardware failure

Btrieve Errors

Errors	Meaning
1	Invalid operation
2	I/O Error
3	File not open
4	Key value not found
5	Duplicate key value
6	Invalid key number
7	Different key number
8	Invalid positioning
9	End-of-file
10	Modifiable key value error
11	Invalid filename
12	File not found
13	Extended file error
14 *	Pre-image open error // Delete all *.PRE files on OBJFAX sub-directories
15	Pre-image I/O error
16	Expansion error
17	Close error
18 *	Disk full // Disk full or limited space for a user.
19	Unrecoverable error
20 *	Record manager inactive // Load Brequester /Check path
21	Key buffer too short
22	Data buffer length
23	Position block length
24	Page size error
25 *	Create I/O error // Insufficient access rights or see Lan Manager section above.
26	Number of keys
27	Invalid key position
28	Invalid record length
29	Invalid key length
30	Not a Btrieve file
31	File already extended
32	Extend I/O error
34	Invalid extension name
35	Directory error
36	Transaction error
37	Transaction is active
38	Transaction control file I/O error
39	End/Abort transaction error
40	Transaction max files
41	Operation not allowed
42	Incomplete accelerated access
43	Invalid record address
44	Null key path
45	Inconsistent key flags
46	Access to file denied
47	Maximum open files
48	Invalid alternate sequence definition
49	Key type error
50	Owner already set
51	Invalid owner

52	Error writing cache	
53	Invalid interface	
54	Variable page error	
55	Autoincrement error	
56	Incomplete index	
57	Expanded memory error	
58	Compression buffer too short	
59	File already exists	
60	Reject count reached	
61	Work space too small	
62	Incorrect descriptor	
63	Invalid extended insert buffer	
64	Filter limit reached	
65	Incorrect field offset	
74	Automatic transaction abort	
78	Deadlock detected	
80	Conflict	
81	Lock error	
82	Lost position	
83	Read outside transaction	
84 *	Record locked	// Event file used by many users. Try again.
85	File locked	
86	File table full	
87	Handle table full	
88	Incompatible mode error	
90	Redirected device table full	
91	Server error	
92	Transaction table full	
93	Incompatible lock type	
94	Permission error	
95	Session no longer valid	
96	Communications environment error	
97	Data message too small	
98	Internal transaction error	

Intel CAS Errors

Error	Class	Subcode	Description
	0	<i>Fax warning (not an error)</i>	
0000	0	0	No error
0002	0	2	Bad scanline count
0003	0	3	Page sent with errors, couldn't resend
0004	0	4	Received data lost
0005	0	5	Invalid or missing logo file
0006	0	6	File name doesn't match nonstandard format (NSF) header
0007	0	7	File size doesn't match nonstandard format (NSF) header
	1	<i>DOS warnings; data was sent.</i>	
0101	1	1	Invalid function number
0105	1	5	Access denied
0106	1	6	Invalid handle
01xx	1	...	(See the DOS Technical Reference)
	2	<i>Fatal errors. The function failed or the data was not sent.</i>	
0200	2	0	Multiplex handler failed
0201	2	1	Unknown command (bad function number)
0202	2	2	Event not found (bad event handle)
0203	2	3	Attempted to Find Next before Find First
0204	2	4	No more events
0207	2	7	Invalid Queue type (bad Queue number)
0208	2	8	Bad Control File
0209	2	9	Communication board is busy
020A	2	A	Invalid command parameter
020B	2	B	Can't uninstall the Resident Manager
020C	2	C	File already exists
0280	2	80	Unknown task type (not a Send or Poll event)
0281	2	81	Bad phone number
0282	2	82	Bad PCX file header
0283	2	83	Unexpected EOF
0284	2	84	Unexpected disconnect
0285	2	85	Exceeded maximum dialing retries
0286	2	86	No files specified for Send event
0287	2	87	Communication board timeout
0288	2	88	Received more than 1023 (maximum) pages of data
0289	2	89	Manual connect posted too long ago
028A	2	8A	Hardware command set error
028B	2	8B	Bad nonstandard format (NSF) header file
	3	<i>Fatal DOS errors. The error subcode is the error returned by DOS.</i>	
0302	3	2	File not found
0303	3	3	Path not found
03xx	3	...	(See the DOS Technical Reference Manual)
	4	<i>Fax errors</i>	
0403	4	3	Other fax machine incompatible
045E	4	5E	Other machine jammed

Chapter 4 - Contact Information

Voice & Fax Numbers

Country	Company	Voice	Fax
Austria	Computer Austria	+43-1-707-574755	+43-1-797-57
Brazil	PCL	+55-115-780711	+55-115-790559
Canada	Chronofax	(514) 395-6060	(514) 878-8299
Chile	ISC Technology	+56-223-55651	+56-223-58071
Denmark	Data Link A/S	+45-39-274800	+45-39-273906
	First Lan'Mark A/S	+45-325-08022	+45-315-14232
Finland	Micronet OY	+358-0-859-3511	+358-0-859-3712
France	Sintel France SA	+33-1-3064-9922	+33-1-3058-3378
Germany	Traffic Software Germany	+49-89-897-55210	+49-89-897-55211
Hungary	Secotel	+36-116-10475	+36-11177241
Iceland*	Traffic Software	+354-1-687150	+354-1-687155
Italy	Redco Telematica	+39-331-329900	+39-331-329901
Norway	SCS	+47-22658180	+47-22654770
Spain	Telecon Iberica	+34-325-2447	+34-423-1767
Sweden	Technology Partners	+468-7556979	+468-7555335
United Kingdom	Object-Fax (UK) Ltd.	+44-71-3631363	+44-71-7129550
United States	Traffic USA	Sales: 1-800-840-0708	(407) 995-5282
		Support: 1-800-9OBJFAX	

**Headquarters*

Internet

The internet domain is: **traffic.is**

Notes

The Notes KnowledgeBase contains various tips, work-arounds, and problem solutions for Object-Fax. It is updated regularly by our support personnel and our developers. I encourage you strongly to make us of it.

Please send us your server's **safe.id** and we will establish a link to your Notes server.

On-line (BBS)

Traffic now has it own On-Line service, and is best described as a Windows based BBS system. To access it go into the BBS directory on the Object-Fax CD ROM and run the file called EXCALTRM.EXE

After running this file a group will be created in your Windows Program Manager called Excalibur. Double click on the Excalibur Icon and proceed set up the modem type and so forth.

BBS Number: **(407)-995-5271**

Chapter 5 - Price Information

Object-Fax ADVANCED		
Product #	Product Name	Price
U7121	Object-Fax ADVANCED Fax Server w/ 5 user license	990.00
U7122	Additional 5 user license (per fax server)	290.00
U7123	Additional 20 user license (per fax server)	590.00
U7124	Additional 100 user license (per fax server)	2,490.00
UUNLIM	Additional Unlimited user license (per fax server)	3,490.00
U7125	Additional 4 lines	890.00

Object-Fax LITE		
Product #	Product Name	Price
U7221	Object-Fax LITE Fax Server w/5 user license	490.00
U7222	Additional 10 LITE user license	290.00

SUPPORT SOFTWARE		
Product #	Product Name	Price
UPCL5	Object-Fax PCL5 Converter - Software based	370.00
UPOST	Object-Fax PostScript Converter - Software based	370.00
UICONP	EiconScript 300 PostScript Converter - Hardware based - High volume	2,490.00
UICONH	EiconScript 300 PCL5 Converter - Hardware based - High volume	2,490.00
UICONZ	EiconScript 300 PostScript/PCL5 converter - Hardware based - High volume	2,990.00

FAX BOARDS		
Product #	Product Name	Price
UGLCPI	GammaLink CPI - 1 line, 14.4Kps, DTMF	890.00
UGLCP4	GammaLink CP4 LSI - 4 lines, 14.4Kps, DTMF	2,990.00
UGLCPD	GammaLink CPD - 1 line, 14.4 Kps, DID receive card only	990.00
UFAX2	Faxination DUO - 2 lines, 14.4Kps, DID, DTMF, T.30 Sub-addressing	1,795.00
UFAX4	Faxination QUATRO - 4 lines, 14.4Kps, DID, DTMF, T.30 Sub-addressing	3,195.00
UBTR2	BrookTrout TR112 Fax Card - 2 lines , 14.4Kps, DTMF, DID	1,995.00
UBTR4	BrookTrout TR114 Fax Card - 4 lines , 14.4Kps, DTMF, DID	3,495.00

The prices do not include shipping and handling, and can be changed without any prior written notice.