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GFI WHITE PAPER

Network fax technology

A primer

Choosing the right fax server software and hardware

A fax server buyers' guide, this paper describes the features you need to look for in fax server software and why. It also describes the type of fax server devices (fax cards) available and which to choose.



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Introduction

This white paper provides background information on network fax technology. It helps you decide on key fax server features, routing methods and what fax device to buy.

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Why you need a fax server

Faxing manually is out of date. A professional fax server solution saves your company substantial costs, whilst also improving your customer service and image. The benefits over manual faxing are:

- Send faxes at the click of a button instead of having to print out every fax, carry it to the fax machine, wait for your turn, and possibly wait for it to retry when the number is busy
- Store fax numbers centrally in one phonebook, eliminating the need to search for a fax number
- Send faxes that are more legible and of better quality, since they are sent directly from your PC, using high-resolution techniques
- Automatically route incoming faxes to the right recipient as soon as they are received. This ensures timely and secure delivery of documents
- Track fax activity, by archiving faxes and using call accounting
- Make sure that only you can view your outgoing and incoming faxes
- Send faxes in the same way as you send email
- Automatically retry fax numbers if they are busy

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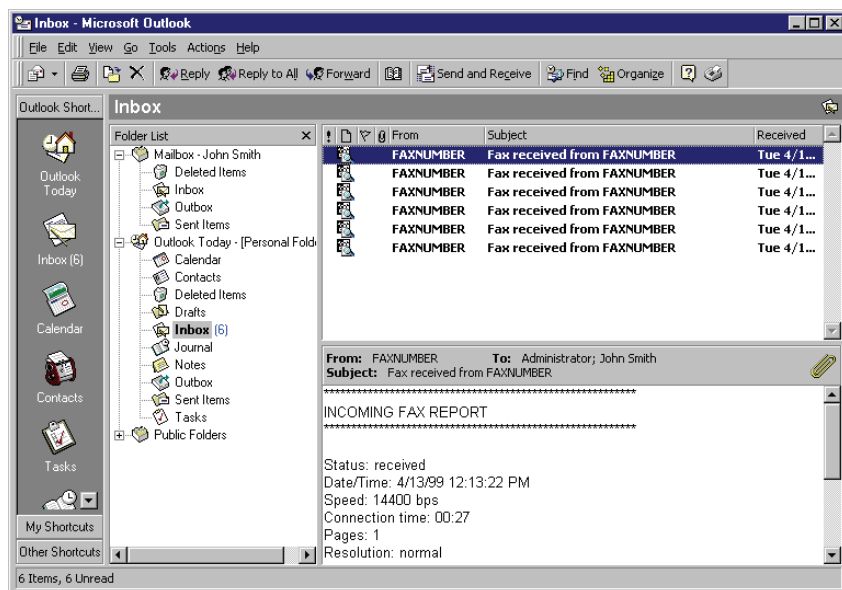
- Easily send faxes to groups of people.

These benefits translate into significant cost savings. The following table shows an estimate of how much a company can save by using a network fax solution:

	Manual faxing	GFI FAXmaker
Time to fax in minutes	5	0.5
No of faxes per week	500	500
Average labor cost per hr	\$30	\$30
Cost per week	\$1250	\$125
Weekly SavingDomain Controller	5	\$1125

Email integration, email integration, email integration...

The future of computer-based fax is as an add-on to an email infrastructure. The existing email infrastructure is ideal to integrate fax. Apart from offering administration ease, it is also much easier for users. Users already check their email inbox and are already familiar with sending and receiving emails: Integrating the fax server with email makes the sending and receiving of faxes a natural extension to email and is therefore much easier for the user. In this way, the user has no learning curve while retaining one inbox to check, one address book to store both email and fax numbers, and so on.



Faxes are received directly in the email client

Advantages include the following:

- Users do not need to learn a separate application to send and receive faxes
- Users can check faxes from their email client
- If your email server has web based access, then users can check faxes via the web too

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- Users do not need to switch to a separate program to send a fax
- Less administration because administrators do not need to administer a separate fax user database
- Administrators receive less support requests from users
- Because the fax server does not have a proprietary communication system, there is less network overhead and less cause for errors
- Application integration through the mail 'Send' command in desktop packages
- Easy to install as fax server is specifically designed for the mail server.

In a nutshell: Network faxing must be email integrated!

Nowadays, most fax servers offer email integration. However, with many fax servers, this is simply 'tacked on' - meaning they still maintain their own proprietary database system, their own proprietary user databases and so on. Look for a fax server that integrates natively with your mail server, either using an Exchange Connector or via the SMTP/POP3 protocol.

Look for minimal administration

An important consideration when choosing a fax server is to take into account the amount of administration the software will require. A high maintenance fax server software might lead to the software not being used, or take time away from other important tasks. Therefore, it is essential to insist on features that reduce administration, such as:

- 1 Complete integration with Active Directory (even if you are not yet running Windows 2000, invest in a solution that is ready for it). Integration with Active Directory should simply use Active Directory directly and not have its own user database; it is advisable not to select a solution that retrieves and synchronizes users.
- 2 Rules-based interface. It is important that you can take a rules approach: This way you can apply rules - for example, inbound routing or a cover page - to groups of users and save on administration time.
- 3 Try not to choose products that modify the Active Directory schema more than necessary. If a fax server adds extra 'tabs' to user settings in Active Directory, then the schema is modified. Note that this can filter down to other domains or cause headaches when upgrading to newer Windows versions or installing service packs. Try to avoid such fax solutions.

Inbound fax routing

An important feature of network fax packages is the ability to automatically route an incoming fax to the right recipient in your company. By having faxes routed automatically, personnel do not have to manually review the fax and route it, which saves time and keeps the fax confidential.

In addition, if you have inbound fax routing in place, you can easily create separate fax numbers for different functions, for example an order fax number, a sales fax number and so on.

The best way to route incoming faxes is by using DID or MSN numbers. If you are using ISDN (recommended if you have access to ISDN) you can choose between DID or MSN numbers; if you have analog lines only, then you have to base inbound routing on DID/DTMF. If using either an ISDN line or a DID trunk, users can be assigned personal fax numbers without having to install physical fax lines for each number. The number of the line is passed to GFI FAXmaker upon receiving the fax, and therefore GFI FAXmaker can route the fax to the correct user.

Routing requirements:

- 1 For routing based on ISDN – DID
- 2 An ISDN Line with MSN or DID numbers.
- 3 An active ISDN CAPI 2.0 card such as an EICON Server BRI (approx. cost \$500).
- 4 For routing based on Analog – DID
- 5 A DID line with X amount of numbers.
- 6 A Brooktrout TR114 DID card (approx. cost \$2000).

For more information about routing, visit <http://kbase.gfi.com/showarticle.asp?id=KBID001349>.

Fax devices

An important choice for your fax server is the type of fax device to use. The following fax devices are available on the market:

- Fax cards (for example Brooktrout)
- Active ISDN fax cards (for example EICON or AVM)
- Fax modems (either class 1 or class 2 or class 2.0)

Which fax device to choose

It is strongly recommended to invest in a professional fax server device such as a Brooktrout TR 114, TR 1034 or Trufax fax board, an EICON DIVA PRO/SERVER ISDN fax card or an AVM B1 ISDN fax card.

These devices are far superior to a modem or multi-port modem in terms of reliability and transmission speed. Modems can be unreliable, requiring regular resets, and are frequently not compatible with all fax machines, resulting in failed faxes. The chipset used is an important factor; however, since modem manufacturers constantly change the chipset, it is difficult to recommend a particular model or brand. This is a hardware issue and has nothing to do with the fax server software!

In terms of cost, a Brooktrout Trufax, EICON or AVM card is relatively inexpensive: A 2-port card can be bought for about \$300-\$500. The per-port cost is \$150-\$250 and is therefore only marginally more expensive than using 2 modems. Depending on what card you choose, you also get more fax features - for example, inbound routing or faster 33.6 faxing. The slight increase in cost is easily justified in terms of reliability and reduced administration costs!

Integration with back office applications via fax server API

Besides allowing easy desktop faxing, your fax server should easily integrate with your back office applications, such as your CRM, ERP or accounts package. Ensure that a fax server has an easy-to-use application programming interface (API).

An extremely easy way to allow almost any software you have to integrate with a fax server is to embed the fax number in the document and have the fax server capture that fax number from the document. This method is also easily networkable, as long as the fax printer driver that captures the print stream can also be a network printer. Using this method, users simply print to the fax network printer driver from the back office application, after which the fax server captures the fax number and faxes out the document. This solution requires no programming or adaptation of the back office application!

Internet fax/fax over IP/least cost routing

Internet fax, fax over IP and least cost routing are 3 technologies designed to reduce the corporate cost of fax communications. Much was made about the potential cost savings offered by these technologies: However, since most countries have now deregulated telecoms, per minute connection charges have dropped significantly. The arguments in favor of these technologies have therefore diminished.

Internet Fax: Internet fax is limited to fax broadcasting applications, since Internet fax offers little or no advantages over email. The point of fax is that one can have secure, immediate delivery of a message. With Internet fax, this is not guaranteed and therefore one might as well send an email instead!

Fax over IP: The main disadvantage of this technology is that you will have to invest quite heavily in equipment and maintain it. In many cases, the yearly depreciation and administration cost will far outweigh the cost savings achieved on the fax call itself. Fax over IP is only suitable for large companies that already have the corresponding hardware and network infrastructure. Even then, one can question the overall savings that will be achieved.

Least cost routing: Most network fax software today supports using least cost routing, either using a proprietary system or by leveraging the available email infrastructure. We strongly advise against using a proprietary system where using the email infrastructure for least cost routing is possible. However, this will invariably bring along significant additional administration and is therefore only applicable for larger organizations.

About GFI FAXmaker for Exchange/SMTP

GFI FAXmaker for Exchange/SMTP is a Windows-based network fax solution that offers email integrated faxing for Exchange Server and SMTP/POP3 server environments. Besides fax, GFI FAXmaker also offers send-and-receive SMS/text functionality. For Exchange Server users, GFI FAXmaker includes a native fax connector for Microsoft Exchange Server. For SMTP server users, GFI FAXmaker includes an SMTP fax gateway.

Users can send and receive faxes and SMS messages (texting) directly from Microsoft Outlook, Outlook Web access or other email client, making GFI FAXmaker easy to use and learn.

GFI FAXmaker includes a multi-line fax server, inbound fax routing, print to fax driver for Windows, support for server-side conversion of Office documents, and fax management features.

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For more info about this product and to download your free trial, please visit <http://www.gfi.com/faxmaker/>.

About GFI

GFI is a leading software developer that provides a single source for network administrators to address their network security, content security and messaging needs. With award-winning technology, an aggressive pricing strategy and a strong focus on small-to-medium sized businesses, GFI is able to satisfy the need for business continuity and productivity encountered by organizations on a global scale. Founded in 1992, GFI has offices in Malta, London, Raleigh, Hong Kong, and Adelaide which support more than 200,000 installations worldwide. GFI is a channel-focused company with over 10,000 partners throughout the world. GFI is also a Microsoft Gold Certified Partner. More information about GFI can be found at <http://www.gfi.com>.



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