



Installation, administration & user guide



with commitment comes success

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Installation, administration and user Guide

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Foreword

BNS Group would like to thank the following people and organizations for making msXfax XP a world class product:

- To all our staff and their families for working tirelessly to deliver undoubtedly the best value for money product available for Microsoft Exchange 2000/2003 & Exchange 5.5
- To Amos Wong & Kenneth Chan and the Mandarin Oriental Hotel Group for their input with respect to enterprise networks.
- To all our customers for their feedback, wish lists and support of msXfax XP.
- To Jane Huxley, Melissa Withers, Allan Cruz, Helen Barnsley, Ross Dembecki, Mark Host, Bruce Smith, John Paloni, Raj Natarajan, Ed Beck, the Exchange beta team and everyone at Microsoft who continue to encourage us to create world class technology that adds value to Microsoft Exchange 2000/2003 and Active Directory.
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Thanks to our customers and partners for being patient with us. We admit to being slow with our releases because we focus on rigorous quality assurance testing which takes time. Thank you all so much.

1 Installation checklist

This checklist provides you with a list of tasks which must be completed by most customers installing msXfax XP for the first time. This manual provides a logical sequence to follow when installing msXfax XP. The order of each chapter and the order of this checklist closely match one another. Please use the checklist to ensure that key tasks are completed. Verify that all other documented chapters have been completed/reviewed. **Follow the sequence of the user guide**

Tasks prior to installing and configuring msXfax XP	Install notes
Identify Exchange bridgehead server(s) in your Exchange 2000/2003 network which will be used to configure a standard Microsoft SMTP Connector to provide a connection between Exchange and msXfax XP smart host services.	
Apply Microsoft registry changes to bridgehead servers hosting the SMTP Connector used for msXfax XP.	
Configure SMTP Connector and apply address space to the connector	
Create an Active Directory mail enabled user account for each fax server	
Schedule a time to restart ALL Exchange Services on the bridgehead servers.	
Tasks to install and configuring msXfax XP	
On a suitable computer (refer sizing recommendations in this guide) install Windows 2000 Server SP4. Only test partners can install Windows Server 2003	
Set the Windows event log to overwrite. Set regional and other settings for your environment	
Install Office XP (no service packs) or Office 2003	
Install Adobe Acrobat FULL PRODUCT (CUSTOM - deselect all options except any required language options).	
Install Fax device: TAPI compliant Class 2.0 fax modems and drivers, Eicon Diva Server boards and Eicon version 7.0 drivers or Brooktrout TR114 series PCI boards.	
Observe special notes if upgrading from a previous release of msXfax XP	
Install initial installation files (INSTALLMSX.EXE)	
Run msXsetup.exe	
Configure and Test your fax device(s)	
Install msXfax XP printer driver (make sure it is set to Print Direct). If the printer driver is already installed there is no need to re-install it.	
Configure msXfax XP	
Send a test fax. Send a fax to msXfax XP - check admin alert mailbox for its arrival	
Configure Global Options as required	

Modify default cover sheet and/or create new cover sheet(s)	
Implement other options as required.	
Request a security release code from BNS's web site per instructions in this documentation.	
Conduct your pilot tests and roll out to users as required.	
Customer testimonials can be sent to sales@bnsgroup.com.au	
Customer support is available directly from www.bnsgroup.com.au	

2 Introduction

This guide is designed to provide administrators and technical staff with a comprehensive set of instructions to install, deploy and manage msXfax XP within an enterprise network or even on a single LAN installation.

msXfax XP has been built upon 14 years of development at BNS Group, building upon BNS Group's previous versions of its Email based fax solutions (from the early days of: msMail 3.x) through Exchange version 4 through to Exchange version 5.5 & Exchange 2003..

Exchange 2000 server was a significant change for Microsoft embracing more industry standards and fully integrating with their new Active Directory (AD) service.

Many other vendors continued to port or modify their existing Exchange Fax Connectors (Exchange MAPI based gateways) in an attempt to fit in with Exchange 2000. BNS Group decided it was time re-develop higher layer code to fully integrate with AD whilst offering a more industry standards based method of integrating with Exchange 2000/2003 server. All references to Exchange 2000 include Exchange Server 2003 unless explicitly noted.

Technology : **BNS Group has made significant investments in upgrading its technology to take advantage of Microsoft's new platform.**

Table 1: Technology upgrades that take advantage of Microsoft's new platform

Integration	Technology used	Comments
Active Directory	ADSI, LDAP & ADO	msXfax ^{XP} does not extend the schema which makes it attractive to enterprises both large and small.
Exchange 2000/2003	SMTP & POP3	msXfax ^{XP} uses a standard Microsoft SMTP Connector which is configured by you. It is so easy. Administrators appreciate this approach because no 3 rd party Exchange components run on your Exchange server. In terms of Exchange 2000/2003, your system remains a 100% pure Microsoft Exchange environment

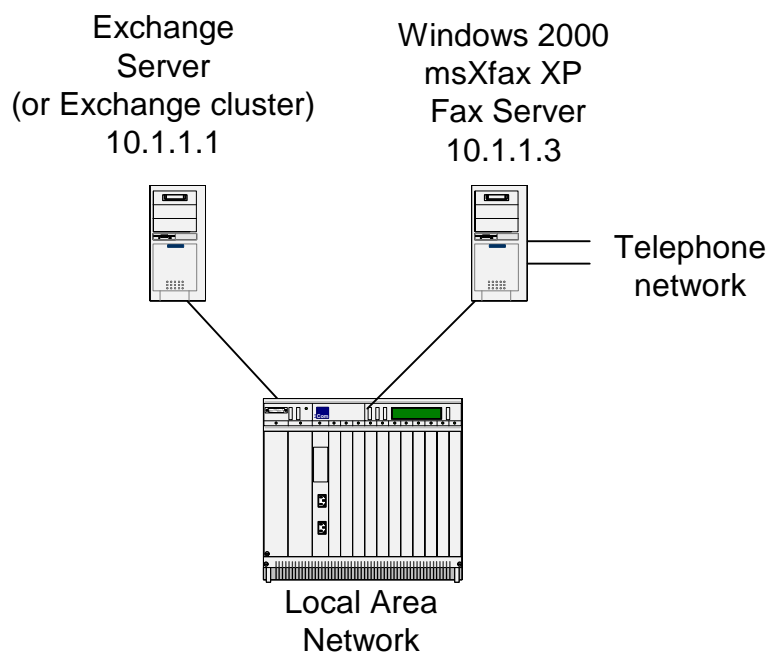
2.1 Architecture

An understanding of the architecture of any product will help you understand the fundamental benefits to be gained from such a product.

2.1.1 High Level diagram: the boxes

As can be seen in Figure 1, msXfax fax server hardware and software can be installed on a separate Windows 2000 member server.

Figure 1: High level diagram showing that msXfax XP is implemented on a Windows 2000 computer in the same Active Directory domain as your Exchange 2000/2003 server

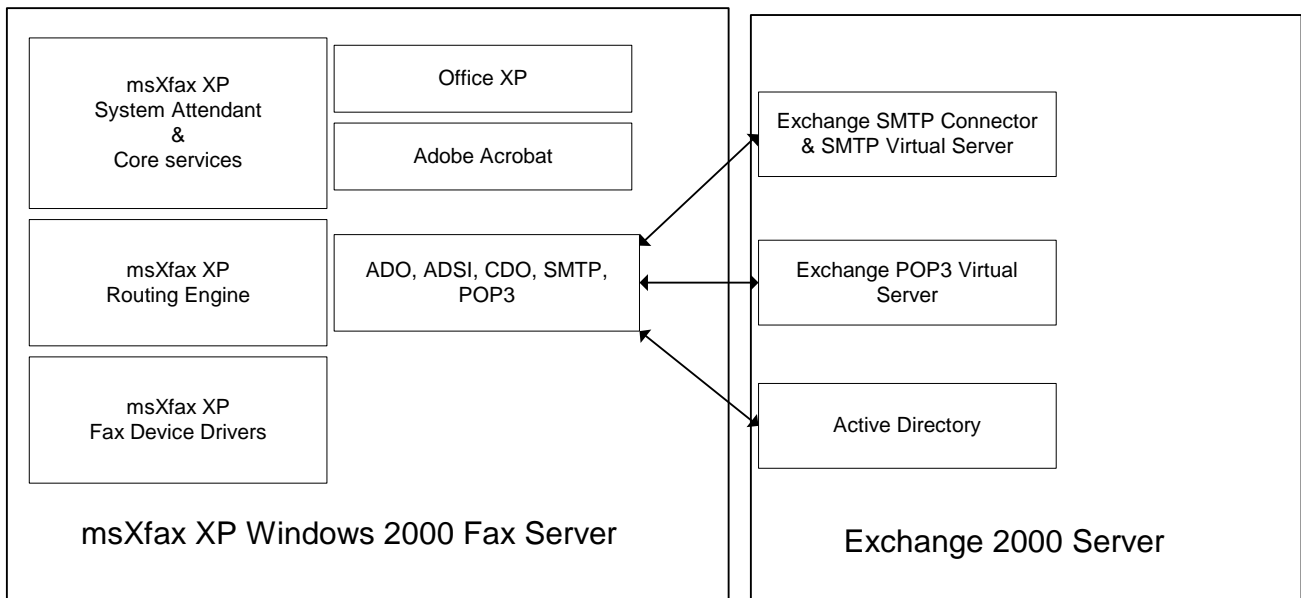


msXfax XP can be installed on: Windows 2000 Server, Windows 2000 Advanced Server. Windows 2000 servers can be Domain Controllers or member servers.

2.1.2 Software components

msXfax XP uses the latest Microsoft recommended technologies to integrate and interact with key Microsoft services: Active Directory Services and Microsoft Exchange 2000/2003 server using Industry standard protocols for message transmission with Exchange Server. **The architecture below can be implemented on the Exchange 2000/2003 server as previously mentioned.**

Figure 2: Software architecture: high level implementation block diagram showing key Microsoft technologies used by msXfax XP.



ADSI interacts with Active Directory Domain Controllers, SMTP & POP3 interacts with the Exchange server. In many instances, the Exchange server is also a Domain Controller/Global Catalogue Server (for more information on Domain Controllers and Global Catalog servers, refer to Microsoft's Exchange 2000/2003 server and Windows 2000/2003 Active Directory resource and planning guides).

2.2 Quick Start Guide for the technical gurus

2.2.1 Is msXfax XP affected by anti-virus software products?

msXfax XP is fully tested with Norton Anti-Virus Corporate edition during BNS Group quality assurance tests. **ETrust from Computer Associates is known to be intrusive on files created by msXfax XP causing msXfax XP to fail.** Customers using ETrust should take appropriate action to prevent msXfax XP files and processes from being impacted by ETrust.

2.2.2 Does msXfax XP run on Windows Server 2003?

msXfax XP has not been certified for Windows Server 2003 as at March 2004. Microsoft changed the security regime for kernel mode printers. A change of security policy in the Windows Server 2003 operating system will allow kernel mode drivers to install. BNS is testing msXfax XP on Windows Server 2003 April 2004.

2.2.3 Does msXfax XP support Exchange 2003 Server?

YES: msXfax XP has been tested on a Windows 2000 member server in a Windows 2003 Domain with Exchange 2003.

2.2.4 Can I install msXfax XP in a pure Exchange 5.5 environment?

YES. msXfax XP has some limitations in pure Exchange 5.5 environments. Exchange 5.5 and Exchange 2000 are so different it was difficult for BNS to make msXfax XP fully backward compatible. Customers who have not yet deployed Exchange 2000/2003 but require fax services with their existing Exchange 5.5 systems should deploy msXfax XP and use msXfax XP Freeform addressing only for sending faxes. Inbound fax routing and outbound fax authorization utilizes a local database rather than Active Directory where Exchange 2000/2003 has yet to be deployed.

msXfax XP provides a CSV import facility to maintain the database pending full implementation of Active Directory/Exchange 2000-2003 Server.

Customers who have deployed at least 1 Exchange 2000/2003 server in their network can implement msXfax XP fully allowing users in the Exchange 5.5 & 2000/2003 sites to send and receive faxes.

Customers who do not plan to deploy Exchange 2000/2003 for a long time should also use freeform addressing & maintain a local database for msXfax XP as described above.

2.2.5 Can I install msXfax XP and a Brooktrout board on a computer with more than 1 CPU?

msXfax XP using Brooktrout TR114 series board will not operate in servers with more than 1 CPU.

2.2.6 Can I install msXfax XP on an Exchange 2000/2003 server?

It is possible but BNS does not recommend or support it. A Microsoft knowledge base article Q310155 provides the detail behind why previous versions of msXfax XP could not run on Exchange 2000 servers. By default Windows 2000 OS/Exchange 2000 server listens on all IP addresses port 25. Therefore, msXfax XP's smart host can't listen on port 25 of a specific IP address. Exchange 2000 provides the GUI in Exchange System Manager to listen on specific addresses, however, socket pooling must be disabled for this to become effective.

2.2.7 Can I use msXfax XP in an Exchange 2003 server network?

YES.

2.2.8 Can I install msXfax XP on a Microsoft small business Server (SBS) 2000 or SBS 2003 server?

It is possible but BNS does not recommend or support it. A Microsoft knowledge base article Q310155 provides the detail behind why previous versions of msXfax XP could not run on Exchange 2000 servers. By default Windows 2000 OS/Exchange 2000 server listens on all IP addresses port 25. Therefore, msXfax XP's smart host can't listen on port 25 of a specific IP address. Exchange 2000 provides the GUI in Exchange System Manager to listen on specific addresses, however, socket pooling must be disabled for this to become effective..

2.2.9 Where do I install the fax software?

Installing on Windows 2000 Server is the only certified platform as at March 2004.

If you intend to use Brooktrout TR114 series PCI boards, the computer you install on must be a single CPU Pentium 4. BNS recommends a Pentium 4 processor min 1.6ghz with genuine Intel motherboard.

msXfax XP can install on any of the following platforms:

- Windows 2000 Servers (inc Advanced Server) which are member servers or domain controllers. Recommendation is a member server.

2.2.10 Where do I install the fax board or modem?

Installation of fax boards or modems is done on the Windows 2000 server computer where you intend to install msXfax XP software.

A range of fax hardware is supported including:

- Selected TR114 series Brooktrout boards
- Eicon Networks ISDN Basic Rate / ISDN Primary rate E1 or North American T1 boards
- Netcomm analogue iNTRA series boards
- Multitech analogue modem boards
- External/internal class 2 fax modems. (USB and/or comport modems can be configured under Windows 2000 if the manufacturer has Window 2000 TAPI compliant device drivers).

2.2.11 Known Compatibility issues IBM X Series?

Installation of Brooktrout fax boards with msXfax XP and some IBM X Series machines is a known problem. Brooktrout fax boards tested with msXfax XP with genuine Intel motherboards (as at January 2003) worked ok. The problem is associated with some IBM X Series which have hot swap slots.

BNS Group completed extensive certification tests with IBM X Series 345 with Eicon Diva Server cards (version 2.0) running in 133Mhz PCI slots. IBM X Series 345 with Eicon Diva Server boards performs very well.

2.2.12 What Exchange Service packs and registry considerations are there?

- Exchange 2000 SP2 or Exchange2000 SP3 is required. Exchange 2003 Server is supported. SP1 beta was tested January 2004 through March 2004 ok.
- A registry additional parameter is required. The procedure is documented further on in this guide.

2.2.13 What permissions do I need to install msXfax XP?

To install software on the Windows 2000 fax server you will need Administrator rights to the local server. Typically, we would expect you to logon as a Domain Administrator account to install msXfax XP.

You or your Exchange Administrator will need to login to your Exchange server with sufficient permissions to: Configure various Exchange options, add an SMTP connector, configure a registry entry on your Exchange server and create an Active Directory user for use by msXfax XP.

2.2.14 What permissions does the fax administrator need?

This is fully documented in this guide. If your administrator is in fact a member of the Domain Admins or Administrators local group (of the Windows 2000 member server), they have sufficient permissions to administer msXfax XP. If you have thought through the benefits of delegated administration through Active Directory and set up 'pseudo administrators' (delegated rights in AD, Server Operator and Backup Operator for example) **they will not have sufficient rights.**

For pseudo administrators you could add one of their Global Security Groups or their individual account to be a member of the local Administrators Group on the Windows 2000 computer. Full control permissions are essentially required on the registry keys Local Machine..... BNS Applications for your pseudo administrator to successfully use msXfax XP's console. Alternatively, you could apply specific permissions to the registry key via REGEDT32. Different customers have their own ways of implementing security. Whichever way you decide to implement your security, the above should help you control access to msXfax XP management console functions.

2.2.15 Does msXfax XP service need to logon with account permissions?

All msXfax service accounts run in the context of local system except for the msXfax XP Print Service. msXfax XP Print service must have permissions to printers in the enterprise. You must set the service account login name after msXfax XP has been installed.

2.2.16 What end user security considerations are there?

For any user to send a fax they must be explicitly allowed through Active Directory or via any facilities presented in msXfax XP configuration properties. This avoids external users being able to send faxes if they happen to guess or know the name of the msXfax XP mailbox in Exchange 2000/2003. In order for a user to send a fax they therefore must be in Active Directory and must be explicitly allowed to send faxes.

For added security, msXfax XP implements an optional special passcode feature. If implemented, every user would be required to supply the passcode in every fax message.

2.2.17 What do I install on my users' PC?

- Outlook 2000 or Outlook 2002 (Office XP), Office 2003 or better is required.
- Optional, "Render to Outlook (R2O)" (previously known as "Print to MAPI" printer drivers are available for msXfax XP to enable users to print from any Windows application. R2O renders the output to an image file then invokes an Outlook send window to enable you to send your fax. Outlook is the single user interface for msXfax XP. Outlook support allows msXfax XP to be deployed with minimal end user training. R2O is incorporated into the annual license agreement of msXfax XP. R2O can be purchased for use on a network without msXfax XP licenses. R2O has broadcast capability which works with releases of msXfax XP greater than version 6.5.4
- Scan to Outlook is a Com Add-in for Outlook 2000/2002/2003. This is not included with msXfax but can be purchased as a separate product.

2.2.18 What do I need to know about Active Directory ?

Good news!

The news that Exchange Administrators want to hear. msXfax XP does not extend or modify the schema in any way.

You will be pleased to know that msXfax XP does not extend or modify the schema. Therefore, you can install msXfax XP without Schema Admin rights. Domain Administrator rights or local Administrator rights for Windows 2000 member servers will be sufficient to install msXfax XP together with your Exchange Administrator (Full) account capable of creating an SMTP Connector and configuring other options in Exchange System Manager.

2.2.19 Where do I get help?

- BNS Group has implemented a customer self help service and technical support tracking system. To use the system for pre sales questions or post sales support (to track and manage your support requests) use the link <http://mycusthelp.com/bnsgroup/> or simply select Support from the BNS Group web site <http://www.bnsgroup.com.au>
- ALL customers must use the above support system.

2.3 Configuration options & capacity planning

2.3.1 Theoretical sizing of a fax server

Fax traffic tends to be oriented around peak periods. Even though a typical fax page typically takes 1 minute to send or receive per page there are so many variations it is difficult to sensibly calculate even a theoretical maximum.

We have therefore made the per page rate = 1 minutes for the purposes of this exercise.

Number of fax lines	(Typical fax content) maximum number of pages per 60 minute period	Comments
1	60 pages per hour	This is theoretical only.
2	120 pages per hour	This is theoretical only.
3	180 pages per hour	This is theoretical only.
4	240 pages per hour	This is theoretical only.

2.3.2 Practical sizing of a fax server

BNS Group's view is that practical sizing of a Fax server should represent **50% or lower** of the maximum theoretical. **This accommodates many variables and peak demands for fax lines.**

If your design involves attachments being sent to the fax server, there is a limited throughput that the fax server will achieve because each attachment must be processed to a rendered image. OLE Automation is used to automate the application concerned eg: Microsoft Word.

Number of fax lines	(Typical fax content) maximum number of pages per 60 minute period	Practical number of pages per minute (50%)	Comments
1	60 pages per hour	30 pages per hour	Much higher chance of contention in peak periods
2	120 pages per hour	60 pages per hour	
3	180 pages per hour	90 pages per hour	

4	240 pages per hour	120 pages per hour	This is a popular configuration for msXfax XP.
8	480 pages per hour	240 pages per hour	Much lower chance of contention in peak periods
16	960 pages per hour	480 pages per hour	Much lower chance of contention in peak periods

2.3.3 Small installation with simple modem(s) requirement.

Small sites can configure Fax class 2 compliant modems which are internationally recognized brands of good quality.

msXfax XP can be configured to send on one modem and receive on another modem. The licensing of msXfax XP allows a customer to implement 1 to 4 modems as the entry level license.

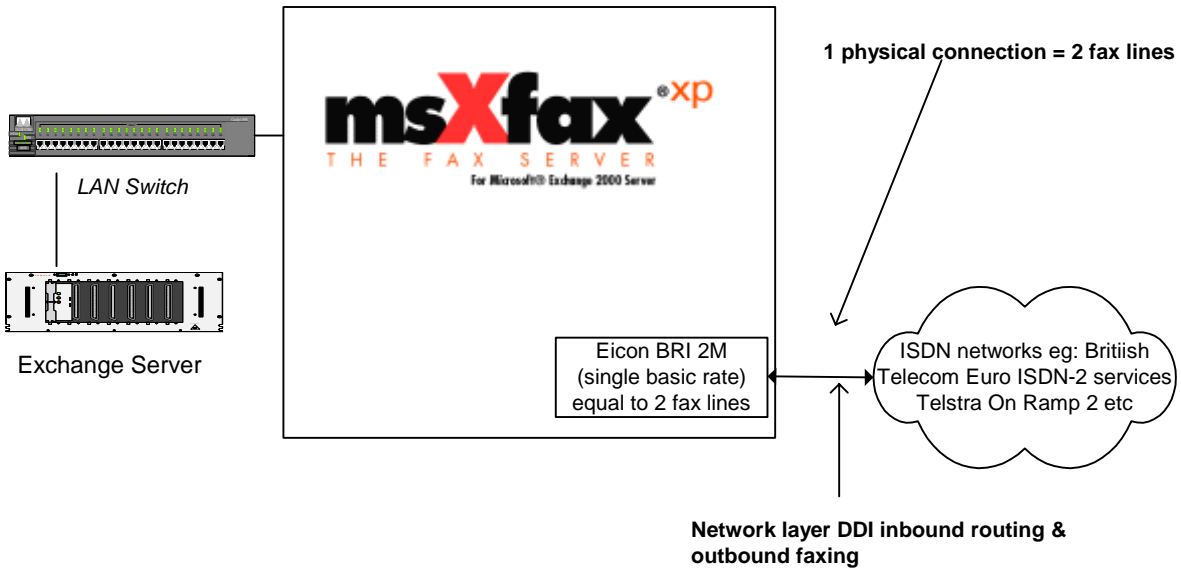
2.3.4 Small to medium installations with direct inbound routing.

Sites receiving faxes directly into Microsoft Exchange Server mailboxes controlled via Active Directory can choose a number of technologies.

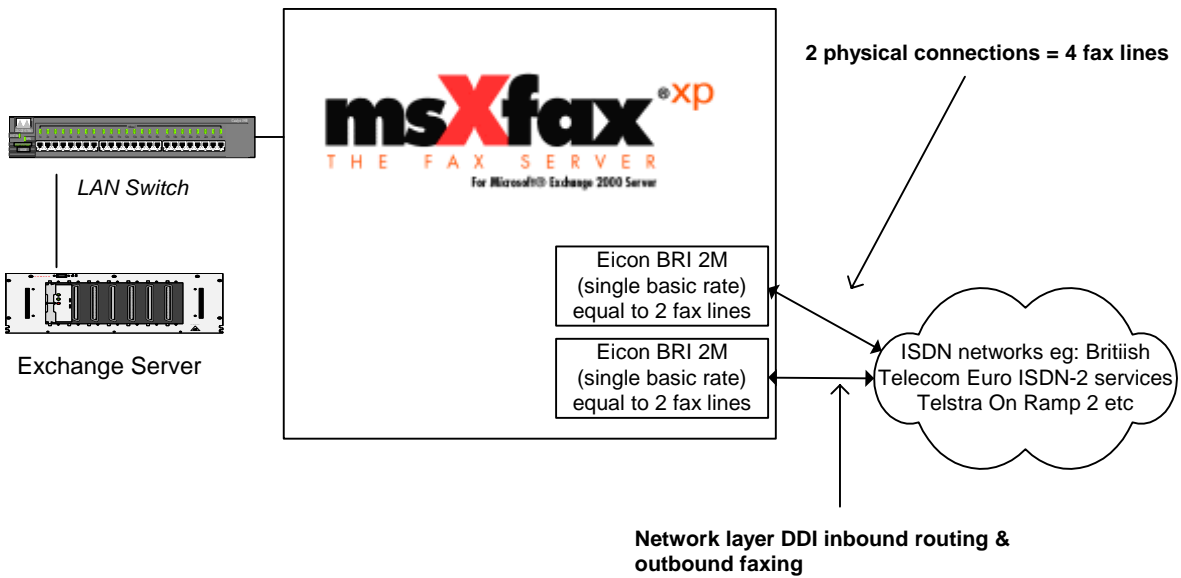
Unless otherwise stated, all these options allow outbound transmissions in addition to inbound routing capability.

Inbound routing technology	Option	Comments
PABX generated DTMF tones based on the extension dialed	Brooktrout TR114 analogue loopstart board	Part number TR114+P2L (2 line) Part number TR114+P4L (4 line) (Note: a number of these boards can be inserted into the one fax server).
DID analogue	Brooktrout DID PCI boards	DID analogue services only (North American services)
ISDN direct in-dial (DDI also referred to as DID). This is where many numbers can be assigned to an ISDN service for use with inbound routing.	Eicon Networks	Diva server boards Single Basic: Rate BRI 2M (1 basic rate = 2 fax lines) 4 Basic Rates: 4 BRI 8M (4 basic rate = 8 fax lines) (Note: a number of these boards can be inserted into the one fax server. Eg: 2 x BRI 2M = 4 fax lines). Primary rate boards offering up to 30 lines are also supported. Refer to the complete range of boards and part numbers listed later in this section.

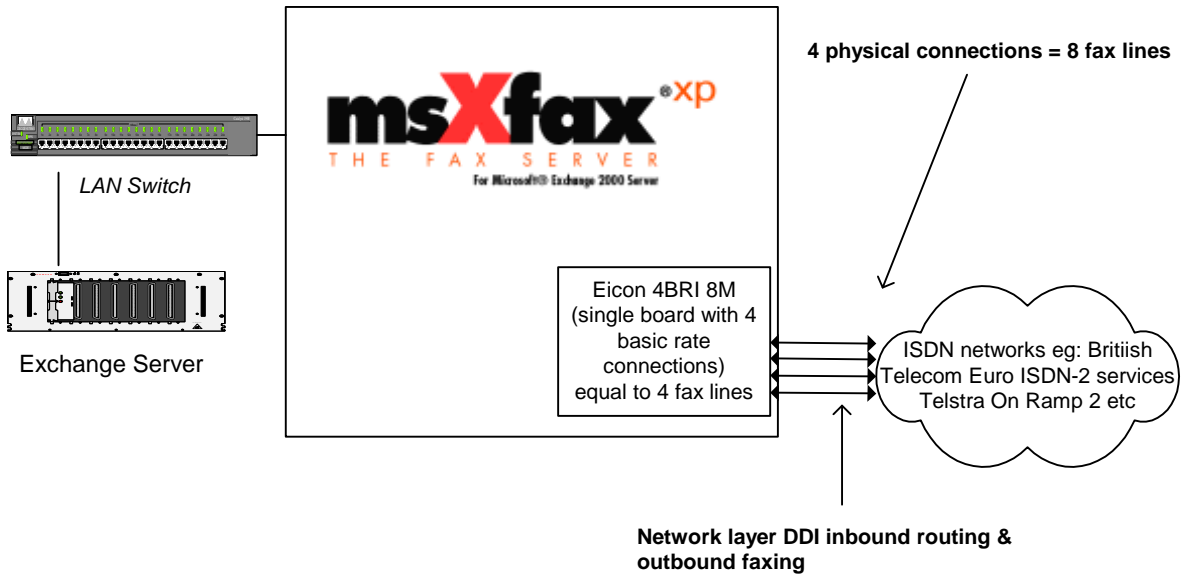
msXfax XP fax server using Eicon Networks ISDN basic rate 2 fax line solution



msXfax XP fax server using Eicon Networks ISDN basic rate 4 fax line solution



msXfax XP fax server using Eicon Networks ISDN basic rate 8 fax line solution



2.3.5 Larger installations with direct inbound routing.

Sites wishing to receive faxes directly into Microsoft Exchange Server mailboxes controlled via Active Directory can choose from a number of technologies.

Note:

From a design perspective, BNS Group recommends that system architects consider multiple fax servers in large sites. Multiple fax servers offer redundancy. As such, many of the medium scale routing technologies still apply to large sites.

Inbound routing technology	Option	Comments
PABX generated DTMF tones based on the extension dialed	Brooktrout TR114 analogue loopstart board	Part number TR114+P4L (4 line) multiple maximum 24 lines per server.
DNIS T1	Brooktrout	North American T1 services (a maximum of 24 fax lines per server). (Refer to the special section on T1 configurations in this user guide).
DID analogue	Brooktrout DID PCI boards	DID analogue services only (North American services)
ISDN direct in-dial (DDI also referred to as DID). This is where many numbers can be assigned to an ISDN service for use with inbound routing.	Eicon Networks	<p>Diva server boards</p> <p>4 Basic Rates: 4 BRI 8M (4 basic rate = 8 fax lines) multiple</p> <p>1 Primary Rate: PRI 30M (1 primary rate = 30 fax lines)</p> <p>1 T1 Primary Rate (USA 1 T1 PRI = 24 fax lines)</p> <p>Refer to the complete range of boards and part numbers listed later in this section.</p>

2.3.6 Mixing technologies

msXfax XP does not support mixed technology platforms. I.e: Do not mix Eicon boards with other vendor hardware in the same fax server. Do not mix Brooktrout boards with any other vendor hardware.

2.3.7 Eicon Networks product part numbers

For the latest information, refer to Eicon Networks web site or contact Eicon Networks directly.

Single Basic Rate Eicon Diva Server board equivalent to 2 fax lines

http://www.eicon.com/worldwide/products/MediaGateways/disvbri.htm?orderingInfo=1&en_prod=Diva_Server_BRI_2M

Code(s) - Product Name(s)

306-162 - Diva Server BRI-2M 2.0 - International
 306-163 - Diva Server BRI-2M 2.0 - Germany
 306-164 - Diva Server BRI-2M 2.0 - UK
 306-165 - Diva Server BRI-2M 2.0 with NT1 - International
 306-192 - Diva Server BRI-2M 2.0 - Australia*

4 Basic Rate Eicon Diva Server board equivalent to 8 fax lines

http://www.eicon.com/worldwide/products/MediaGateways/disv4bri.htm?orderingInfo=1&en_prod=Diva_Server_4BRI

Code(s) - Product Name(s)

305-486 - Diva Server 4BRI-8M 2.0 - International
 305-487 - Diva Server 4BRI-8M 2.0 - German
 306-193 - Diva Server 4BRI-8M 2.0 - Australia*

E1 Primary Rate Interfaces

4M = 2 fax lines

8M = 6 fax lines

30M = 30 fax lines

FAQ: Why configure 2 or 6 fax lines as a Primary Rate?

Answer: you may want to connect via an ISDN PBX.

http://www.eicon.com/worldwide/products/MediaGateways/disvpri.htm?orderingInfo=1&en_prod=Diva_Server_PRI

Code(s) - Product Name(s)

305-470 - Diva Server PRI-4M - International
 305-495 - Diva Server PRI-4M - German
 306-183 - Diva Server PRI-4M - Australia*

305-471 - Diva Server PRI-8M - International
 305-490 - Diva Server PRI-8M - German
 306-184 - Diva Server PRI-8M - Australia*

305-982 - Diva Server PRI-30M - International
 305-491 - Diva Server PRI-30M - German
 306-185 - Diva Server PRI-30M - Australia*

T1 Primary Rate Interfaces

http://www.eicon.com/worldwide/products/MediaGateways/disvt1pri.htm?orderingInfo=1&en_prod=Diva_Server_T1_PRI_24M

Code(s) - Product Name(s)

305-473 - Diva Server T1/PRI-4M
305-474 - Diva Server T1/PRI-8M
305-981 - Diva Server T1/PRI-24M

2.3.8 Connecting Eicon Diva Server to PBX's

For the latest information, refer to Eicon Networks documentation at <http://www.eicon.com/pubs/20633913.pdf>

Q-SIG line specifications are generally used for connection to PBX's.

Q-Sig specific line parameters

Q-Sig is the standard protocol for inter-PBX signaling. If you are using a Q-Sig switch type, you must configure the following specific parameters.

For information on proper Q-Sig settings, refer to your PBX documentation.

PBX Type:

Select your PBX type from the list. If your PBX is not listed, select 'Generic'.

Q-Sig Standard:

Normally, the correct Q-Sig standard is automatically set for the selected PBX type. Change this value only if your PBX requires a different value.

2.3.9 Connecting Eicon Diva Server to Cisco IGX WAN Switch

For the latest information, refer to Eicon Networks documentation at <http://www.eicon.com/pubs/20633913.pdf>

Q-SIG line specifications are generally used for connection to Cisco IGX Switches. However, it is important to force on CRC4 mode.

2.3.10 ISDN Line ordering specifications Basic Rate(s)

For the latest information, refer to Eicon Networks documentation at <http://www.eicon.com/pubs/20633913.pdf>

If you are configuring 1 or more Basic Rates with a range of numbers to allocate to users for their incoming fax numbers you should order the following from your telecommunications provider:

- Point to Point NT2 Interface.
- If more than 1 NT2 Interface is required (eg: 4 would be required for use with Eicon's 4BRI model) then you should make sure that hunt grouping has been specified on your order to your Telco.

2.3.11 30 channel 2MB ISDN Line ordering specifications

For the latest information, refer to Eicon Networks documentation at <http://www.eicon.com/pubs/20633913.pdf>


- Point to Point NT Interface is the default for connection to public ISDN networks. Australia and other Euro ISDN compatible countries provide these services.
- If you intend to connect to your PBX refer to the previous section regarding Q-SIG. If you're not sure, contact Eicon technical support.

2.3.12 North American Primary rate Line ordering specifications Primary rate

For the latest information, refer to Eicon Networks documentation at

<http://www.eicon.com/pubs/20633913.pdf>

- If you intend to connect to your PBX refer to the previous section regarding Q-SIG. If you're not sure, contact Eicon technical support.
- The following is an extract from Eicon Network's Diva Server manual.



ENGLISH

Provisioning an ISDN PRI connection

This section explains how to order an ISDN PRI line for your Diva Server PRI adapter.

What to order

Specify the following requirements when you place your order:

- 23 B-channels + 1 D-channel
- D-channel on channel 24 (timeslot 24). Do not order NFAS (non-facility associated signaling service), which enables you to use channel 24 as a data-carrying B-channel.
- Layer 1 line code is B8ZS with ESF (Extended SuperFraming)
- Data rate of 1.544 Mbps
- 64 kbps clear channel service which ensures calls will not be routed over 56 kbps channels
- Companding type is μ -law
- A CSU is not required (Diva supplies the function of the CSU internally). However, you can connect to a CSU if present.
- The T1 interface number must be 0.
- The D-channel must be specified as the terminal endpoint identifier (TEI) 0.
- If the switch type is AT&T/Lucent, request that allocation of channels for incoming calls is in descending order, high to low (23 to 1).

Information to obtain when you order


Obtain the following information when you place your order. You will need this information to properly configure your Diva Server PRI adapter.

- The type of ISDN switch your line is connected to.
 - AT&T/Lucent 4ESS
 - AT&T/Lucent 5ESS
 - Nortel DMS-250
 - Nortel DMS-100
 - Nortel DMS-250
 - National ISDN-2 (any switch running NI-2)
 - Japan INS-1500
- Directory number assigned to the PRI line
- Line build out setting (LBO). Only if you are going to use the Diva Server's on-board CSU.

2.3.13 North American channelized T1 connection Line ordering specifications

For the latest information, refer to Eicon Networks documentation at <http://www.eicon.com/pubs/20633913.pdf>

- The following is an extract from Eicon Network's Diva Server manual.
- If you intend to connect to your PBX refer to the previous section regarding Q-SIG. If you're not sure, contact Eicon technical support.



Provisioning a channelized T1 connection (robbed-bit)

This section explains how to order a T1 line that uses robbed-bit signaling for your Diva Server PRI adapter.

What to order

Specify the following when you place your order:

- Switched T1 service for 56 kbps voice calls
- No multichannel services (switchtec 384/H0 or 1536/H11)
- Extended SuperFrame (ESF)
- B8ZS line encoding
- Wink Start E&M signaling
- DTMF dialing
- Answer supervision required for outgoing calls

Information to obtain when you order

Obtain the following information when you place your order. You will need this information to properly configure your Diva Server PRI adapter.

- The type of ISDN switch your line is connected to.
 - AT&T/Lucent 4ESS
 - AT&T/Lucent 5ESS
 - Nortel DMS-250
 - Nortel DMS-100
 - Nortel DMS-250
 - National ISDN-2 (any switch running NI-2)
 - Japan INS-1500
- Directory number assigned to the T1 line

2.4 Eicon Networks Inc Contacts

Helpful contacts for you. Refer to www.eicon.com for other regions.

The Americas

John Nielsen Vice President - Sales and Support - Americas

Eicon Networks, Inc. Plano Texas

(972) 473-4540

South Asia

Chew Weng Hock

General Manager South Asia

Eicon Networks, Inc. Malaysia

Tel +6(03)79541046

Australia

Laurence Buchanan

Director Sales & Marketing

BNS Group Eicon Technology Partner

Tel +61(2)6231-2704

3 Installation pre-requisites & considerations

This guide is designed to provide administrators and technical staff with a comprehensive set of instructions to install, deploy and manage msXfax XP within an enterprise.

3.1 Pre-requisites of your Exchange 2000/2003 Server

Your Exchange 2000/2003 mode of operation can be either Mixed mode or Native mode.

3.1.1 Domain considerations

msXfax XP can be in any domain or child domain.

It is recommended that the Windows 2000 fax server computer be a member computer in the same domain as your Exchange server.

3.1.2 Schema

- MsXfax XP does **not** extend the schema.
- Installer permissions **do not** require Schema Administration rights. Domain Admin rights is sufficient for most installations. Installation on Windows 2000 member servers only requires local administrators group permissions to install msXfax XP.

3.1.3 Exchange Server Service pack considerations

msXfax XP will operate in conjunction with an Exchange server(s) which has the following:

Exchange release	Service Pack	Microsoft Hotfixes required	Comments
2000	Service Pack 2 or Service Pack 3		A registry change is required ONLY on the bridgehead server(s) for SMTP Connector servicing configured for msXfax XP use.
2003			A registry change is required ONLY on the bridgehead server(s) for SMTP Connector servicing configured for msXfax XP use.

3.1.4 Exchange Server Registry Key addition

BNS Group reported a problem to Microsoft which is fully documented on the Microsoft web site Refer to Microsoft’s Knowledge base article Q288719.

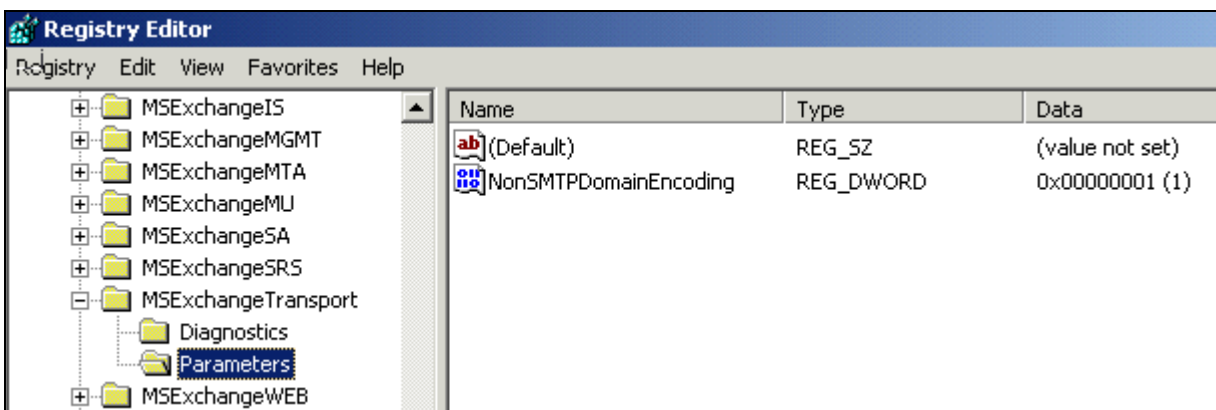
Q288719 was incorporated into Exchange 2000 Server Service Pack 2.

The registry change associated with the hotfix is not automatically set when a customer upgrades their system to Exchange 2000 SP2 or SP3. Therefore, customers must follow Microsoft’s documentation for the creation of an extra registry key.

Alternatively, you can copy the program EXCONFIG.EXE from the msXfax XP fax server software directory onto your Exchange 2000/2003 Server. It simply creates the registry values for you. You must obviously have sufficient permissions to update the registry.

If you decide to follow Microsoft’s documentation for Q288719, please note that it does not state that the “Parameters” keyword needs to be created first.

The following screen image should help you create the correct registry entry.



For your convenience, the following is an extract from Microsoft's Q288719 knowledge base article. However, please refer to Microsoft's knowledge base at all times to obtain the latest information with respect to this aspect of Microsoft Exchange 2000/2003 operations. **(Note: 30 March 2004 – Microsoft no longer had this KB article on their web site. Contact Microsoft if you wish to confirm this reference information. BNS contact Microsoft March 2004 to ask them why the KB article was missing)**

To add the `NonSMTPDomainEncoding` registry value and set it to 1:

1. Start Registry Editor (Regedt32.exe).
2. Locate and click the following key in the registry:

`HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MSExchangeTransport\Parameters`

3. On the **Edit** menu, click **Add Value**, and then add the following registry value:

Value name: `NonSMTPDomainEncoding`
Data type: `REG_DWORD`
Radix: Hexadecimal
Value data: 1

4. Quit Registry Editor.

BNS Group Tests

1. BNS tested applying registry changes to bridgehead server only with a WAN design and a LAN design. I.e: routing group connectors and a single site with multiple Exchange Servers. Both configurations only require the registry change on the bridgehead server for the msXfax XP SMTP Connector.

3.2 Pre-requisites of your fax server

All software and hardware can operate independently of your Exchange Server.

Integration with AD is achieved using Microsoft's recommended developer programming API's such as ADSI and ADO. Interaction with Exchange itself is achieved using industry standards SMTP and POP3 protocols.

3.2.1 Fax Server computer

If you use Brooktrout fax boards please make sure that adequate cooling is provided in the computer you intend to use as your fax server.

Minimum computer specifications: Note: the fax server can be a desktop style machine unless a substantial number of boards are being configured. Cooling

considerations need to be considered for certain types of boards. Typical installations using TR114+P4L boards can use a desktop style machine which reduces costs.

Please use a single CPU computer as the fax server if using Brooktrout fax boards. Eicon Diva Server and other TAPI based devices do not have that restriction.

Table 2: Fax Server computer specifications when essentially used as a dedicated computer for this purpose

Item	Minimum	Preferred	Comments
Motherboard	Brand supplier such as DELL	Intel	Major brand suppliers to ensure compatibility with PCI specifications. Capable of running Windows 2000 server. If using Brooktrout Universal PCI boards you should make sure that manufacturer specific hot swap slots are not used. Use a regular PCI slot.
CPU requirements for up to 4 fax lines	Pentium 4 2.4Ghz	Pentium 4 3.0Ghz+	msXfax XP OLE automates Microsoft Office XP and pre-processes faxes to rendered the output in advance of transmission. This requires CPU power. Customers can implement higher spec machines if required with version 6.7+ of msXfax XP.
CPU requirements for up to 16 fax lines	Single CPU Pentium 4 3.0Ghz	Single CPU Intel® Xeon™ Processor 2.4Ghz or better	Customers can implement higher spec machines if required with version 6.7+ of msXfax XP.
CPU requirements over 16 lines to 30 lines	Single Intel® Xeon™ Processor 2.4Ghz or better	Dual Intel® Xeon™ Processor 2.4Ghz or better	Eicon Diva Server only
Memory to support up to 8 fax lines	512MB		
Memory to support over 8 and up to 30 fax lines	1GB		

Your fax server computer must be compatible with Windows 2000 server software plus **either:**

1. Sufficient PCI slots to accommodate your Brooktrout fax board(s), Eicon boards or;
2. A fax modem or multi port modem configuration.

ISA board support: officially, Microsoft Windows 2000 does not support ISA boards. Brooktrout do not manufacture ISA boards. You must replace old ISA boards with PCI technology consistent with today’s computer hardware. The motherboard must be an Intel motherboard or a current model brand name such as Dell & HP.

Table 3a: Fax Server computer hardware which has been certified by BNS Group

The following list of computer hardware has been tested and internally certified by BNS Group using Eicon Diva Server Primary and basic rate boards and subjected to extensive testing.

Manufacturer	Model	CPU size	Other configuration notes
HP	Proliant DL380	Single Xeon 3.02ghz	RAID 1 dual drive 1GB ram
Dell	2600	Dual Xeon 1.8 ghz	Dual Xeon 1.8 with RAID 5 and 2G RAM. BNS also tested a single Xeon 2.4 processor without RAID and 1GB RAM.
IBM	X Series 345	Single Xeon 2.4ghz	RAID 1 dual drive, 1GB ram.

3.2.2 Fax Server software

Table 4: Fax Server software specifications

Software	Version/service packs	Mandatory or optional	Vendor/Manufacturer
Windows 2000 server	SP4	Mandatory	Microsoft Corporation
Office XP Professional	Base version only Do not apply Office XP service packs to the fax server	Mandatory	msXfax XP uses Microsoft Office for a number of tasks including: Cover sheet generation and rendering of various attachments to be sent as a Group III fax image.
msXfax XP	msXfax XP	Mandatory	BNS Group

Software	Version/service packs	Mandatory or optional	Vendor/Manufacturer
Adobe Acrobat (Full product)	5.0 or 6.0	Optional	Adobe Systems Inc. (required to support faxing of PDF attachments)

3.2.3 Brooktrout TR114 PCI series Fax Boards

MsXfax XP supports Brooktrout fax boards. Brooktrout boards are available from Brooktrout or their distributors by contacting Brooktrout <http://www.brooktrout.com>

The following list of boards are supported by msXfax XP. Please note that ISA boards are not officially supported in Windows 2000 servers.

Table 5: Fax boards supported by msXfax XP August 2002 edition (PCI boards only are supported under Windows 2000 server and this msXfax XP)

Country	Model	Comments
Australia:	TR 114 P2L/P4L TR 114 P2B/P4B	
US/Canada Analog Loopstart:	TR 114 P2L/P4L	
Worldwide:	TR 114 P2V/P4V/P8V TR 114 P8V-T1 TRNIC TR114 P2L & P4L	Check with Brooktrout for local permits
US/Canada Analogue DID:	TR 114 P2C/P4C TR 114 P2D/P4D	
Europe-CTR 21:	TR 114 P1L TR 114 P2L/P4L TR 114 P2B/P4B	
Hong Kong:	TR 114 P4L	
Japan:	TR 114 P2L/P4L TR 114 P2B/P4B	
Singapore:	TR 114 P4L	
UK:	TR 114 P2L/P4L w/UK cables	

3.2.4 Brooktrout white paper references (everything you need to know)

- Inbound Fax Routing Information (See next section for extract included with this manual)

(http://www.brooktrout.com/whitepapers/html_pages/routing_index.html)

- T1/E1 White papers index

http://www.brooktrout.com/whitepapers/html_pages/t1_wp.html

Please check with BNS Group to determine which boards are supported.

- Ordering DID Telephone Service

http://www.brooktrout.com/whitepapers/html_pages/order_did.html

- The Why and How of T1 in the LAN Fax Environment

http://www.brooktrout.com/whitepapers/html_pages/t1_white.html

- DTMF Routing using a PBX

<http://www.brooktrout.com/whitepapers/pdf/dtmf.pdf>

3.2.5 Direct InBound Fax Routing Utilizing PBX DTMF Tones with TR Series Loop-Start Boards

msXfax XP supports analogue and digital DID, ETSI ISDN BRI (DDI) and DTMF routing with PABX's.

The same msXfax XP post reception principles apply to all types of inbound routing. msXfax XP even allows different technologies to be used in the same server. msXfax XP allows the specific number of routing digits to be specified for each line.

After your Brooktrout board receives the routing information and passes it to msXfax XP, msXfax XP performs the same routine of concatenating (msXfax XP site code with routing digits), performs an ADSI search, selects the recipient's SMTP email address and submits directly to the Exchange server using SMTP protocols.

The following is the high level sequence that occurs using this technique.

- The sending fax machine dials the number for the TR114.
- PABX rings the TR114, and plays ringing tone to the sending fax machine.
- TR114 answers the call (goes off-hook).
- PABX senses this, and sends down the last few digits of the dialed number as DTMF tones (usually the last 3 or 4 digits of the phone number).
- PABX connects the sending fax machine to the TR114.
- The fax is then received.
- msXfax XP collects the DTMF digits, stores them with the received fax in the received fax queue.
- msXfax XP Messenger concatenates its <SiteCode> with the DTMF routing value, performs ADSI search on Active Directory.
- msXfax XP obtains the SMTP address(es) which match the fax routing code.
- msXfax XP constructs an SMTP message to the recipient(s).

3.2.5.1 PABX System Requirements

PABX should provide a standard loop-start line for the TR114. (Loop-start is often referred to as "POTS", for Plain Old Telephone Service.)

Be capable of assigning a sub-group of numbers to a single port. When any number within the subgroup is dialed, the call is automatically routed to the same port. Hunt grouping would be required for multiple fax server lines.

Be able to send down the dialed number, or part of the dialed number to the port as DTMF digits after the call has been answered. This is commonly called after-dialing, and is a feature provided for the PABX to communicate with other peripherals, such as voice mail.

Send the first DTMF digit no earlier than 200ms after the call has been answered by the TR114. Ideally this parameter would be programmable, or significantly longer than the 200ms required by the TR114 to allow for delays within the application.

Many systems are capable of sending down a pre-defined number of digits, and stripping off any leading digits. For example, a typical system can be programmed to send down the last 4 digits.

3.2.6 Netcomm Australia Intra series PCI analogue Boards

MsXfax XP supports Netcomm Australia Intra series boards which can be used with msXfax XP configured for TAPI support. A range of Netcomm modems has also been certified by BNS Group for use with msXfax XP.

Netcomm can be contacted via <http://www.netcomm.com.au>

Table 6: Netcomm boards supported by msXfax XP

Country	Model	Comments
Australia:	Intra-4 PCI	Outbound faxing plus channel based inbound routing. DTMF routing not supported.

3.2.7 Eicon Networks PCI ISDN Boards

MsXfax XP supports Eicon Networks ISDN boards using CAPI.

For the latest information, refer to Eicon Networks web site or contact Eicon Networks directly.

Single Basic Rate Eicon Diva Server board equivalent to 2 fax lines

http://www.eicon.com/worldwide/products/MediaGateways/disvbri.htm?orderingInfo=1&en_prod=Diva_Server_BRI_2M

Code(s) - Product Name(s)

306-162 - Diva Server BRI-2M 2.0 - International

306-163 - Diva Server BRI-2M 2.0 - Germany

306-164 - Diva Server BRI-2M 2.0 - UK

306-165 - Diva Server BRI-2M 2.0 with NT1 - International

306-192 - Diva Server BRI-2M 2.0 - Australia*

4 Basic Rate Eicon Diva Server board equivalent to 8 fax lines

http://www.eicon.com/worldwide/products/MediaGateways/disv4bri.htm?orderingInfo=1&en_prod=Diva_Server_4BRI

Code(s) - Product Name(s)

305-486 - Diva Server 4BRI-8M 2.0 - International
 305-487 - Diva Server 4BRI-8M 2.0 - German
 306-193 - Diva Server 4BRI-8M 2.0 - Australia*

E1 Primary Rate Interfaces

The Diva Server primary rate boards come in different configurations namely:

Diva Server PRI-4M => 2 concurrent fax connections

Diva Server PRI-8M => 6 concurrent fax connections

Diva Server PRI-30M => 30 concurrent fax connections

FAQ: Why would want a 6 line configuration as a Primary Rate?

Answer: you may want to connect to an ISDN service offering a limited number of channels. Check with Eicon directly to confirm suitability for connection.

http://www.eicon.com/worldwide/products/MediaGateways/disvpri.htm?orderingInfo=1&en_prod=Diva_Server_PRI

Code(s) - Product Name(s)

305-470 - Diva Server PRI-4M - International
 305-495 - Diva Server PRI-4M - German
 306-183 - Diva Server PRI-4M - Australia

305-471 - Diva Server PRI-8M - International
 305-490 - Diva Server PRI-8M - German
 306-184 - Diva Server PRI-8M - Australia

305-982 - Diva Server PRI-30M - International
 305-491 - Diva Server PRI-30M - German
 306-185 - Diva Server PRI-30M - Australia

T1 Primary Rate Interfaces

http://www.eicon.com/worldwide/products/MediaGateways/disvt1pri.htm?orderingInfo=1&en_prod=Diva_Server_T1_PRI_24M

Code(s) - Product Name(s)

305-473 - Diva Server T1/PRI-4M (2 concurrent fax connections)
 305-474 - Diva Server T1/PRI-8M (6 concurrent fax connections)
 305-981 - Diva Server T1/PRI-24M (24 concurrent fax connections)

3.3 Inter-operability with other applications

3.3.1 Finance One from Technology One

Finance One can send SMTP email with msXfax XP freeform addressing (FAX=) in the memo body. Finance One can produce PDF files (V4) and attach them to the SMTP email.

Finance One runs from a user's workstation sending the fax over the MAPI session of the user to Microsoft Exchange.

Installation of Adobe Acrobat full product version 5.x or 6.x on the fax server is required.

Technology One can be reached via www.technnologyonecorp.com

3.3.2 SAP Connectivity

The following information is provided for your convenience and is available from <http://www.sapgenie.com/interfaces/exchange.htm>

The new version of the SAP Exchange Connector (version 2.0) connects the Microsoft Exchange 2000 Server to the SAP system. This enables SAP applications and SAP users to send and receive documents to and from an Exchange mailbox. Documents can also be sent and received in the SAP system using other connectors that are connected to the Exchange server, for example, over the Internet or as a fax. Attachment files (for example, SAP documents, Microsoft Office documents, fax bitmaps) can be transmitted in both directions.

Note that SAP Exchange Connector 2.0 is compatible only with Microsoft Exchange 2000 Server, and not with any earlier versions. (Both native mode and mixed mode are possible for the interaction between Windows and Exchange.)

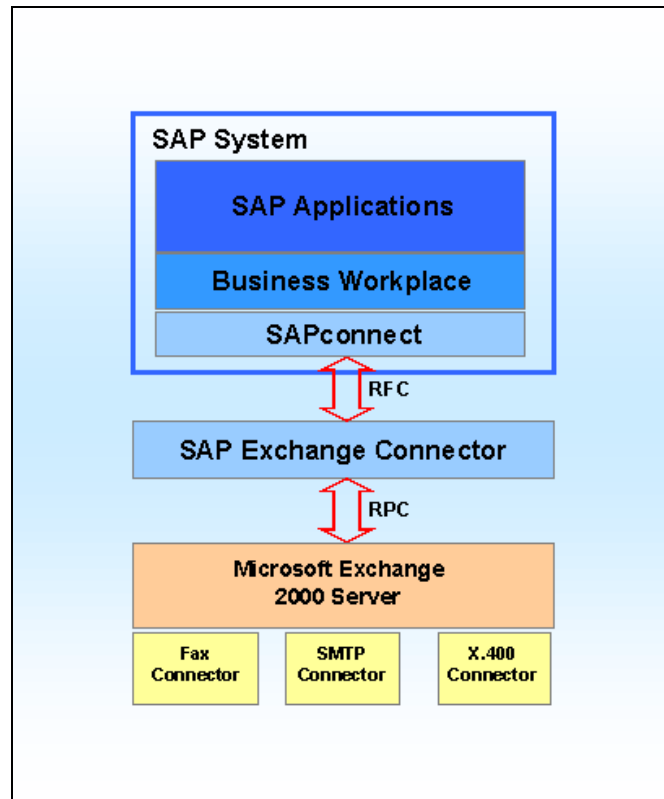
Recommendations SXC version 2.01 with Patch level 2.04

The SXC need Outlook 2000 or Outlook XP with Sp2 on the E2K server where the connector will be installed.

The SAP Exchange Connector controls message receipt, message conversion and message transport between Exchange and [SAPconnect](#), the SAP system's communications interface. This mean that connectors installed on the Exchange server (gateways) can also be used from the SAP system. Examples include:

- SMTP Connector
- TCP X.400 Connector

- X25 X.400 Connector
- Third-party fax connectors for Exchange



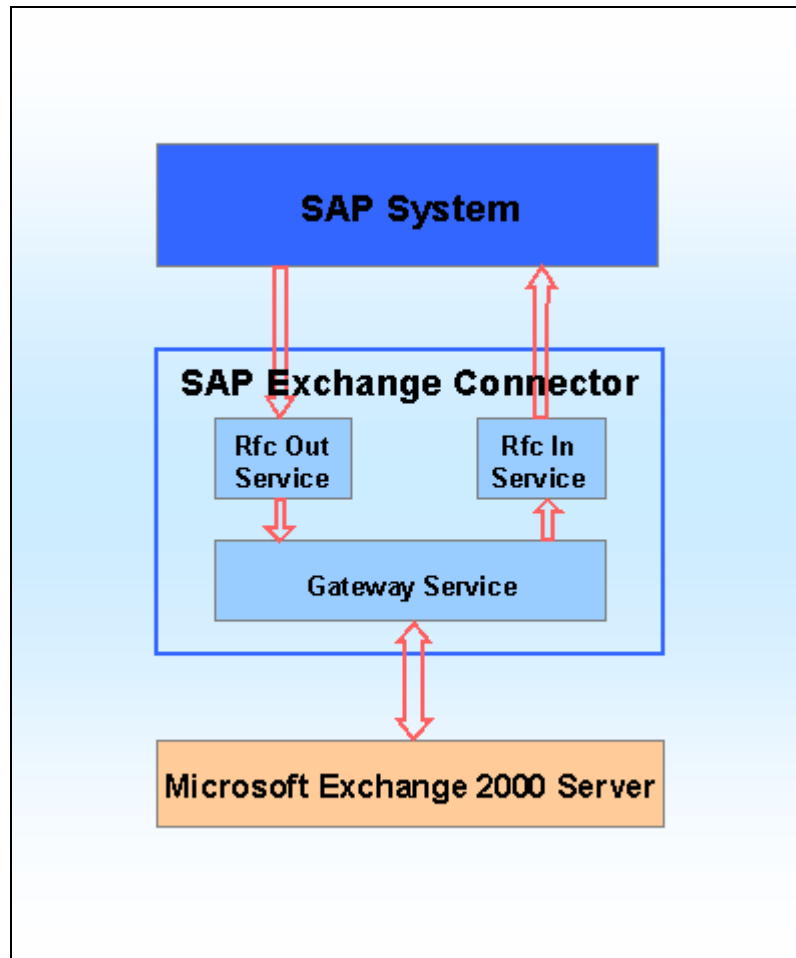
msXfax XP uses Microsoft's SMTP Connector. Therefore, as Microsoft implement newer versions of Exchange server, msXfax XP Connectivity with Exchange server will be automatically provided by virtue of msXfax XP architecture supporting SMTP.

The SAP Exchange Connector exchanges messages with the SAP communications component SAPconnect by SAP Remote Function Call (RFC). The RFC used here is based on the transport protocol TCP/IP.

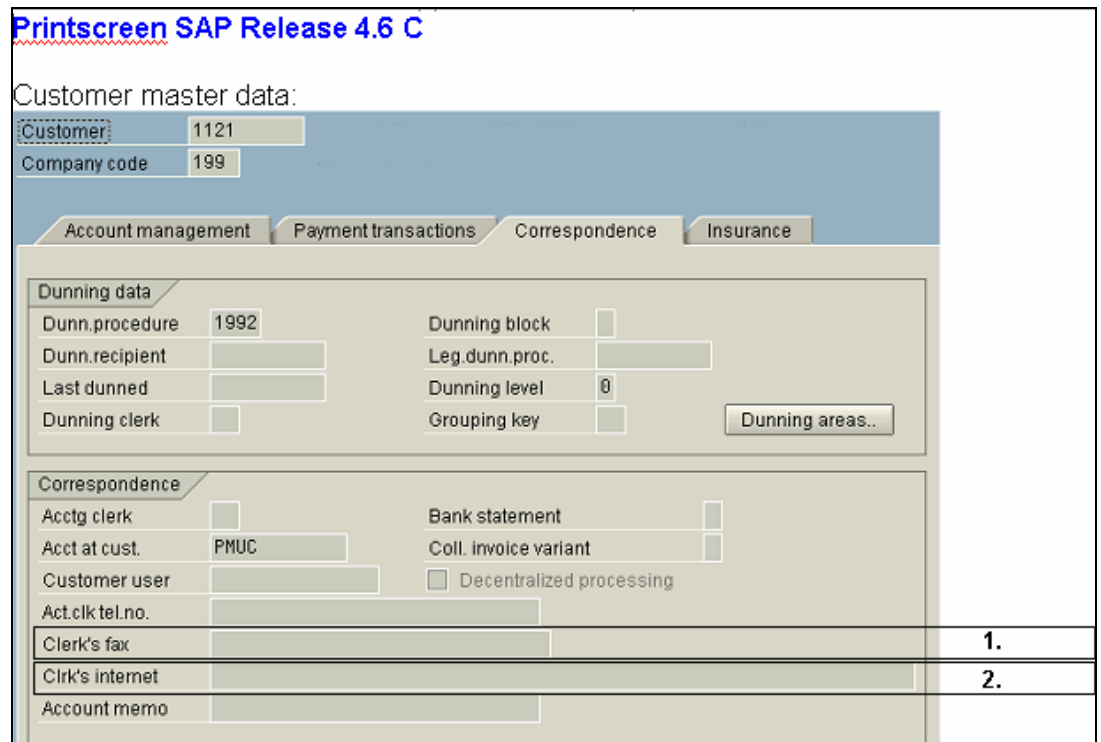
The communication between the SAP Exchange Connector and Exchange takes place using RPC mechanisms. The RPCs can be transported locally or using the LAN protocols TCP/IP, NetBEUI, IPX/SPX, or Banyan Vines.

The SAP Exchange Connector is made up of three Microsoft Windows 2000 system services. These services can be installed either on an Exchange server or, to distribute the load, on a separate Microsoft Windows 2000 computer.

The RFC Out service takes messages from the SAP system and transfers them via a queue to the Gateway service, which then forwards them to the Exchange MTA. Incoming messages flow via the Gateway service and the RFC In service, which then forwards messages to the SAP system.



3.3.2.1 Which field to use in SAP?



Field number 2 (Email Internet address) is the field you should use with msXfax XP Domain addressing.

For example:

+41-61-2261111@Company.fax

Company.fax is address space assigned to the SMTP Connector in Exchange Server which routes messages to msXfax XP's in-built smart host called msXfax XP Routing Engine.

Field 1 is designed for other fax connectors. Do not use field 1 with msXfax XP. Use field 2 as described above.

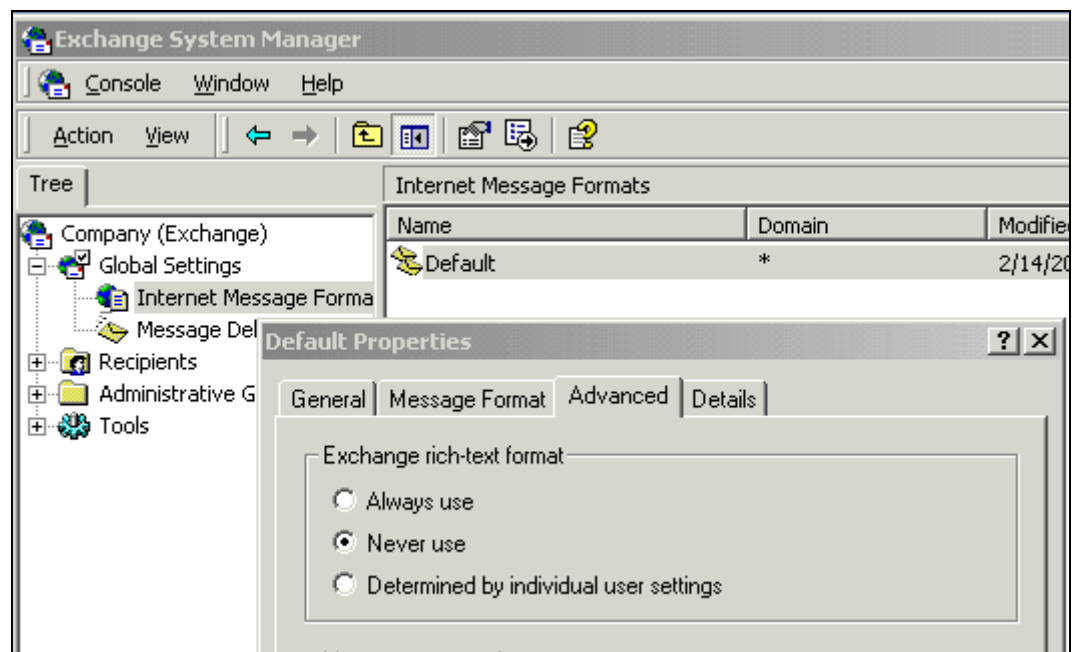
4 Configuring Exchange Server

4.1 Exchange 2000 SP2 minimum & Registry change

- If your organization has Exchange 2000 you must apply Service Pack 2 or Service Pack 3 of Exchange 2000 before proceeding. Exchange 2003 Server is supported. Exchange 2003 SP1 (beta) has been tested January through March 2004 – **it also requires the registry change.**
- **You must apply a Microsoft Registry change ONLY to the bridgehead server(s) assigned to the Microsoft SMTP Connector configured for use by msXfax XP** (Refer to section 3 for detailed information on this pre-requisite). After the registry change you must schedule a restart of your Exchange Services.

4.2 Exchange Settings

- Login as a full Exchange Administrator.
- Expand Global Settings
- Right click on Default Message Format
- Select Properties



- Select the Advanced tab.

- Select the “Never use” radio button.

A note about the “Never use” option: for msXfax XP to operate correctly, this global setting must be set to never use. Exchange Rich Text (also known as Outlook Rich Text format) is a Microsoft standard which was widely used prior to HTML becoming the main standard for delivery of rich email messages between organizations and individuals over the Internet.

Outlook Rich Text is the default setting for Outlook 2000 whereas HTML is the default setting in Outlook 2002 (Office XP).

To accommodate backward compatibility for a ‘standard installation’ of Exchange 2000, Microsoft made the default Internet Message Format – Advanced tab setting = “Determined by individual user settings”. Clearly, this would allow organizations with Outlook 2000 on the desktop to implement Exchange 2000 server without any direct impact on existing desktops.

Organizations that also rolled out Outlook 2002 at the same time as their Exchange 2000 implementation would equally be satisfied with a standard installation allowing both Outlook 2000 and Outlook 2002 user settings to be different but not affected by a global default on Exchange 2000 server. **Most organizations today do not use Exchange/Outlook Rich Text because Internet based recipients often complain of WINMAIL.DAT (Outlook/Exchange Rich Text Files) appearing as attachments in their emails.**

4.3 Configure Exchange SMTP Connector

In this section you’ll configure an SMTP Connector for use with msXfax XP. The address space associated with this connector is “Fax” address space to support Outlook Contact Business Fax Addresses. When using the Outlook rich client (also referred to as the MAPI client), whenever a user adds a user into their local contacts or a Contacts public folder, Outlook automatically creates an address entry in the Outlook address book with a FAX address space.

In addition to supporting Outlook contact Fax addresses, msXfax XP also supports email domain addressing. For the purposes of this documentation we will refer to this as “msXfax XP Domain Addressing”.

Please note: if you have previously installed other fax products on your system you must make sure that:

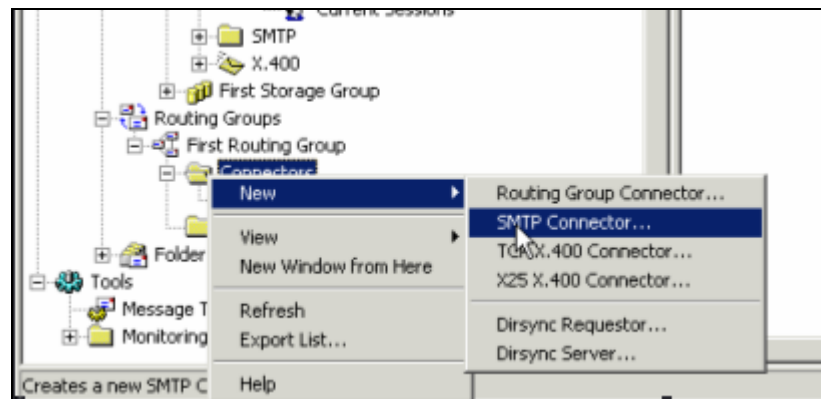
- a) the removal of that software actually removes FAX addressing information and;
- b) you should not attempt to run multiple fax products on the one server. This typically happens in test labs. If you are testing various products in your lab, please make sure that you install msXfax XP on a clean Exchange network.

Fax Connector: A standard Microsoft SMTP Connector is required

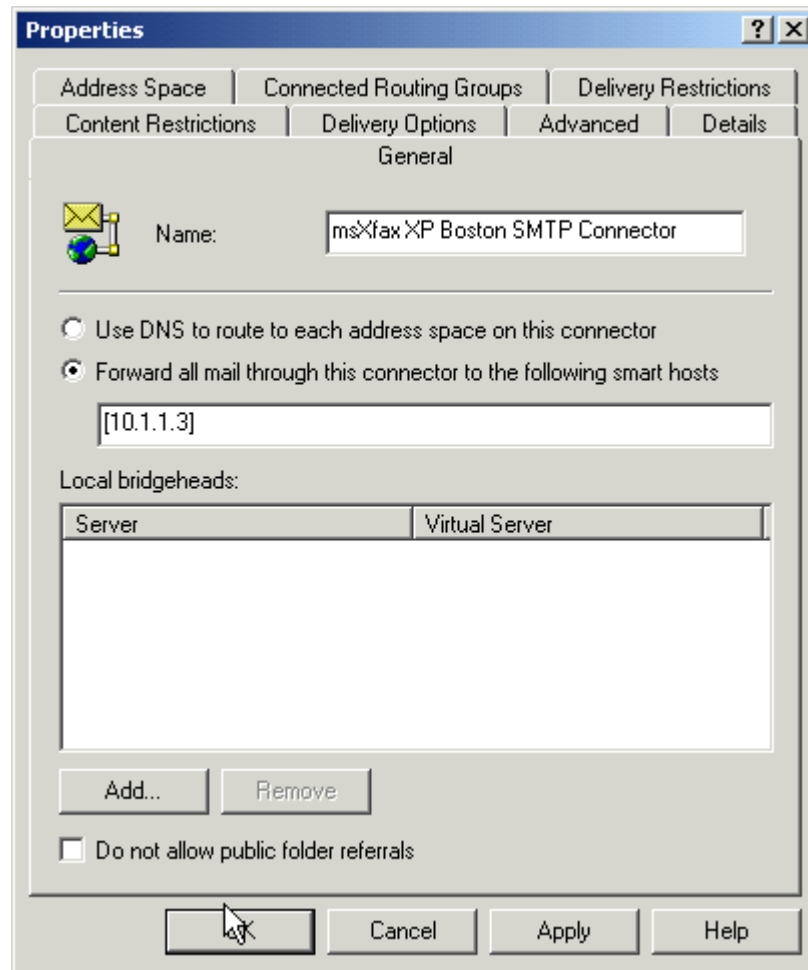
An SMTP Connector needs to be set up for the Fax Address Space on your Exchange Server. Open Exchange System Manager to begin.

This SMTP connector communicates with the msXfax XP Smart Host.

- The IP Address of your msXfax XP Windows 2000 fax server is required for the configuration of the Exchange SMTP Connector. (The IP Address was set up when you installed and configured Windows 2000 server to be used as your msXfax Fax Server. In our examples it is 10.1.1.3)



- Right Click the **Connectors folder** and choose New Connector, SMTP Connector



- On the General properties page, Configure the connector to forward all mail to the Smart Host which is the IP address of your msXfax XP Windows 2000 computer. Shown above as [10.1.1.3].

Note: for large Exchange 2000 networks that require fax server redundancy:

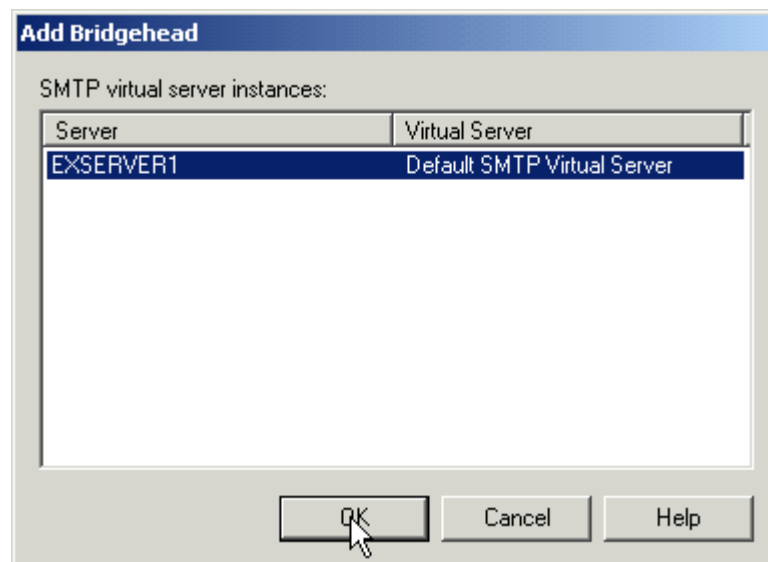
Additional msXfax XP servers can be set up on different IP addresses all serviced from the one SMTP connector. The value in the smart host field of your Exchange SMTP Connector would be for example:

[10.1.1.3];[10.1.1.4]

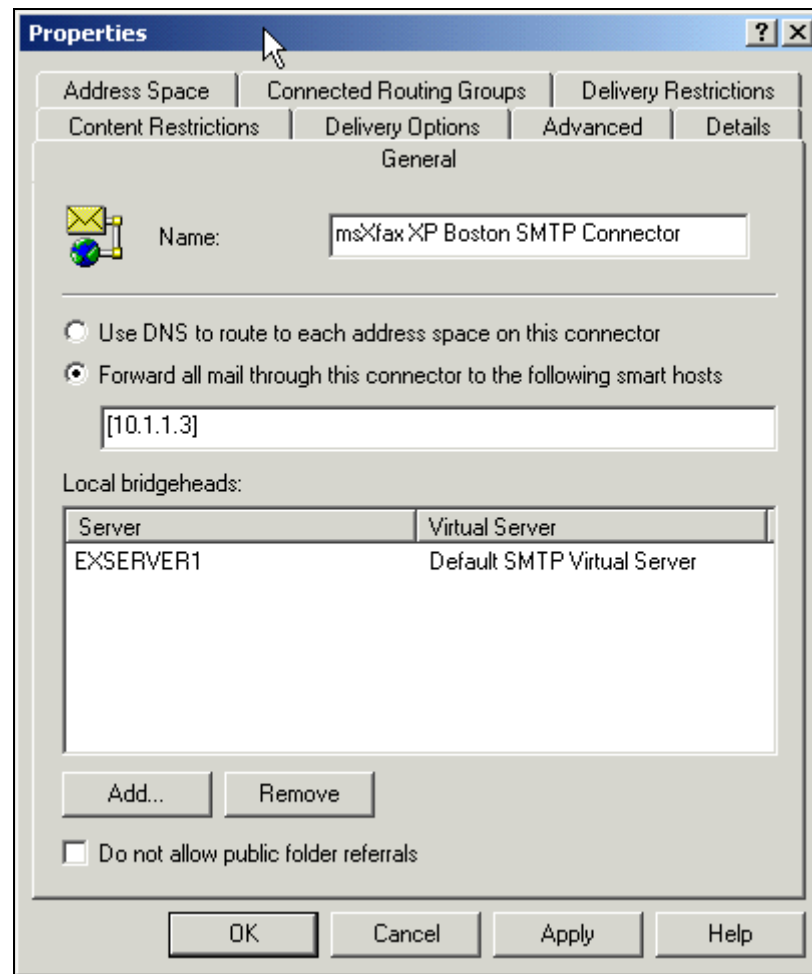
Exchange 2000 will attempt to deliver all outbound fax requests to 10.1.1.3. If it is unavailable, Exchange will attempt to deliver to another msXfax XP fax server at IP address 10.1.1.4. Additional msXfax XP fax servers can be added offering even more redundancy and meshing. This Exchange server feature was introduced with SP2.

Technical note: BNS Group tested Microsoft's implementation of failover to other smart hosts (Exchange 2000 SP2) and found that if Exchange could not contact the first smart host it would correctly rollover to the next smart host. However, Exchange does not attempt to re-establish connections with the first smart host ever again. The resolution is to stop and start the SMTP virtual server. Please fix this Microsoft.

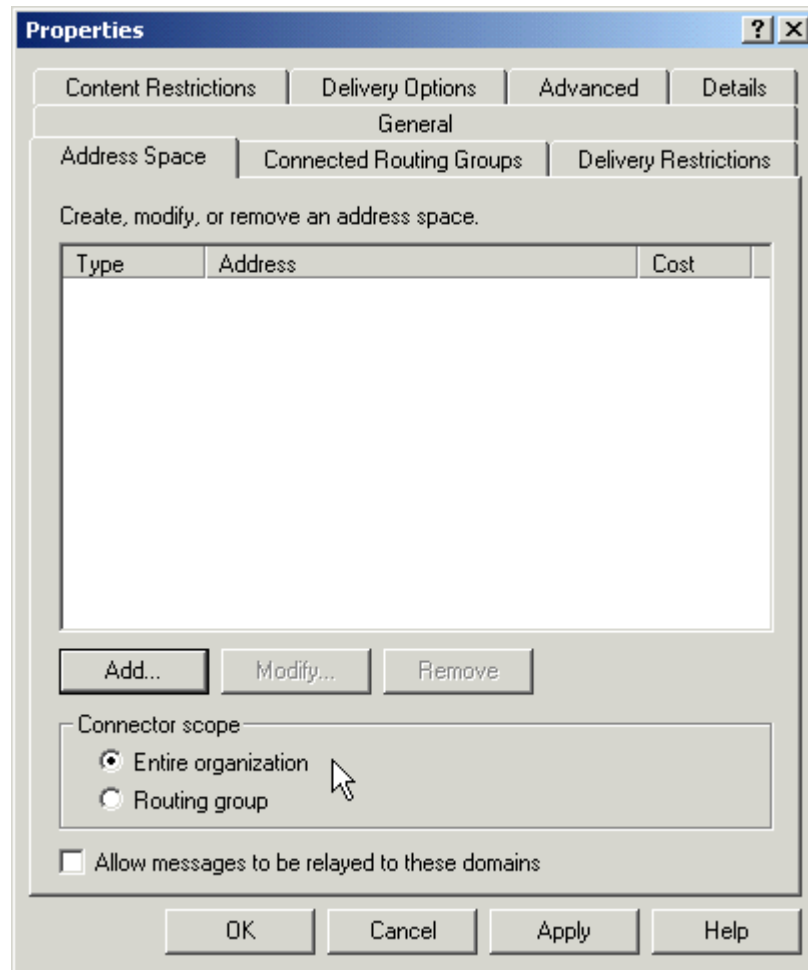
- Add a local Bridgehead Server by clicking the Add button on the Bridgehead Server section, use the local Exchange Server



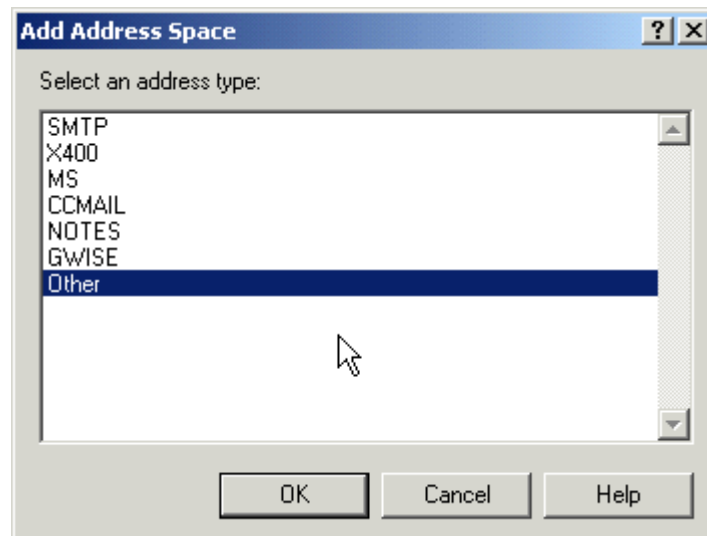
- The General Properties should look as follows:



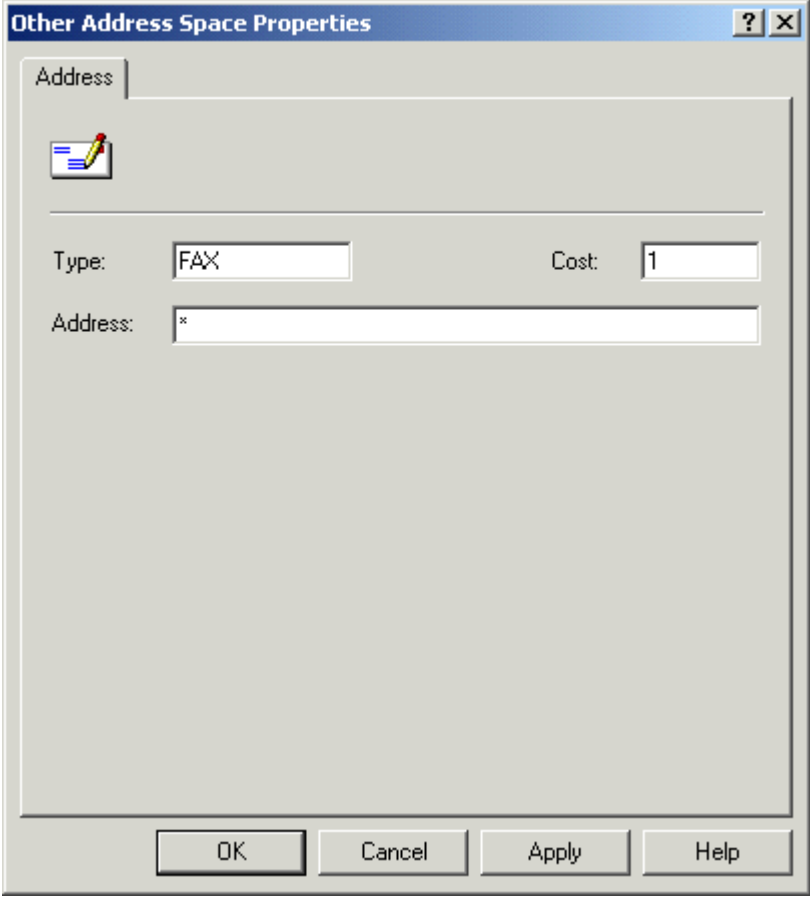
- Click on the Address Space property tab.



- Select Add.



- Select Other, select OK.



Other Address Space Properties

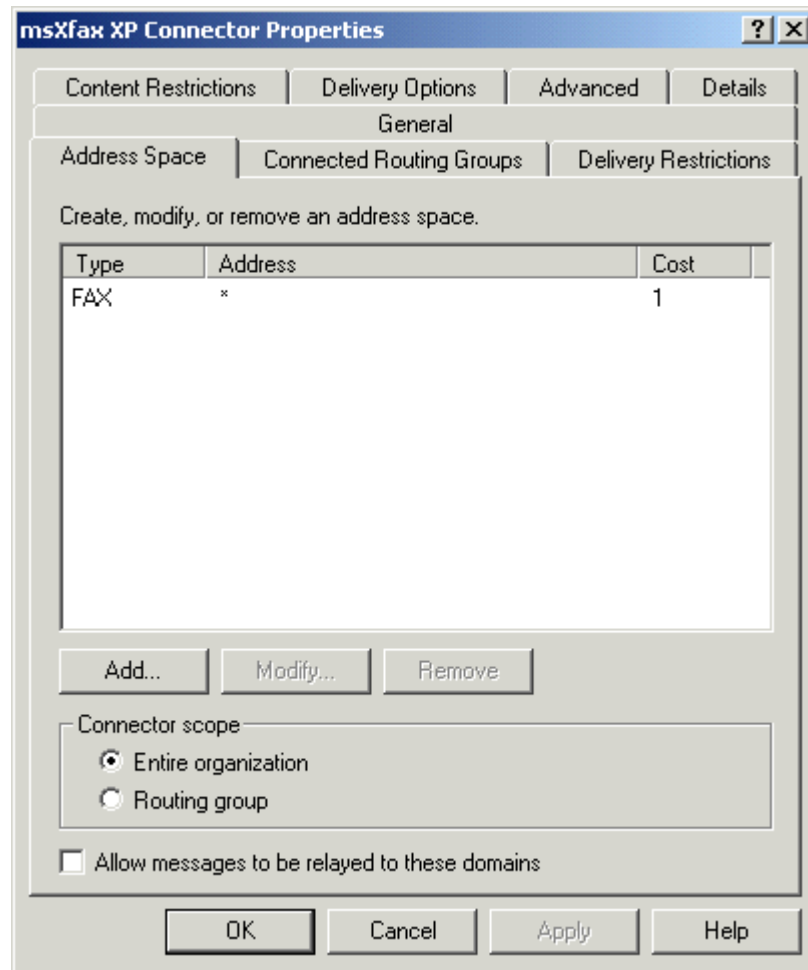
Address

Type: FAX Cost: 1

Address: *

OK Cancel Apply Help

- Add the following address space
 - Select Address Type **Other**
 - Type into the Address Space box **FAX**
 - Cost of **1**
 - Address = * (Asterisk)



Connector Scope: The Scope should be set to Entire Organization if this is the only fax server in your organization. If you wish to limit the use of this fax server to this Routing Group (a routing group is generally a very well connected set of Exchange servers analogous to an Exchange Site in Exchange 5.5 terminology). If you have an enterprise network, your design will most likely set the connector scope to the local Routing Group and deploy additional msXfax XP fax servers to other routing groups to localize fax capabilities.

The following recommendations will assist in larger scale deployments.

1. Limit the scope of the FAX Address space on the msXfax XP SMTP connector to the Routing Group.

2. Create separate msXfax mailbox accounts using a prefix such as the site name eg: msXfax-xp-newyork, msXfax-xp-london, or conversely London-msXfax-xp etc

4.3.1 Adding msXfax XP domain addressing

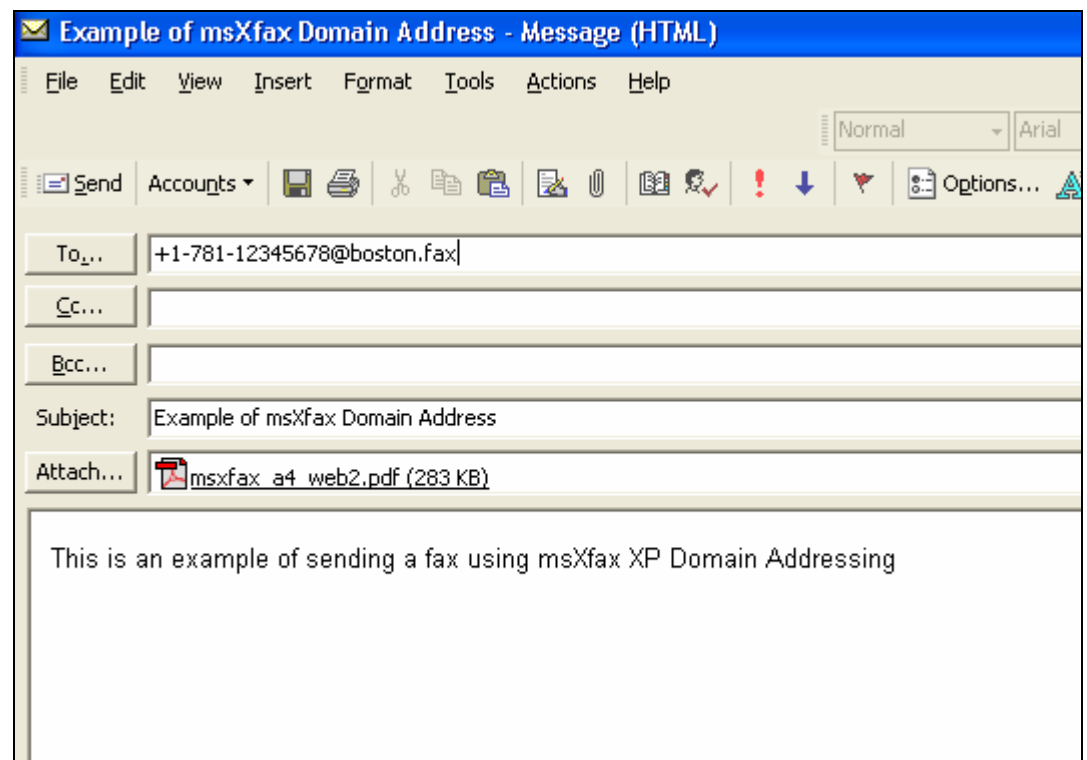
To allow users to send faxes from Outlook MAPI client or Outlook Web Access (OWA) the following is extremely useful and recommended.

Customers with Digital Senders (network based scanners) such as Hewlett Packards range can use the Digital Senders interface to send faxes via Exchange 2000 and onto msXfax XP for processing. Sender details are still validated in Active Directory.

Customers with SAP should also implement msXfax XP domain addressing.

Users can use Outlook MAPI client or OWA can simply address their faxes just like an email.

For example

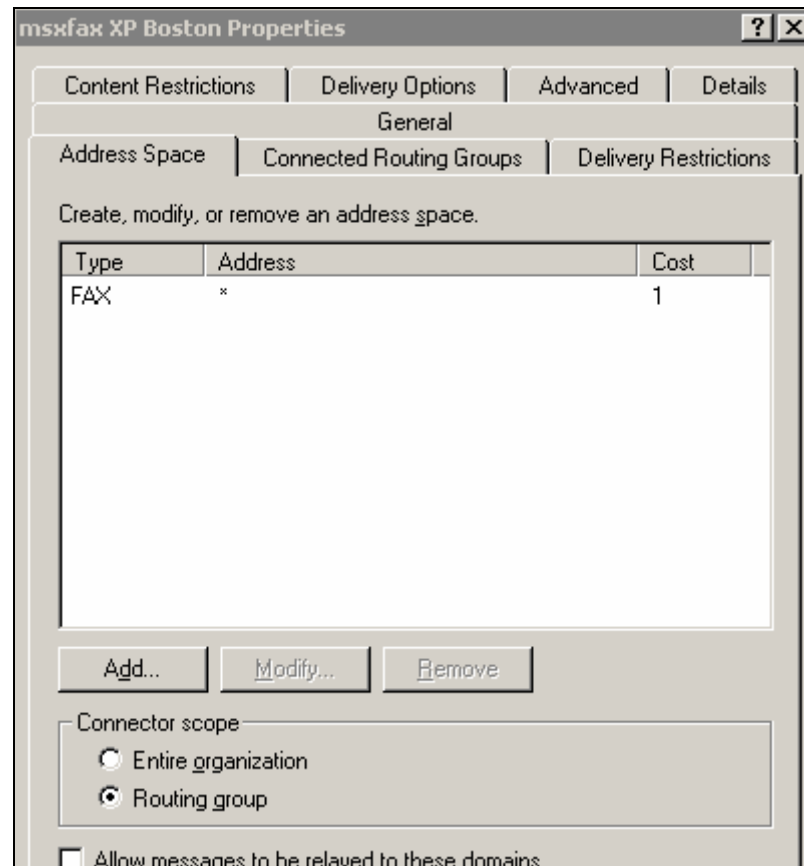


Example for a USA fax number +1-781-12345678

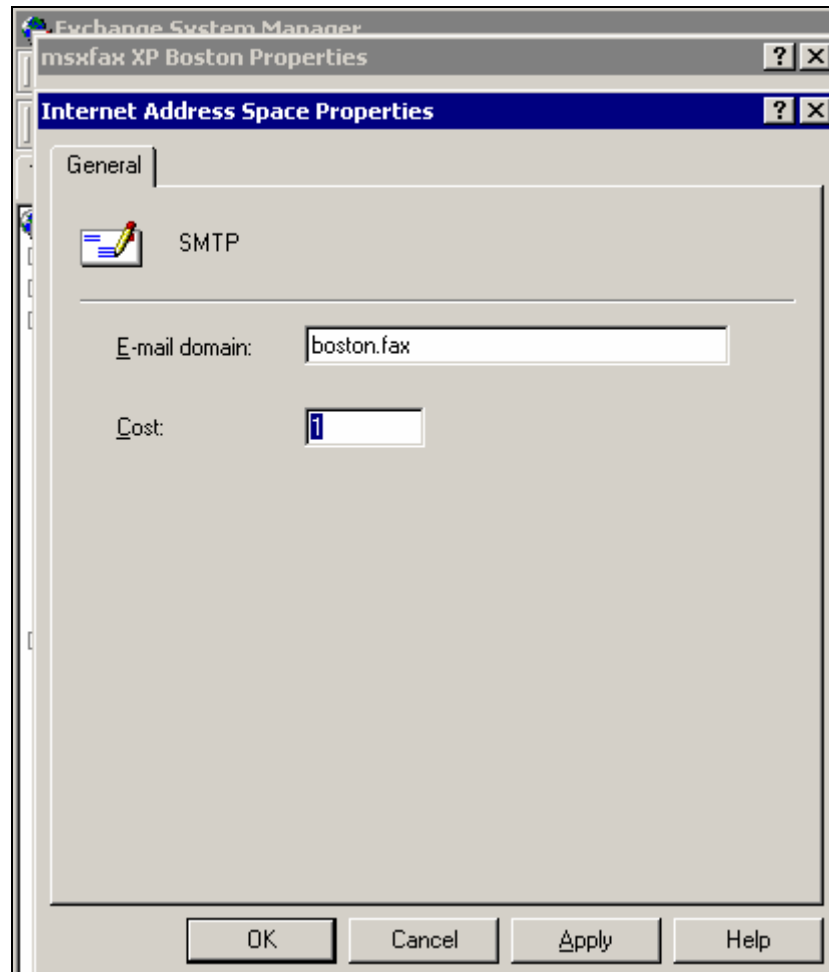
Country with no area code +852- -12345678

No spaces between the dash symbols in the case of +852

To add the address space for msXfax Domain addressing the following example shows how users in your Boston Site will be able to send faxes to number@boston.fax

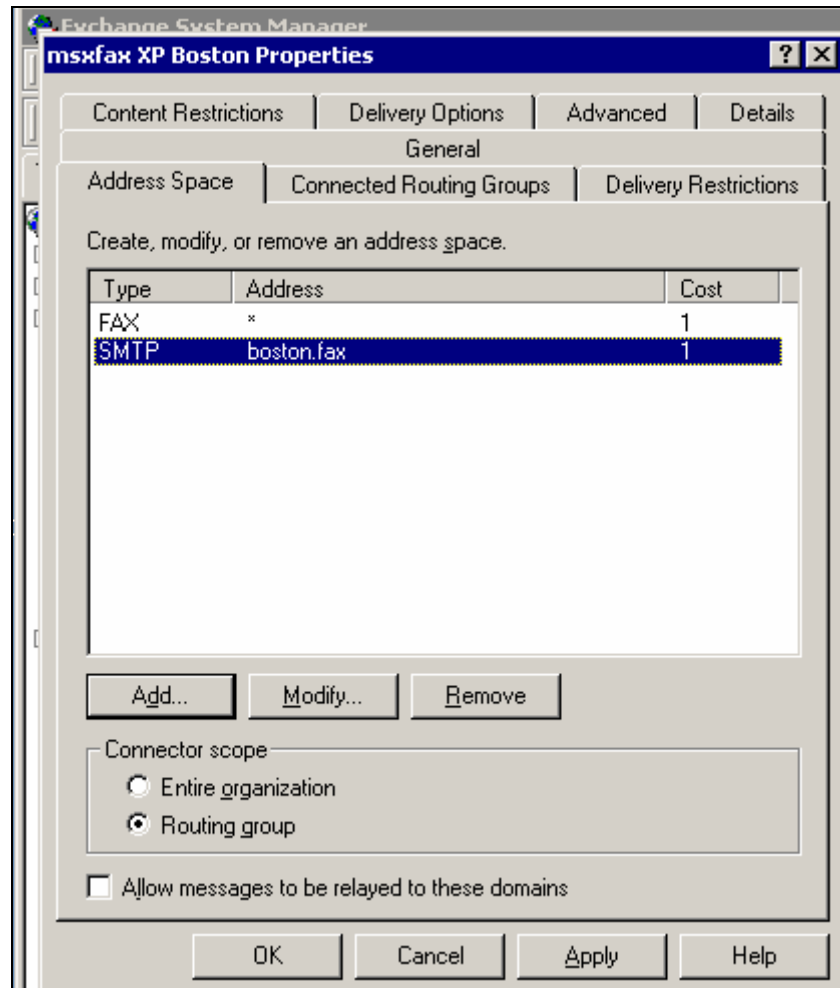


- Reselect the address space for the Connector. In this case we have shown the msXfax XP Boston SMTP Connector
- Click Add
- Select SMTP
- Supply the address space relevant to your site/organization



Boston.fax is only valid within your Exchange network thereby providing added security for your enterprise fax network. By limiting the msXfax XP SMTP Connector scope to a routing group, effectively segments your design. This allows the local msXfax XP fax server to process ALL messages within the routing group.

This is important from a design perspective because localized coversheets and language considerations are used by msXfax XP to render the fax.



Your msXfax XP SMTP Connector should now look similar to the one above except that Boston.fax would be replaced by something appropriate to your site name.

- It is recommended that you limit the scope to the Routing Group.
- Click OK.

4.3.2 Single Routing Group design over a WAN

If your Exchange 2000/2003 network has only 1 routing group with a wide geographically dispersed set of Exchange Servers, we recommend the following by way of example:

In this example we have a simple scenario: Company.com has 2 locations namely: Boston and Los Angeles (LA). A high speed VPN is provided between the sites. The customer's Exchange Design architect decided to create 1 Administrative Group in Exchange and 1 Routing Group in Exchange.

In this case the customer wants to implement a fax server in Boston and a Fax Server in LA. They want users in each location to send local faxes via the LA Server and take advantage of least cost routing within the network.

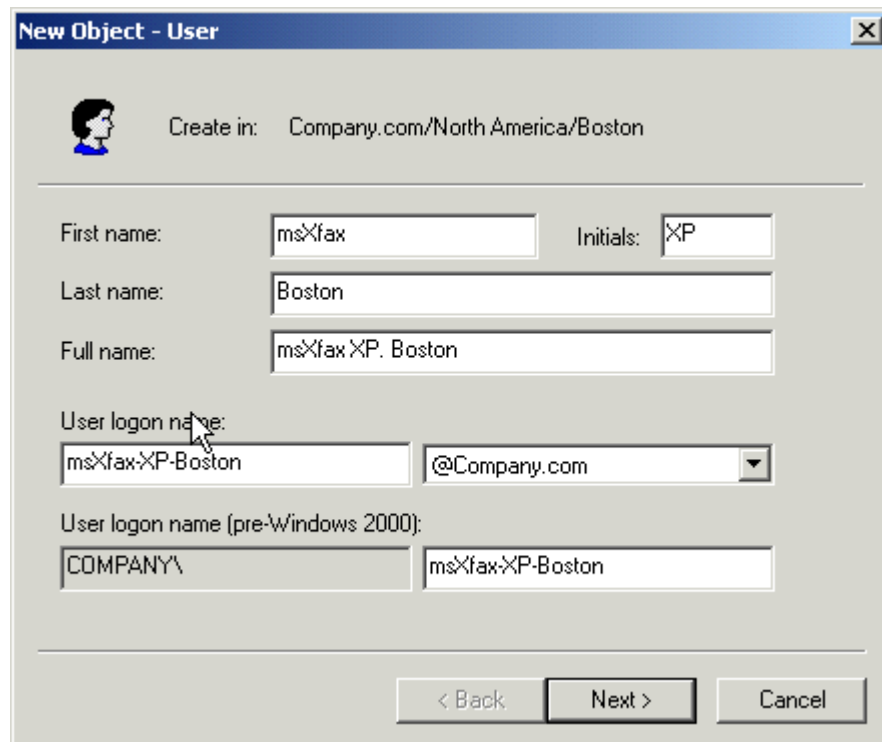
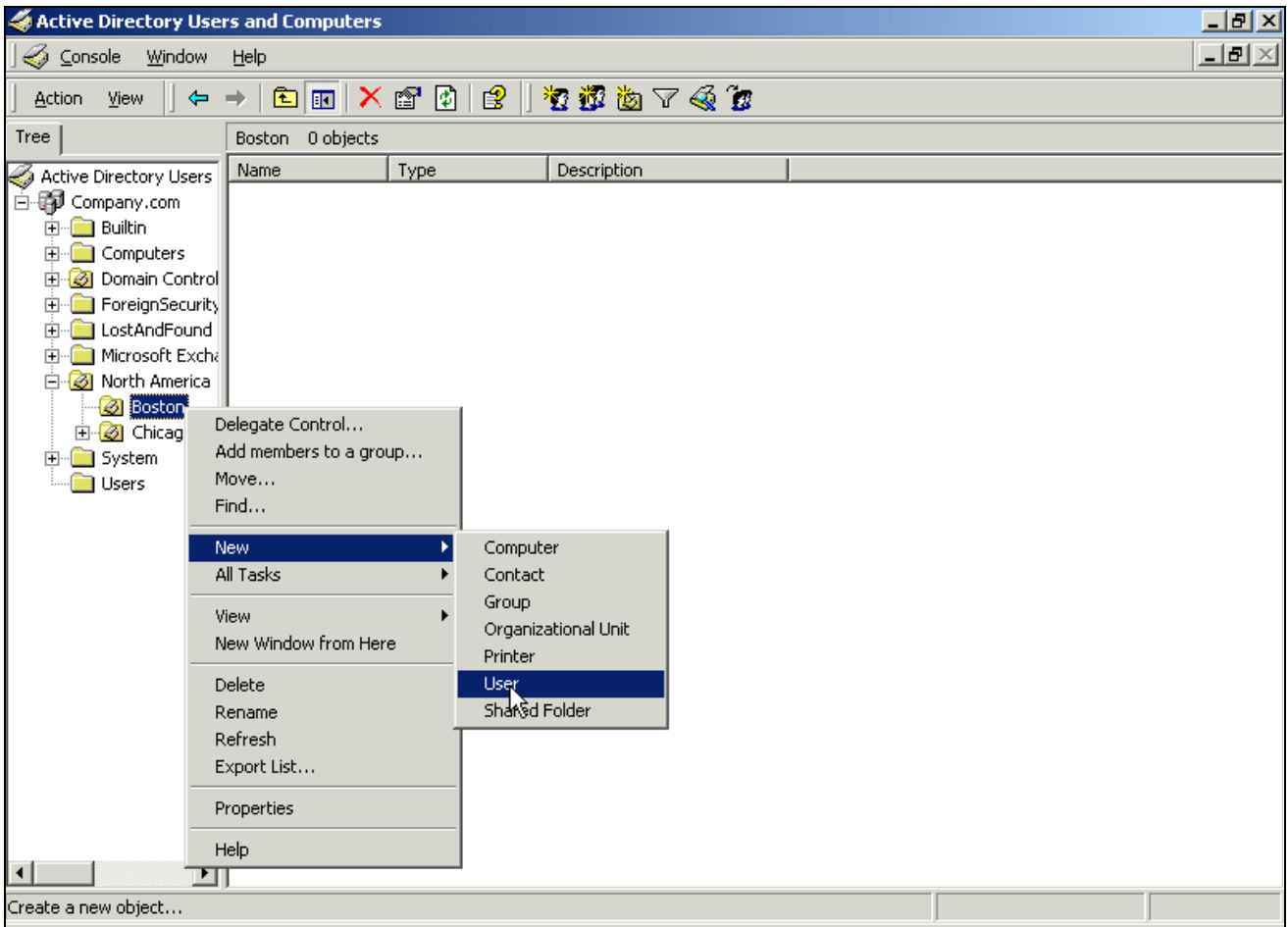
1. Install fax servers in the physical locations.
2. Create an SMTP Connector called msXfax XP LA

3. Add FAX address space
4. Add LA.FAX to the msXfax XP LA Connector.
5. Enter the IP address of the fax server in msXfax XP LA Connector.
6. This will allow users in LA to send their faxes to [number@la.fax](#) it will also capture faxes sent using Outlook Contacts.
7. Create an SMTP Connector called msXfax XP Boston
8. Add Fax address space
9. Add BOSTON.FAX to the msXfax XP Boston Connector.
10. Enter the IP address of the fax server in msXfax XP Boston Connector.
11. This will allow users in Boston to send their faxes to [number@boston.fax](#) it will also capture faxes sent using Outlook Contacts.

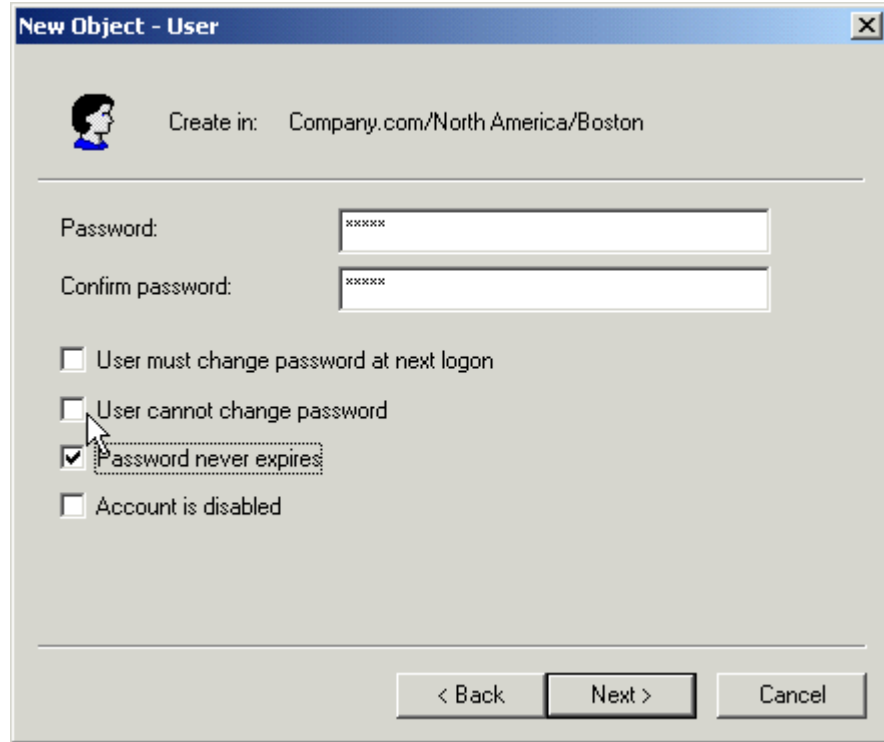
4.4 Adding an account in Active Directory for msXfax XP

From your Exchange 2000/2003 server, open Active Directory Users and Computers snap in.

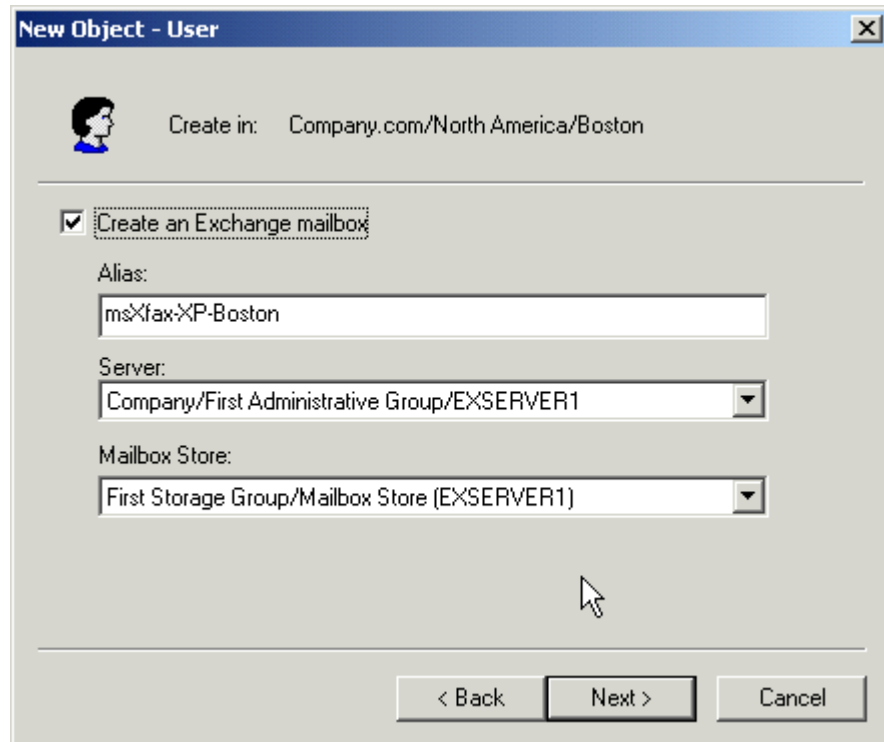
- Select View, choose Advanced View. This will allow you to select the options required in this section.
- Create a user for msXfax XP and create an Exchange Mailbox for this account on this Exchange Server.



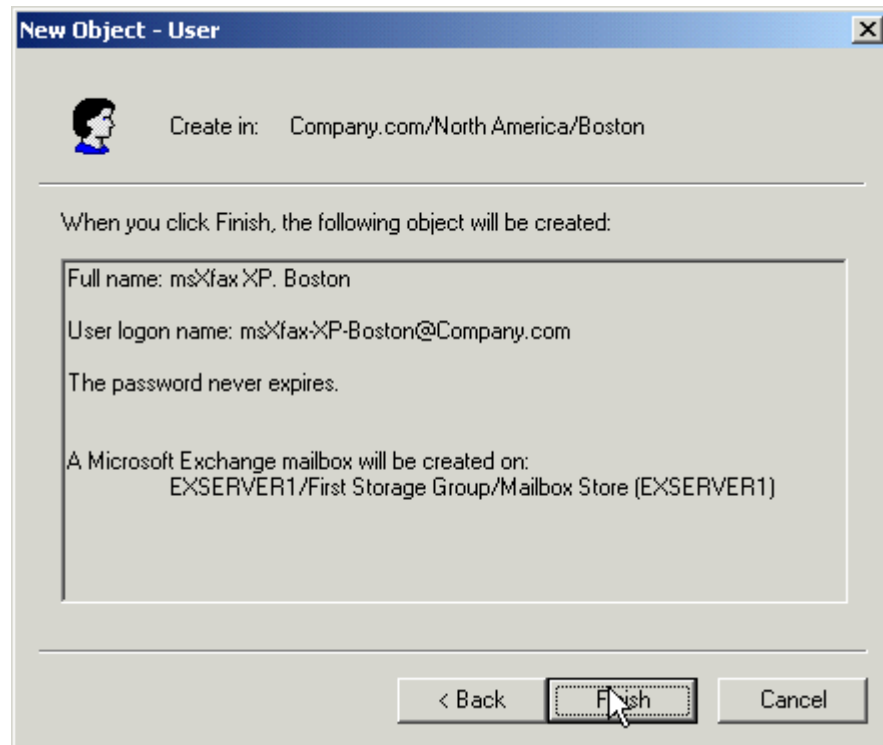
- Customers with more than one location should configure the account name with the site name/location included. The example above shows how Boston can be included in the name and User logon name to allow multiple msXfax XP servers to co-exist within the enterprise.
- Select Next.



- Ensure the password does not have to be change, and never expires



- Select the check box to Create an Exchange mailbox. Next...



- Select Finish

The screenshot shows the 'msXfax XP. Boston Properties' dialog box. The 'General' tab is active. The fields are filled with the following information:

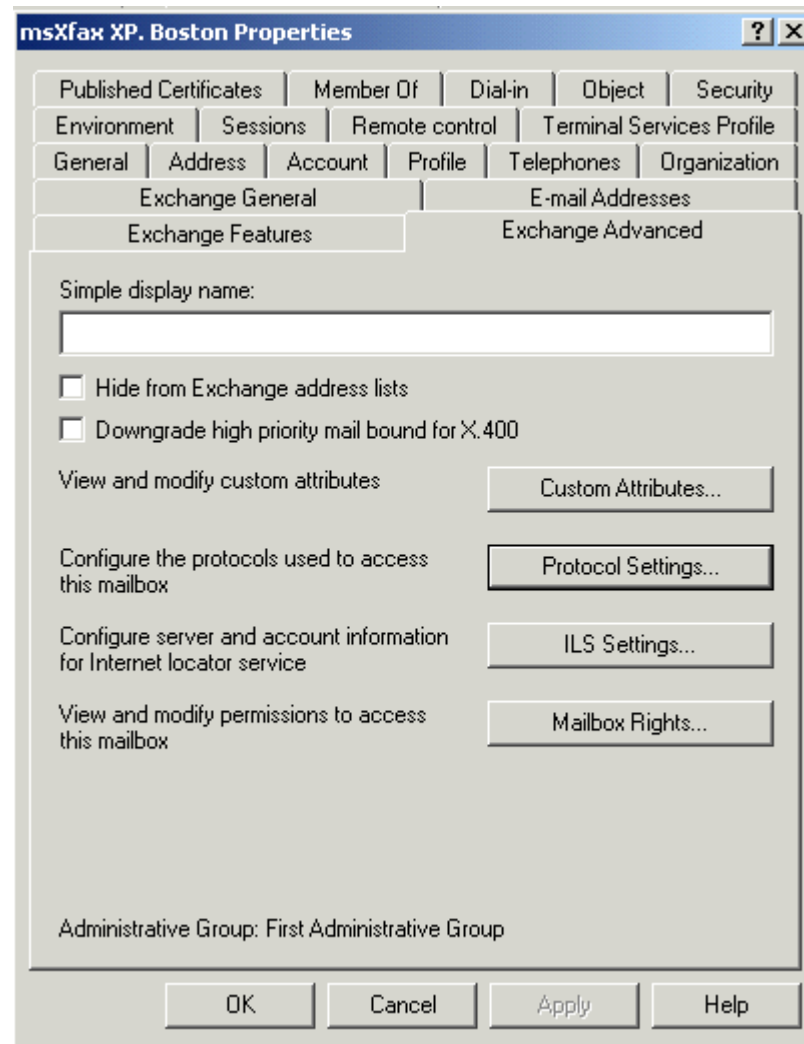
- First name: msXfax
- Initials: XP
- Last name: Boston
- Display name: msXfax XP. Boston
- Description: msXfax XP Boston service
- Office: Boston
- Telephone number: (empty)
- E-mail: msXfax-XP-Boston@Company.com
- Web page: (empty)

Buttons at the bottom: OK, Cancel, Apply, Help.

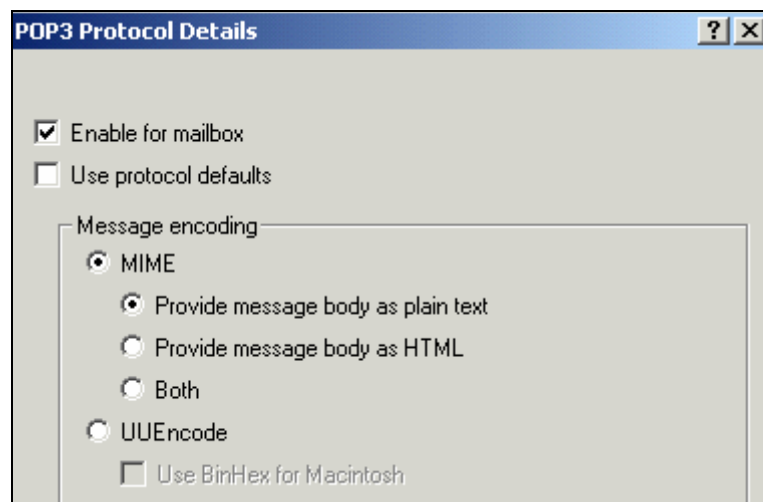
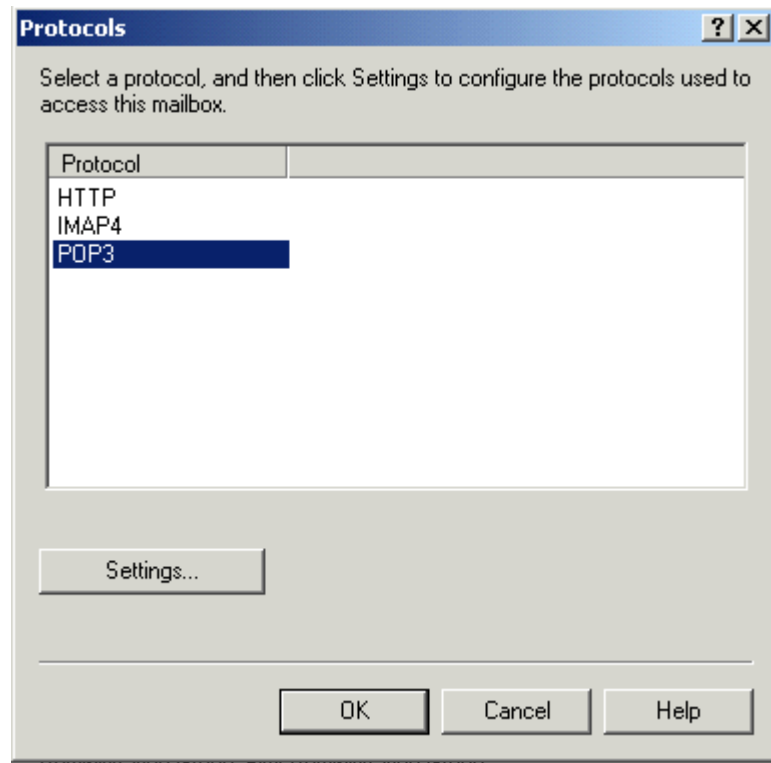
- Complete other details as required.

Permissions for this user account are the same as a normal Exchange user. Eg: membership of built-in security group "Domain users"

- Administrators can hide this user from the global address list if required.
- Set POP3 protocol for the msXfax XP account should be set as follows:



Note: Windows 2003 Active Directory has Protocol Settings listed under Exchange Features



- Select "Provide message body as plain text"
- Click OK to save the settings.

4.4.1 Customers configuring more than 1 fax server in a site/connector

The following configuration notes will assist customers configuring 2 or more msXfax XP servers in an Exchange Server location.

A second msXfax XP user object is required similar to the first one but with a different login account name and other details. The following example will show an example of a second msXfax XP Exchange user account servicing the second fax server.

The screenshot shows the Active Directory console for the Boston site. The left pane shows the tree structure with 'Boston' selected under 'North America'. The right pane displays a table of 5 objects:

Name	T...	E-Mail Address	Description
Boston Administrator	User	boston-admin@Compa...	msXfax XP Boston service
Boston Help Desk	User	Boston-help@Compan...	msXfax XP Boston service
msXfax XP, Boston	User	msXfax-xp-Boston@C...	msXfax XP Boston service
msXfax XP, Boston1	User	msxfax-xp-boston1@...	This is the failover msXfax XP server
Normal User	User	User@Company.com	msXfax XP Boston service

- msXfax XP, Boston services the first fax server.
- msXfax XP, Boston1 services the second fax server. This second failover fax server could be used for mainly incoming faxes with a minimal amount of outbound capability to handle failovers from fax server 1.

Both fax servers accept fax submissions from Exchange SMTP Connector configurations.

4.5 Reboot your Exchange Server(s)

Schedule a suitable time to restart your Exchange Servers which are acting as bridgehead servers for msXfax XP.

- Reboot your Exchange Server(s).

5 Preparing your fax server

Now that you have fully prepared your Exchange environment, it is now time to build your fax server.

If you are evaluating msXfax XP you have 30 days to conduct your evaluation. If you require more time please contact your regional distributor or email sales@bnsgroup.com.au to obtain an extension.

MsXfax XP is licensed on an annual subscription basis. Multi-year subscriptions can also be purchased. After you have evaluated msXfax XP the next step is to purchase your first annual license from your Distributor/Reseller or web site.

This documentation assumes that you have purchased your first annual license agreement to use the software.

5.1 Installation on Window 2000 Server

msXfax XP must be installed on Windows 2000 Server or any member of the Windows 2000 Server family eg: Advanced Server.

Optimum performance can be achieved by ensuring that your AD design incorporates a Global Catalog server in the Windows 2000 Site where your fax server is located. MsXfax XP uses ADO and ADSI to access your AD service to obtain information about your users.

- Perform a typical installation of Windows 2000 server.
- Windows 2000 server SP4 should be installed on your fax server and you should apply any security patches that are applicable in your network.
- Set the event viewer 'Application log file settings' to overwrite events as needed.

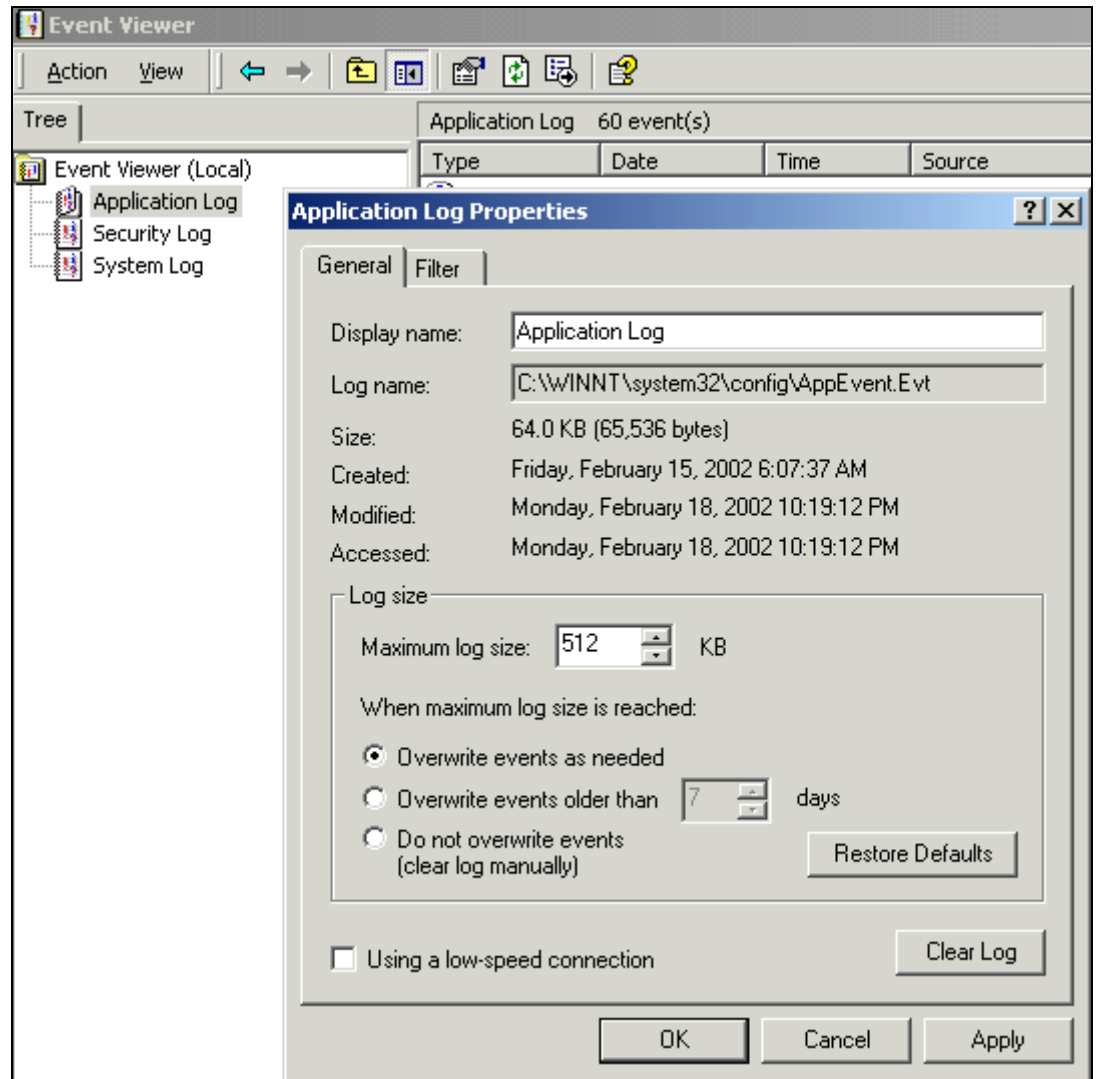
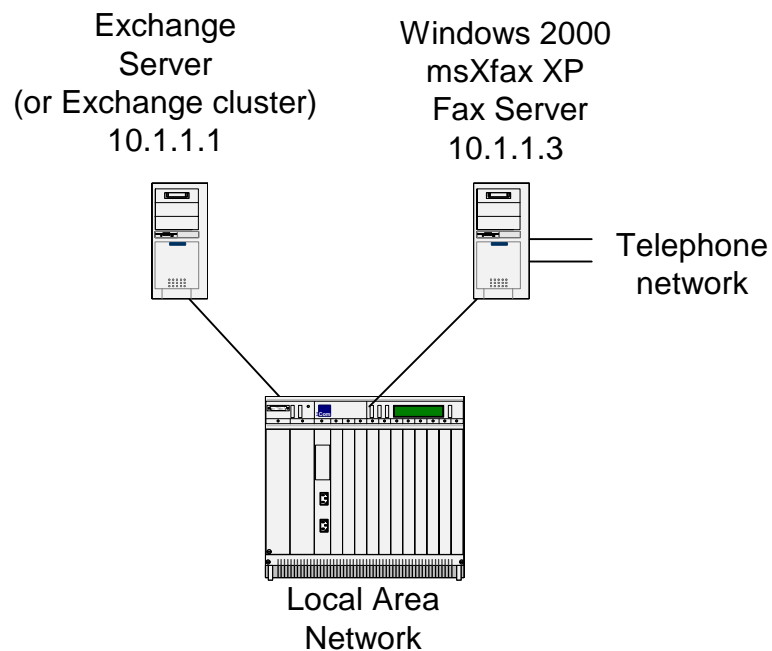


Figure 3: High level diagram Exchange Server & msXfax XP Fax Server



- Set the IP address of your fax server to a reserved IP address for use by this server. Do not allow DHCP to assign an address. The IP address in the above example and throughout this guide is 10.1.1.3
- Set DNS server IP address to the IP address of your DNS server. In the above example, the Exchange server is also a DNS server and is also a global catalog server. Therefore, the IP address of the DNS server entered into the TCP/IP properties of the fax server is 10.1.1.1.

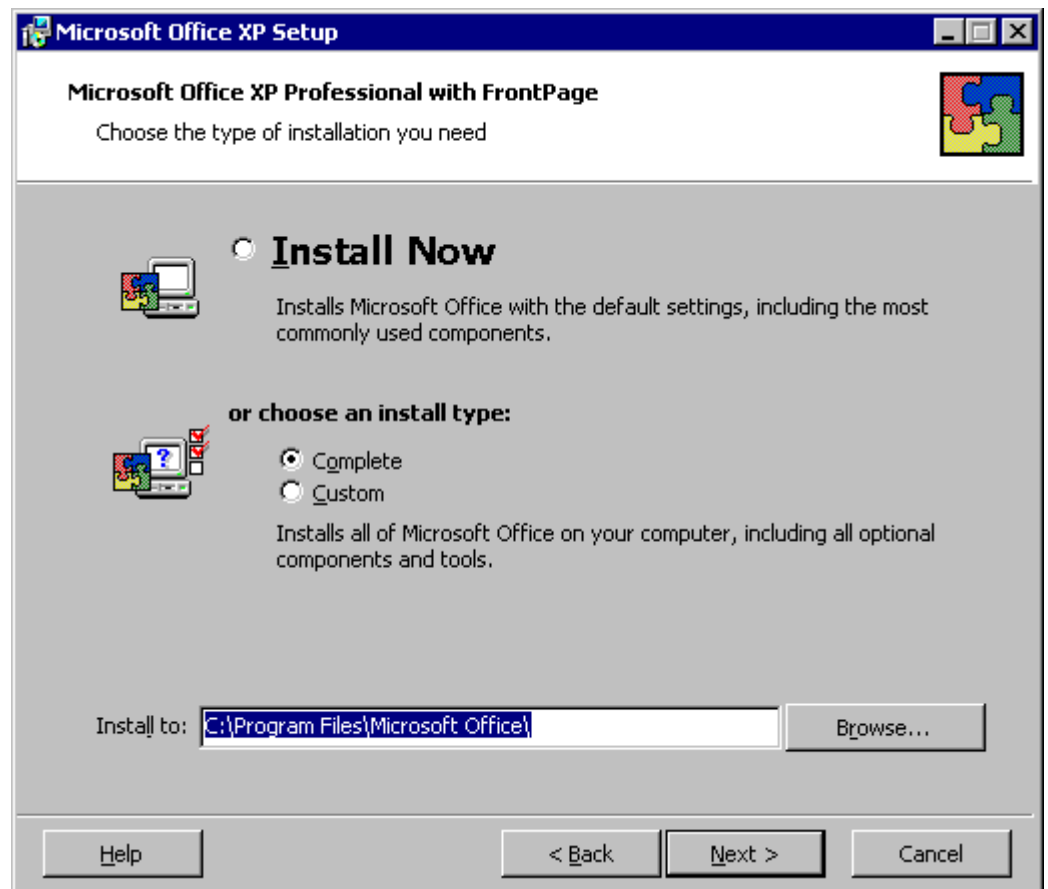
5.2 Installation of Office XP

Office XP professional is required on the Fax Server because msXfax XP OLE automates Office programs as an OLE Server to render attachments. The following table provides you with a better understanding of the attachments that can be supported and the component which supports it:

Table 7: msXfax XP support attachment extension types

Attachment Extension	Native support in Windows 2000 Kodak Image viewer	Office XP required on fax server	Adobe full version
DOC		Yes	
RTF		Yes	
BMP	Yes		
DCX	Yes		
HTM		Yes	
HTML		Yes	
XLW		Yes	
PCX	Yes		
PPT		Yes	
TIF	Yes		
TXT			
WK1		Yes	
WK3		Yes	
WK4		Yes	
WPD		Yes	
PDF			Yes
XLS		Yes	

- Proceed to install Office XP on the fax server. You should login with sufficient permissions to install Office XP.
- Install a **Complete** copy of Office XP Professional on the Fax server.
- Fully register your software otherwise msXfax XP will not work.

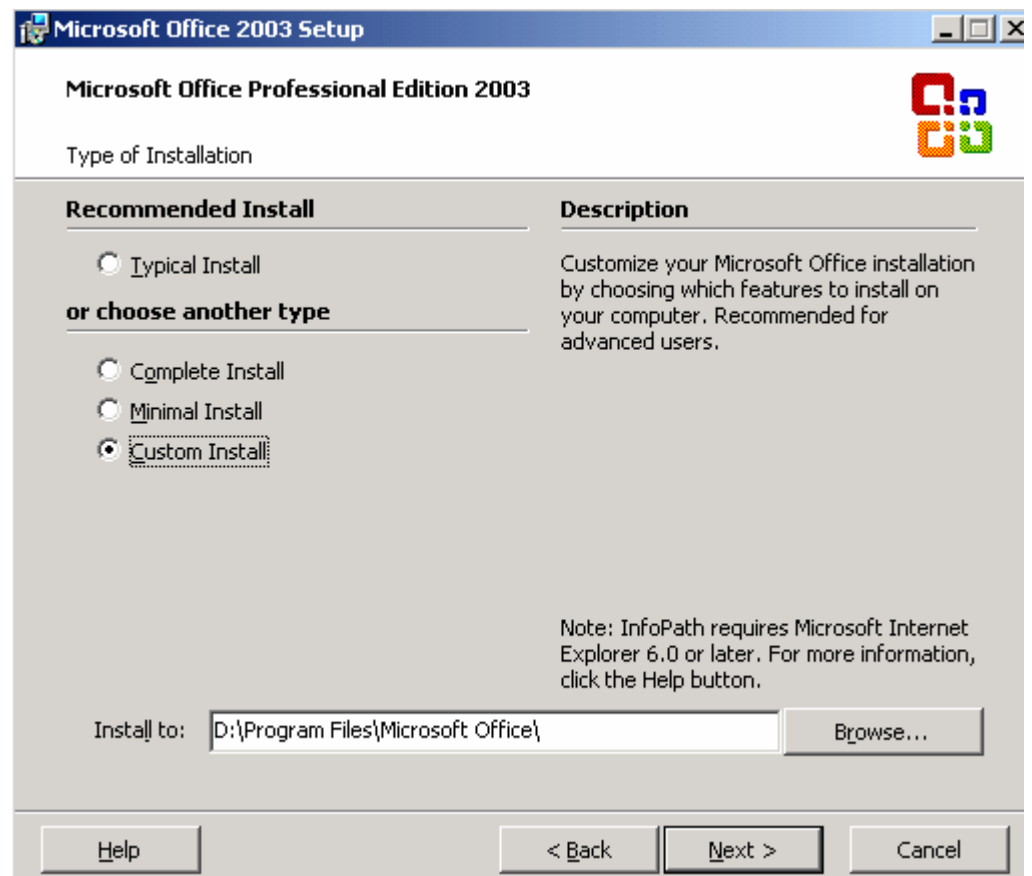


5.3 Installing Office 2003

Customers with Office 2003 on any of their client machines, should also install Office 2003 on their fax server.

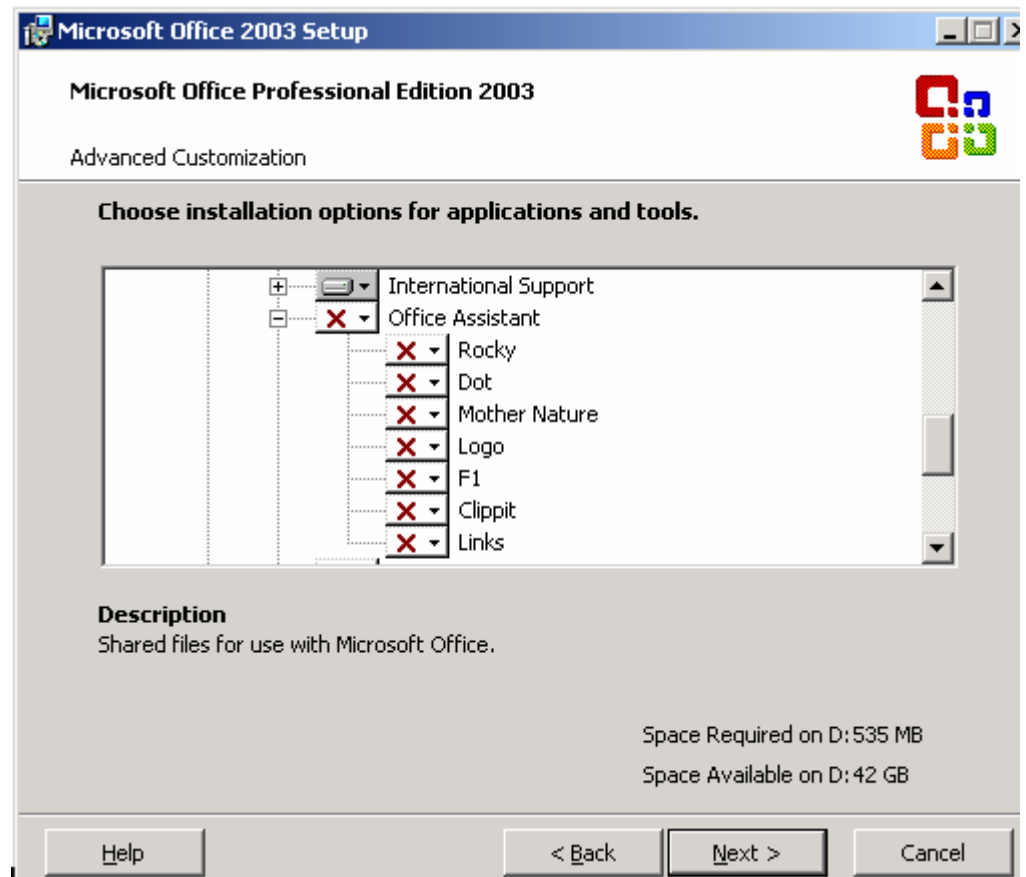
Upgrading Office: If you are upgrading your fax server please stop all msXfax XP services and remove Office XP before installing Office 2003.

- Perform a Custom installation as follows:

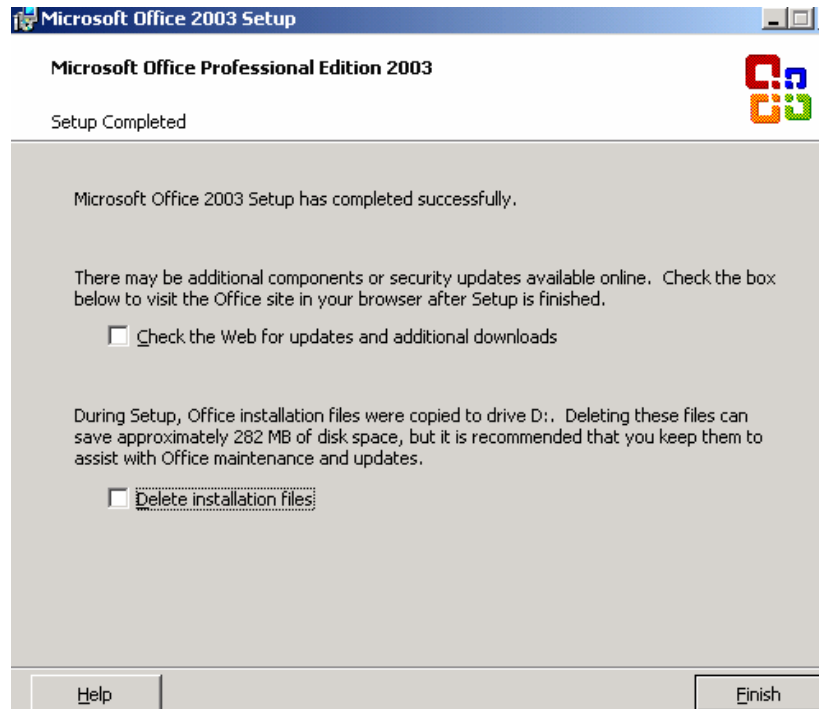




- Click on the option Choose advanced customization of applications.



- Make sure that Office Assistant is removed from the installation.
- Do not check any of the options on the Setup Completion wizard.



5.4 Optional: Installation of Adobe Acrobat Software

A standard installation of Adobe Acrobat Full product version 5.x or version 6.x is required (**FULL PRODUCT not the reader only**).

Note:

If your users intend to fax PDF attachments using Outlook or applications intend to submit PDF files for processing by msXfax XP, a full version of Adobe Acrobat version 5.0 or 6.0 is required on the fax server.

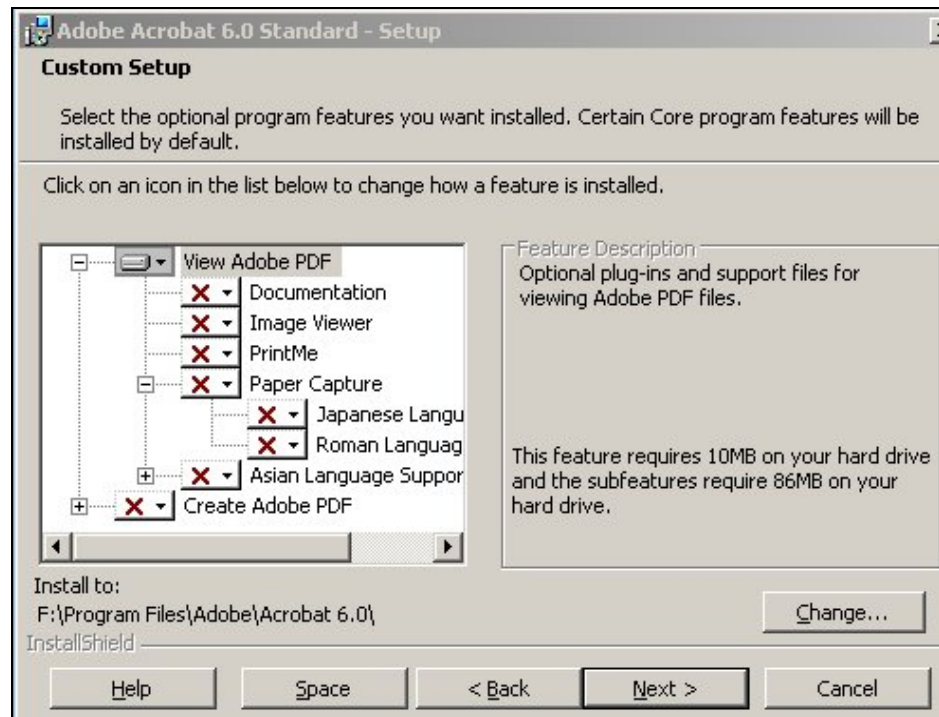
Installing Adobe Acrobat on the fax server is only required if users wish to send PDF files by fax.

5.4.1 Installing Adobe Acrobat VERSION 6.0 full product

To install Adobe Acrobat full version 6.0 on the fax server must be performed using the CUSTOM OPTION.

- Insert your Adobe Acrobat version 6.0 FULL VERSION (Acrobat Reader is not acceptable – **it must be the full version**).
- Perform a CUSTOM installation
- Set the optional components so that **none of them are installed**. Refer to the screen example below.

As noted on the Adobe setup screen below, “Certain Core program features will be installed by default”. No optional features are required except for some foreign language support services.



Note: Japanese and Asian countries should review Adobe's documentation to install support for those languages.

5.4.2 Installing Adobe Acrobat VERSION 5.0 full product

To install Adobe Acrobat full version on the Windows 2000 fax server, refer to Adobe's documentation for information on performing a standard installation.

- Insert your Adobe Acrobat version 5.0 FULL VERSION (Acrobat Reader is not acceptable – **it must be the full version**).
- Perform a standard installation.

Note: Asian countries should review Adobe's documentation to install support for Asian languages.

5.4.3 Acknowledge first time registration

After installation of Acrobat it will be necessary to acknowledge a registration dialogue box for Adobe Acrobat. For version 6.0 of Acrobat simply run the Acrobat product and register the product. Acrobat 6 appears to request registration once whereas Acrobat 5.0 required registration for each user or system context.

To register version 5.0 for use with msXfax XP wait until this user guide instructs you to perform certain steps.

5.5 Installing support for MAX Compress / Winzip

msXfax XP supports attachments which have been zipped either by the user or by using products such as Max Compress. msXfax XP will automatically unzip files, render them to fax format at the fax server.

To implement this support:

- Purchase Winzip version 8 or better.

Make sure that you install the Winzip command-line add-on

- Install Winzip fully licensed version on your fax server.
- Copy the file WZUNZIP.EXE needs to be copied to C:\WINNT\SYSTEM32 directory of the fax server.

6 Installing Class 2 fax modem(s)

6.1 Installing fax modems

msXfax XP can be used with most good quality fax modems which support Fax Class 2 fax protocols.

US Robotics appear to have problems with certain fax machines. BNS does not recommend US Robotics.

Important: It is essential that you follow the manufacturer's installation procedures and install the correct drivers for Windows 2000.

Very Important: If Windows 2000 detected your modem it is highly recommended that you remove the modem from Control Panel and add it manually with the manufacturer's installation diskette.

This will guarantee that the correct drivers are loaded.

Failure to do this may result in faxes not being transmitted and being stuck in the queue.

7 Installing Multi-Tech ISI5634PCI boards

7.1 Installation documentation

Installation of Multi-tech is well documented in the manufacturer's documentation.

For more information on Multi-tech products please refer to www.multitech.com

8 Installing iNTRA Netcomm modem boards

8.1 Installing iNTRA boards

Installation of the iNTRA PCI board(s) is a simple process.

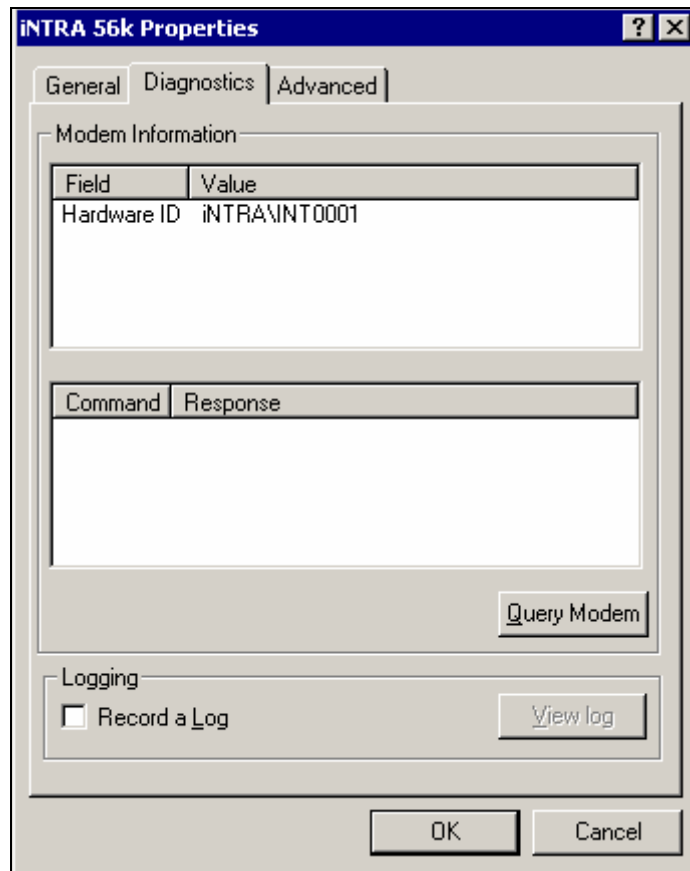
- Connect phone lines to the board after it has been physically installed in the computer.
- Start your computer
- Logon with administrative rights to the computer
- Windows 2000 should detect the board "Found new hardware"
- Insert the iNTRA driver diskette which came with your system.
- Follow the on screen instructions.
- When requested for the driver files, specify a location as A:\WIN2000
- After the drivers are installed you will need to re-start your computer.

8.2 Configuring & testing a iNTRA board(s)

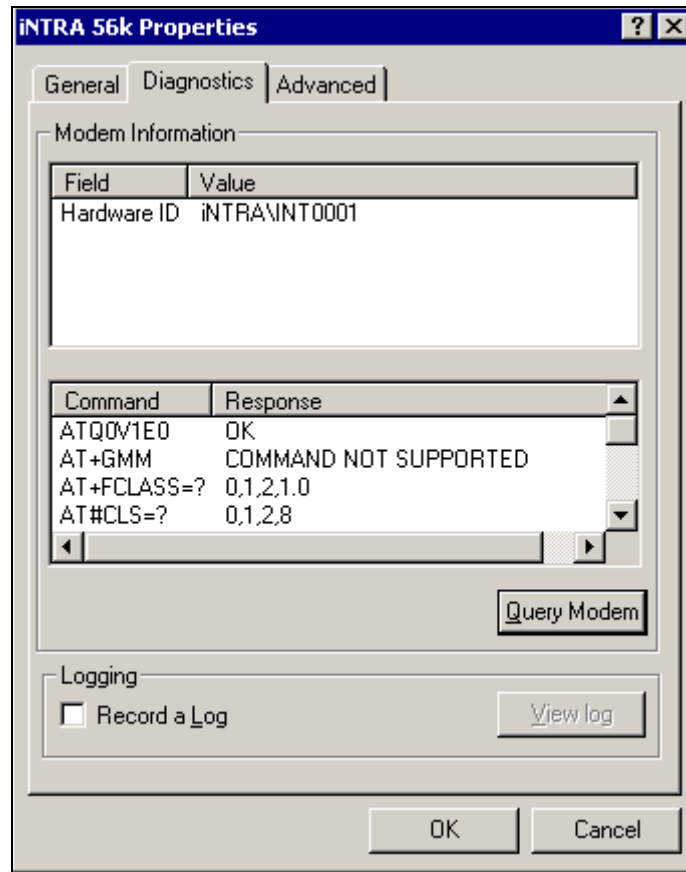
- Logon with administrative rights to the computer
- Run the Modems and Phones Icon from Control Panel



- Select Properties of iNTRA 56K.
- Select Diagnostics tab



- Select Query modem



- If the modem is working correctly, you should see responses coming back from the iNTRA modem(s). Command AT+FCLASS=? Should obtain a response showing the fax modem classes supported. Class 2 is required.

9 Installing Eicon Diva Server boards

9.1 Installing Eicon Diva Server board(s) Windows 2000

- Install BRI board(s) or a single PRI board in accordance with EICON's documentation.
- Start your computer
- Windows 2000 will detect your board(s).
- **Cancel the "Found New Hardware Wizard".**
- Connect Eicon board(s) to your ISDN line(s).

9.2 Obtaining Eicon Diva Server software

Go to www.eicon.com to download the Diva Server Software.

http://www.eicon.com/worldwide/products/MediaGateways/disvwin2000.htm?dl=1&en_prod=®ID=9696

- Download version 7.0 of Eicon Diva Server software.
- We suggest that you download the option which includes drivers for all Basic Rate and Primary rate boards.
- Refer to the screen example below.

Download

Please Note: It is not recommended to make upgrades in mission critical scenarios prior to testing in an 'offline' environment. Also check the list of new features to make sure that there are benefits for your environment. If there is no specific benefit, maintaining your known stable environment is recommended.

This software comes in *packages*. Each one is a self-extracting, sealed ARJ archive. You can install the software from your hard disk after extraction.

To download, proceed as follows:

1. Select an empty directory on a volume with sufficient disk space.
2. Download either the complete product or choose an individual package:

Complete product:

Select the appropriate download from the following list:

- [All you need for Diva Server adapters incl. English manual](#) (DsAllM.exe, 10683kB)
Supported boards: Diva Server 2FX, Diva Server BRI 2.0, Diva Server 4BRI 2.0, Diva Server PRI 2.0, Diva Server PRI 3.0, Diva Server V-PRI

Individual packages:

- Download DsAllM.exe (10MB).
- Save the file to your fax server hard drive.
- Run the self extracting file DsAllM.exe

9.3 Installing the Eicon Diva Server software

9.3.1 Customers upgrading from Eicon Diva Server version 6.x

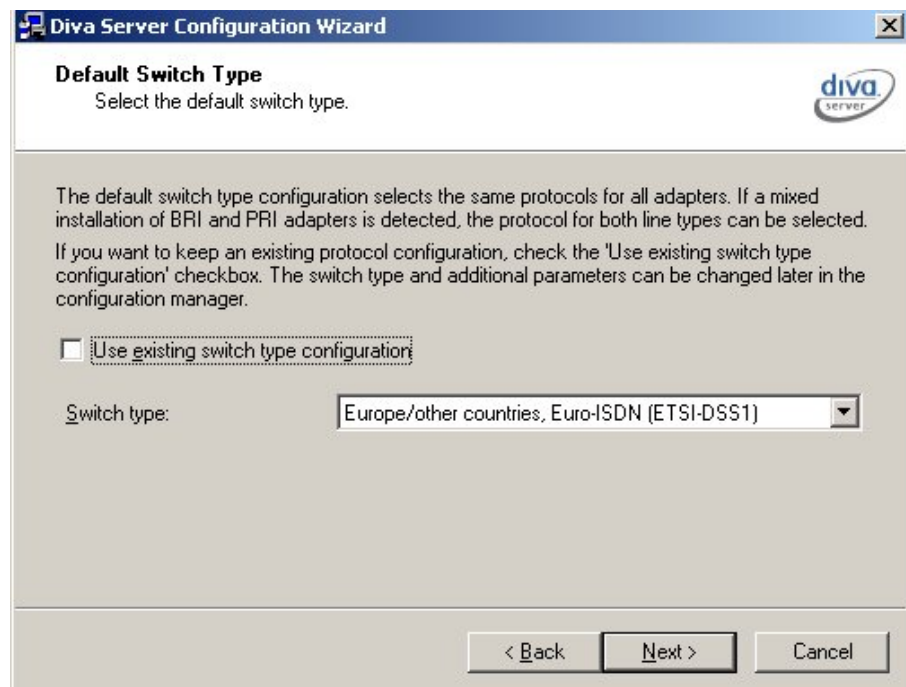
Customers with version 6.x of Eicon Diva Server software should follow these instructions:

- Run the program SETUP.EXE from the directory where you ran the self extracting EXE.
- Select Upgrade and follow the screen prompts.
- A reboot is required.
- Login with Domain Admin rights once again.
- Select Start, Programs, Diva Server for Windows Software
- Run the Diva Server Configuration Wizard
- Proceed to the section below "Diva Server Configuration Wizard"

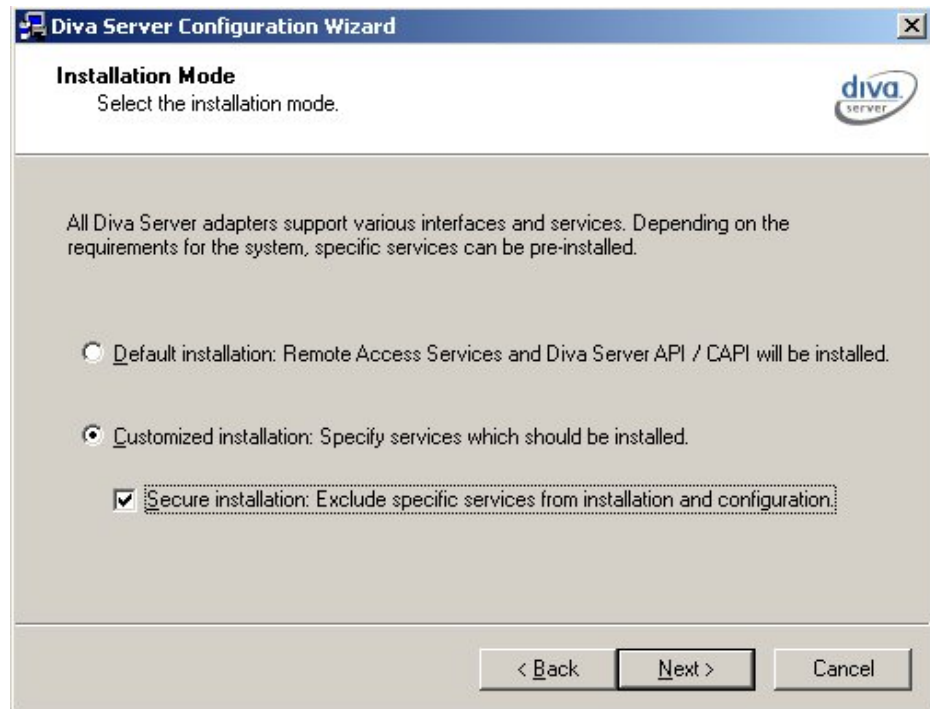
9.3.2 New Installations of Eicon Diva Server software

- Run the program SETUP.EXE from the directory where you ran the self extracting EXE. This will launch the Diva Server Configuration Wizard in addition to installing the software. Proceed to next section below.

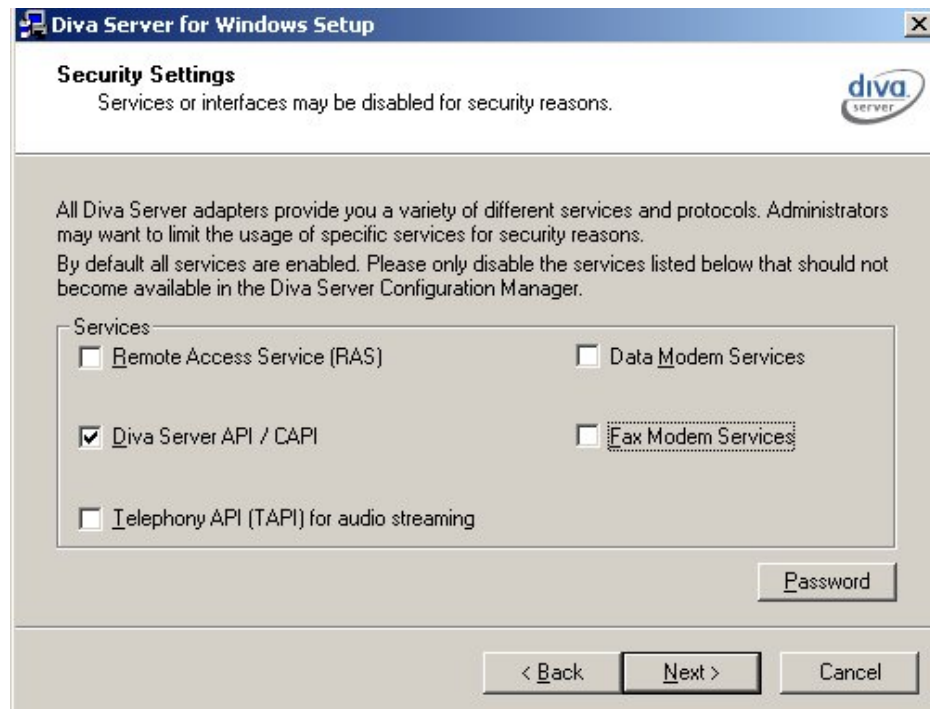
9.3.3 Diva Server Configuration Wizard



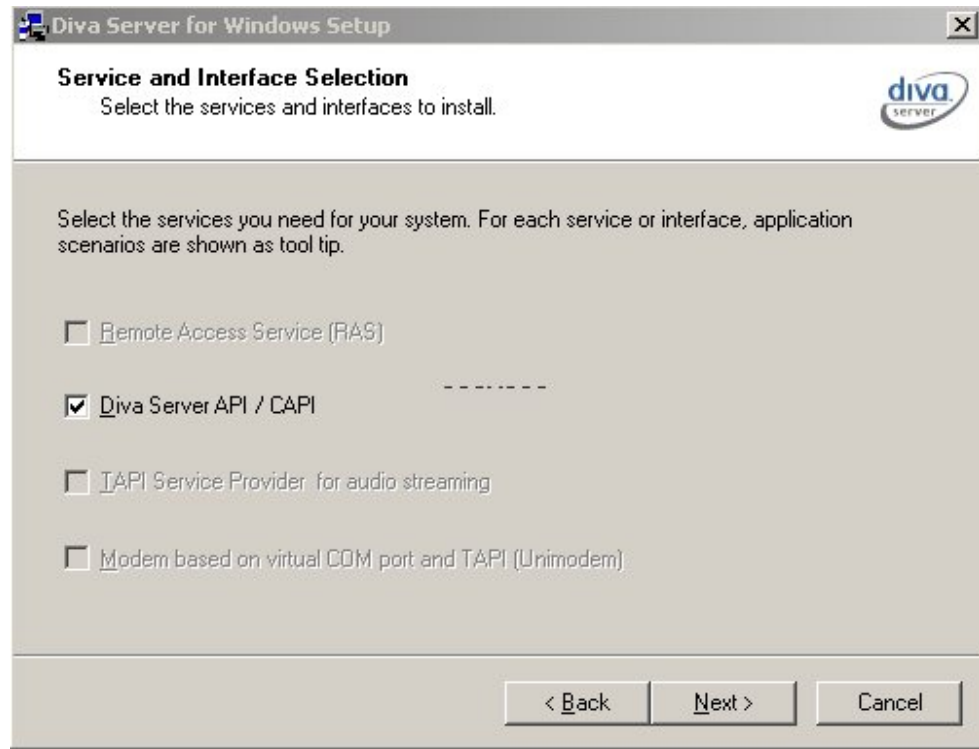
Note: Australian customers should select Europe/other countries as shown above.



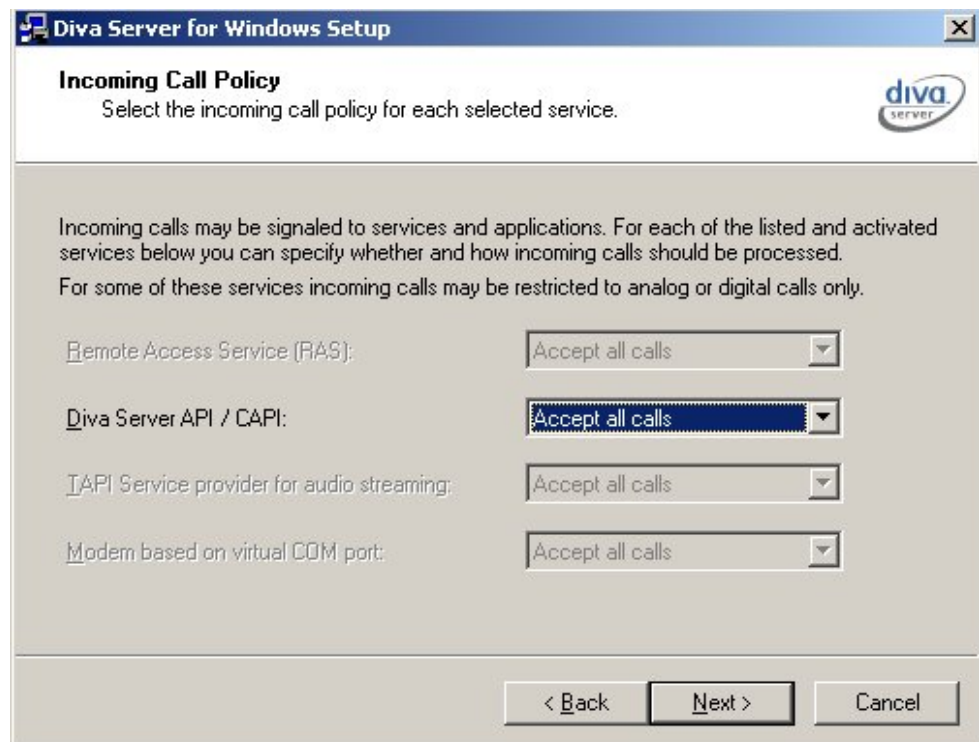
To improve security, select the options as shown above.



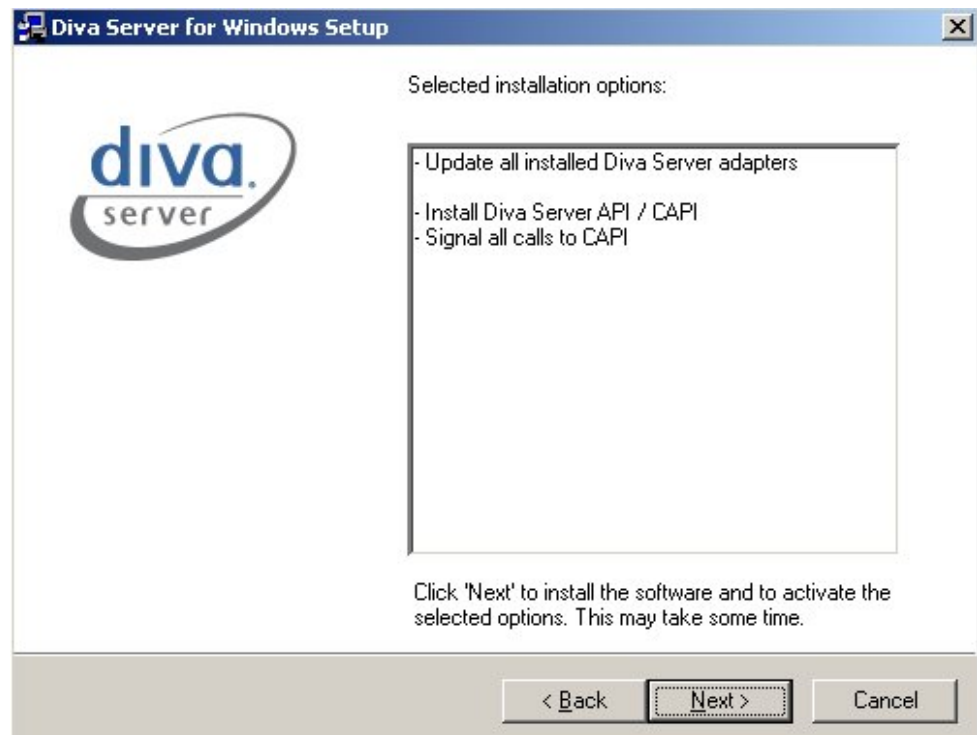
- Only Diva Server API/CAPI should be selected. This improves security.



- Select Next



- If this server is to be used only for outgoing fax services you may change the option to not accept incoming calls.
- Select Next

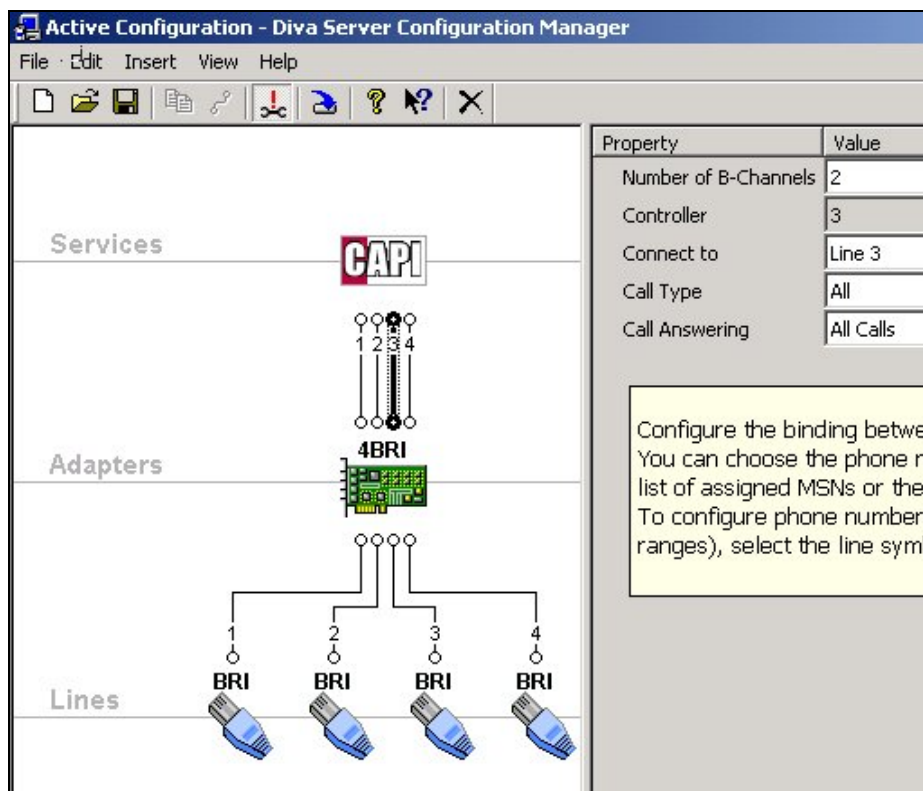


- Select Next
- Wizard should now complete to the finish.

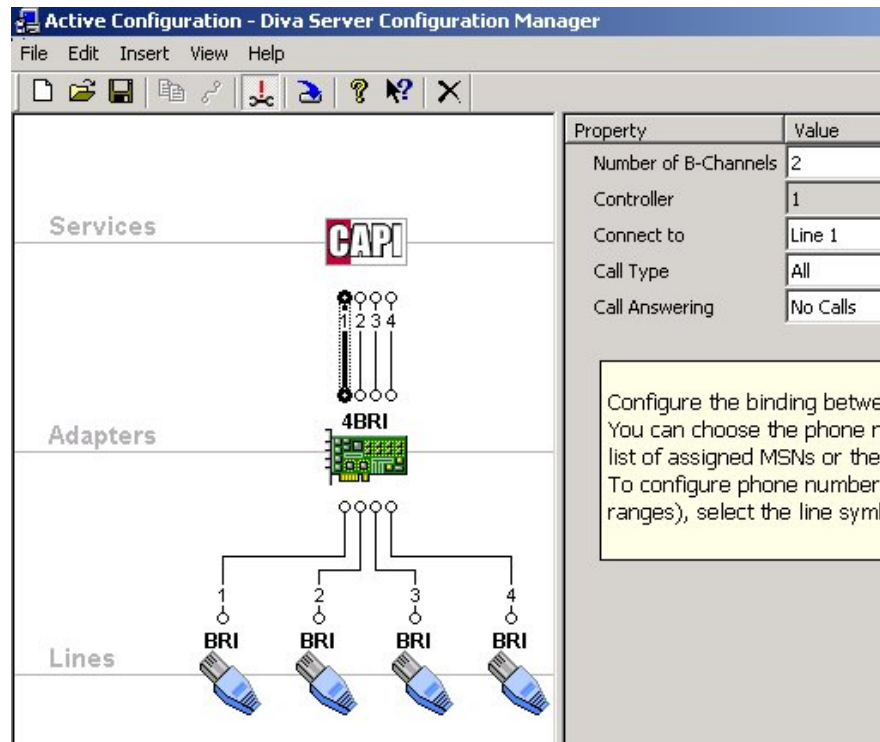
9.4 Configuring a Diva Server adapters

- Select Start, Programs, Diva Server Configuration Manager.
- You should see a screen similar to the one below with just the CAPI Services linked to your adapter(s).

TIP! Select View, Advanced to see additional fields in the configuration program.

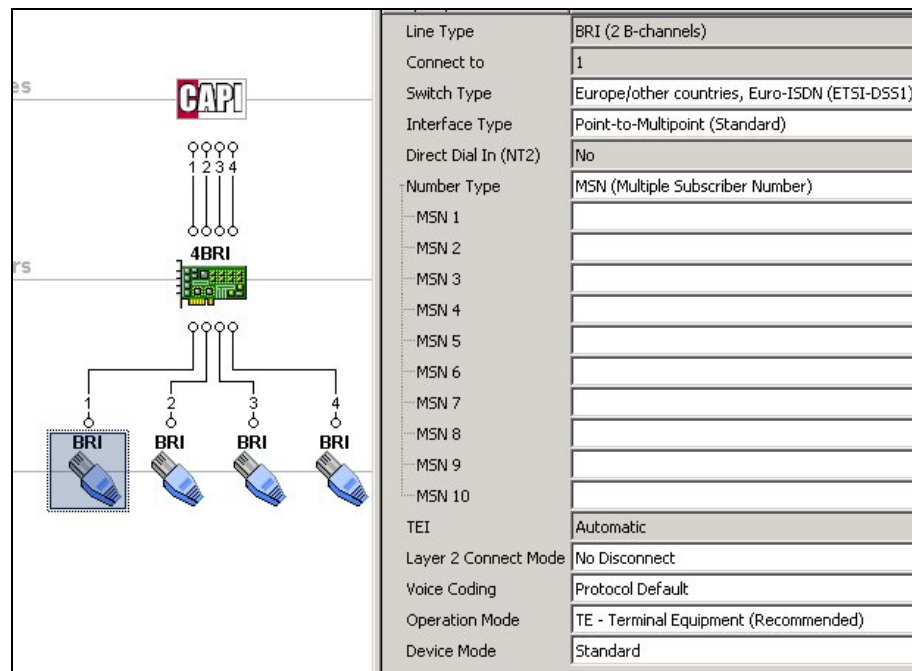


The example screen above is for a customer who has 4 basic rate services connected to their fax server. It is recommended that CAPI configurations be allowed to answer calls a number of channels which is the same number of receive circuits configured in msXfax XP. msXfax XP sees the CAPI service as one logical pool. msXfax XP allows you to set how many circuits will be used for transmission and how many for reception.

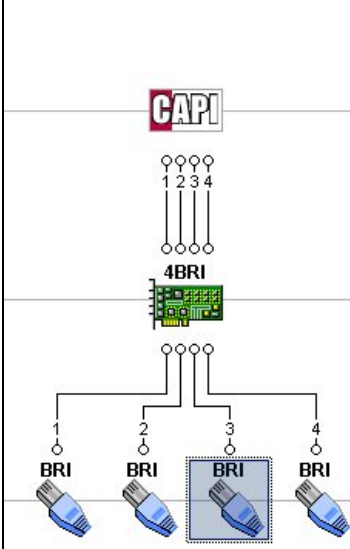


- For lines 1 and 2 this example shows how to prevent incoming calls from being answered on those interfaces. Call answering = No calls.

Line specification example for a system connected to point to multipoint system (No Direct Dial Inwards service).



Line specification example for a system connected to point to point Direct Dial Inwards service



Property	Value
Line Type	BRI (2 B-channels)
Connect to	3
Switch Type	Europe/other countries, Euro-ISDN (ETSI-DSS1)
Interface Type	Point-to-Point
Direct Dial In (NT2)	Yes
Number Type	Range of Extensions
Extension Collecte...	Adapter
Lowest Extension	000
Highest Extension	999
TEI	0
Layer 2 Connect Mode	No Disconnect
Voice Coding	Protocol Default
Operation Mode	TE - Terminal Equipment (Recommended)
Generate Ring Tones	No
Device Mode	Standard

Tip

If you need to connect Services to the Adapter or Lines to the Adapter perform the following:

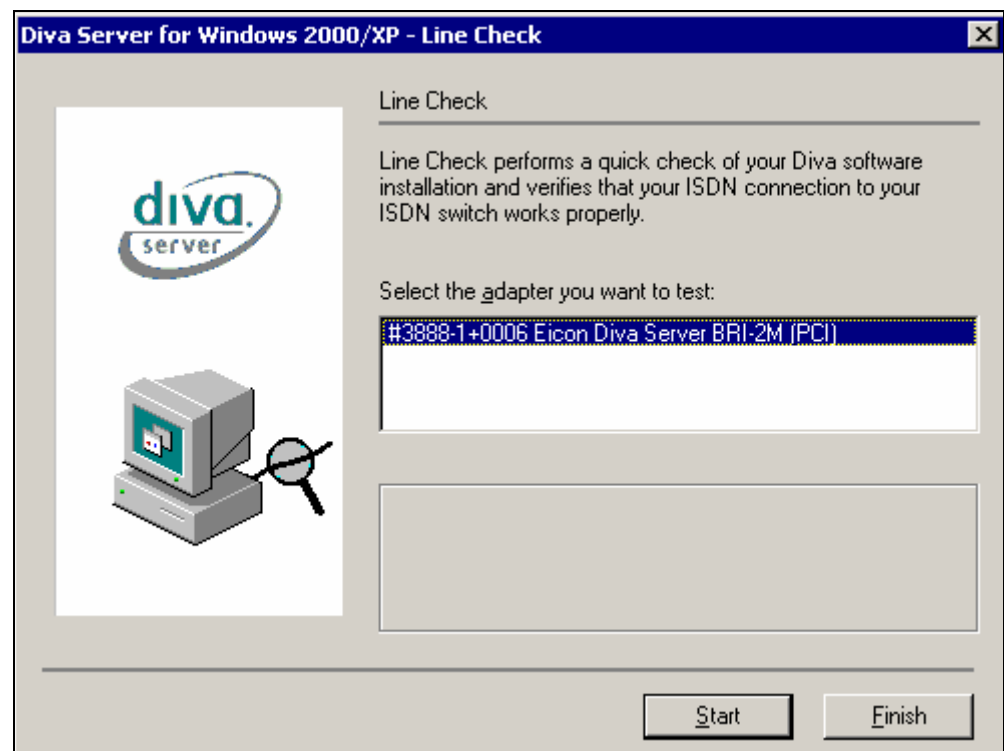
1. Right click on say Services and click copy.
2. Right click on your adapter (eg: 4BRI card) then Right click Connect.

When you have finished configuring the Eicon Adapters, lines and services:

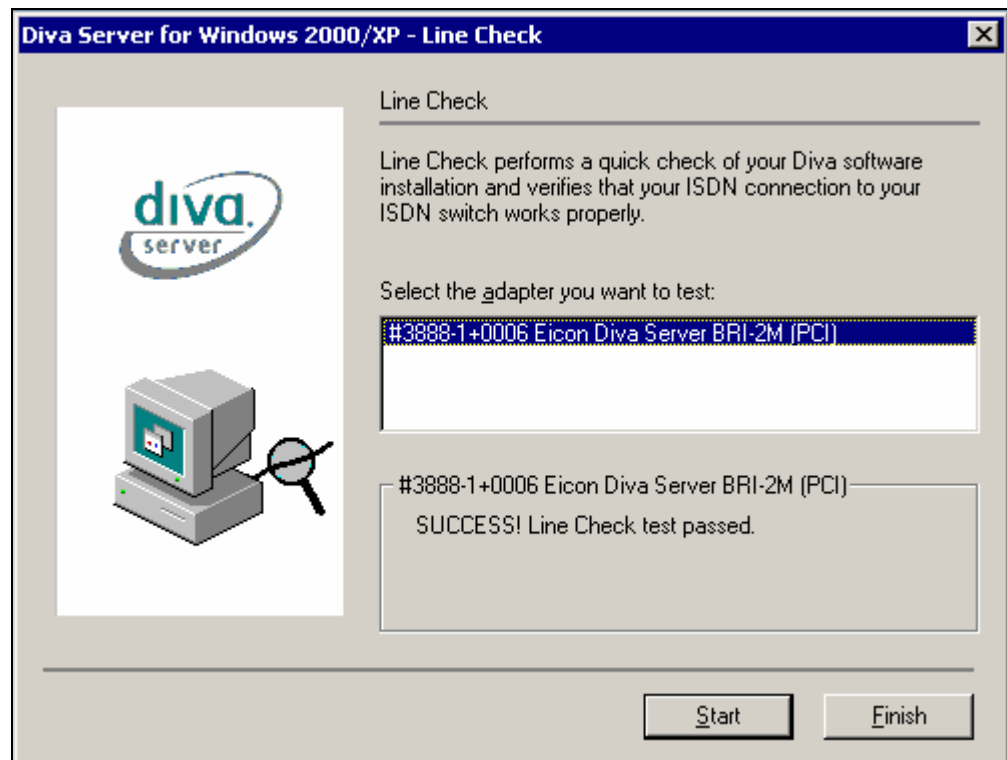
- Select File, Save As.
- Save your configuration file with an appropriate name eg: EICONISDN.CFG.
- Select File, Activate.
- A message will be displayed stating that the configuration update is in progress.
- You should now see a message "The configuration was updated successfully".
- A restart the server will now be necessary.

9.5 Testing a Diva Server adapter

- Select Start, All programs, Diva Server for Windows
- Select Check ISDN Line
- Perform a Check of the ISDN Line using Eicon's software.



- Click Start



- If you see "Success! Line Check test passed". Proceed to the section after the Brooktrout section below.
- If the line check fails, check with your telecommunications company to determine the correct settings.

TIP!

If you have multiple Basic rate Eicon Boards in your server we recommend that you use a permanent marking pen and write the serial number (available from the configurator and the line test utility) on the metal fascia of the board. It is also recommended that you label port 1 being the port nearest the top of the board.

10 Installing Brooktrout PCI Fax boards

ISA boards are not supported by msXfax XP.

10.1 Installing TR114 PCI analogue boards

Brooktrout TR114 analogue 'loop start' boards (PCI Version) are used to connect to 'traditional normal telephone lines'.

IRQ and I/O address resources for PCI boards are allocated by the system BIOS

10.2 Installing TR114 PCI ISDN Board(s)

Brooktrout TR114 ISDN boards are used to connect to ISDN networks that conform to the European ISDN standards. These boards have a daughter board that comprises specific firmware to communicate with the ISDN network.

TR114-P2B and TR114-P4B (PCI ISDN boards) IRQ and I/O resources are assigned by the system BIOS.

10.3 T1 connection considerations for TR114+P8V-T1

The TRNIC is the Brooktrout T1 robbed-bit interface board. The TR114+P8V-T1 is a PCI board 8-channel digital fax boards *with* a TRNIC interface board built into them (supports only the MVIP interface). For purposes of ordering a T1 service, you may think of all of them as a "TRNIC" in all Brooktrout's documentation.

When you order T1 service from the telephone company, give its representative the following information:

Items in **bold** are Brooktrout-recommended.

Product Manufacturer: Brooktrout Technology

Product Name:	TR114+P8V-T1
T1 Service Type	Robbed-bit, four-wire (more info here)
Signal Protocol:	E&M Wink, E&M Immediate, or FXS/FXO (more info here)
Line Coding:	B8ZS or AMI
Frame Mode:	Super Frame(D4) or Extended Super Frame
Channels:	1-24
Dial Tone:	Optional
CSU:	Not on-board (more info here)
DNIS Digits:	DTMF or Pulse
SOC:	6.0F
FIC:	04DU9-BN 1.544Mbps SF 04DU9-DN 1.544Mbps SF+ B8ZS 04DU9-1KN 1.544Mbps ESF 04DU9-1SN 1.544Mbps ESF+B8ZS
FCC Registration Number:	EAGUSA-24598-CN-N
Wall Jack Required:	USOC-RJ-48C

Additional info on 'T1 Service Type': When using a Brooktrout TRNIC board, the type of T1 line that *must* be supplied is a **robbed-bit T1 line**, which also may be described as an **A/B signaling T1 line**, or an **E&M tie trunk** or **FXS/FXO tie trunk**. This type of signaling is **in-band**, meaning the signaling info is carried on the same channel as the traffic. The physical connection *must* be a 4-wire connection, no other type of physical connection is supported by the TRNIC.

Additional info on 'Signal Protocol': The TRNIC needs the signal protocol to be consistent across all T1 channels, in both directions. **FXS/FXO** signalling is sometimes referred to as **T1 loop-start**. Brooktrout say **E&M**, they mean that the signalling bits do whatever the A-bit does; your telecommunications representative should know what that means.

Important note: **T1 'Ground-Start'** signalling is **not supported** by the Brooktrout TRNIC, or any Brooktrout board.

Additional info on signal regeneration, and CSUs: The distance between the last signal regeneration point on the T1 circuit and its termination point (connector on the TRNIC) determines whether you must connect TRNIC to a CSU (Channel Service Unit) or directly to a T1 circuit. When we say "distance", we mean *cable length*, not the straight-shot distance from the last point of signal regeneration to the TRNIC. **The TRNIC is not approved as a CSU.**

If the last point of signal regeneration on the T1 circuit is less than 500 feet from the TRNIC, you do not need to connect TRNIC to a CSU. If the distance from the TRNIC to the last point of signal regeneration exceeds 500 feet, you must connect TRNIC to a CSU and the CSU to the T1 circuit. *Refer to White Paper for more information*
http://www.brooktrout.com/whitepapers/html_pages/csu.html .

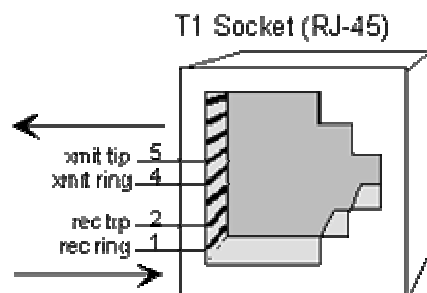
Frequently Asked Questions for T1 installations.

http://www.brooktrout.com/pages/technical/t_fax/faq/faq_t1.html

10.3.1 Connecting the TR114+P8V-T1 to T1 Telephone Service

Hint: If your telephone service provider or PABX support people aren't familiar with the TR114+P8V-T1 or a TRNIC, and thus are not sure how to treat it, you may tell them to view it as a PABX, and your telco people should set up a "tie trunk", or "tie line", from their side to the TRNIC, just as if they were setting up a line to a PABX. The service must be tie line/tie trunk. **Off-premise extensions, or stations, are not supported.**

10.3.2 TR114+P8V-T1 pin assignments



Pins 1, 3, 9, and 11 of the DB-15 connector (J301) and pins 1, 2, 4, and 5 on the RJ-45 T1 socket provide T1 data paths to and from the (Brooktrout supplies this adapter).

The pinouts of the DB-15 plug and the RJ-45 socket on the cable adapter are the same as J301 and the RJ-45 T1 socket, respectively.

Connection between the adapter's DB-15 pins and its RJ-45 pins is straight-through. That is, DB-15 pins 1, 3, 9, and 11 connect to RJ-45 pins 5, 2, 4, and 1, respectively.

Cable note: Although CAT-5 cable will suffice in many situations, please bear in mind that CAT-5 cables typically use an unshielded twisted pair, or UTP. If you want to safeguard as best you can against any electromagnetic interference, then ideally you'll have a cable that has the receive pair and the transmit pair shielded separately.

10.3.3 MVIP cable to expand from 8 to 16 & 24 lines on T1

TR114-P8V-T1 is shipped with a ribbon cable to allow additional digital boards (TR114+P8V) to expand from 8 lines to 16 to 24.. To expand your system to 16 lines you will need to order 1 x TR114+P8V. To expand your system to 24 lines you will need to order 2 x TR114+P8V.

Note: msXfax XP March 2002 edition only supports the TR114+P8V digital board not the TR114+P16V.

10.4 Installing TR114+P8V-T1 & TR114+P8V Digital boards

Note: TR114+P8V-T1 boards come with a Brooktrout “Quick Start Guide” Part Number 930-422-33 dated May 2000. The quick start guide section which describes the settings for MVIP clock termination can be a little misleading. The following should help clarify that section of the Brooktrout quick start guide.

10.4.1 Diagram of TR114+P8V-T1.

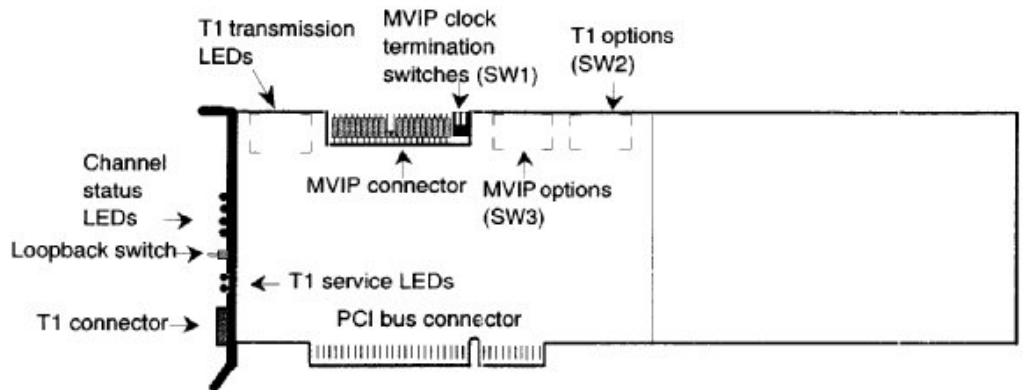


Figure 1. TR114+P8V-T1 Layout

10.4.2 MVIP Clock Termination on TR114+P8V-T1.

If the TR114+P8V-T1 is the only Brooktrout board in your system then the 2 position dip switch labeled SW1 should be switched ON. The diagram below shows that the switches are set ON towards the numbers.



If you have installed any additional TR114+P8V boards using the ribbon cable provided, you simply need to set SW1 to the ON position **on the last board only** (ie: the furthest away from the TR114+P8V-T1 board). IE: if you have multiple boards

make sure that SW1 on the TR114+P8V-T1 is OFF and the further board away from the TR114+P8V-T1 should be set ON.

SW2	Switch setting	Comments
T1 (Settings)		
1=T1 Master (MASTR)	UP	
2=Framing mode (SF)	You must ask your telecommunication company	ESF is an extended framing mode which is quite commonly used. Brooktrout default is in the UP position for SF. Check with your telecommunications vendor to determine if SF or ESF is used. If ESF is used please change this switch to the DOWN position
3=Line coding	UP	B8ZS is the most commonly implemented. Check this with your telecommunications vendor
4=Len1 5=Len2 6=Len3	DOWN	If your T1 cable length is greater than 132feet (nn metres) you should review the Brooktrout quick start guide documentation.
7&8	DOWN	These switches have no use. The default is in the DOWN position

10.4.3 Brooktrout Digital Fax Boards and In-House PABXs

Brooktrout TR114 digital T1 fax boards are often used behind in-house PABXs, some sample setup documents for some of the PABXs in use today. The sample T1 configuration URL's have been used either in a test environment or an actual production environment to connect the PABX listed above to Brooktrout TR114 cards. This information should **only** be used as a guideline; Brooktrout recommend that you contact your telephone administrator or PABX vendor if you are planning to configure and change the switch settings on your PABX, or if you have questions about any of the information URL's. Therefore, inter-connection and systems integration testing is important for the successful deployment of integrated fax behind PABX's.

10.4.3.1 PABX Set Up for T1 Robbed-Bit Service, Providing Service to Brooktrout TR114 and TRNIC Board Combination

Fujitsu PABX <http://www.brooktrout.com/whitepapers/pdf/fujitsu.pdf>

Intercom S80+ PABX

<http://www.brooktrout.com/whitepapers/pdf/intercom.pdf>

Lucent/Avaya Definity PABX

<http://www.brooktrout.com/whitepapers/pdf/lucent.pdf>

Mitel SX2000 Light PABX

<http://www.brooktrout.com/whitepapers/pdf/mitel.pdf>

Nortel Meridian <http://www.brooktrout.com/whitepapers/pdf/nortel.pdf>

10.4.4 T1 Connection frequently asked question

Having installed the TR114+P8V-T1 my telco (or PBX) people tell me that when they look to the Brooktrout board, they see the signaling bits in an off-hook state (sometimes called "high and wet"), when they should be seeing them in an idle state. What do I do?

Answer: Before the firmware is downloaded to each of the channels of the TR114 digital card, the signaling bits coming from each channel are all in a busied-out state. Once firmware is downloaded to the TR114 channels, the signal bits should go to an in-service/idle state, which is what your telco people want to see. **Firmware will be loaded to the TR114 channels automatically by msXfax XP and by Brooktrout's diagnostic NTTEST software.** NTTEST diagnostic tests to put channels into send or receive mode, NTTEST will load firmware onto the channel it's working with, if it detects that the channel doesn't have firmware loaded to it. You can tell whether firmware has been loaded to a channel by looking at the red LED associated with that channel; if it's flashing, then firmware has been loaded to the channel, and the channel is in an idle state. If the LED is solid, that means the channel is seized.

Be aware of this and simply proceed to install the software in the next section.

11 Upgrading your msXfax XP software

11.1 Special notes for existing customers

Releases of msXfax XP prior to release 6.2.2 allowed the installation files to be installed on any drive letter but the actual msXfax XP installation did not allow installation on any other drive letter other than C.

Customers who installed on C drive but who now wish to install on D drive should:

- Note all parameter settings and copy any files such as cover sheets to a safe location.
- Remove msXfax XP software
- Remove msXfax XP Installation files
- Proceed to install a fresh copy on any local disk drive in the next chapter.

11.2 Upgrading to release 6.7.4

Version 6.7.4 introduced too many enhancements to allow an upgrade in place.

To assist customers with their upgrade, BNS developed a program called msXsnapshot.exe. **msXsnapshot.exe takes a snap shot of all current settings** which will present those same settings during the upgrade procedure. This program is available from <http://www.bnsgroup.com.au/bns/downloads/msxsnapshot.exe>

You can download this program to any location on your fax server. Run the program to save parameter settings.

Follow these steps to successfully upgrade your msXfax XP server.

- Take a full backup of your fax server.

- **Note all parameter settings in the msXfax MMC version prior to release 6.7.4** and copy any files such as cover sheets to a safe location.
- Print reports and/or save statistics to an Excel spreadsheet.
- Run the msX
- Remove msXfax XP software
- Remove msXfax XP Installation files
- Reboot your fax server
- Proceed to install a fresh copy on any local disk drive.

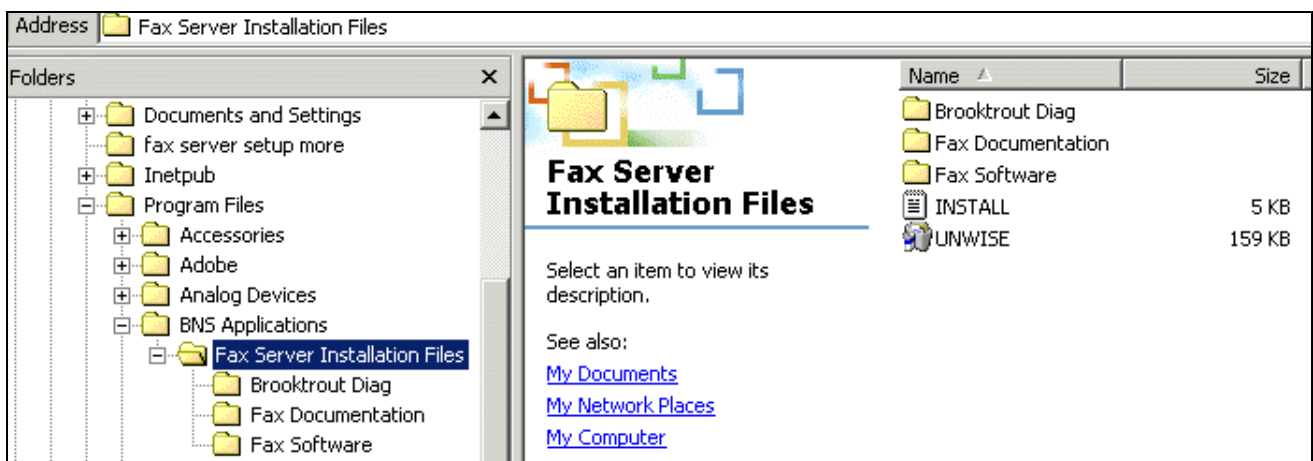
12 Initial Installation Files

12.1 Installing the installation files

- Downloading msXfax XP software allows you to trial the software and turn it into a fully licensed product after purchasing a subscription license.
- By downloading the software a file called “INSTALLMSX.EXE” is downloaded from BNS Group’s Internet web site.
- Copy the file INSTALLMSX.EXE to your Fax Server’s local hard drive.
- Run INSTALLMSX.EXE
- Follow the wizard and select a local hard drive to install.

Program INSTALLMSX.EXE installs 3 major components on your fax servers local hard drive:

- “Brooktrout Diag” – msXfax XP diagnostic software for testing Brooktrout boards
- “Fax Documentation” – This installation documentation and any other technical notes.
- “Fax Software” – Cover Page Setup and Fax Server Setup programs.



13 Installing msXfax XP on your Exchange server

BNS Group does NOT support installation of msXfax XP on your Exchange Server.

BNS Group does NOT support installation on Microsoft Small Business Server.

Install msXfax XP on another Windows 2000 Server other than your Exchange Server.

14 Test your Brooktrout Fax board(s)

14.1 Disable PCI plug & play Brooktrout boards

Note:

If you are using the newer Brooktrout Universal boards DO NOT DISABLE the device but proceed to the next section “Running Brooktrout’s Diagnostic Test Software”.

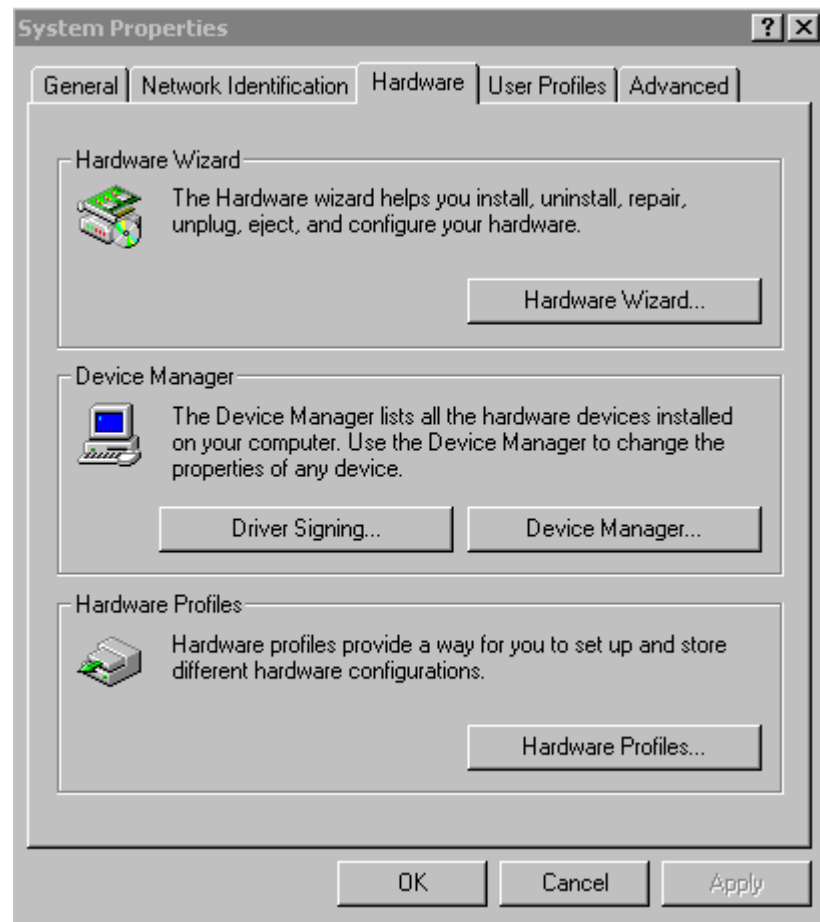
Universal Brooktrout PCI boards must not be disabled via W2K Device Manager or they will fail to be detected and used by msXfax XP. Non Universal Brooktrout PCI cards must still be disabled as usual or the new hardware detection wizard will be displayed on each boot.

PCI Brooktrout fax boards should have the plug and play disabled in the Windows 2000 operating system.

- After re-booting your system login as Domain Administrator or an account with Administrator rights to the computer.
- You should notice that Windows 2000 may have detected a PCI board. Select “Cancel”.

If Windows 2000 does not detect the Brooktrout PCI board(s), your mother board may not be compatible with Brooktrout’s PCI implementation or some other related problem.. You should consult Brooktrout/Your computer manufacturer about this problem.

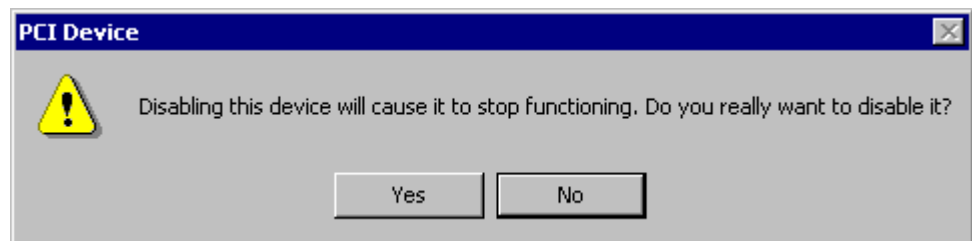
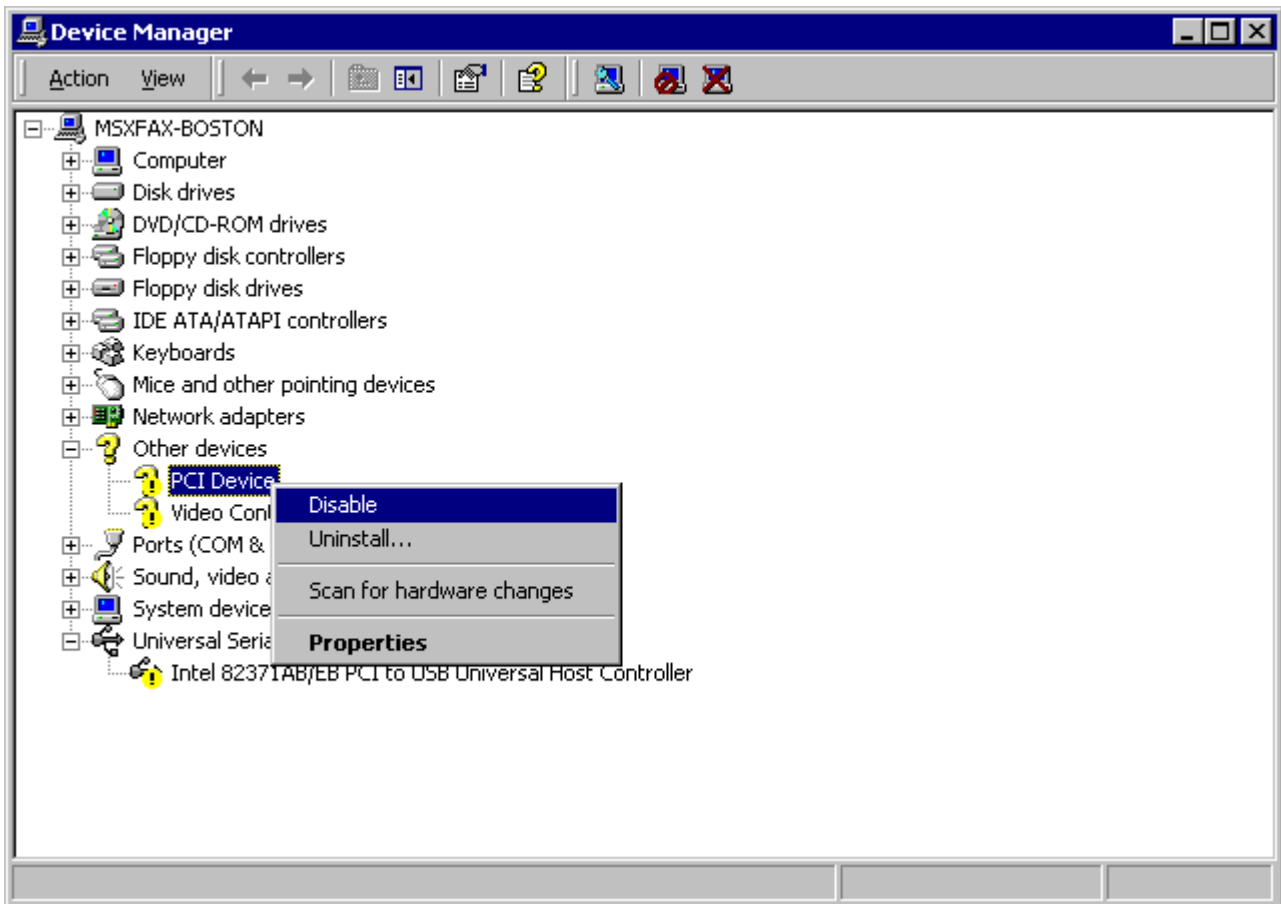
- Go to programs, Control panel, double click System Icon.



- Select the Hardware tab
- Select Device Manager
- Expand other devices to show unknown PCI devices.

Note: If you are using the newer Brooktrout Universal boards DO NOT DISABLE the device but proceed to the next section "Running Brooktrout's Diagnostic Test Software".

- Right click, select disable as shown below.



- Select Yes to the warning message.

14.2 Running Brooktrout’s diagnostic test software

Section 7 installed the diagnostic test software for your Brooktrout fax board(s).

Important:

Do not use Windows Terminal Services to conduct Brooktrout Diagnostics Tests. Perform the tests at the fax server itself.

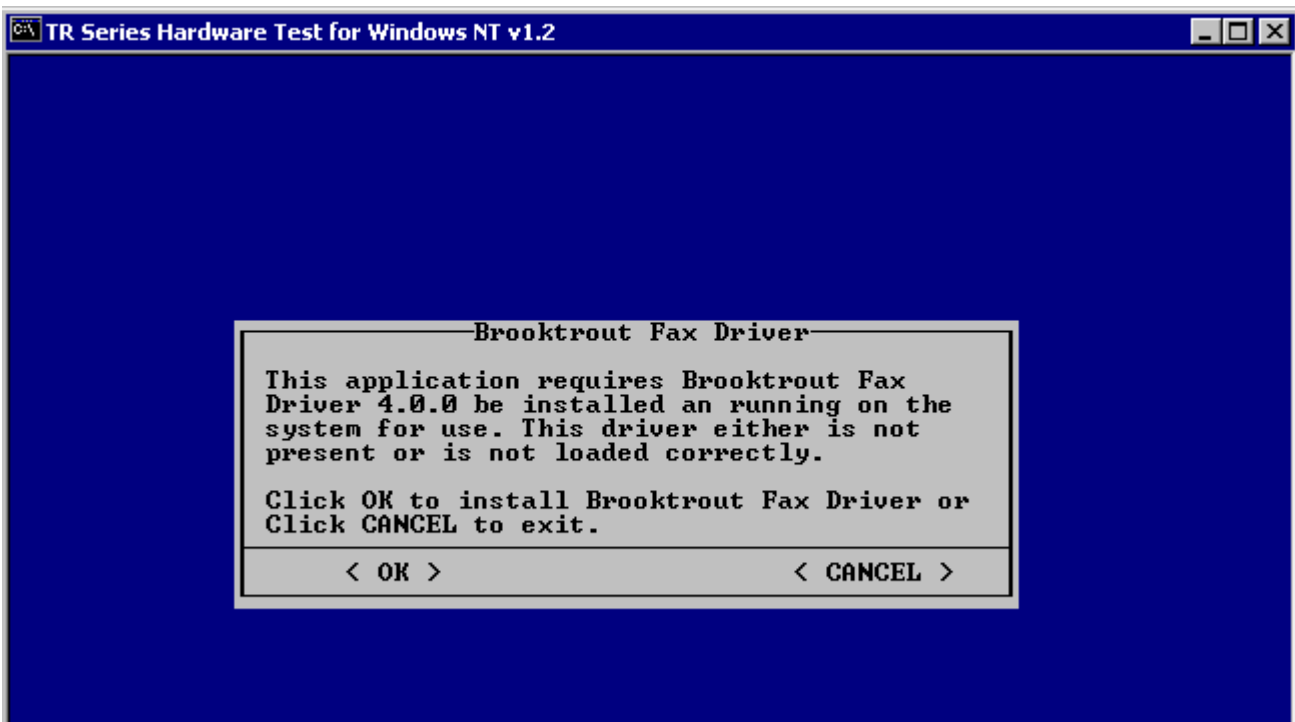
- Connect phone lines to your fax boards in accordance with the Brooktrout hardware guide which came with your fax board(s)..
- Login to your fax server as a Domain Administrator.
- Select Start

- Select Run
- Type CMD
- OK
- Navigate to the program files directory on the disk where you installed the installation files.
- Navigate to brooktrout diag directory
- Type TESTNT

```

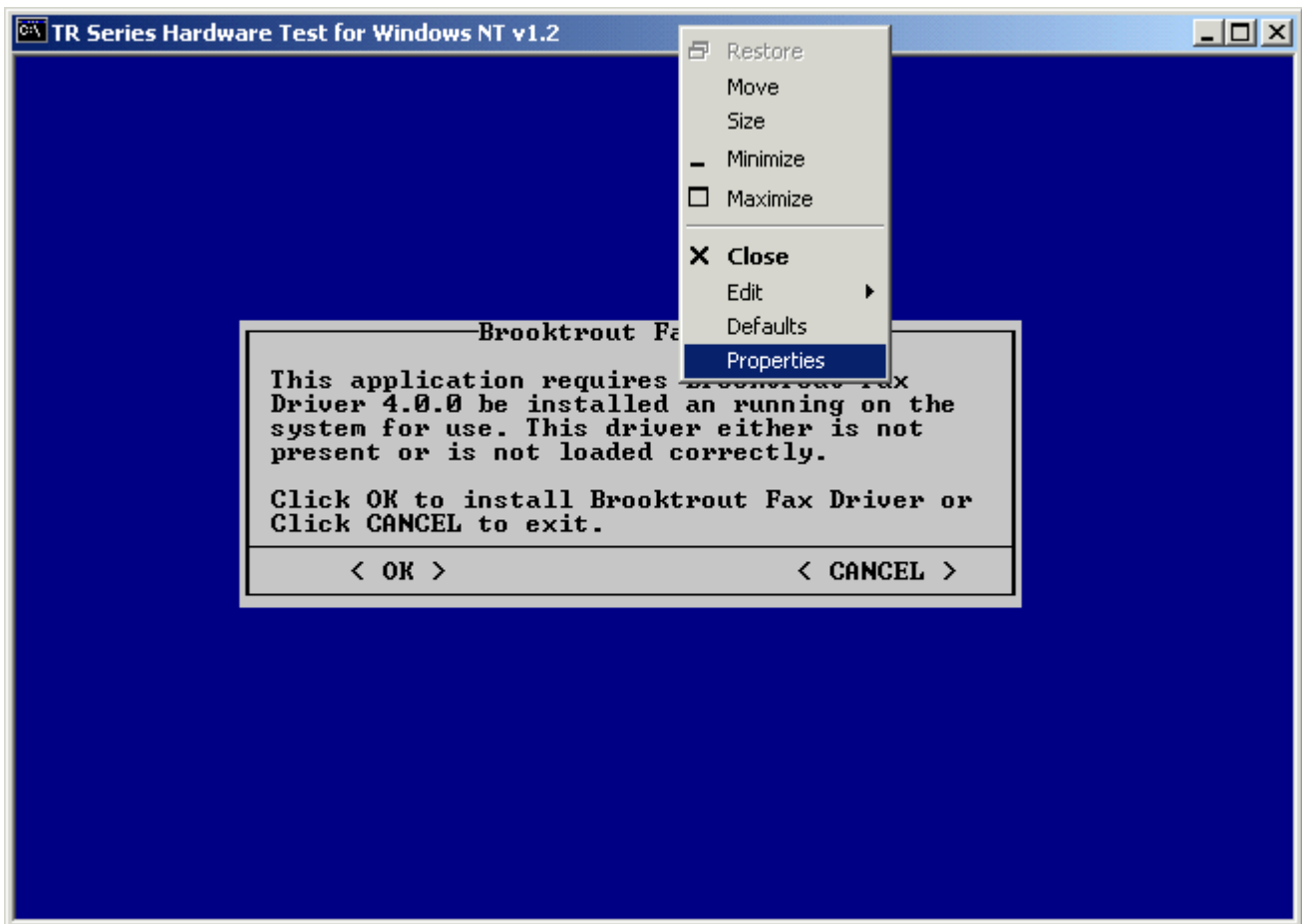
C:\WINNT\System32\cmd.exe - testnt
11/04/1998 11:06a          4,708  CGCODE.TXT
09/18/1997 01:46p          6,532  COUNTRY.CFG
07/28/1999 05:37p       576,193  DIAG12.EXE
10/04/1999 02:22p          1,195  DIGITAL.CFG
10/01/1999 05:56p       61,952  FAXCFG.EXE
11/16/1999 02:49p           26  FAXINIT.CFG
04/14/1999 03:21p       57,344  FAXINIT.EXE
12/21/1990 03:19p       10,757  IBMPCPS.FZ8
01/17/2000 09:03a          761  ISDN.CFG
10/28/1998 02:34p          8,653  MSG.TXT
02/14/2002 07:02p     1,156,131  ntdiag.exe
11/02/1998 11:14a          52,736  NTINSTAL.EXE
01/17/2000 09:51a          7,366  README.TXT
11/16/1999 03:09p          47,211  RESULTS.TXT
09/17/1997 06:47p          25,088  RUNFAXIN.EXE
01/17/2000 09:58a          15,004  SESSION.TXT
05/12/1998 09:45a       526,994  TEST-164.PEX
09/12/1997 01:33p          18,801  TEST.IPS
11/16/1999 11:57a       395,264  TESTNT.EXE
02/15/2002 03:41a           948  USER.CFG
          23 File(s)          3,135,195 bytes
          2 Dir(s)         6,680,162,304 bytes free

C:\htdiag1v2_win2k>testnt
    
```

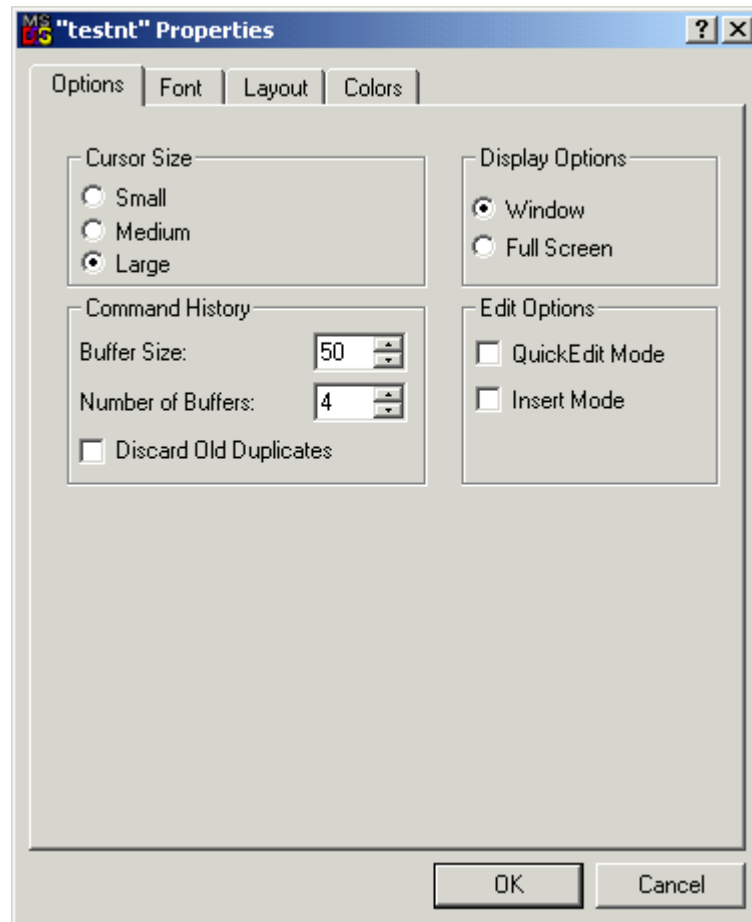


- Position your mouse pointer to the blue bar with the title "TR Series Hardware Test for Windows NT 1.2".

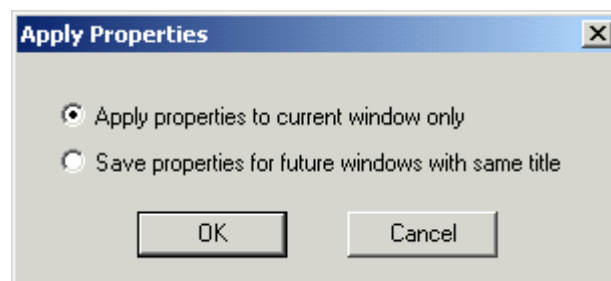
- Click the Right button on your mouse
- The following screen will be displayed.



- Select Properties
- In the Options tab make sure that the "Quick Edit mode" and "Insert Mode" options are UNCHECKED.



- Click OK.

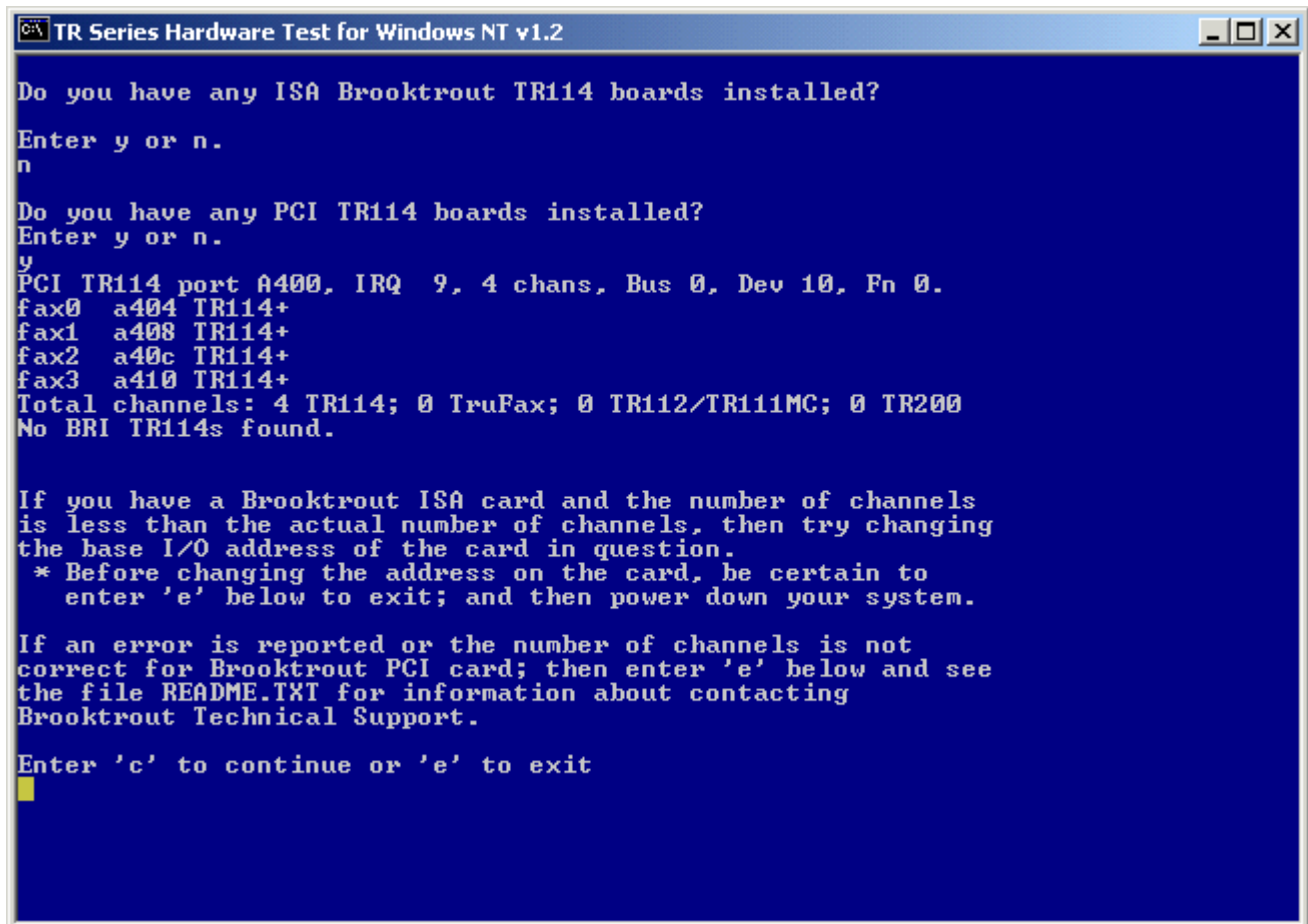


- Select Apply properties to current window only
- Click OK.
- Answer the questions similar to those in the example below

```
TR Series Hardware Test for Windows NT v1.2
Installing Brooktrout Fax/Voice Device Driver Version 4.0.0
How many total fax & voice channels do you want to support(1-96, default 16): 4
What interrupt line will the ISA fax/voice boards use;
enter -1 if you are using only PCI boards (default 5): -1
What DMA channel will the ISA fax/voice boards use,
-1 if no ISA boards or no DMA channel (default 1): -1
Configuring fax/voice driver:
    Number of channels 4
    Interrupt line -1
    Dma channel -1
    Buffer size 8192
    Interrupt queue size 10
    Debug: y, 200 0
The C:\WINNT\bfx directory has been created.
The service named 'bfx' has been added to the registry.
Attempting to start Brooktrout Driver (bfx service)

The bfx service was started successfully.

Press ENTER key to continue
█
```

```
TR Series Hardware Test for Windows NT v1.2

Do you have any ISA Brooktrout TR114 boards installed?
Enter y or n.
n

Do you have any PCI TR114 boards installed?
Enter y or n.
y
PCI TR114 port A400, IRQ 9, 4 chans, Bus 0, Dev 10, Fn 0.
fax0 a404 TR114+
fax1 a408 TR114+
fax2 a40c TR114+
fax3 a410 TR114+
Total channels: 4 TR114; 0 TruFax; 0 TR112/TR111MC; 0 TR200
No BRI TR114s found.

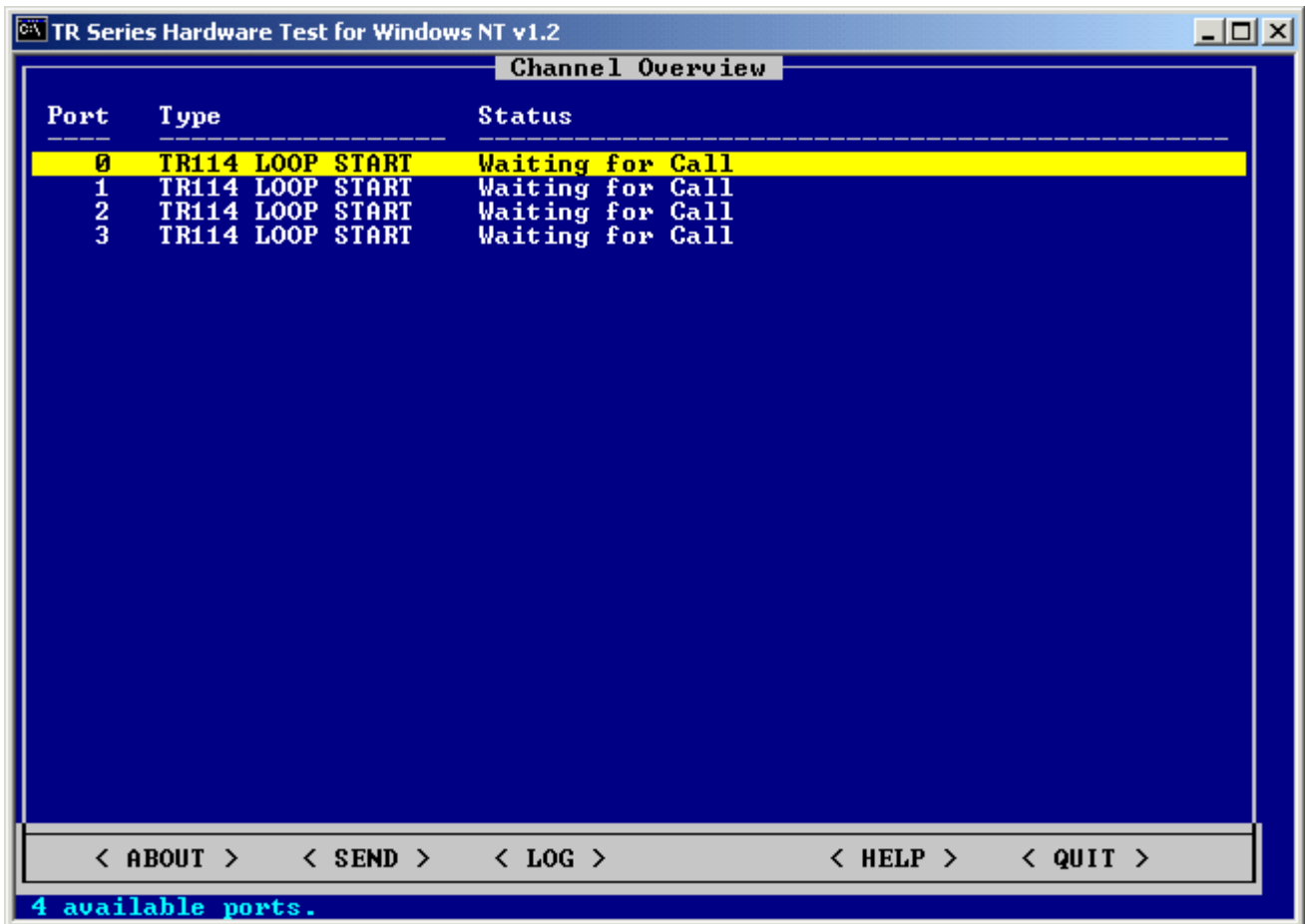
If you have a Brooktrout ISA card and the number of channels
is less than the actual number of channels, then try changing
the base I/O address of the card in question.
* Before changing the address on the card, be certain to
  enter 'e' below to exit; and then power down your system.

If an error is reported or the number of channels is not
correct for Brooktrout PCI card; then enter 'e' below and see
the file README.TXT for information about contacting
Brooktrout Technical Support.

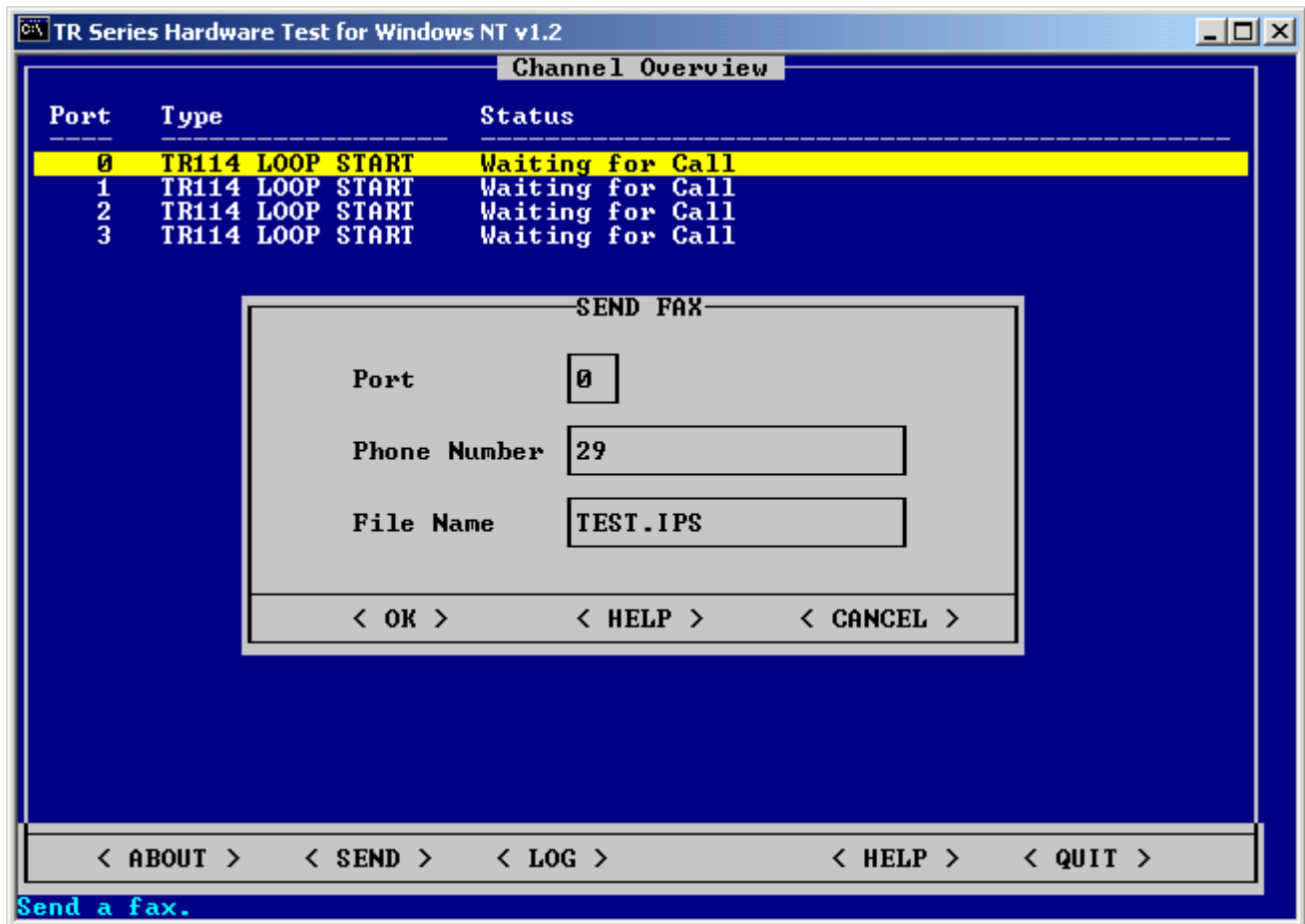
Enter 'c' to continue or 'e' to exit
■
```

The example above shows a 4 port TR114 Loop Start Analogue board.

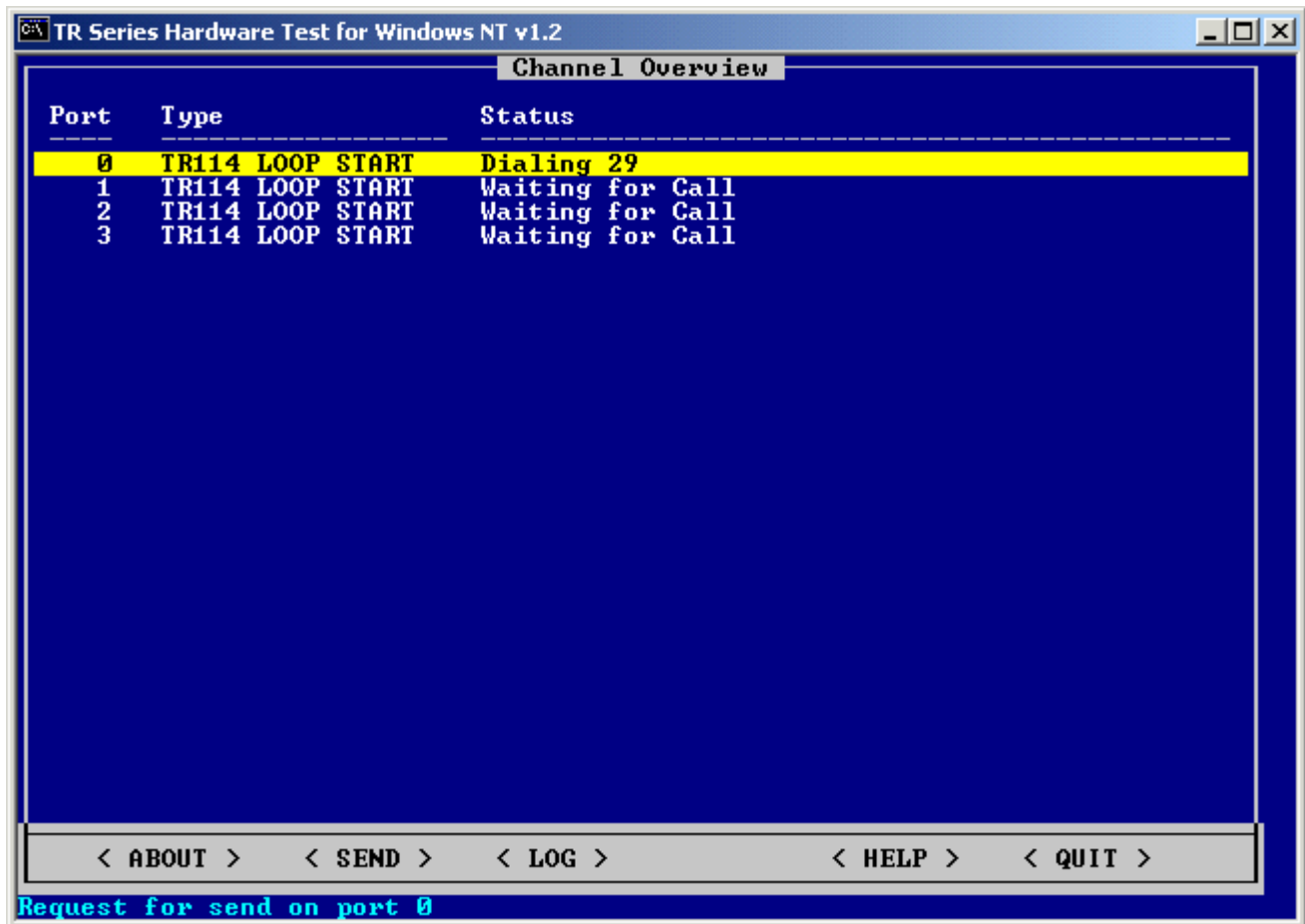
- Press C to continue



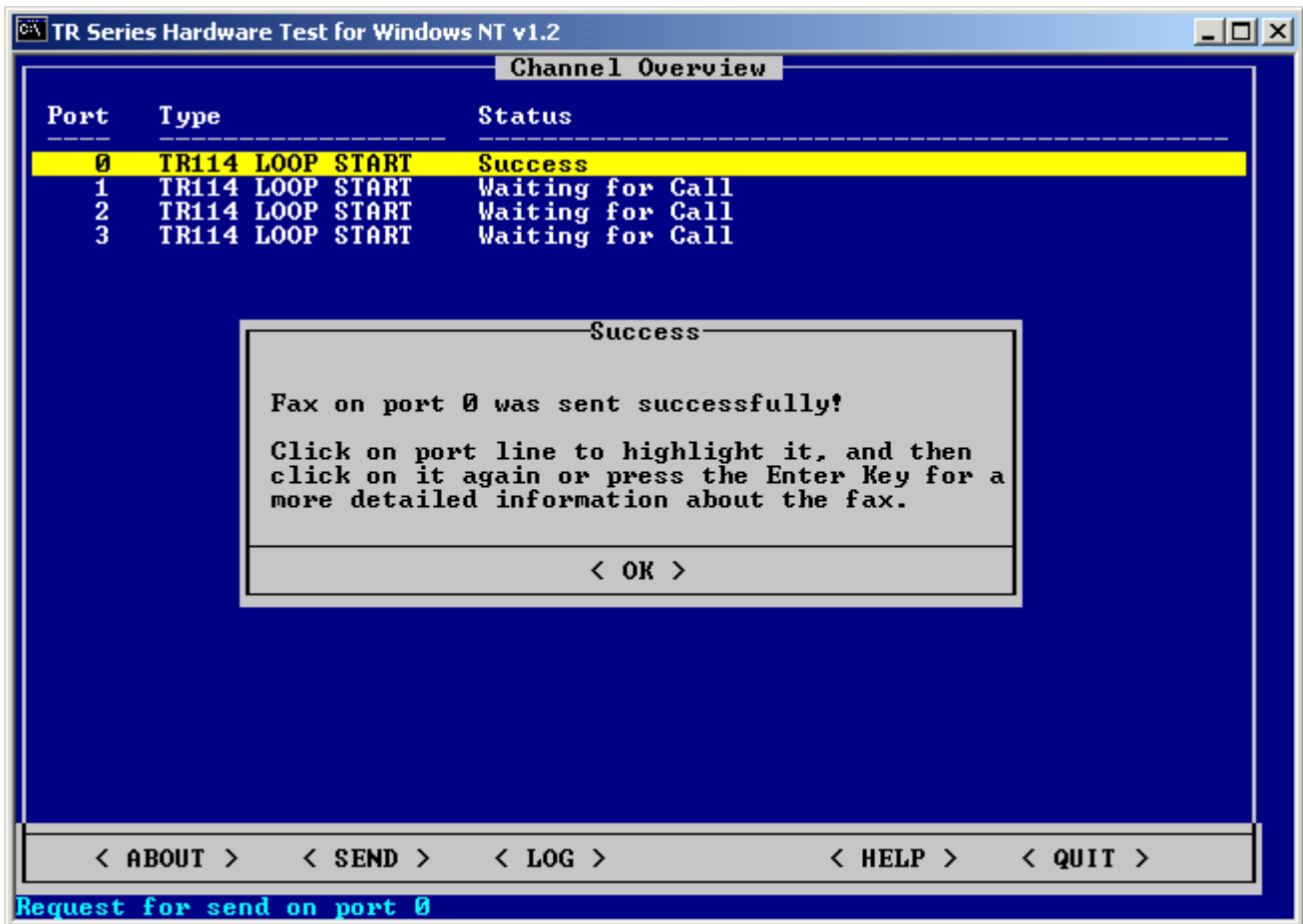
- You should initially see each port with the Status = "Resetting Channel".
- After a few seconds, the Status should change = "Waiting for Call".
- Print a copy of the screen above so that when you configure msXfax XP fax line devices you will know exactly which ones are which. The general order relates to the sequence you placed the boards in the PCI slots.
- Connect your Brooktrout board lines to your telephone interface. If you are using a standard analogue loop start phone system, connect line 0 to your telephone socket.



- Click on the < SEND > button with your left mouse button
- Select port 0 (this is the cable labelled 0 when using standard phone connections)
- Enter the phone number of the fax machine. Our example shows that we are dialling a fax machine via a PABX extension.
- Click OK



- The test program will now say Dialing + the phone number you specified.
- The test program will advise of progress. If everything is working, it should say sending.



- Click OK.
- Select Quit

Note: **Port 0 in the Brooktrout diagnostics is device 1 in msXfax XP.**

Note: if the status does not change from Resetting Channel to Waiting for Call, you may be experiencing problems such as:

1. IRQ/DMA resource conflicts (ISA boards)
2. PCI resource allocation problems (check your BIOS settings with Brooktrout/your computer manufacturer)

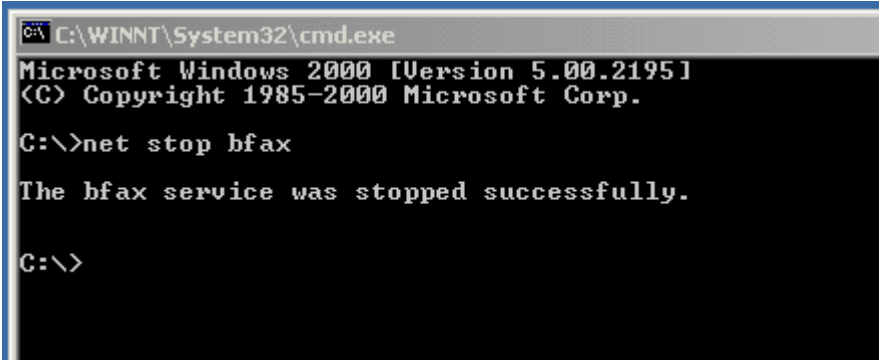
Under certain circumstances your computer may not even boot with multiple Brooktrout boards installed. If you experience this condition please contact Brooktrout and your computer manufacturer to resolve the specific hardware issues relating to your system.. For example: AOPEN motherboard AX6BC generated 1 long beep and 3 short beeps at power on stage when more than 1 Brooktrout PCI board was installed in a BNS Group test lab machine.

15 Remove Brooktrout Diagnostic Software

Important!

Removal of Brooktrout Diagnostic software is mandatory otherwise msXfax XP will not work.

- Remain logged in to your fax server as a Domain Administrator.
- Select Start
- Select Run
- Type CMD
- OK
- Navigate to the program files directory on the disk where you installed the installation files.
- Navigate to brooktrout diag directory
- Type NET STOP BFAQ



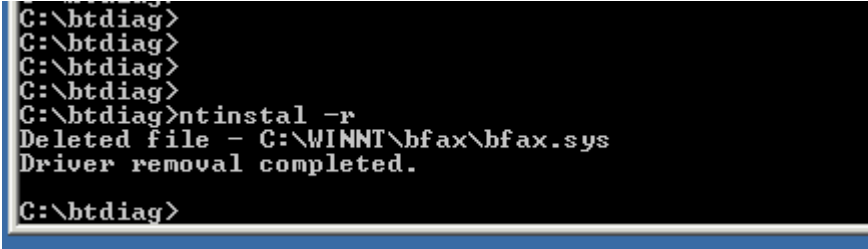
```
C:\WINNT\System32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>net stop bfax

The bfax service was stopped successfully.

C:\>
```

- Type NTINSTALL -R



```
C:\btdiag>
C:\btdiag>
C:\btdiag>
C:\btdiag>
C:\btdiag>ntinstal -r
Deleted file - C:\WINNT\bfaq\bfaq.sys
Driver removal completed.

C:\btdiag>
```

- Re-boot your fax server

16 Installing msXfax XP

16.1.1 Login to the Domain & Permissions

- If your fax server is a Windows 2000 member server you may login as a user of the local administrators group or as a domain admin.
- If your fax server is a Windows 2000 domain controller you should login as a Domain Administrator.

It is recommended that your fax server computer account be in the same domain as your Exchange server computer account.

With the exception of the msXfax XP Print Service, all other msXfax XP services run in the local system context. msXfax XP uses POP3 protocol to access its Exchange mailbox using credentials supplied in the setup/configuration of msXfax XP. Therefore, msXfax XP requires no special permissions to access your Exchange server over and above the POP3 credentials to access the msXfax Messenger mailbox.

Active Directory services interfaces built into Windows 2000 provide the transport for msXfax XP to access directory resources.

16.1.2 Run the Setup program

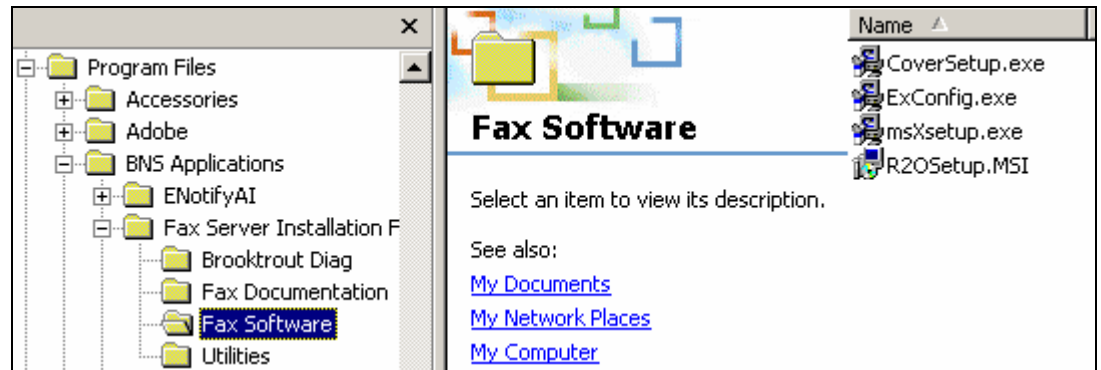
The initial installation setup program installs: Brooktrout diagnostics, documentation and msXfax Setup software.

If you're upgrading you should have already installed the msXfax XP installation files (see previous chapter). The procedure is the same to upgrade as it is to install a fresh copy. In most instances, msXfax XP setup software will examine existing software settings and preserve them during the upgrade.

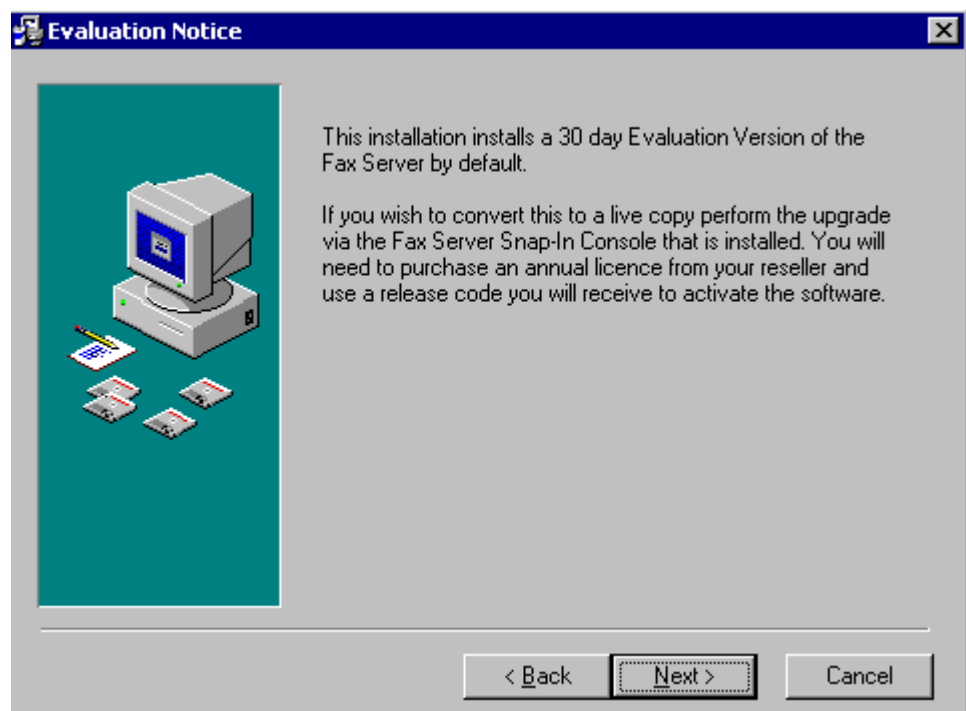
In previous sections you installed and tested hardware components, configured Exchange 2000/2003 in preparation for installation of msXfax XP on your Windows 2000 fax server.

Now it is time to install msXfax XP on your fax server.

- Navigate to Program Files\BNS Applications\Fax Server Installation Files\Fax Software



- Run the msXfax Install Program, **msxsetup.exe**
- Accept or Reject the license agreement, click Next
- Choose a local hard disk location for installation of msXfax and click Next



- The Exchange Site code is used by msXfax XP to qualify DID/DDI routing information in Active Directory. For example: it is possible that DID fax extension 5555 in your Boston PBX could also exist in your London office. Therefore, to distinguish the intended recipient in Active Directory, msXfax XP fax server(s) in a particular site are configured to concatenate the Site code with the numeric DID value to ensure that inbound faxes are routed to the Active Directory object which matches both the Site code and the DID value. In a global enterprise this is essential.

Recommendation for sites in Countries such as Australia. If your organization does not extend beyond your country your ISDN number range will be unique. Therefore, using "DDI" or "DID" as the Exchange Site code is recommended. Reason: it is more meaningful in that context when inserting routing information into Active Directory.

Exchange Site Code :

Boston

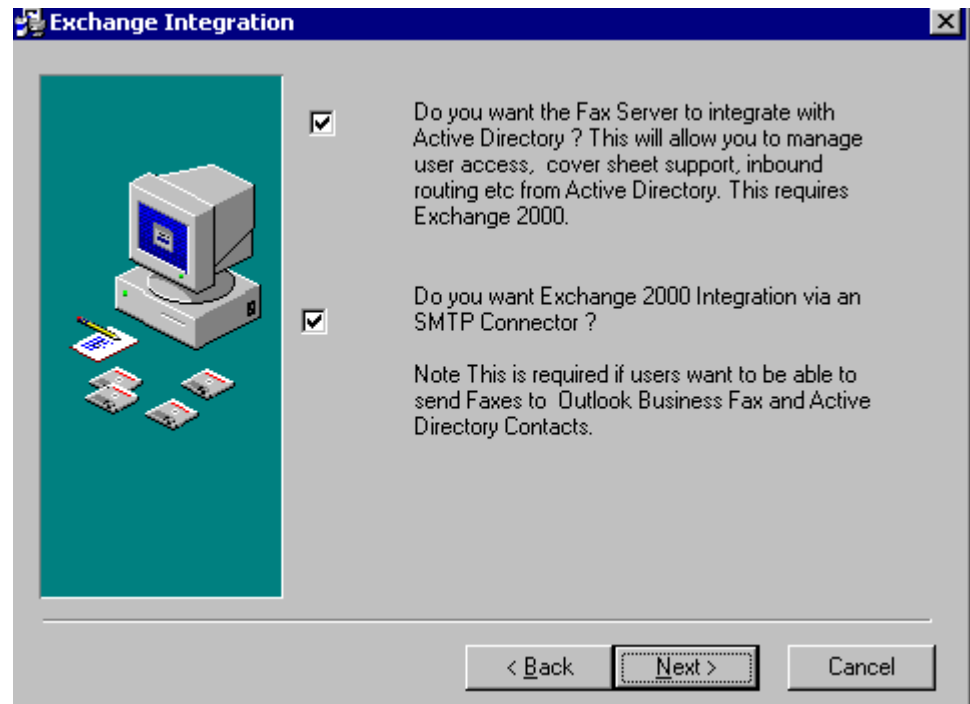
SMTP/Exchange Server IP Address : 10.1.1.1

Note : The Site Code is used to identify what Exchange Site this Fax Server is servicing. Inbound faxes are routed to Exchange Users or Contacts that have a Site Code and DID value specified in the Fax Number field of their Active Directory Record e.g Chicago9982, where 'Chicago' is the Site code and '9982' is the DID value.

< Back Next > Cancel

The msXfax XP Site Code is used to uniquely identify inbound routing information within a global enterprise directory. The msXfax XP Site code is pre-pended to the actual DID value received by the fax server to form a unique string of characters to search Active Directory.

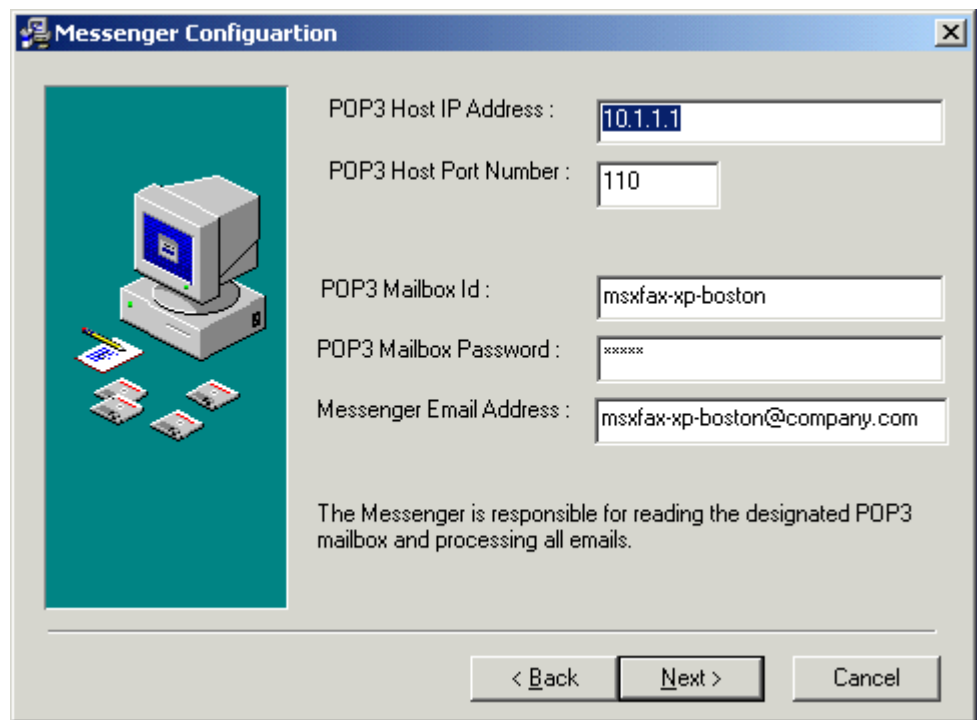
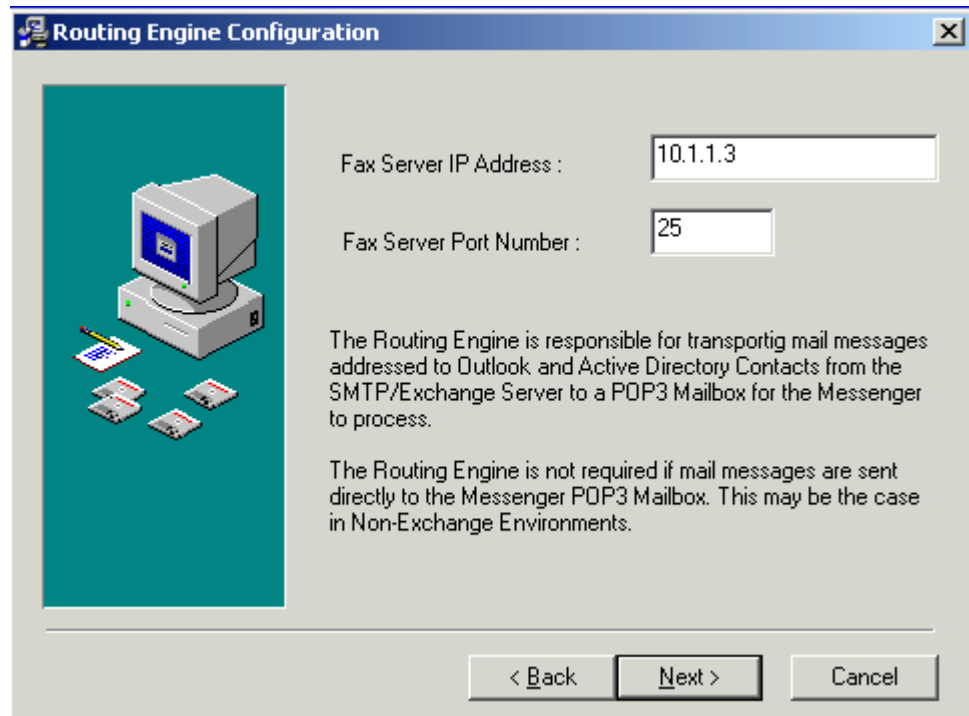
- Recommendation for customers who have designed their Active Directory and Exchange networks based on Geographic location:
 - Insert a meaningful msXfax XP Site Code being the general location eg: Boston. Some customers in large networks use their Active Directory Site name. msXfax XP Site Code is used mainly to pre-pend inbound DID values with a logical name to ensure that DID values are unique to an office or campus being serviced by the fax server. The msXfax XP Site code can be changed later when you have a better understanding of its use. For now, simply use the Office, town or city name as your Site code.
 - Supply the IP address of one your Exchange Servers (or SMTP Servers) servicing the Site. DNS entries can also be used.



Special Note: **Customers who have deployed their first Exchange 2000 or Exchange 2003 server should leave both of these options checked and click next.**

Customers deploying in a network where Active Directory has been deployed but the first Exchange 2000 or Exchange 2003 server is yet to be deployed must UNCHECK the 1st option above "Do you want the fax server to integrate with Active Directory...."

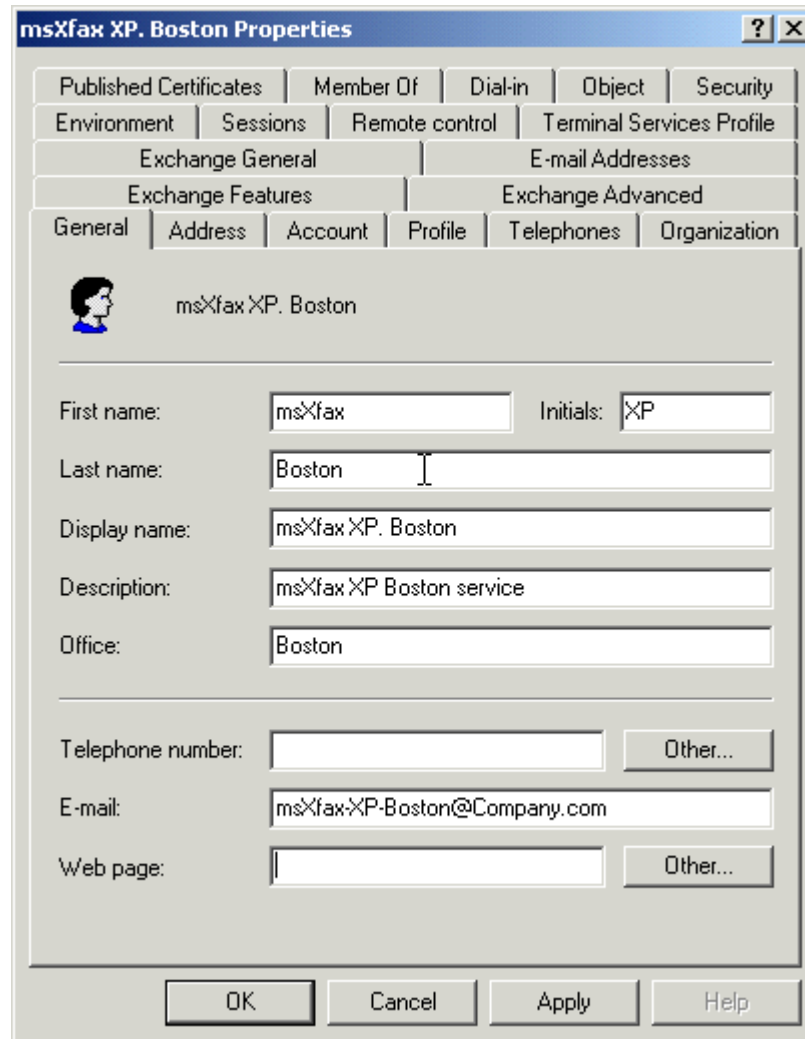
NOTE: You should always have the 2nd option CHECKED.

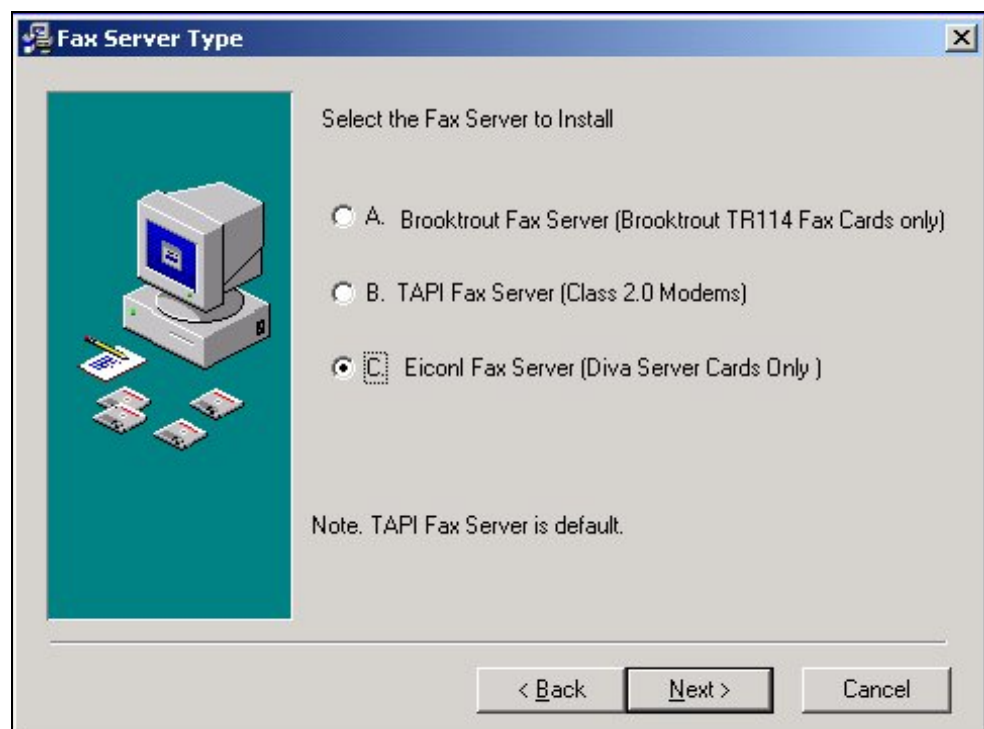
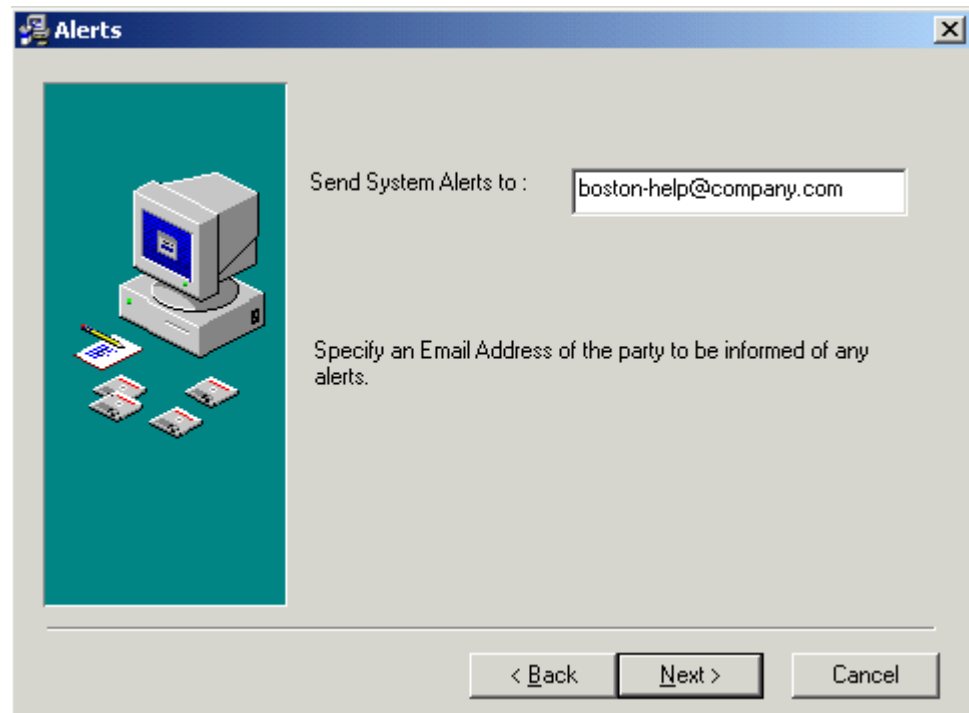


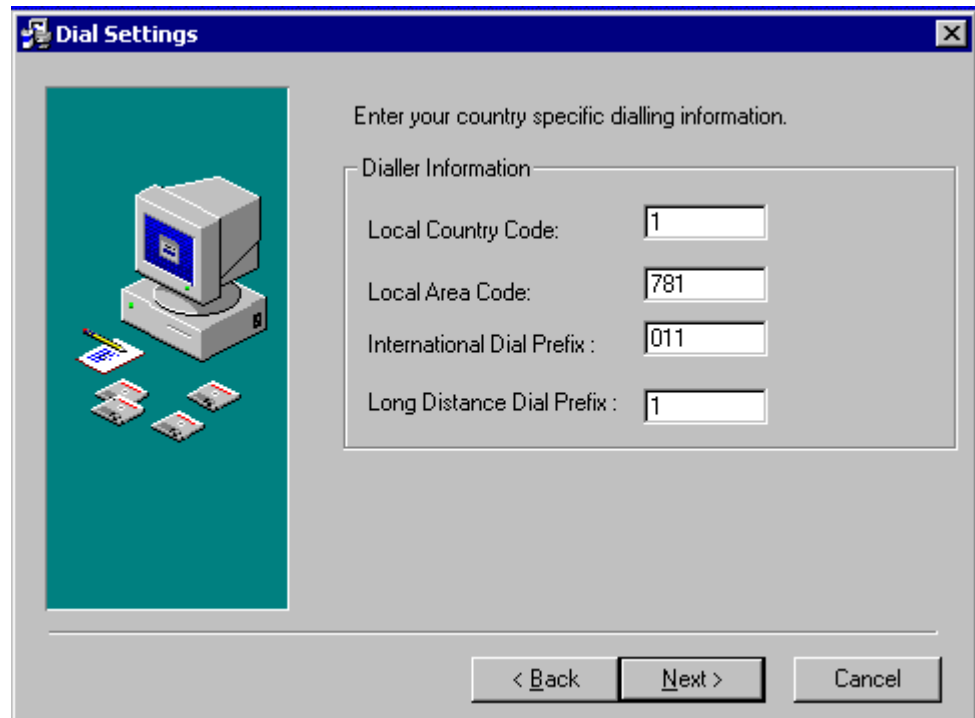
The POP3 Host IP address: is the IP address of the Exchange server where you created the msXfax XP mailbox. POP3 Host Port Number is usually port 110.

- POP3 Mailbox ID is the Account login name for the msXfax XP mailbox.
- POP3 password is the password you set in Active Directory for the msXfax XP mailbox.
- Messenger Email Address is the SMTP email address of the msXfax XP mailbox.. This is the SMTP address of the msXfax XP mailbox you created. Refer to the

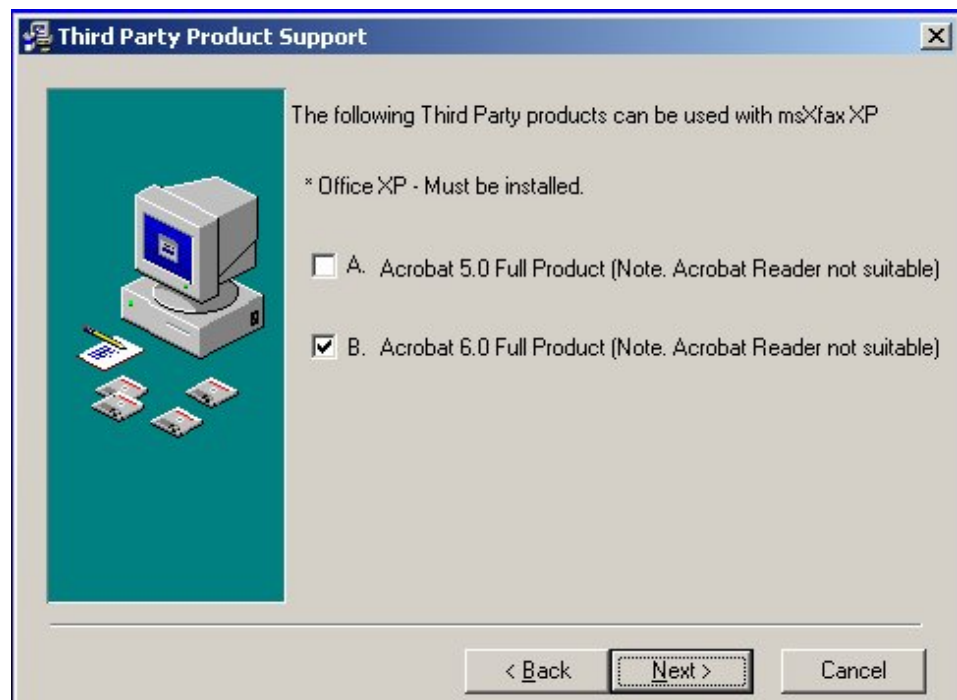
Email addresses property sheet and the general property sheet of the the msXfax XP mailbox. Refer to the following example.







- Select the Country code settings
- Adobe version selection. Select which version of Adobe's product has been installed on the fax server.



- Choose the Program Manager group to place shortcuts into, click Next to continue
- Click Next to continue installation, msXfax Setup will now proceed to install files
- When a message box appears saying you have successfully installed msXfax XP. Click Finish to complete the installation.

- A message stating that your system needs to be rebooted to complete installation, click OK.
- Your system will reboot and msXfax will be successfully installed.

16.1.3 msXfax XP Print Service

msXfax XP offers inbound and outbound printing features. If your installation requires printing please follow these instructions:

- Create an Active Directory account which has sufficient permissions to print to designated printers within your enterprise. Permissions will vary depending on your security model. Basic recommendation: set up a user account (no Exchange mailbox) which is a member of the Administrators Group or Domain Admins group(s) for each domain where you want the print service to print. Small customers tend to use the Administrator Account. Large customers tend to set up a specific account with only the permissions required to print to printers within the enterprise.

Note: if you decide to use other groups such as the Printer Operators Group then this group must be granted the logon as a service right. The operating system will automatically grant the right to the account you select when you follow the procedure below.

- Run a program Services.msc
- Scroll down until you see the msXfax XP Print Server
- Right click properties
- Select Log on property tab
- Select This account
- Click Browse to select the security account you wish to use eg: Administrator
- Enter the password for the account
- Verify the password for the account
- Click OK.
- Logon as a service right may appear if the account you have used has not yet been granted the right. Click OK.
- STOP the msXfax XP Print Server Service.
- **DO NOT START the service.** Press the refresh button (green arrowed button) on the Service MMC. msXfax XP's System Attendant should automatically restart the service having detected that it was not running.
- **That completes the installation of the Print Service.**

17 msXfax XP configuration overview

Note: **All administration is performed via msXfax's Console**

17.1 Maintaining a rich Active Directory

A rich well maintained AD will serve your organization well. Completeness of Address details, phone contacts, fax numbers become important as you deploy more AD aware applications on your network.

BNS Group recognized that AD Administrators needed a powerful tool to assist them maintain user object properties in their respective OU's. For example: imagine how long it would take to change your Company name or address properties for every user in your enterprise.

By licensing msXfax XP you automatically obtain this capability through the msXfax XP Snap-in.

BNS Group license the features of the snap-in as a separate product called "Management Aid to Active Directory" (MAAD) or simply known as the MAAD tool. The MAAD tool can be purchased from the Internet and will pay for itself immediately saving you valuable time. Before we discuss the richness of AD and msXfax XP configurations, let's take an important look at Permissions and Security.

17.2 Permissions & Security

msXfax XP uses the underlying services provided by ADSI/LDAP. Enterprise customers running global networks generally delegate control of AD to selected site administrators many of whom are NOT members of the Domain Administrators Group.

msXfax XP has been designed to consider enterprise global security permissions allowing selected operations to be conducted at a local computer level (ie: Login as user who had been granted local Administrator rights to the member server as opposed to a Domain Administrator login).

17.2.1 msXfax XP management of Active Directory (Permissions)

msXfax XP is capable of updating select properties of AD user and AD Contact objects. In order to perform updates and connect to AD itself you must login to the Domain (from the Fax Server) with sufficient permissions to access AD itself.

One simple way to determine if you have the necessary permissions is to install the ADMINPAK (Active Directory Snap-ins) found in the I386 directory on the Windows 2000 server CD. If you can access and manage AD from the Fax Server via the snap-ins then the account you logged in as has been granted those rights.

17.2.2 msXfax XP management at a local server level

Enterprise customers typically want to restrict access to AD using the tools available in Microsoft's snap-ins. However, at an operational level, a local administrator will need local access to the member server and login as a local user account (Refer to: Start, Programs, Administrative Tools, Computer Management, Local Users & Groups).

A local msXfax XP administrator must be a member of the Local Administrators Group in order to access configuration settings and other features provided by msXfax XP's console.

Note: If you implement security in this manner in an Exchange 2000/2003/Active Directory enterprise, please advise your local administrator not to utilize the options called:

- 1. Fax Server settings in absence of LDAP support**
- 2. Fax Server user access in absence of LDAP support**

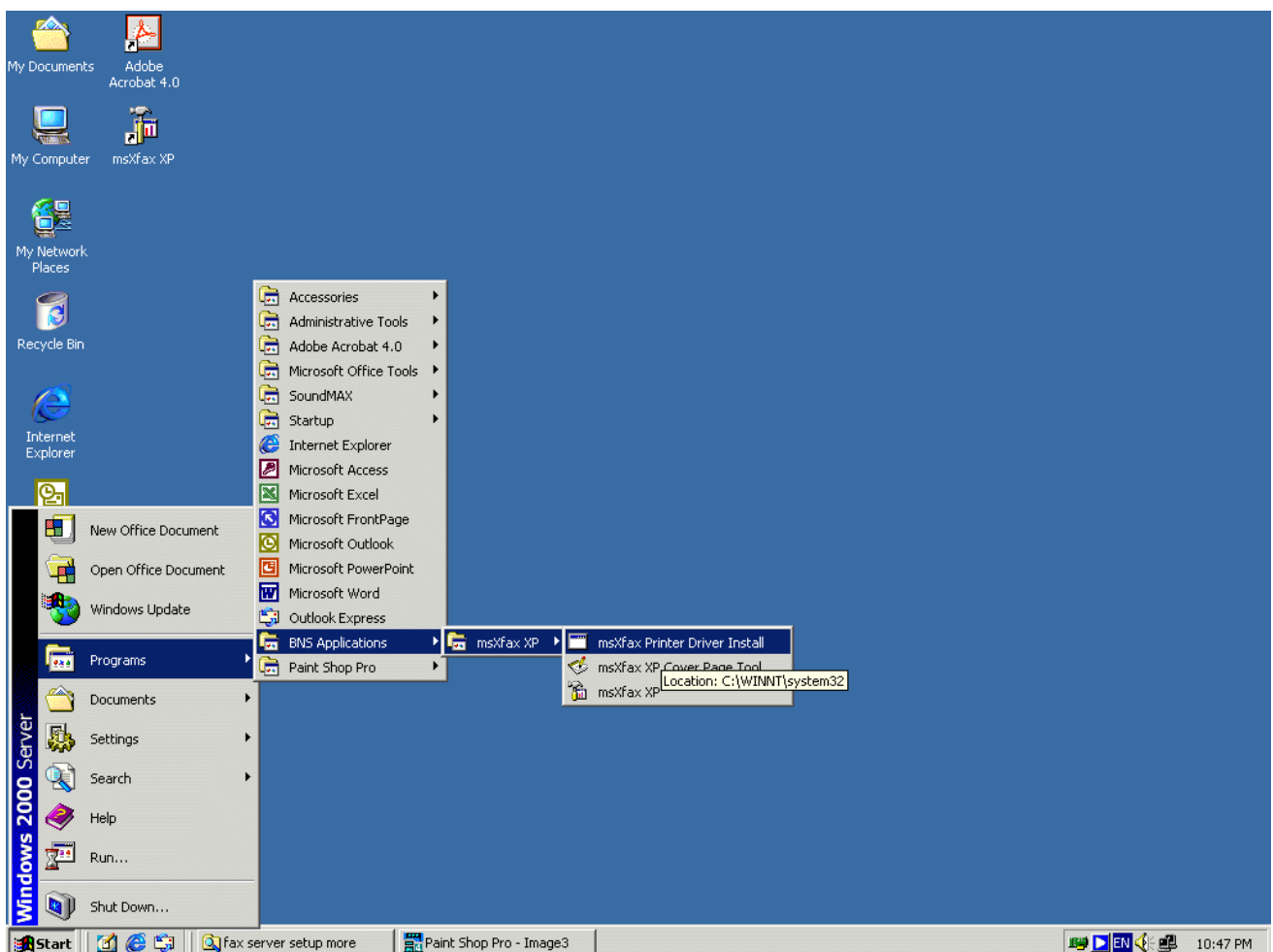
These 2 options assume that there is no back end LDAP compliant directory service but still provides security at a local level. In reality, it is purely a permissions restriction.

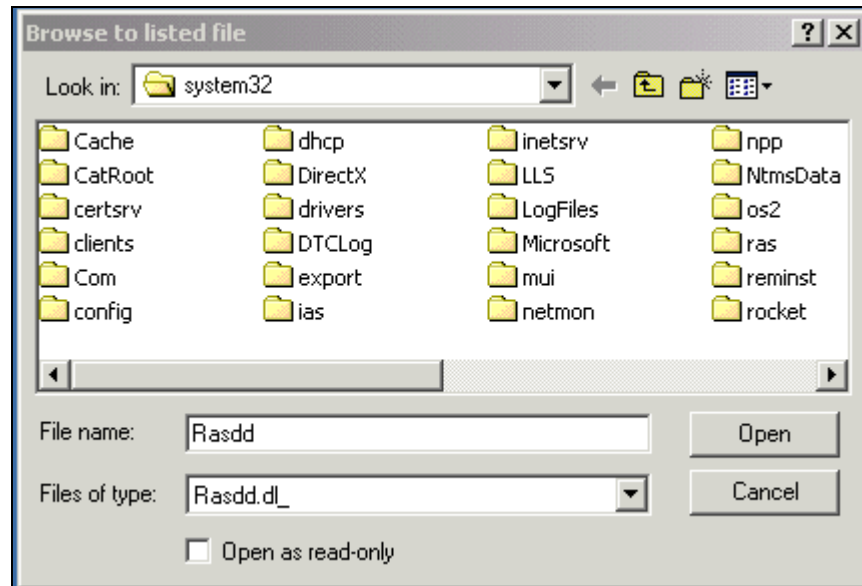
18 Configuring msXfax XP Printer Driver

18.1 Fax printer driver

This documentation assumes that you're logged in to the Domain with full permissions to AD.

- Select msXfax printer driver installation as shown below.





- Simply click on the Open button.



- Click OK

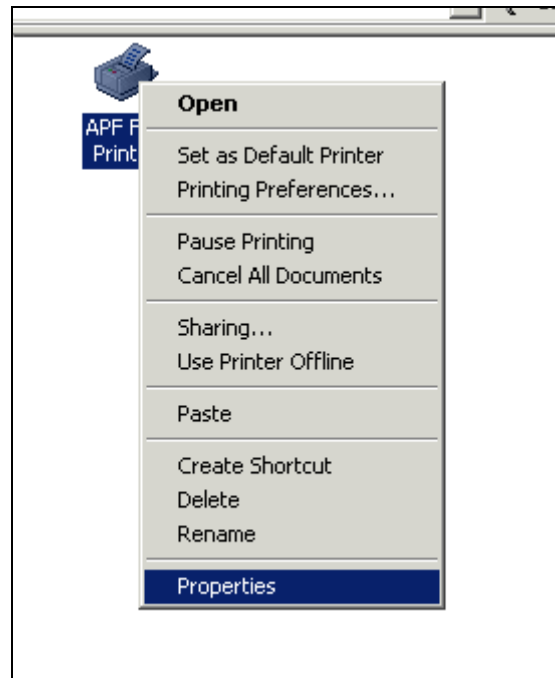
Note: if you do not see the APF Fax Printer Driver Installed OK dialogue box above this is probably because you're installing on Windows 2003 Server. BNS Group has not qualified msXfax XP version 6.7.4 on Windows 2003 Server. **If you are a beta test partner on Windows 2003 Server, please refer to the very end of this manual.**

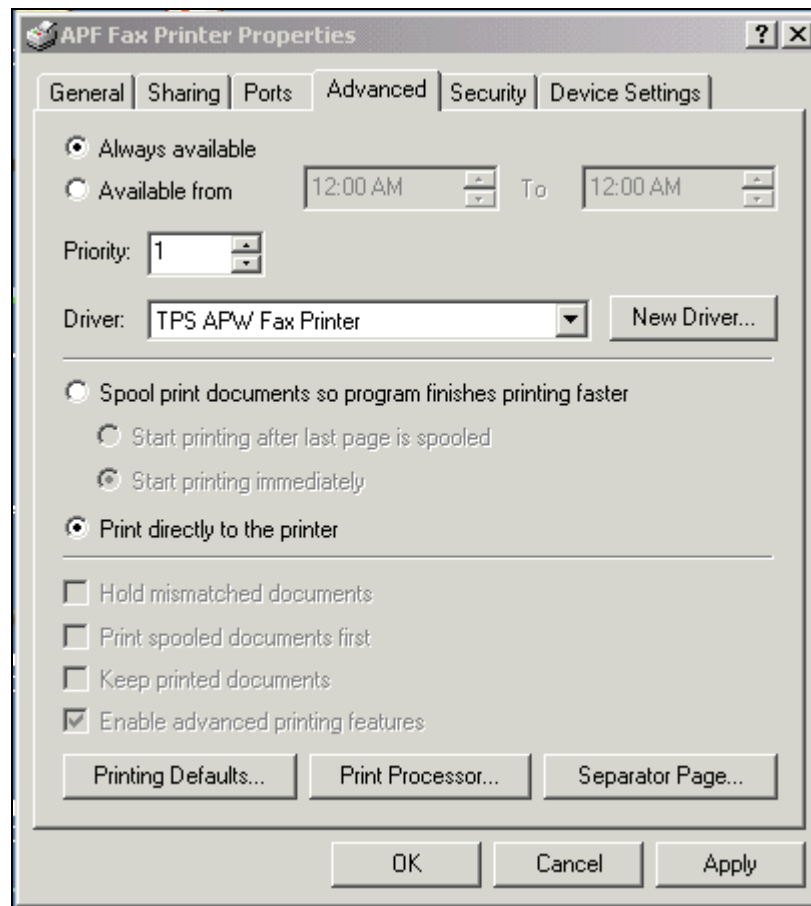
If you have installed on Windows 2003 Server you should install only on Windows 2000 Server Service Pack 4.

- Select Start, Settings, Printers.
- Right click on APF Fax Printer Icon

Note: **Set the APF Fax Printer as the Default Printer (“Set as Default Printer”)**

- Select Properties





- Click on Advanced property tab
- Select the radio button "Print directly to the printer"
- Click OK.

19 msXfax XP Configuration

19.1 msXfax XP Console

Prior to msXfax XP version 6.7.4, msXfax XP utilized Microsoft Management Console (MMC) snap-ins as the method of management. With the introduction of Windows Server 2003, Microsoft implemented version 2.0 of the MMC which is not supported on Windows 2000 Server. BNS Group therefore, decided to replace the MMC snap-in with its own independent console to provide backward compatibility for msXfax XP customers.

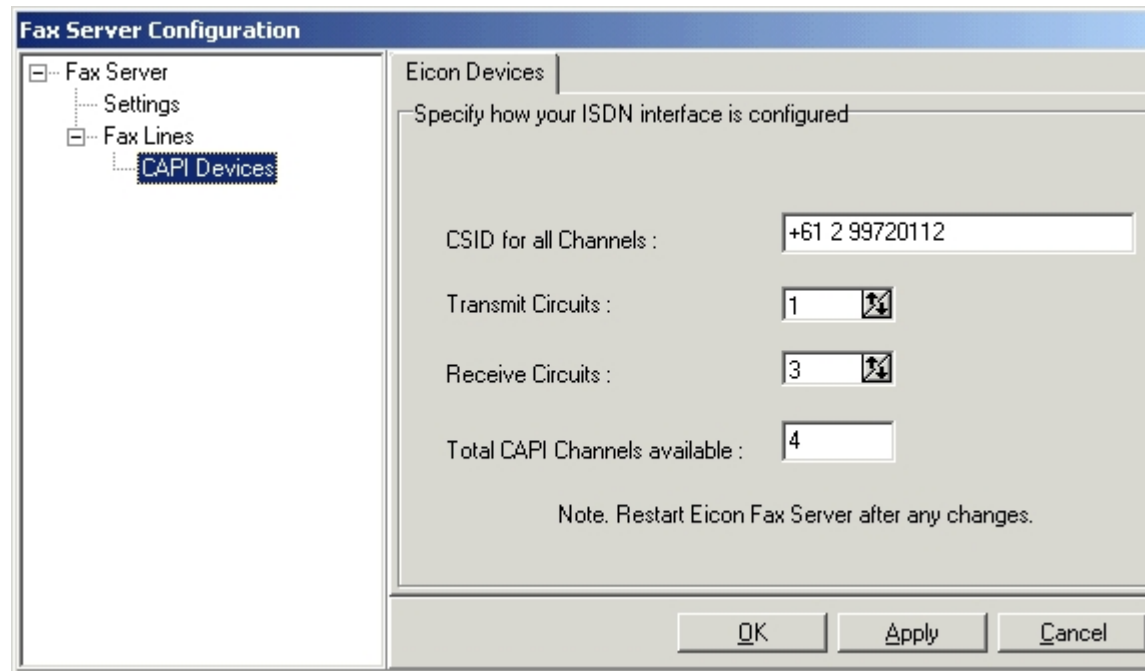
- To load the msXfax XP Console, select Start, Programs, BNS Applications, msXfax XP, msXfax XP Console.

The first time msXfax is started you are allowed 30 days to evaluate the software. At any time you can activate the software from evaluation mode to production. Once it is activated, the expiration date of your license is displayed on the main msXfax XP console. During the evaluation period, each fax transmitted by msXfax has an evaluation statement included at the top of each fax page (called the fax header). When the product is activated in a production environment, the fax header comprises details such as recipient name.

19.2 Configuring msXfax XP for Eicon boards

msXfax XP and Eicon Networks Diva Server boards offer a flexible, scalable and easy to configure solution.

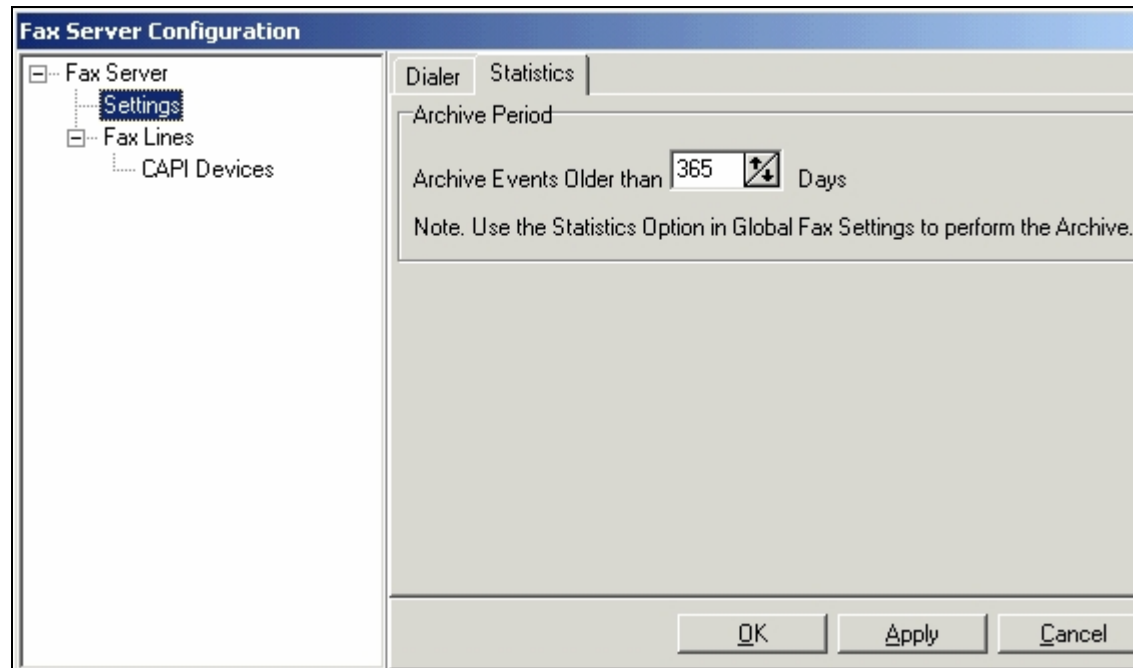
- Open Eicon Fax server
- Double click Fax Devices



Note about Eicon: Prior to release 6.5.4 Eicon boards were configured as TAPI devices. Effective release 6.5.4+ Eicon boards are configured as a CAPI pool.

- Double click on Fax Devices
- Double click on Settings
- The CSID (Communication Subscriber ID) for All Channels is the value which msXfax XP will exchange with the remote fax machine in the fax call setup. CSID usually contains your main fax line number for identification purposes by the receiver.
- Total CAPI channels available represents the number of B channels (for ISDN) which are configured between the CAPI Pool Service and your Eicon adapter(s).
- You need to set how many of the fax lines will be used for transmitting and the number for receiving faxes.
- Receive circuits represents the number of fax lines which can be received.

Receive Circuits must match the total number of Eicon Interfaces configured to Answer incoming calls. It is important to make sure that your Eicon adapters are configured to answer calls and that the total number of lines set to answer should be equal to the number specified in msXfax XP.



- Archive period refers to the msXfax XP events recorded in the Statistics table of the msXfax XP database.

Archiving of statistics is performed via the Fax Server statistics option by clicking the checkbox "Purge & Archive Statistics" then pressing "Export to CSV".

Fax Server Statistics

EventID	Time Entered	Time Sent	Sender Name	Subject	Retry Count	Duration	Total
4742	9/03/2004 5:45:00 P	9/03/2004 5:45:	+61 2 99720112	99720113	0	86	
4741	9/03/2004 5:43:31 P	9/03/2004 5:43:	+61 2 99720112	99720113	0	86	
4739	9/03/2004 5:41:59 P	9/03/2004 5:45:	administrator@exch55d	msXfax XP Test Fa	0	86	
4740	9/03/2004 5:41:59 P	9/03/2004 5:43:	administrator@exch55d	msXfax XP Test Fa	0	86	
4738	9/03/2004 5:40:08 P	9/03/2004 5:40:	+61 2 99720112	99720117	0	86	
4735	9/03/2004 5:38:35 P	9/03/2004 5:40:	administrator@exch55d	msXfax XP Test Fa	2	86	
4735	9/03/2004 5:38:35 P	9/03/2004 5:37:	administrator@exch55d	msXfax XP Test Fa	2	0	
4737	9/03/2004 5:37:52 P	9/03/2004 5:37:	+61 2 99720112	99720117	0	86	
4735	9/03/2004 5:37:28 P	9/03/2004 5:36:	administrator@exch55d	msXfax XP Test Fa	1	0	
4736	9/03/2004 5:36:20 P	9/03/2004 5:37:	administrator@exch55d	msXfax XP Test Fa	0	86	
4734	9/03/2004 5:30:12 P	9/03/2004 5:30:	+61 2 99720112	99720117	0	86	
4733	9/03/2004 5:29:30 P	9/03/2004 5:29:	+61 2 99720112	99720117	0	86	
4732	9/03/2004 5:28:42 P	9/03/2004 5:28:	+61 2 99720112	99713174	0	86	
4731	9/03/2004 5:27:57 P	9/03/2004 5:30:	administrator@exch55d	msXfax XP Test Fa	0	86	
4730	9/03/2004 5:27:57 P	9/03/2004 5:29:	administrator@exch55d	msXfax XP Test Fa	0	86	
4729	9/03/2004 5:27:55 P	9/03/2004 5:27:	+61 2 99720112	99713174	0	86	
4728	9/03/2004 5:26:25 P	9/03/2004 5:26:	+61 2 99720112	99720334	0	86	
4726	9/03/2004 5:26:13 P	9/03/2004 5:28:	administrator@exch55d	msXfax XP Test Fa	0	86	
4727	9/03/2004 5:26:13 P	9/03/2004 5:27:	administrator@exch55d	msXfax XP Test Fa	0	86	

Sorted by Time Entered

Show All Faxes
 Show Sent Faxes
 Show Received Faxes

Descending Order
 Launch Excel
 Purge & Archive Statistics

Select Directory to Export to

Export to CSV

- msXfax XP has now been configured to communicate with your Eicon Diva Server board.

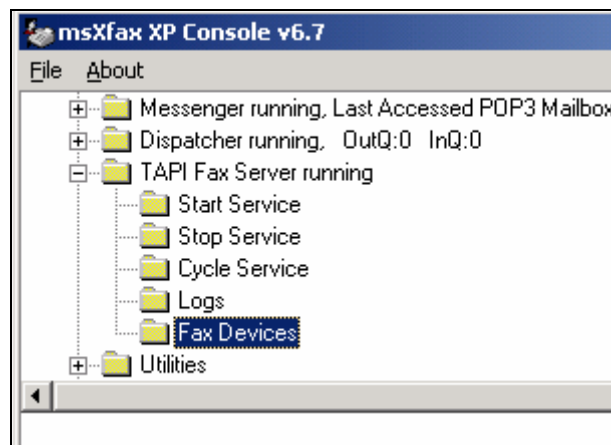
Restart Eicon Service: It is important that you now restart the Eicon Fax Service.

If you are using Eicon Diva Server cards bypass the next section relating to TAPI class 2.0 devices

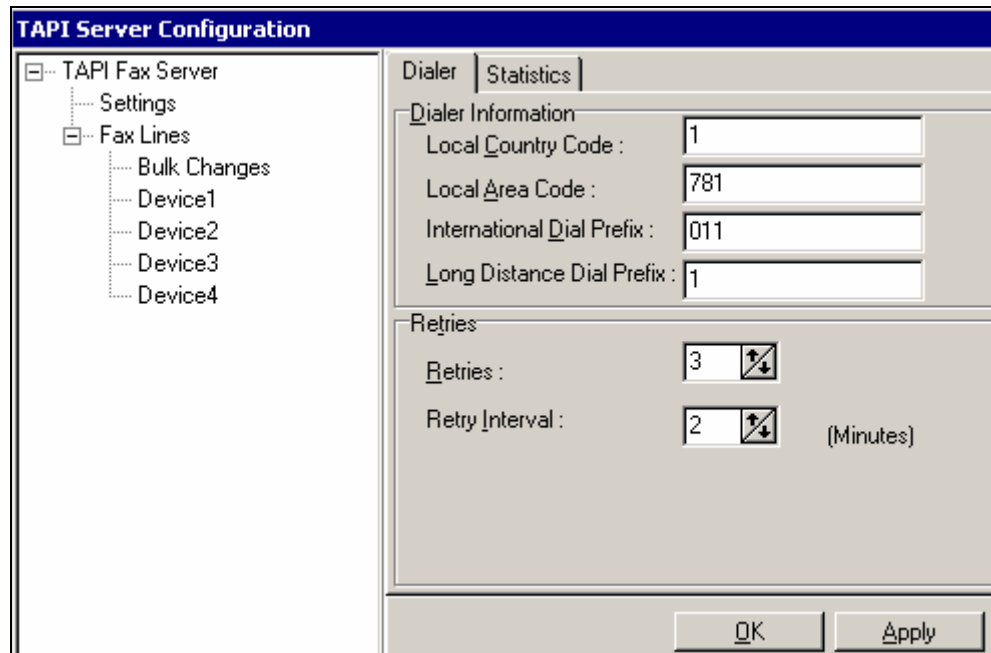
19.3 Configuring msXfax XP for TAPI fax class 2.0 devices

msXfax XP when configured for use with TAPI modem(s) offers a friendly easy to use interface for configuring class 2.0 fax modem(s) and telephony settings.

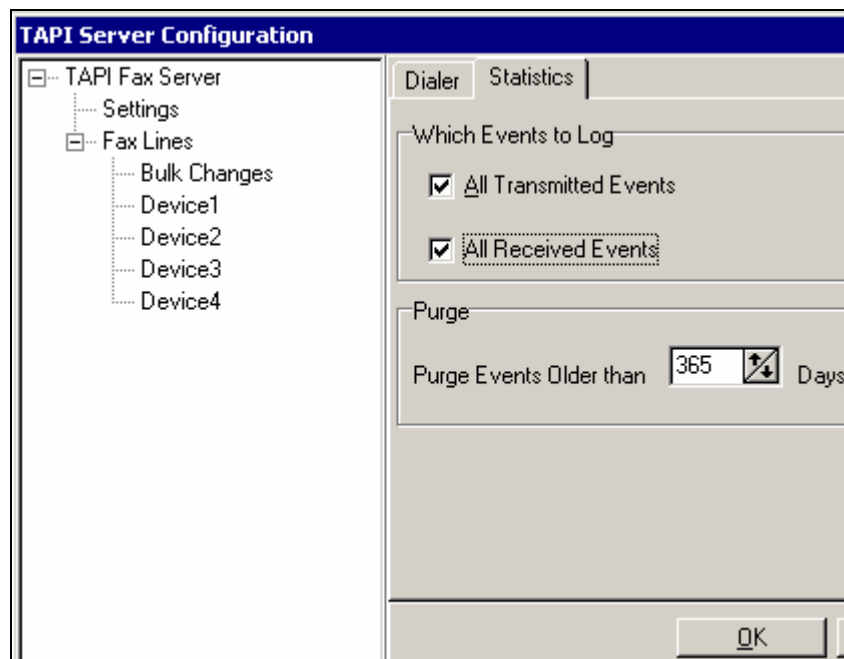
- Open TAPI Fax server
- Select Fax Devices



- Double click on Settings



- These entries were created from the set up



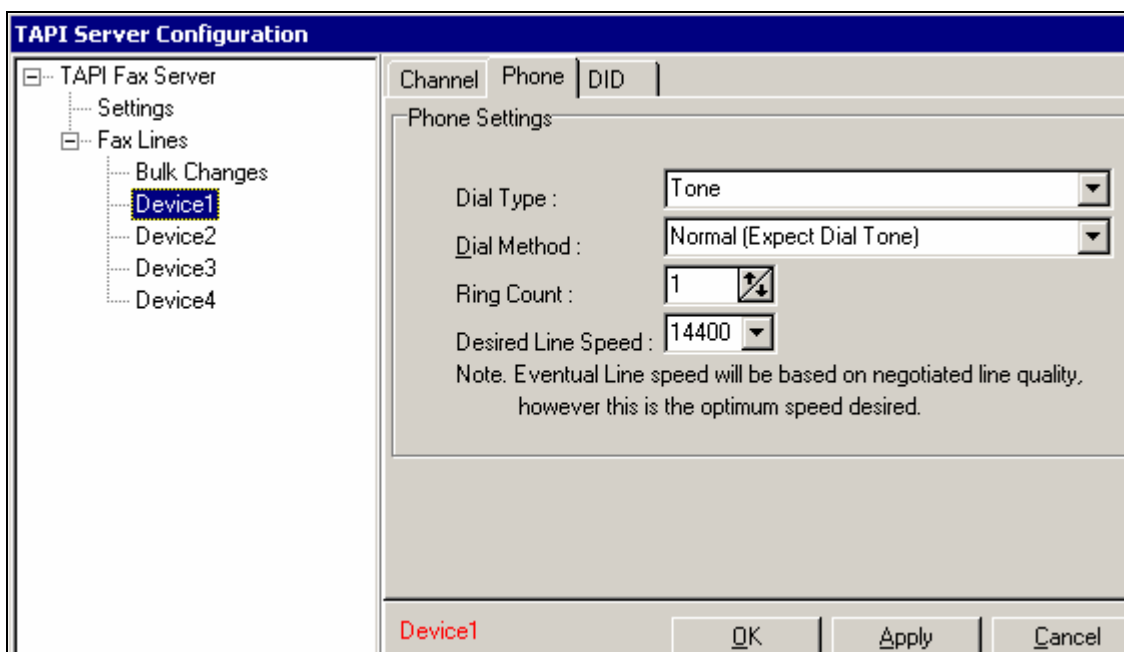
- Log events are written to msXfax XP statistics database for reporting purposes.
- If you have many modem devices to configure try using the “Bulk Changes” option.
- Double click Bulk Changes
- Select your first modem device.
- Supply all details for your Fax class 2 Modem to be applied to selected devices eg: device 1 to device 4.
- Click **apply** to set those channels to these values.
- DO NOT CLICK OK.

- If you have say devices 5 to 8 to set as receive channels click the radio button RX Enabled, change “From device” to 5 and “To Device” to 8.
 - Click **apply** to set those channels to these values.
 - Check your parameter settings for each fax device.
- msXfax XP has now been configured to communicate with your TAPI fax class 2 device.

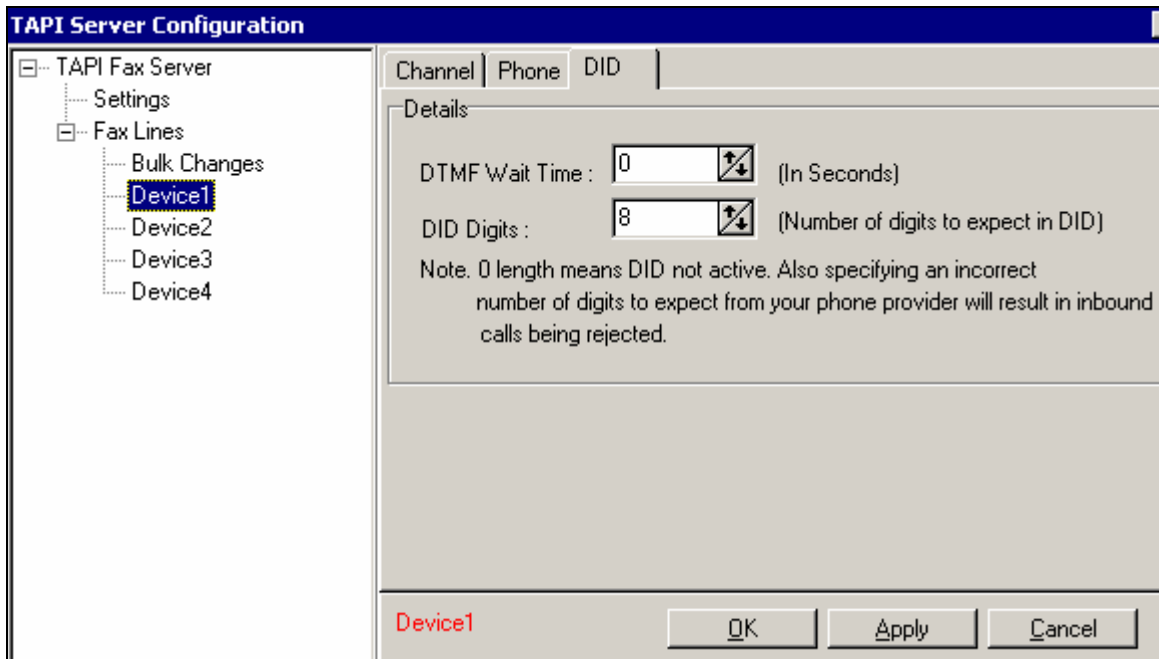
Line Type should be set to Normal.

- The CSID value is the “Communication Subscriber ID” which is exchanged in the fax call setup between 2 fax machines. This can contain you business name or your main fax line number for identification purposes by the receiver.
- TX Enabled allows faxes to be sent on this fax device
- RX enabled allows faxes to be received on this fax device
- Dialout is the command set which msXfax XP will use before dialing the fax number.
 - This is reserved for PABX dial-out commands eg: “9,,” will be included in the AT command sent to the fax modem to dial 9 and wait for 3 seconds before supplying the remainder of the fax number. (A comma = wait for 1 second).
- Suffix is similar to Dialout but is appended after the number is dialed. This is useful for certain types of PABX equipment but is generally not required.
- Modem Init string can’t be changed for Eicon Diva Server by design.

Note: **If you make changes on the above property sheets, you must click apply and double click to move on to the next fax device.**



- Phone settings – Dial type is usually set to Tone, Dial method is usually set to Normal, Ring count determines the number of rings before the fax modem will answer an incoming call.



DTMF support: This is planned for a future release with TAPI devices capable of supplying DTMF tones from PABX's suitably configured for inbound fax routing.

DID (Direct Inwards Dialing): This is only relevant where such a device is capable of providing DID information and has been certified by BNS.

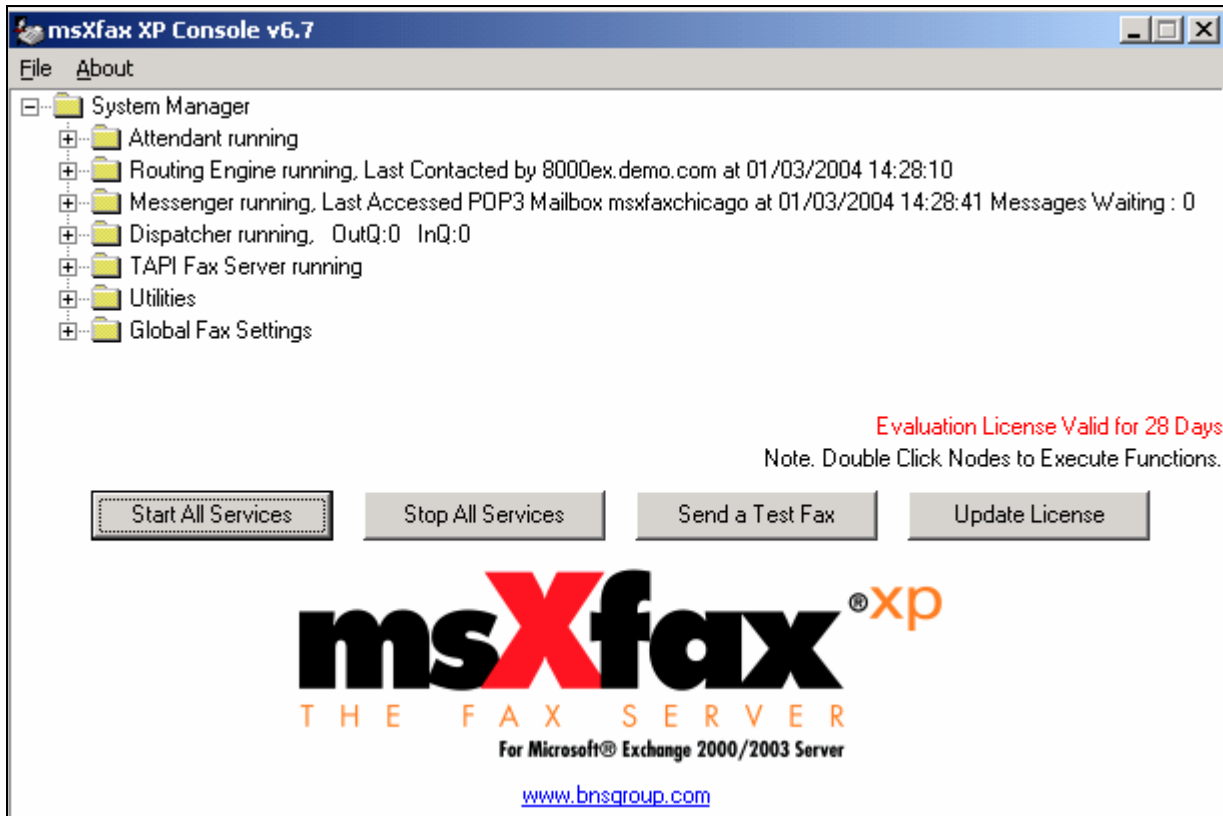
19.4 msXfax XP General Configuration

19.4.1 Licensing

To fully license your product, you are required to supply a value called "System ID" to your reseller who in turn obtains a license key for the subscription period eg: 12 months.

The System ID is nothing more than a value generated which is tied to the configuration of your hardware. It does not identify anything about your organization or credentials or any other elements which would breach security. It is only a means of generating a key pair (based on the hardware platform) to avoid piracy of BNS Group software.

Note: It is also possible to stop and start all the msXfax XP services via the console.



- Left click on the + symbol to open respective folders.
- Double click on the options which are expanded. Each option is called a Node. There is a note on the main console screen to remind you to double click to open the function.
- Commonly used functions are now included Right Click on the msXfax XP Folder in the Console Root, and select Update License
- A screen similar to the following is displayed.

License Information

You can request your evaluation version of the Fax Server be converted to a live version by purchasing an annual license. Also an existing annual license can be updated. In both cases contact your reseller or visit our web site at www.bnsgroup.com.

When you have purchased your annual license you should receive a release code from your reseller or BNS Group.

Supply this to reseller or BNS Group

System ID :

ESD Order No# :

ESD Order Date :

Any Notes

[Request Activation Code](#)

Enter these Details from reseller or BNS Group

Serial No# :

Release Code :

Fax Server License Expires on: 01/03/05

Check Functionality supported in this Edition

BNS Group Contact Details

Sales : sales@bnsgroup.com
 Phone : +61 2 6231 2704
 Support : support@bnsgroup.com
 Phone : +61 2 99720113
 Web : <http://www.bnsgroup.com>

- The Notes field can be used for your records to record additional information such as: who you purchased the software from, your purchase order number and other relevant details. This will be very useful in the future.
- If you purchased your software via the Internet, enter your purchase details for future reference.
- If you purchased msXfax XP via the Internet you can electronically request an Activation code. If your fax server is connected to the Internet, press the hyperlink "Request Activation Code"
<http://www.bnsgroup.com/bns/license.asp?a=products&next=chooseprod>
- Alternatively, visit www.bnsgroup.com to request an activation code (Select Product Info, "Registration and Licensing") . Activation codes typically take 24 hours to clear our verification system. Please do not leave it until the last day or so before you activate the product.
- If you purchased msXfax XP from a reseller, you should advise your reseller of your System ID and allow your reseller to request an activation code on your behalf. Activation codes are not issued until payment has been received in full by BNS Group.

Please note: Activation keys are sent to the registered customer via email only after payment has been received in full.

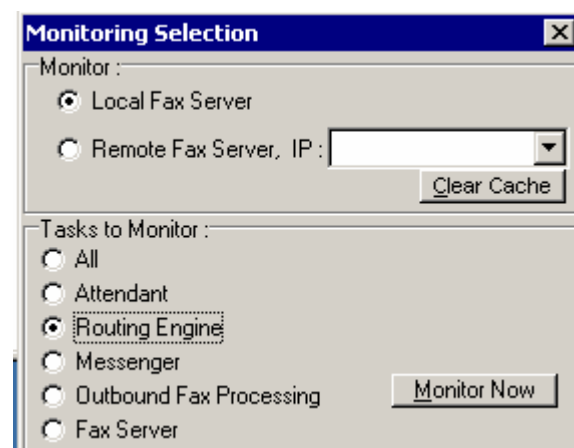
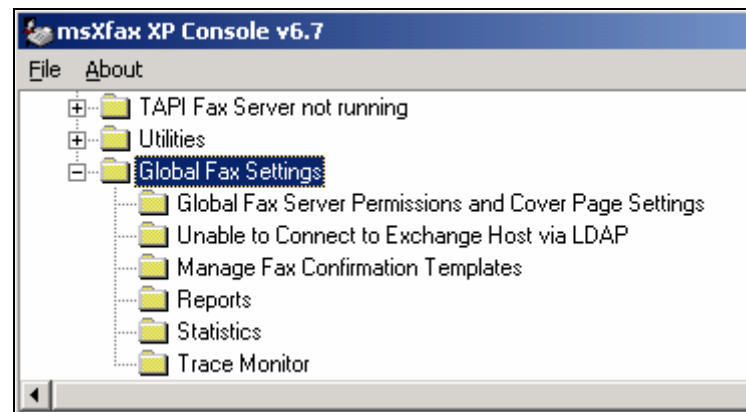
- Upon receipt of the Release code (Activation Key), enter it into the field called Release code and click on the Activate Licence button.

19.5 msXfax XP Configuration in more detail

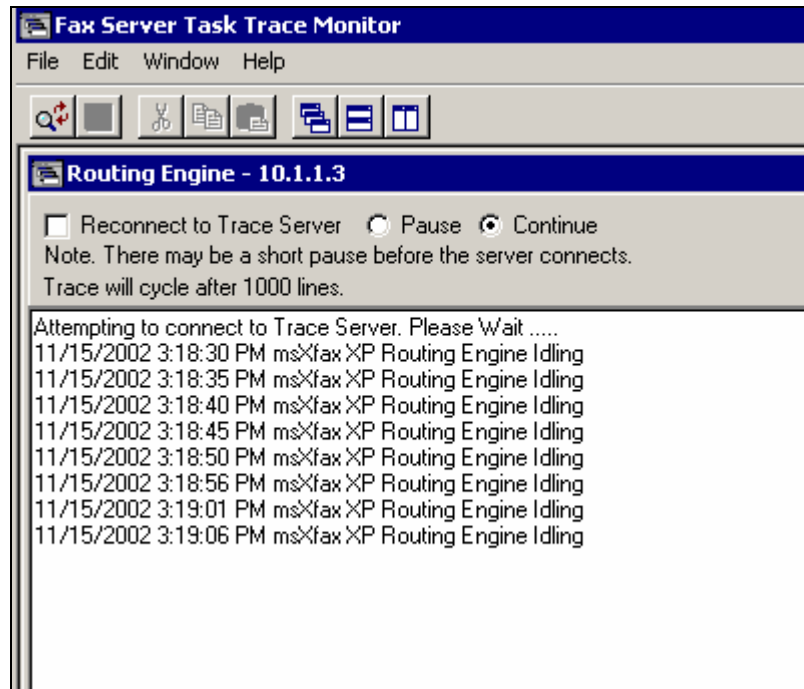
msXfax XP's setup program requests as much information as possible to pre-configure the required elements of your fax server and its interaction with Exchange/ Active Directory.

19.5.1 Trace Windows show you what's happening

- Open Global Fax Settings
- Double Click Trace Monitor



- Select Tasks to Monitor = Routing Engine
 - Leave Monitor option set to Local Fax Server.
- Allow time for the routing engine trace to appear.

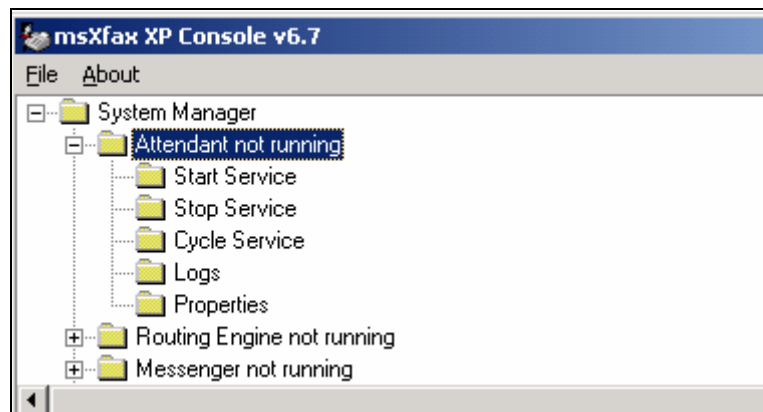


- You should see a trace window similar to the example above.
- Please minimize the trace window.

19.5.2 msXfax XP System Attendant

The msXfax XP system attendant is responsible for overseeing and managing various services. If the system attendant detects a service not running, it will automatically start the service.

msXfax XP's console allows you to manage different aspects of each service or function.



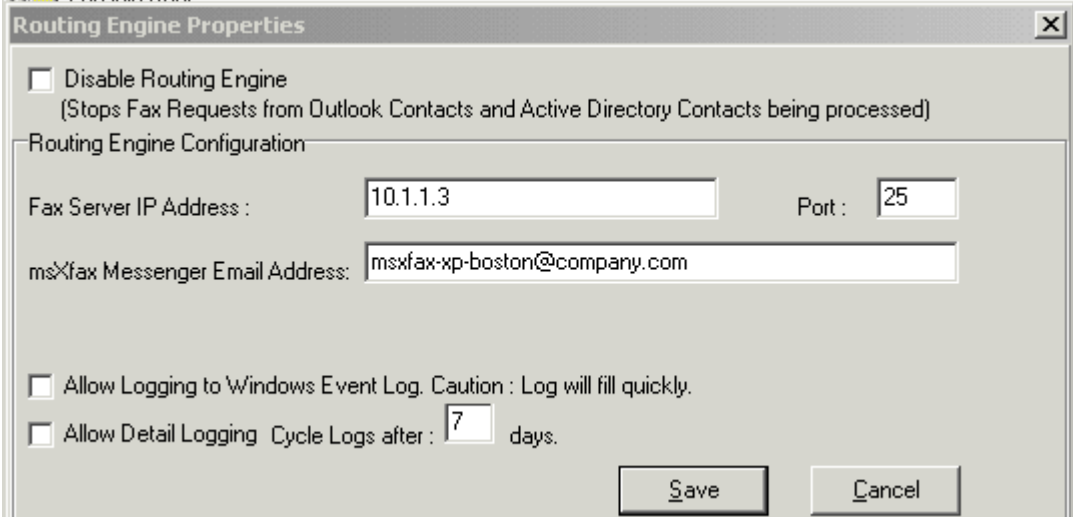
- Double click Properties

Primary Alert Address	
Send Alerts to Email Address	Maximum Alerts
<input type="text" value="boston-help@company.com"/>	<input type="text" value="100"/>
(uses SMTP Server defined in Messenger Configuration)	
Alternate Alert Address & SMTP Server	
Send Alerts to Email Address :	<input type="text"/>
External SMTP Server :	<input type="text"/>
Queue Depths	
	Send Alert
Awaiting a Free Line :	<input type="text" value="20"/>
Transmitting :	<input type="text" value="20"/>
Received awaiting Messenger :	<input type="text" value="2"/>
Processed awaiting Messenger :	<input type="text" value="20"/>
Conversion :	<input type="text" value="20"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

- The properties of the System Attendant shows basic configuration elements.
- The default maximum alerts should be set to 10. You can alter it if you wish but a maximum of 10 alert messages delivered to your mailbox should be sufficient.
- Queue depths represent the number of items in the queue at any one time. If these thresholds are reached a warning message is delivered to the email address(es). Do not change the settings unless you have good reason to do so.

19.5.3 msXfax XP Routing Engine

msXfax XP Routing Engine is a powerful SMTP smart host included with the msXfax XP package, which acts specifically as a router for FAX and other eligible address space items from Exchange. Configure the Routing Engine properties as follows:



The image shows a Windows dialog box titled "Routing Engine Properties". It contains the following elements:

- A checkbox labeled "Disable Routing Engine" with the subtext "(Stops Fax Requests from Outlook Contacts and Active Directory Contacts being processed)".
- A section titled "Routing Engine Configuration" containing:
 - A text field for "Fax Server IP Address" with the value "10.1.1.3".
 - A text field for "Port" with the value "25".
 - A text field for "msXfax Messenger Email Address" with the value "msxfax-xp-boston@company.com".
- Two checkboxes at the bottom:
 - "Allow Logging to Windows Event Log. Caution : Log will fill quickly." (unchecked)
 - "Allow Detail Logging Cycle Logs after : 7 days." (unchecked)
- "Save" and "Cancel" buttons at the bottom right.

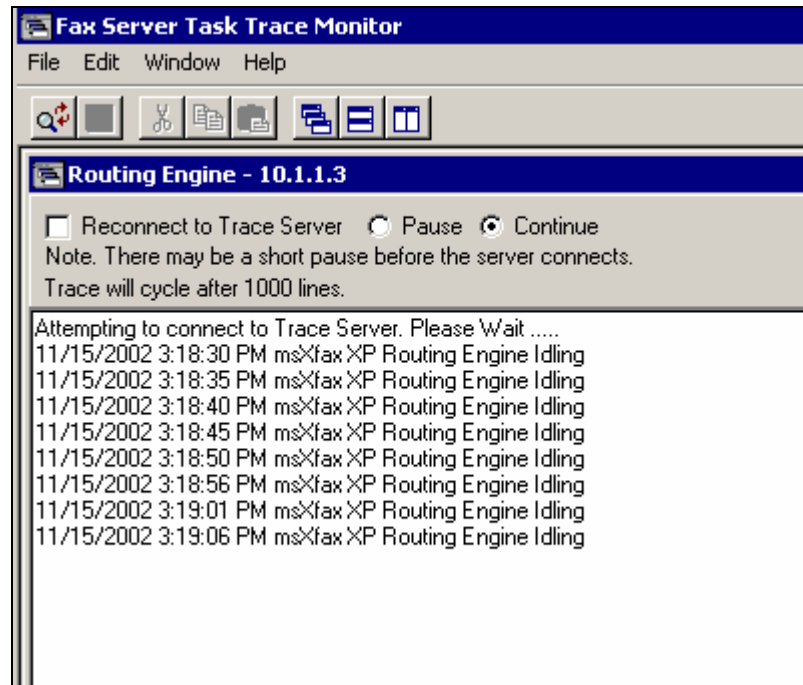
These values were configured automatically based on the values you supplied during msXfax XP's setup program.

Tip!

Click on the "Allow Detail Logging" option at the bottom of the Routing engine property page if you are installing msXfax XP for the first time. This will assist in problem resolution. Make a note to yourself to uncheck this option when the fax server has been fully commissioned and you're happy that everything is working to your satisfaction.

Logging items to the Windows Event log and detailed logging should be used for troubleshooting only.

19.5.3.1 msXfax XP Routing Engine Trace



To show some activity in the Routing Engine perform the following from the Fax Server:


- Run Outlook rich client. (You may need to create an Outlook profile to access your mailbox.). Alternatively, use an existing desktop Outlook client to send a message
- Refer to the following examples to create an Outlook Contact. Enter a fax number for this test user which is a fax number of your fax machine in your office. This will allow verify that the fax transmission worked successfully.

Bill Brown - Contact

File Edit View Insert Format Tools Actions Help

Save and Close [Print] [Clipboard] [Undo] [Redo] [Navigation]


General Details Activities Certificates All Fields

 Full Name... Bill Brown

Job title: Test User

Company: Test Company


File as: Brown, Bill

 Business: +1 (617) 12345678

Home: [Empty]


Business Fax: +1 (617) 88889999

Mobile: [Empty]


 Address... [Empty]

Business [Dropdown]

This is the mailing address

 E-mail: [Empty]

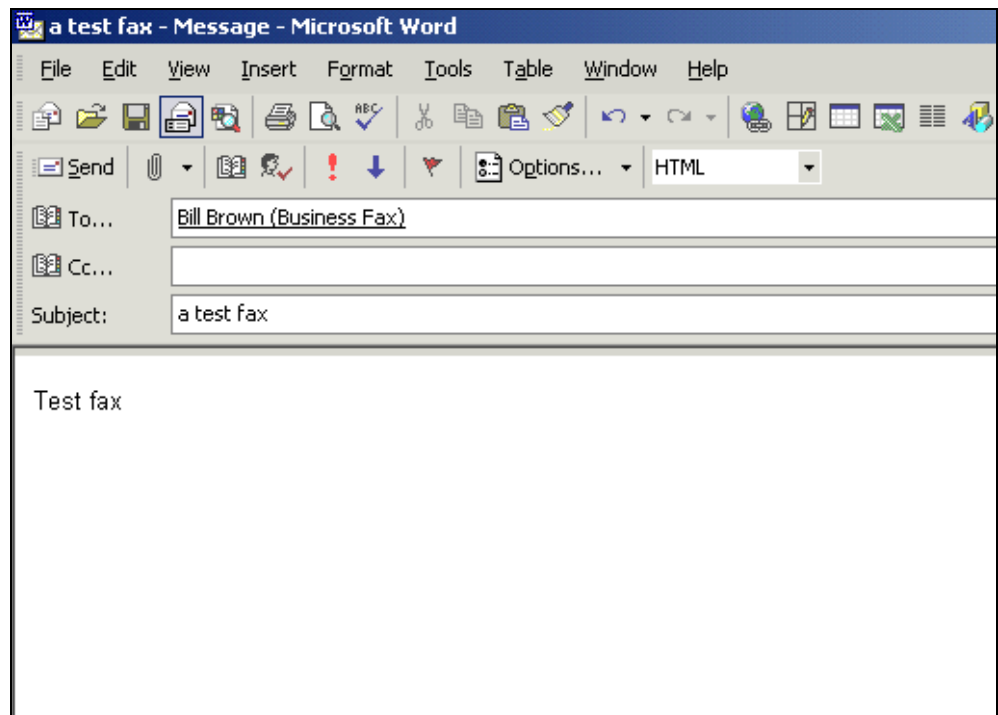
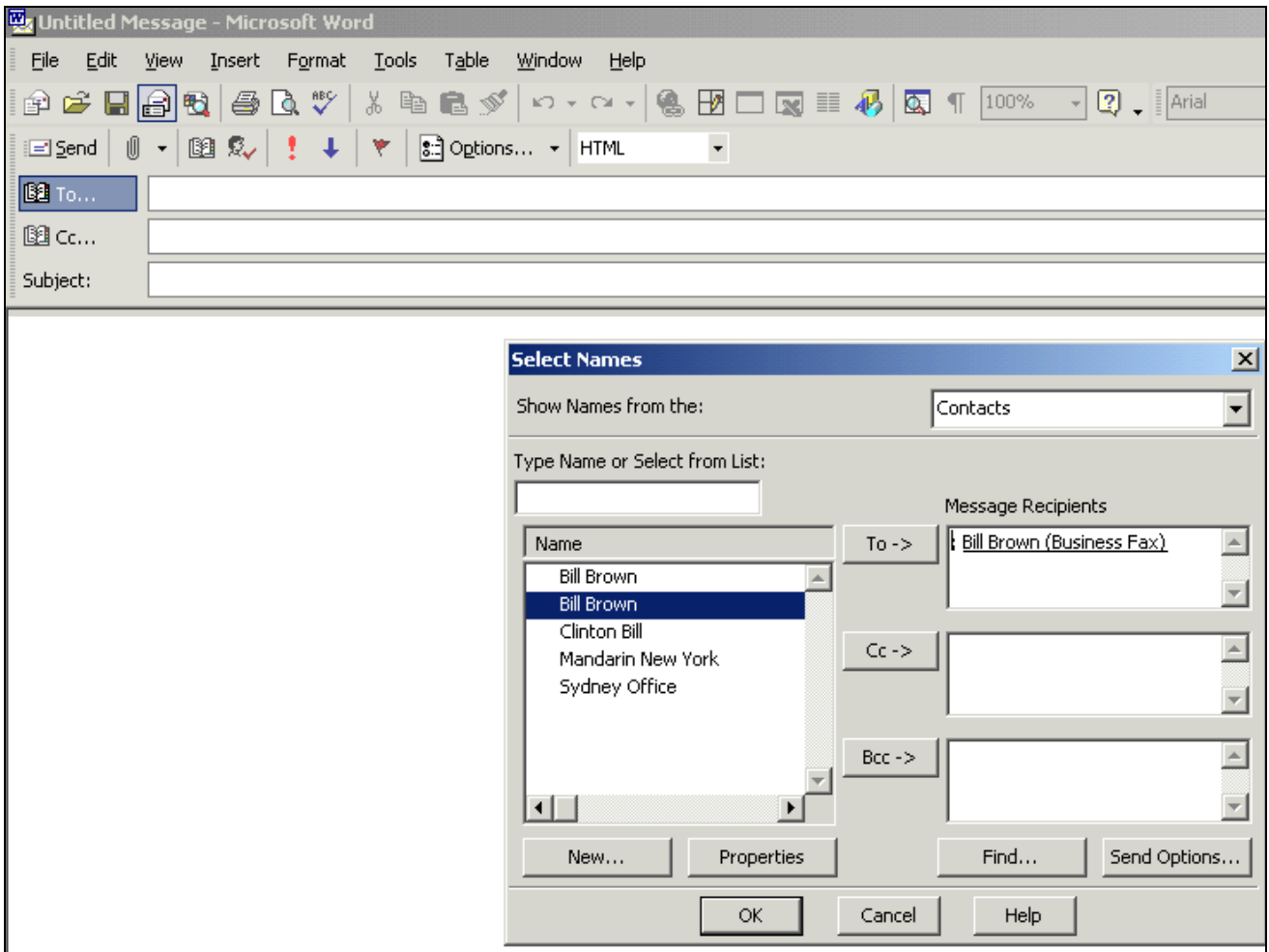
Display as: [Empty]

 Web page address: [Empty]

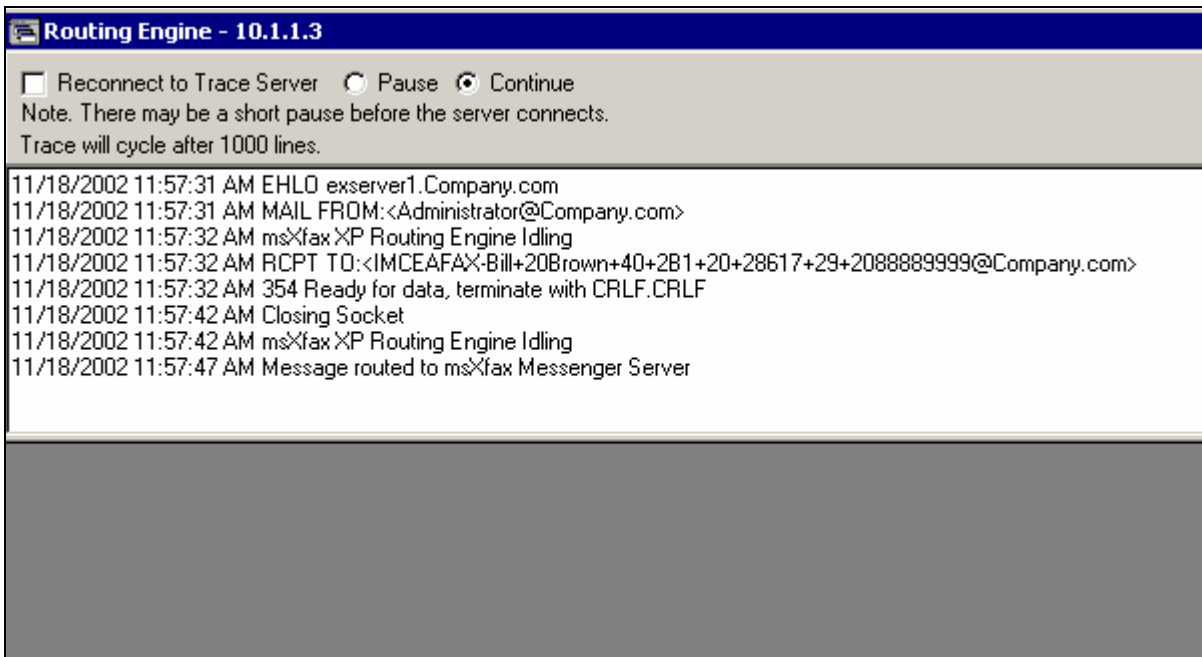
IM address: [Empty]

[Empty text area]

Contacts... [Input] Categories... [Input]



- Your test fax should look similar to the one above.
- Press send and then observe the Routing Engine trace activity.



The screenshot shows a console window titled "Routing Engine - 10.1.1.3". At the top, there are three radio buttons: "Reconnect to Trace Server" (unchecked), "Pause" (unchecked), and "Continue" (checked). Below the buttons, there is a note: "Note. There may be a short pause before the server connects. Trace will cycle after 1000 lines." The main area of the console displays a series of log entries:

```
11/18/2002 11:57:31 AM EHLO exserver1.Company.com
11/18/2002 11:57:31 AM MAIL FROM:<Administrator@Company.com>
11/18/2002 11:57:32 AM msXfax XP Routing Engine Idling
11/18/2002 11:57:32 AM RCPT TO:<IMCEAFAX-Bill+20Brown+40+2B1+20+28617+29+2088889999@Company.com>
11/18/2002 11:57:32 AM 354 Ready for data, terminate with CRLF.CRLF
11/18/2002 11:57:42 AM Closing Socket
11/18/2002 11:57:42 AM msXfax XP Routing Engine Idling
11/18/2002 11:57:47 AM Message routed to msXfax Messenger Server
```

You may need to select “Reconnect to Trace Server” before you commence tests from Outlook.

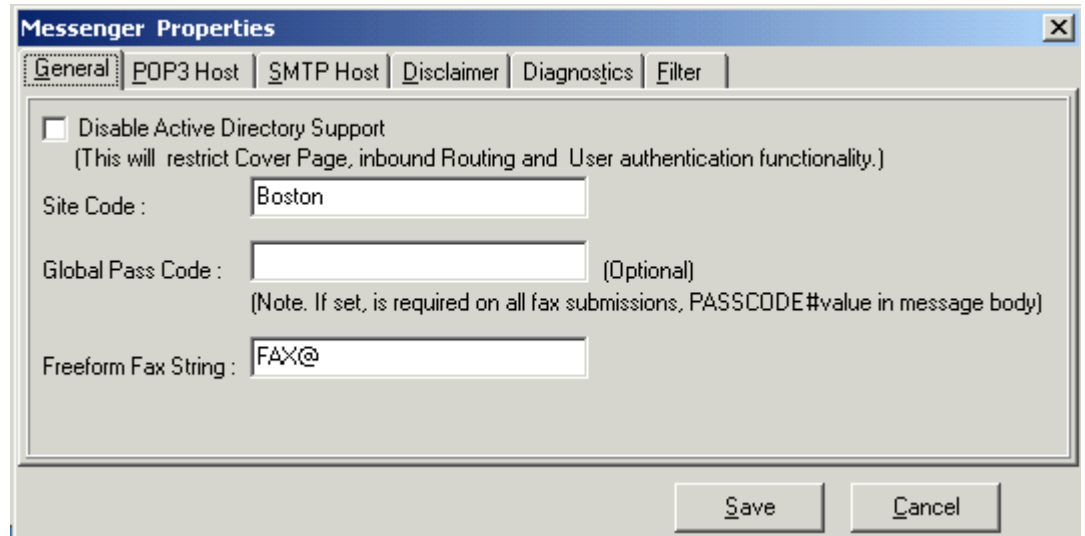
Sending a message to Bill Brown Business Fax address from Outlook sends an SMTP message to msXfax XP’s routing engine as shown above.

The above confirms that Exchange has received the message from Outlook and delivered it to msXfax XP smart host for processing.

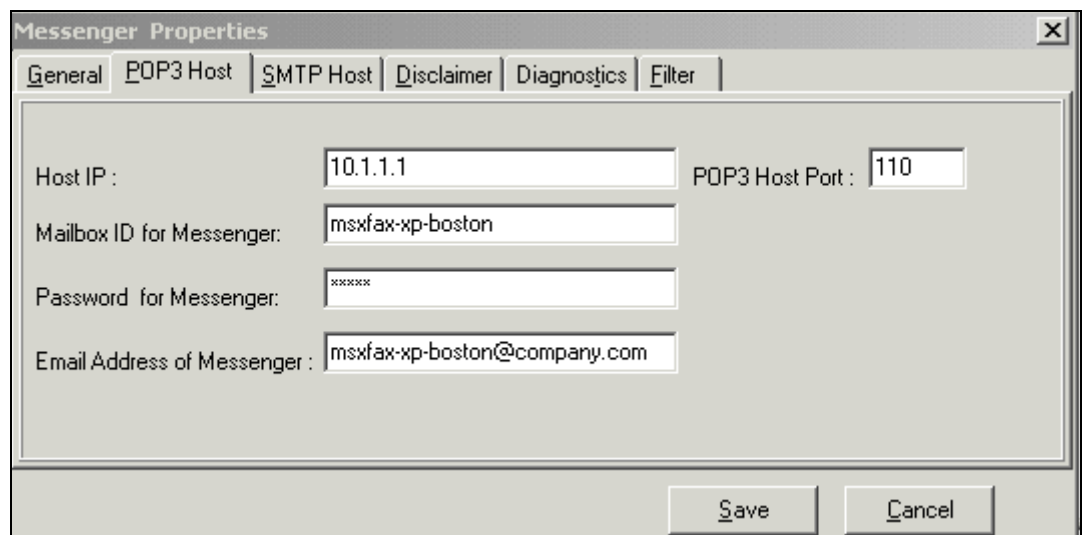
19.5.4 msXfax XP Messenger

The msXfax messenger handles core processing and management of fax messages.

- From the main msXfax XP Console, open the msXfax Messenger folder
- Various property sheets are displayed.

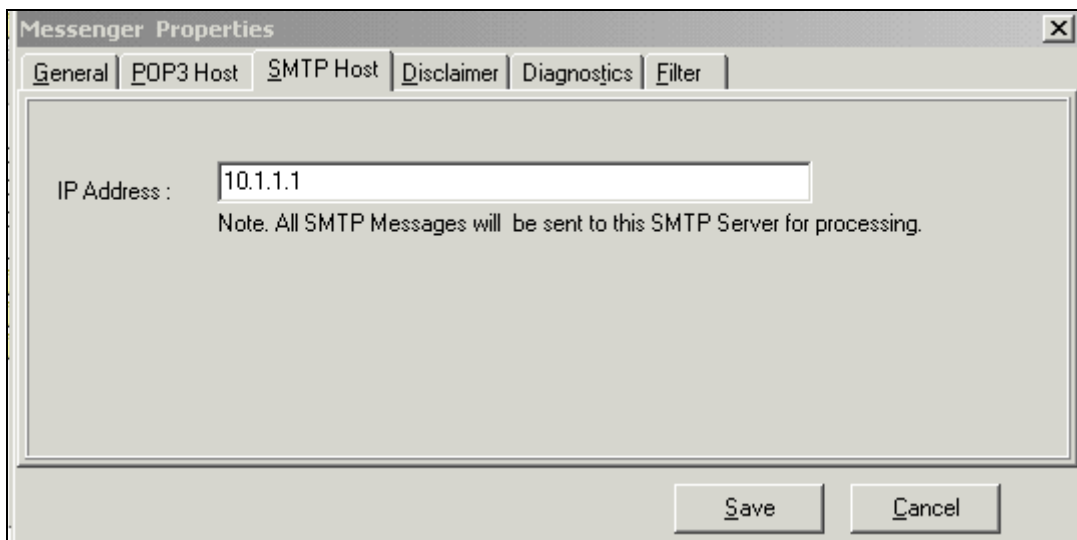


- Most of these settings should not be altered once they are set up. We recommend that you leave these settings as they are until you examine the security recommendations later in this documentation.
- Global Pass Code is optional for additional security when used with freeform addressing. If you set the Global Pass Code to “Microsoft”, users will need to include PASSCODE#Microsoft in the memo of their Outlook fax message.
- Some users nowadays use FAX# in their autosignatures which could cause forwarded emails to fax to be copied to recipients not intended to be copied. msXfax XP allows the freeform string to be defined by your organization. Examples could include: FAX@, FAX=, msxfax# or fax% or any other keyword you feel is appropriate. **We recommend that you use FAX= as the freeform address**

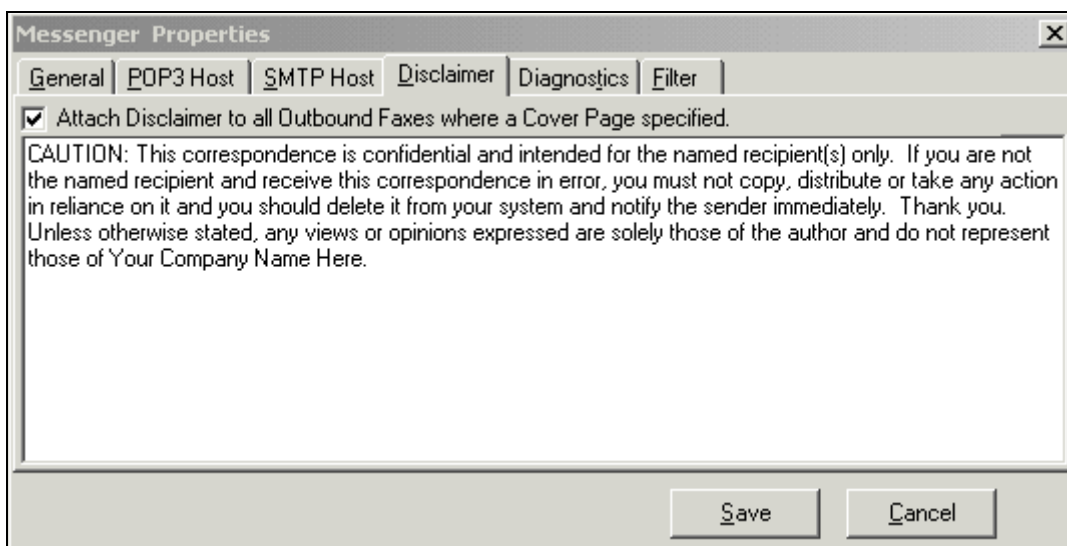


- The Host IP address should be the IP address or DNS name of your Exchange Server
- The mailbox ID for Messenger is the Active Directory Account login name
- Password is the Active Directory password for that account.
- Email address is the SMTP address of the Active Directory account used by the msXfax XP Messenger.

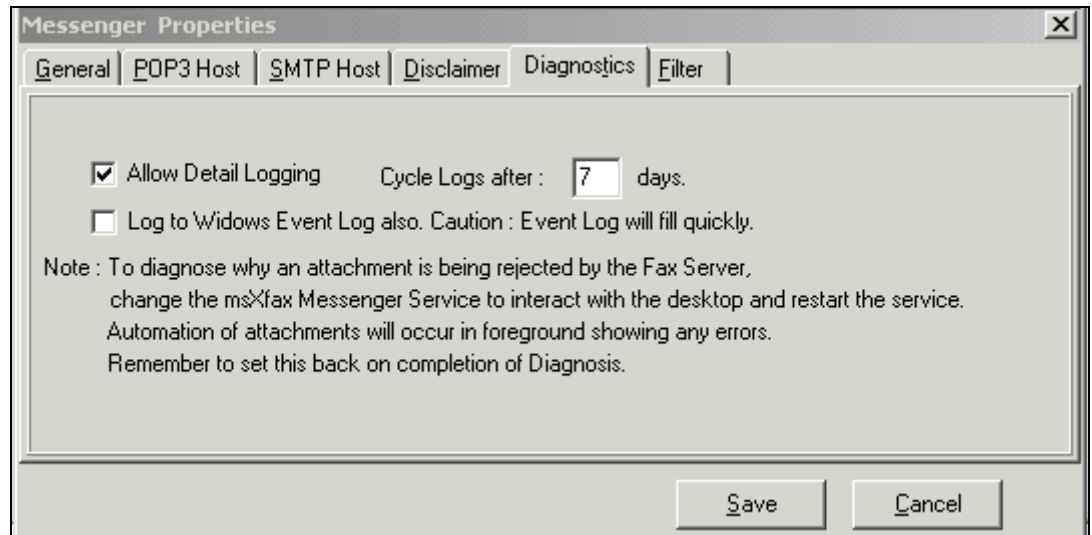
- POP3 Host Port is the TCP/IP port number configured on your Exchange Server's Default POP3 Virtual Server.



- This is the IP address or DNS name of your Exchange Server.

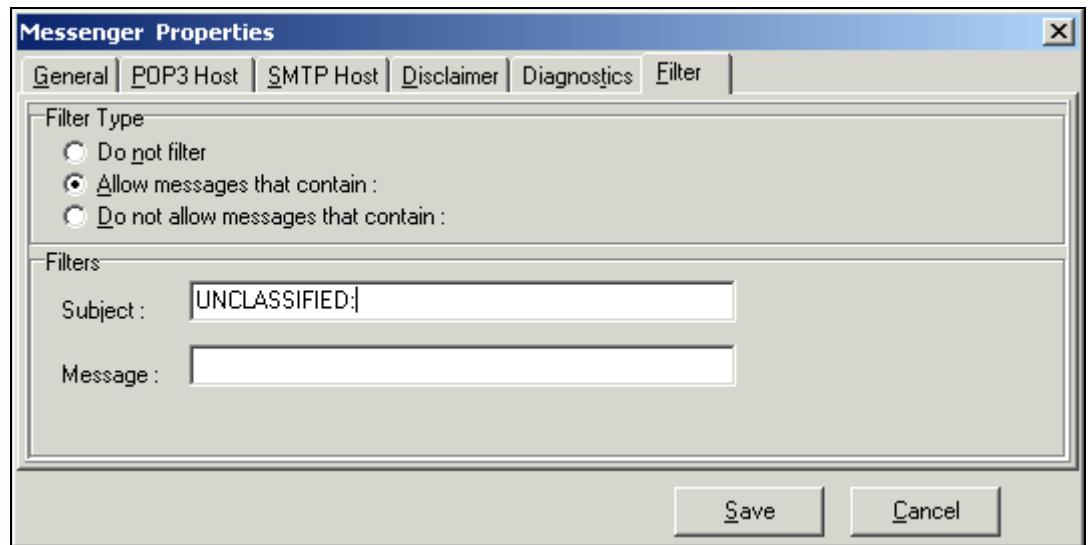


- This is the disclaimer which msXfax XP will automatically include on automatic cover sheets. **The default option is OFF. BNS recommends that you turn this off** and modify the msXcover.rtf cover sheet provided, insert your standard organization disclaimer using Microsoft Word to edit the cover sheet. The concept of an enterprise wide disclaimer fax cover sheet is very popular. A user's auto signature in Outlook defines who they are and their contact details. Just like regular email messages, the auto signature is included in the message body of the cover sheet taken from their Outlook message.



Diagnostic logging is useful if you want to fully understand all the activity that msXfax XP is performing.

Note: If you want to log events to the Windows Event log, make sure that you have set the “overwrite events as needed” in the Event Viewer.



msXfax XP can selectively filter messages. This is mandatory on high security networks which employ gateways such as X.400, SMTP, SMS and FAX.

Defense networks for example may use a filter on the subject line to ensure that only unclassified correspondence can be transmitted by fax or via other gateways.

Brooktrout: If you have Brooktrout TR114 board(s) you should complete the next section, otherwise proceed past the section below.

19.5.5 msXfax XP Dispatcher & Fax Queues

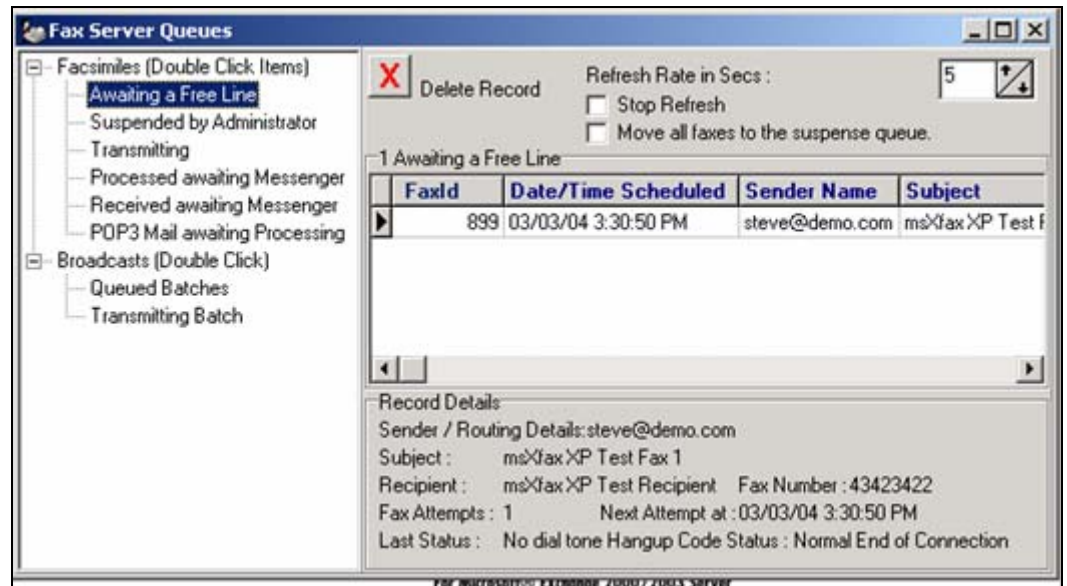
The msXfax Dispatcher is responsible for Fax Queue management, dispatching eligible faxes to lower layer device drivers for transmission. The Dispatcher plays a role in the management of inbound faxes.

Access to fax queues via the msXfax XP console is achieved from the dispatcher folder.

msXfax XP using Brooktrout, TAPI fax modems and Eicon CAPI support, offers the same user interface for accessing fax queues for both inbound and outbound traffic.



- Open Dispatcher folder
- Double click on the Fax Queues.
- Double click on the queue you are interested in eg: "Awaiting a Free Line".
- If you want to view a fax – double click on the entry in the queue.
- It is possible to expand this window to full size.
- Sorting on columns is achieved by clicking on the column heading. The only exception is POP3 which is a linear view of the mailbox.

**Hints:**

If you are trouble shooting your fax server the following hints may help:

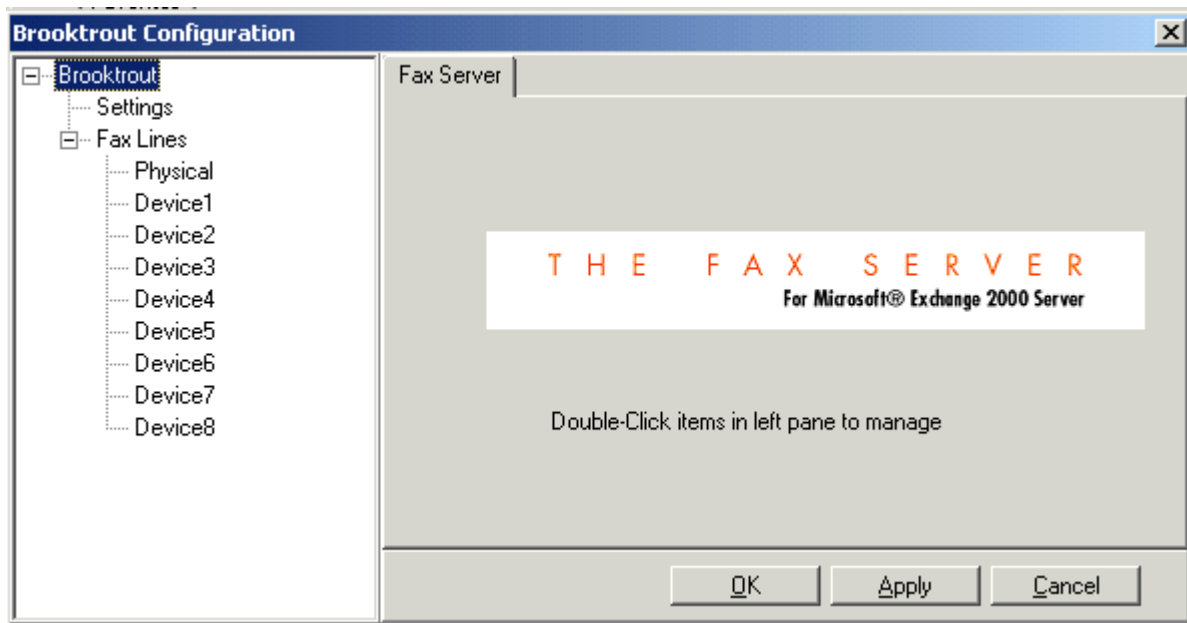
- Stop system attendant – this will prevent this process from re-starting other tasks
- Stop Routing engine – this will prevent additional messages being received from Exchange SMTP Connector while you are resolving any issues.
- Stop Messenger – this will prevent additional messages being received from Exchange POP3 mailbox while you are resolving any issues.
- Use the “Move all faxes to the suspense queue” check box to highlight and move all the items to the suspense queue until you resolve the issues. This can be useful to avoid too many NDR’s in the case of a telephony failure or other temporary problem.

19.6 msXfax XP Brooktrout Settings

If you have a Brooktrout TR114 series board, configure msXfax XP using these guidelines.

- Open Brooktrout fax server
- Select Fax Devices

19.6.1 Brooktrout Fax Devices

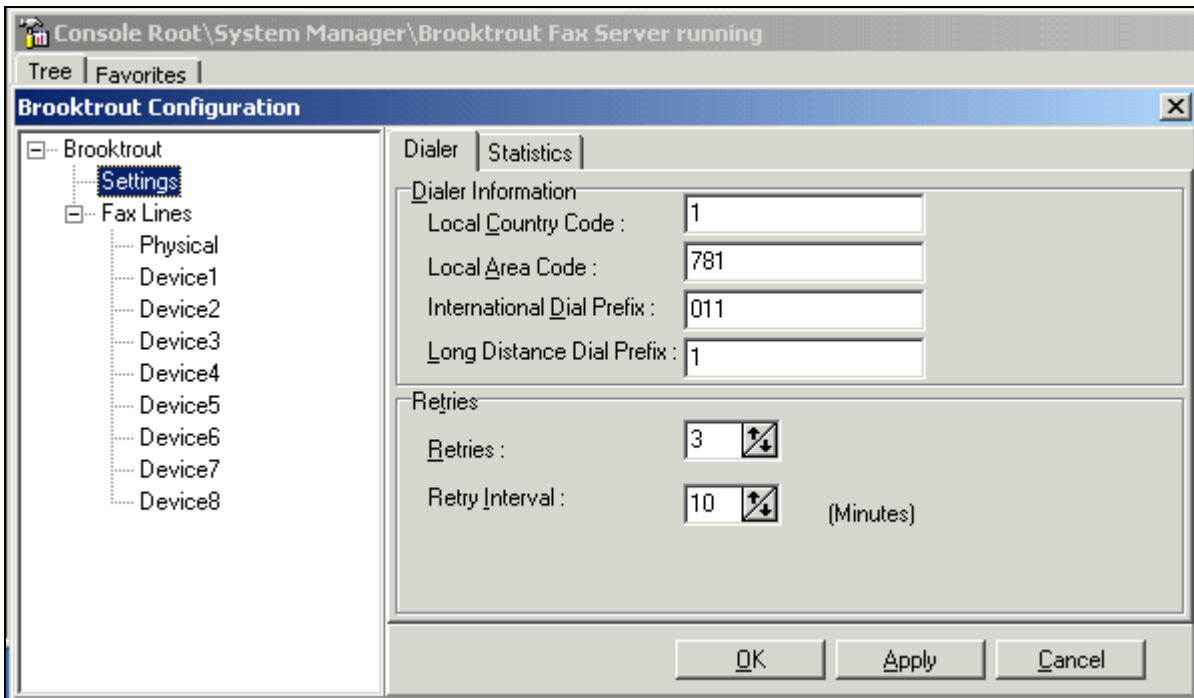


- Double click on Settings

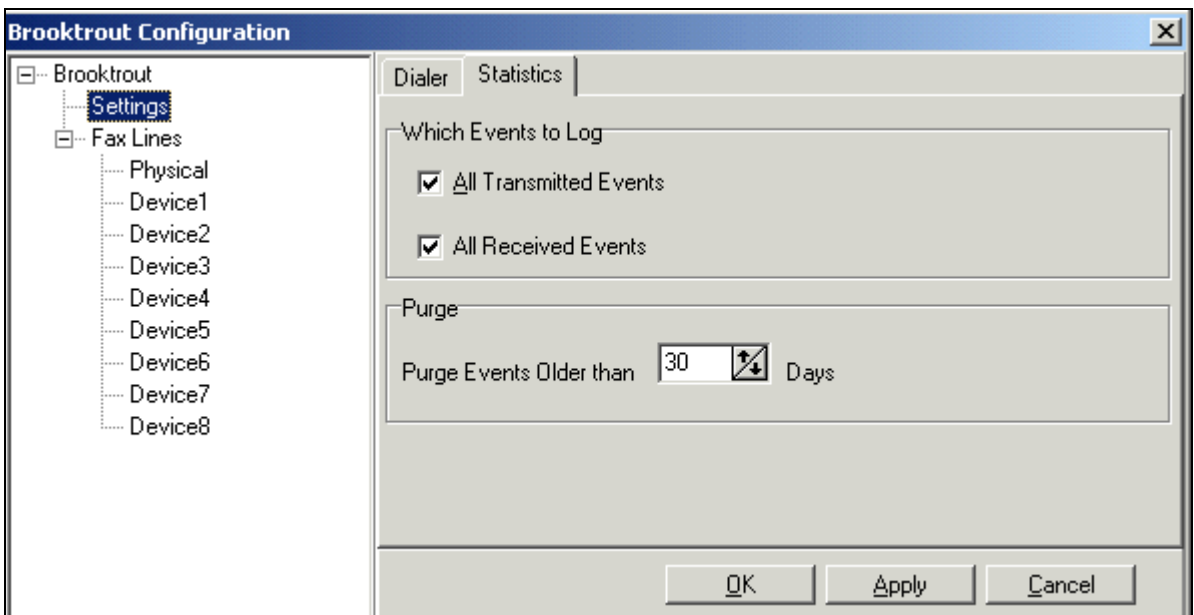
Note: if you do not see Devices listed this could be because of the following reasons:

1. You did not perform installation of Brooktrout Diagnostics and successfully ran the tests or did not successfully uninstall the Brooktrout Diagnostics.
2. Some other conflict has prevented msXfax XP from detecting the devices.

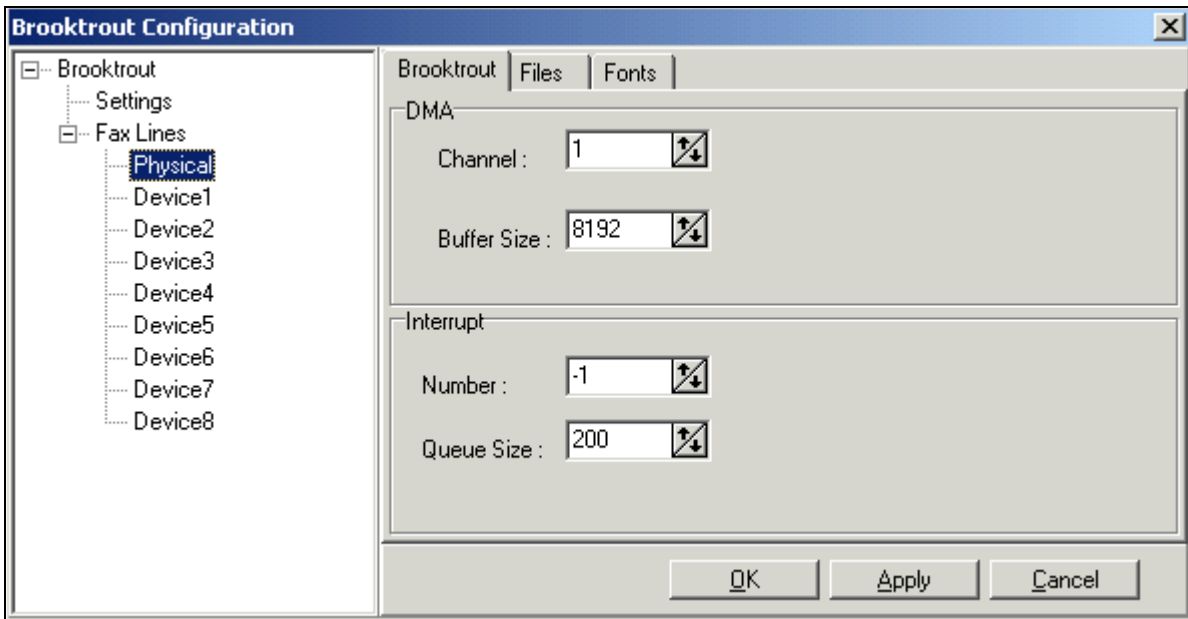
If you did not perform full diagnostics tests using Brooktrout's diagnostic tools, you will need to remove msXfax XP using Add/Remove from Control Panel. You only need to remove the entry which has an actual size recorded against it (approx 20MB).



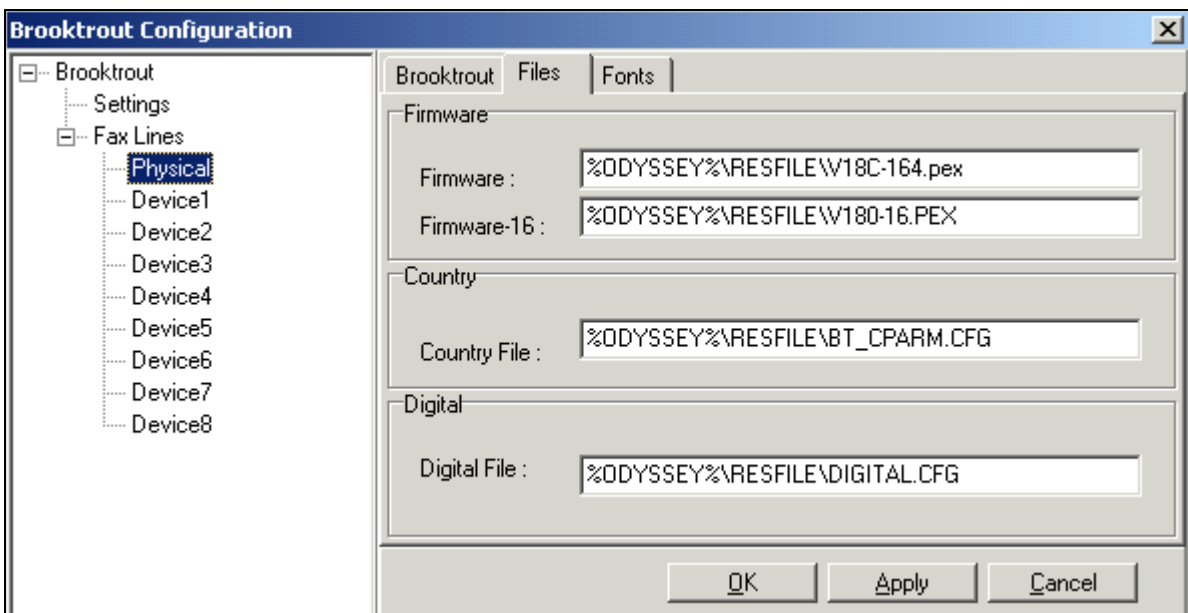
- These entries were created from the setup routines.



- Statistics values are generally not altered.



- These settings should not be altered unless advised to do so by technical support specialists.
- The same applies to File and Fonts properties.

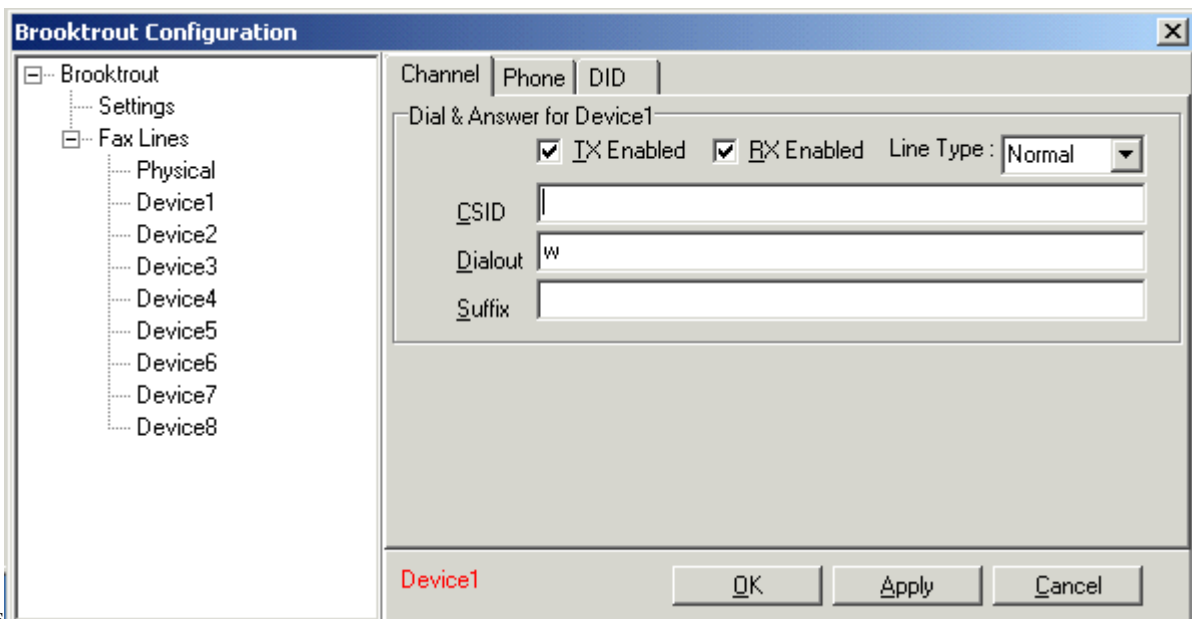
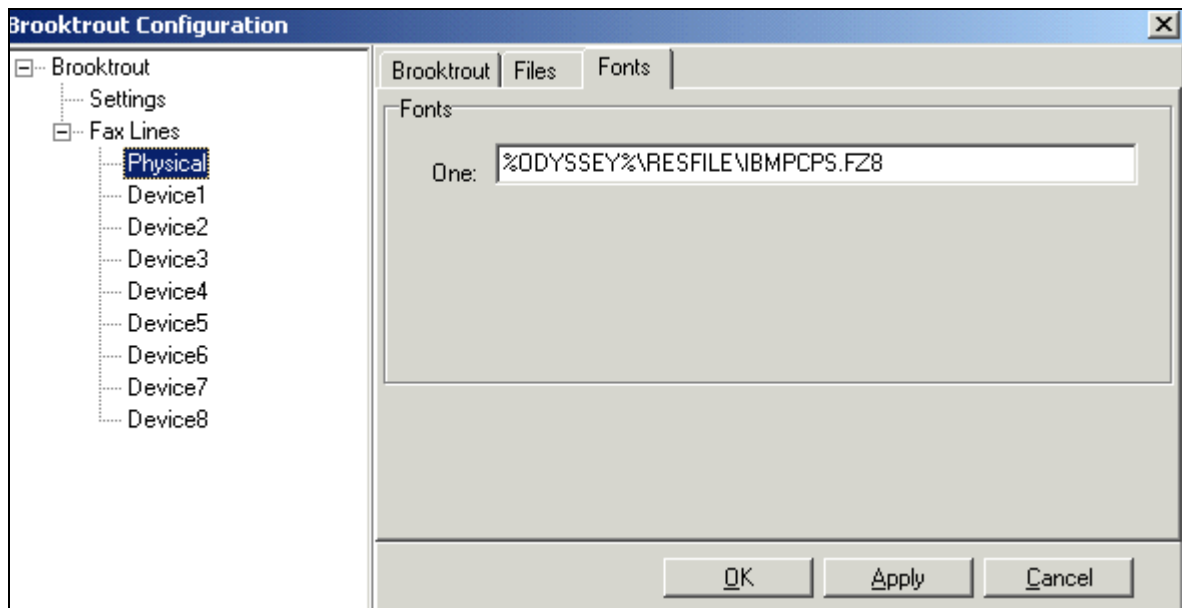


- Do not change firmware settings.
- Do not change Country file settings.
- Do not change Digital File settings.

If you have installed Brooktrout’s digital fax board(s) you may need to edit the file DIGITAL.CFG in accordance with the Brooktrout hardware guide.

The following configuration files are placed in the \Program Files\BNS Applications\msxfax XP\Resfile directory. Generally these are correct for 8 channels through to 24 channels.

- Digital_08.cfg
 - Digital_12.cfg
 - Digital_16.cfg
 - Digital_20.cfg
 - Digital_24.cfg
- If you have a TR114 T1 configuration with say 8 channels, you should copy Digital_08.cfg to DIGITAL.CFG in the same directory “Program files\BNS Applications\msXfax XP\Resfiles”. If you have a 16 channel TR114 series configuration you should copy Digital_16.cfg to DIGITAL.CFG in the same directory.

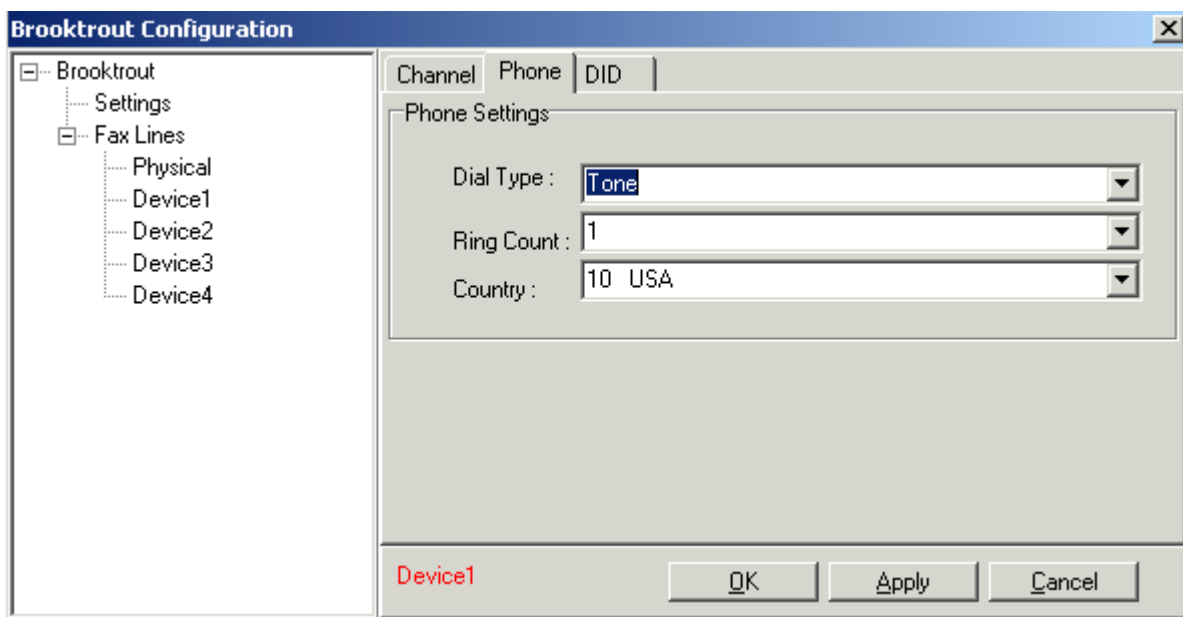


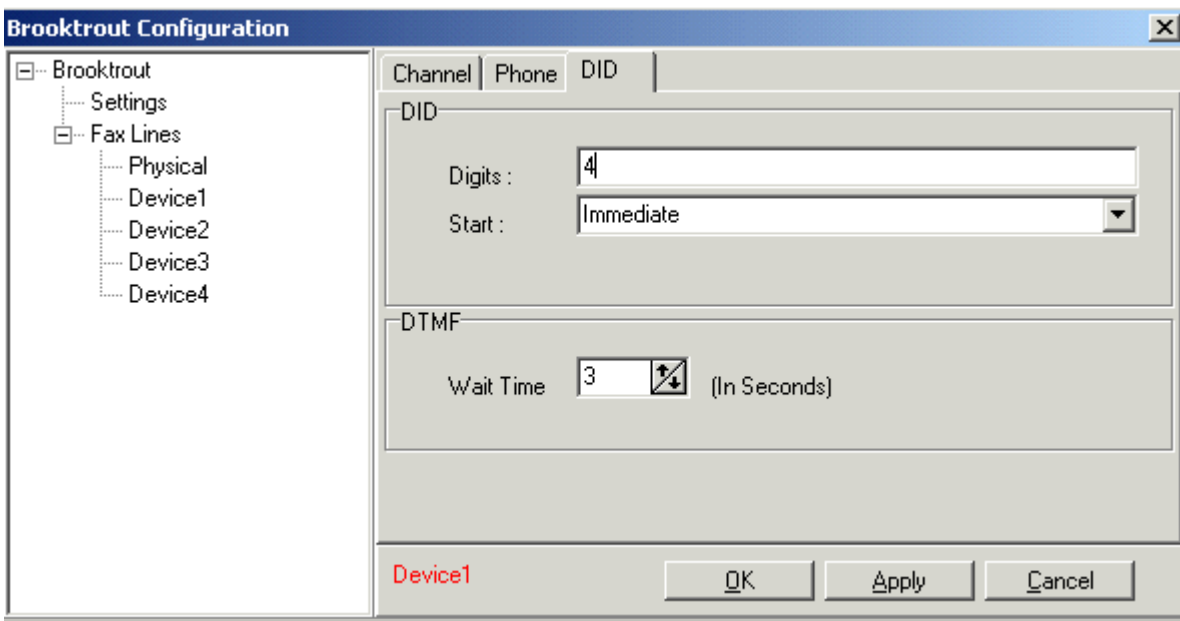
- The CSID value is the “Communication Subscriber ID” which is exchanged in the fax call setup between 2 fax machines. This can contain you business name or your main fax line number for identification purposes by the receiver.
- TX Enabled allows faxes to be sent on this fax device
- RX enabled allows faxes to be received on this fax device
- Line type “Normal” is for normal operation of your fax telephone lines. Do not change this value unless advised by technical support specialists.
- Dialout is the command set which msXfax XP will use before dialing the fax number.. The following screen example shows that W9, means:
 - Wait for dial tone
 - Dial a 9
 - Comma wait for 1 second
 - Then attempt to dial the fax number
- Dialout can also include semi colons “;” which will force a longer wait period of 5 seconds for very slow PBX’s .
- Suffix is similar to Dialout but is appended after the number is dialed. This is useful for certain types of PBX equipment but is generally not required.

Note:

If you make changes on the above property sheets, you must click apply and double click to move on to the next fax device.

Phone Settings are usually Tone dial, 1 ring count before a call is answered and the Country selection is based on your approved telecommunications equipment or service provider. Usually this simply means the country your equipment is being used in. Sometimes government departments deploy PABX equipment in overseas posts which are comply with their home country certifications and interfaces on their internal wiring closets. In such cases the Country selection would comply with the PABX equipment standards.





The above example shows an implementation of DTMF routing using a PABX to provide DTMF tones to the Brooktrout TR114 series boards eg: TR114+P4L is a loop-start (standard phone connection) interface which would be cabled to a PABX capable of sending the extension number dialed to the fax server. When using DTMF routing you must set the wait time in seconds to at least 3 seconds and possibly 5 seconds in some instances.

For all inbound routing technologies DID Digits must be specified. The following tables provides a high level summary of these values and how/when they are applied.

Table 8: DID routing properties in msXfax XP when using DTMF routing

Parameter	DTMF Routing	Comments
DID	4	Usually DTMF routing will use the last 4 digits of a range allocation on your PABX
Start	N/A	N/A
DTMF Wait time	Set this to 5 seconds	

Table 9: DID routing properties in msXfax XP when using DTMF routing for North American DID analogue services

(Analogue DID services were popular in Hong Kong in the 90's through service providers such as Hong Kong Telecom. Note PCI versions of analogue DID boards are not manufactured by Brooktrout for Hong Kong).

Parameter	DID routing (analogue DID service)	Comments
DID	4	Usually DID routing using either analogue or DNIS digital DTMF routing will use the last 4 digits of a range allocation on your PABX
Start	Wink	<p>Your phone service provider must communicate whether the service is wink or immediate, in order for you to set msXfax XP appropriately. msXfax XP tells your Brooktrout DID board what the service type is, so the board can function appropriately with the DID trunk.</p> <p>Wink is recommended by Brooktrout because it less prone to error and more efficient. Refer http://www.brooktrout.com/whitepapers/html_pages/order_did.html</p>
DTMF Wait time	N/A	

msXfax XP is configured differently when interfaced to a T1 line as opposed to loop start lines. With loop start, the phone lines are connected directly to the TR114 board. Up to four loop start lines can be connected to a single TR114 board (e.g. TR114+P4L). If you plan to implement more than 12 fax lines and your PABX or service provider can provide a T1 service you should consider a Brooktrout digital board solution. Such configurations require msXfax XP fax server to be configured with a T1 Network Interface Card, such as the Brooktrout TRNIC.

TRNIC serves as the interface between the T1 line and other digital TR114 boards. In a T1 msXfax configurations, digital TR114 boards are used instead of analog TR114 boards.

Digital TR114 boards are available with 2, 4, 8, 12 or 16 channels per board, and communicate with the TRNIC across a digital telephony bus.

Brooktrout also offer TR114+P8V-T1 (PCI board) that put an 8-channel digital TR114 board and a TRNIC board together, and form one board out of them. The physical connection among the digital TR114 boards and the TRNIC is a flat ribbon cable with connectors or "drops" to connect the boards.

Table 10: DID routing properties in msXfax XP when using DNIS digital services

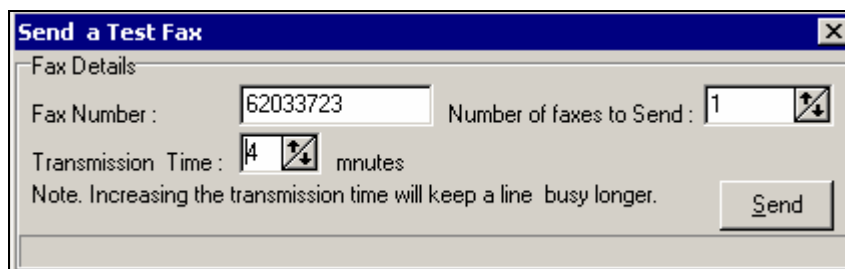
Parameter	DID routing (analogue DID service)	Comments
DID	4	Usually DID routing using either analogue or DNIS digital DTMF routing will use the last 4 digits of a range allocation on your PABX
Start	Wink	Your phone service provider must communicate whether the service is wink or immediate. Contact Brooktrout for more detailed information.
DTMF Wait time	N/A	

Table 11: Table for European Standard (ETSI) ISDN services

Parameter	DDI ISDN ETSI routing	Comments
DID	See comments	Australia's Telstra On-Ramp Basic rate services = 8 Other ETSI compliant networks will advise you how many DDI (DDI means Direct Dial Inwards under the ETSI standard). In msXfax XP terms this is DID digits. Contact your ISDN service provider or ETSI compliant PABX vendor to determine the number of DDI network layer digits passed via the ISDN protocols.
Start	N/A	
DTMF Wait time	N/A	

20 Send a test fax and some useful utilities

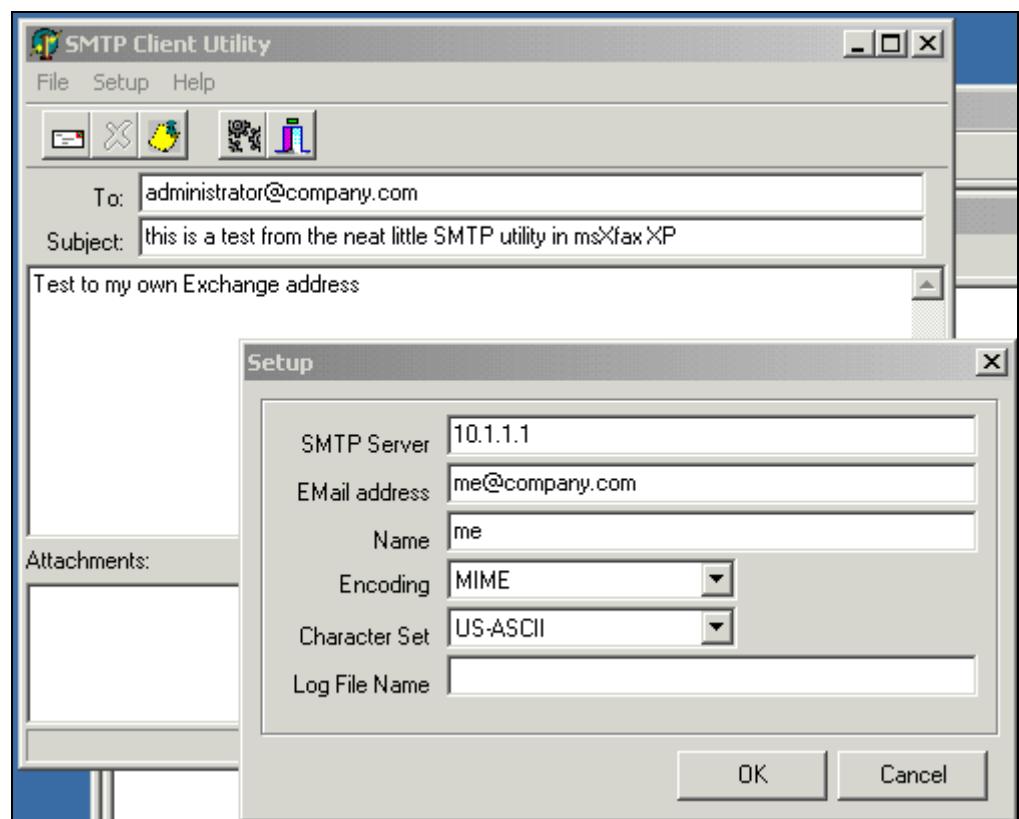
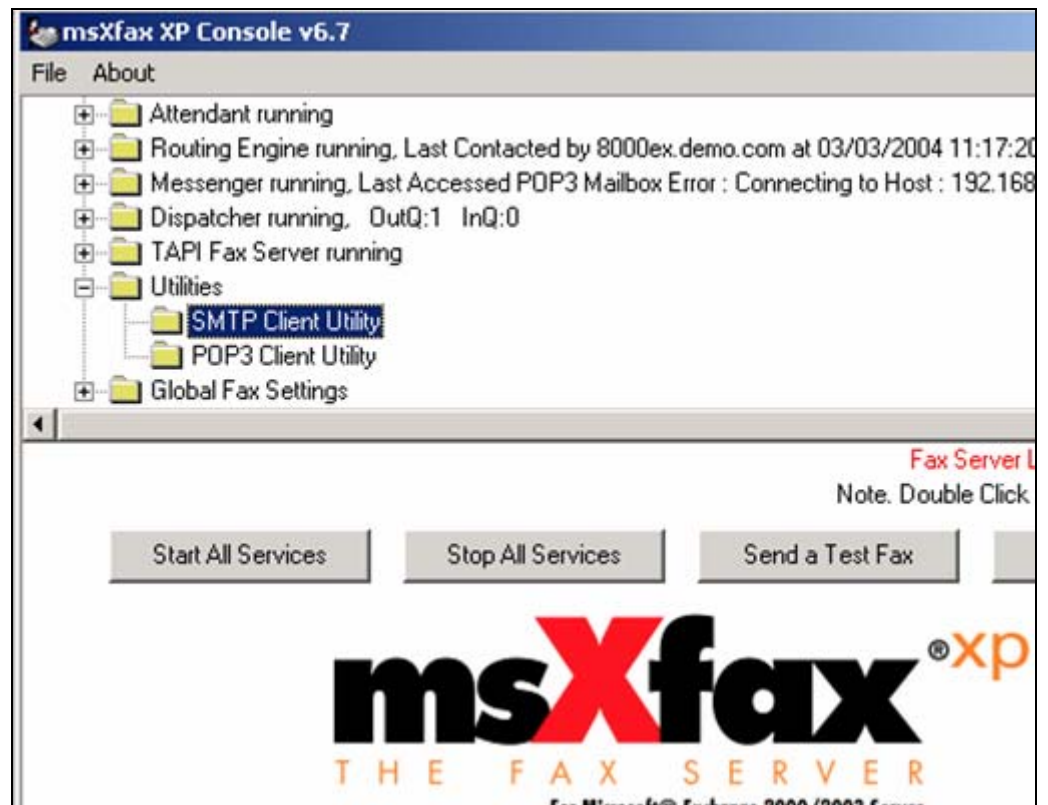
- msXfax XP has a large button to allow you to quickly send a test fax.
- Select Send Test Fax
- Enter the fax number you want to send to
- It is possible to generate many faxes by increasing the number from 1 using the up arrow.
- A sample fax is sent. By increasing the Transmission simply adds additional pages to the fax to increase the transmission time.



20.1 msXfax XP Utilities

msXfax XP comes packed with lots of useful tools including an SMTP send utility and a POP3 client utility.

Both of these tools can be used from your fax server if there is a problem trying to send from your fax server to Exchange users or when attempting to read messages using POP3 protocol from the Exchange Mailbox reserved for msXfax XP's Messenger service.



- Click on the setup option as shown above and set the values that correspond to your Exchange Server.
- Click OK.
- Click on the envelope to send your message

- Go into your Outlook Email and verify that you got the message.
- A similar utility exists should there be a need to verify that POP3 protocol is working to your Exchange server.

21 Active Directory Integration

21.1 Introduction

msXfax XP uses existing fields in Active Directory (AD) to store specific information required for outbound and inbound fax controls and routing.

AD is the single source for all information relating to users in a Microsoft Exchange 2000/2003 network.

The next major chapter introduces Global Fax Settings. Global Fax Server Permissions and Cover Page settings and Fax Server Permissions via LDAP.

Fax Server Permissions invokes BNS Group's "Management Aid to Active Directory" or the MAAD Tool. MAAD Tool carries the Designed for Windows XP Logo.



When reading this section, it is important to understand that after msXfax XP has been installed **all users can send faxes with a few simple parameters set and a cover sheet defined.**

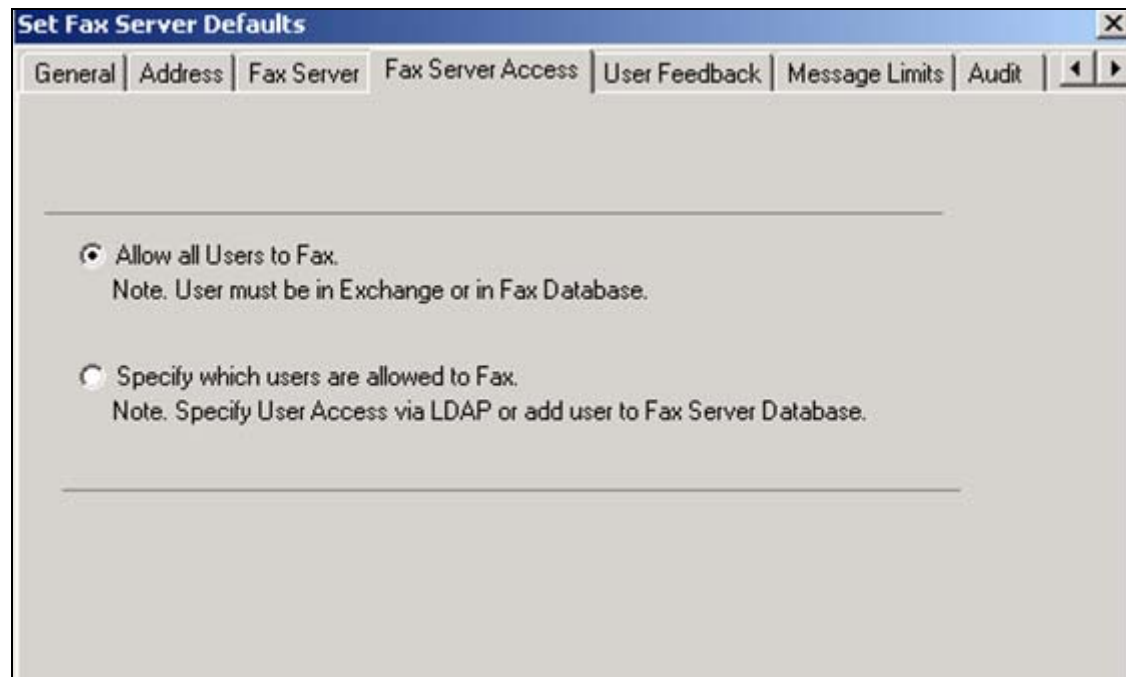
Let's look at how easy that is.

21.1.1 Quick setup all users can send a fax without automatic cover sheets

Allowing all users to send a fax from Word would be satisfactory for some organizations; whereas, other organizations would want each user to be explicitly allowed to send faxes via Active Directory.

To allow all users to send faxes without expressly setting their options in AD:

- Expand Global Fax Settings
- Double click Global Fax Server Permissions and cover page settings



By setting “Allow all Users to Fax” will allow users in Active Directory or in msXfax XP’s local database to send a fax.

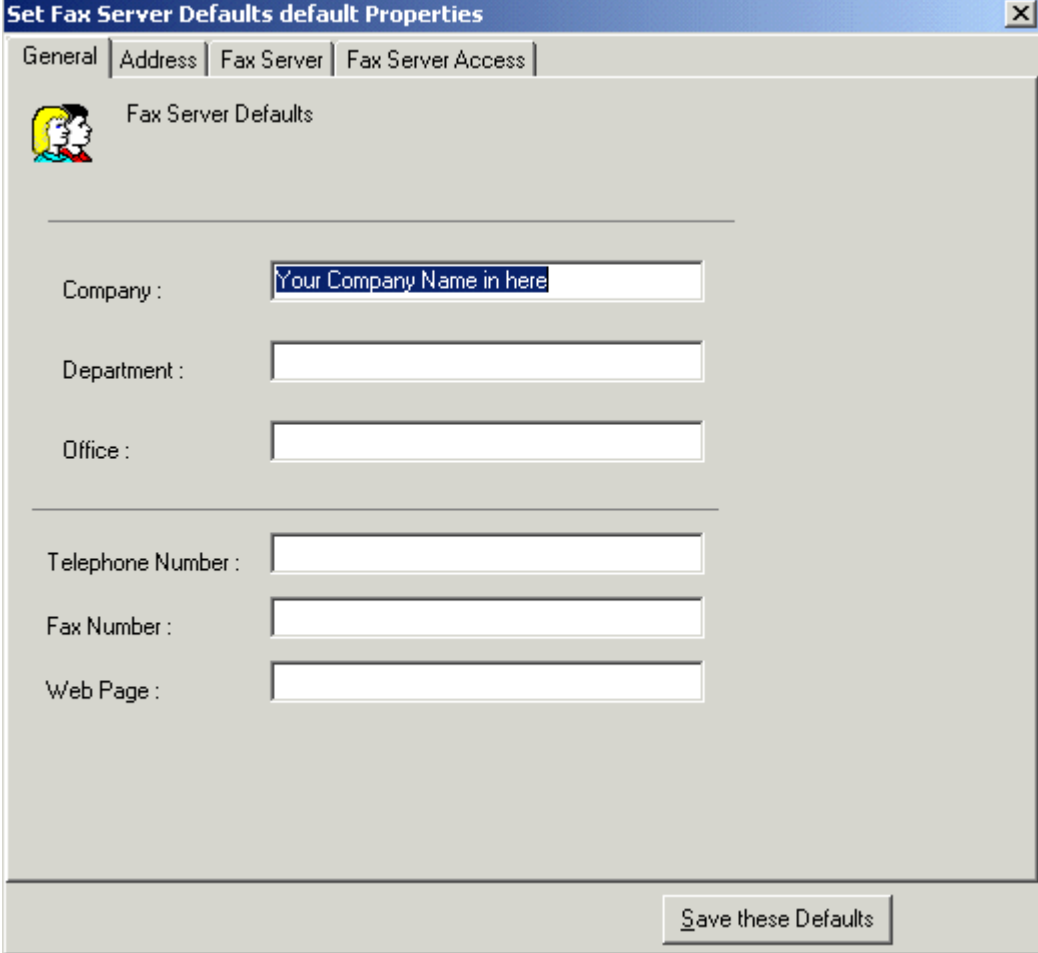
Some customers want their users to prepare all their faxes using Microsoft Word fax cover sheet templates. If this is the case for your organization, no further action is required to implement outgoing faxes.

21.1.2 Quick setup all users can send a common automatic cover sheet

Some organizations want all their users to be able to send a fax without any restrictions using a single automatic cover page.

An understanding of the cover page section is necessary to fully appreciate the following points. Please read the cover page section to obtain a basic understanding of how it works.

If you are a small company you may have only a few variables in your cover page and you may simply place your company name and logo in the cover page. This is actually quite efficient because it reduces the number of Active Directory queries.



Set Fax Server Defaults default Properties

General | Address | Fax Server | Fax Server Access

Fax Server Defaults

Company :

Department :

Office :

Telephone Number :

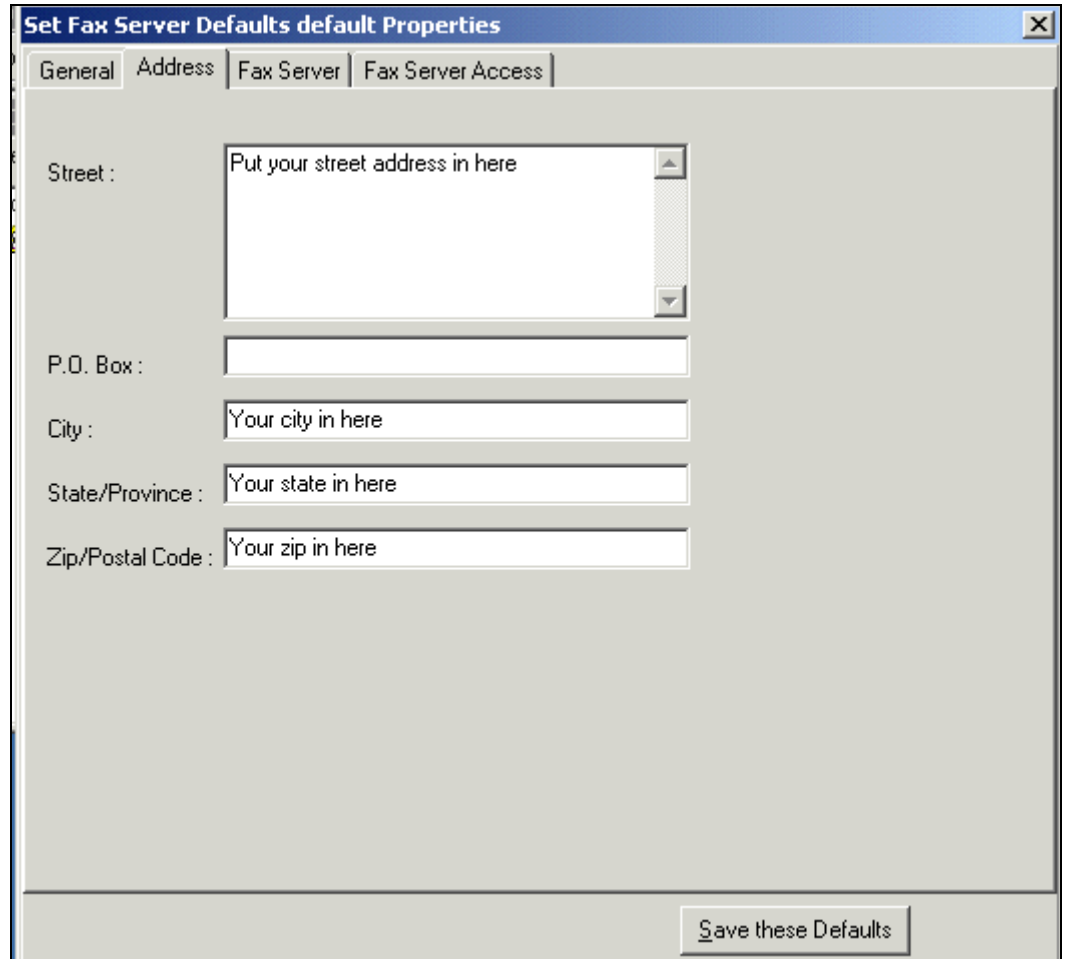
Fax Number :

Web Page :

Save these Defaults

General Page explained:

These values are used when assembling an automatic cover page if the values are not available from Active Directory.



The screenshot shows a dialog box titled "Set Fax Server Defaults default Properties" with a close button (X) in the top right corner. The dialog has four tabs: "General", "Address", "Fax Server", and "Fax Server Access". The "Address" tab is selected. The "Address" tab contains the following fields:

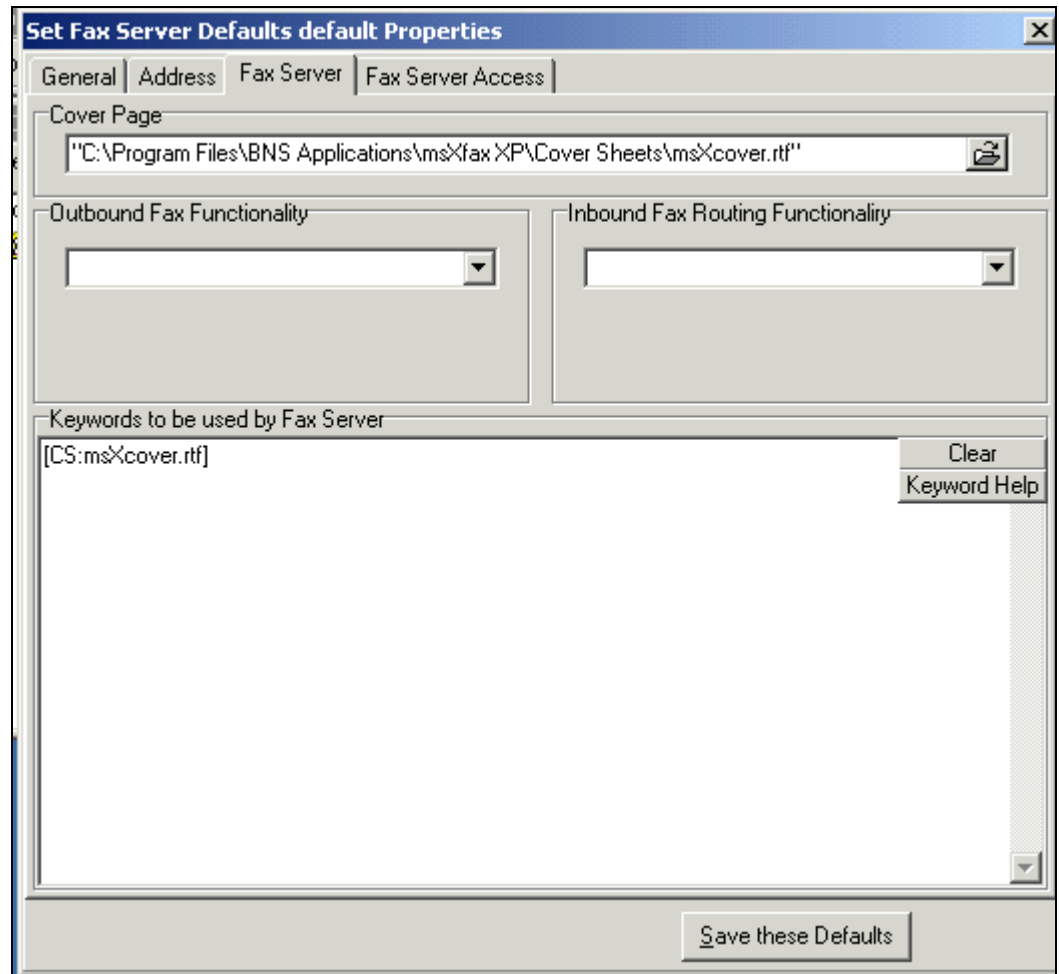
- Street : A text box with the placeholder text "Put your street address in here".
- P.O. Box : A text box.
- City : A text box with the placeholder text "Your city in here".
- State/Province : A text box with the placeholder text "Your state in here".
- Zip/Postal Code : A text box with the placeholder text "Your zip in here".

At the bottom right of the dialog, there is a button labeled "Save these Defaults".

Address Page explained:

These values are used when assembling an automatic cover page if the values are not available from Active Directory.

Most medium to large sized enterprise customers will always use Active Directory therefore the above fields are not used.



This is where the automatic common cover page can be defined.

Customers can use Active Directory to define the cover sheet to be used on a user by user basis. BNS recommends that you keep administration to a minimum and use an enterprise wide cover sheet complete with disclaimers.

21.1.3 Other global default options

Global inbound and outbound settings can be implemented for example:

- Ability to print all sent/received faxes
- Ability to save all sent/received faxes to a directory

Customers can use Active Directory to determine what action is to be taken for a specific user.

21.2 Keywords & authorization to send a fax

msXfax XP's MAAD Tool allows User, Contact & Distribution Groups objects in AD to be set in bulk at an OU level.

For example: if you want all User objects in your "Sales" OU to be authorized to send faxes you could use the MAAD tool to select and apply all the necessary settings in AD rather than you going through each User object and setting the properties for each user.

AD administrators can set specific values via the AD Users and Computers snap-in.

This section outlines the individual level keyword settings in AD to expand your understanding of how msXfax XP harnesses the power of AD.

The screenshot shows the 'Administrator Properties' dialog box with the 'Profile' tab selected. The 'Telephone numbers' section contains the following fields:

Home:	<input type="text"/>	Other...
Pager:	<input type="text"/>	Other...
Mobile:	<input type="text"/>	Other...
Fax:	+1 (781) 62813355	Other...
IP phone:	<input type="text"/>	Other...

The 'Notes' field contains the following text:

```
[FaxEnabled]
[CH:Boston1]
[InPrinter:1|HP LaserJet 4000 Series PS]
[InDMI:1|C:\received faxes]
[CS:msXcover.rtf]
[CC:sales01]
[OutDMI:C:\outboundfaxes]
```

At the bottom of the dialog box are the buttons: OK, Cancel, Apply, and Help.

The Notes field is used to instruct msXfax XP to: authorize, account for, route, save, print and log faxes.

msXfax XP uses the Notes field to:

1. To avoid extending your AD schema and;

2. To allow additional keywords to be added in the future without compromising your directory service.

The fax number field can be used for inbound DID/DDI routing - we'll look at that in just a moment.

All msXfax XP keywords are enclosed in square brackets within the Notes field.

The following table summarizes the keywords above and their usage:

Table 12: msXfax XP keywords and their usage

Keyword	Function	Comments
[FaxEnabled]	To authorize a user to send a fax	This is best set in the Global fax settings chapter if many users in a single OU are to be authorized to send a fax.
[CH:<sitecode>#]	Faxes arriving on fax line # on a fax server in site = <Sitecode> will be routed to this user	Channel based routing is typically used by organizations without DID, DDI or DTMF routing capability. Example: [CH:Boston1]
[InPrinter:1 Printer name]	Received faxes on fax line 1 will be printed on the printer	Eg: [InPrinter:1 \\fileserver1\HPLaserJ]
[InDMI:1 Directory location]	Received faxes on fax line 1 will be stored in the directory specified. DMI is short for Document Management Interface. Faxes can be automatically profiled into any document management system which can import from an external directory.	Eg: [InDMI:1 \\fileserver1\DMI]
[OutDMI:Directory location]	Outbound faxes will be stored in the directory specified. DMI is short for Document Management Interface. Faxes sent from your organization can be automatically profiled into any document management system which can import from an external directory.	Eg: [OutDMI:C:\FAXESOUT]
[CS:Coversheetfilename]	If this keyword is present, an automatic cover sheet will be sent each time this user sends a fax.	Eg: [CS:SALES.RTF] The coversheets must be stored in the local path Program Files\BNS Applications\msXfax XP\Cover Sheets
[CC:<costcenter>]	Each fax sent by this user will be recorded in a database for reporting and input to an accounting system for internal billing purposes.	Eg: [CC:Sales] = sales cost center.

Another common example follows:

The screenshot shows the 'Test A. User Properties' dialog box with the 'Telephone numbers' section selected. The 'Fax' field contains the text '+1 (781) 9899-7789:Boston7789'. The 'Notes' field contains the text '[CS:business_unit1_cover.rtf]' and '[FaxEnabled]'. The dialog box has standard Windows-style buttons for 'OK', 'Cancel', 'Apply', and 'Help' at the bottom.

The above example shows that this user has a DID (read also DDI/DTMF) Fax number 7789 (embedded in the Fax Field) qualified with the Boston site code.

The user's full fax number is not used by msXfax XP, only the routing portion to the right hand side of the : (colon) is used.

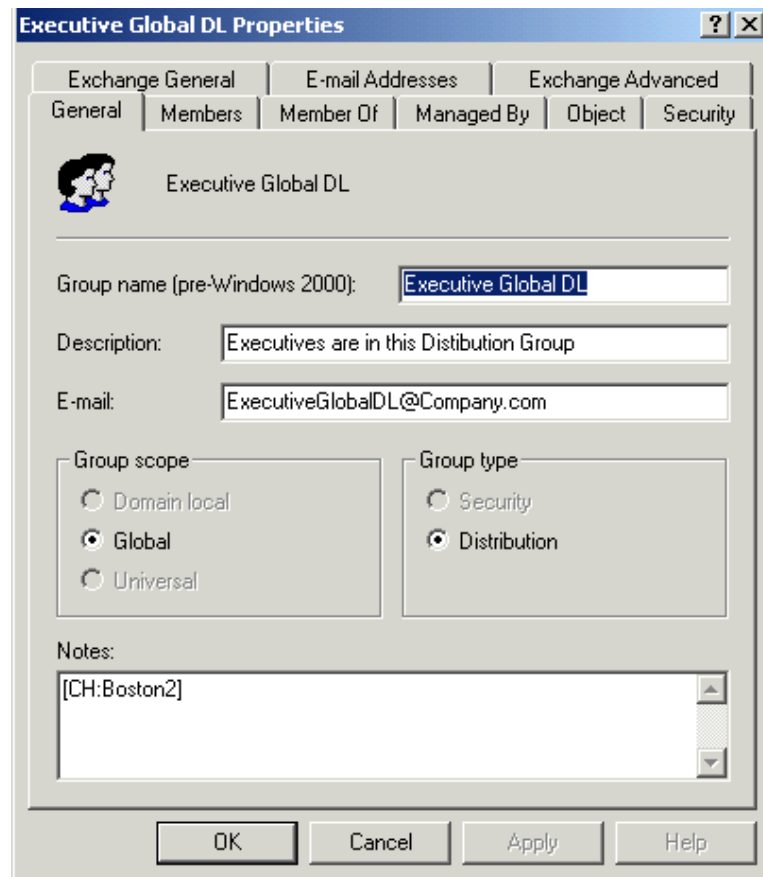
In addition to searching the Notes field for [DDI:Boston7789] or [DID:Boston7789] msXfax XP will also perform a filtered ADSI query on the fax number field in AD.

Filtered ADSI queries perform efficient searches against AD.

This user will have cover sheet business_unit1_cover.rtf attached automatically each time they send a fax. If an employee moves to another department on a temporary basis, it is a simple matter of updating AD with their temporary cover sheet. Users can override cover sheet settings by attaching a cover sheet in the message.

Charge codes: Legal firms can enter charge codes in each fax message sent. This is covered in the user documentation. Charge codes are not to be confused with cost centers. A cost center is an internal billing code whereas a charge code is used by some organizations to bill clients.

21.2.1 Routing to Distribution Groups



The above example shows how an AD Distribution Group containing multiple members can be set up to use msXfax XP to route incoming faxes based on all the same criteria as previously discussed earlier in this chapter.

Inbound DID values can be assigned to the Notes field together with Document Management Interfaces etc.

Organizations have the capability with msXfax XP to collectively route incoming faxes to:

- Users
- Distribution Groups
- Contacts
- Other email addresses
- Printers
- Document Management or other applications

21.3 Enterprise security & controls

In well designed, secure Active Directory enterprises, designers and security control officers require local IT staff to conduct day to day management of services including:

- Management of users
- Management of printers
- Management of groups
- Management of exchange mailboxes
- Etc

msXfax XP when installed on the Windows 2000 fax server can only be administered by members of the local Administrators Group.

If the person who will manage msXfax XP is a member of the Administrators group or Domain admins group, the following **does not apply**.

The simplest way to provide access to local IT staff is to make them members of the local Administrators group on the msXfax XP Windows 2000 member server.

- Administrative Tools
- Computer Management
- Local Users and Groups
- Select Administrators Group
- Select the user or domain global security group to be included in the local Administrators group.

Using the above approach will provide access to msXfax XP's functions. However, some network security controllers do not allow local IT staff to have the capability to change settings such as TCP/IP properties.

The solution in that case would be to provide specific rights to the msXfax XP registry keys on the fax server as follows:

- Log on as an administrator
- Run regedt32
- Navigate to local machine, software, Better Network Services Group
- Set the security permissions on this registry key to include full control to the person or global security group who will be responsible for the day to day management of msXfax XP.

21.4 Security recommendations

msXfax XP support Domain addressing in various format including: [number@domain.fax](#) and [name | number@domain.fax](#) (Recipient name is separated from the fax number using a vertical bar keyboard character).

For example: an Outlook user can send to [Larry | 673273223@Boston.fax](#)

Domain Boston.fax is only known to Exchange 2000/2003 by virtue of that address SMTP space being added to the msXfax XP SMTP Connector. It is not possible to address email to Boston.fax on the Internet and have that associated in any way with this customer's Exchange network.

As a general rule it is advisable to:

- Use Fax address space in the msXfax XP Connector to allow authenticated Outlook users to send to Outlook Contacts and;
- Use msXfax XP Domain addressing and;
- **Disable freeform fax addressing by using some cryptic value** and;
(If you need to implement freeform addressing consider using passcodes see note 1 below) and;

Note: 1 If you must use freeform addressing and pass codes, it is important to note that addressing only to fax recipients is important. You should not include other recipients who are on E-mail. Email recipients will have access to pass codes and could attempt to use fax services on your network without authorization. This depends on how secure your Exchange network is.

22 Global Fax Settings

22.1 Introduction




Global Fax Settings provides global settings for each fax server:

1. Global settings which apply for customers with Exchange 2000/2003 environments.
2. Global settings which apply when msXfax XP is deployed in non Exchange/ Active Directory sites.
3. Fax Server Permissions via LDAP uses a BNS Group tool called “Management Aid to Active Directory (AD)” or the MAAD Tool. MAAD updates AD objects with keywords to perform specific functions. After a while you will become familiar with msXfax XP keywords which are used in the notes field of an AD object to identify the object for such things as: permissions to send a fax or an inbound DID fax number.

22.1.1 Global Fax Server Permissions and Cover Page Settings

Set Fax Server Defaults default Properties

General | Address | Fax Server | Fax Server Access

 Fax Server Defaults

Company :

Department :

Office :

Telephone Number :

Fax Number :

Web Page :

Set Fax Server Defaults default Properties

General | Address | Fax Server | Fax Server Access

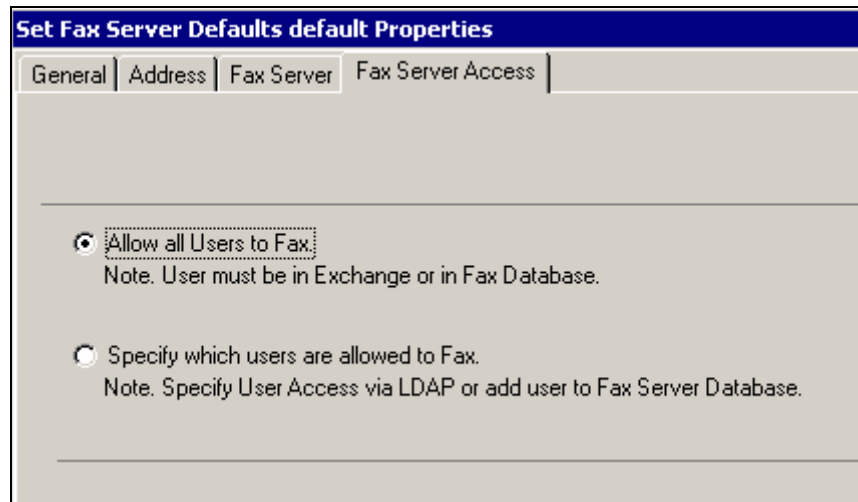
Street :

P.O. Box :

City :

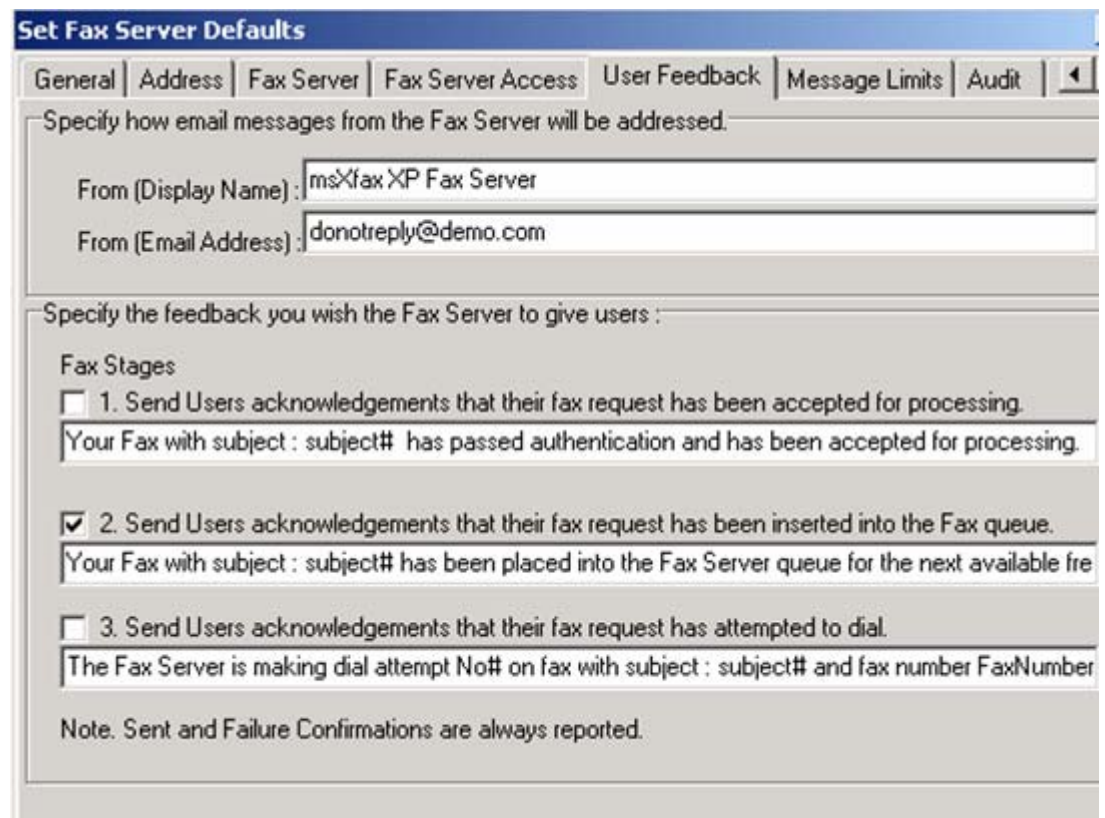
State/Province :

Zip/Postal Code :



Version 6.5.4 and 6.7.4 introduced User feedback, message limitations and audit trails.

22.1.2 User Feedback

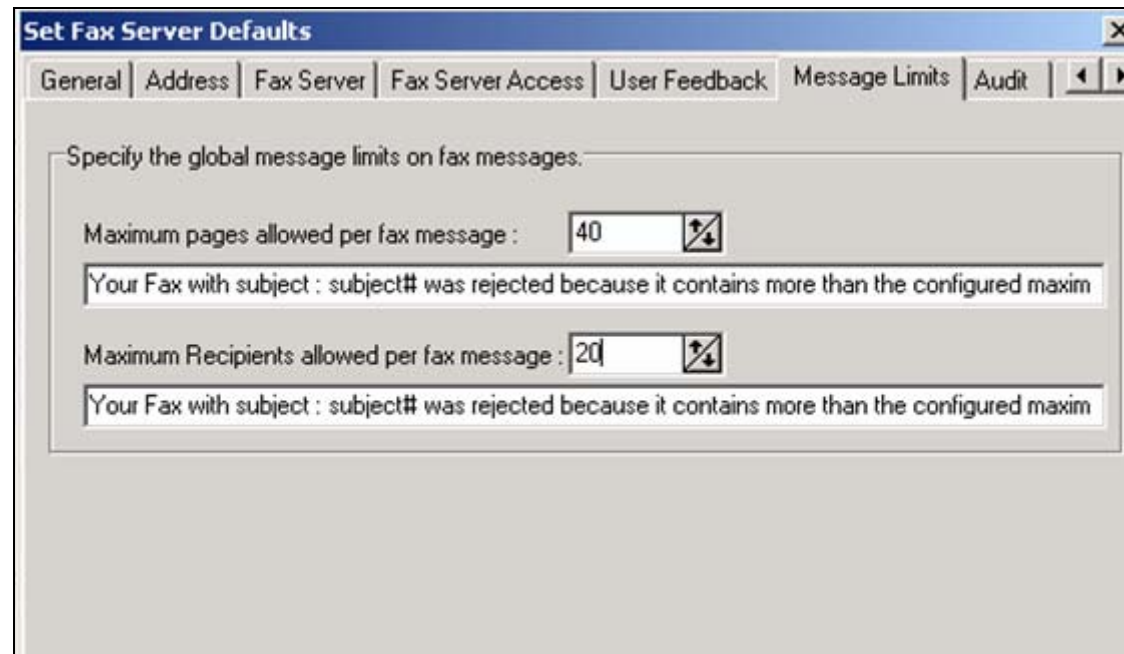


To improve the feedback to end users of the system, msXfax XP provides administrators the ability to send messages back to Outlook users when:

1. their fax has been accepted for processing
2. their fax has been inserted into the fax queue for transmission
3. their fax has commenced dialing.

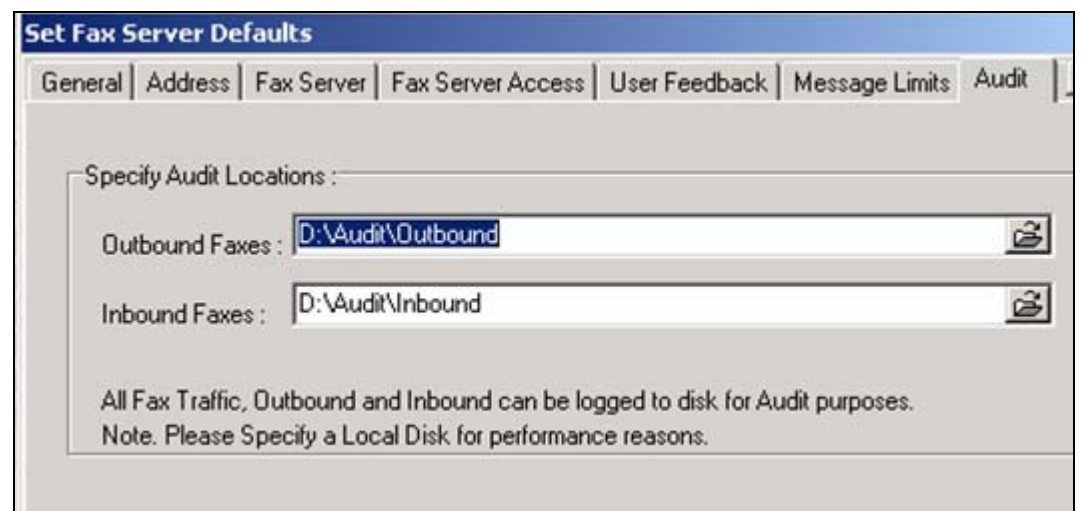
Users will always receive a fax sent or fax failed message. These additional messages gives the users of the system direct feedback on the progress of their fax request.

22.1.3 Message Limits



Administrators can restrict message sizes and recipient limits.

22.1.4 Audit images of sent and received faxes



Administrators can specify directories to store images of faxes successfully sent or successfully received.

Outbound Audit File Name Convention :

TX_ccyymmdd_hhmmssh_FaxServerSiteCode_FaxServerID_EventID_SenderDisplay Name_Pages_Channel_DialedNo_RemoteCSID.tif

Inbound Audit File Name Convention :

RX_ccyymmdd_hhmmssh_FaxServerSiteCode_FaxServerID_EventID_Pages_Channel_DDI_RemoteCSID.tif

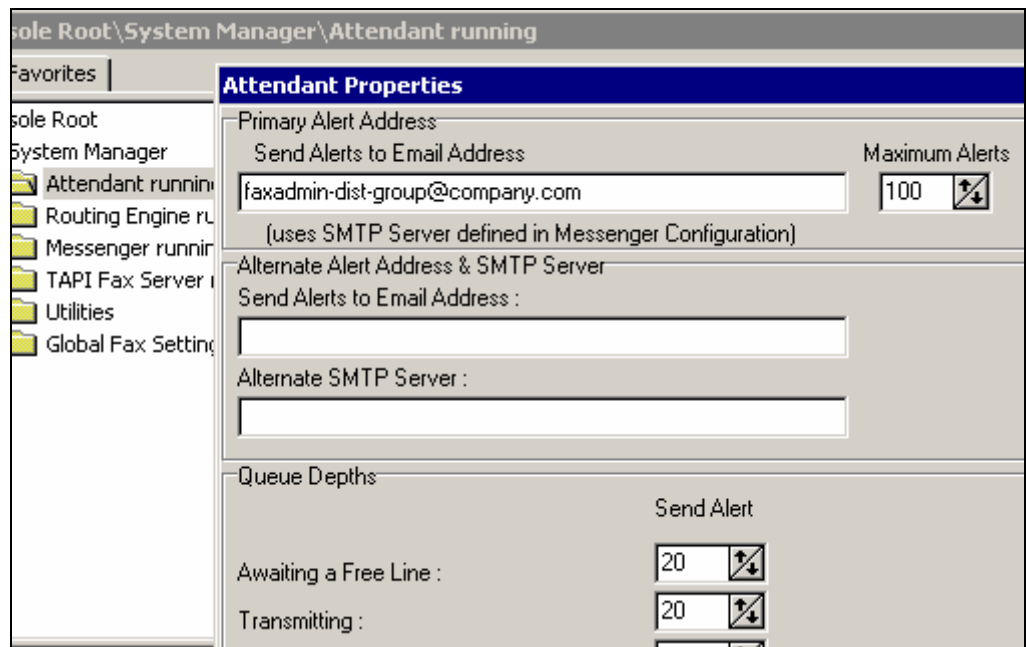
Many customers will install msXfax XP in the simplest way possible whereas other customers need granular controls for complex routing and management of faxes.

The best way to understand this subject is to look at various examples.

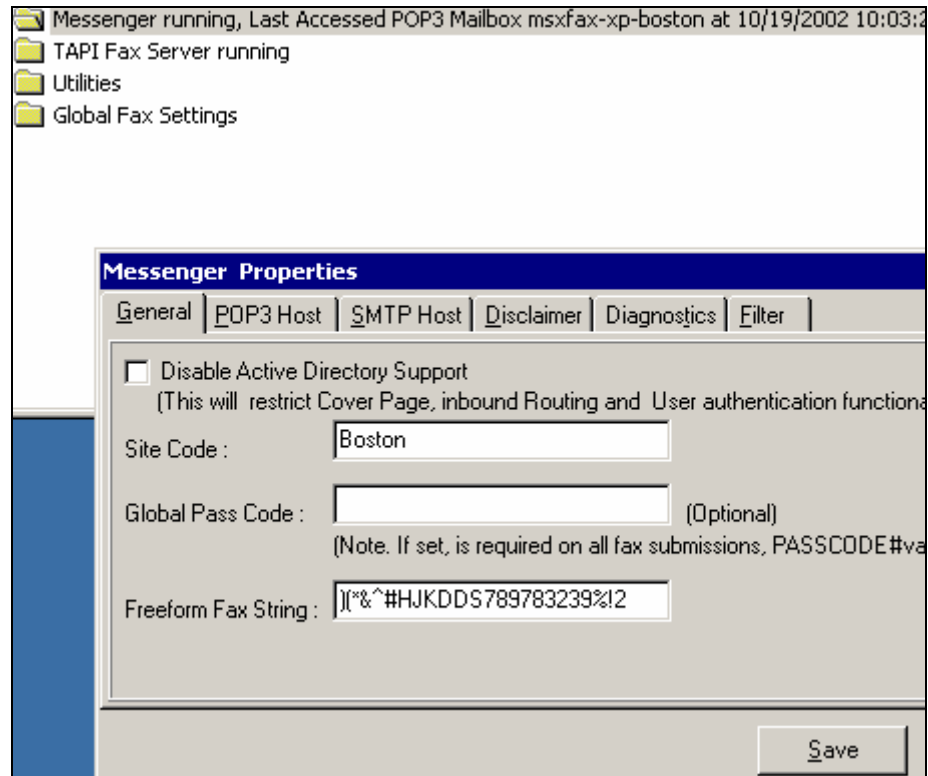
Example 1: a small business with a single fax modem with 20 users.

Their users have come from a manual system of faxing and used Microsoft Word Fax templates to create their manual faxes. The customer does not want to change the staff work practices. They have elected to continue to use their Word Fax templates. All faxes that come in on line 1 will go to the default fax administrator who is currently responsible for distributing paper faxes.

Answer= this customer would not make any changes to any of the Global Fax Property sheets. All users by default in Exchange can send a fax when msXfax XP is installed (refer to Fax Server Access). However, for added security, the user object must be in AD. This customer would nominate the default administrator during installation. The default administrator is located in the msXfax XP System Attendant properties. The field is called Primary Alert Address. It is the email address of the user or distribution group or any other email address.



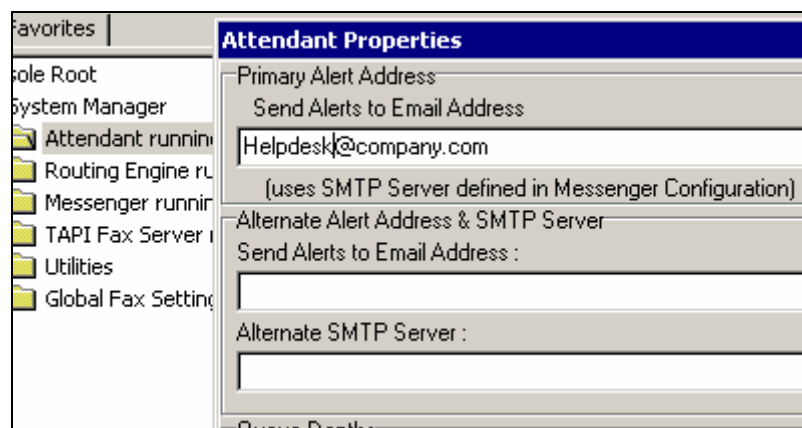
The customer decides to disable freeform fax addressing preventing forged relay of faxes from outside the organization.



Note: entering a cryptic freeform fax string similar to the one above will help prevent forged emails being bounced off the customer’s Exchange Server onto other Connectors.

Example 2: similar to example 1 but the default fax admin is different from alert admin.

Answer= this customer would nominate say the IT Manager as the Primary alert for error notifications but nominate a fax administrator to receive inbound faxes.



The IT Manager (Larry) is smart, he decides to set up a mailbox in Exchange called “Helpdesk”. He monitors the help desk for this small business but he intends to employ a help desk person as his business grows. He configures msXfax XP System Attendant to send primary alerts to Helpdesk@Company.com

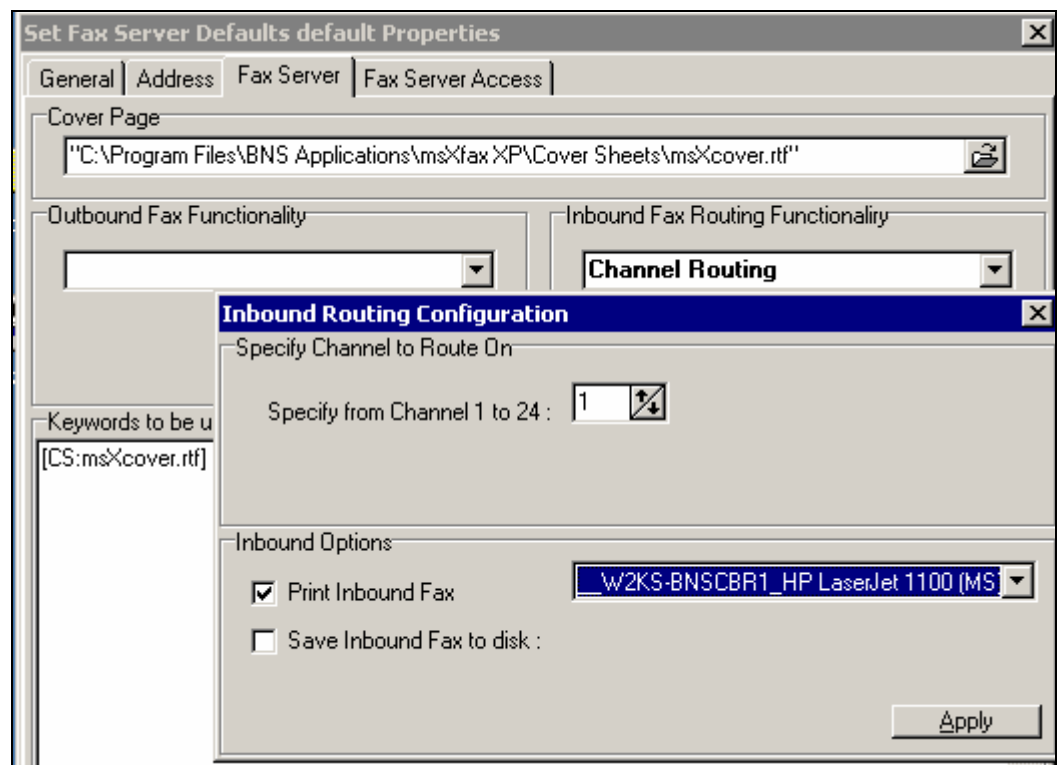
Example 3: any sized business with a number of fax lines and users who want to use automated standardized organization wide cover sheet for transmissions. The customer has a few more specific requirements for inbound fax lines.

The IT Director (Sharon) has the following requirements:

- She has many users who will send Outlook messages to fax recipients and the Outlook memo text has to be inserted into a standard automated fax cover sheet with automatic disclaimers. She wants to do this because she wants only one place to change the business fax cover sheet, its representation and disclaimers which the legal department keep changing.
- She wants to restrict who can sent faxes using AD.
- Her users typically drags and drops standard PDF files to create fax responses based on the type of customer enquiry.
- She has 1 fax line (fax line 1) which will receive faxes. She wants these faxes to be sent to a nominated email address and a specific printer.
- She has another fax line (fax line 2) which will receive customer complaints and other special correspondence which must be document managed.

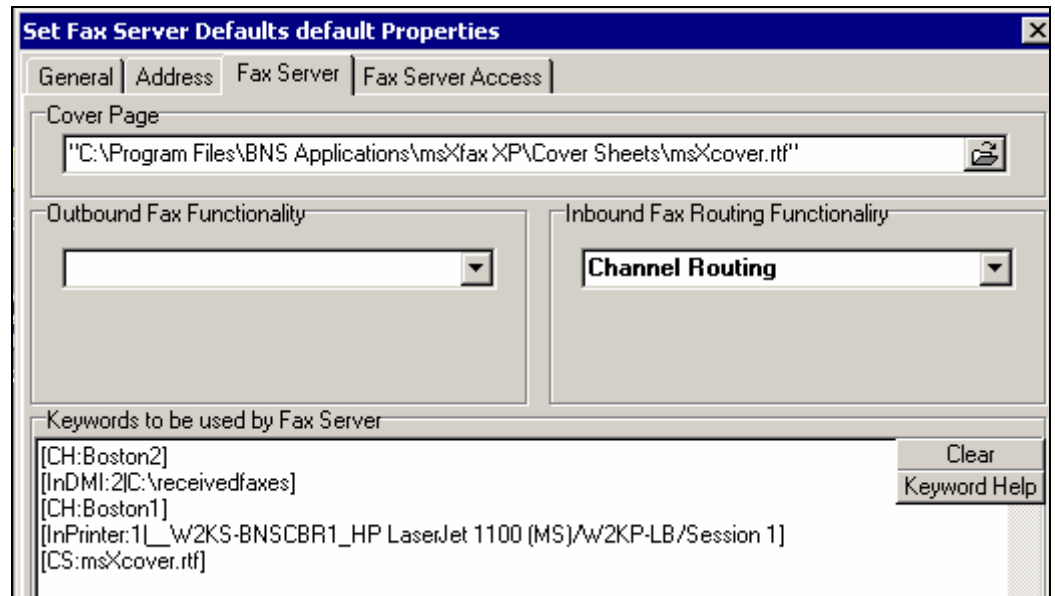
Answer:

- Prepares an automatic cover sheet using msXfax XP cover sheet program.
- The cover sheet can use the company and address details supplied in the property sheet or they can be simply inserted into the word document as normal. She decides to not use Company and address details in the global fax settings but simply to layout her fax cover sheet in her own way.
- Therefore, all she has to do is to nominate the cover sheet she has created then nominate the keywords for fax line 1 and fax line 2.



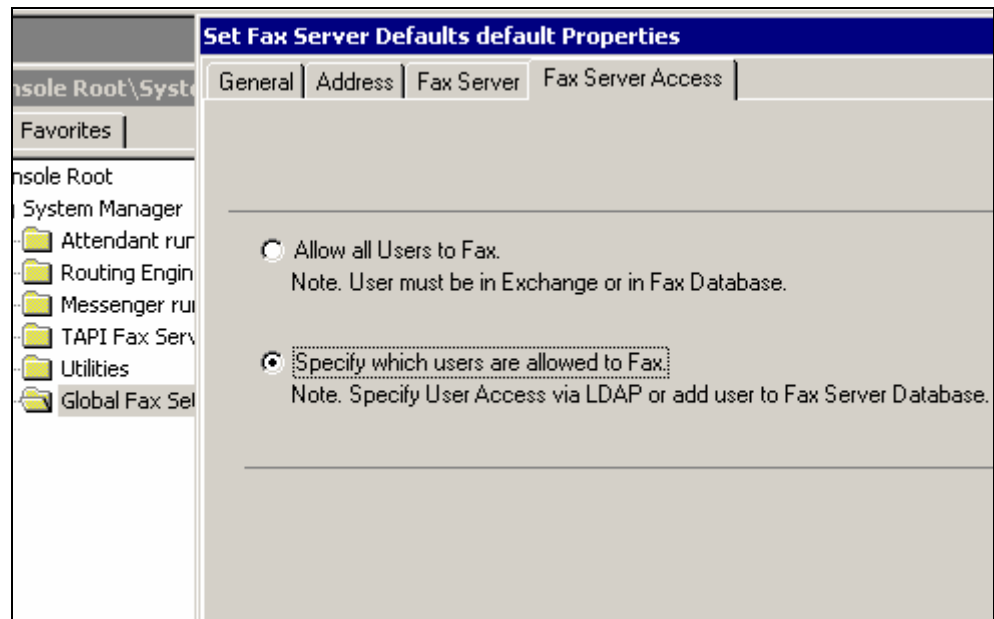
Selecting Channel Routing (channel = fax line) allows selection of various options including Printing, Saving to disk and emailing to an email address.

The result should look like this.

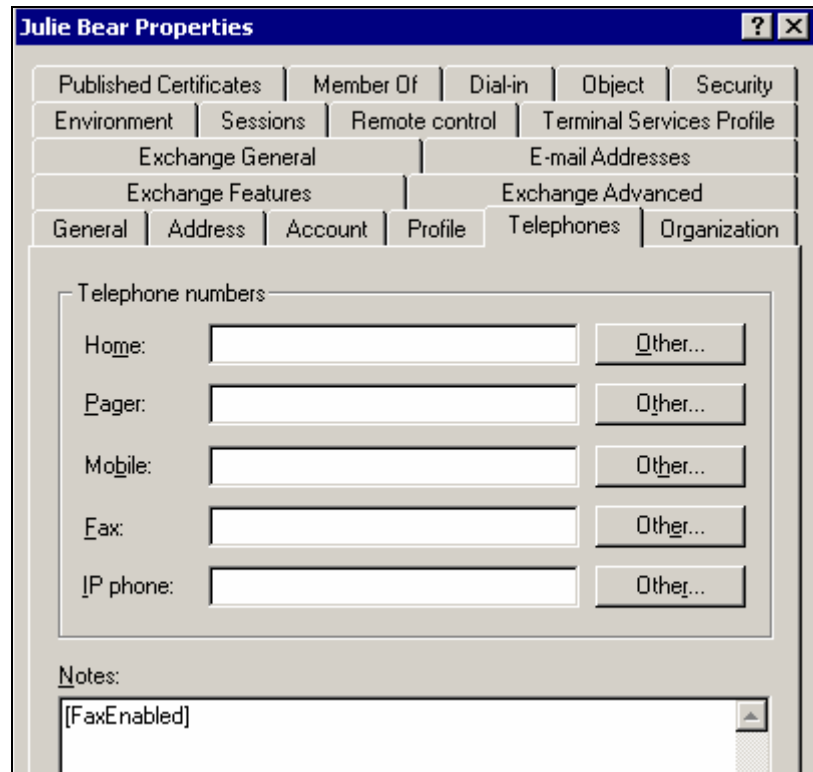


She now wants to restrict which users can send faxes. This is done in Active Directory.

- Firstly, she must change the Fax Server access property sheet as shown below. This forces msXfax XP to check against the senders AD object to determine if they have the keyword [FaxEnabled].



- She then goes into AD and inserts [FaxEnabled] keyword in the Notes field.



- Done.

Example 4: a large multi-national with many requirements.

The IT Director (James) has the following requirements:

- Nothing is to be installed on the desktop because he has 30,000 users. He is prepared to install some client software on a few machines where there is a language considerations such as Simplified Chinese.
- He also has HP digital senders and wants to use them to send faxes directly from each department.
- They have approximately 50 regional locations where a fax server is to be located.
- They have SAP mainframe applications which must be able to send emails, faxes and other forms of communications in the future.
- They use Maxcompress within their Exchange network to minimize network traffic.
- He wants to restrict who can send faxes using AD.
- He would also like to set up least cost routing so that a fax server in say Singapore can send a fax via the USA.
- He must provide accounting information for cost centers to be correctly billed via the general ledger
- Inbound routing is required within the enterprise across 63 countries.

Answer:

- Install Render to Outlook only on the workstations that support Simplified Chinese. All faxes are rendered locally at the client and sent as an image attachment to the local fax server

- Users should use msXfax XP Domain addressing when using HP digital senders.
- They should install 50 regional fax servers ideally each one in its own routing group. If this is not possible then each fax server should be given a logical site name and possible use of msXfax Domain addressing to make each fax server specifically addressable via msXfax XP Domain addressing. FAX Address space is still a consideration where there is no direct correlation between Fax servers supporting FAX Address space and a Routing Group.
- Install SAP Connector for Exchange 2000/2003 in accordance with SAP's documentation.
- Install support for Winzip as documented in this guide.
- This customer will use AD for almost everything they do with msXfax XP. Including keywords for: FaxEnabled, Cost centers, DID values.
- He should carefully consider how least cost routing can be used within msXfax XP and utilizing the Exchange design that they have.
- Standardize on Brooktrout boards unless there is a business/technology reason why other fax devices should be used.

22.1.5 Fax Server Permissions via LDAP on <Server name>

This function runs the MAAD Tool to update Active Directory with general values and msXfax XP keywords.

MAAD tool allows you to update a single user or many users with msXfax XP keywords. For example you could insert the [FaxEnabled] keywords in 1000 user objects notes fields in AD in less than 1 minute using MAAD.

As a general recommendation, we suggest that you assign DID fax numbers manually using AD users and computers snap in but use the MAAD Tool for bulk basic updates. Using MAAD for a single user update is also useful if you can't remember the keyword names for msXfax XP.

The MAAD tool is powerful, very useful, will save you time and effort to build and maintain a rich AD.

We keep talking about AD being rich. Correctly implemented, AD becomes a central resource for an enterprise network. If AD is not used effectively, it is simply a directory service to support various applications without any substance.

msXfax XP has been built around AD to utilize key elements of AD but at the same time does not extend the AD schema. This is generally well appreciated by network administrators and design architects. From BNS Group's perspective, msXfax XP can be enhanced at any time by using keywords. Customers can feel confident that their AD schema will not be extended in any way by msXfax XP.

The MAAD tool is incorporated into msXfax XP and is also licensed as a separate product.

msXfax XP utilizes AD for the following:

Table 13: msXfax utilization of AD

Feature	Field Used in Active Directory	Value/Parameter
Authorization to send a fax	Notes field	[FaxEnabled]
Option 1: Direct Dial Inwards fax number	Fax Number Field (Telephone Tab)	A colon followed by the <SiteCode>DDI value eg: :Boston62813355
Option 2: Direct Dial Inwards fax number	Notes field	[DDI:<SiteCode>DDI value] eg: [DDI:Boston62813355] eg: [DID: Boston62813355]
Cover sheet	Notes Field	[CS:sales_cover.rtf]
Cost Center	Notes Field	[CC:Sales]
Printer to use for inbound faxes	Notes Field (This feature will be rolled into service pack1)	[InPrinter:<Printer name>
Printer to use for outbound faxes	Notes Field(This feature will be rolled into service pack1)	[OutPrinter:<Printer name>.
Channel based routing	Notes Field	[CH:<Sitecode+channel number-> eg: [CH:Boston2]
Place received faxes in a directory	Notes Field	InDMI:channel number network path Eg: InDMI:1 C:\faxes_received Note: Channel 0 means any fax channel
Place transmitted faxes in a directory	Notes Field	OutDMI:channel number network path Eg: OutDMI:0 C:\faxes_received Note: Channel 0 means any fax channel

22.1.6 Quick access to fax server statistics

- This option is available under Global Fax Settings



Fax Server Statistics							
EventID	Time Entered	Time Sent	Sender Name	Subject	Retry Count	Duration	Total
123	11/04/2003 3:01:46	11/04/2003 3:02	lvb@bnsgroup.com	msXfax XP Test Fa	4	0	
119	11/04/2003 3:01:40	11/04/2003 3:02	lvb@bnsgroup.com	msXfax XP Test Fa	4	0	
120	11/04/2003 3:00:58	11/04/2003 3:01	lvb@bnsgroup.com	msXfax XP Test Fa	4	0	
121	11/04/2003 3:00:18	11/04/2003 3:00	lvb@bnsgroup.com	msXfax XP Test Fa	4	0	
122	11/04/2003 2:59:34	11/04/2003 3:00	lvb@bnsgroup.com	msXfax XP Test Fa	4	0	
123	11/04/2003 2:58:37	11/04/2003 2:59	lvb@bnsgroup.com	msXfax XP Test Fa	3	0	
119	11/04/2003 2:57:53	11/04/2003 2:59	lvb@bnsgroup.com	msXfax XP Test Fa	3	0	
120	11/04/2003 2:57:06	11/04/2003 2:59	lvb@bnsgroup.com	msXfax XP Test Fa	3	0	
121	11/04/2003 2:56:22	11/04/2003 2:58	lvb@bnsgroup.com	msXfax XP Test Fa	3	0	
122	11/04/2003 2:55:08	11/04/2003 2:57	lvb@bnsgroup.com	msXfax XP Test Fa	3	0	
123	11/04/2003 2:49:34	11/04/2003 2:56	lvb@bnsgroup.com	msXfax XP Test Fa	2	0	
119	11/04/2003 2:48:47	11/04/2003 2:55	lvb@bnsgroup.com	msXfax XP Test Fa	2	0	
120	11/04/2003 2:48:04	11/04/2003 2:55	lvb@bnsgroup.com	msXfax XP Test Fa	2	0	
121	11/04/2003 2:47:08	11/04/2003 2:54	lvb@bnsgroup.com	msXfax XP Test Fa	2	0	
122	11/04/2003 2:46:08	11/04/2003 2:53	lvb@bnsgroup.com	msXfax XP Test Fa	2	0	
124	11/04/2003 2:41:58	11/04/2003 2:52	lvb@bnsgroup.com	msXfax XP Test Fa	1	259	
123	11/04/2003 2:22:56	11/04/2003 2:47	lvb@bnsgroup.com	msXfax XP Test Fa	1	0	
119	11/04/2003 2:22:55	11/04/2003 2:46	lvb@bnsgroup.com	msXfax XP Test Fa	1	0	
120	11/04/2003 2:22:55	11/04/2003 2:46	lvb@bnsgroup.com	msXfax XP Test Fa	1	0	

Sorted by TimeSent

Show All Faxes
 Show Sent Faxes
 Show Received Faxes

Descending Order

Launch Excel

Select Directory to Export to

Export to CSV

Features:

- Ability to sort columns
- View sent/received faxes or all faxes
- Export to CSV and launch Excel

Note: Statistics are retained in the MSGSTORE.MDB file. They are removed based on the number of days set in the Statistics Tab found under Fax Devices in the TAPI or Brooktrout Fax Server folder of the msXfax XP Console.

23 Configuring Cover Sheets

23.1 Cover Page Editor Overview

A Cover Page editor setup program is supplied with the general install files. This setup can be deployed to users responsible for the creation of cover pages for their respective business units

Cover pages created using the Cover Page editor can be tested by forwarding it to the Fax Server to process and return a rendered image as it would appear as a fax. The forwarding process is actually part of the Cover Page editor. A DCX image is returned showing you exactly how the cover page would appear if sent as a fax.

To control the implementation of user defined cover pages, users must send their final designs to the msXfax XP administrator for inclusion in the Program Files\BNS Applications\msXfax XP\Cover Sheet location on the fax server.

The msXfax XP administrator can then use Global Fax Settings (MAAD Tool) to set all users in an OU to use the cover sheet. The MAAD tool updates Active Directory properties for each user object in the OU (or selected users) with items such as cover sheet details.

23.1.1 Cover Page tool features

- Cover Page Tool supports Microsoft Word as the editor and allows Active Directory keyword tags to be dragged from the sender and receiver panes in the tool to word.
- The keyword tags are defined in a text file called 'msXKeywords.txt' located on the fax server by default in C:\program files\BNS Applications\msXfax XP\Cover Sheets'.
- msXfax XP keyword tags support **ANY** Active Directory attribute for Person or Contact Objects. msXfax XP also supports user defined keyword tags for by end users or application processes. This unique feature in msXfax XP is extremely powerful for use by: Application developers, Outlook forms designers or users who want to insert values in the message body and have those values appear on the fax cover sheet.

Supporting user defined keyword tags allows systems integrators to provide value added integration services for their clients to integrate msXfax XP to any application such as: Document Management Systems, Outlook front end forms, mainframe applications, SAP applications, E-commerce applications etc.

From an application perspective, an msXfax XP cover sheet could be considered like a fax business form which can be supplied values from an application. For example: an SAP application could perform a simple MAPI send or an SMTP send for an AD user called Purchaseorder@Company.com. This AD user has a cover sheet called Purchaseorder.DOC and the application supplies the variables the message text.

This is a simple implementation of BNS Group's Enotify-AI application programmers interface which is now bundled with msXfax XP version 6.7.4+

When msXfax XP receives a message with embedded user defined keywords it will perform a search and replace on the cover page associated with the user when the fax is rendered.

Technical note: The keyword/value combination should be specified in the message body of the email and prefixed with a 'S-' for Sender details or 'R-' for Receiver details and , e.g. R-SAPAccount=Q12654UQ, then in the Cover Page the keyword tag should be placed in any suitable place but be enclosed in brackets e.g. [R-SAPAccount].

There is no limit to the number of keyword/value combinations in a message or Cover Page. While traditionally a cover page is a single page there is no limitation in msXfax XP and a cover page can be any number of pages.

23.1.2 The Keyword Tag definition is made up of two parts :

This is technical information for customers who need to know a little more about the inner workings of cover sheet processing:

Table 14: Example of Keyword Tag definition

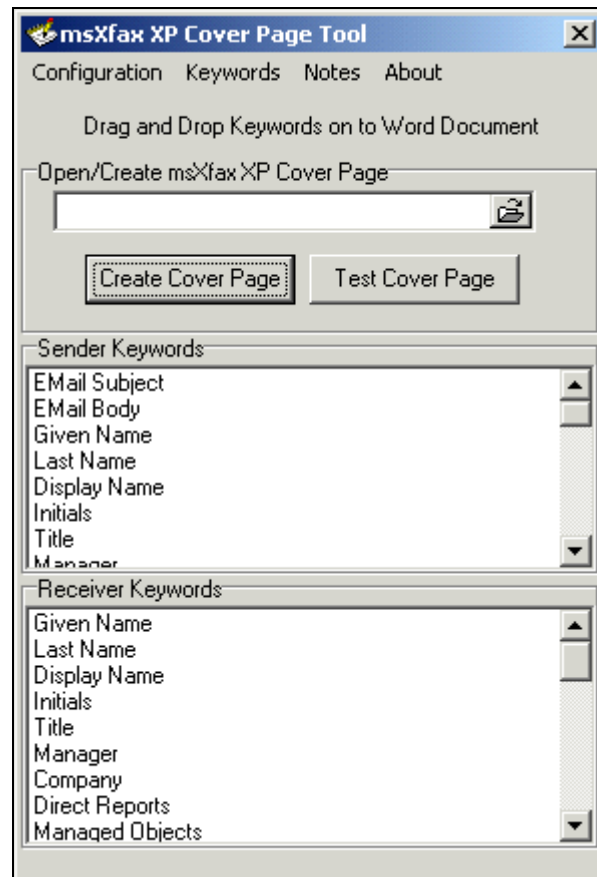
Part	Description	Comments
S-GivenName	The 'S-' prefix indicates that the tag refers to Sender Details, The value following refers to the Active Directory Attribute name for the Given name of the Sender	
Value=GivenName	The label assigned to Value is displayed in the Cover Page tool to describe meaningfully what the AD Attribute refers to.	

Extensible:

Keyword Tags/Value combinations can be added to a file called 'msXkeywords.txt using a text editor such as notepad at any time.

It should be noted however, that the Cover Page Tool setup (which may be deployed to users desktops) also requires the 'msXkeywords.txt' file. If any changes are made to this file in regards to adding new keyword Tag/value combinations, this file must be copied to the Fax Server(s) for the new keywords to be used.

Figure 4: The Cover Page Tool is an “always on top” tool, to be used in conjunction with Microsoft Word. Fields are easily dragged onto cover pages created using Microsoft Word.



23.2 Using the Cover Page Tool

23.2.1 Configuration

The configuration menu shows the location to store cover page files. Click the Folder icon to the right of the location to select another location. This is where your cover sheets will be created if you create them from the tool. Fields can be dragged onto any word document that is open.

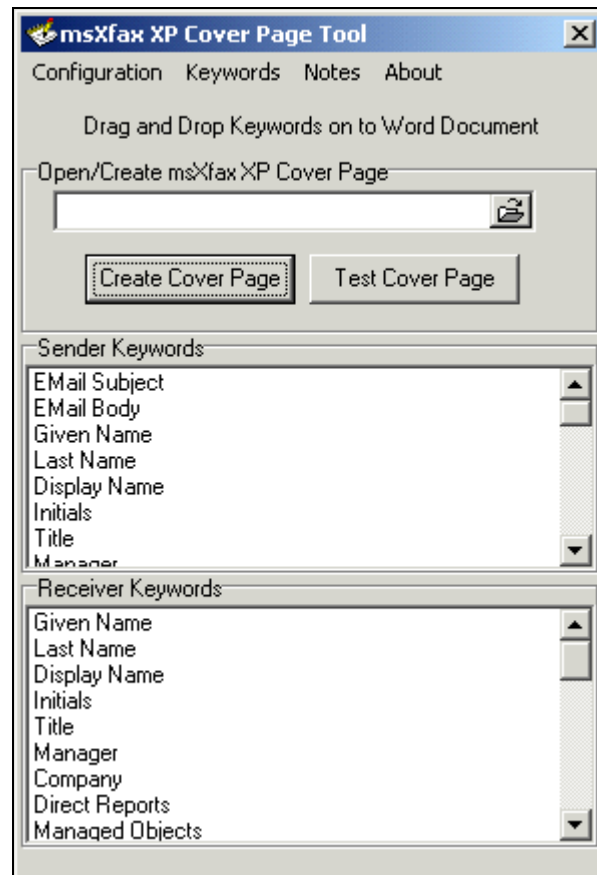
23.2.2 Keywords

Opens the extensible msXfax XP keywords file in notepad. This file can be altered by advanced Administrators with a good knowledge of Active Directory and msXfax. Keywords are representative of Active Directory Object Properties.

Instructions exist in comments at the top of the file. Once you correctly modify this file, the keywords you add will appear in the keyword list next time you start the Cover Page Tool.

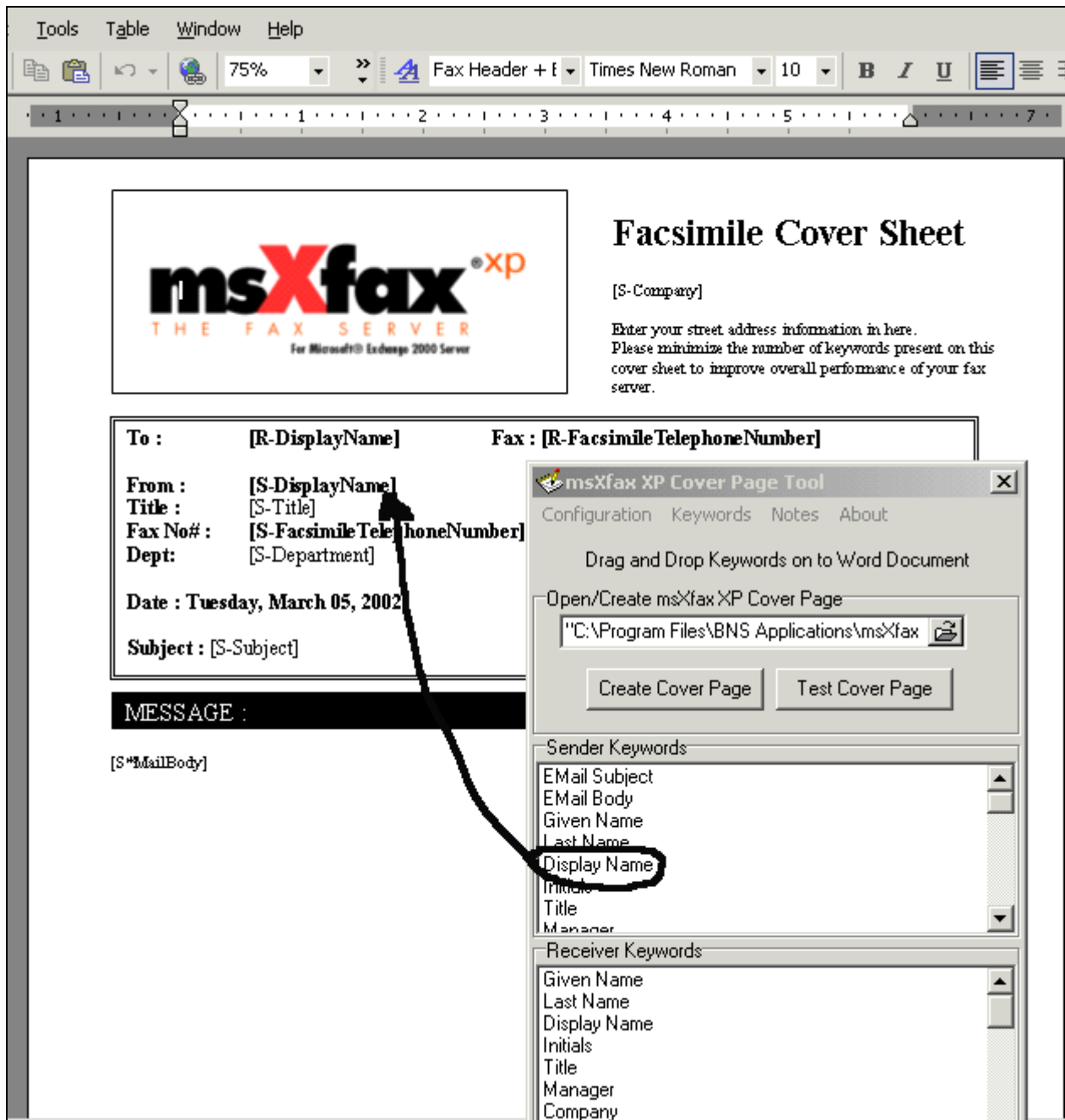
23.2.3 Open a sample Cover Page file msXcover.rtf

- Click on the Folder icon to open an existing cover sheet (RTF format file).



- Select the sample supplied with msXfax XP called "MSXCOVER.RTF".

Figure 5: Open the sample cover sheet



This sample cover sheet includes many of the common values for your Active Directory users.

- It is a simple matter of drag and dropping the keywords from the tool to the word document.

Note: Please minimize the number of keywords you use, otherwise it will add more processing requirements on your fax server. Where possible use static values in your cover sheets. For example: Rather than pulling the Company name from Active Directory it

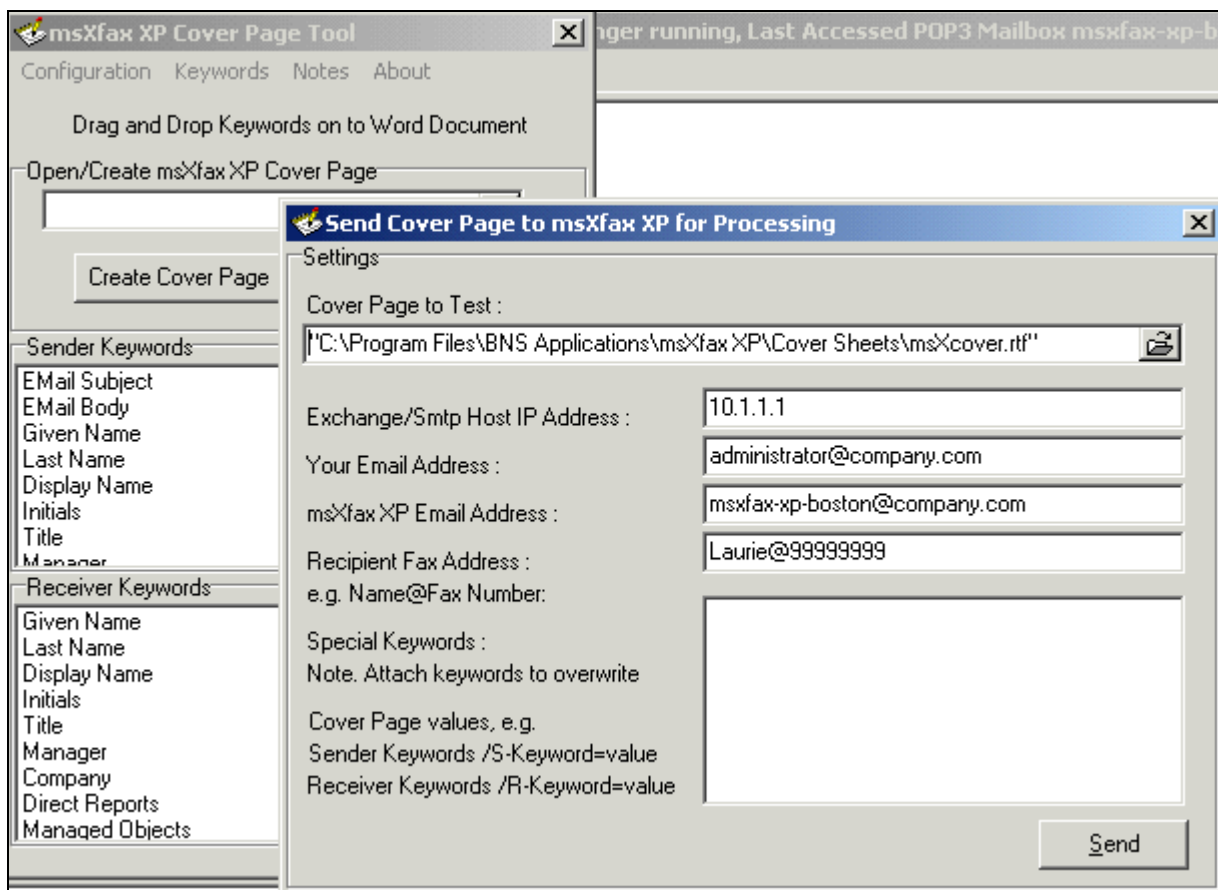
would be more efficient to simply have your company name and logo in the word document. If your enterprise is split into many business units and AD is the source of all information, ensure that your fax server has sufficient CPU and memory.

23.2.4 Test your Cover Page

From the Cover Page tool you can test your cover page using the “test cover page” button. This will send the cover page to the fax server, perform an OLE automation of Word then return the result as a DCX image.

- Click the Test Cover Page button, the following dialogue appears:

Figure 6: Cover page testing using the in-built test facility.

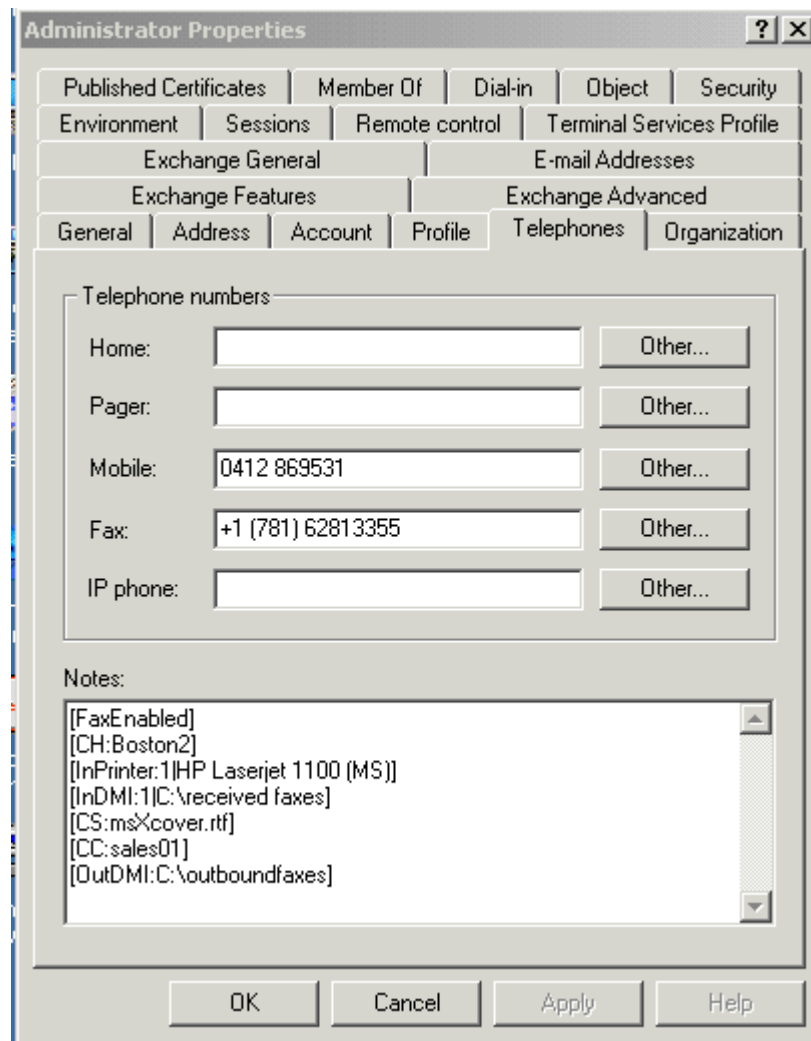


- You can browse for an existing cover sheet that you want to test.
- Specify your Exchange server DNS name or just the IP address of your Exchange Server.
- Complete the fields similar to the above example replacing company.com with your DNS domain name.
- The example above shows that we used the fax server’s POP3 Mailbox email address used by msXfax XP’s Messenger process. [msXfax-xp-boston@Company.com](mailto:msxfax-xp-boston@Company.com)

- Click Send to send the test. A mail message containing the cover sheet will be sent to the specified address.
- msXfax XP will process the message and send you a DCX image of the rendered cover page. If you see some large text on secondary pages, please ignore this and move on to perform a real test using your fax server and a fax machine).

When you're happy with the presentation, you should send yourself a test fax to a fax machine. However, before you send a test fax you must:

- Ensure that the cover page file eg: msxcover.rtf is located on the fax server in Program Files\BNS applications\msXfax XP\Cover sheets\.
- Go to your Active Directory user object and add the keyword [CS:msxcover.rtf] in the Notes field. (You may also require [FaxEnabled] in the sender's Notes field in AD in order to send a fax).



23.3 Fax Server cover page keywords

This information is provided for administrator's to be aware of the comprehensive features sets of msXfax XP with respect to cover pages.

As mentioned in the introduction section of this chapter, you can add your own keywords to the keywords file. Keywords can be used in conjunction with your applications and Outlook forms (VB Script) to insert keyword commands into the body of messages.

The following file can be edited via the "Keywords" menu option in the Cover Page Tool. It is physically located in the:

"Program files\BNS Applications\msXfax XP \cover sheets" directory on your fax server.

```

*****
* msXfax XP Cover Page Keywords File *
*
* This file is used by msXfax XP to propagate the*
* Cover Page program and the Messenger as to *
* what Active Directory attributes are supported *
*
*          Modify this with Care *
*          Version 6.0 *
*****
* The TAG is the actual AD Attribute in brackets and the value is the name
* displayed
* in the Cover Page Program.
*
* Tags Prefixed with a 'S-' refer to single value Sender attributes.
* Tags Prefixed with a 'S*' refer to multivalue Sender attributes.
* Tags Prefixed with a 'R-' refer to single value Receiver attributes.
* Tags Prefixed with a 'R*' refer to multivalue Receiver attributes.
*
* Note that Receive details will only be extracted if the Receiver is in
* Active Directory
*
*****
* Special Tags not part of AD but used by msXfax XP
*          Do not delete or change
*****
[S-Subject]
Value = EMail Subject

[S*MailBody]
Value = EMail Body
*****

*****
*          Sender Tags *
*****

[S-GivenName]
Value = Given Name

[S-Sn]
Value = Last Name

[S-DisplayName]
Value = Display Name

[S-Initials]
Value = Initials

[S-Title]
Value = Title

[S-Manager]

```

Value = Manager

[S-Company]
Value = Company

[S-DirectReports]
Value = Direct Reports

[S-ManagedObjects]
Value = Managed Objects

[S-Department]
Value = Department

[S-Info]
Value = Notes

[S-Description]
Value = Description

[S*StreetAddress]
Value = Business Street

[S-L]
Value = Business City

[S-St]
Value = Business State

[S-Co]
Value = Business Country

[S-PostalCode]
Value = Postal Code

[S-PostOfficeBox]
Value = Business Post Office

[S-PostalAddresss]
Value = Business Postal Address

[S-physicalDeliveryOfficeName]
Value = Office

[S-HomePhone]'
Value = Home Phone

[S-TelephoneNumber]
Value = Business Telephone

[S-Pager]
Value = Pager

[S-Mobile]
Value = Mobile

[S-FacsimileTelephoneNumber]
Value = Fax

[S-OtherMobile]
Value = Alternate Mobile

[S-OtherPager]
Value = Alternate Pager

[S-OtherTelephone]
Value = Alternate Business Telephone

[S-OtherFacsimileTelephoneNumber]
Value = Alternate Fax

[S-IPPhone]
Value = IP Phone

[S-OtherPPhone]
Value = Alternate IP Phone

[S-wwwhomepage]
Value =www Home Page

[S-url]

```
Value = url

[S-mail]
Value = Email Address

*****
*                               Receiver Tags                               *
*****

[R-GivenName]
Value = Given Name

[R-Sn]
Value = Last Name

[R-DisplayName]
Value = Display Name

[R-Initials]
Value = Initials

[R-Title]
Value = Title

[R-Manager]
Value = Manager

[R-Company]
Value = Company

[R-DirectReports]
Value = Direct Reports

[R-ManagedObjects]
Value = Managed Objects

[R-Department]
Value = Department

[R-Info]
Value = Notes

[R-Description]
Value = Description

[R*StreetAddress]
Value = Business Street

[R-L]
Value = Business City

[R-St]
Value = Business State

[R-Co]
Value = Business Country

[R-PostalCode]
Value = Postal Code

[R-PostOfficeBox]
Value = Business Post Office

[R-PostalAddresss]
Value = Business Postal Address

[R-physicalDeliveryOfficeName]
Value = Office

[R-HomePhone]'
Value = Home Phone

[R-TelephoneNumber]
Value = Business Telephone

[R-Pager]
Value = Pager

[R-Mobile]
Value = Mobile
```

```
[R-FacsimileTelephoneNumber]
Value = Fax

[R-OtherMobile]
Value = Alternate Mobile

[R-OtherPager]
Value = Alternate Pager

[R-OtherTelephone]
Value = Alternate Business Telephone

[R-OtherFacsimileTelephoneNumber]
Value = Alternate Fax

[R-IPPhone]
Value = IP Phone

[R-OtherPPhone]
Value = Alternate IP Phone

[R-wwwhomepage]
Value =www Home Page

[R-url]
Value = url

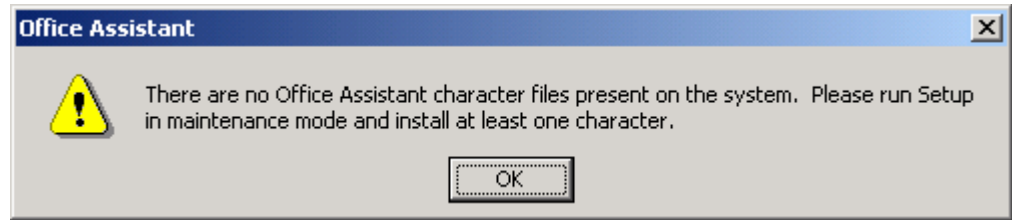
[R-mail]
Value = Email Address
```

24 Adobe & Microsoft Office Dialogues

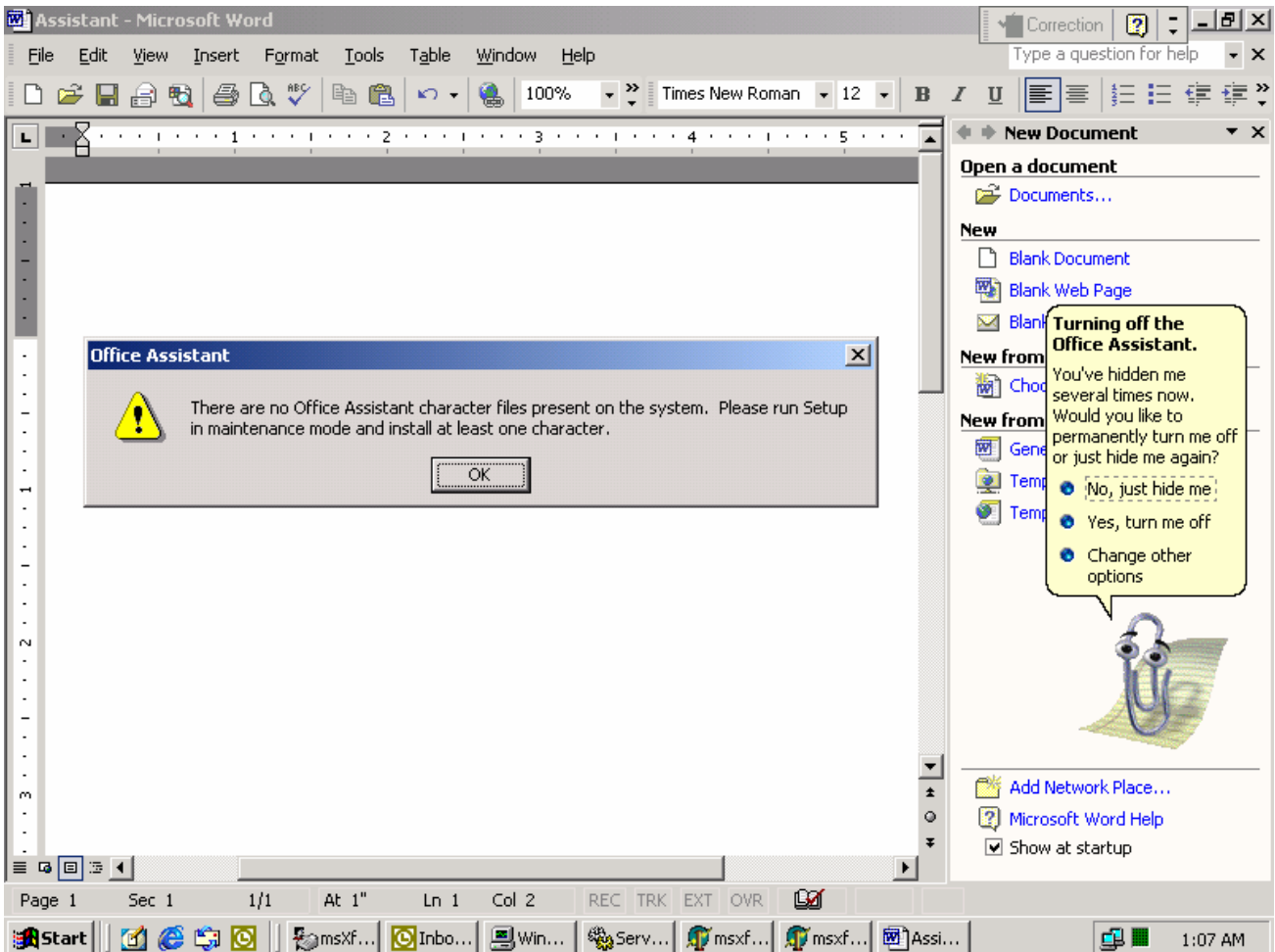
24.1 Microsoft Office Assistant (Office XP)

When you send your first fax using an Office document set the msXfax XP Messenger Service to interactive with the desktop. Occasionally, the Office Assistant needs to be hidden as a once off operation.

- You may see the following dialog box come up when word is started to perform a render.
- You need to stop all services and acknowledge the dialog box until it goes away.



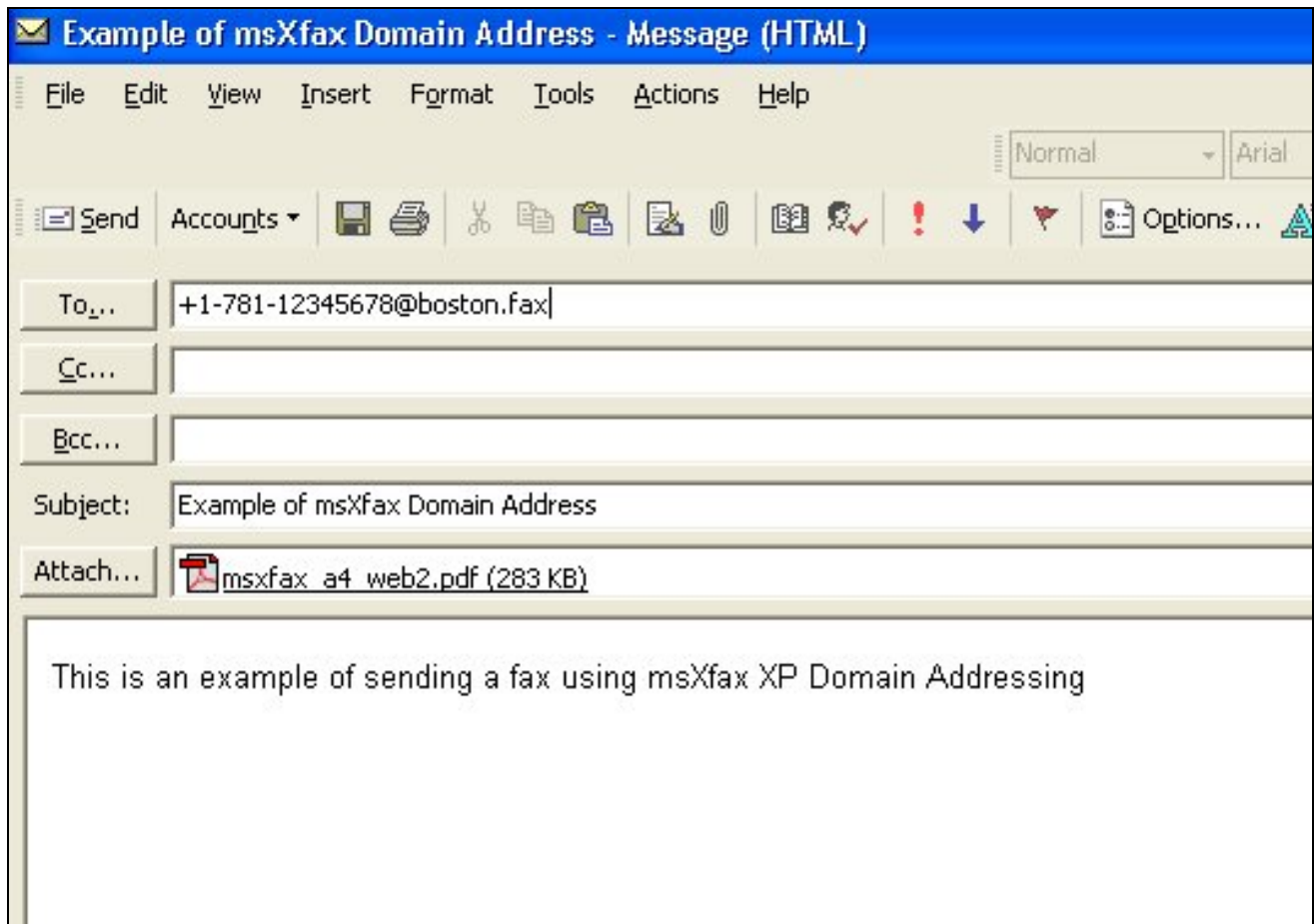
- Start word manually on the fax server.
- Click on Help/Hide the Office Assistant.
- Click on Help/Show the Office Assistant.
- Perform the Hide and Show process until you are presented with an assistant message as below asking you if you need to 'Yes, turn me off'
- Once you do turn the assistant off you can restart the services and the message will not be displayed again.



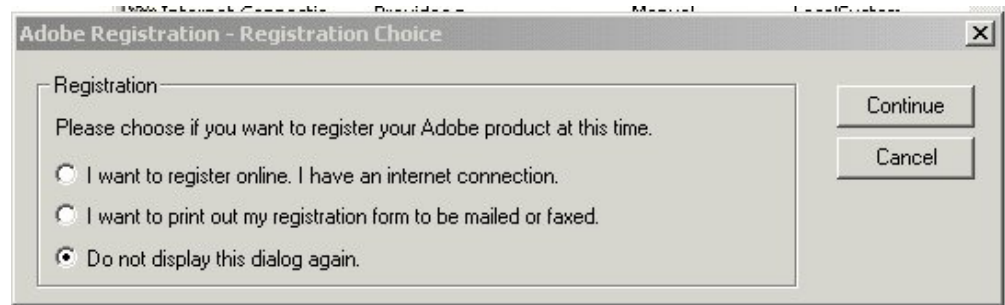
24.2 Adobe Acrobat registration version 5.0

Acrobat 6.0 appears to require registration once. Therefore, this procedure should only apply to version 5.0 customers. This is the procedure which must be followed for Acrobat 5.0. Should any other version require registration using the local system context this is how it is done:

- From your fax server select Start, Administrative Tools, Services.
- Scroll down until you see the msXfax XP Messenger Service
- Right Click properties
- Select Log On property tab
- Click the check box "Allow Service to interact with desktop".
- Click OK.
- Right click and select "Restart"
- Go to an Outlook client and attach a PDF file to a message and address it to a fax contact or send using say msXfax domain addressing as shown below.



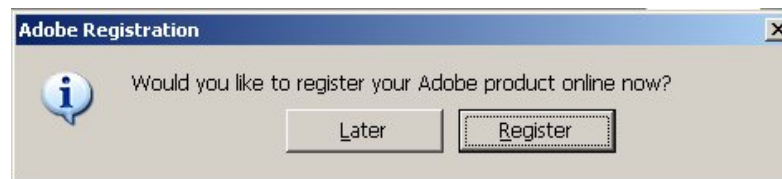
- Go to the fax server and wait for the Adobe registration dialogue box to appear.



The above registration choice is for version 5.0

- Do not display this dialog again and press Continue.

The one below is for version 6.0



- Select Register for version 6.0. This launches a web browser window. Complete the registration process.
- Wait for a few minutes.
- Set the msXfax Messenger Service back to normal so that it does not interact with the desktop.
- Restart the msXfax Messenger Service.

25 Other configuration elements and options?

25.1 Changing confirmation messages

Fax Sent, Fax Failed, fax received message templates can all be changed to suit your organization's standards.

msXfax XP uses HTML format files allowing maximum flexibility for administrators to change the way users are presented with messages from msXfax XP.

The following files are located in the msXfax XP\templates directory on the fax server.

File name	Purpose
ALERT.HTM	msXfax XP Alert message
FAXSENT.HTM	msXfax XP sent confirmation
FAXFAIL.HTM	msXfax XP failed fax notification
FAXIN.TXT	This is a text file used for received faxes

Note:

Before making any modifications to these files, make sure that you make a copy of the originals for safe keeping.

Some customers like to modify the HTML files to include their company logo and links to their own internal intranets for user instructions and policy in relation to msXfax XP.

Remember to apply any file changes to all your fax servers.

26 Configuring Exchange/AD for other tasks

26.1 Creation of Active Directory Fax Contacts

Administrators or users with delegated permissions can create fax users in Active Directory. One advantage of creating users in AD is the fact that recipient properties are available to msXfax XP for insertion on cover sheets. **Outlook Contacts does not provide this capability.**

The following example shows how to create fax contacts in AD.

- From Users and Computers snap-in select an OU then Right click, create New Contact

New Object - Contact

Create in: demo.com/Contacts/FAX Contacts

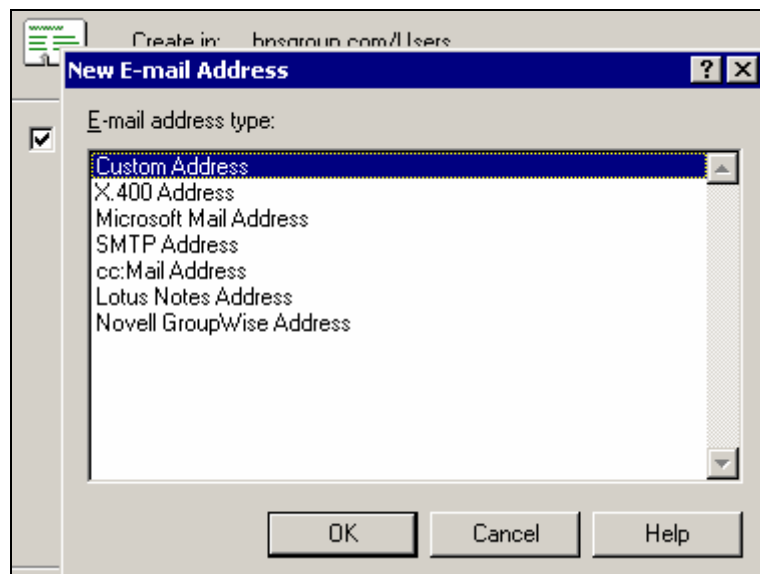
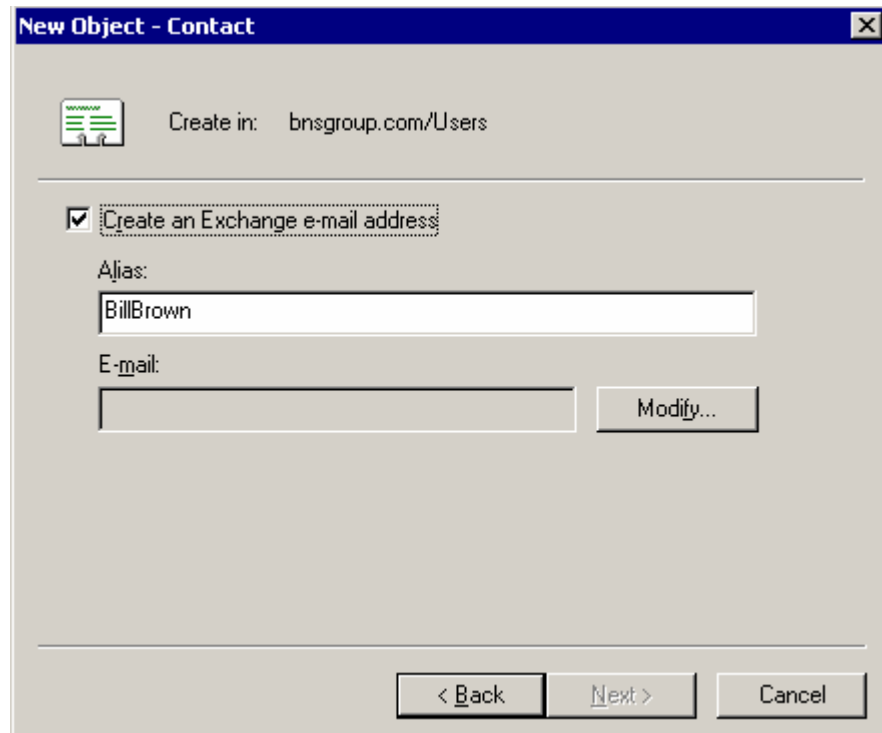
First name: Initials:

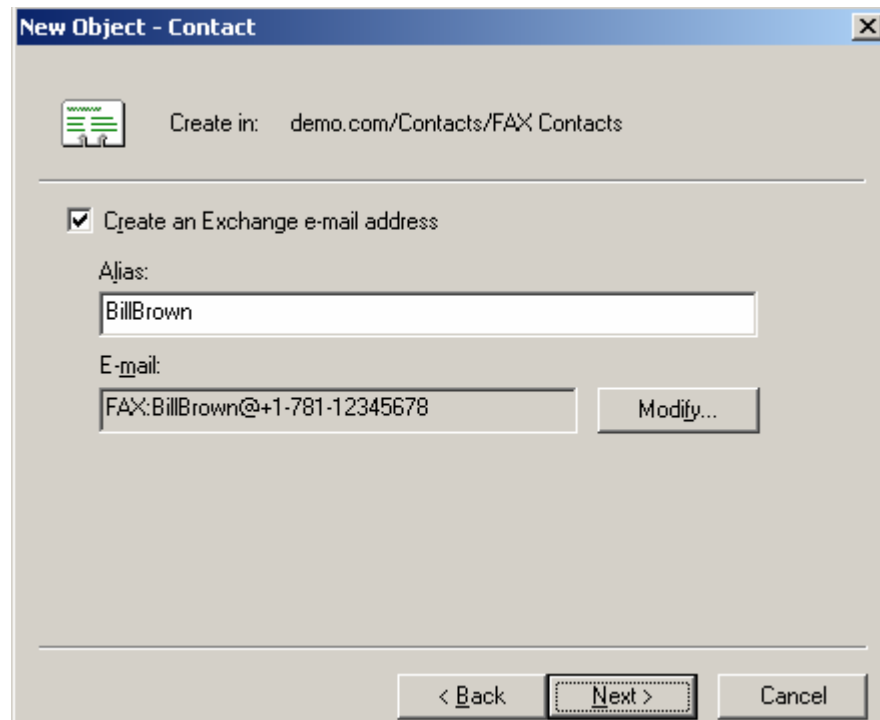
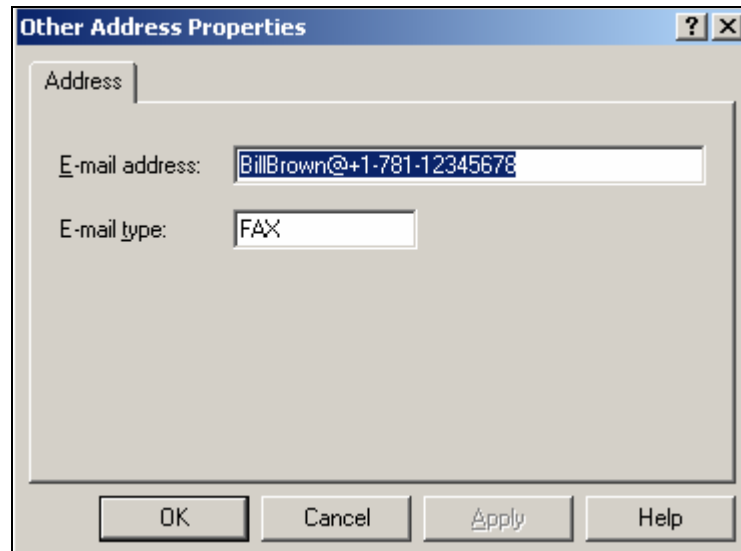
Last name:

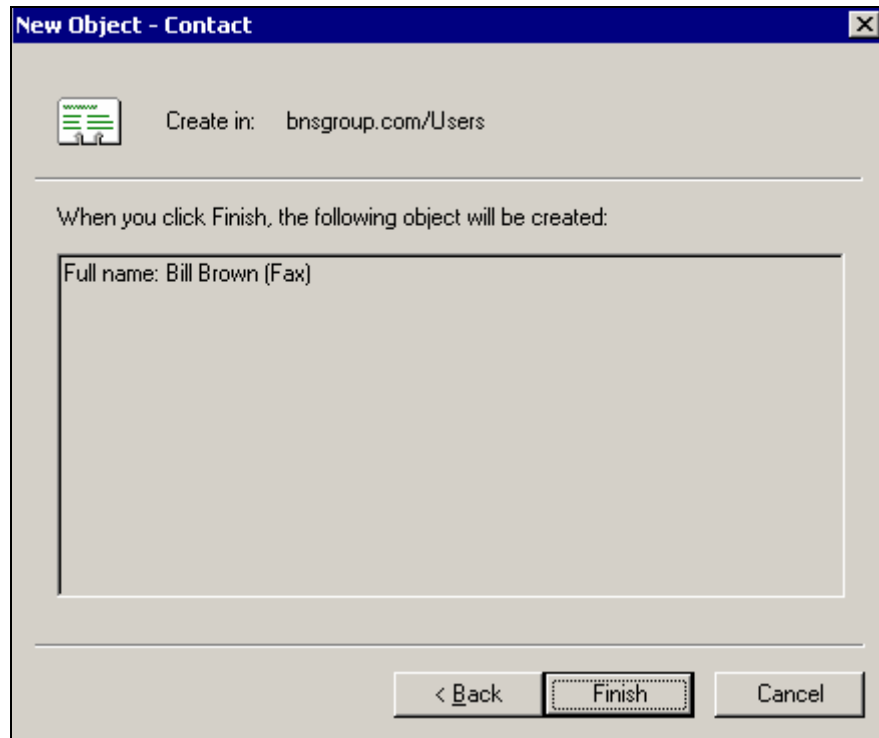
Full name:

Display name:

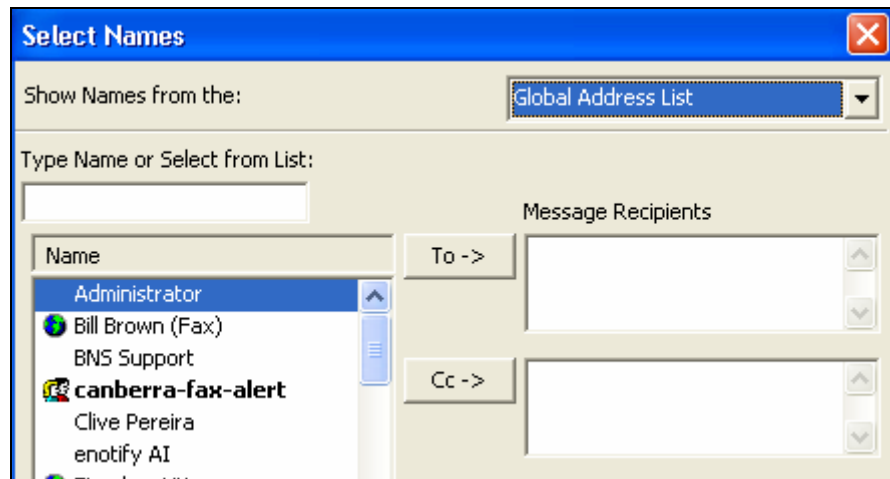
< Back Next > Cancel







- This user can now be selected from the global address list

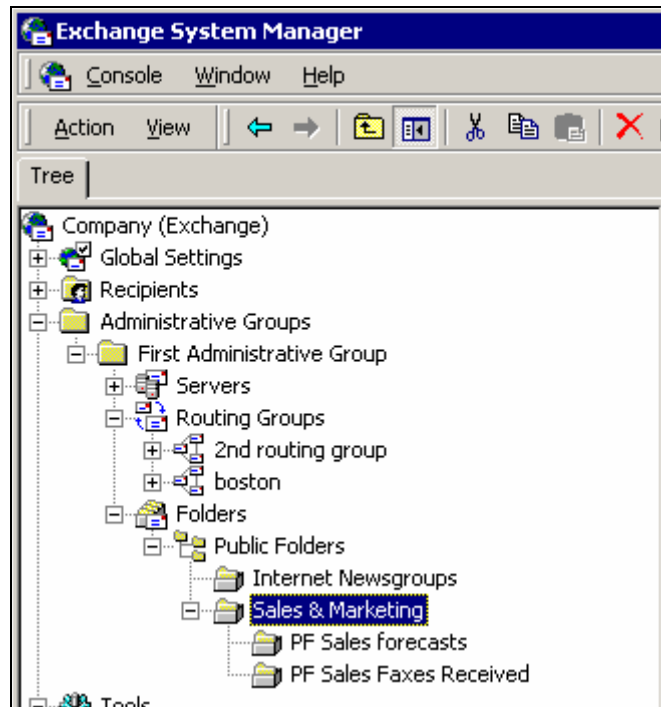


From Outlook, users can now select Bill Brown a fax recipient from the Global Address List. AD Fax Contacts can be included in distribution groups.

26.2 How to route inbound faxes to a public folder

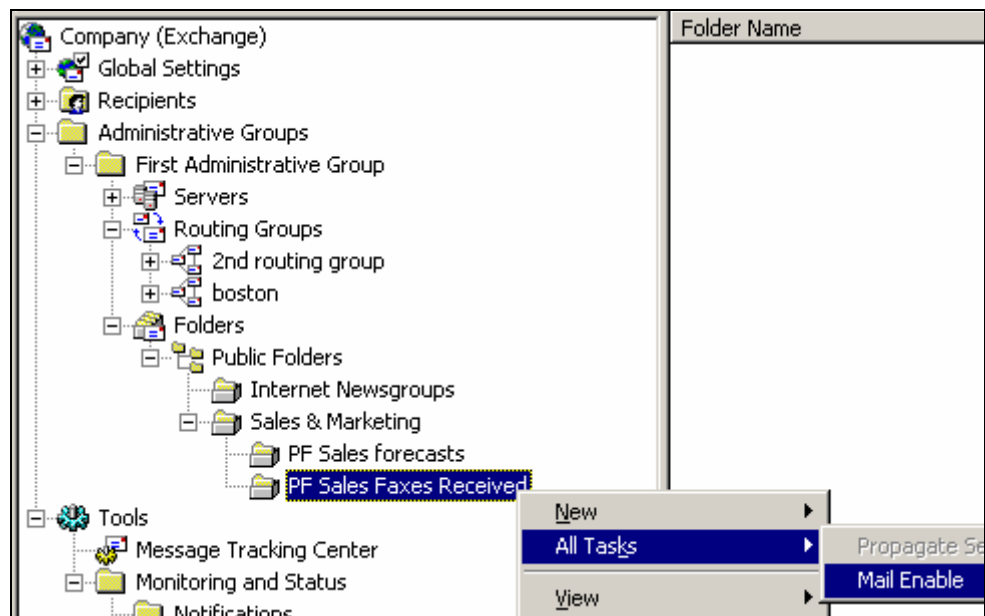
Routing inbound faxes to users is achieved by using an email address. The following describes how to accomplish the task of routing to a public folder.

Firstly let's look at an example public folder structure in Exchange.



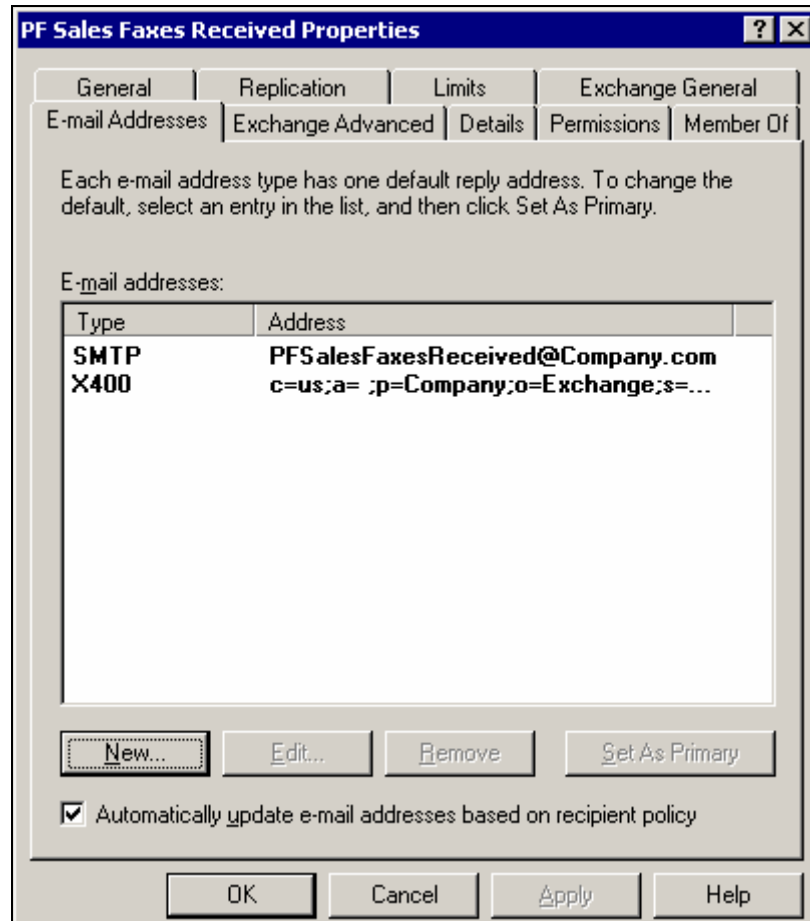
In this scenario we want to route faxes that come in on fax line 1 to the “PF Sales Received Faxes” public folder. We also want to notify ALL people in the sales team that a fax has arrived and has been placed in the public folder. Our assumption in your Exchange design is that you have mail enabled you Global Security Group eg: Sales Team Boston

- Firstly create your public folder in Exchange System Manager and assign permissions to the folder.
- Right click the public folder
- Select All Tasks
- Select Mail Enable as shown below



- Right click the PF Sales Faxes Received public folder
- Select properties

Note: Exchange/AD may take a little time depending on your AD Design to actually generate the proxy email address(es).



Your public folder should now have an email address automatically generated by Exchange. You can now send an email to PFSalesFaxesReceived@company.com and you should be able to see the message in the public folder from Outlook.

26.2.1 Create a Distribution Group

Note: **To route incoming faxes to a Public Folder requires a Distribution Group**

Scenario: The Sales Manager decided he wanted ALL of his sales team to receive a copy of faxes for Sales. His staff cover for one another while they are on vacation so he wants all of his staff to receive a copy plus he wants a copy stored in a Public Folder for his team to refer back to if they lose a copy from their mailbox.

How to Implement this scenario: Create a global distribution group which will have 2 members:

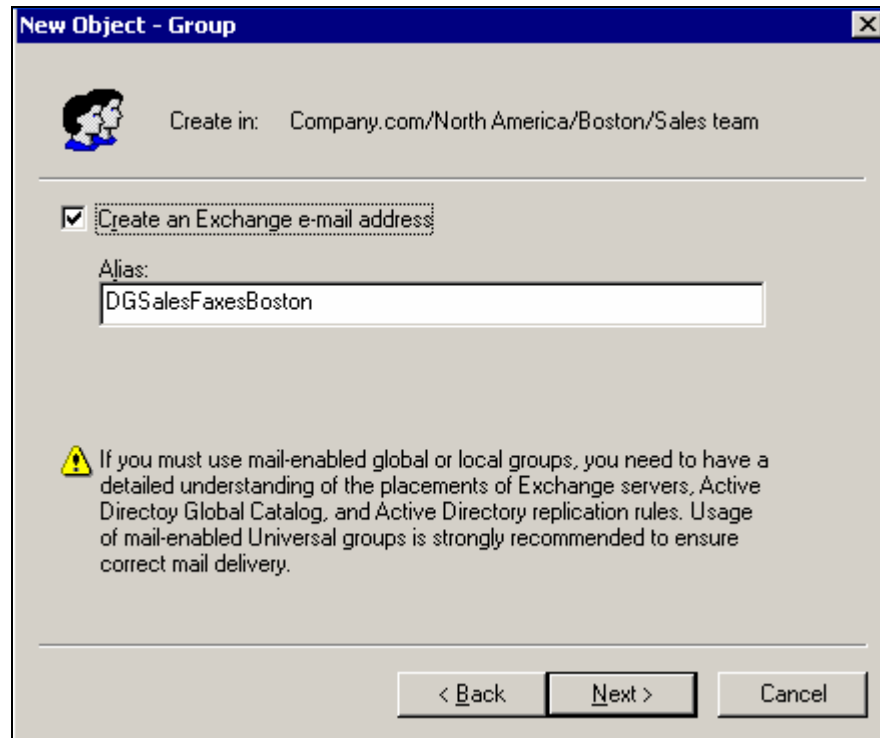
- The public folder “PF Sales Faxes Received”
- The Global Security Group called “Sales Team Boston”

By making the Global Security Group mail enabled ensures that if a new staff member is added to the sales team they will automatically start receiving sales faxes without the Exchange Administrator having to change anything else.

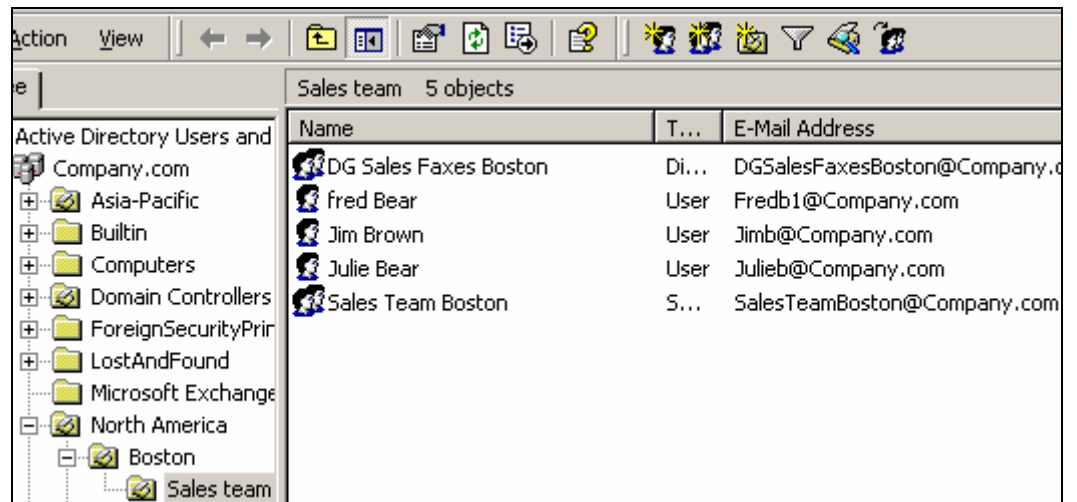
- Run Active Directory users and computers
- Select the OU where you want to create the Distribution Group (we will use a global distribution group in our example. Depending on your design you may want to use Universal Distribution Groups).

The screenshot shows the 'New Object - Group' dialog box. At the top, it says 'Create in: Company.com/North America/Boston/Sales team'. Below that, there are two text boxes for 'Group name' and 'Group name (pre-Windows 2000)', both containing 'DG Sales Faxes Boston'. There are two sections: 'Group scope' with radio buttons for 'Domain local', 'Global' (selected), and 'Universal'; and 'Group type' with radio buttons for 'Security' and 'Distribution' (selected). At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

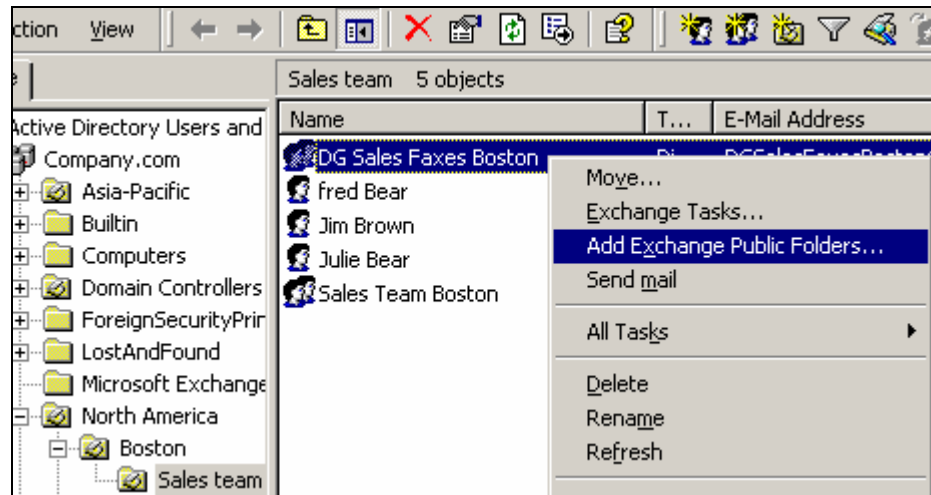
- For the purposes of this documentation we have used a prefix DG to make it clear which objects are which. You should carefully plan your naming conventions.
- Next



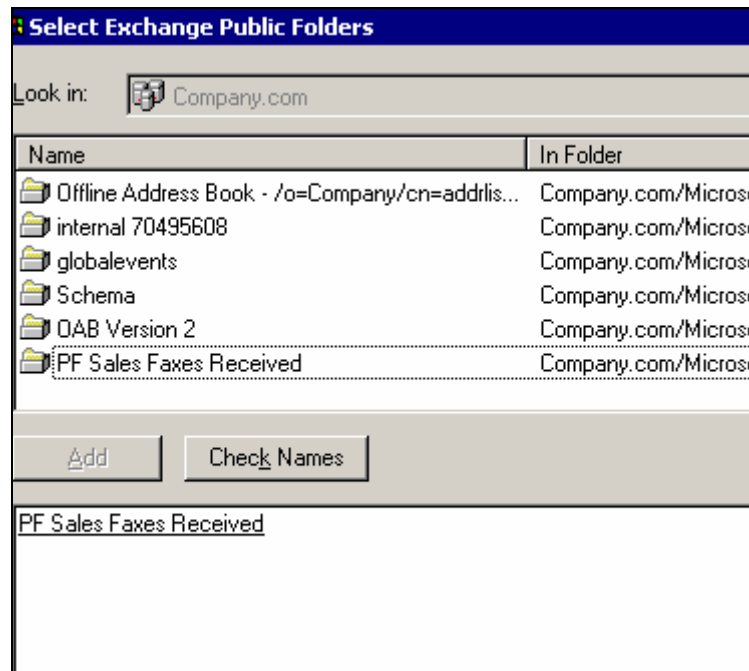
- Create an Exchange e-mail address
- Next then Finish
- The following example shows: 3 users, a global security group (mail enabled) and global distribution group (Mail enabled).



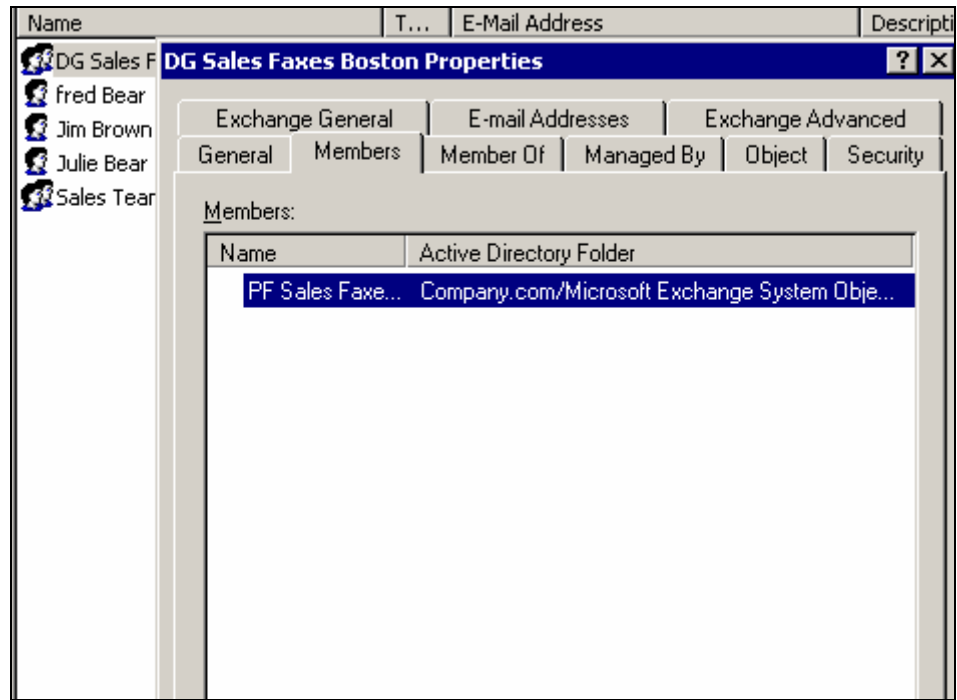
- Right Click on DG Sales Faxes Boston



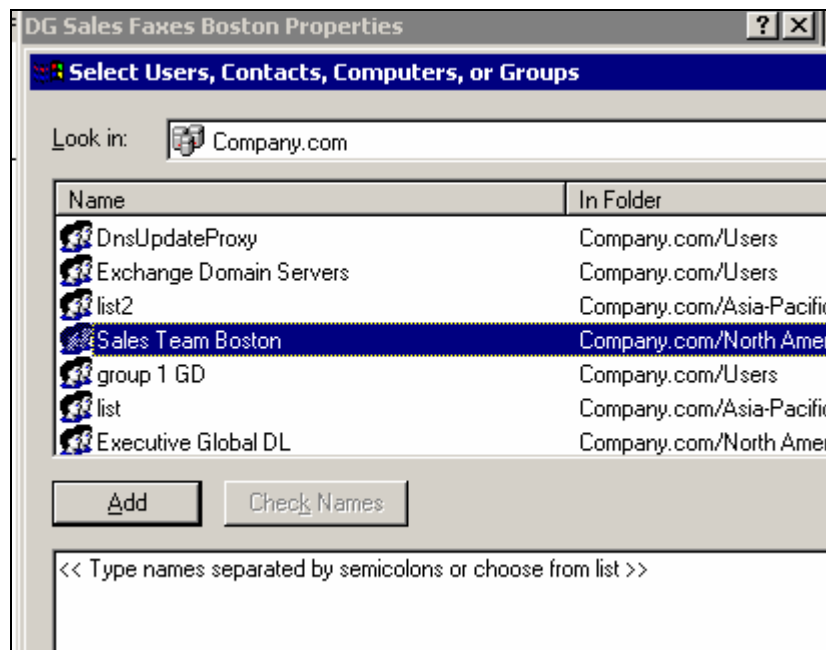
- Select Add Exchange Public Folders



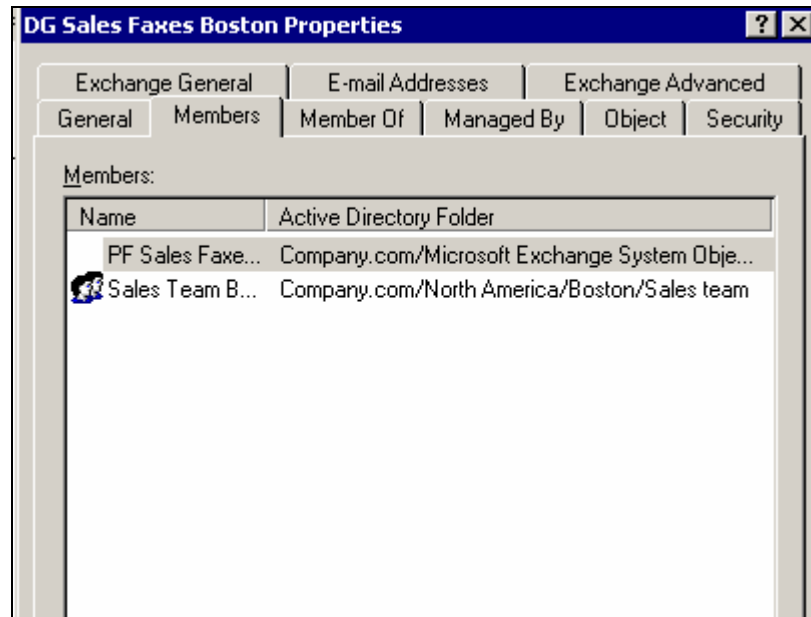
- Select your public folder
- Click on Ok
- Right click properties on DG Sales Faxes Boston.
- View the Members property tab



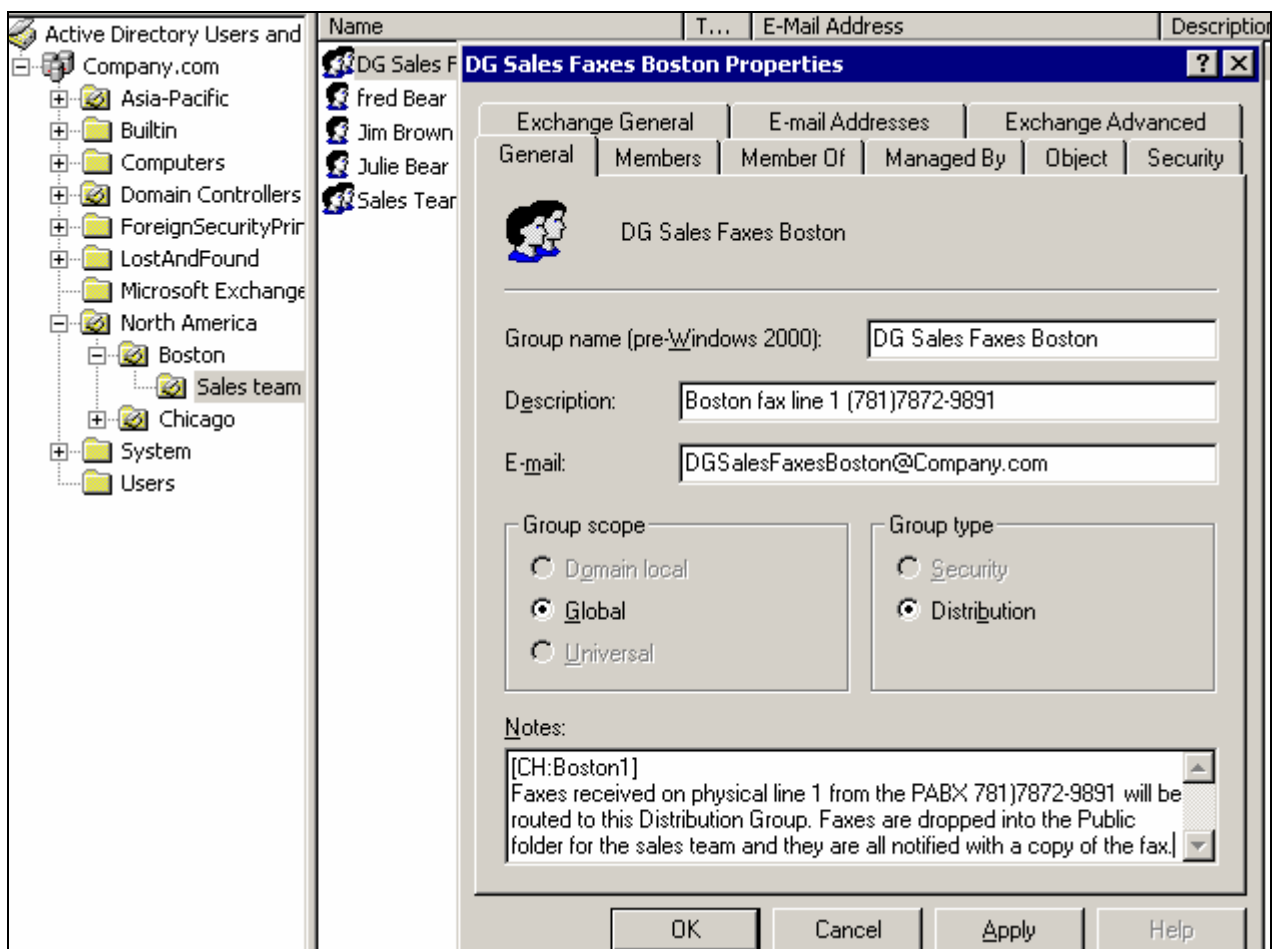
- Now you can add other objects to the list.
- We will add the Sales Team Boston as shown below



Your example should now look like the one below: a Distribution Group containing a mail enabled security group and a public folder.



■ Click on the General Property Tab



[CH:Boston1] is the channel routing keyword for msXfax XP for the site Boston line 1 to route to this Distribution Group. We have given you some ideas how you can

use the notes field to make your own notes about the function of the Distribution Group. Using Distribution Groups provides ultimate flexibility.

26.3 Routing inbound faxes to external contacts

Fax Service providers and customers can configure Contacts in AD with a Fax number assigned in their AD properties to enable inbound routing to external contacts.

When a fax is received on a particular DID fax number, msXfax XP will lookup AD and send the fax to the Contact.

The AD Contact can be on any external network including: Groupwise, Notes, SMTP Internet, X.400 etc.

The following example shows how to create a contact in AD that an inbound fax will be routed to.

- From Users and Computers snap-in select an OU then Right click, create New Contact

New Object - Contact

Create in: aspfax.com/ASPFAX Customers

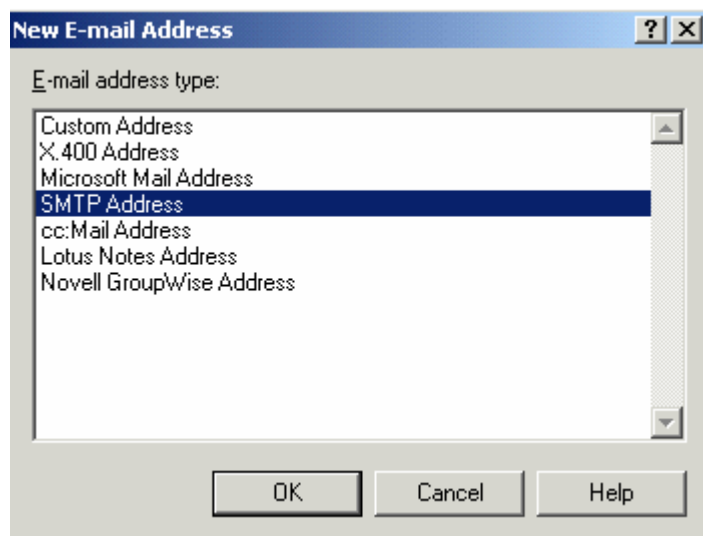
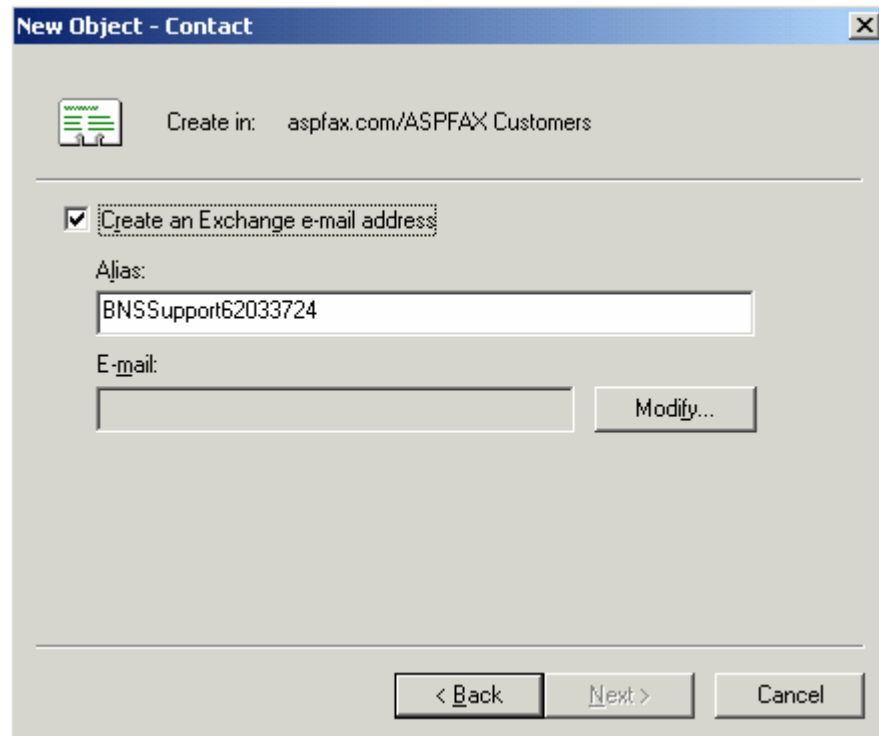
First name: Initials:

Last name:

Full name:

Display name:

< Back Next > Cancel



The screenshot shows the 'Internet Address Properties' dialog box with the 'General' tab selected. The 'E-mail address' field contains the text 'support@bnsgroup.com.au'. At the bottom, there are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

The screenshot shows the 'BNS Support 62033724 Properties' dialog box with the 'Telephones' tab selected. The 'Telephone numbers' section contains five rows, each with a label, a text input field, and an 'Other...' button. The 'Fax' row has the text ':cbr62033724' in the input field. Below this section is a 'Notes' section with a large empty text area. At the bottom, there are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

- The example above shows how the fax field in AD is used together with the site code and a colon to create the search criteria for msXfax XP to determine which

external contact will receive this fax. An alternative approach would be to use the [DID] keyword in the notes field.

It is possible to set up distribution groups using the [DID] keyword in the notes field of the AD distribution group. The distribution group can contain many external contacts or other Exchange objects.

27 Fax Server Management

Installing msXfax XP on Windows 2000 servers offers remote management and configuration via Windows Terminal Services.

msXfax XP Trace Monitor uses Named Pipes to allow trace windows of key services and processes to be viewed anywhere in the network.

It is also possible to monitor detailed traces by copying the msXtrace.exe program to your computer.

27.1 Copy msXtrace.exe to your computer

- Copy msXtrace.exe from the msXfax XP Programs directory on the fax server to your computer.
- Run msXtrace.exe
- Monitor any fax server on your network

28 How do my users use the system?

msXfax XP uses features already built-in to Microsoft Outlook that allow users to send a fax.

28.1 Addressing & Sending faxes

There are many other ways to send faxes which include:

- Exchange Custom Addressing
- msXfax XP Free form addressing
- msXfax XP Domain addressing
- Render to Outlook
- Scan to Outlook

We will discuss these additional ways to send a fax later in this chapter. Let's look firstly at sending a fax to an Outlook Contact using Outlook and we will attach a Microsoft Word document to be sent as a fax.

28.1.1 Outlook Contacts

Users can simply add the recipient's fax number in the business fax number field of an existing contact. For one-off faxing, we suggest you use Exchange Custom addressing.

The following is a basic Outlook Contact entry. This could be a Contact in the user's Mailbox or a public folder Contact.

Important: **Please advise your users to always format their fax numbers with full International formats. This is particularly important for roaming users who connect to other subnets in your enterprise. The international format is +Country code (area) number EG: +1 (781) 12345678
+1 = USA, 781 = area code in Boston, 12345678 is the fax telephone number**

Laurie 62813866 - Contact

File Edit View Insert Format Tools Actions Help

Save and Close

General Details Activities Certificates All Fields

Laurie 62813866

Test fax user

BNS Group
 +61 (2) 62813866

62813866, Laurie

This is the mailing address

The example above:

+61 = Australia Country code

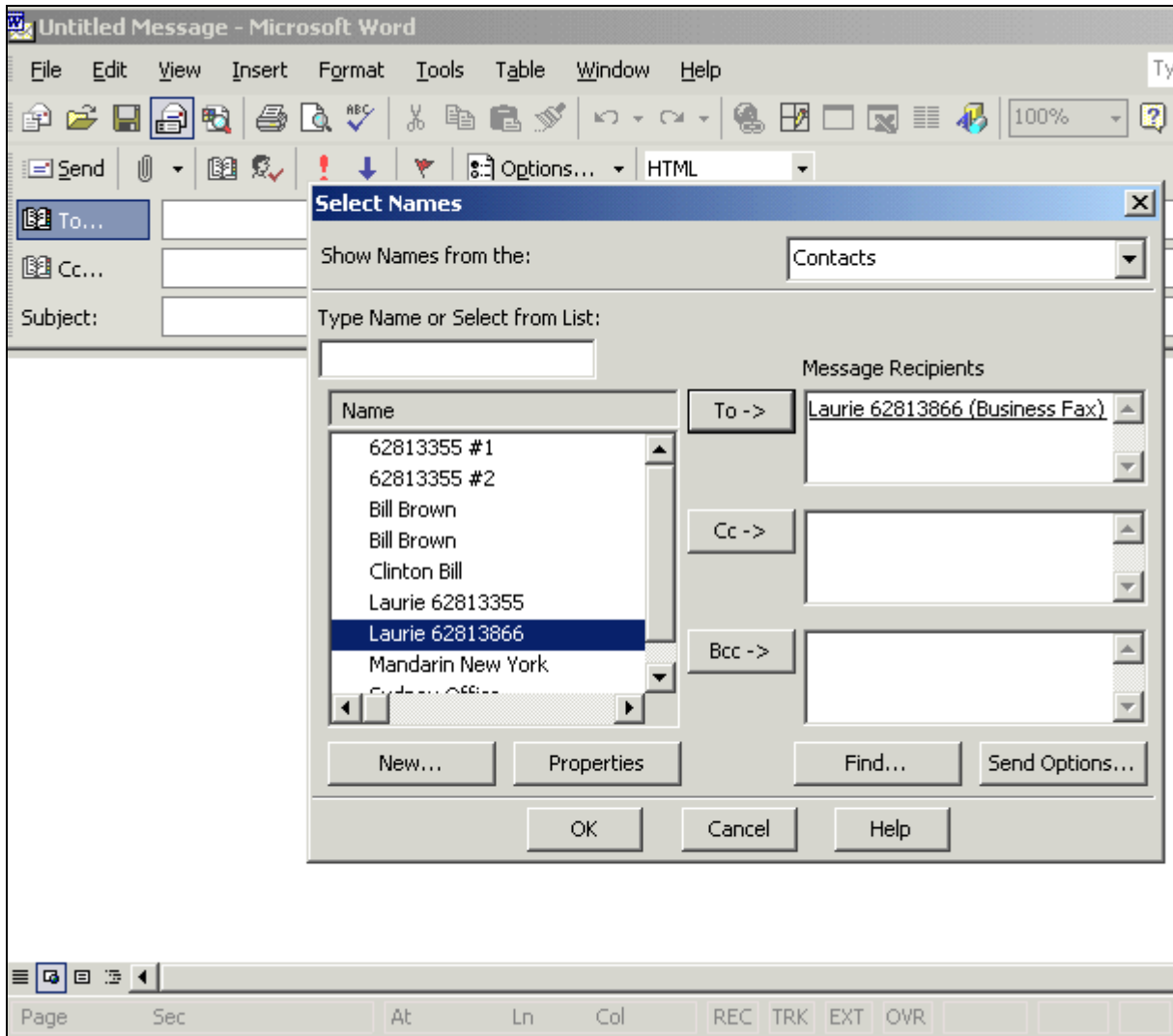
(2) = area code for greater part of NSW and ACT

followed by the number

Note: in some countries (such as Australia and the UK) people think of an area code for say Sydney NSW as area code (02) or an area code in the UK (0173).

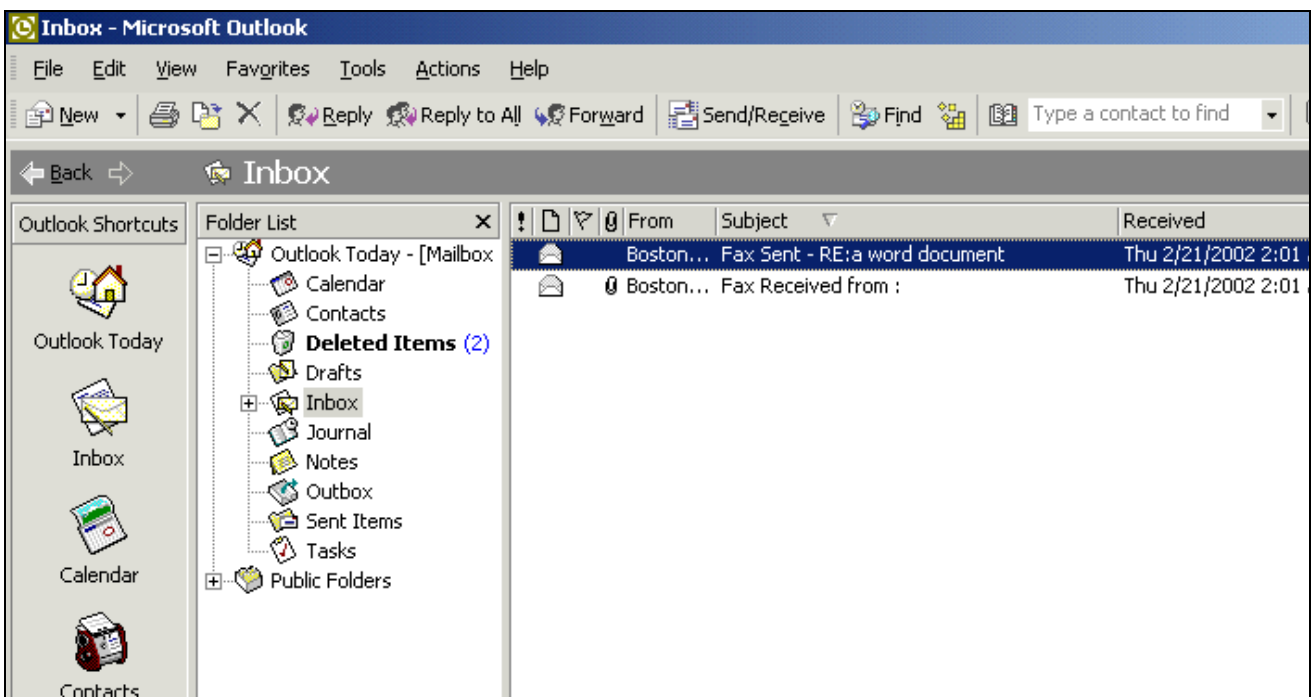
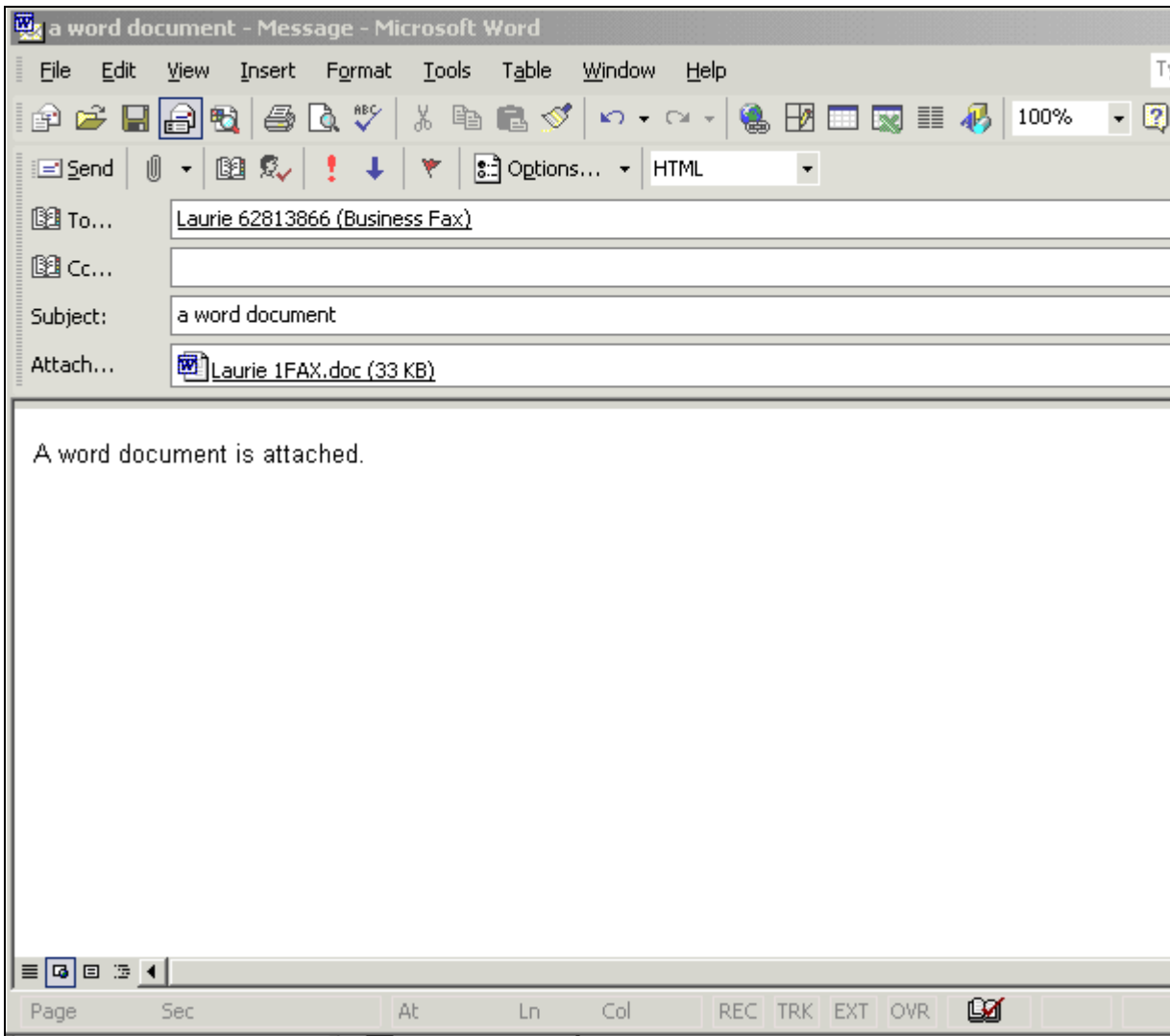
This is correct in the context of the National telephone system which people use everyday. In actual fact, the 0 is in effect the long distance code. 2 or 173 in the case of is the area code.

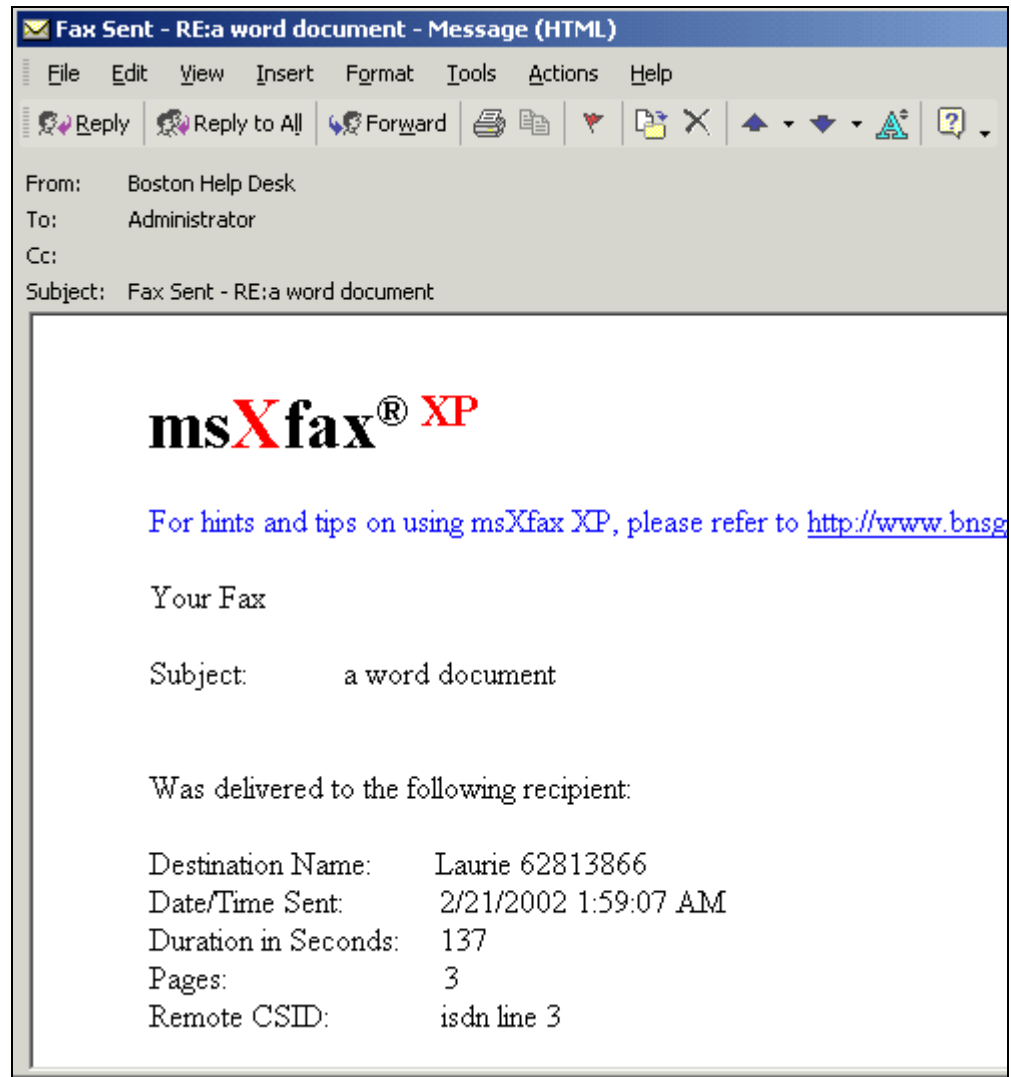
28.1.2 Send a Word document example



Selecting recipients from your local Contacts requires care. 2 entries are shown on the left hand side of the Outlook Select Names window. This is because you have specified a fax number and an email address for a single contact.

This is as designed by Microsoft, please take care when selecting the recipient and check that “(Business Fax)” is displayed by Outlook in the Message Recipients list box.





28.1.3 Sending faxes when using Microsoft Word

Many customers prefer to implement simple fax templates using Microsoft Word for creating and sending a fax message rather than using msXfax XP automatic cover pages.

After a fax message has been created inside Word:

- Select File
- Select Send to
- Select "Mail Recipient (As attachment)" (This option does not appear in all Word versions. If you are using an older version of Microsoft Word and this option does not appear, you should select "Mail Recipient" which in fact sends the word document as an attachment.
- When Word launches an Outlook send window, you can address your fax using the many options supported by msXfax XP.

28.1.4 Outlook public folder Contacts

The same level of functionality is provided as in Outlook Contacts. The only consideration is to ensure that your users' profile has been configured correctly to include a public contacts folder in their address list.

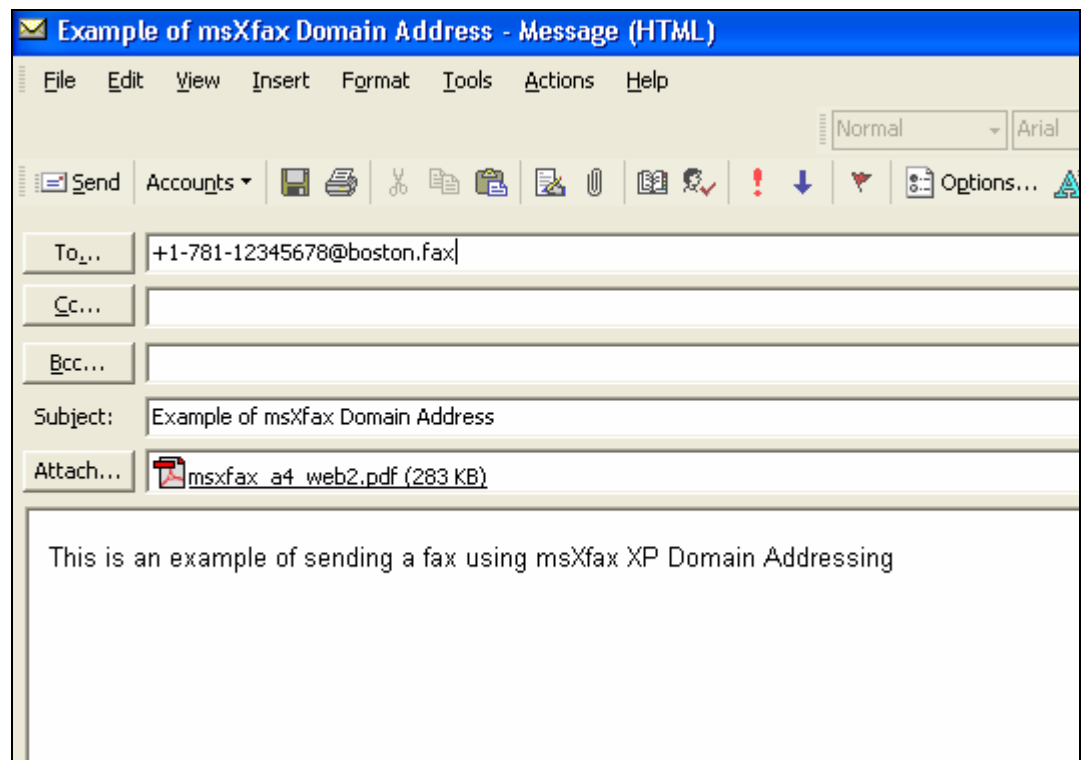
28.1.5 msXfax XP Domain Addressing

To allow users to send faxes from Outlook MAPI client or Outlook Web Access (OWA) the following is extremely useful and recommended.

Customers with Digital Senders (network based scanners) such as Hewlett Packards range can use the Digital Senders interface to send faxes via Exchange 2000/2003 and onto msXfax XP for processing. Sender email addresses are validated against Active Directory.

Users can use Outlook MAPI client or OWA can simply address their faxes just like an email.

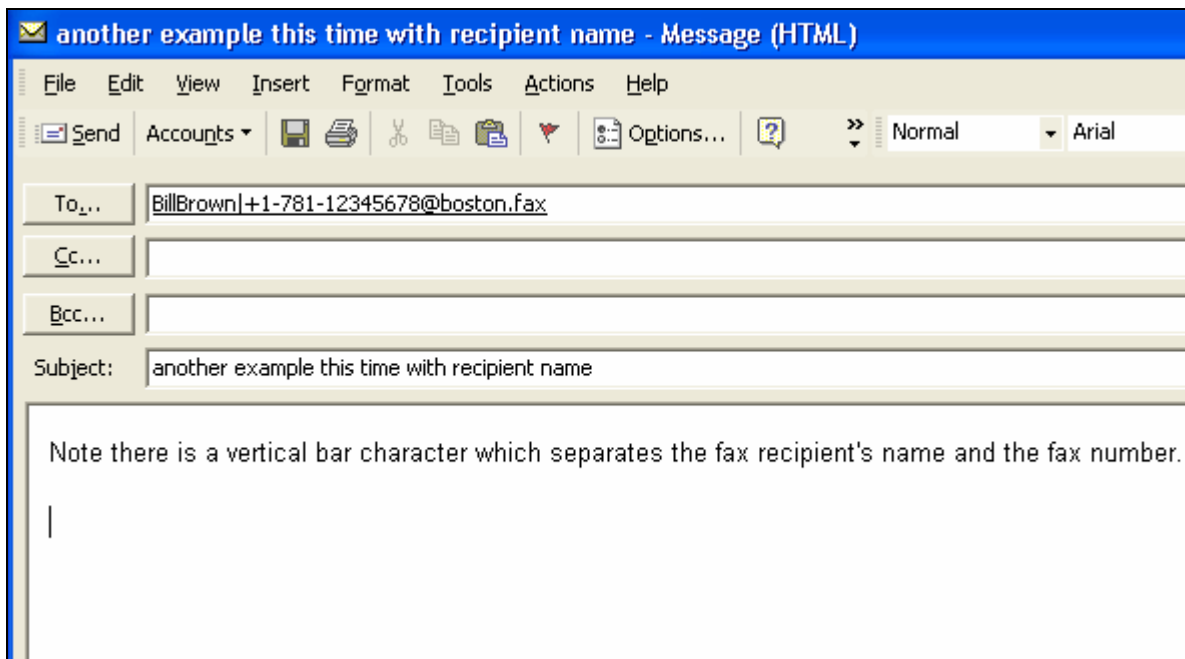
For example



Example for a USA fax number +1-781-12345678

Country with no area code +852- -12345678

No spaces between the dash symbols in the case of +852



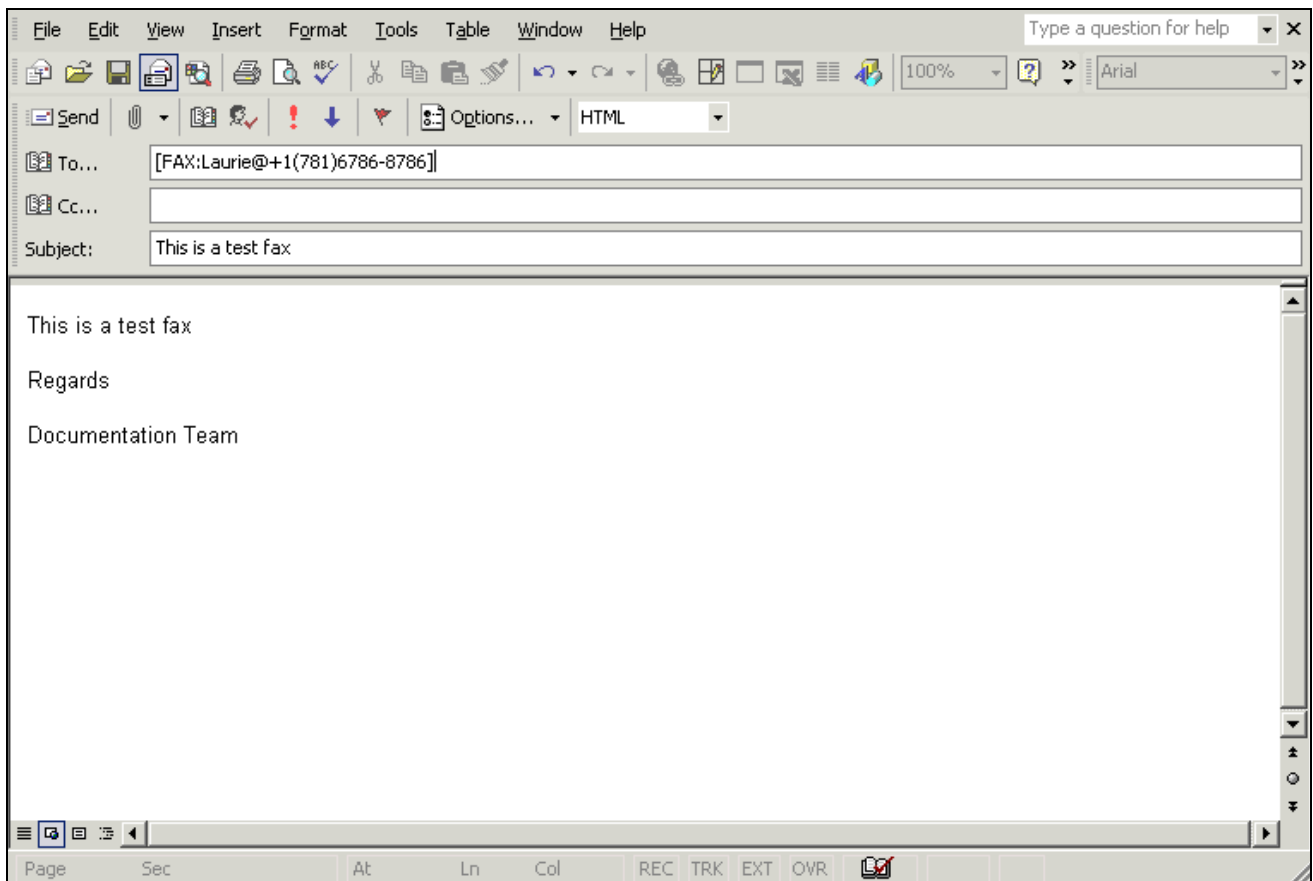
Above: Another example of msXfax XP domain addressing.

This is the recommended way to prepare faxes using domain addressing if automatic cover sheets are used. msXfax XP uses the name eg: BillBrown to include on the fax cover sheet.

28.1.6 Exchange Custom Addressing

Exchange Custom addressing is built-in service of Microsoft Outlook which creates a one-off address for a fax or other similar address type.

Many users find this a simple way to send a fax if they do not wish to set up a Contact.



The above example shows that a fax would be generated addressed to a person called Laurie to a fax number:

- +1 = Country code
- (781) = Boston Area code
- 6786-8786 is the local number where the recipient's fax machine is located.

28.17 msXfax XP free form addressing

msXfax XP has a very useful form of addressing called "msXfax XP free form".

Free form addressing is mainly used for sending to a list of fax recipients which you store in a text file.

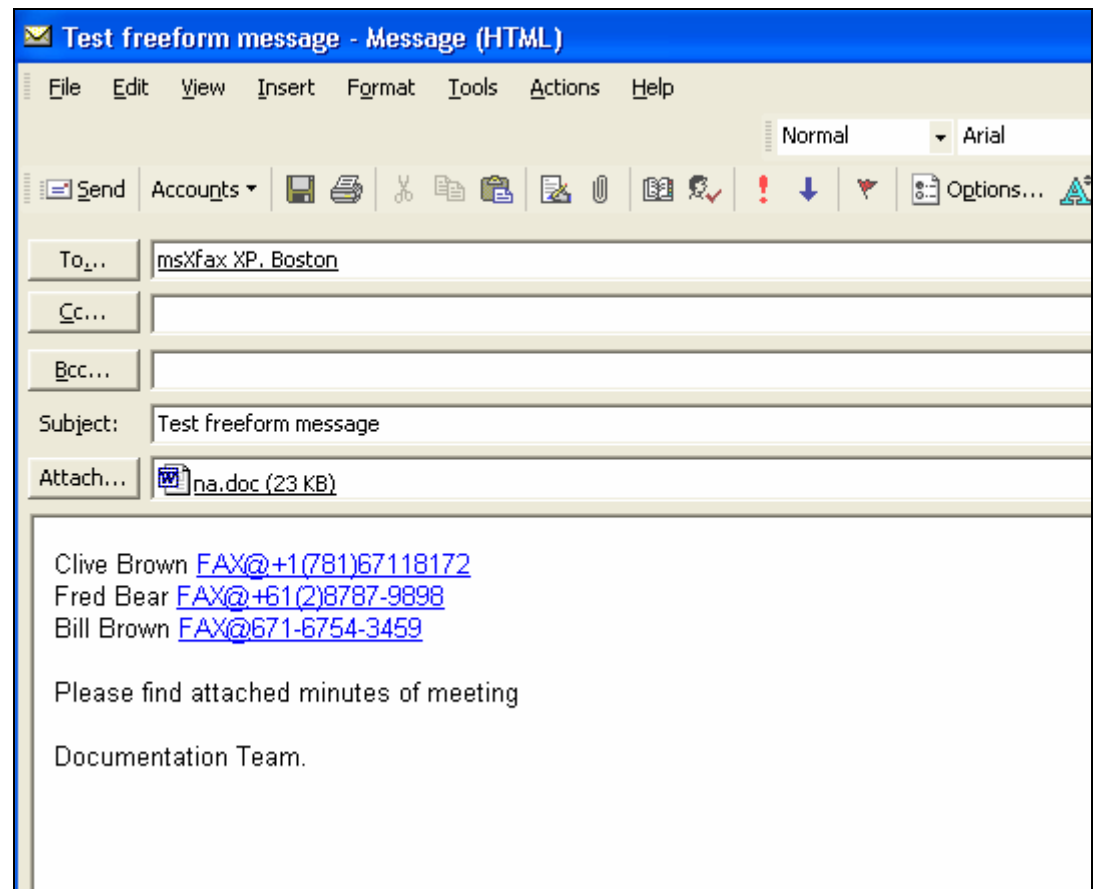
With msXfax XP free form addressing you can either:

- Paste the free form values into your memo or;
- Attach a text file (.ADR extension) with the free form values contained in the file.

Let's look at an example to see how easy it is.

NOTE: **The default freeform fax command is FAX@**

The default value can be changed in msXfax XP. BNS recommends FAX=



The example above shows that full International numbers can be specified by using the + symbol. msXfax XP fax server will automatically dial the International dial number eg: 011 (If dialing from USA), 0011 (Australia).

You can specify an absolute number as shown in the example above to Bill Brown who is in area code 671. **However, where possible please use full international formatted numbers.**

- 011 (International dial from USA)
- 852 is Country code for Hong Kong
- There is no area code
- The remaining digits is the local number in Hong Kong.

28.2 Faxing from Windows Applications (Render to Outlook)

Faxing from Windows applications is achieved by installing Render to Outlook (R2O) on a user's desktop or notebook.

R2O includes an executable and a printer driver is called "APF Fax Printer".

R2O is included with your msXfax XP license. You may install this software on all your enterprise desktops at no extra cost.

R2O can be used to:

- Fax from a Windows application to msXfax XP Fax Servers
- Create a TIF Group 4 image file to send to any email recipient.
- Create a fax broadcast using msXfax XP .ADR files.

Sending TIF images to recipients on the Internet minimizes the chance of transmitting viruses traditionally found in some attachments.

TIF images do not host viruses such as macro viruses thereby minimizing the risk of infecting other people's computers.

Some organizations can't justify the cost of deploying a PDF writer on many computers and choose R2O to create TIF images for transmission via Outlook.

28.2.1 Installing Render to Outlook (R2O)

Compatibility: **R2O has been designed to work with Windows 2000 and Windows XP. R2O will not install on previous releases of Microsoft Windows.**

Note: **Do not install R2O on the msXfax XP server.**

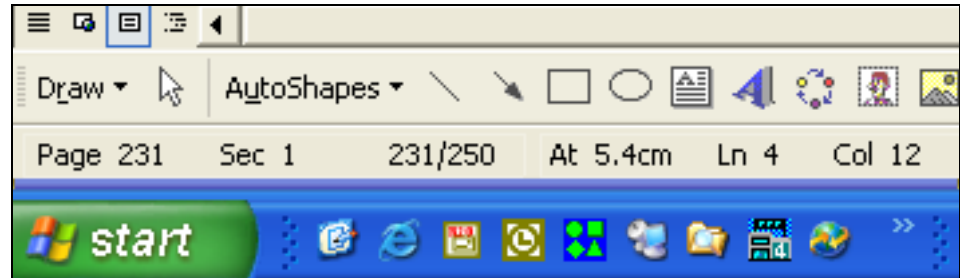
R2OSetup.MSI conforms to the Windows Installer specifications. Deployment of R2O to the desktop can be deployed using Microsoft or other tools.

After installation of R2O the user must perform the following:

- Select Start, Programs, BNS Applications, Render to Outlook
- Select R2O Printer Driver Install
- A printer called APF Fax Printer will be installed on the computer.
- Click ok to complete the process.

28.2.2 Render to Outlook options and icons

R2O is a small floating application. Most users tend to insert a copy into their quick launch pad as shown below. R2O icon is shown to the left of the Outlook icon in this example.



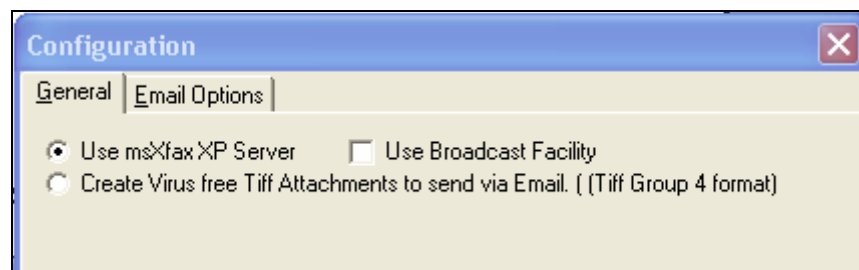
- Click on the icon to launch R2O. Alternatively, select it via Start, Programs, BNS Applications, Render to Outlook.



28.2.2.1 Configure R2O



This icon is used to configure R2O.



General property page

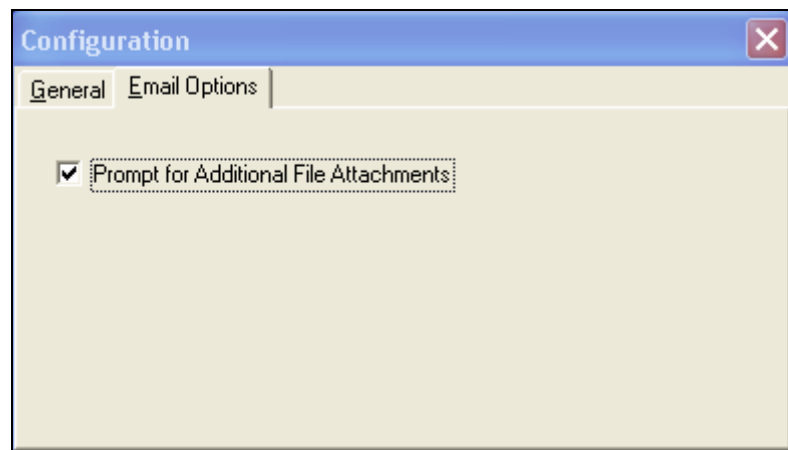
- Select Use msXfax XP Server to send fax requests to send faxes using R2O.
- "Use Broadcast Facility" is a special option which should be used by trained authorised staff. Broadcasting faxes is described in subsequent sections.

R2O can be used to send virus free TIFF attachments to recipients*.

* Tiff attachments do not support macros and are not executable files. Therefore, the attachment itself is considered a safe attachment. BNS does not warrant that an email containing a TIFF file is free from viruses. BNS is suggesting that a TIFF attachment is safer than a Word document which may contain a macro virus. TIFF is an image format and is not executable. Tiff image files are interpreted by imaging software programs found in operating systems such as Microsoft Windows 98, Windows 2000 and Windows XP. Microsoft Office XP also contains a document imaging viewer which has been tested with TIFF CCITT group 4 format. TIFF CCITT group 4 format is a highly compressed format created by R2O). Some legal firms prefer to use TIFF format for client reviews rather than sending a word document or PDF. R2O is a cheaper alternative to installing PDF writer software on every client machine.

Email Options

This option is usually checked for faxing and emailing. It allows users to print from many applications and/or source documents to render their image.



28.2.2.2 R2O Help

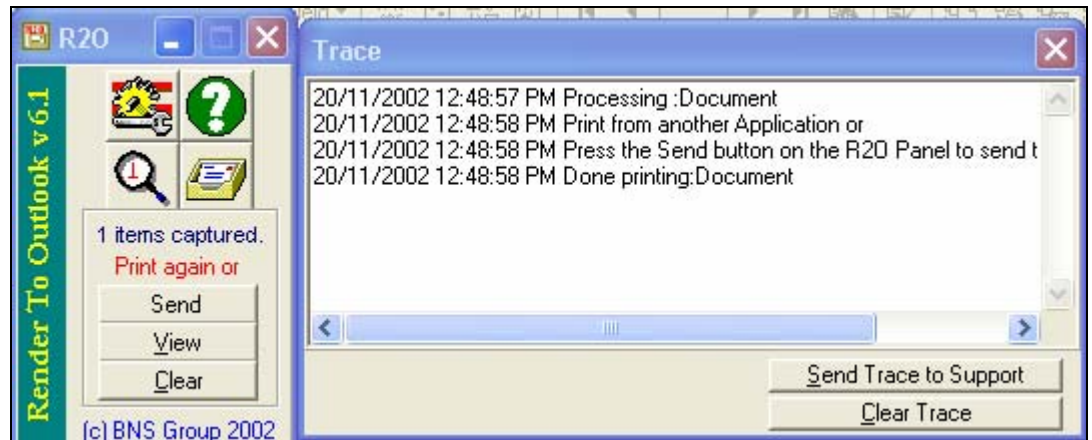


This icon is a simple help icon which reminds a user that the APF FAX Printer driver should be installed before R2O can be used. After they have installed the APF Fax Printer driver this help button will still produce the same message. If a user has installed the printer driver they can commence using R2O.

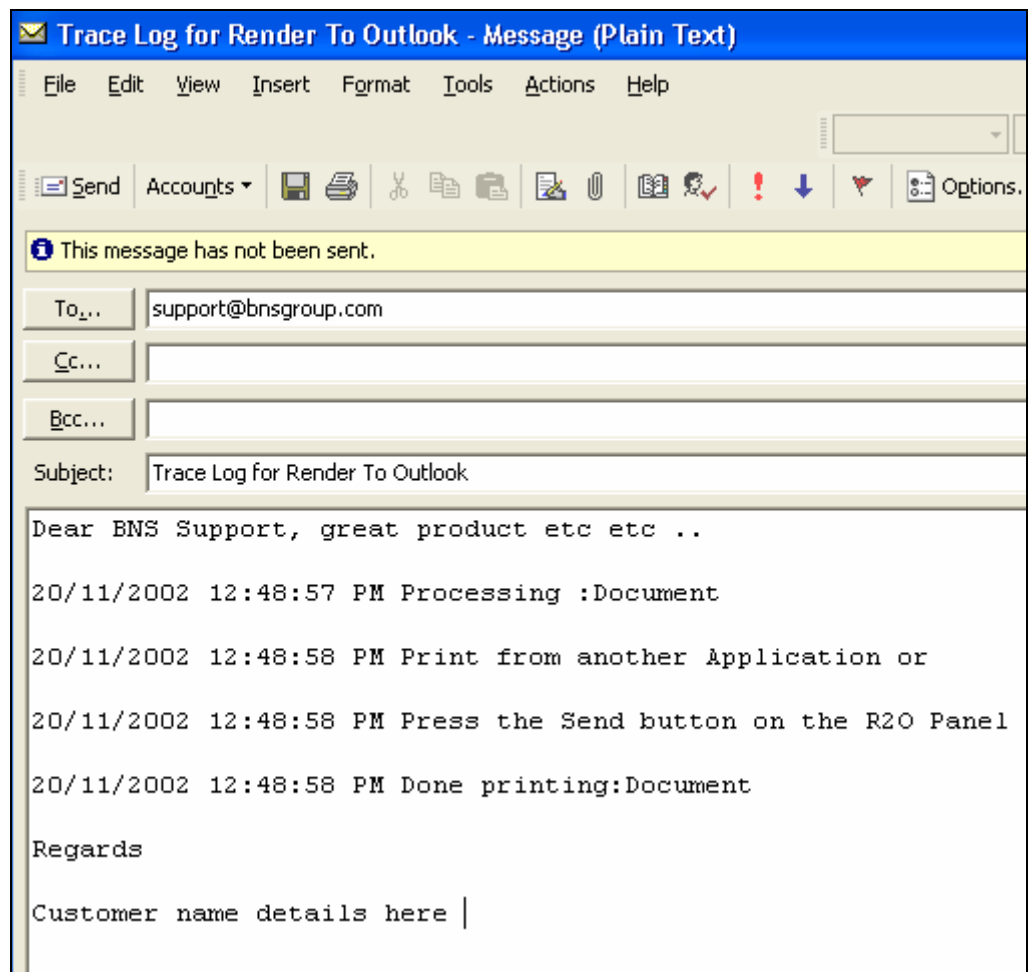
28.2.2.3 R2O session trace



This icon produces a session trace which allows customers with specific issues the ability to capture what is happening behind the scenes.



Clicking on the Send Trace to Support button, initiates a new message window in Outlook. Customers should insert their comments about their problem. BNS Support can look at the session trace to provide advice in a reply email.



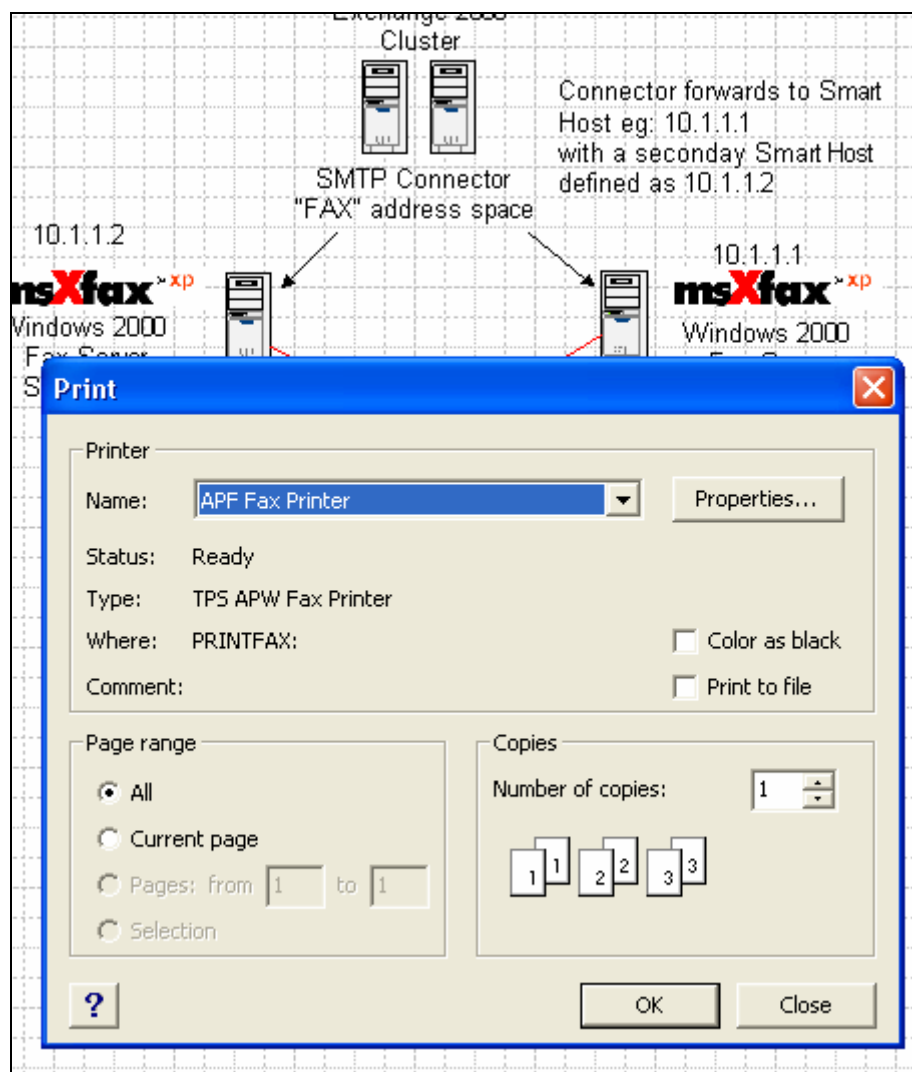
28.2.2.4 Suggestion box



This icon will create a message to support@bnsgroup.com for your suggestions to improve the product.

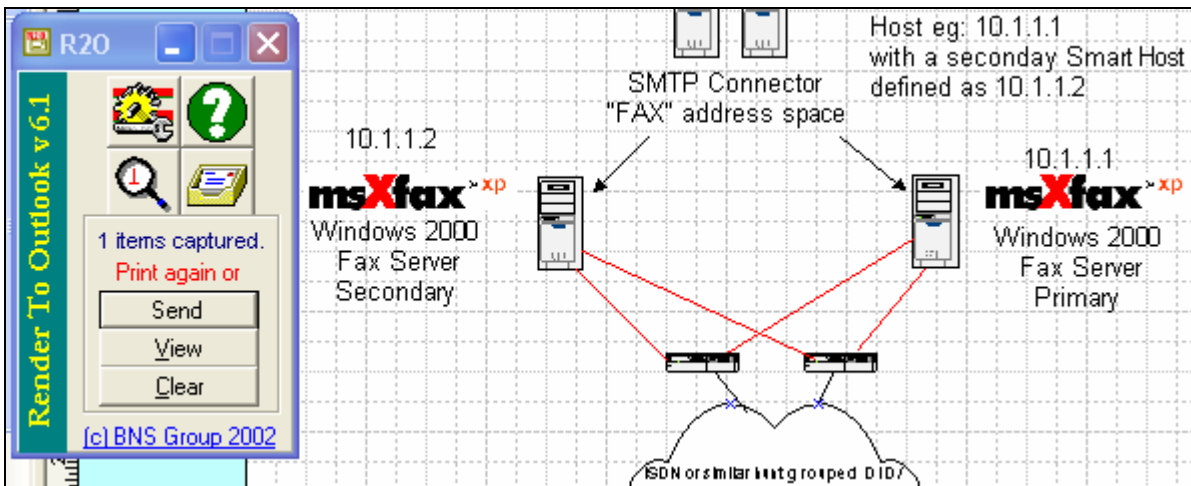
28.2.3 Print from your application

- Leave R2O running.
- Run Winword or any other Windows application.
- Our example below show a Visio diagram which we will fax or send to any email recipient via R2O.
- From Visio select File, Print
- Select APF Fax Printer
- Do not change properties just press ok.

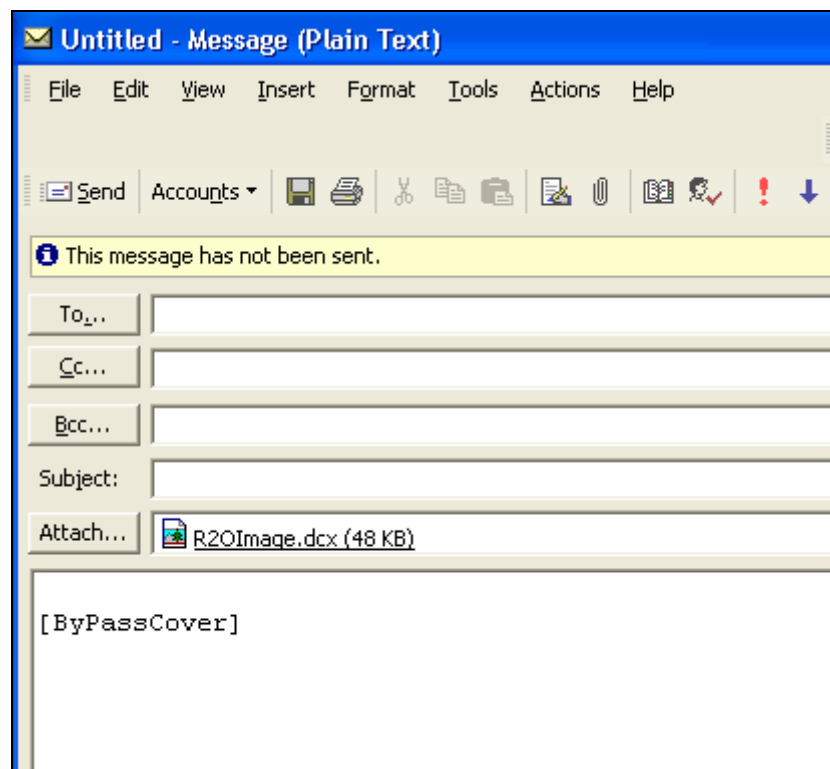


- R2O will now show that 1 item has been captured.
- At this point you can view the image captured, clear the captured image, print again to capture another file (concatenate output from different applications) or simply send via Outlook the rendered image.

Note: If you view the image before sending it, please make sure that you close the image viewer first.



- Press Send



R2O now invokes an Outlook new message window.

- Users can now address the DCX image to msXfax XP Server in all the ways described throughout this guide.

Attaching an ADR file in Outlook and addressing it to the msXfax XP mailbox will perform an efficient fax broadcast. Alternatively, use Exchange 2000/2003 Distribution Groups with the DCX image for broadcasting.

Tip: **Using R2O to send TIFF files to email recipients simply requires the R2O configuration radio button to be changed.**

28.3 Broadcast faxing

R2O generates a DCX format image file which is more efficient when broadcasting using msXfax XP. Fax broadcasting using R2O assumes that the user will attach an address list file (.ADR file) in their Outlook message to accompany the DCX image created by R2O. The ADR file contains fax recipients.

R2O provides an import facility to import and convert .CSV files into .ADR format.

Broadcast faxing follows exactly the same procedures above except that provision is made to prepare .ADR files from CSV files and an additional keyword is included in the Outlook memo.

28.3.1 Set up of your Excel CSV file

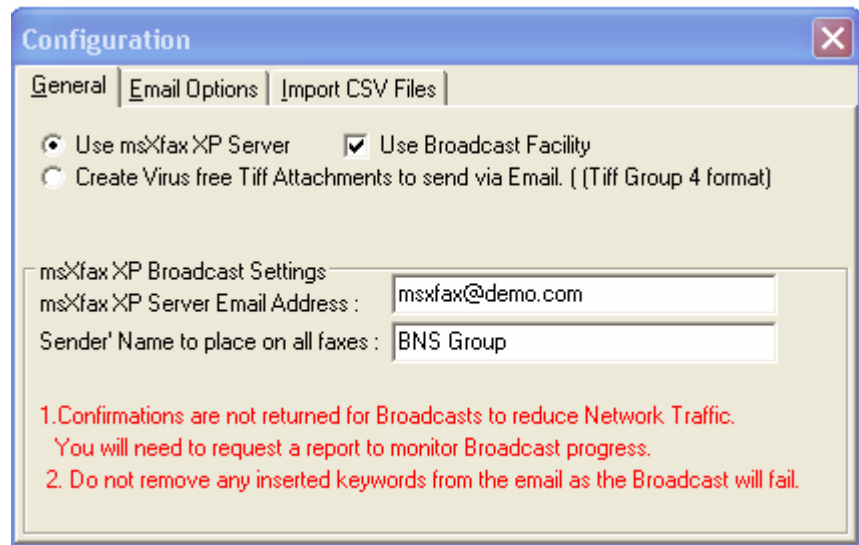
Your CSV file should contain a minimum of 2 fields: Recipient Name and Fax number.

Your column heading names can be any thing you like.

The fax numbers in the CSV file should be formatted to include the country and area codes eg: +1(781)12345678

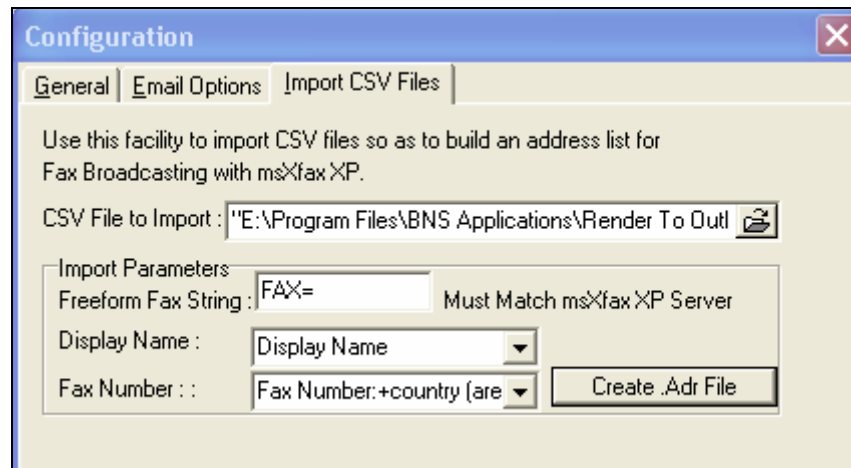
When faxing within your own Country only, it is possible to include the absolute number to be dialed inclusive of area code.

28.3.2 Importing your CSV file



Sdfsd

- Check the item “Use Broadcast Facility”.
- Obtain the name of the msXfax XP Broadcast Server Email Address from your System Administrator. (msXfax Servers can be configured to accept broadcasts otherwise they will be rejected).
- Select the property tab “Import CSV Files”.

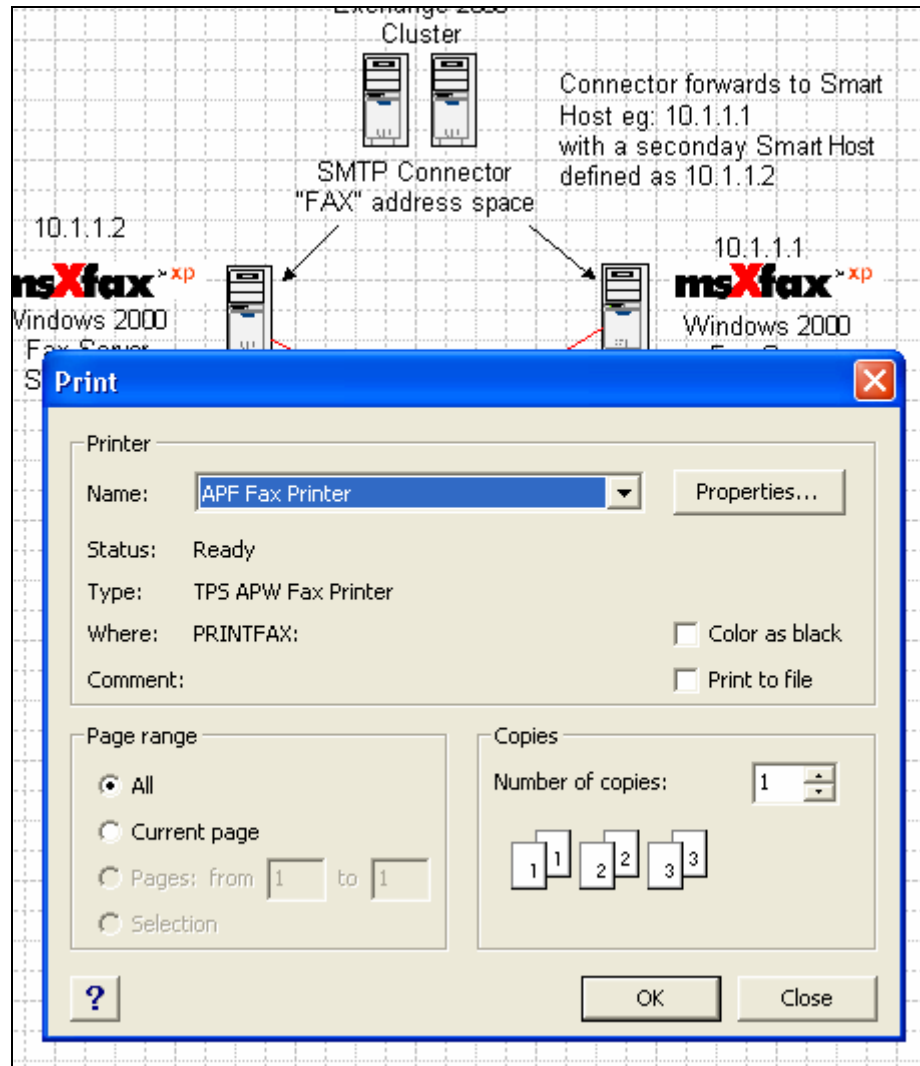


- Select your CSV file
- R2O will present column names from the CSV file.
- Choose columns for Fax Recipient Display Name and Fax Number
- Verify that the Freeform address String is correct.
- Click Create .ADR file
- Close the Configuration window.

28.3.3 Broadcast from application

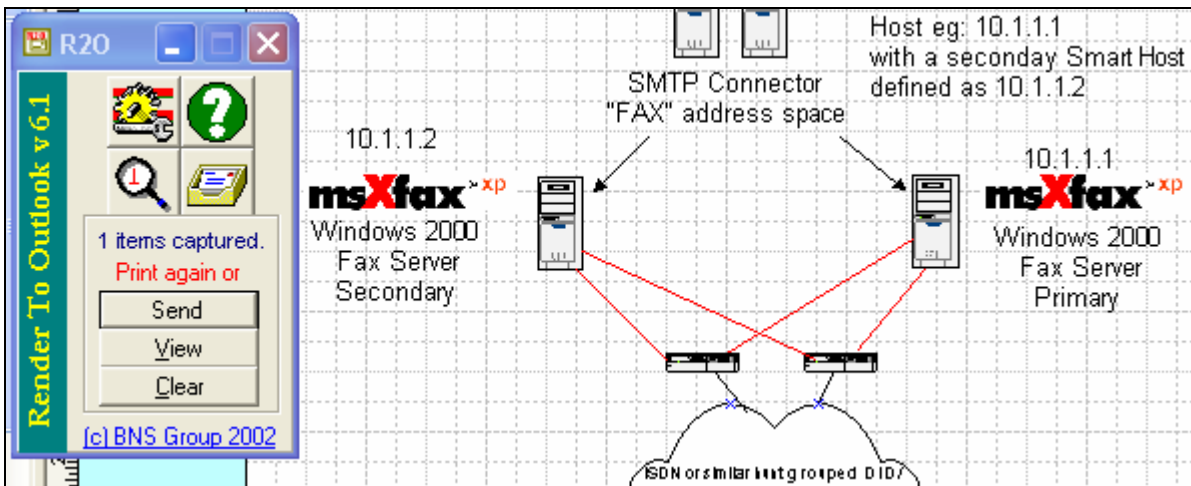
- Leave R2O running.

- Run Microsoft Word or any other Windows application containing your source document.
- Our example below show a Visio diagram which we will fax broadcast to recipients listed in the .ADR file.
- From Visio select File, Print
- Select APF Fax Printer
- Do not change properties just press ok.

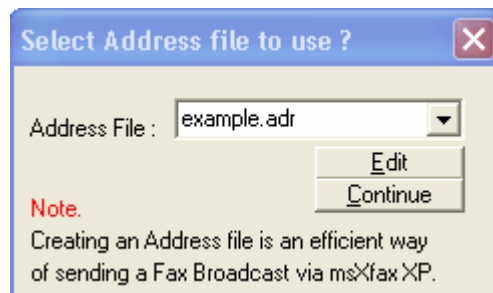


- R2O will now show that 1 item has been captured.
- At this point you can view the image captured, clear the captured image, print again to capture another file (concatenate output from different applications) or simply send via Outlook the rendered image.

Note: If you view the image before sending it, please make sure that you close the image viewer first.

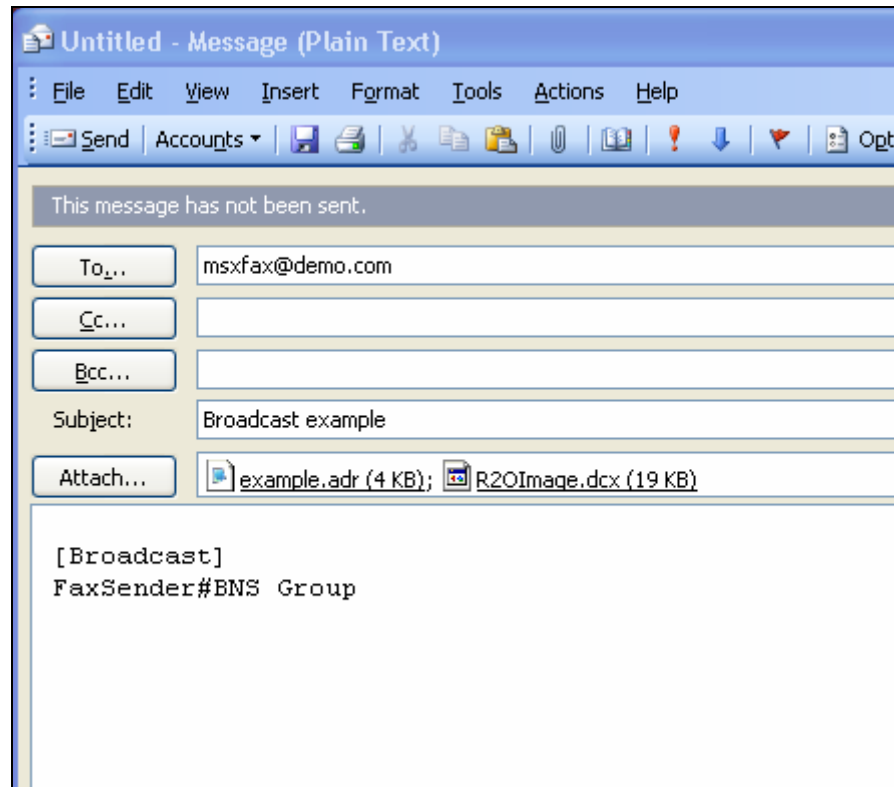


- Press Send



- Select the .ADR file created from the CSV import.
- Press "Continue".

A new Outlook message window is created. msXfax XP includes keywords in the memo which should not be modified. Remove any auto signatures which are generally not used on a broadcast transmission. FaxSender# keyword is used to override the real sender's details on the fax header which is transmitted to the recipient. **NO COVER PAGE IS SENT.** Your broadcast should include any disclaimers and corporate identity to ensure that the broadcast is performed as efficiently as possible.



msXfax XP will provide broadcast updates and final completion information directly to the sender's Outlook mailbox.

28.4 Faxing via Network Scanners such as HP Digital Senders

Customers with Digital Senders (network based scanners) such as Hewlett Packards range, can use the Digital Senders interface to send faxes via Exchange 2000/2003 and onto msXfax XP for processing. Sender details are still validated in Active Directory and confirmations are sent to the sender's inbox.

Using the interface of the Digital Sender it is possible to send to any of the following addresses:

[Number@msXfaxXPdomain.FAX](#)

Name | [Number@msXfaxXPdomain.FAX](#)

Examples:

[62989867@Company.fax](#)

[Bill_Brown | 62989867@Company.fax](#)

msXfax XP will:

- Place “Bill_Brown” in the Recipient Name on automatic cover sheets
- Use the number presented to send the fax.

Using the country code is not required if it is within your country. Use hyphens to separate Area Codes for example:

+1-781-12345678@Company.fax or Bill_Brown|+1-781-12345678@Company.fax

28.5 Faxing from scanners and other TWAIN devices

Faxing from scanners and other TWAIN compliant devices is achieved using another BNS Group product called Scan to Outlook (S2O). S2O can be purchased in license packs.

How does it work?

- Scan To Outlook installs as button on the Outlook button bar.
- You will need to have installed your twain hardware like a scanner and/or digital camera. You can install any number of twain devices as Scan To Outlook will allow you to select the twain device you wish to connect to.
- When you are ready to include an image from your twain device as an email, simply press the Scan To Outlook button on the Outlook button bar.
- Scan To Outlook will invoke the twain driver interface for your device, and this may vary from device to device depending on the manufacture. The interface will request you to scan the image or select the stored image depending on the device. Once you have done this, the image or images will be transferred to Scan To Outlook for inclusion in an email/fax.
- All that has to be done now is address the message (with the automatically inserted TIF image). The scanned image can be sent via: email or msXfax XP.
- Works with: Office 2000, Office XP on Windows 98, Windows NT, Windows 2000 and Windows XP.

Scan To Outlook should work with all twain compliant scanning Such as:

- Fujitsu (ALL models)
- Hewlett-Packard (most models)
- Canon DR-3020
- Ricoh 420
- Panasonic 3323
- Panasonic DV-S6045
- Panasonic KVSS 55 EX
- Epson Perfection 600

- Microtek scanners (especially E3)
- Mustek
- Visioneer (TWAIN)
- Tamarack
- Logitech Scanman 2000
- Easytouch
- Easy Photo Reader

Scan to Outlook provides customers with a tightly integrated Com Add-in to Outlook for low resolution faxing of paper documents.

28.6 Receiving faxes

When a fax is sent to the msXfax XP fax server usually there is direct in-dial (DID or DDI or DTMF) values detected by msXfax XP. Put simply, if msXfax XP receives a fax on the number assigned to you by your administrator, the fax will be sent to your mailbox.

msXfax XP supports receiving to other locations IN ADDITION to your mailbox, these include:

- Printer
- Disk directory


The following shows how a received fax appears in your mailbox.

Fax Received from : - Message (Plain Text)

File Edit View Insert Format Tools Actions Help Type a question for help

Reply Reply to All Forward Print Copy Paste Undo Redo Bold Italic Underline Text Color Background Color

Extra line breaks in this message were removed. To restore, click here.

From: Boston Help Desk Sent: Thu 2/21/2002 2:01 AM
To: Administrator
Cc:
Subject: Fax Received from :
Attachments:  00000444.TIF (137 KB)

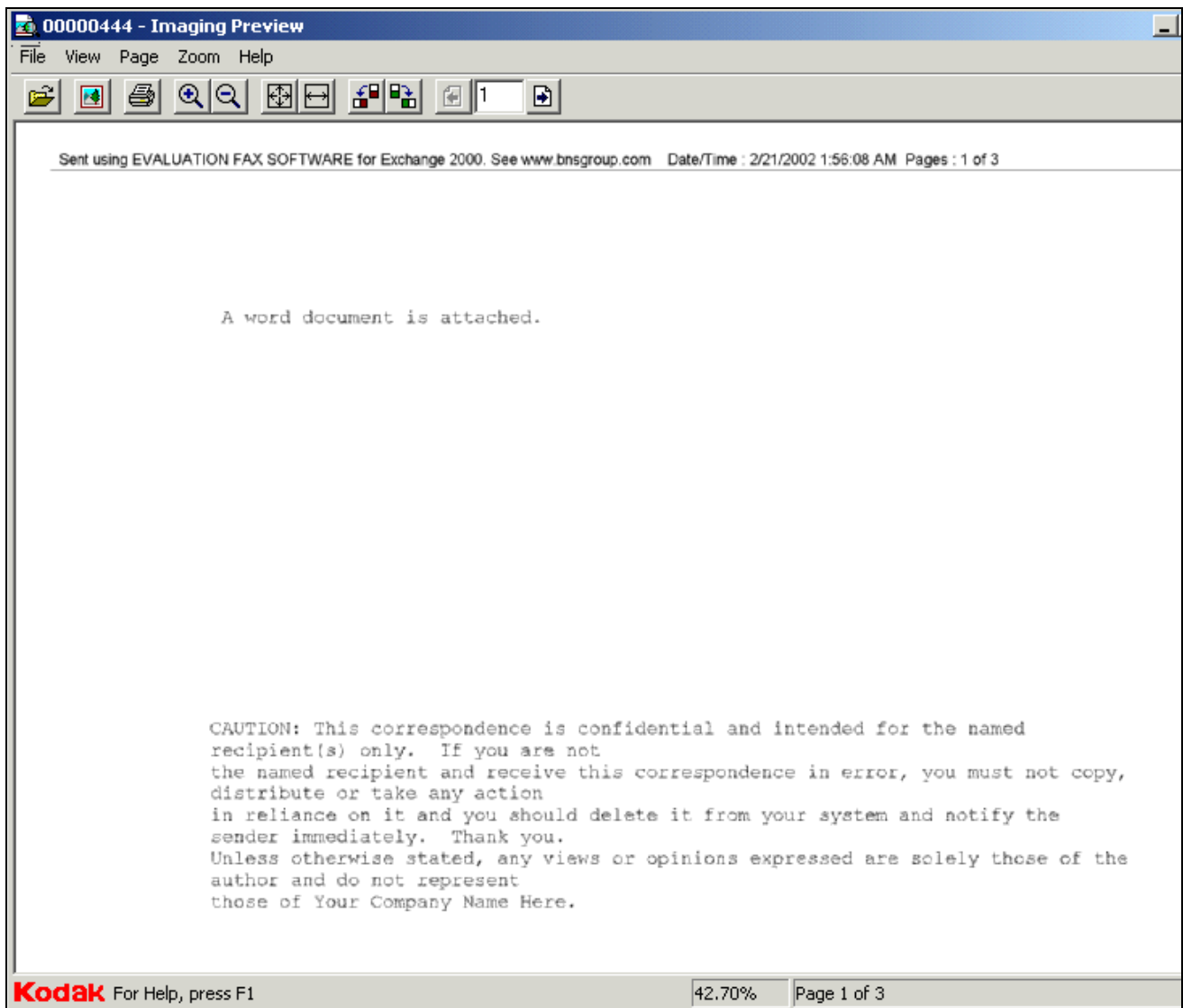
msXfax@ XP

For hints and tips on using msXfax XP, please refer to <http://www.bnsgroup.com/bns/userhints.asp>

Your Fax

Received at: 2/21/2002 1:56:53 AM
Sender's CSID:
Sender specified a DDI of: 62813355
Fax arrived on Fax Server Channel: 1

There were no instructions specified to save inbound faxes to folder(s). There were no instructions specified to print inbound faxes.



The above example shows the Kodak viewer which is built-in to the Windows XP operating system.

The Kodak viewer is also included in Windows 2000, Windows 98 second edition and there was also support in a service pack for Windows 95.

28.7 Special commands

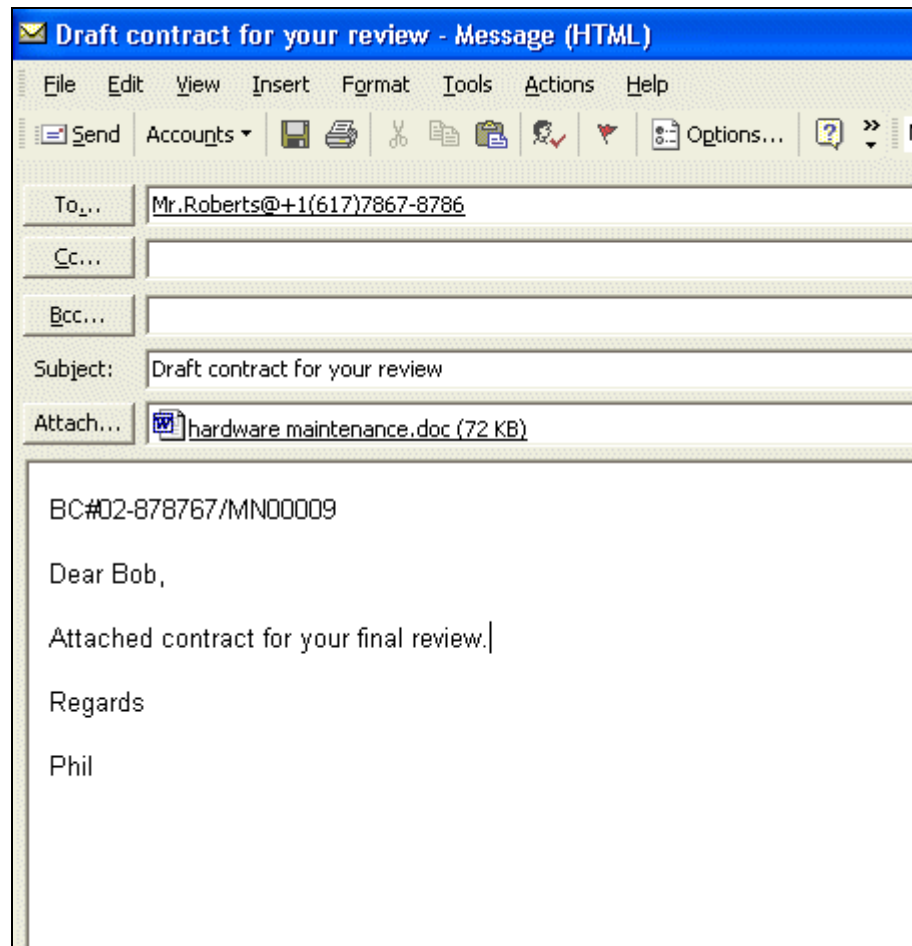
Organizations such as Legal firms usually track fax usage for client disbursement charges.

Legal firms' client accounting systems usually have Client/Matter number as the billing control.

msXfax XP allows special commands to be included in the memo portion of a fax which is extracted and written to the fax transaction log for reporting and import into back office client accounting systems. The Client/Matter number are removed from the memo before transmission by fax.

Outlook forms, document management systems or work flow applications can construct fax messages with special commands.

The actual command used for Billing codes (sometimes referred to in the legal industry as charge codes) is as follows:



The above example shows how special command BC# (billing code) is followed by 02-878767/MN0009

This particular law firm uses 02 to signify the year in which the client first used the services of the firm, followed by a 6 digit client number followed by a "/" followed by the matter number.

msXfax XP will record the entire reference in the billing code field for that fax.

msXfax XP also records information including: total number of pages, date and time of transmission, time taken to transmit.

Many law firms charge based on the number of pages sent.

28.7.1 Passcodes

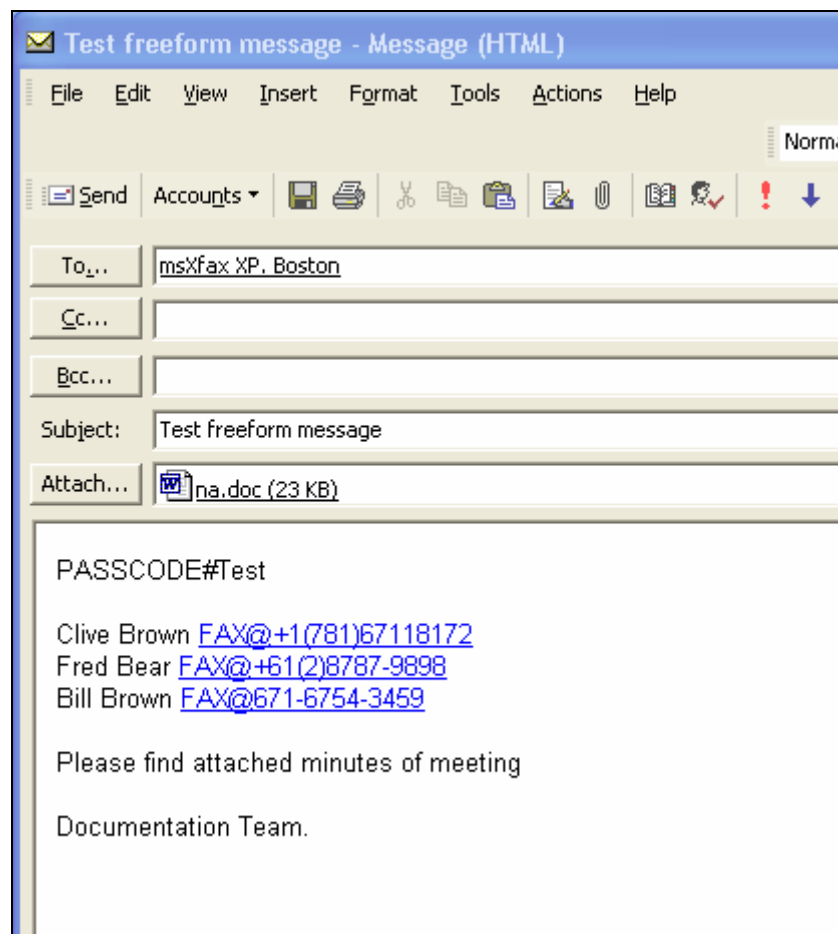
As an additional security check it is possible to configure msXfax XP to check for the presence of a keyword in the message memo body called PASSCODE#

Passcodes can be implemented at a Fax Server level or at a user level.

Administrator's notes:

- At the fax server level the Passcode is entered in msXfax XP console - Messenger General Property tab
- At a user level in Active Directory as a keyword for example: [Passcode#test]

The format would look like the example below:



28.8 Manual Selection of Cover Page

In the Outlook memo type the following keyword in the first part of your memo.

[CS:yourcoverpage.rtf]

The RTF cover page must exist in the fax server's directory where cover pages are stored.

29 Removing msXfax XP

29.1 Exchange Server considerations

- Delete any Exchange mailboxes which you used for msXfax XP.
- Delete Exchange SMTP connectors which you configured for msXfax XP.

Deleting the additional registry entries can be performed if required but it is not essential.

29.2 Removing msXfax XP from the fax server

- Login with Domain Admin rights or with local Administrators group permissions.
- Control Panel, Add/Remove programs
- Select the first msXfax XP entry which has approximately 20MB associated with it.
- Select Remove

Removal issue? BNS noted that sometimes WISE uninstall does not work correctly. Symptom is that removal of the entry from Add/Remove happens immediately without actually removing msXfax XP. If this happens to you, refer to the special section below.

- If you want to remove msXfax XP's installation files also, remove the other msXfax XP entry which has no associated file size associated with it.

If you are removing msXfax XP to simply re-install it on the same machine, there is no requirement to remove the installation files. Installation files can be copied to another machine and a new installation performed. However, a change in hardware platform will require a new release code and activation process. Please contact your reseller or BNS Group if you intend to relocate your msXfax XP license to another machine.

29.3 How to remove msXfax XP if WISE fails to correctly remove msXfax XP

29.3.1 First and preferred option

There is a known problem with WISE uninstall, whereby WISE does not remove the software correctly and continues to remove its own UNWISE.EXE program. A copy of this program exists in the Program Files\BNS Applications\Fax Server Installation Files directory. If you can't find a copy of this program contact BNS Group support via www.bnsgroup.com.au

- Copy the UNWISE.EXE program to the Program Files\BNS Applications\msXfax XP directory.
- Run the remove option again in Control panel's Add/Remove programs.

29.3.2 Removal via a re-install

There is a known problem with WISE uninstall, whereby WISE does not remove the software correctly and continues to remove its own UNWISE.EXE program. By reinstalling the software creates another copy of the UNWISE.EXE program.

- Remain logged in with Domain Admin rights or with local Administrators group permissions.
- Run REGEDIT
- Navigate to HKEY_LOCAL_MACHINE\Software\Better Network Services Group\msXfax XP\Messenger
- Rename the registry key "POP Host IP" to "POP Host IPX".
- Close REGEDIT.
- Run Windows Explorer and navigate to your msXfax Setup files
eg: Program files\BNS Applications\Fax Server Installation files\Fax Software
- Stop all msXfax XP services
- Run the program msXsetup.exe to re-install msXfax XP over the top of the existing installation. **Take all defaults but make sure you select the same type of installation eg: TAPI, Eicon or Brooktrout.**
- After installation is completed **DO NOT reboot the machine.**
- Now you can go back to the section above to remove the software again.

30 Troubleshooting & Diagnostics

This section is provided for installations which do not go to plan or where additional technical information may be required outside of the normal installation and operational procedures.

30.1 Moved/replaced a Brooktrout board problem

Special consideration if you replace/remove your Brooktrout board

Please note: if you move your Brooktrout board at any point in the future it will be necessary to re-load the diagnostics tools, perform the tests and remove the diagnostics tools. Therefore, if you remove a board temporarily, make sure that it goes back into the same slot.

If a board has moved or replaced and your fax server does not work you will need to:

- Set all msXfax XP services to disable.
- Reboot you fax server.
- Perform the Brooktrout diagnostics chapter again including the removal of the diagnostics software.
- Run the msXfax XP installation program again. Do not remove msXfax XP simply re-run the installation program. msXfax XP setup program will remember all the settings from the registry.

30.2 Upgrading from TAPI to Brooktrout boards

Special consideration if you upgrade from TAPI to Brooktrout

Please note: if you initially implement or evaluate TAPI based hardware and then decide to install Brooktrout boards this section applies to you.

- Set all msXfax XP services to disable.
- Reboot you fax server.
- Perform the Brooktrout diagnostics chapter including the removal of the diagnostics software.
- Run the msXfax XP installation program again. **Do not remove msXfax XP simply re-run the installation program.** msXfax XP setup program will remember all the settings from the registry and will load the necessary Brooktrout modules for use with msXfax XP.

30.3 Class 2 Fax Modems

The most common problem reported is the wrong drivers for the modem.

It is important that you obtain the Windows 2000 drivers for your modem. Do not simply assume that Windows 2000 PNP will load the correct drivers.

- If you see a message in the TAPI log which states “Bad response from modem”, this is a classic symptom of the wrong driver.
- If you are using a US Robotics modem go to:

<http://www.usr.com/support/drivers-template.asp?prod=s-modem#general3cominf>

30.4 msXfax XP hangup codes for class 2 modems

Hangup Codes	Class 2 msXfax XP Hangup code description
Call placement & termination	
00	Normal end of connection
01	Ring detect without successful handshake
02	Call aborted from +FKS or <Can>
03	No loop current
04	Ringback detected, no answer time out

05	Ringback detected, answer without CED
Transmit phase A	
10	Unspecified phase A error
11	No answer
Transmit phase B	
20	Unspecified phase B error
21	Remote cannot receive or send
22	COMREC error in transmit phase B
23	COMREC invalid command received
24	RSPREC error
25	DCS sent three times without response
26	DIS/DTC received three times; DCS not recognized
27	Failure to train at 2400 bps or +FMS error
28	RSPREC invalid response received
Transmit phase C	
40	Unspecified transmit phase C error
41	Unspecified image format error
42	Image conversion error
43	DTE to DCE data underflow
44	Unrecognised transparent data command
45	Image error, line length wrong
46	Image error, page length wrong
47	Image error, wrong compression code
Transmit phase D	
50	Unspecified transmit phase D error
51	RSPREC error
52	MPS sent three times without response
53	Invalid response to MPS
54	EOP sent three times without response
55	Invalid response to EOP
56	EOM sent three times without response
57	Invalid response to EOM
58	Unable to continue after PIN or PIP
Receive phase B	

70	Unspecified receive phase B error
71	RSPREC error
72	COMREC error
73	T.30 T2 timeout, expected page not received
74	T.30 T1 timeout, after EOM received
Receive phase C	
90	Unspecified receive phase C error
91	Missing EOL after 5 seconds
92	Bad CRC or frame (ECM mode)
93	DCE to DTE buffer overflow
Receive phase D	
100	Unspecified receive phase D error
101	RSPREC invalid response received
102	COMREC invalid response received
103	Unable to continue after PIN or PIP

30.5 Brooktrout ISDN TR114 Diagnostics

- Look at the rear of your PC and see if any green lights are pulsing on and off.
- If the green light(s) are continuously on (with periodic pulsing off) then this is an indication of normal operations.
- If the green light(s) are off then the board has not been initialized.

Note: from Appendix A of the Brooktrout ISDN hardware guide:

“The green LED only changes state from continuously on to continuously off and back again immediately after a call attempt. For example, when you first initialize the card, the LED is continuously on (with periodic pulsing off) even with the cable disconnected. It remains in this state until a call is attempted, after which time the LED goes off (with periodic pulsing on). When the cable is reconnected, the LED remains in the off state until another call is attempted, when it changes back to the on state.”

The next command will load the protocol for either point to point or point to multi-point. If your network is using point to point replace xxx with ptp and if it is a point to multi point configuration replace xxx with pmp. If you're not sure try ptp.cnf first then proceed to perform the fax tests. If an error occurs when trying to send a fax (timeout message) then try using the pmp.cnf command and try sending your fax again.

ISDN Protocol: Point to Point is used by most ETSI ISDN service providers (including Telstra Onramp)

```
briconf -p xxx.cnf
```

To test sending a fax, at the DOS prompt type:

```
faxtest -u 0 -s <fax number> (0 = channel zero)
```

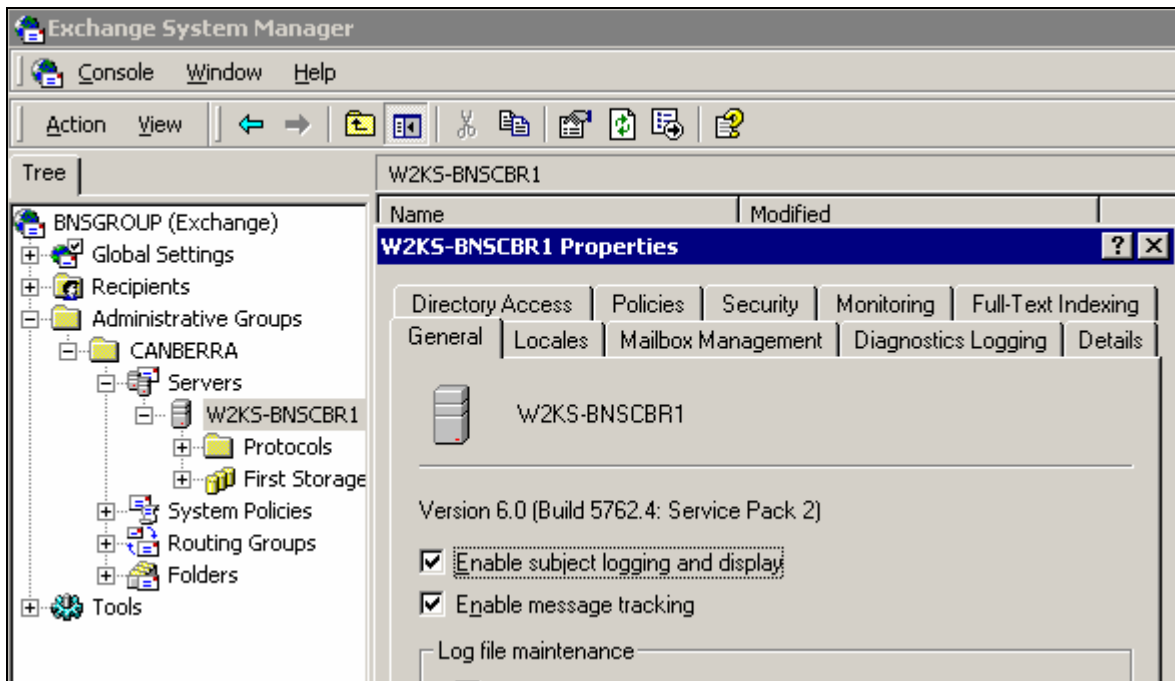
30.6 Winmail.dat error messages

Checklist for customers receiving the message

"Your fax was not sent because winmail.dat was found as an attachment. A Service Pack or Configuration change needs to be applied to your Exchange Server. Please contact your Administrator with the following information : Either Exchange SP2 or above is not applied, or the Global Message Default is not set to never use Exchange Rich Text Format or the supplied configuration program for Exchange has not been run on the Exchange Server".

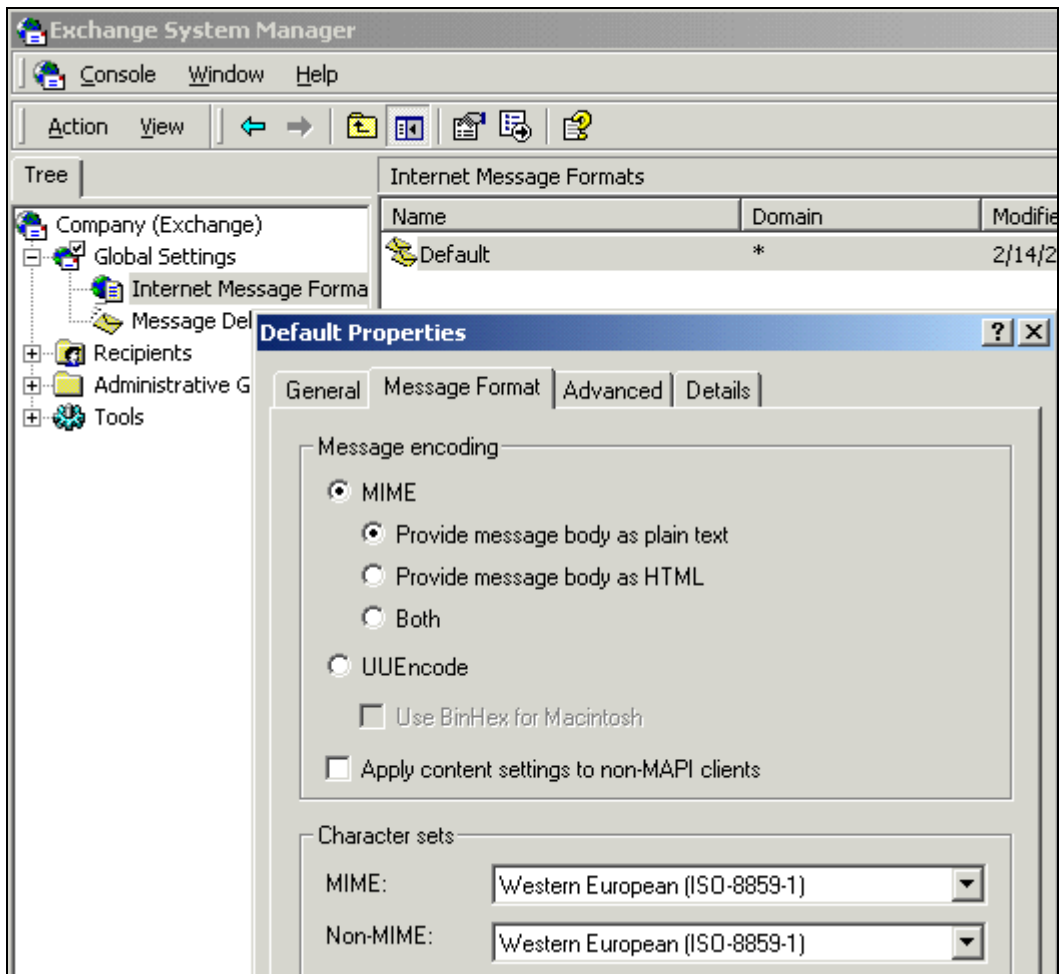
Checklist item	Item to check	Msxfax XP section references	comments
1	Exchange Server is running Windows 2000 server family service pack 2 or better	Pre-requisites	From the Exchange server. Start, run a program, CMD. In the CMD window type WINVER.
2	Exchange 2000 server is SP2 or better		Run Exchange System Manager, expand the folders to your Exchange Server(s) See example below.
3	Registry program has been made to the Exchange server(s) acting as local bridgeheads for "FAX" SMTP Connector		If you have multiple Exchange servers acting as bridgeheads for "FAX" address space in the routing group then you should apply the registry change to all servers defined as local bridgeheads. Check that the "Parameters" key has been created because Microsoft's documentation does not include that.
4	Exchange SMTP connector	Configure Exchange SMTP Connector.	Double check the configurations (DO NOT CHANGE CHARACTER SETS only follow the bullet point instructions in the msXfax XP manual).
5	Exchange Global Settings	Exchange Settings	Have you set "Provide message body as plain text"? Have you set "Never use Exchange Rich Text"? Also, some customers have followed msXfax XP screen examples and have changed character sets from say US ASCII to Western European. See notes below.
6	Active Directory msXfax XP Mailbox POP3 Settings	Adding an account in Active Directory for msXfax XP	Ensure that Plain text is set correctly. See notes below relating to character sets.
7	Reboot your Exchange Server(s)		This should not be necessary but please schedule this just to be sure.
8	Go to step 1 and check again		If you have checked everything multiple times and the problem persists contact BNS Group support Support@bnsgroup.com Action points for BNS & Customer: <ul style="list-style-type: none"> a) send an attachment directly to the msxfax mailbox (verifies POP3 settings ok). b) If necessary Set IP address of SMTP Connector to BNS's test fax server on the Internet. (this will simply verify problem is in Exchange)

30.6.1 Exchange 2000/2003 service pack check



The above example shows service pack 2 of Exchange is installed on the Server.

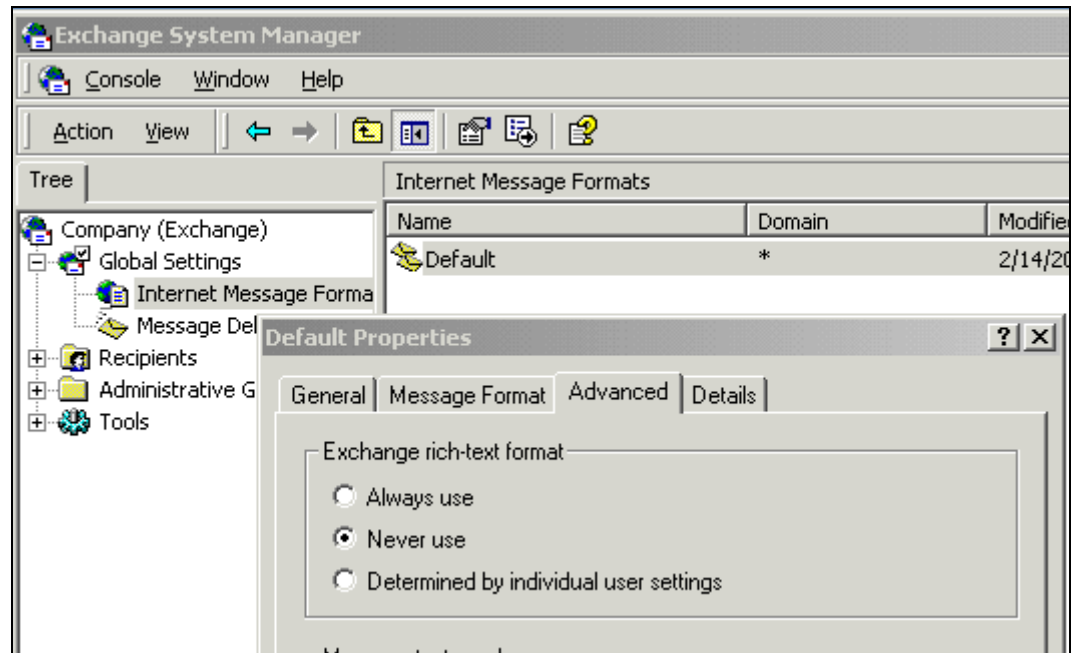
30.6.2 Exchange Global Settings



Note: Character Sets – do not change your default character set.

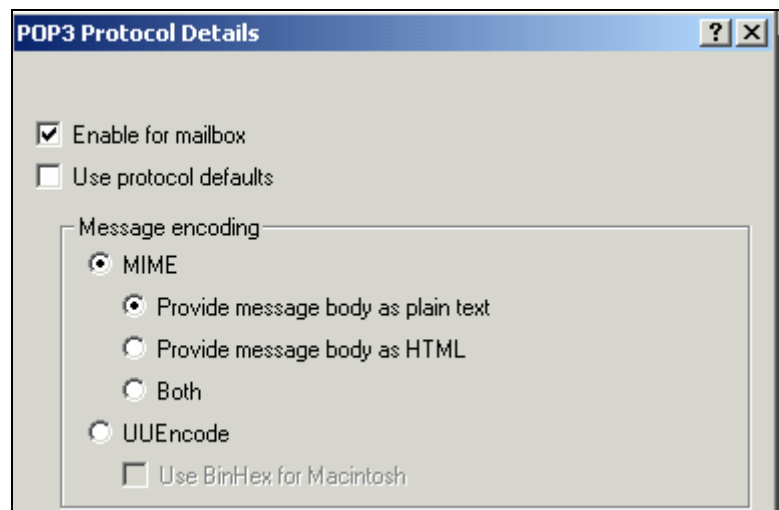
Some customers have looked at the screen examples in our documentation and changed their configuration to look like the above example which was set out in version 1.0 of msXfax XP documentation. We have since removed the lower portion of the screen example so that customers do not inadvertently change settings. MsXfax XP documentation did not specifically ask customers to change the character sets, our bullet point instructions only ask them to change the MIME setting to plain text.

- Select Internet Message Format
- Select Default
- Right Default, Select Properties
- Verify that the standard default setting “Provide message body as plain text” has not been changed.



- Select the Advanced tab.
- Select the “Never use” radio button.

30.6.3 POP3 Settings for msXfax XP Mailbox



31 ENotify Application Interface

Effective version 6.7.4 of msXfax^{XP}, BNS Group bundled its popular application interface known as ENotify-AI or msXfax-AI. BNS will be providing customers with updated documentation and code versions post release 6.7.4.

ENotify-AI can be run standalone, however, customers must purchase msXfax^{XP} to obtain the license.

ENotify-AI allows customers to fax and email enable their applications by simply creating files.

Your application programmers can send a variety of business documents via fax and/or email via a single file based API.

Customers typically need to send the following types of documents via fax and/or email:

- Remittance Advices for EFT payments
- Purchase orders
- Invoices
- Contract Renewal – acceptance memorandums
- Subscription notices

ENotify-AI allows your application programmers to send faxes and email messages easily, requiring no knowledge of fax or email protocols.

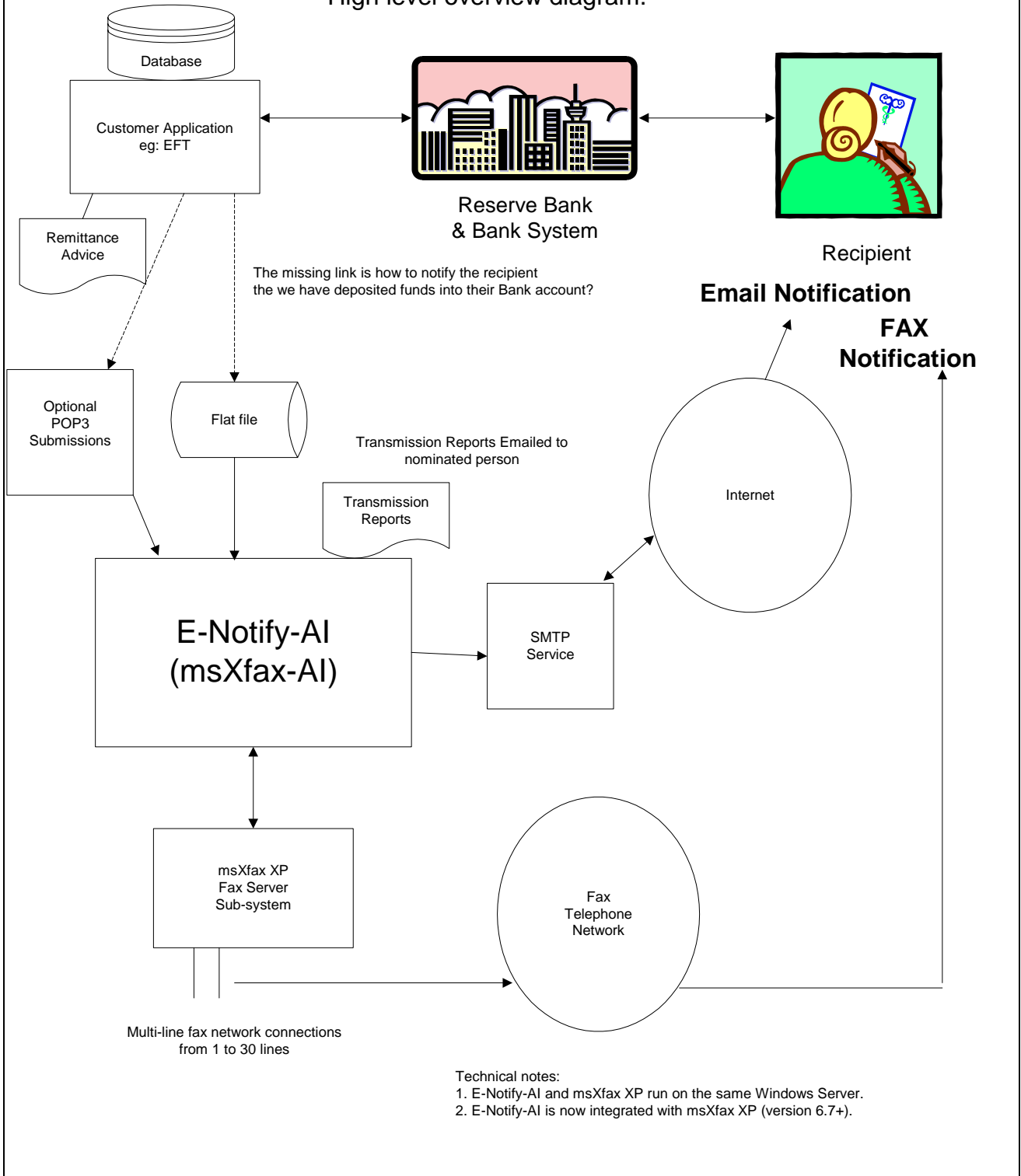
31.1 Modes of operation

ENotify-AI can operate in 2 modes. Requests can be received via:

- a mailbox which can be accessed using POP3. eg: Microsoft Exchange Server
- a network share

The following diagram shows a typical implementation of Enotify-AI.

Enotify-AI E-Commerce Notification Application Interface High level overview diagram.



31.1.1 Using a mailbox

If your application can send messages to an email address, then it can send formatted Faxes or Emails to recipients. Your application sends its output via a nominated email mailbox which ENotify-AI will read using POP3 protocol.

ENotify-AI processes the requests from your applications, inserts fax requests directly into the msXfax Database and sends SMTP emails to recipients via SMTP .

31.1.2 Via a Network Share

If your application can't send messages to an email address, then it can send formatted Faxes or Emails to recipients via a network share. ENotify-AI can process submissions from a network share anywhere from the ENotify-AI server. Your applications should connect to the network share and place their files into the directory for processing.

31.1.3 Whichever method you choose, the following applies

ENotify-AI will provide a direct connection to the msXfax message store allowing fast fax submission and processing.

Fax or Email Requests are submitted in a structured form. The syntax of the request is the same whether submitted as a flat file or via email to ENotify-AI. The syntax is described later.

A standard report is included with ENotify-AI allowing on-demand or scheduled reporting detailing of all sent/failed faxes. The report is created either on disk or sent to a nominated SMTP address automatically. Depending on the message transport selected, the report is dispatched either via SMTP.

ENotify-AI allows the sender of fax requests to be notified automatically when their fax was processed with a confirmation message. This is activated when additional keywords are specified.

Reporting allows report selection by using two new keywords ChargeCode and BillingCode. See more detail later.

ENotify-AI provides the ability for a custom created word document to be specified as a coversheet in the Fax Request Format. Insertion tags in the word document correspond with keywords and values in the Fax Request email or flat file. Microsoft Word is OLE automated as a child process and the data in the Fax Request email/file is merged with the Word document. The result is a custom cover page rendered by Microsoft Word to deliver a professional looking fax cover page to the recipient.

Customizing Recipient cover sheets is very useful for business units who want separate coversheets for their business unit or even per host application.

Implementing the above feature requires a msXfax user profile be created with Username/Displayname matching the Sender Name in the Fax Request file. The

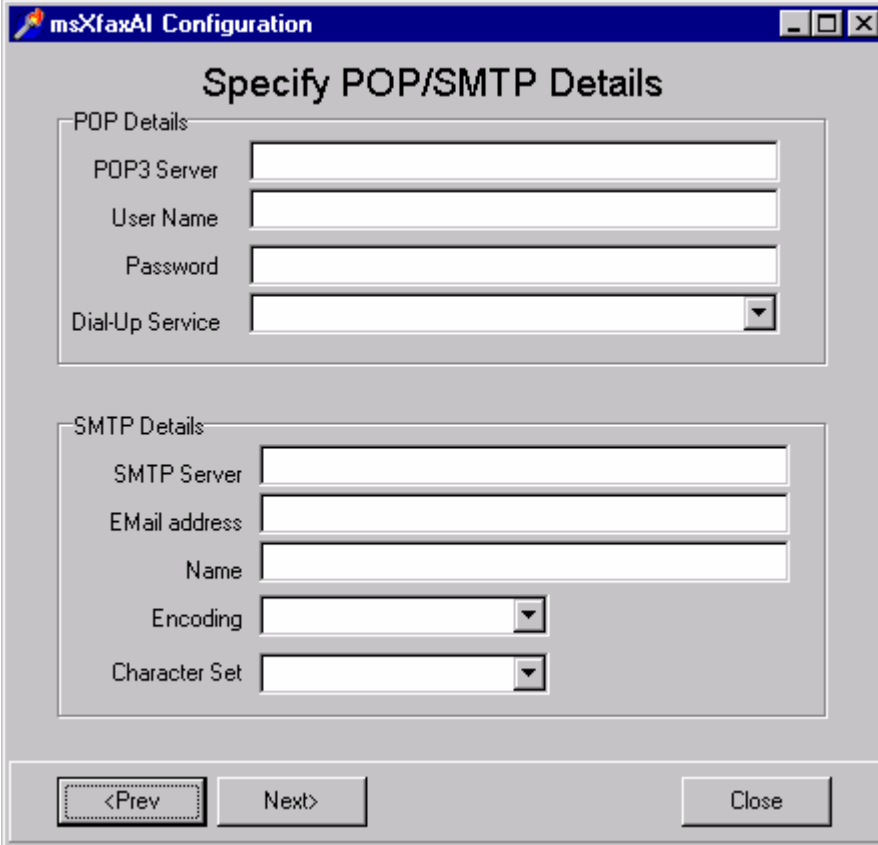
coversheet in the user profile should be set to blank, this is to override the global coversheet of msXfax.

31.2 Enotify-AI Configuration

The Enotify-AI Interface runs on the msXfax^{XP} Server computer.

Enotify-AI Interface is configured via a wizard. The wizard firstly requests how messages will be accepted by Enotify-AI and if audit logs are to be created. Requests can be received from email and flat files simultaneously.

31.2.1 Enotify-AI parameters to read a mailbox



The screenshot shows a Windows-style dialog box titled "msXfaxAI Configuration" with a sub-title "Specify POP/SMTP Details". The dialog is divided into two sections: "POP Details" and "SMTP Details".

POP Details:

- POP3 Server: Text input field
- User Name: Text input field
- Password: Text input field
- Dial-Up Service: Dropdown menu

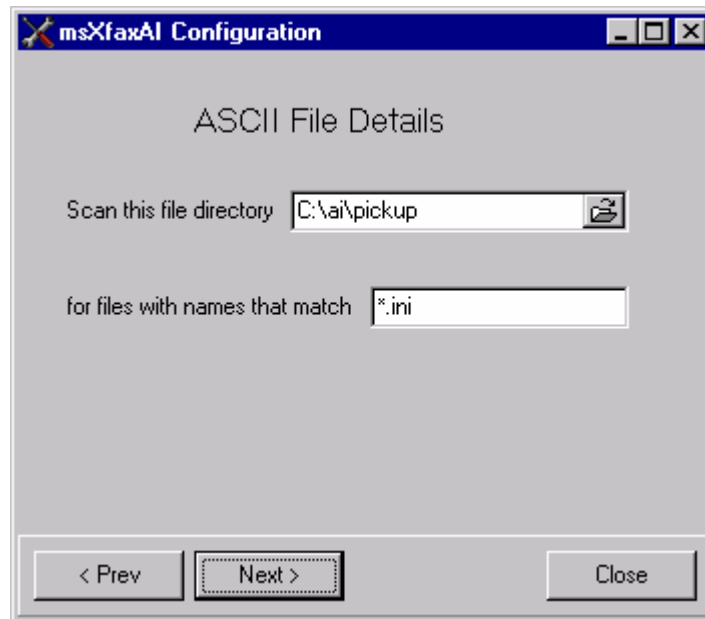
SMTP Details:

- SMTP Server: Text input field
- E-Mail address: Text input field
- Name: Text input field
- Encoding: Dropdown menu
- Character Set: Dropdown menu

At the bottom of the dialog, there are three buttons: "<Prev" (disabled), "Next>", and "Close".

- Most Host applications have SMTP capability allowing them to send simple text in the body of the email.

31.2.2 Using the Flat ASCII File approach



The wizard allows a configurable directory to be specified for scanning in regular intervals for control files. The above example scans for files with the 'INI' extension. Enotify-AI will support *.* as a parse string but will by design not process *.rpt, *.err and *.bkp files. The control files are simple text files that can be edited by notepad or any text based editor.

Enotify-AI will attempt to rename the control files before processing them to obtain exclusive access. If unable to rename the file, Enotify-AI will proceed to the next file.

31.3 Exception Handling

Enotify-AI logs all errors in the audit log if configured.

Request files that are picked from a directory that are syntactically incorrect are renamed with a file extension of 'err'. An error message is sent to the Administrator specified by the keyword ErrorMessageAddress. If no Administrator is specified no message is sent.

Requests via emails that are syntactically incorrect are sent to the Administrator specified by the keyword ErrorMessageAddress. If no Administrator is specified no message is sent.

The error message sent back to the configured Administrator will contain an explanatory message with the **Subject : msXfax Applications Interface Error**

Body :

The Sender's SMTP address in the AI configuration should be set to an real person's email address for error handling.

Valid control files are renamed to an extension of '.bkp' after processing. This allows the file to be simply renamed if a resend is required.

Note: **File extensions 'bkp', 'err' and 'rpt' are ignored by Enotify-AI.**

The contents of the email or the control file are the same. They are made up of sections, keywords and keyword values. Some are mandatory and others optional.

Version 1.4 of the specification has introduced the ability Enotify-AI to send emails. It was decided that a separate email control file addressing email requirements be created rather than including it in the fax control file.

A keyword approach will allow additional functionality to be added without requiring client programs to be re-written. The keywords are as follows:

Email Body and Control File Content for Fax Transmission.

[SplitFaxFile]	← <i>Optional</i>
[FaxTransmission]	← <i>Mandatory</i>
msXfax=Send	← <i>Mandatory</i>
[SenderDetails]	← <i>Mandatory</i>
Name= <i>Sender's Name to appear on fax, e.g. Accounts Department</i>	← <i>Mandatory</i>
Subject= <i>Any Subject</i>	← <i>Optional</i>
SendDate=CCYYMMDD	← <i>Optional</i>
SendTime=HHMMSS	← <i>Optional</i>
NotifySMTPUser=xxxxx@xxxxx	← <i>Optional</i>
StatusToReport= <i>Sent/Failed/Both</i>	← <i>Mandatory</i>
<i>(Mandatory if NotifySMTPUser Specified).</i>	
ChargeCode= <i>40 Character Text Field</i>	← <i>Optional</i>
[CoverPage]	
Location= <i>full path to Word cover page</i>	← <i>Mandatory if</i> <i>[CoverPage]</i> <i>Section</i> <i>Specified</i>
Variable Keyword1= <i>Variable value1</i>	← <i>Mandatory</i>
<i>(At least one keyword/value pair required).</i>	
Variable Keyword2= <i>Variable value2</i>	
Variable Name(n)= <i>Variable value(n)</i>	
[Destination]	← <i>Mandatory</i>
RecipientCount = <i>nnnn</i>	← <i>Mandatory</i>
[ErrorEmailAdmin]	← <i>Optional</i>

ErrorName= <i>Recipient's Name</i> (<i>only if ErrorMessageAdmin specified</i>)	← <i>Mandatory</i>
ErrorMessageAddress=xxxxx@xxxxxx <i>ErrorMessageAdmin specified</i>	← <i>Mandatory if</i>
[EmailSaveDetails]	← <i>Optional</i>
EmailFileName = <i>Name of file with extension</i> (<i>Mandatory only if EmailSaveDetails specified e.g N10254.txt</i>)	← <i>Mandatory</i>
[FAX1]	← <i>Mandatory</i>
Name= <i>Recipient's Name</i>	← <i>Mandatory</i>
FaxNumber= <i>nnnnnnnnnnnnnnnnnnnnnn</i>	← <i>Mandatory</i>
BillingCode= <i>40 Character Text Field</i>	← <i>Optional</i>
[FAX2]	← <i>Optional</i>
Name= <i>Recipient's Name</i>	← <i>Mandatory if</i> <i>[FAX2] specified</i>
FaxNumber= <i>nnnnnnnnnnnnnnnnnnnnnn</i>	← <i>Mandatory if</i> <i>[FAX2] specified</i>
BillingCode= <i>40 Character Text Field</i>	← <i>Optional</i>
[FAXn]	← <i>Optional</i>
Name= <i>Recipient's Name</i> <i>[FAXn] specified</i>	← <i>Mandatory if</i>
FaxNumber= <i>nnnnnnnnnnnnnnnnnnnnnn</i> <i>[FAXn] specified</i>	← <i>Mandatory if</i>
BillingCode= <i>40 Character Text Field</i>	← <i>Optional</i>
[FaxMemo]	← <i>Optional</i>
EOLDelimiter=CRLF or CR <i>[FaxMemo] specified</i>	← <i>Mandatory if</i>
LinesPerPage=60 <i>[FaxMemo] specified</i>	← <i>Mandatory if</i>
[MemoStart]	← <i>Optional</i>

Type plain text here that you wished to be faxed to the recipients specified. This will be sent after the cover sheet.

Note. If there are any email text attachments they will be sent after the memo text.

[MemoEnd] <i>MemoStart specified</i>	← <i>Mandatory if</i>
[FileAttachments]	← <i>Optional</i>
DeleteAttachments=Y or N <i>default Yes</i>	← <i>Optional</i>
FileCount= <i>n</i> <i>FileAttachment specified</i>	← <i>Mandatory if</i>
File1= <i>full file path</i> <i>e.g. N:\msxfax\invoice.txt</i> <i>FileAttachment specified</i>	← <i>Mandatory if</i>
File2= <i>full file path</i> <i>e.g. N:\msxfax\purchase.txt</i>	← <i>Optional</i>
FileN= <i>full file path</i> <i>e.g. N:\msxfax\pay.txt</i>	← <i>Optional</i>

Email Body and Control File Content for Email Transmission .

[SplitEmailFile]	← <i>Optional</i>
[EmailTransmission]	← <i>Mandatory</i>
msXemail=Send	← <i>Mandatory</i>
[SenderDetails]	← <i>Optional</i>
Name= <i>Sender's Name to appear on Email, overrides SMTP default in Registry</i>	← <i>Optional</i>
EmailAddress= <i>Sender's Email Address overrides SMTP address default in Registry</i>	← <i>Optional</i>
Subject= <i>Any Subject default blank</i>	← <i>Optional,</i>
[Destination]	← <i>Mandatory</i>
RecipientCount = <i>nnnn</i>	← <i>Mandatory</i>
[ErrorEmailAdmin]	← <i>Optional</i>
ErrorName= <i>Recipient's Name ErrorEmailAdmin specified</i>	← <i>Mandatory if</i>
ErrorEmailAddress=xxxxx@xxxxxx <i>ErrorEmailAdmin specified</i>	← <i>Mandatory if</i>
[EMAIL1]	← <i>Mandatory</i>
EmailName= <i>Recipient's Name</i>	← <i>Mandatory</i>
EmailAddress=xxxxxxxxxxxxxx	← <i>Mandatory</i>
[EMAIL2]	← <i>Optional</i>
EmailName= <i>Recipient's Name</i>	← <i>Optional</i>
EmailAddress=xxxxxxxxxxxxxx	← <i>Optional</i>
[EMAILn]	← <i>Optional</i>
EmailName= <i>Recipient's Name</i>	← <i>Optional</i>
EmailAddress=xxxxxxxxxxxxxx	← <i>Optional</i>
[MemoStart]	← <i>Optional</i>

Type plain text here that you wished to be faxed to the recipients specified. This will be sent after the cover sheet.

Note. If there are any email text attachments then they will be sent after the memo text.

[MemoEnd] <i>MemoStart specified</i>	← <i>Mandatory if</i>
[FileAttachments]	← <i>Optional</i>
DeleteAttachments=Y or N <i>default Yes</i>	← <i>Optional,</i>
FileCount=nnnn <i>FileAttachment specified</i>	← <i>Mandatory if</i>
File1=full file path <i>e.g. N:\msxfax\invoice.txt</i> <i>FileAttachment specified</i>	← <i>Mandatory if</i>
File2=full file path <i>e.g. N:\msxfax\purchase.txt</i>	← <i>Optional</i>
FileN=full file path <i>e.g. N:\msxfax\pay.txt</i>	← <i>Optional</i>

31.4 Fax/Email Keywords Explained

[SplitFaxFile]	<i>Section Name Optional for</i>
[SplitEmailFile]	<i>Fax/Email</i> Informs the Enotify-AI Parser that Multiple blocks of fax/email requests Follow.
[FaxTransmission]	<i>Section Name Mandatory for Fax</i>
msXfax=Send	Describes the process to perform. Without this keyword the fax request is ignored. <i>Mandatory Keyword with Fax</i>
[EmailTransmission]	<i>Section Name Mandatory for Email</i>
msXEmail=Send	Describes the process to perform. Without this keyword the Email request is ignored. <i>Mandatory Keyword with Email.</i>
[SenderDetails]	<i>Section Name Mandatory for Fax</i> <i>Optional for Email</i>
Name=	Specifies the Sender's Name. This is used in msxfax server to select user profiles. Without this keyword the fax request is ignored. <i>Special Note</i> It is important that when a Customised word cover page is specified that a user profile is created with the coversheet field set to blank so that the generated and not the global coversheet is used. <i>Mandatory Keyword with Fax</i> For Email Transmissions this name overrides the SMTP Sender Name configured via the set-up wizard. <i>Optional Keyword with Email</i>
EmailAddress=	Used in Email Transmissions to override the SMTP Sender Email Address configured via the set-up wizard. <i>Optional Keyword with Email</i>
Subject=	Specify any text subject <i>Optional Keyword for Fax and Email , default is blank Subject.</i>
SendDate=	Specify date to send fax in CCYYMMDD format, default is today. <i>Optional Keyword for Fax</i>
SendTime=	Specify time to send fax in HHMMSS format, default is now. <i>Optional Keyword for Fax</i>

NotifySMTPUser=	Specify a single SMTP address of a person that will receive notification of the fax status. Optional Keyword for Fax
StatusToReport=	Specify the status to report as Sent, Failed or Both. A report will be sent to the party nominated by Keyword NotifySMTPUser. Mandatory Keyword for Fax when NotifySMTPUser specified.
ChargeCode=	Specify a text string up to 40 characters that can be used to search on for reporting. Optional Keyword for Fax
[CoverPage]	Section Name Optional for Fax
Location=	Specify a full path to the MS Word 97/2000 document. A bad path will see the cover page processing skipped and the processing of this fax request aborted with log message placed in the Enotify-AI log file. Note. Special Registry integer MSVersion (integer) = 97 or 2000 can be created in \HKEY_LOCAL_MACHINE\ \Software\ Better Network Services Group\Enotify-AI to improve OLE Automation performance, defaults to handle 97 and 2000 with generic OLE calls but is slower. Special Registry DWORD value ShowOLE(DWORD) = 1 can be created to expose the automation of word to foreground, the Enotify-AI service must be started as a system ac/c and to interact with the desktop. Mandatory Keyword for Fax only when [CoverPage] section specified.
Variable Keyword(n)=	Specify a variable keyword with no embedded spaces e.g FirstName with a corresponding Variable value e.g FirstName=Joe. There is no limit to the number of variable keywords. The keywords must correspond to keyword tags in the MS Word document e.g [FirstName] specified by the location keyword.
[Destination]	Section Name Mandatory for Fax and Email
RecipientCount =	Specifies the number of fax recipients in this transmission. Maximum figure is 9999. Without this keyword the fax and email request is ignored. Mandatory Keyword for Fax and Email
[ErrorEmailAdmin]	Section Name Optional for Fax and Email
ErrorName=	The Friendly Name of the email recipient to receive error messages. Mandatory Keyword for Fax and Email when [ErrorEmailAdmin] Specified.

ErrorEmailAddress=	The Email address of the email recipient to receive error messages in the format name@aaaa.com Mandatory Keyword for Fax and Email when [ErrorEmailAdmin] Specified.
[EmailSaveDetails]	Section Name Optional for Fax and Email
EmailFileName =	Specify the unique file name the email will be save as to disk in the configured directory. Some applications cannot create text files for ENotify-AI to process but can send emails. By specifying a filename the email is saved to the pickup directory that ENotify-AI is checking. Once processed the file is renamed with .bkp extension. Retransmission is easy because the file need simply be renamed back without going back to the source application. Note all attachments are saved to the configured directory as their original names. Mandatory Keyword for Fax and Email when [EmailSaveDetails] Specified.
[FAXn]	Section Name Mandatory for Fax Note. <i>n</i> is the recipient number i.e. 1. <i>n</i> can be between 1 – 9999. At least one recipient must be specified or the fax request will be ignored.
Name=	Specify the Fax Recipient's name. Without this keyword the fax request is ignored. Mandatory Keyword when [FAXn] Specified.
FaxNumber=	Specify the Recipient's fax number. The fax number specified should include international and area code prefixes if required in addition to the fax number. Without this keyword the fax request is ignored. Mandatory Keyword when [FAXn] Specified.
BillingCode=	Specify a text string up to 40 characters that can be used to search on for reporting. Useful when searching for a particular fax recipient Optional Keyword for Fax
[Emailn]	Section Name Mandatory with Email Note. <i>n</i> is the recipient number i.e. 1. <i>n</i> can be between 1 – 9999. At least one email recipient must be specified or the request will be ignored.
EmailName=	Specify the Recipient's name. Without this keyword the email request is ignored. Mandatory Keyword when [EmailN] Specified.
EmailAddress=	Specify the Recipient's Email Address format name@aaaa.com Mandatory Keyword when [EmailN] Specified.
[FaxMemo]	Section Name Optional with Fax
EOLDelimiter=	Specify the End of Line delimiters for the following memo. Valid values are CRLF or CR. Default is CRLF. Optional Keyword for Fax

LinesPerPage=	Specify the Lines per page for the following memo. Default is 60 lines per page. <i>Optional Keyword for Fax</i>
[MemoStart]	<i>Section Name Optional for Fax and Email</i> Used to indicate the start of the Memo. Memo text is to follow this section and be formatted with padded spaces and lines as required. The EOLDelimiter will determine when a page skip is to occur for fax but has not relevance for email transmissions.
[MemoEnd]	<i>Section Name Mandatory for Fax and Email when MemoStart specified.</i> Used to indicate the end of the memo.
[FileAttachments]	<i>Section Name Optional for Fax and Email</i> Specified when text file attachments are to be processed from a pickup directory
DeleteAttachments=	Specify 'Y' or 'N' whether the attachments are to be deleted after processing. Default is Y for Yes. <i>Optional Keyword for Fax and Email</i>
FileCount=	Specify the number of attachments. Range is 1 to 9999. <i>Mandatory Keyword for Fax and Email when FileAttachments Section specified.</i>
FileN=	<i>N</i> is the attachment number whose Range is 1 to 9999. Specify the full path of the attachment e.g. N:\msxfax\pickup\invoice.txt <i>Mandatory Keyword for Fax and Email when FileAttachments Section specified.</i>

31.5 Email Body and Control File Content for Fax Reporting only

[FaxTransmission]	← <i>Mandatory</i>
msXfax=Report	← <i>Mandatory.</i>
StatusToReport=Sent/Failed/Both (default Failed)	← <i>Optional</i>
ReportDate=CCYYMMDD	← <i>Optional</i>

31.6 Reporting Keywords Explained

[FaxTransmission]	<i>Section Name Mandatory</i>
msXfax=Report	Describes the process to perform. Without this keyword the fax request is ignored. <i>Mandatory Keyword.</i>
StatusToReport=	Specify 'Sent', 'Failed' or 'Both' <i>Mandatory Keyword</i>
ReportDate=	Specify date to report from CCYYMMDD format, default is today. <i>Optional Keyword</i>
ChargeCode=	Specify up to a 40 character string to search the Statistics Database in conjunction with StatusToReport, ReportDate and BillingCode fields. It is associated with the sender of the fax and typically can be used to locate all faxes queued by this category. Note This ChargeCode Value must be specified an initial fax request to enter the Statistics Database. <i>Optional Keyword</i>
BillingCode=	Specify up to a 40 character string to search the Statistics Database in conjunction with StatusToReport, ReportDate and ChargeCode fields. It is associated with the recipient of the fax and typically can be used to locate all faxes queued to this recipient. Note This BillingCode Value must be specified an initial fax request to enter the Statistics Database. <i>Optional Keyword</i>

Note: **Enotify-ai will report on faxes only and not on emails that have been sent out.**

Your messaging system's audit logs should be used to track emails sent by Enotify-AI.

Reporting requests made to Enotify-AI using email will result in Enotify-AI sending the report to the originator's email address. If a report request is placed in a shared mapped directory for processing, the resultant reports will be placed in the same directory with a similar filename to the fax request except that the extension will be '.rpt'. So if the fax request filename was fax12456.ini the report file name will be fax12456.rpt.

31.7 Calling Enotify-AI as a Data Link Library (DLL)

If you wish to integrate within your application please contact BNS Group support@bnsgroup.com.au for programming code examples.

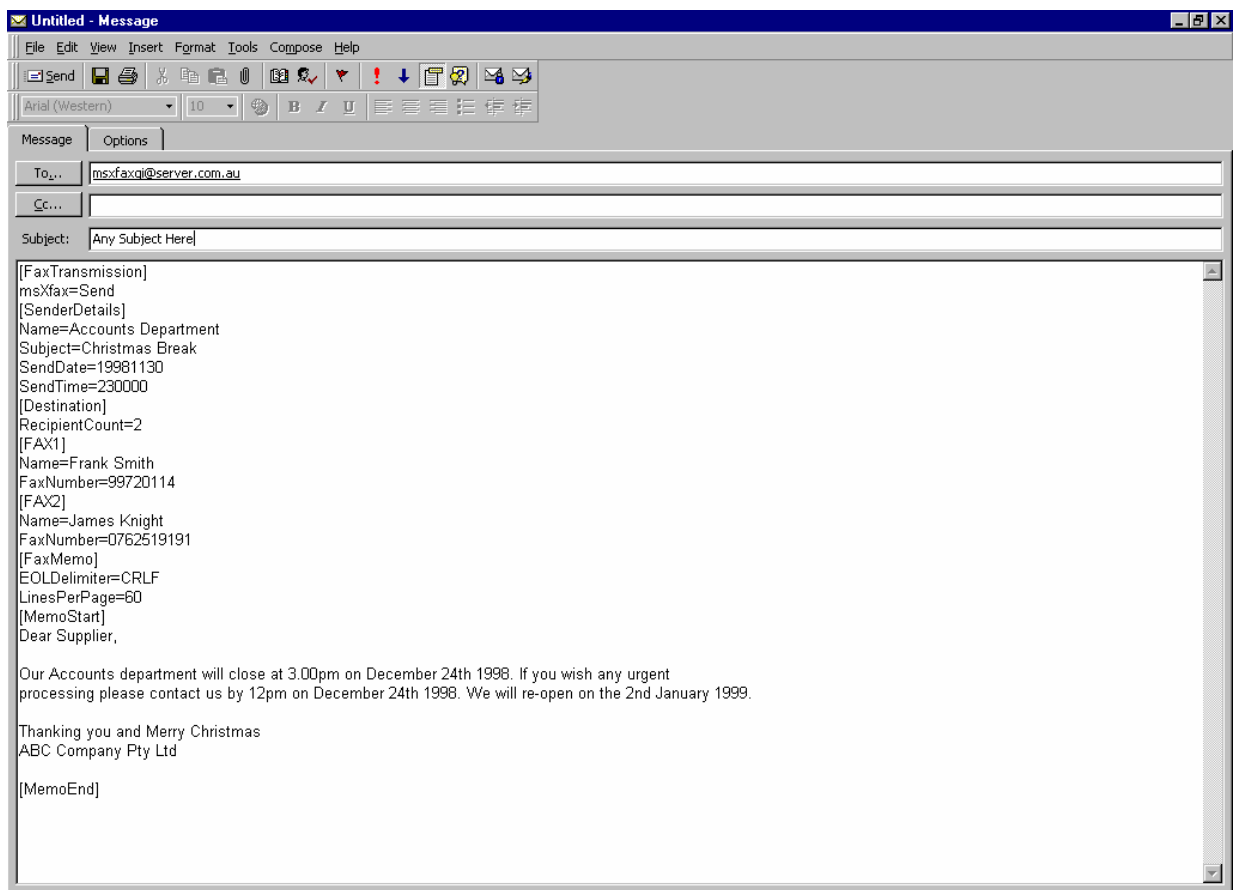
31.8 Automatically Purging files in the pickup directory

Enotify-AI includes a service which will auto delete old pickup files. This saves the need for an administrator to manually clean up old files. A registry entry needs to be created :

31.8.1 Examples of FAX Requests

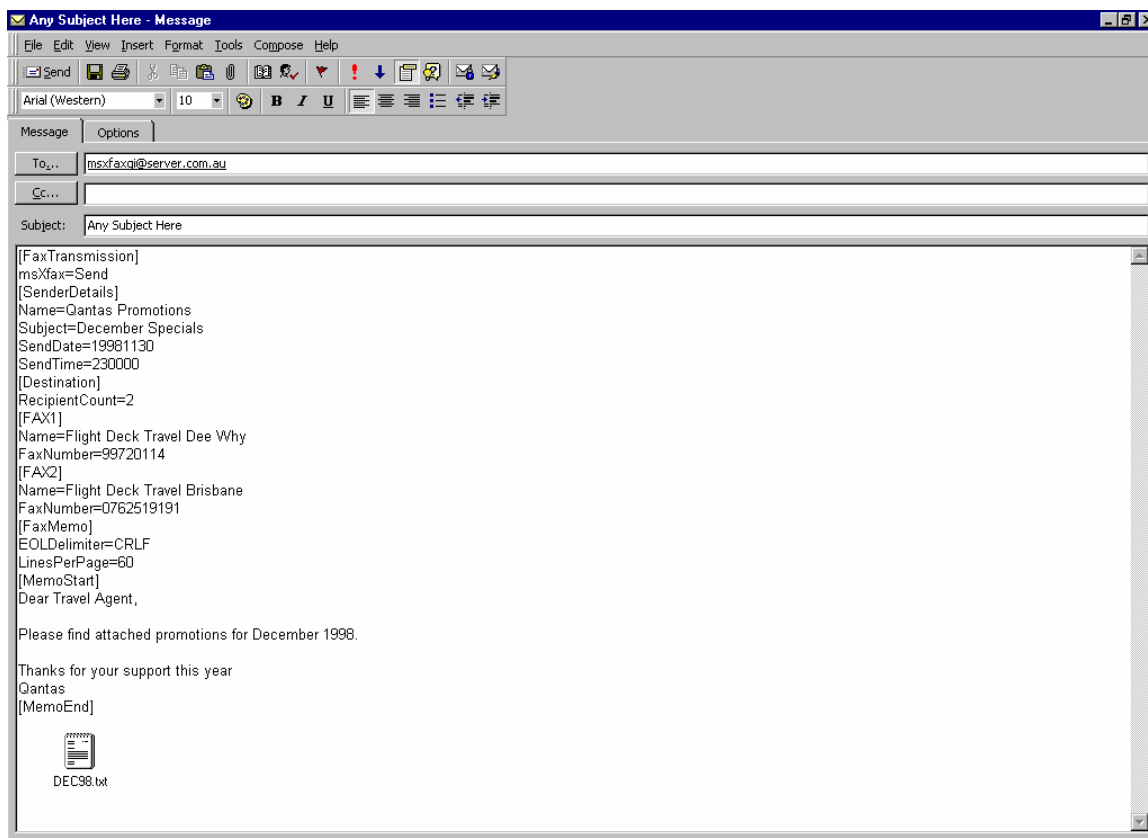
31.8.1.1 A Fax request using email

In this example an email message is sent to the Enotify-AI Interface for processing. Note. That all mandatory and some optional keywords are specified. In this example only a short memo is sent to two recipients.

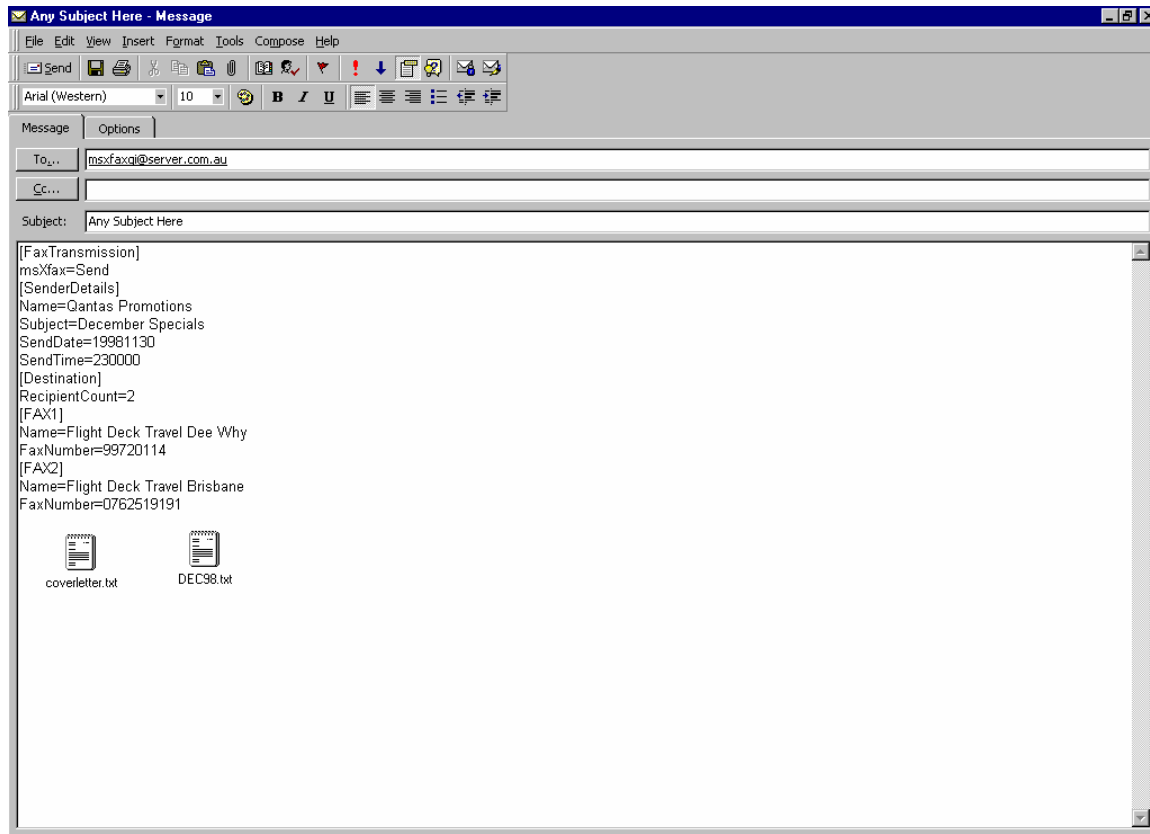


31.8.1.2 A Fax request using SMTP with text attachments.

Any number of text or msxfax supported attachments can be added. In this example an email message is sent to the Enotify-AI Interface for processing. Note: all mandatory and some optional keywords are specified. In this example a short memo followed by a text attachment is sent to two recipients.

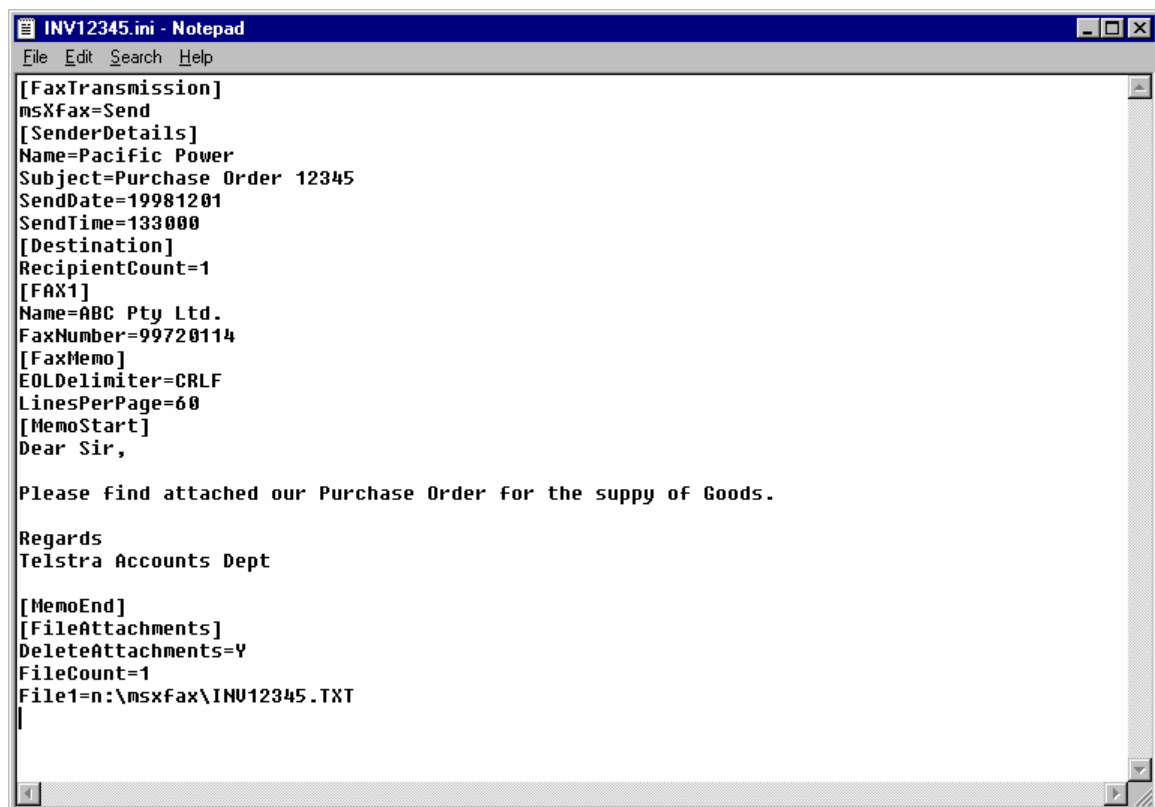


31.8.1.3 Another Fax request using SMTP with text attachments.



31.8.1.4 A Fax request using a flat ASCII file.

In this example a Host application creates a control file shown below in the format described previously. The application will place the control file and file attachments into a configurable directory on a shared network drive. The Enotify-AI interface will scan this directory and process all control files, submitting all fax requests to the msXfax Fax Server. The control file and optionally the attachment will be deleted from the directory.



```
INV12345.ini - Notepad
File Edit Search Help

[FaxTransmission]
msXfax=Send
[SenderDetails]
Name=Pacific Power
Subject=Purchase Order 12345
SendDate=19981201
SendTime=133000
[Destination]
RecipientCount=1
[FAX1]
Name=ABC Pty Ltd.
FaxNumber=99720114
[FaxMemo]
EOLDelimiter=CRLF
LinesPerPage=60
[MemoStart]
Dear Sir,

Please find attached our Purchase Order for the supply of Goods.

Regards
Telstra Accounts Dept

[MemoEnd]
[FileAttachments]
DeleteAttachments=Y
FileCount=1
File1=n:\msxfax\INV12345.TXT
|
```

31.8.1.5 A multi-Fax Request using a flat file with the [SplitFaxFile] keyword.

[SplitFaxFile]
[FaxTransmission]
msXfax=Send
[SenderDetails]
Name=QUEENSLAND STATE OFFICE
Subject=000005665/02031160
SendDate=20000119
SendTime=161336
[Destination]
RecipientCount=1
[ErrorMessageAdmin]
ErrorName=FMISEFTFAX
ErrorEmailAddress=fred@bnsgroup.com.au
[FAX1]
Name=DASFLEET
FaxNumber=0299720114
[FaxMemo]
EOLDelimiter=CRLF
LinesPerPage=60
[MemoStart]

AusAID - AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
REMITTANCE ADVICE

Subject: 6621-200007 AUSAID Date: 20000119

Voucher Number: 02031160 Cheque Number: 000005665 Vendor Id.: DAS005

summary invoice 6621-200007
AA BBBB

[MemoEnd]
[SplitFaxFile]
[FaxTransmission]
msXfax=Send
[SenderDetails]
Name=FINANCE & ADMN SUPPORTSECTION
Subject=000005666/02031157
SendDate=20000119
SendTime=161336
[Destination]
RecipientCount=1
[ErrorMessageAdmin]
ErrorName=FMISEFTFAX
ErrorEmailAddress=fred@bnsgroup.com.au
[FAX1]
Name=DATASCAPE INFORMATION P/L
FaxNumber=0299720114
[FaxMemo]
EOLDelimiter=CRLF
LinesPerPage=60
[MemoStart]

AusAID - AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT
REMITTANCE ADVICE

Subject: CS-107-01 AUSAID Date: 20000119

Voucher Number: 02031157 Cheque Number: 000005666 Vendor Id.: DAT050

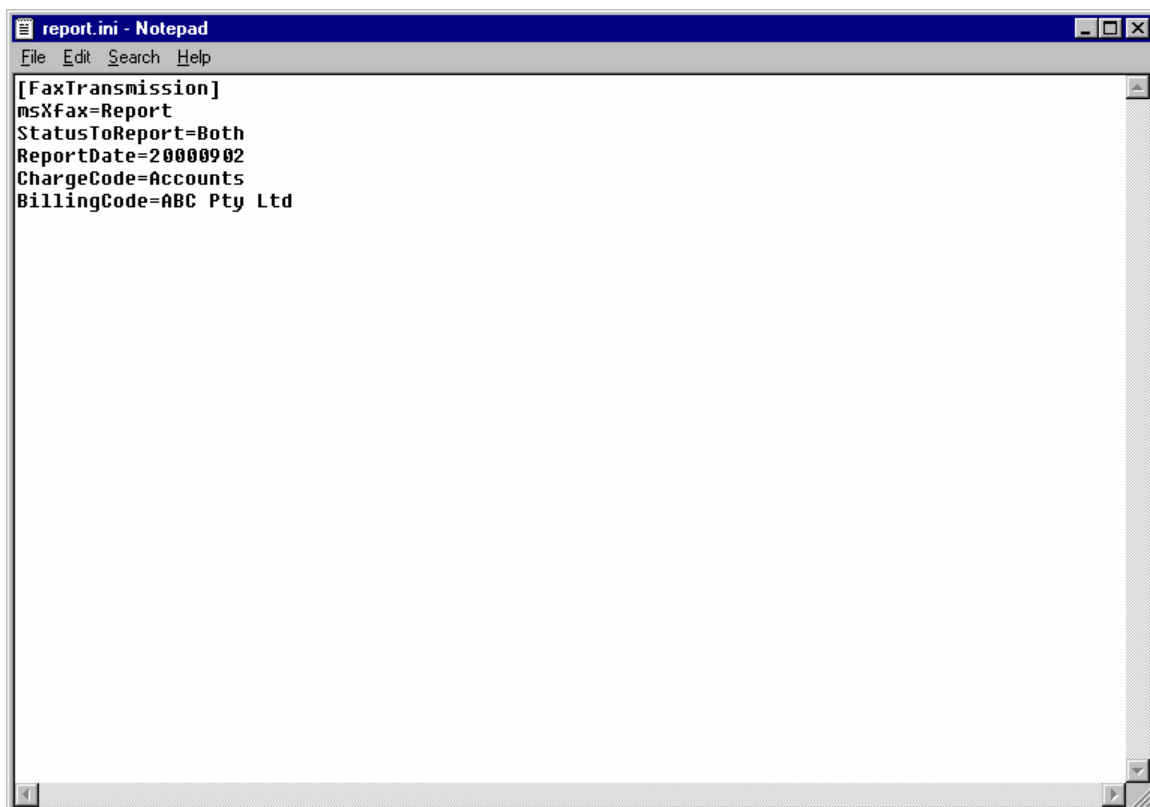
CATALOGUEING CONTRACT FOR SERVICES FROM 1/7/99-31/8/99
AA BBBB

[MemoEnd]

31.8.1.6 A Report request using a flat ASCII file.

In this example a Host application creates a control file shown below in the format described previously. The application will place the control file into a configurable directory on a shared network drive. The Enotify-AI interface will scan this directory and process all fax report requests. The control file will be deleted from the directory and replaced with a resultant text report file with an extension of '.rpt'.

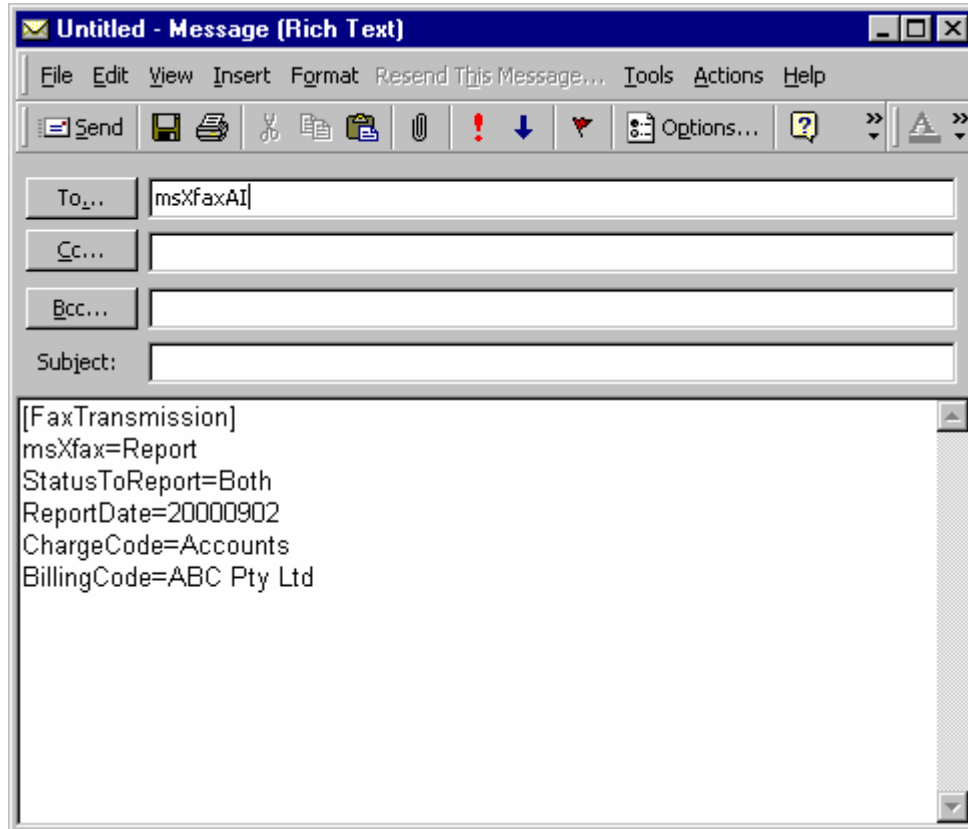
In this example all optional fields are specified.



```
report.ini - Notepad
File Edit Search Help
[FaxTransmission]
msXfax=Report
StatusToReport=Both
ReportDate=20000902
ChargeCode=Accounts
BillingCode=ABC Pty Ltd
```

31.8.1.7 A Report request using SMTP.

In this example a report request is sent to Enotify-AI as an email message for processing. In this example all optional fields are specified.



A sample report follows as an example of a report that will be returned to the SMTP or Exchange user as an attachment or as a text file in a shared mapped directory. Formatting and layout may vary.

Enotify-AI Fax Transmission Statistics
 =====

Records selected from 20-Mar-2000 onwards

Time Sent	Retry Count	Duration Seconds	Total Pages Sent	Fax Number Dialled	Error Results
20/03/2000 18:02:38	0	65	2	0299720114	
Subject:	000005668/02031158				
Recipient:	RICARDO SMITH PTY LTD				
Billing Code:					
Charge Code:					
20/03/2000 18:03:53	0	74	2	0299720114	
Subject:	000005667/02031159				
Recipient:	GRAHAM, HEATHER				
Billing Code:					
Charge Code:					
20/03/2000 18:05:07	0	72	2	0299720114	
Subject:	000005666/02031157				
Recipient:	DATASCAPE INFORMATION P/L				
Billing Code:					
Charge Code:					
20/03/2000 18:06:30	0	82	2	0299720114	
Subject:	000005665/02031160				
Recipient:	DASFLEET				
Billing Code:					
Charge Code:					
Total		293	8		

31.8.1.8 Another Fax request using email with an auto notify keyword set, a charge and billing code set, and custom Cover Page.

```
[FaxTransmission]
msXfax=Send
[SenderDetails]
Name=TEST
Subject=403833
NotifySMTPUser=support@bnsigroup.com           ← auto notify to this party after fax completion
StatusToReport=Both
ChargeCode=Accounts
[CoverPage]
Location=C:\pickup\coverpage\cover.doc         ← location of cover page
TAFENAME=TAFE Sydney
TAFEPaymentContact=Henry Bittner
SenderContactNumber=99720114
Subject=Remittance Advice
ParentPayeeName=ABC Pty Ltd
ParentPaymentContact= Joe Bloggs
ParentPaymentPhone=991234567
NoteText= Please be advised of this Purchase Order 4038333
[Destination]
RecipientCount=1
[ErrorMessageAdmin]
ErrorName=Paul O'Neill
ErrorEmailAddress=support@bnsigroup.com
[FAX1]
Name=026286
FaxNumber=92686144
BillingCode=ABC Pty Ltd
[FaxMemo]
[MemoStart]
```

Purchase Order
No. 403833

Date 24/02/00

```
CHRIS BENES PTY LTD
38 Cambridge St
PADDINGTON NSW 2021
Delivery Details:
Advanced Technology Centre
```

```
Attn:
DEAR SIR Free into Store
```

Please supply the following.
Item Qty

001	6.00 EA	your fax dated 15/02/00	11111111111111111111111111111111	
			22222222222222222222222222222222	
			33333333333333333333333333333333	
			44444444444444444444444444444444	
			Supplier	
			Part No:	
			@ \$967.00 EA	Item Total \$5802.00
			Due Date 05/03/00	
			Clauses: 0010	
002	15.00 EA		11111111111111111111111111111111	
			22222222222222222222222222222222	
			33333333333333333333333333333333	
			44444444444444444444444444444444	
			Supplier	
			Part No:	
			@ \$1573.00 EA	Item Total \$23595.00
			Due Date 05/03/00	
			Clauses: 0010	
				Order Total \$29397.00

Clauses applying:
0010 Price(s) not subject to variation.

Enquiries: C ~COLLIE QUOTE BUYER
Phone:

CONDITIONS OF ORDER

1. Delivery - Delivery of goods will only be accepted for

the total purchase order or for the individual quantities of items listed on the purchase order. Delivery of separate component parts making up an item are not acceptable.

2. Goods to be new - All goods shall be new and unused and clearly identified with Pacific Power purchase order number.
3. Place of payment - Payments will be made at the office of Pacific Power in Sydney or at the option of Pacific Power by a cheque posted to the supplier at last known address or by electronic funds transfer.
4. Lodgement of invoices - Invoices shall be addressed to the Payments Administration Manager, Pacific Power, GPO Box 5257, Sydney 2001 or where the supplier is located within the general area of a power station to which the order refers, to the Manager of the respective power station.
5. Terms of payment - Invoices are payable following proper performance of the order not later than the end of the following month in which an invoice is received from the supplier after the delivery or part delivery (where provided for) of the goods.
6. Rejection - The goods may be rejected within 30 days where a defect in or damage to the goods occur by reason of faulty materials, workmanship or design are not in accordance with the purchase order. the supplier shall remove and repair or replace goods at their own expense or Pacific Power at its option may return goods to the supplier and recover the cost incurred from the supplier.
7. Risk and Property - The risk and property in any goods shall pass upon the goods being unloaded at the delivery point or at point of pick up by Pacific Power.
8. Pacific Power shall be at the liberty to cancel the contract if the contractor fails to comply with the obligations under the contract in relation to the time for the completion of the works. Pacific Power will not exercise its rights of cancellation without giving consideration to the causes of the contractors failure to comply with obligations under the contract.

PAYMENT OF ACCOUNTS

If payment is not made within the time provided for in the order as specified under Conditions of Order Point 5, the matter should be taken up with the Accounts Enquiry Officer on (02) 9268 7032.

Specific complaints in respect of overdue payments may be taken up with Pacific Power's Accounts Complaints Officer, the Payments Administration Manager, on (02) 9268 7087. The Minister may award penalty interest if payment is not made with the prescribed time determined herein.

Sales Tax Assessment Act 1992 Quotation of Exemption
Declaration to the Commissioner of Taxation under section 86
I hereby declare that these goods are free of sales
tax as they are for use by Pacific Power.
[MemoEnd]

Example Word Cover Page

TEST SYDNEY

Fax

Sender :[TESTName]

Sender Contact:[TESTPaymentContact]

Sender Contact Number: [TESTContactNumber]

Subject:[Subject]

Receiver:[ParentPayeeName]

Receiver Contact :[ParentPaymentContact]

Receiver Contact Number : [ParentPaymentPhone]

Comments :[NoteText]

31.8.19 A multi-Email Request using a flat file with the [SplitEmailFile] keyword.

```
[SplitEmailFile]
[EmailTransmission]
msXemail=Send
[SenderDetails]
Name=QUEENSLAND STATE OFFICE
EmailAddress=fred@bnsgroup.com.au
Subject=000005665/02031160
[Destination]
RecipientCount=1
[ErrorEmailAdmin]
ErrorName=FMISEFTFAX
ErrorEmailAddress=fred@bnsgroup.com.au
[EMAIL1]
EmailName=DASFLEET
EmailAddress=fred@bnsgroup.com.au
[MemoStart]
```

AusAID - AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT

REMITTANCE ADVICE

Subject: 6621-200007 AUSAID Date: 20000119

Voucher Number: 02031160 Cheque Number: 000005665 Vendor Id.: DAS005

```
summary invoice 6621-200007
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA BBBBXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE
```

```
[MemoEnd]
[SplitEmailFile]
[EmailTransmission]
msXemail=Send
[SenderDetails]
Name=FINANCE & ADMN SUPPORTSECTION
EmailAddress=fred@bnsgroup.com.au
Subject=000005666/02031157
[Destination]
RecipientCount=1
[ErrorEmailAdmin]
ErrorName=FMISEFTFAX
ErrorEmailAddress=fred@bnsgroup.com.au
[EMAIL1]
EmailName=DATASCAPE INFORMATION P/L
EmailAddress=fred@bnsgroup.com.au
[MemoStart]
```

AusAID - AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT

REMITTANCE ADVICE

Subject: CS-107-01 AUSAID Date: 20000119

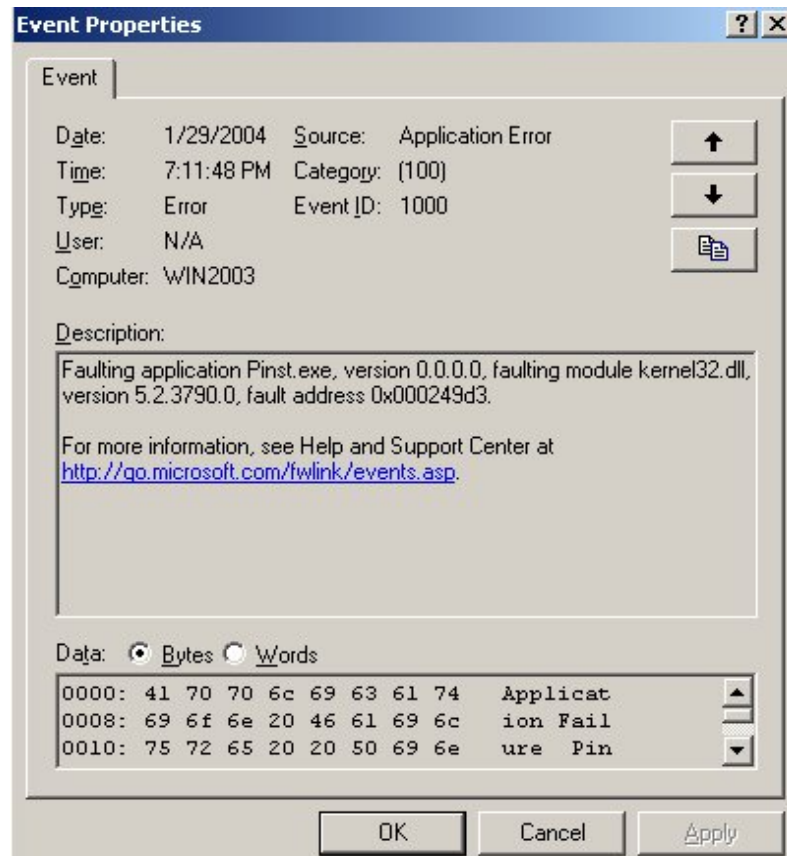
Voucher Number: 02031157 Cheque Number: 000005666 Vendor Id.: DAT050

```
CATALOGUEING CONTRACT FOR SERVICES FROM 1/7/99-31/8/99
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA BBBBXXXXXXXXXXXXXXXXXXXXXXXXXXXX
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE
```

[MemoEnd]

32 Notes to beta partners using Windows 2003 Server:

Attempting to install the printer driver results in a Windows Event as follows:



Unlike Windows 2000 server and all other Windows software, Windows 2003 Server will not allow kernel mode printer drivers to install by default.

- To allow kernel mode printer drivers to install – select Start, Run, GPEDIT.MSC
- Select Disable as shown below

