# Fax Server Quick Configuration Guide

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# 1 Introduction

## 1.1 Overview

**Note: This document only applies to snappy fax server version 3 and addresses the mandatory settings needed to quickly configure the fax server and get it up and running. It does not address settings for optional settings categories related to user preferences. Those topics are covered in the general help for the fax server software.**

A brief overview of how the fax server software works and interacts with the client software follows. Please read this information as it will help you gain an understanding of the underlying concepts and make the setup procedure more intuitive.

First, it should be noted that the fax server can be installed on *any* network computer. It does not have to be a file server or network server in any sense of the word *server.* The only requirement is that all client computers on the network that will utilize the snappy fax client software must have *file level* access to the fax server's fax data files.

The configuration of the fax server involves two critical categories and a number of other optional settings categories.

The critical categories are:

- Modems
- Network Clients

**Modems**

Note: the term *modem* used here does not mean cable modems or dsl modems designed to provide broadband (high speed) internet access. These modems are not fax devices and cannot send or receive faxes.

We strongly recommend fax class 2.1 capable modems with high speed "super G3" and error correction capability. With Class 2.1 modems, the modem hardware performs most of the fax session processing which reduces the load on the computer's cpu, this is especially important if you are using multiple modems/fax lines.

Refer the topic on modems for more of a discussion on which modems are appropriate for your system.

The fax server can *theoretically* support up to 32 fax modems. The practical limit will depend on many factors including task load on the server, memory available and cpu speed. In practice in our installed base, 8 modems should be easily handled by a nicely equipped computer, we have knowledge of some users utilizing 16 modems.

The fax server supports multiple concurrent incoming and outgoing fax sessions. For example, you might have two modems simultaneously transmitting different faxes while two other modems are receiving faxes from two different fax lines simultaneously. Each fax modem must be connected to a separate phone line for sending and receiving faxes.

Each modem configured in the fax server can be configured for:

- Sending faxes only
- Receiving faxes only
- Both Sending and Receiving

Modems that are configured for sending only, are referred to as *primary* modems. Modems configured for both sending and receiving are referred to as *secondary* modems. A secondary modem will only be assigned an outbound fax job if all primary modems are currently busy with transmissions or, of course, if it is the only modem configured for use with the fax server.

If a secondary modem is used to transmit an outbound fax job, after the transmission, it will be put back into answer mode in order to begin receiving faxes again.

When a fax is received by the fax server, an entry is recorded in the fax server's database and the information as to date, time, calling fax CSID, number of pages , etc. along with the fax image are stored to the incoming fax data file. The fax server *does not* communicate with the client software in any way to tell it that a fax has arrived. This type of activity is performed by the client software, it will periodically scan the fax server's incoming fax file to see if any new faxes have been received. The process of updating the client software's data with information about faxes that have been received by the fax server and the process of updating the client software's outgoing fax data to reflect the status of jobs that have been submitted to the fax server is handled entirely by the client software. The fax server is not involved in this activity at all, presumably the fax server has quite enough to worry about with multiple concurrent inbound and outbound fax sessions. Involving the fax server in multiple update procedures on client computers would unnecessarily increase the load on the server and perhaps interfere with the time-critical tasks of fax transmissions.

## Network Clients

It should be understood that the fax server software cannot initiate an outgoing fax job on its own. The fax server only transmits fax jobs that are submitted to it by the client software. The client submitting the fax job must be a supported or enabled network client and its network name must be known to the fax server and included in its list of supported clients.

Any fax job submitted to the fax server from a non-supported network client computer *will be ignored by the fax server.*

When a fax job is *submitted* by the client software the process is quite simple...

The client software prepares the job along with the fax image and writes a record into the fax server's pending jobs file. This file is located in the fax server's data folder and is named jobs.sfdata. The fax server continuously scans this file for outbound fax jobs that need to be processed. The client software does not communicate with the fax server via tcp/ip or any other network protocol and it is not necessary that the fax server software be running in order for the client to successfully submit an outbound fax job.

***For this reason, it is critical that the client computer have sufficient privileges on the fax server's data folder to enable it to write to the fax server's jobs file.***

*If you will be using the fax server only for receiving faxes, it is not necessary to configure any network clients unless you will also be using the client software to retrieve and view incoming faxes that have been received by the fax server.*

# 2 Configuring the Fax Server Software

## 2.1 Windows Server Versions - Special Considerations

With Windows Server Versions (Server 2003, 2008, 2012 and Small Business Server) special considerations may need to be given, depending on the 'Roles' you have configured in Windows Server.

**Fax Server Role**

To use snappy fax server with Windows server versions, it is not necessary to have the 'Fax Server' Role installed and configured in Windows Server. If you have the 'Fax Server' Role installed and configured in Windows Server then you should take 1 of the following 2 actions:

- Remove the 'Fax Server' Role from Windows Server. From the Server Manager, right click on the top node in the left pane 'Server Manager' and select 'Remove Roles' from the popup menu. Remove the 'Fax Server' Role.
- If removing the role is not desired then you will need to disable the devices (modems) that have been configured. Expand the nodes beneath the 'Fax Server' until you see the 'Devices' node, your modem(s) may be shown in subnodes beneath this node. If so, right click on each modem and uncheck the 'Auto Receive' and 'Send' items in the popup menu or select 'Properties' from the popup menu and disable the device for receiving and sending on the Properties page.

If the 'Fax Server' Role is installed and devices are configured and you do not disable the devices or remove the Role, snappy fax server will be denied access to the modems' com ports and will not be able to send or receive faxes.

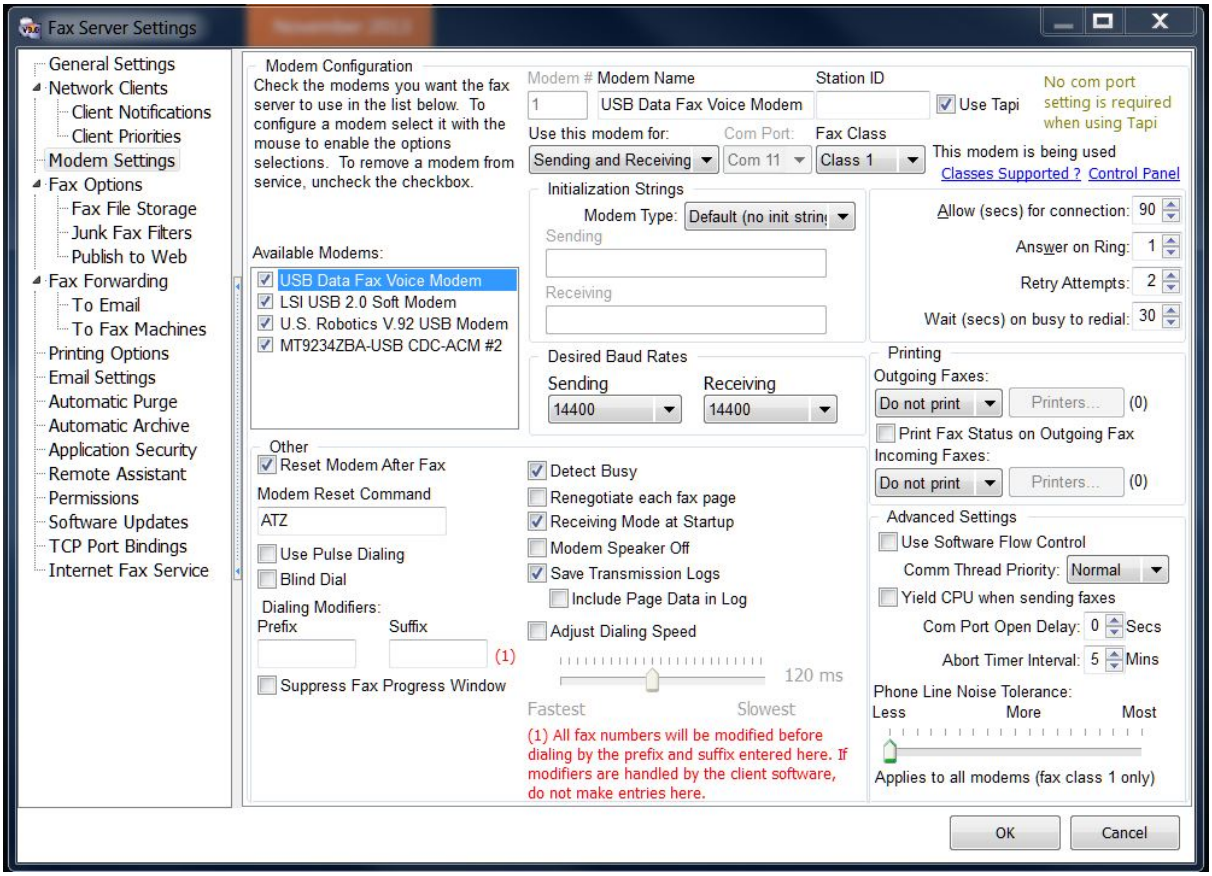
**Network Policy and Remote Access Role**

If the 'Network Policy and Remote Access Role' is installed and configured to have Windows server listen for incoming network connections on a dialup modem connection, this must be disabled. If this is not done, snappy fax server will be prevented from using the modem(s) for sending and receiving faxes.

Expand the 'Network Policy and Remote Access Role' node and look for 'Routing and Remote Access', expand further and examine the 'Ports' node. Right click on the 'Ports' node and select 'Properties' from the popup menu. Select each fax modem on your computer and click the 'Configure...' button and then disable (uncheck) the 'Remote access connections (inbound only)' and 'Demand dialing routing connections (inbound and outbound)' checkboxes.

## 2.2 Configuring Modems

Here is a screenshot of the modem configuration screen in the fax server (A discussion follows):




**Available Modems:**

The fax server will automatically list all installed modems and / or modem drivers. You will notice in the screenshot above that 'Standard 56000 bps Modem' is shown. This is not a real modem but is listed because the standard windows modem driver has been installed on this computer. You should only tick the checkboxes for 'real' modems installed in your computer. When you select a modem in the list by clicking it with the mouse, the
settings specific to that modem will be represented on this settings screen.

**Use this modem for:**

A modem can be configured for:

- Sending faxes only
- Receiving faxes only
- Both sending and receiving

Select the option you want for this modem.

Note: if you have heavy outgoing fax volume then you may want to reserve one or more modems for receiving only otherwise a modem will never be in answer mode long enough to receive faxes.

When fax jobs are available for transmission, the job scheduler will first look at primary modems available for transmission. Remember, a *primary* modem is one that is configured only for sending faxes. If no primary modems are currently available, it will select a *secondary* modem, shut down fax

receive mode on that modem and use it for transmission. A *secondary* modem is one configured for both sending and receiving. Modems configured only for receiving faxes will never be used for an outbound fax transmission. As you can see, heavy outbound fax volume will not leave much receiving time for modems configured for both sending and receiving.

**Com Port and Use Tapi:**

Beginning with build 3.12.1.1 of the fax server software, Use Tapi is checked by default. When Tapi (telephony application programming interface) is used, you do not need to know which com port your modem is connected to. An additional advantage of Tapi is that it is capable of communicating with the modem even if another application (using tapi) has an open connection to the modem.

**If you choose not to use Tapi...**

Every modem has its own com port assigned in the Windows operating system. This com port is the means by which software sends commands and data to the modem and the means by which it receives command responses and data from the modem. It is critical that the correct com port be selected here. The fax server will automatically populated the drop down list of available com ports by querying Windows as to which com ports are configured on the computer.

If you are not certain as to the correct com port, click the link 'Show Modems in Control Panel', to call up the Windows Control panel applet for phone and modems. You can verify the correct com port there and make your selection here accordingly.

Note that a com port on your computer cannot be shared by more than one application or process. If another process is using the com port then the fax server will not have access to it. If the fax server at any time reports that another process is using a com port then you must trust this because Windows is returning an error code indicating just that and on your computer Windows is GOD ! You may not know *what* process is using the port but you will be given the task of discovering which process it is as Windows does not provide any way for the fax server to discover it for you. Many times, the Microsoft fax service is the offending process, if that is the case then refer to the section on disabling other fax services to resolve the conflict.

**Fax Class:**

If you know what fax classes your modem supports, you can choose 'Detect' here. Snappy fax will query the modem and use the highest fax class that the modem supports. If you are using the SG3 edition of the fax server software, always select Class 2.1 here, assuming that all of your modems do support class 2.1. When you specifically select class 2.1, the baud rates will default to 33600 as opposed to 14400 and high speed fax with error correction will be used when possible, depending on the capability of the remote fax.

**Station ID:**

*Station ID* is a fax term which simply means the fax number. During the negotiation phase of a fax session between two fax devices, each reports it's Station ID, more commonly referred to in the fax world as CSID (calling station id). You should enter the phone number of the fax line this modem is connected to here. You can include the area code if you wish, it really does not matter. This number will be reported to the receiving fax when a fax is transmitted. Note that the fax server uses the CSID reported by the transmitter when receiving a fax, it does not use the caller id reported by the phone company, if that feature is available on your phone line. The reason for this is that many, if not most modems do not support caller id. Also note that some transmitters will report a blank CSID or something other than their fax number. You have no control over this.

**Modem Type:**

There are a number of pre-defined modem types in the fax server. The modem type controls which initialization string is use for the modem. The default is 'Default (no init string required)'. Most modems will not need a special initialization string, some do however. If you need to use an initialization string not provided for with the pre-defined modem types, select the modem type 'Custom (Enter init strings)' and enter the initialization strings in the boxes provided for sending and receiving.

**Desired Baud Rates:**

Select 14400. Note that the fax server does not currently support G3 33600 fax speeds. This is not a severe limitation as most fax modems do not support it anyway and the array of devices that do support it is still somewhat limited in the real world. You may find that your modem works better at 9600 baud, if you have dropped connections or experience partial page receptions then drop the baud rate to 9600 and see if it resolves the issue. Also, if you find transmission to certain fax numbers troublesome, the reason may be that the receiver you are transmitting to operates better at 9600 baud. We have seen instances where transmitting at 14400 to a fax number will fail consistently while transmitting at 9600 will be consistently successful.

**Allow (secs) for connection:**

This is the amount of time that the modem will allow for the remote to answer an outbound fax call before giving up on the connection. The default is 60 seconds, you can increase this value if needed for fax receivers that take an excessive amount of time to pickup incoming calls.

**Answer on Ring:**

This applies only to modems configured for receiving only or both sending and receiving. This is the number of rings that must occur before the modem will be instructed to go off hook and answer the call.

**Retry Attempts:**

This is the number of transmission retries that will occur if an outbound fax fails. For example, if the receiver does not answer, is busy, etc. Note that the retry attempts will be exhausted for the current fax job assigned to this modem before another job will be scheduled for it.

**Wait (secs) on busy to redial:**

This is the number of seconds to wait before retrying a busy fax number.

**Printing Options:**

You can have the fax server automatically print a copy of incoming or outgoing faxes to any number of printers. You can select to print the fax image only, a confirmation page only or both. If you select an option other than 'Do not print', click the 'Printers...' button to select the printers you want to print to. The 'Print Fax Status on Outgoing Fax' option when checked, will cause a status line to print at the top of the fax image indicating the status of the fax and the date and time. ie was the fax successful, etc. This applies only to outgoing faxes.

**Reset modem after fax:**

If you check this option, enter the reset string that will be sent to the modem. Most modems perform more consistently when reset after fax operations. The two most common reset commands are 'ATZ' and 'AT&F0' (a zero not the letter OH). If you leave this option checked then the reset command will not be sent to the modem after faxing.

**Use Pulse Dialing:**

Check this option if your phone system requires the old style rotary dialing, no longer in common usage.

**Dialing Prefix:**

If your phone system requires special dialing then enter anything that must be dialed before the modem dials the fax number. For example, if you phone system requires you to dial '9' to acquire an outside line enter '9,' (no quotes) in this box. The comma causes a 2 second delay after dialing the 9 which allows the line to reset and present a dial tone.

**Dialing Suffix:**

If you need to append some dialing string after the fax number is dialed enter it here. This is not common, but some systems have some special features that record phone usage, etc by means of dialing certain digits after the phone number to be called.

**Suppress Fax Progress Window:**

Check this option if you do not want to show the fax progress window on screen for this modem during fax transmissions and receptions.

**Adjust Dialing Speed:**

This option controls how fast the modem sends the DTMF tones (dials). Some phone systems require slower dialing rates but this option rarely needs to be changed. If your phone system has problems with the modems dialing of the fax numbers you can slow the dialing speed using this option.

**Detect Busy:**

This option controls whether the modem will detect a busy signal. You would normally want this option checked. If you experience your modem reporting false busy signals then you can uncheck this option. Please note that a 'fast busy' signal detected by your modem will also cause the modem to generate a 'BUSY' response. The 'fast busy' signal is an older style phone company signal that means that the number cannot be called as dialed, usually an indicator that the area code is required and missing or another problem with the number. The 'fast busy' is for the most part out of style now in favor of a phone company recording.

**Renegotiate each fax page:**

You rarely will need to check this option. When this option is in effect, the fax session parameters will be renegotiated before each fax page is transmitted.

**Receiving Mode at Startup:**

This option only applies to modems that are configured as receivers only or sending and receiving. When this option is in effect, the modem will be put in answer mode when the fax server software is started. If this option is not checked, you will need to manually start receive mode for a modem by ticking the checkbox in the 'Monitoring ?' column on the 'Modem Status' page of the main window.

**Modem Speaker off:**

If this option is checked the init string sent to the modem will include the command M0 to silence the modem's speaker. Note that not all modems have a speaker, most notably some USB modems.

**Save Transmission Logs:**

Transmission logs are enabled by default. When enabled, a transmission log will be saved for each incoming or outgoing fax session. The transmission log includes everything sent to and received from the modem and is critical to diagnosing failed fax sessions.

**Include Page Data in Log:**

You should not check this option unless requested to do so by technical support. The page data itself is not normally useful in diagnosing problems and including it will create an unduly large log file that is more difficult to analyze.

**Advanced Settings:**

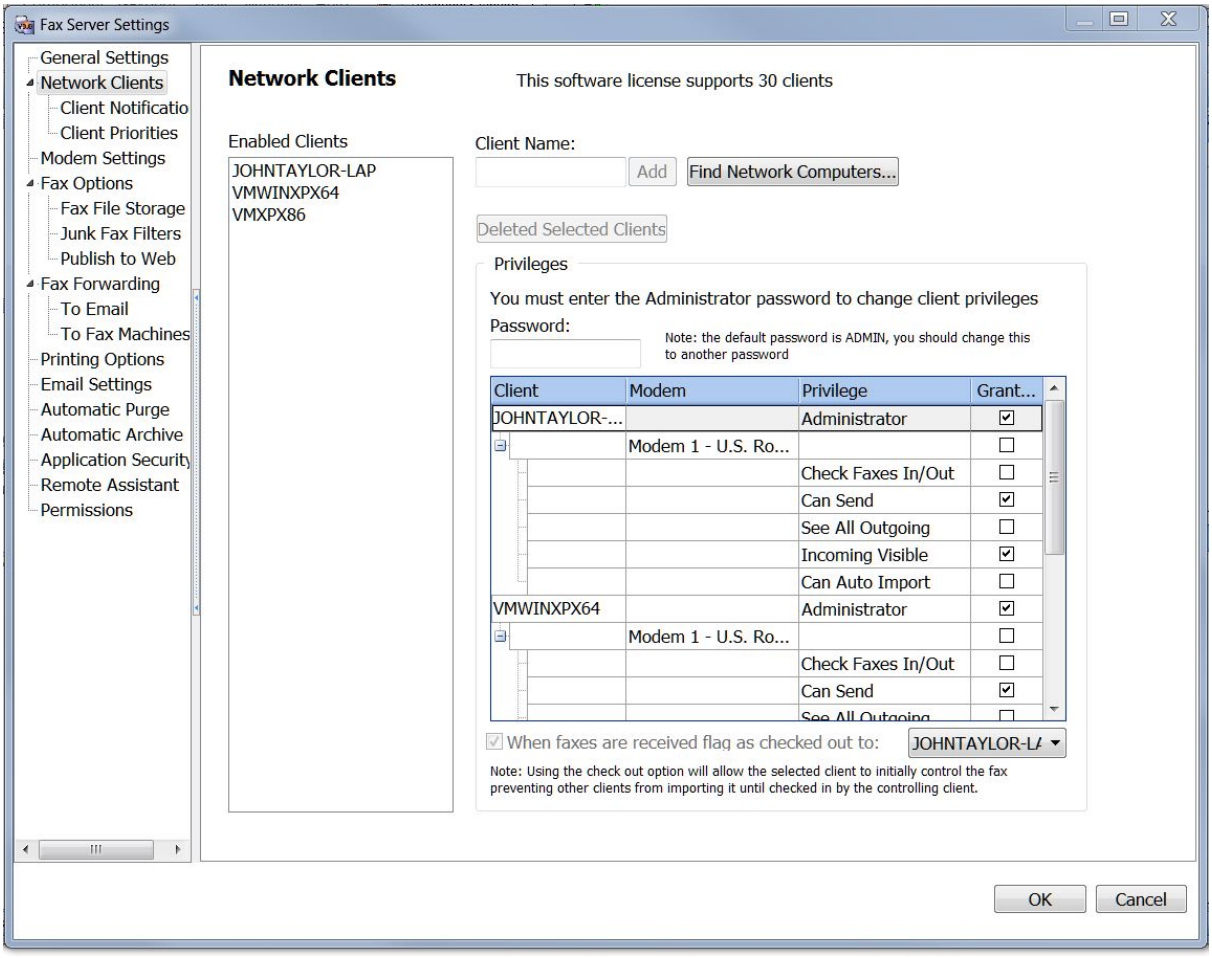
The advanced settings will almost never need to be changed. You should not change these unless asked to do so by technical support. No explanation of these is offered here as they are very technical in nature and generally, not of use to the user.

## 2.3 Configuring Network Clients

**This topic refers to configuring the supported network clients in the fax server software. It does not refer to configuring the *client* software for use with the fax server.**

The fax server will only process outgoing fax jobs submitted from clients that have been established in its list of supported network clients. Your fax server license has embedded information indicating how many clients your fax server is licensed to support. During the evaluation period, the fax server will support a maximum of 30 clients.

The following screenshot shows the settings screen for network clients and a discussion follows:




**Enabled Clients:**

The list of enabled clients reflects the list of computer names on your network that have been enabled for faxing in the fax server. To add a computer, type the network name in the 'Client Name' box and click the 'Add' button to add it to the list. You can also use the 'Find Network Computers...' button to enumerate workstations found on your network, you can choose the client names from the ensuing dialog after Windows has finished enumerating the computer names.

**Privileges**

*In order to change the privileges you will need to enter the password. The default password is* ADMIN. You can change this password in the 'Application Security' section of the fax server's settings.

All enabled network clients will also have and entry in the 'Privileges' section and a subsection for each modem configured in the fax server. For this reason, configure your modems before configuring your network clients in this section. Privileges can be granted for a client on each modem so if you want to , for example , prevent a particular client from using a particular modem/fax line you can deny privileges for 'Can Send' on that modem.

The privileges which are available are:

- Administrator - Granting Administrator status to a client effectively gives it all privileges on all

modems.
- Check Faxes In/Out - This gives the client the ability to check in/out faxes processed by a particular modem. When a fax is checked out in the client software, it is effectively 'owned' by that client until it is checked back in. Like checking out a book at your local library. Other clients will not be able to import or otherwise use the fax when it is checked out by another client.
- Can Send - Allows a client to send a fax on this modem
- See All Outgoing - Allows a client to see all outgoing faxes for this modem regardless of whether that client initiated the fax job
- Incoming Visible - Allows the client to see the incoming faxes that were received by this modem
- Can Auto Import - Allows the client to automatically import the faxes received on this modem

When a client is added the first time to the list of supported network clients, the following privileges are the defaults:

Administrator: false
Check Faxes In/Out: true
Can Send: true
See All Outgoing: false
Incoming Visible: true
Can Auto Import: true

## 2.4 What modems do you recommend ?

If you already have a fax modem then there is a good chance that it will work with Snappy Fax Server.

All modems are not created equal. A modem can support any or all of the following fax classes:

- Class 1
- Class 2
- Class 2.0
- Class 2.1

Class 1 modems are typically very cheap modems. While they do offer cost savings, dependability may suffer since Class 1 is very sensitive to timing and fax sessions may fail if timing constraints of the Class 1 protocol are violated. With Class 1, all fax session management is performed by the fax software which requires more of a load on the computer's cpu during the fax session.

Class 2 modems offer an improvement over Class1 in that the modem itself performs the fax session management functions relieving the fax software and the computer's cpu of some of the burden.

Class 2.0 is a further improvement over Class 2 which further refined the Class 2 standard.

Class 2.1 is high speed fax with error correction. The fax modem performs the entire session management, and error checking. Class 2.1 modems can transmit and receive faxes at a maximum speed of 33,600 bits per second when communicating with other similarly enabled fax devices. This high speed fax is referred to as "Super G3". The installed base of "Super G3" machines is rapidly growing, you will notice that most fax machines you see in the retail stores boast "Super G3" functionality. In addition, the error correction feature makes less than perfect phone lines less of a problem. Affordable Class 2.1 modems, were virtually non-existent until recently.

If *reliable* faxing is important to your business, you should invest in a good quality Class 2.1 capable

modem. You can get a very good Class 2.1 modem starting at about $125. If you do not care to invest that much in a modem, then expect reduced reliability with Class 1 modems.

Just to give you an example, with a 145 page fax transmitting at 31,200 bps with a Class 2.1 modem, the elapsed time to send the fax was 40 minutes and 52 seconds. That is an average transmission time per page of 17 seconds. With a class 1 modem transmitting at 14,400 bps the transmission time was 1 hour 46 minutes, which is an average of about 45 seconds per page.

Note: Snappy fax server (standard edition) support Fax Class 1, 1.0, 2 and 2.0. Snappy fax server (G3 Edition) supports all fax classes including Class 2.1 "super G3" with error correction.

We have heavily tested the following Class 2.1 Modems:

- Multitech Model MT9237ZBA-USB-CDC
- Multitech Model ISI9237PCIe Multi-Modem Card
- MainPine IQExpress Multi-Modem Card

The MultiTech ZBA model is a USB modem that has a small footprint, has a stackable design and multiple units can be installed on one computer. We have 4 such modems installed on a single computer in our testing lab. This modem retails for around $125 and is an excellent value.

The MultiTech ISI9237 and the MainPine boards are multi-port modem cards that come in 1,2, 4 and 8 port models, they are more expensive with the MainPine boards being the most expensive. Both of these boards are very dependable. The MainPine IQExpress cards are the ultimate in reliability, if you are serious about your fax activity and want a minimum of fuss over failed fax attempts, you should consider the additional investment in these board.

# 3 The Fax Server Database

## 3.1 Fax Data Files

When the fax server is first run it will create new (empty) data files in it's data folder.

The default data folder is c:\faxserver3\data

You will find the following files there:

- sfjobs.sfdata - The data file containing information about outgoing fax jobs not yet processed
- sfsrecv.sfdata - The data file containing information about faxes that have been received by the fax server
- sfssent.sfdata - The data file containing information about faxes that have been sent by the fax server
- rejects.sfdata - The data file containing information about faxes that were rejected is a reject filter is in place

In addition you will see files with a file extension of .sfidx and .sfblb.

.sfidx files are index files containing index information about the related .sfdata file.
.sfblb files are BLOB (Binary Large Object) files that contain fax images for the related .sfdata file

Files in this folder with a file extensions of .sfbbk, .sfdbk, .sfibk are backup files used by the database

engine during processing operations and are not normally needed, it is recommended that these files be left undisturbed to avoid problems with the database engine, however.

Other file types not previously mentioned above have special purposes for the fax server and client software and should not be disturbed.

**Database Server**

Beginning with build 3.12.1.1, the fax server installs and employs the 'snappy fax database server' software for purposes of network file access as opposed to typical windows file sharing. The database server provides much more efficient file handling. The database server uses tcp ports 12005 through 12008. You will need to open these ports on your firewall on both the fax server and each client computer that will be running snappy fax client software. Note that unless you are using both fax server build 3.12.1.1 or higher *and* client software build 5.12.1.1, data access will resort to typical windows file sharing.

# 4 Configuring the Client Software

## 4.1 Snappy Fax 5 Desktop/Client Configuration

Snappy fax version 5 desktop/client can run as either a standalone application or a client to the fax server. To configure it as a client to the fax server software, simply go to the settings->fax server interface section.

Only a few entries are required there:

- Check the 'enable fax server interface' checkbox.
- In the 'Fax Host' edit box enter the network name of the computer where the fax server software is installed.
- Check the 'Use database server' checkbox.