This document was written by my favorite sysop the names have been changed to protect the innocent. ...Jerry LeVan

MiniTerm

Tuesday, November 8, 1988

Requires system v4.1 or greater

SYSOP'S comments and tips follow below:

After contacting the author, Jerry LeVan, he made what I thought were some critical changes in order for us to consider this terminal emulation package. The changes are described in detail in his personal development log, which I have included for you to read. At least give it a glance from the bottom on up.

Below I've tried to take the mystery out of YMODEM and how to use it between BBS and MiniTerm version 2.9.5. Experienced BBS users may already know most of it, but skim it anyway because there is BBS specific material contained in my verbiage.

I have taken the liberty of posting MiniTerm v2.9.5 on the BBS with default settings for YMODEM at a speed of 9600 baud. If you want to use XMODEM you'll have to change the packet size back to 128 bytes.

CLASS 101a, OVERVIEW OF PROTOCOL DEFINITIONS:

XMODEM and **YMODEM** are nearly identical except for the fact that **YMODEM** sends the data in packets of 1024 bytes at a time instead of 128 bytes at a time. Many have asked, "Why then is **YMODEM** faster?". Ans: Since the **YMODEM** packet size is 8 times larger than XMODEM's, MiniTerm and the BBS perform data packet error checking 1/8 as often. This is VERY helpful on networks like PSCN or GTE/Telenet, where **YMODEM** will generally ***double*** your throughput. On communication links such as dedicated local lines or phone lines, you'll see an increase of 15% -20%. The only requirement for getting the most use out of **YMODEM** is a clean line. Whether you use XMODEM or **YMODEM**, if MiniTerm detects an error in a received packet, then MiniTerm will instruct the BBS to resend the packet...and resending 1024 byte packets vs. 128 byte packets can be VERY time consuming. On clean lines you can check the **Fast Download** option found under **Xmodem preferences.**   Upon receipt of a packet, MiniTerm will immediately tell the BBS to send another packet. This will increase download throughput. The only drawback is that if a CRC error check performed by MiniTerm on that packet should fail, the file transfer will abort instead of requesting the BBS to resend the packet.

The most commonly asked question is, "My communications package only has "receive XMODEM"**.** How do you expect me to receive a file from your BBS with **YMODEM**?" Ans: Communication packages such as MiniTerm and RedRyder v10.3 expect ***you*** to select an option which indicates that the communication package will recognize **1K** blocks (1024 bytes a.k.a. **YMODEM**) when you have selected "receive XMODEM". Selecting that option implies that the file will be captured in **YMODEM** mode assuming you have instructed the BBS to send the file with **YMODEM**.

For **YMODEM** downloads please use the settings described below. They are identical to settings required for **YMODEM** uploads. The MiniTerm application was posted on the BBS with those **YMODEM** settings as the default. You may easily customize your own default settings.

DOWNLOADS WITH YMODEM:

My notes from MiniTerm v2.5 explain a **YMODEM download & upload:**

Go to **XMODEM preferences** under the **FILE** menu choice and change from the 128 chr to **1024 chr.** (which is by definition **YMODEM**). Also make sure you have chosen **1K uses C Handshake** found under the same menu choice. Once that change has been made to your **MiniTerm** program, you can proceed by selecting the **YMODEM** download protocol on the **BBS** after you've chosen a file to download. Receive the file w/**MiniTerm** using **receive XMODEM** since it does not have a **receive YMODEM** choice. You should see the downloaded bytes transferred in 1024 byte increments.

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PSCN, GTE/TELENET USERS PLEASE READ

Those users who make use of **PSCN** or **GTE/Telenet** will find the adjustable timeouts helpful across slow networks. You **SHOULD** customize the timeouts to your liking (or the network's liking as the case may be). Downloads and uploads may fail @1200 baud with current timeout values. **PLEASE FINE TUNE (INCREASE) THOSE VALUES BEFORE GIVING UP.**

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UPLOADS WITH YMODEM:

Yes, at long last, users can UPLOAD**,** w/**YMODEM**, all those public domain Mac files you have ...that we don't!   First, on the BBS select **YMODEM** as the upload protocol. Next, please check these features which are found under the **Xmodem preferences** which is found under **File** of the main menu bar of MiniTerm.

 MacBinary,
1024 Byte Buffers,
1K uses C Handshake <===== Specific to BBS and other BBS's.

With those settings in place and the BBS awaiting your file, you would select **send Xmodem** from within MiniTerm. Now choose the file you'd like to contribute which is located on your Mac. Once the file transfer has begun, you should notice it transferring in blocks of 1024 bytes instead of 128 bytes as XMODEM would have done.

If you have noisy lines and resort to XMODEM (128 bytes/packet) as your upload protocol, on the BBS choose <**C**>RC XMODEM as the upload protocol. This will cause the more reliable **crc** error checking mode to take effect instead of **checksum**,which would have been in effect if you simply chose <**X**>MODEM.

PSCN users may need to login to PSCN @1200 baud in order to perform an **upload** to BBS. If you login to PSCN at 2400 baud or greater, the file transfer may fail because the communications hardware at your site can not forward all the data fast enough due to other data the communications hardware is processing from other connected data channels. You say, "Why not turn flow control on?" **Ans:** Xmodem and Ymodem file transfer protocols by definition will not function properly if there is intermediate flow control, hence the transfer will abort. Slowing your connect speed to 1200 baud allows the communications hardware to keep up with the data you're sending.

A FEW MORE FEATURES:

A **<break>** key is invoked by typing **<Option><Enter>.**
A **<long break>** can be issued by typing **<Shift><Option><Enter>.**
A **<control chr>** is sent by holding down **<command><chr>** key.

You can create setting files that when double clicked will invoke MiniTerm with preset parameters such as specific baud rates or protocols. Your master copy of MiniTerm can be customized and you can make those settings permanent under MiniTerm's **FILE** menu where it has the choice of **Default <- Current Settings.**

Also recently added was the ability to dial a phone number in tone or pulse rotary mode, as well as a new **Send** option. The **Send** button is a poorman's way of issuing a "macro" command. It could contain a predefined string that includes your login name. For example, when you are at the point of logging on to the BBS you would issue the **Send** command of the string that contained your first and last name. e.g.   JOHN;DOE   The semicolon is specific to our BBS as a means of answering two consecutive questions. In this case, FIRST NAME?   LAST NAME? As a reminder, one thing **NOT** to include in your Phone Manager directory would be your password. Should you give someone a copy of MiniTerm, your password would travel along with it. PSCN or GTE/Telenet users may wish to store their SET commands in the phone directory and **SEND** them at the appropriate time.

The **MiniTalk Manager v1.0** (or greater) will also be posted as a separate application on the BBS at some time in the future. It allows you to communicate with other users on AppleTalk. Right now it is found as a choice under **Communications** on the top menu bar of MiniTerm as **MiniTalk Manager**. If you choose to run it from within MiniTerm make sure AppleTalk is turned on, otherwise it will not be highlighted, hence unavailable for use.

The most recent addition that will prove useful is the ability to exit the MiniTerm program by clicking the box now displayed in the upper left hand corner of the MiniTerm screen. You no longer have to pull down the **QUIT** choice from the **FILE** menu.

<The following makes for fast XMODEM **downloads -use at your own risk!>**

Another tip on how to achieve *faster* downloads (recommended only on local clean lines such as in-house Micom lines) is this: Under **Xmodem preferences** choose **Disable CRC** and **Fast Download.** This will force error checking to be computed in Checksum mode which is almost twice as fast as the CRC mode when used with the BBS. **Fast Download** will also speed it up because MiniTerm instructs the BBS to immediately fire off another packet unless MiniTerm detects an error, in which case the transfer is aborted. I've used this method here with throughput ~6000 baud on a 9600 line. Normal safe throughput using CRC error checking w/o fast mode has been about 3300 baud.

NOTE: If you should download a particular file using MacBinary format to the same folder a second time, your second download will automatically be renamed as expected to: **COPY OF file name.** *However*, if you download that same file to the same folder a third time it will (unknown to you) *delete* your initial **COPY OF file name** and cause your third download to be named **COPY OF file name**. If you need to download a specific file numerous times it would be wise to place subsequent downloads in different folders just to be safe.

This should fill a **YMODEM** void that has existed in the Mac shareware communications package field and I hope you will take advantage of it. Let me know otherwise.

My thanks to the author, **Jerry LeVan,** who *rapidly* (yes, sometimes too, too rapidly!) made the recent YMODEM enhancements and a host of others, so you, the BBS users could take advantage of them.

If you have MiniTerm questions or suggestions, feel free to leave mail to the BBS Sysop and I'll either answer them or forward them to Jerry. Read his history file for the inside details, too. It's interesting reading. Software development is the same everywhere!

Thanks for reading this far.