KB2ICI
Packet Tracker

Packet Radio Monitoring Program
for
Macintosh Computers
Version1.05
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written by
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Introduction

PacketTracker is a program that monitors packet activity and keeps track of what is going on. It draws a graphical map showing who is talking to who and displays statistics of all current stations and keeps a running tally of activity .

PacketTracker was written for both the casual packet user and the network manager or BBS operator. The casual packet user will be able to learn a great deal about what is happening in packet around him; which stations are generating the most data and what some of them are. He will also be able to see graphically what stations he can hit directly and which ones he cannot.

For the network manager and BBS operator, PacketTracker provides extensive insight to the operation of the local network and the problems such as excessive retries on a path. It also allows for extensive logging of channel utilization and other pertinate information.

Distribution Policy

PacketTracker is freeware. I encourage you to give this program to as many packet users that have Macs as you can.   I would, however ask that you send me a QSL card stating that you are using my program and what type of Macintosh you are using it on. If you want me to send you a copy of the latest version on a disk via US Mail, please send me $10.00. If you want me to include a printed copy of the manual, send $13.00. Copies of the program will be made available on the Internet and on various online services. It will also be available on the April 1993 Buckmasters CD-ROM. You are welcome to put a copy of the program on any BBS's provided that the entire distribution be included. The distribution disk contains:

        PacketTracker   program
        PacketTracker.docs   documentation (MS Word 5.0)
        sampleMap   PacketTracker map file

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Terms Of Realease

This software is a project of the Radio Amateur Telecommunications Society (RATS). It is released for non-commercial, Amateur Radio use at no charge. RATS provides support for this program as well as other projects and software. Those in need of assistance are asked to remember that this is a volunteer effort; we have real jobs, and families, too!. At times there will be other demands upon our time, which may cause our responses to be delayed. In that event, please have patience!

If you would like to do more to assist in our development efforts, please consider joining the Radio Amateur Telecommunications Society. A description of our organization, including membership information, is the end of this manual.

Requirements

- Macintosh Plus or higher
- System 6.05 or higher, System 7.00 or higher preferred
- Macintosh Communications Toolbox, this must be installed on System 6.05 but is a part of system 7.00 and higher.
- Comm Toolbox Serial Tool. This comes with the comm toolbox.

Quick Start

- If KISS mode is turned on in your TNC, make sure it is off.
- If you are using MacRATT with you AEA PK-232 or PK-88, you must turn host mode off first using MacRATT . See the section on MacRATT.
- Double click on **PacketTracker**.
- It will tell you that preferences need to be set.
- Use the **Port Setup** under **Input** menu to configure the Macintosh Communications Toolbox correctly. You must select the **Serial Tool** and which ever port and baud rate you need for your setup. If you do not have the Comm Toolbox installed or the serial tool, you will have to get those before you can use PacketTracker.
- Select the **Station Map** menu item under the **Window** menu. This will create a new empty window for the map.
- Go back to the **Input** menu and select **Start Serial Input**.
- Use the **File** menu and **Save Map Data**.
- To make the program remember a station identity and screen location, double click on the icon of that station on the map and check the lock screen box. Then **Save Map Data** to save the map again.
- The next time you want to run the program, just double click on the map document.
- To move an icon on the map, grab it with the mouse.
- To quickly switch between windows use the Tab, ESC, or (') key (accent key). This does not work with the console window.

Packet Tracker Application and Map Document

Display Windows

There are several windows of information in this program

Station Map Window
Station List Window
Bar Chart Window
Station Info Window

Each of the windows can be moved as per the normal Macintosh conventions, they cannot however, be sized. The map window is adjusted to the size of the computer screen that you are using. Each of the windows can also be closed and reopened. If you close a window you can bring it back with the appropriate command under the **Window** menu. If you are monitoring a busy channel on a slower computer, it is VERY important to know that by closing the windows that you don't care about watching, you can dramatically improve performance of the program. Considerable time is spent updating each of the windows every time a packet comes in and every 30 seconds.

Station Map Window

The most important window in this program is the map window. It shows all of the stations and data paths graphically. There are two types of stations displayed on the map, heard stations and unheard station. A station that we can hear directly is a heard station. It is displayed as an icon on the map. The default icon is a radio with a computer sitting on top of it. If the program can make any determination as to what the station is, it will automatically change the icon to the appropriate one. You can also change the icon for a station, see below. When a station transmits to another station, a line is drawn on the map to show that connection. Throughout the program I refer to these as "connections" but in fact they may not actually be connections. It is to difficult for the program to determine if the stations are actually connected. If station A transmits to station B, they are assumed to be connected and the line is drawn. After 30 seconds, the line is changed from a heavy line to a thin line. After the time-out specified in the preferences, the line goes away. If the line is dashed, it signifies that there is more than 10% retries on that connection. There will be many times when a line goes only half way; this is because it is showing that one half of the connection has timed out and the other half has not. After the time-out for the station, also specified in the preferences, the station will go away. If you LOCK a station, it will never go away. As of this version of the program, if you have a lot of stations, it is possible for one station to be on top of another. This wont happen too often but may happen. When it does, use the *Clean Up Map Icons* command in the Windows Menu. To change the icon for a station, see the section Changing an Icon under Station Info Window below. The Map window is resiable.
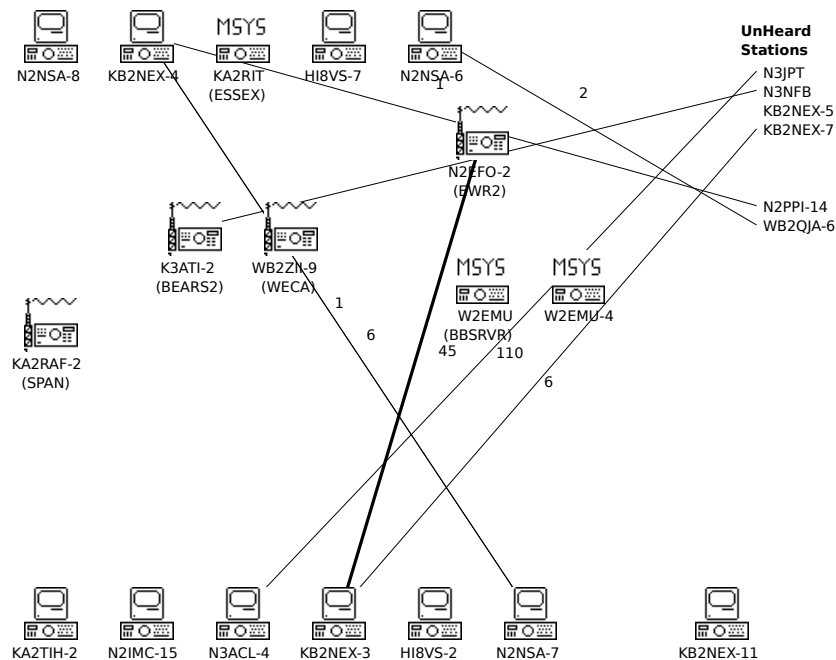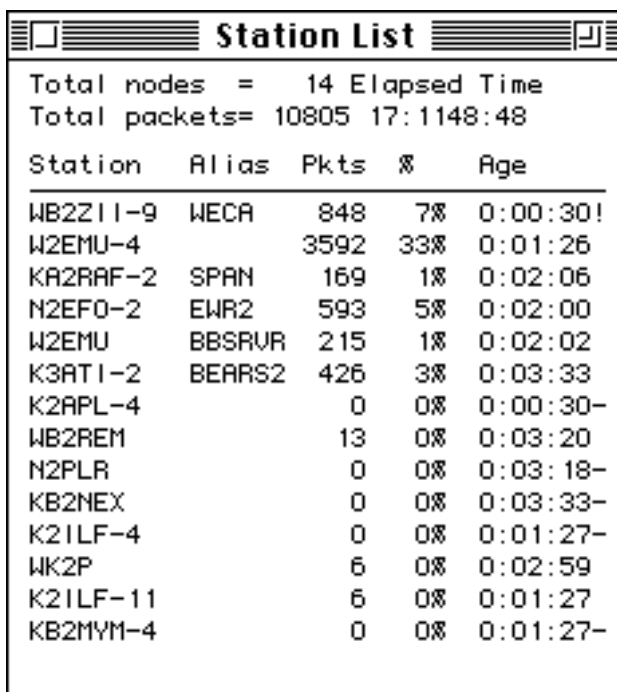

Moving Icons on the map

To move an icon around on the map, click on the icon you wish to move. It will change to a plain rectangle, you can now drag it anywhere on the screen you like. When you let go of the mouse, the icon will snap to a grid to help keep them somewhat in line. If the icon is locked, save the map file and it will be in the same location the next time. It is

very useful to move the major stations around on the map so that you can get a better feel as to what is going on. If you live in a large geographical area, you may want to arrange the BBS's that you can hear as they are physically placed. If you live in a highly congested area such as I do in central New Jersey, moving the icons around in a logical organization helps. The intent is to lock the heavy hitters i.e.. BBS's, DX-Clusters, CallBook Servers and the like to the center and watch the traffic flow. Of course you can move them were you want them and organize your map as it best suits your needs and situation.

Station List Window

The Station List Window contains a list of the current active stations, it has their callsign, alias if they have one, number of packets transmitted, percentage of packets transmitted, age (hh:mm:ss) of last transmission. After the age their may be a character. The characters have the following meanings:

    !   Most recent station to transmit
   -   Unheard station

```
┌─────────────────────────────────────┐
│ ≣▢≣▅▅▅▅▅▅▅ Station List ▅▅▅▅▅▅≣⊔≣ │
├─────────────────────────────────────┤
│ Total  nodes  =    14 Elapsed Time   │
│ Total  packets= 10805 17:1148:48     │
│                                      │
│ Station    Alias   Pkts   %    Age   │
│ ──────────────────────────────────── │
│ WB2ZII-9   WECA     848    7%  0:00:30! │
│ W2EMU-4            3592   33%  0:01:26 │
│ KA2RAF-2   SPAN     169    1%  0:02:06 │
│ N2EFO-2    EWR2     593    5%  0:02:00 │
│ W2EMU      BBSRVR   215    1%  0:02:02 │
│ K3ATI-2    BEARS2   426    3%  0:03:33 │
│ K2APL-4              0     0%  0:00:30- │
│ WB2REM              13     0%  0:03:20 │
│ N2PLR               0     0%  0:03:18- │
│ KB2NEX              0     0%  0:03:33- │
│ K2ILF-4             0     0%  0:01:27- │
│ WK2P                6     0%  0:02:59 │
│ K2ILF-11            6     0%  0:01:27 │
│ KB2MYM-4            0     0%  0:01:27- │
│                                      │
└─────────────────────────────────────┘
```

Station List Window

Bar Chart Window

The Bar Chart Window displays information about the channel utilization. The calculations are based on the number of characters received from the TNC. Therefore, the numbers are not exact but close approximations. If I implement KISS mode in a later version of this program, it will be more exact. All graphs are based on full scale being 100%
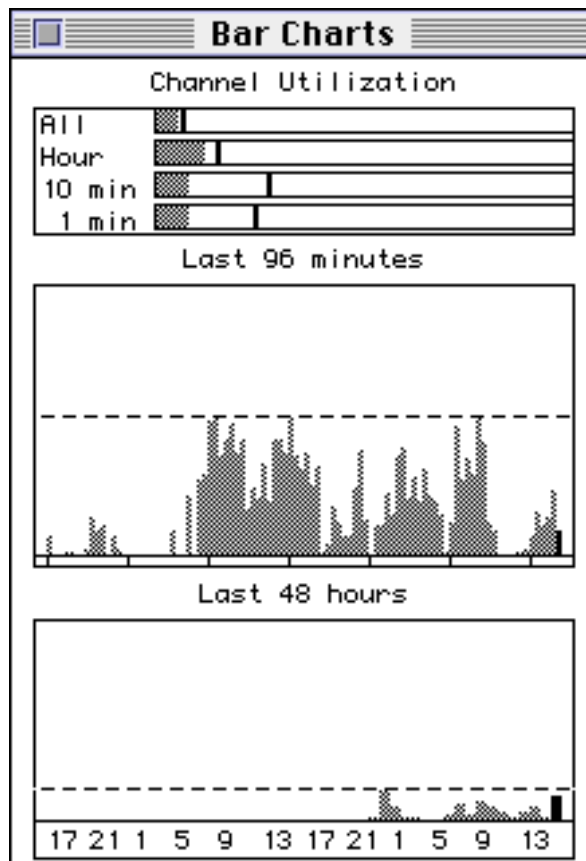

Bar Chart Window

The Bar Chart Window is broken up in to 3 parts, the first part is the current utilization. It has 4 horizontal bar graphs. The first one is overall utilization since the program was started. The second is the previous hour (last 60 minutes), the third bar is the previous 10 minutes and the last one is the previous minute. The solid line in each of the bars is the high water mark.

The second graph on the window is utilization for each of the previous 96 minutes. Why 96 you ask, because it is twice 48 and I wanted 48 hours using 2 pixel wide bars for the next section and 96 1 pixel wide bars fit in the same space. The tick marks at the bottom are spaced 15 minutes apart.

The third graph is the utilization for each of the previous 48 hours. In both the last 96 minutes and last 48 hours, the most recent one is in black and the rest are in gray. The dashed line is the high water mark for both cases.

Station Info Window

To look at the detailed information about a specific station, double click on the icon in the map window or the entry in the Station List Window. This displays about everything known about the station, its call, the alias if there is one, the number of packets transmitted, number of retries, age of last transmitted packet, ID string if the station has transmitted one, who the station talking to and if the station locked on the map. The information in Station Info Window will dynamically update.
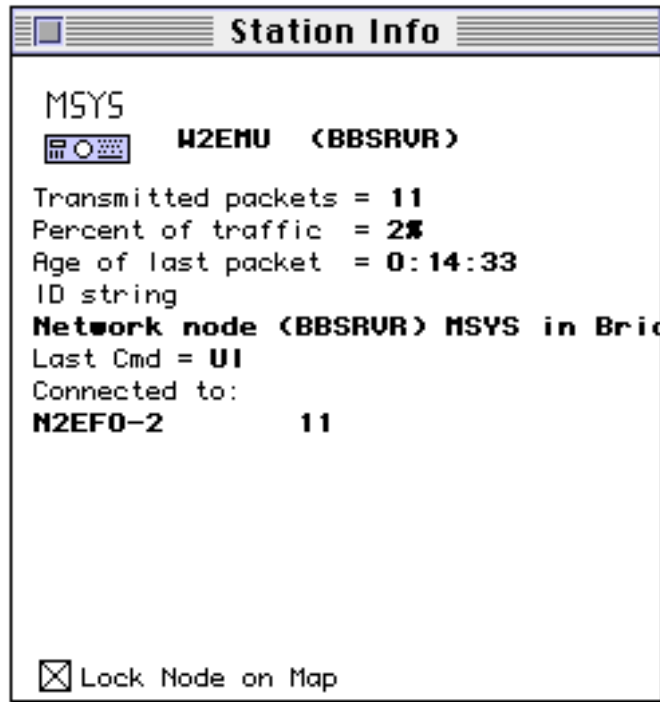

The information contained in this window includes:

- The callsign of the station.
- The alias if there is one.
- Total number of packets that the station has transmitted.
- Percentage of total packet traffic
- Age of last packet transmitted.
- ID String if there was one.
- The AX.25 command string of the last packet transmitted.
- A list of the stations it is connected to. This is a list of all of the other stations that this station has transmitted to. Therefore "connected to" may not be really correct, but it is close. Also, this list does not get purged unless one of the stations itself gets purged.
  On each line of the connections, the number of packets transmitted to that station and the number of retries if any in "()".
- Lock Station on Map: If you check this box, the station will not be purged (aged out due to lack of transmission) and will be saved to the map file when you do a save command. Only those stations with this lock flag set will be saved.

Changing an Icon

When you double click on a map icon or on an entry in the **Station List** window, a **Station Info** window will appear as shown on the previous page. This contains specifics about that station. If you double click on the icon in the upper left corner, it will bring up a dialog box that will allow you to change the icon of that station.
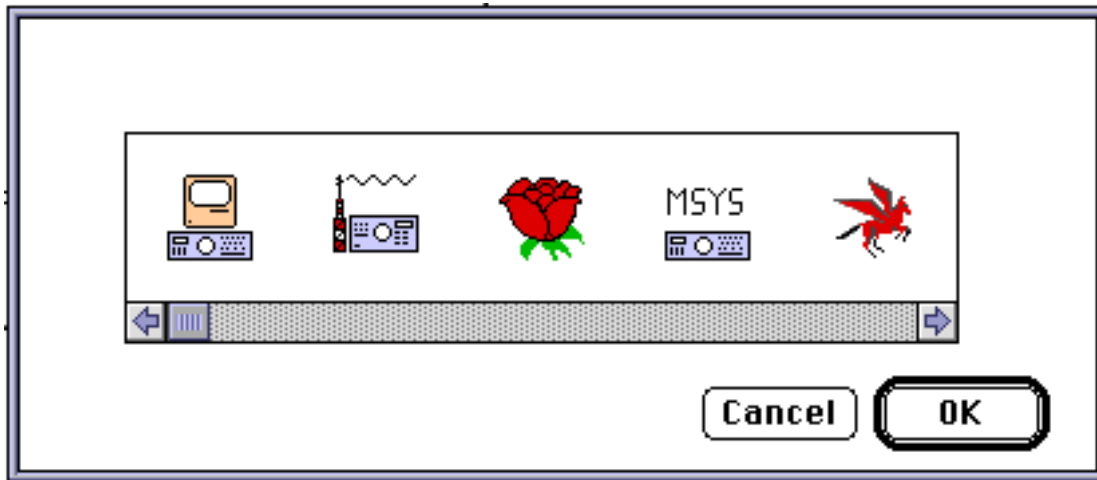
ICON selection Dialog Box
Note, as long as this dialog box is open, processing data is halted

Menus

The menus in PacketTracker are:

File

Open Map Data   Open a map data file
Close   Close a window, closes any window except the console window which cannot be closed.
Save Map Data   Save locked stations out to map file.
Save Map Data as... Save new map data file
Page Setup   Same as any other Mac Application
Print   Prints the current front window. The console window CANNOT be printed
Quit   Quit the program

Edit

Copy   Copies the text or graphics from the current front window. Except for the console window, the text and/or graphics do NOT have to be selected.
The rest are not implemented

Settings

PacketTracker Prefs...Bring   up   dialog   for Preferences
Logging Prefs...   Bring up dialog for Logging

settings

Input

Port Setup   Bring up the Communications tool box connection dialog box for selecting a port, baud rate, etc.

Start Serial Input   Start serial input, this opens the comm tool box serial channel.

Clear Station List   Clear out all current stations in the station list window. This does not affect logging, just the current stations in the station list and map windows.

Windows

Reset Windows   Puts all windows (except the console window) back in their normal possitions.

Next Window Bring the next window to the front, allows you to step through the windows easily and quicly on a small screen.

Station Map   These 4 bring the appropriate window to the front.   or creates one if it does not exist.

Station List

Station Info

Bar Chart

Clean Up Map Icons Cleans up the icons on the map. Any icon that is LOCKED is not touched.

Preferences

There are two sets preferences settings under the Settings menu. The first is **PacketTracker Prefs…** this brings up the preferences dialog box shown below. Use this to set various options. The settings in the box below are all the default settings.
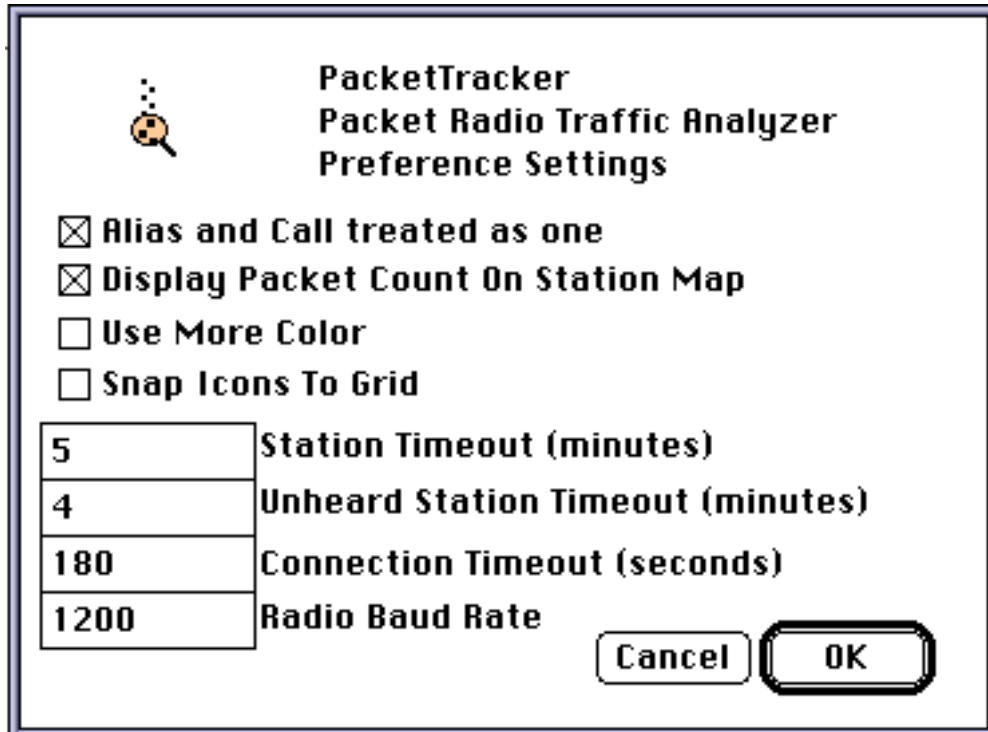
Packet Tracker Preferences Showing Default Settings
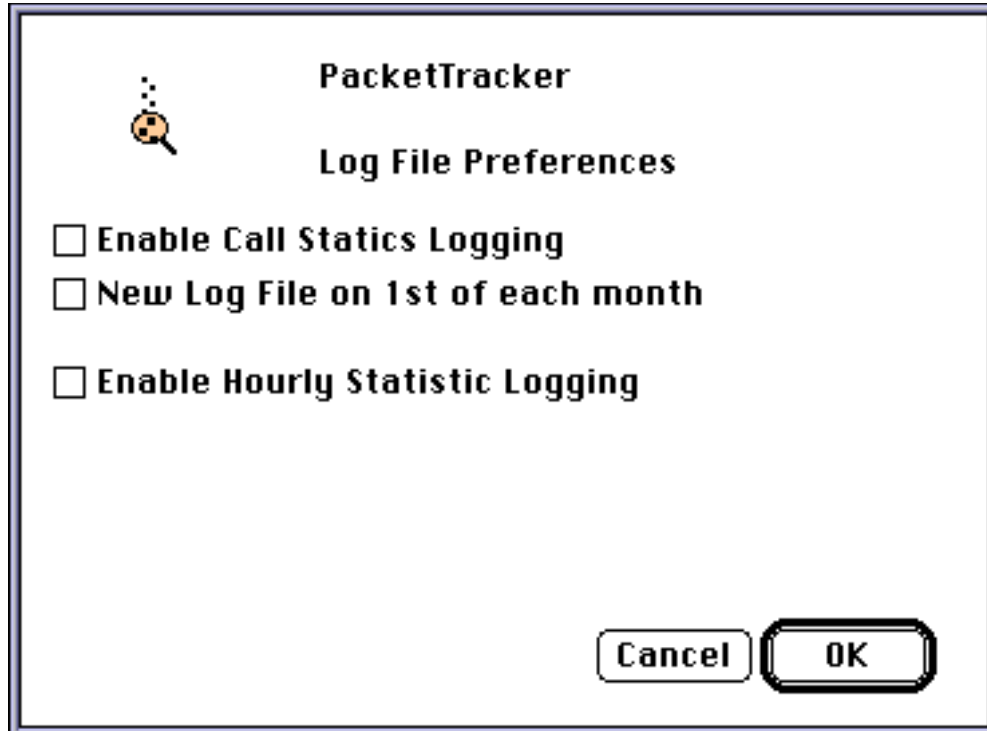
- **Alias and Call treated as one**
  When this is set, if a station has an alias, they will show up as one ICON on the map and one entry in the table. If it is NOT selected, they will show up as two separate stations. The primary (i.e. the callsign) will indicate that it has an alias, but the alias will not know that it is an alias or what it is an alias of. Note that if the a station transmits as an alias and does not identify that it is using an alias with an ID string then it becomes very difficult for this program to figure out. Also if it transmits as the alias before transmitting as the real call it may get confused. If it is a station you want to watch closely, the best thing to do is wait until it has obtained the alias and then LOCK that station on the map.

- **Display Packet Count On Node Map**
  For each connection on the node map (line drawn between two stations) there is a count of packets for each direction, station 1 transmitting to station 2, and station 2 transmitting to station 1. When this is checked, these counts are drawn as numbers above the line. Unfortunately when there is a lot of traffic going on, too many numbers start appearing and it can get confusing. If you turn off this option, the numbers will not be displayed.

- **Use More Color**

  This allows some screens to use some color options that will not work on black and white screens. The only window that takes advantage of this at present is the Bar Chart Window.

- **Snap Icons To Grid**

  When this is checked, the icons will align up on a 30 pixel grid, This helps keep them in straight lines. When off, they can go anywhere.

- **Station Time-out (minutes)**

  When a station transmits, it appears in the station list and on the map. Every time it transmits, the time of last transmission is saved. The Station List Window (described in another section) shows the age of the last transmission. When this age gets above the time specified in this setting, the station is timed out, and purged from the active list.

- **Unheard Station Time-out (minutes)**

  When a station transmits to another station but that other station has not been heard, the unheard station is added to the list but is treated differently. In the Station List window, it is indicated by a '-' after the packet age. On the Map it is listed, call sign only under the Unheard Stations column. If later, that station is heard to transmit, it is changed to normal station status. For the stations that are not heard, their time-out is different. You can set them the same if you like. The time for an unheard station is the last time someone transmitted TO them. When the time-out is exceeded, they are purged in the same manner as a heard station.

- **Connection Time-out (seconds)**

  When a station transmits to another station, (heard or unheard) a line is drawn on the map. After the amount of time specified in this setting, that line is erased.

- **Radio Baud Rate**

  This is the baud rate of the radio in bits per second (bps). It has NO affect on the actual interface to the radio and is ONLY used for the channel utilization calculations. If this is not set to correct value, the bar chars will not be accurate.

The second set of preferences is the **Logging Prefs** this brings up the logging dialog box shown below. Use this to set various options for logging. The settings in the box below are all the default settings. Note that the default is that all logging is turned off. See the section on Logging Statistics for the details of the logging files created.

```
                    PacketTracker

                    Log File Preferences

    ☐ Enable Call Statics Logging
    ☐ New Log File on 1st of each month

    ☐ Enable Hourly Statistic Logging




                              [ Cancel ]  [  OK  ]
```

Logging Preferences showing defaults

Logging Statistics

There are two types of log files that can be optionally created by *PacketTracker.* The first is a Station log, the second is a bandwidth utilization statistics log.

The station log will be called *StationLog.1992-12* or *StationLog.1992*, depending on the options selected.   The log itself is a standard text file with tabs between fields. If you double click on it, System 7 will ask you if you want to open it with TeachText, System 6 will say the application cannot be found. You can open the file with any word processor or with Excel. I recommend using Excel for doing statistics on the data. An excel spread sheet file with an example of statistics is included with the distribution. The information in the log is as follows:

Call	Alias	Appr	Xmit	Retry	ID string
KB2ICI-7		20	223	5	text

KB2ICI-7   is the call (this is my call book server
                 on 145.070 in central New Jersey)
                 there is no alias

20	it showed up and timed out 20 times
223	a total of 223 packets were transmitted
5	5 of them were retries
text	ID string, if there is one

To enable logging, use the **Logging Prefs** menu under **Settings Menu**. There are two settings that have to do with call logging. The first **Enable Call Statistics Logging** does just that. If it is checked, then the calls will get logged as above. The second option is **New Log File on 1st of Each month**. If this is checked, a new file will be created on the first of each month. The file name is **StationLog.1992-12**. If the new log file is NOT selected, then the file name will be **StationLog.1992,** and a new file will be created on the first of each year. If you want the file to start over fresh, simply delete (or move the file to another folder) and restart the program.

Note: The log file only gets written to disk on the hour. i.e. 9:00 pm, 10:00 pm, 11:00 pm etc. If you start the program at 9:01 pm, turn on the logging option, and quit the program at 9:59 pm, you will NOT get any log file. When the program starts, if logging is turned on, it reads in this file so that it can add to it instead of starting over.

```
* KB2ICI Macintosh Packet Analyzer
* Station Log file
* Log as of 12-16-1992   7:00
* Total Calls in list = 91
```

* Call	Alias	Appr	Xmit	Retry	ID String
N3ACL-7	MRACES	7	117	27	Mini-Convers 1.0 (MRACES)
N3EYM	Hatfiel	24	1	0	N3EYM-1: MAILDROP (Hatfield, PA.) N3EYM-1 MAILDROP and N3EYM-3
NN2Z-2	#BBSNN	5	5	0	Network node (#BBSNN)
W2EMU	BBSRVR	1	367	0	Network node (BBSRVR) MSYS in Bridgewater, NJ W2EMU-4/B W2EMU
KA2RIT	ESSEX	14	65	0	Network node (ESSEX) MSYS in Newark,NJ. {MSYS} KA2RIT-4/B KA
N2NSA	IPNSA	8	9	0	Network node (IPNSA) MSYS in Bronx, N.Y. N2NSA-4/B N2NSA-7/N
N2IVL	LINY10	9	25	0	Network node (LINY10) MSYS in Hicksville, NY N2IVL/B N2IVL/R
K3CSG-1	SPK	10	193	8	Network node (SPK)
HI8VS	STMFRD	1	3	0	Network node (STMFRD) MSYS in STAMFORD, CONN. HI8VS-4/B HI8VS
N2PPI	UNI2	3	0	0	Network node (UNI2) MSYS in Uniondale, NY N2PPI/B N2PPI/R
KB2NEX	WFARMS	19	362	13	Network node (WFARMS) MSYS in Bronx County, N.Y. KB2NEX-4/B K
KA2RAF-2	SPAN	1	12	0	TheNet 1.0 (SPAN)
K1EIC-2	HAVEN2	6	203	20	TheNet 1.16 EastNet Ver a (HAVEN2:K1EIC-2)
N2EFO-2	EWR2	1	543	33	TheNet Plus 2.08 (EWR2)
WB2ZII-9	WECA	1	227	67	TheNet Plus 2.08 (WECA)
K3ATI-2	BEARS2	1	329	18	TheNet Plus 2.10st (BEARS2)
W2EMU-4		1	181	5	
KA2RIT-4		2	855	31	
WB2FGX		3	17	0	
RVRC		1	379	20	
N2GGB		1	297	61	
N2IVL-8		1	15	4	
N3JZV		4	0	0	
KB2MYM		4	0	0	
W3ZGD		1	9	0	

Sample Station Log

Hourly Log

The second type of logging is hourly utilization information. Each hour (on the hour) the program writes a single line of text to the end of the log file. The name of the log file is **HourlyUseLog.** The program will continue to write to the same log as long as it is running. Each time it writes to the file, it opens it, appends a line to the end and then closes the file. Therefore, you can make a copy of it anytime you like. If you want to do anything with it I strongly recommend that you make a copy of the file. If you have the file open with a text editor or other program when the hour changes, PacketTracker will get an error and not be able to write out the log information. If you want the log to start fresh, simply delete the file, it will get recreated at the next hour change.

Each entry contains the following information. There are tabs between each field.

The date
the time
total number of packets that were transmitted
number of retries
new nodes seen this hour
otal characters received this hour

```
* KB2ICI Macintosh Packet Analyzer
* Hourly Log file
* Date Time    Hourly Packet Count  Hourly Node Count
12-22-1992   23:00  15      6
12-23-1992   00:00  969     50
12-23-1992   01:00  194     31
12-23-1992   02:00  500     39
12-23-1992   03:00  727     41
12-23-1992   04:00  662     37
12-23-1992   05:00  862     38
12-23-1992   06:00  769     27
12-23-1992   07:00  780     46
12-23-1992   08:00  772     31
12-23-1992   09:00  416     35
12-23-1992   10:00  1110    33
12-23-1992   11:00  227     33
12-23-1992   12:00  527     22
12-23-1992   13:00  401     43
12-23-1992   14:00  Program Restarted
12-23-1992   14:00  98      15
12-23-1992   15:00  710     38
```

Sample Hourly Log

TNC Settings

To set the baud rate at which the computer talks to the TNC, use the **Port Setup** under **Input** menu to configure the Macintosh Communications Toolbox correctly. When you select Port Setup, it has to look like the figure below. You may have other communications tools such as "Apple Modem Tool" or others. You MUST use the Serial Tool. Change the port selection and baud rates here. If you make a change, you will probably have to quit the program and restart it for the change to take affect. Do NOT select the "Hold Connection" option.
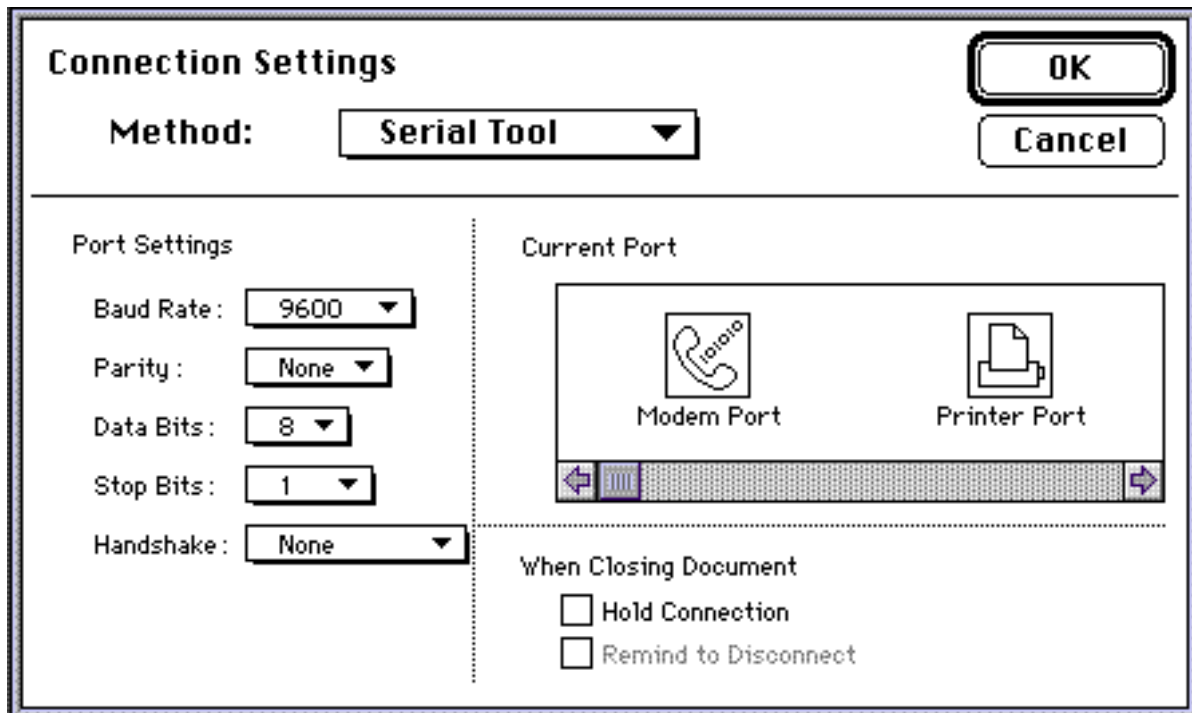
Communications Toolbox Serial Port Settings from Port Setup Menu

TNC Notes

PK-232 and PK-88

Your TNC must NOT be in KISS mode. PK-88 and PK-232 users take note. If you are using MacRATT with PK-88 or PK-232 you must turn off HOST mode before running PacketTracker. Go to the TNC item under the Settings menu and make sure the HOST mode is NOT selected, also make sure that the HOLD input on exit is also NOT selected. This must be done BEFORE running PacketTracker.

Dual Port TNCs:

The current implementation of PacketTracker only supports single port TNCs. Therefore if you are using multi-port TNCs such as the KAM or KPC-3, you must set it in single TNC mode.

KPC-4/KAM (Version 5.0 firmware) Setup...

Setting	KPC-4	KAM	
MAXUSERS	n/0		Turns Port 1 ON and Port 2 OFF
MAXUSERS		n/0	Turns HF Port ON and VHF Port OFF
MAXUSERS	0/n		Turns Port 2 ON and Port 1 OFF
MAXUSERS		0/n	Turns HF Port OFF and VHF Port ON
			(n = maxusers setting)

For example, a maxusers setting of 1/0 on a KPC-4 will allow one connection on Port 1, and no (zero) connections on Port 2. This same setting on a KAM will allow one connection on the HF Port and no connections on the VHF Port.

Data Engine V1.0x Setup...

The standard Data Engine (with a version 1.0x ROM) uses the Port Command to make the unit operate as a single-port TNC. (See page 55 of the Kantronics Data Engine Operator's Manual, dated 4-13-90). Kantronics describes the operation of the POrt command as follows:

• POrt n (n = 0|1|2)
default 0
If n is 0, the Data Engine will operate only through radio port 1. Radio port 2 will be disabled in this configuration. Setting n to 1 will enable both radio ports, and when first turned on, the current I/O stream will be on port 1. If n is set to 2, both ports are again enabled, but the active I/O port when the unit is turned on will be port 2.

It appears from Kantronics' description of the Data Engine POrt command that only port 1 can be turned on by itself -- that port 2 cannot be turned on by itself. Therefore, if you are going to use the Data Engine to monitor packet traffic with PacketTracker V1.04, you will have to use port 1.

Furthermore, the manual for the 1.0x ROM version describes the MAXUsers command thusly:

• MAXUsers n (n = 1 - 26)
default 10

Notice that "0" is not mentioned as a possible input. Therefore, a setting such as MAXU 0/1 would appear to not be an acceptable input for Maxusers, resulting in the "eh?" response to such an attempt.

Data Engine V2.x Setup...

With the limited introduction of the V2.x Prototype ROM for the Data Engine, the MAXUsers command appears to have changed. With the V2.x ROM, "0" IS an acceptable input value when using the MAXUsers command. You can input either MAXU 6 / 0 or

MAXU 0 / 6 commands to a Data Engine equipped with the V2.x ROM. But, it also appears the controlling function is still the POrt command. Only when POrt 0 is set (and the MAXU command is n/n where n ≥ 1) does the Data Engine operate properly as a single-port TNC with PacketTracker.

Trouble Shooting

If the program improperly quits or is aborted in any manor, you may have to restart the computer. If the serial port was opened and not closed properly, the Mac does not get it closed and you will get an error saying that it is already in use. Simply restart the computer.

If the console window opens up but no data seems to be comming from your TNC, (ALL data from the TNC is displayed in the console window). Use a communications program like MacTerminal 3.0 or some other program that uses the Communications Tool Box to make sure that everything is working correctly to the TNC.   If MacRATT is working but PacketTracker is not, see the section about the PK-88 and PK-232 elsewhere in this manual.

On occasion, I have found the Comm Tool Box to not work correctly. To verify that your TNC is talking to the program correctly, turn the TNC OFF and back ON, the start up message should come out on the CONSOLE window. If it does not, something is not right. If you think you have everything set correctly, try quiting the program and starting it again.

The graphs in the bar chart window are all black. Turn OFF the USE MORE COLOR option in the preferences settings.

Advanced Features

User Added Icons

You can add your own icons to PacketTracker with ResEdit or other resource editing programs. This is only recommend if you know how to use such programs. When attempting this, ALWAYS make sure you make a copy of the program and edit the copy. In order for this to work, you must add TWO (2) icon resources for each and every icon that you add, the first must be a 'cicn' resource. The second icon must be an 'ICON' resource. They must both have the EXACT same resource number. The 'cicn' is the color icon and the 'ICON' is the black and white icon. Even if you are running on a black and white Macintosh, you must have the 'cicn' resource. If you have a color Mac, you must create the B&W icon for printing. Be sure to use icons with resource numbers starting above 128. The icons I have in the program start with 128 and continue up. If you create an icon with a number lower than 128, it will be the default icon, and the icons that I recognize for the automatic icon assignment will not work. Of course you can change the current icons, but I ask that you do not. Please do not pass on to others a modified copy. If you come up with some neat packet related icons, send them to me and I may include them in the next release.
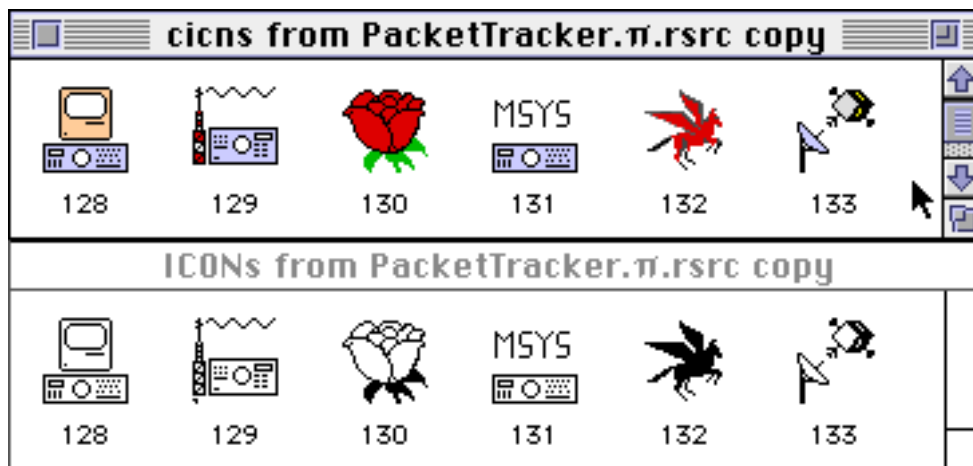
'cicn' and 'ICON' resources from PacketTracker
The 'cicn' resources show up in color on a color screen.

Named Icons

You can also create an icon (as described above) and give it a name, i.e. "KB2ICI-7". KB2ICI-7 is a call book server and you can create an icon like the red Pegasus to indicate that it is a call book server. The name MUST be associated with the 'cicn' resource and it IS case sensitive. If you are "LOCKING" the icon on the map, this is NOT necessary as the icon type will stay with the station. This feature should only be used for a station that shows up occasionally and you want it to show up with a certain icon.

'cicn' resource from PacketTracker listed by Name

Complete Set of Icons from PacletTracler

Version History

Feb 13, 1993 V1.05 Minor upgrade
Jan 16, 1993 V1.04 First Public Release
Jan   7, 1993 V1.03ß First Release version, limited distribution
Dec 21, 1992 V1.02ß Beta version release to small group
Dec 15, 1992 V1.01ß Beta version release to small group
Dec 10, 1992 V1.00 Beta version release to small group
Dec   3, 1992 V0.80 First public showing at RATS board meeting
Nov 10, 1992 V0.00 Started writing PacketTracker

V1.05   Added Resiable windows
           Added "Snap to Grid option" for Map

V1.04   Added dashed lines to show connections with greater than 10% retries.

RATS
Radio Amateur Telecommunications Society

What Is the Radio Amateur Telecommunications Society?

- A general-interest Amateur Radio club specializing in advancing digital communication techniques for Radio Amateurs

- An American Radio Relay League Special Service Club

RATS Packet Networking

- ROSE Networking
  The RATS ROSE X.25 Network, with its high-speed, transparent "backbone," is used by packet bulletin boards to transfer bulletins, traffic, and personal packet "mail" throughout the region.

  Individuals use the network for reliable, long-distance packet operations of all types.

- ROSErver/PRMBS PBBSs
  RATS sponsors many area packet bulletin boards which operate ROSErver, the Packet Radio MailBox System software. This advanced PBBS software offers users many advanced capabilities absent on other bulletin boards. A majority of bulletins and messages forwarded within our area are handled by RATS ROSErver/PRMBS bulletin boards.

- KB2ICI/WU2Z Callbook Server
  Many packet operators have come to depend upon the KB2ICI-7 Callbook Server in North Brunswick, NJ. This system provides callbook look-up while you are connected, in real-time.

Join us!

RATS meetings are open to everyone. Please join us on the second Thursday evening of each month as we meet in Northern New Jersey. Informal discussion begin at 6:30 PM, with programs beginning at 7:45 PM. Contact us (see below) in advance for the meeting location. Many members use the 145.19 MHz (-600) K2AQG repeater in Montclair, NJ, and we can help with directions.

For more information:

        Packet: askrat@kb4cyc.nj.usa
        CompuServe: 74756,2055 (kb7uv)
        Internet: rats@kb2ear.ampr.org (not a packet address)
        Modem: KB7UV ROSErver/PRMBS,
                                   message and up/download system
                       718-956-7133, 300 to 14400 bps (V.32+bis, V.32+bis), 8N1
        Or write: to the address below
              Radio Amateur Telecommunications Society
              P.O. Box 93 Park Ridge, NJ 07656-0093

Support Packet Radio Network Development

Packet Radio is still relatively new. Radio amateurs are still experimenting with and developing this exciting mode of communications.

Traditional Amateur Radio is relatively simple. Each "ham" operates, and depends solely upon, his or her own station.

VHF FM operation introduced a new phenomenon: repeaters. Communication now depended upon an additional, intermediary station. The need for repeaters led to special clubs to construct and maintain these shared, community resources.

Although many radio amateurs don't seem to realize it, packet radio also depends upon shared, community resources. For packet these resources are known as networks.

Just as FM operators join together to support the repeaters they use, we ask that packet radio operators join in supporting the networks they depend upon.

This brochure describes the networking projects of the Radio Amateur Telecommunications Society. You probably are already taking advantage of RATS networking efforts. Please give serious consideration to contributing towards the maintenance and further development of these valuable resources made available to the amateur radio community.

Yes!

I want to support network development.
Here is my $20.00 donation to RATS.

Name: _____

Call: _____ @ BBS: _____

Address: _____

City: _____

State: _____   Zip: _____

Phones : _____

ARRL Member [Y/N] ?_____

We'd like you to become involved with our on-going projects. If you have skills with hardware, software, RF, etc;please jot them down here:

Members receive a copy of the RATS Network Users Guide and a subscription to the "By Any Other Name...," RATS newsletter of the ROSE X.25 Packet Network.

Please make checks payable to RATS and mail to:

>   Radio Amateur Telecommunications Society
>   P.O. Box 93
>   Park Ridge, NJ 07656-0093

INDEX