CT ARES – REGION 2

PRESENTS

DATA COMMUNICATIONS

Session 1

CLASSIC PACKET RADIO

with

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District Emergency Coordinator
Region 2

WHEN ALL ELSE FAILS…

…It's a

DISASTER !

(Make no mistake)

THE CASCADE OF FAILURES

▶ Power

▶ Cell Phone Service

▶ **Cable**

▶ **Internet** & VOIP Telephone

▶ Telephone (Land Line)

▶ **Fax** (see: Telephone)

WHAT IS PACKET RADIO?

Where Digital data is sent from a computer to a radio that sends it via Analog radio waves to another amateur radio station similarly equipped.

▶ Packet radio is so named because it **sends** the data in small bursts, or **packets**.

▶ A packet station normally has a **lower duty cycle** than a **voice station**.

- **Think "BATTERY LIFE"** ☺

HISTORY:

▶ Data packet technology was developed in the **mid-1960's** and was put into practical [application](#) in the **ARPANET** which was established in **1969**.

▶ Initiated in **1970,** the **ALOHANET**, based at the University of Hawaii, was the **first large-scale packet** radio project.

▶ **Amateur packet radio** began in **Montreal, Canada** . The first transmission occurring on **May 31, 1978**

▶ This was followed by the **Vancouver A**mateur **D**igital **C**ommunication **G**roup (**VADCG**) **development** of a Terminal Node Controller **(TNC)** in **1980**.

- The **current TNC standard** grew from a discussion in **October of 1981** at a meeting of the Tucson Chapter of the IEEE Computer Society.

- A week later, six of the attendees gathered and discussed the feasibility of developing a TNC that would be available to amateurs at a modest cost.

- The Tucson Amateur Packet Radio Corporation (**TAPR**) formed from this project.

- On **June 26th 1982,** Lyle Johnson, WA7GXD, and Den Connors, KD2S, initiated a packet contact with **the first TAPR TNC unit**.

- The project progressed from these first prototype units to the TNC-1 and then finally to the TNC-2 which is **now the basis for most packet operations worldwide.**

- **In 1986, PCs became the rage** with Dial-up CompuServe, AOL, etc., and interest in Packet Radio began to decline.

WHERE WE ARE TODAY

Some **23** ᴠᴇᴀʀs ʟᴀᴛᴇʀ….

2009: ARES folks rediscover Packet Radio and have a vision for its application in (~~Emergency~~) DISASTER Communications .

New higher level software programs (AX.25 based) begin to be written and tested.

TODAY's Software:

NBEMS, and Winlink 2000 (**WL2K**) which includes: RMS Express, Outpost, WinMor, Etc.

WHAT IS AX.25?

▶ **A**X.25 (**A**mateur X.25) is the communications <u>protocol</u> used for packet radio.

▶ **A protocol is a "standard"** for two computer systems to communicate with each other, somewhat analogous to using a business format when writing a business letter.

▶ **A**X.**25** was developed in **the 1970's** and **based on** the wired network protocol **X.25**.

▶ **A**X.25 includes **a Digipeater's field** to allow other stations to **automatically <u>repeat packets</u> and <u>extend the range</u> of transmitters.**

▶ One advantage of **A**X.25 is that **every packet** sent **contains the sender's and recipient's amateur radio callsign,** thus providing station identification with every transmission.

THE PACKET NETWORK

Digipeaters…

KA-Nodes…

Nodes…

BBS's…

and

Clusters…

Oh, my!

WHAT IS A DIGIPEATER?

▶ The first networking scheme with packet radio was Digipeaters.

▶ Digipeaters would simply look at a packet, and if its call was in the digipeater field, would resend the packet.

▶ Digipeaters allow the **extension of range** of a transmitter by retransmitting any packets addressed to the digipeater.

WHAT IS A DIGIPEATER?

▶ This scheme **worked** well **when only a few people** were on the radio channel.

▶ However, as packet became **more popular**, digipeaters soon were **clogging up the airwaves** with traffic being repeated over long distances.

▶ Also, if a **packet got lost** by one of the digipeaters, **the originator** station would have to **retransmit the entire packet** again, forcing even **more congestion**.

KA-NODES

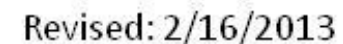Kantronics **improved** on the **"digipeater"** slightly, and created **"KA-Nodes"**.

As with digipeaters, KA-Nodes simply repeat **A**X.25 frames. However, a **KA-Node acknowledges every transmission at each link (node),** instead of over the entire route.

Therefore, instead of an end-to-end acknowledgment, KA-Nodes allow for more reliable connections with fewer timeouts. This is because acknowledgments are only carried on one link.

KA-Nodes, therefore ,are **more reliable than digipeaters**, but are not a true network.

CT NETWORKING – 2 SYSTEMS

Connecticut Towns

Classic Packet Radio NODE Locations by Frequency

Revised: 2/16/2013

Frequency	Answers to	location	Frequency	Answers to	location
145.010	ReddCT	Wilton (1) (2) (4)	145.050	W1HAD-2	Shelton (1) (3) (5)
	KD1ZD-3	Enfield (3)		W1WCG-2	North Haven (3) (5)
	FranCT	Franklyn (1) (2) (4)		NHAVCT	New Haven (1) (2) (4)
	MeriCT	Meriden (1) (2) (4)		TollCT	Tolland (1) (4)
	AvonCT	Avon (1) (2) (4)		NorfCT	Norfolk (1) (2) (4) Connects to K1FFK (WMA)
	WestCT	Westport CT (1) (2) (4)		KA1HSP-2	Ware MA (EMA)
	SoutCT	Southbury (1) (2) (4)		K1FFK	MT Greylock (WMA)
	K2DLL-1	Gallway, NY		WA2FNQ-2 Flex no emergency power	Northport (5) (LI NY)
	SterCT	Sterling (4)			
	HaddCT	Haddam (1) (2) (4)			
	CanaCT	Canaan (1) (2) (4) Connects to K2DLL-2 (NNY)			
145.030	N1NW-4	Norwich	145.070	K1YON-2	East Hartland (1) (3) (5)
	KD1RY-2	Bethel		WA2PNU-2	Huntington (3) (5) LI NY
	KX1EOC	Danbury		WolcCT	Wolcott (1) (2)
	ColcCT	Colchester (1)		K1CRC-7	Burlington (1)
	ThomCT	Thompson (1)			
	W1QI	Bethel	145.090	W1EDH	Glastonbury (1) (3) (5)
	N1LMA	Westerly, RI		W1JOE	Brockton, MA
	MansCT	Mansfield (1) (2) (4)			
	K1MUJ-5	Killingly (4)	145.610	K2PUT-2	Carmel, NY (3) (5)

ENTER THE 8 NEW W1SP TOWER FREQS.

COMMON PACKET FREQUENCIES (SIMPLEX)

144 .91, .93 .95, .99

145 .01, .03, .05, .07, .09

and

145 .51, .53, .55, .57, .59
.61, .63, .65, .67, .69
.71, .73, .75, .77, .79

WHAT IS A BBS?

▶ A BBS, or **B**ulletin **B**oard **S**ystem, is a message center and information store.

▶ You are able to connect to the BBS, send messages, retrieve messages and read bulletins or announcements.

▶ Not only is a BBS a User Area, it's designed to be user friendly.

▶ One of the most common features of a BBS is an online extensive **H**elp file.

WHAT IS "SSID"?

▶ **S**econdary **S**tation **Id**entification: "**callsign-1**" **through** "**callsign-15**".

▶ Usually your callsign by itself is considered "callsign-Ø".

▶ By some standards, using a SSID of 1 denotes your mailbox (e.g. **WA1SFH-1**).

▶ You may have up to 16 of your callsign active at any one time, each with a unique number identifier (SSID). No duplicates are allowed at any one time.

WHAT'S A NODE?

▶ Part of the packet network, it's a device that allows you to connect to other parts of the network - similar to a telephone switchboard.

▶ **Nodes establish routes and remember where other nodes are**.

▶ Properly configured nodes can have a **very extensive list of routes** to other nodes even in different states or countries.

▶ A node may have multiple ports as well as multiple operating frequencies.

▶ **Nodes** are **more effective at "getting someplace" than Digipeaters**, as they have established links and can provide the most direct route.

▶ **A node is a tool** to allow users to get to other places **easier and faster**.

▶ **A node is a User Area**.
 There are usually **menu options** available when you are connected

to a node – simply **type a "?" (question mark) or "H" (help)** to get

the list of commands available on that node.

WHAT IS KEYBOARD TO KEYBOARD?

▶ **A direct connection** with another user.

▶ Both of you able to send and receive each others messages.

▶ If both parties have CONVERS set to ON, connecting will be easy.

SIMPLE RULES TO KEEP IN MIND:

▶ Typical Power @ 5 Watts (25+ Watts …as needed)

▶ Make sure your antenna is not masked (L-O-S Rules!)

▶ Learn to use the **Question Mark "?"** to find out what **commands** are available when connected to a Node or cluster.

▶ To finish and send a message: Hit "Enter" and then "Cntl-Z" on **a new line.**

▶ Make sure to properly exit the system, use:

▶ **"B"** (Bye) to exit a BBS,

▶ **"Q"** (Quit) to exit a Node.

CONFIRMATION OF RECEIPT

▶ It is very **good practice** that we receive confirmation of receipt for all messages.

▶ This is much simpler when using voice, but **not as guaranteed** when using **digital modes**.

▶ Packet messages and WinLink email can be stored for later retrieval, not requiring that another station be present and active at the time of sending.

▶ Because of this convenience, **the receiving station needs to send another message** stating that they **have received the message**, thereby confirming with the originating station.

▶ It is preferred that the confirmation be sent within the hour.

QUESTIONS

?

TIME FOR A BREAK

Everybody up!

Restrooms!

Chat!

Walk about!

WHERE AM I ?

▶ The PROMPTS are *different*…

cmd: **TNC** (e.g. **wa1sfh-0**)

=>   **Node** (e.g. **w1had**)

>   **BBS** (e.g. **w1had-4**)

YOUR TNC

H and ?H are your friends ☺

cmd:h

TYPE '**HELP**' OR **?** FOLLOWED BY COMMAND

FOR MORE INFORMATION

BKONDEL CONNECT CONVERS DISCONNE DAYTIME DELETE
DISPLAY DWAIT ECHO HELP INTFACE K MONITOR
MHEARD MYCALL MYPBBS PBBS RESET STATUS TXDELAY
UNPROTO VERSION

CMD: ?H – PAGE 1

▶ BKONDEL If on, DELETE will backspace; else \

▶ **C**ONNECT callsign [via calls] can be used to reconnect with different path

▶ **CONVERS** Enter conversational mode

▶ DISCONNE Disconnect current stream

▶ **DAYTIME** yymmddhhmmss

▶ **DELETE** Char used to delete last char in line

▶ **DISPLAY** {ASYNC | CHAR | GPS | ID | LINK | MONITOR | PBBS | TIMING}

CMD:?H – PAGE 2

▶ DWAIT   Time to allow digipeaters first acces to channel (10 msec)

▶ **ECHO**   Characters from terminal are echoed back

▶ **H**ELP   For further help read your manual

▶ INTFACE {TERMINAL | NEWUSER | BBS | KISS | XKISS | HOST | GPS | MODEM}

▶ K   Same as CONVERS

▶ **MONITOR** Master switch for monitoring packets

▶ **MH**EARD   [LONG|SHORT|CLEAR] Display list of stations heard

CMD: ?H – PAGE 3

- **MYCALL**   This station's callsign {call[-n]}
- **MYPBBS**   Callsign used for access to personal mail box
- **PBBS**   Amount of memory (1K increments) set aside for PBBS messages
- **RESET**   Soft reset
- **STATUS**   [LONG] Show status of streams
- **TXDELAY** Time delay between PTT and radio data out (10 msec)

▶ UNPROTO {call [via calls]} path for UI data frames

▶ **VERSION** Displays software version number

CMD: ?H – PAGE 3

- INTFACE {TERMINAL | NEWUSER | BBS | KISS | XKISS | HOST | GPS | MODEM}
- K   Same as CONVERS
- **MONITOR** Master switch for monitoring packets
- **MH**EARD   [LONG|SHORT|CLEAR] Display list of stations heard
- **MYCALL**   This station's callsign {call[-n]}
- **MYPBBS**   Callsign used for access to personal mail box
- PBBS   Amount of memory (1K increments) set aside for PBBS messages
- RESET   Soft reset
- **STATUS**   [LONG] Show status of streams
- TXDELAY Time delay between PTT and radio data out (10 msec)
- UNPROTO {call [via calls]} path for UI data frames
- VERSION Displays software version number

LET'S CONNECT TO A BBS

cmd:

type

c w1had-4

= c SPACE w1had-4

(Hit Return)

cmd:*** CONNECTED to W1HAD-4

[FBB-7.00i-AB1FHMRX$]

W1HAD BBS, QTH FN31JH.

Hello Douglas, you are now on channel 1.

Here are 390 active messages, 149908 is last message and

149898 is the last you have listed.

Assigned channels:

Ch. 1 (NETWORK) : WA1SFH-0 - Mon 18/02/13 21:08

   via : W1HAD-2

        *** Welcome to the Mohegan ARC, W1HAD Packet Bulletin Board ***

             *** at Shelton, Fairfield County, CT [FN31jh] ***

Msg#   TSLD Dim To   @ BBS   From   Date/Time Title   (LC-choice:*)

149908 PNL   411 WA1SFH   KB1WLW 0218/2046 Burning 10 CD 4 U

149901 PN   372 WA1SFH   N1CLV 0218/1519 Congrats on getting on packet!

You have 2 new (unread) message(s).

(1) W1HAD BBS (H for help) >

(1) W1HAD BBS (H for help) >
R 149901
From   : N1CLV
To   : WA1SFH
Type/status : PN
Date/time   : 18-Feb 15:19
BID (MID)   : 9524_W1EDH
Message #   : 149901
Title   : Congrats on getting on packet!

(This message has been read 1   times so far in this BBS.)

Path: !W1EDH!
From: N1CLV@W1EDH.CT.USA.NOAM
To : WA1SFH@W1HAD.CT.USA.NOAM

Glad to hear you are now up on packet! I have had some computer
configuration changes in my shack and did not have packet set up. Had to
move some cables between the old and "new" (less old) computers!
Enjoy the new mode!
73, Wayne N1CLV

--- End of messsage #149901 to WA1SFH from N1CLV ---

You have 1 new (unread) message(s).

(1) W1HAD BBS (H for help) >

From   : N1CLV
To   : WA1SFH
Type/status : PN
Date/time   : 18-Feb 15:19
BID (MID)   : 9524_W1EDH
Message #   : 149901
Title   : Congrats on getting on packet!

Path: !W1EDH!
From: N1CLV@W1EDH.CT.USA.NOAM
To : WA1SFH@W1HAD.CT.USA.NOAM

Glad to hear you are now up on packet! I have had some computer
configuration changes in my shack and did not have packet set up. Had to
move some cables between the old and "new" (less old) computers!
Enjoy the new mode!
73, Wayne N1CLV

--- End of messsage #149901 to WA1SFH from N1CLV ---

You have 1 new (unread) message(s).

(1) W1HAD BBS (H for help) >

KILL THE MESSAGE

(1) W1HAD BBS (H for help) >

Type:

k SPACE **149901**

Hit Return

Message #149901 has been Killed (deleted).

You have 1 new (unread) message(s).

(1) W1HAD BBS (H for help) >

LIST MESSAGES

(1) W1HAD BBS (H for help) >

l

Msg# TSLD Dim To @ BBS From Date/Time Title(LC-choice: *)

149910 PNL   54 KB1WLW   WA1SFH 0218/2131 roger # 149908

149909 PNL   64 KA1CVV   WA1SFH 0218/2129 TNX so much!

149906 BF   1912 EQUAKE@WW   CX2SA 0218/1718 KERMADEC ISLANDS, NEW ZEALAND

149905 BF   3771 TECH @WW   G8MNY 0218/1519 70cm 27el G3JVL's QLY

149904 BF   2222 TECH @WW   G8MNY 0218/1519 70cm 19el Tonna Yagi info

149903 BF   2829 TECH @WW   G8MNY 0218/1519 70cm Collinear

149902 BF   1767 EQUAKE@WW   CX2SA 0218/1519 KERMADEC ISLANDS, NEW ZEALAND

149900 BF   3174 TODAY @WW   N0KFQ 0218/1418 Today in History - Feb 18

(1) W1HAD BBS (H for help) >

LIST TRAFFIC - CT ZIP CODES+

(1) W1HAD BBS (H for help) >
LT >06*

```
Msg#   TSLD  Dim To    @ BBS   From   Date/Time Title      (LC-choice: *)
149885 T$     439 06513 @NTSCT  WB5NKD 0217/2230 NEW HAVEN 203 752
149884 T$     438 06040 @NTSCT  WB5NKD 0217/2230 MANCHESTER 860 649
149883 T$     441 06013 @NTSCT  WB5NKD 0217/2230 BURLINGTON 860 404
149882 T$     458 06033 @NTSCT  WB5NKD 0217/2230 GLASTONBURY 860 657
149881 TFL    227 95926 @NTSCA  K1ENF  0217/2201 QTC CHICO
149880 TFL    240 52404 @NTSIA  K1ENF  0217/2201 QTC CEDAR RAPIDS
149879 TFL    236 55420 @NTSMN  K1ENF  0217/2200 QTC BLOOMINGTON
149878 TFL    236 95667 @NTSCA  K1ENF  0217/2200 QTC PLACERVILLE
149877 TFL    234 52402 @NTSIA  K1ENF  0217/2200 QTC CEDAR RAPIDS
149876 TFL    239 33702 @NTSFL  K1ENF  0217/2159 qtc st petersburg
149875 TFL    215 24592 @NTSVA  K1ENF  0217/2159 QTC S BOSTON
149874 TFL    203 95492 @NTSCA  K1ENF  0217/2158 QTC WINDSOR
149873 TFL    221 91350 @NTSCA  K1ENF  0217/2158 QTC SANTA CLARITA
149872 TFL    225 93012 @NTSCA  K1ENF  0217/2157 QTC CAMARILLO
149871 TFL    234 55405 @NTSMN  K1ENF  0217/2157 QTC MINNEAPOLIS
149870 TFL    237 39573 @NTSMS  K1ENF  0217/2156 QTC PERKINSON
149866 TFL    255 04781 @NTSME  W1ZFG  0217/2015 QTC WALLAGRASS 207 444
149859 TFL    193 01062 @K1HEJ  0217/1027 QTC EAST LONG MEADOW 413 250
149858 TFL    250 02359 @NTSMA  K1HEJ  0217/1027 qtc pembroke ma
149843 TFL    246 91116 @NTSCA  W1ZFG  0217/0042 QTC K6HTN PASADENA
149842 TFL    181 91116 @NTSCA  W1ZFG  0217/0041 QTC K6HTN PASADENA
149824 T$     576 06043 @NTSCT  WB5NKD 0216/1320 BOLTON 860 533
149823 T$     579 06437 @NTSCT  WB5NKD 0216/1320 GUILFORD 203 458
149822 T$     583 06877 @NTSCT  WB5NKD 0216/1320 RIDGEFIELD 203 438
149770 TFL    172 02359 @NTSMA  W1ZFG  0215/0123 QTC N1IQI PEMBROKE MA
149769 TFL    218 02359 @NTSMA  W1ZFG  0215/0122 QTC N1IQI
```

LIST TRAFFIC

(2) W1HAD BBS (H for help) >
L 149885 149884 149883 149882

Msg#   TSLD   Dim To   @ BBS   From   Date/Time Title   (LC-choice: *)
149885 T$ 439 06513 @NTSCT WB5NKD 0217/2230 NEW HAVEN 203 752
149884 T$ 438 06040 @NTSCT WB5NKD 0217/2230 MANCHESTER 860 649
149883 T$ 441 06013 @NTSCT WB5NKD 0217/2230 BURLINGTON 860 404
149882 T$ 458 06033 @NTSCT WB5NKD 0217/2230 GLASTONBURY 860 657
(2) W1HAD BBS (H for help) >

LISTING MESSAGE #S

(2) W1HAD BBS (H for help) >

L 149885 149884 149883 149882

Msg#   TSLD Dim To   @ BBS   From   Date/Time Title   (LC-choice: *)

149885 T$ 439 06513 @NTSCT WB5NKD 0217/2230 NEW HAVEN 203 752

149884 T$ 438 06040 @NTSCT WB5NKD 0217/2230 MANCHESTER 860 649

149883 T$ 441 06013 @NTSCT WB5NKD 0217/2230 BURLINGTON 860 404

149882 T$ 458 06033 @NTSCT WB5NKD 0217/2230 GLASTONBURY 860 657

(2) W1HAD BBS (H for help) >

(1)   W1HAD BBS (H for help) >

L 149885

From   : WB5NKD

To   : 06513@NTSCT

Type/status : T$

Date/time   : 17-Feb 22:30

BID (MID)   : 12595_KB0OFD

Message #   : 149885

Title   : NEW HAVEN 203 752

(

This message has been read 2   times so far in this BBS.)

Path: !W1WCG!W1WCG!KB0OFD!

(CONTINUES ON NEXT SLIDE)

1201 R HXG WB5NKD 21 OKLAHOMA CITY OK FEB 18

JOSE A CHALCHE KB1ZCK

239 JAMES ST

NEW HAVEN CT 06513

203 752 0022

BT

MESSAGE RELAY STATIONS ARE NEEDED

X HOPE YOU ARE ABLE

TO HELP X FIND A

LOCAL NET TO LEARN HOW

73

BT

PAT WB5NKD

LOG OFF THE BBS

B = BYE

(1) W1HAD BBS (H for help) >

B

You have been connected 2mn 07s - Computer-time : 1s

Bye, Douglas, and welcome back.

*** DISCONNECTED

cmd:WA1SFH>W1HAD-4: <<UA>>:

QUESTIONS

?

LET'S CONNECT TO A NODE

CMD:

C W1HAD (return)

cmd:*** CONNECTED to W1HAD

PC/FlexNet V3.3g

Welcome to the Mohegan Amateur Radio Club, W1HAD FlexNet-Digi node

Located at Shelton, Fairfield County, Connecticut. [FN31jh] It is

operating as part of the USA Eastnet FlexNet Network, serving the

Southern Connecticut Region. CT

<LO> for Local info.

Local Server:

<C W1HAD-4 or <M> to connect to the Shelton PBBS.

Region Servers:

<C W1WCG-4   to connect to the North Haven PBBS.

<D> for available Destinations and <A> for info on Destination calls.

<H> for Command Summary with details.

<I> for System and Additional Information.

NODE OPTIONS

<D> for available Destinations and

<A> for info on Destination calls.

<H> for Command Summary with details.

<I> for System and Additional Information.

=>

D (return)

K1YON 2-5 68   **K2PUT** 0-4 133   KB2VLX 0-4 1072   N4FLA 0-4 426
N4LEM 2-6 122 N4LEM 3-3 95 W1EDH 0-4 31   **W1WCG** 0-0 78
W1WCG **2**-5 64 W4AKH 2-9 321 W4MLB 2-4 137 W4OT   2-7 246
WA2FNQ 0-15 147 WA2PNU 0-15 45 WA2UPK 2-4 270
WB2QJA 0-7 236 WB2ZII 9-14 157   WN3DHI 2-4 151

NODE OPTIONS

<D> for available Destinations and

<A> for info on Destination calls.

<H> for Command Summary with details.

<I> for System and Additional Information.

=>

H (return)

NODE OPTION "H"

A   shows information about Destination calls

B   shows beacon text

C <call> [options]   connect to station <call>; possible options:

            <node>   : use path via <node>

         <node-SSID> : use path via <node> with <SSID>

             <port>   : use path via <port>

                  (a maximum of 6 of these options can be given)

C -<SSID>   change to (user)port <SSID>

C   shows all participants of convers (with channel number) and users of the infobox (with '---'); after the prompt 'channel?' you can type   the channel number to enter a specific channel or type RETURN to   go back to the infobox commands in the convers mode:

/w   shows all users of convers and infobox

/w <n>   shows all users of convers channel <n>

/c   shows the current channel number of the convers

/s <call> <text>   sends <text> to the user <call>

/t <call>   starts talk mode to user <call>

/t   exits talk mode

/q   Quit, exits convers or talk mode

NODE OPTION "H"

D   shows destination table (list of reachable nodes) with SSID range and RTT in tenth of a second

D <partial call> like D, shows only destinations with the string <partial call>
                              e.g. prefix or suffix

D *   like D, shows also destinations that would be available via a loop

D * <partial call>   combination of 'D *' and 'D <partial call>'

D <call>   shows RTT and choosen path to <call>

D <call> *   shows RTT via different available paths

D <call> >   shows RTT of all nodes of the path in between

F <call>   search for <call>

H   shows this help text

I   shows information about the node (if available)

L   shows link information of the node

L *   like L, additionally shows the last 16 measured RTT's

LO   shows local info text

NODE OPTION "H"

M   connects to the (local) mailbox (if defined)

M ?   shows call of the (local) mailbox (if defined)

MH <options> shows MHeard list: list of stations with time since the last activity;
        possible options:
        <call>   : callsign
        <partial call>: shows only stations with the string <partial call>
             e.g. prefix or suffix
        <number> : shows last 16..300 entries; default: 30 entries

MY   shows callsign of the node with SSID range

P   shows parameters (layer 1/2 parameters)

P *   like P, with additional information
        (see below)

P [*] <port>   like P or 'P *' only for port <port>

NODE OPTION "H"

Q   disconnect from the node

S   shows search paths for the FIND command
                           (setsearch text)

ST   shows internal port statistics

T <call> <text>   talk mode, sends <text> to user <call>

T * <text>   sends <text> to all users connected to the infobox

T <call>   starts talk mode to user <call>, the talk mode uses
                          the same command set like the convers mode

U <options>   shows user list; possible options:

               '*'   : also shows Maxframe and Frack

               '='   : shows only the QSO's directly

                         with the node (infobox)

          <port> : shows only QSO's on port <port>

          <call> : shows only user <call>

Additional information when using the commands 'L *' and 'P *' :

NODE OPTION "?H"

=>

?H

invalid command

=>

There is no ?H at a NODE.
Only at your TNC and a BBS.

NODE OPTIONS

<D> for available Destinations and

<A> for info on Destination calls.

<H> for Command Summary with details.

<I> for System and Additional Information.

=>

I (return)

NODE OPTION "I" (PAGE 1)

System info:

This FlexNet-Digi node, W1HAD, is located at Shelton, Fairfield County, Connecticut, USA. The Grid locator is [FN31jh]. It is operating on a 486 PC using MS-DOS 6.22 together with a Packet Bulletin Board.

These systems are part of the USA Eastnet FlexNet Network, serving the Connecticut Region RF Network. For further information please connect to the Eastnet Packet Web site: http://www.eastnetpacket.net

FlexNet_Digi node:

Software: PC/Flexnet version 3.3g.

Call: W1HAD responding to ssid in the range 0 thru 7

Port 0 -2 VHF Local User Channel.   145.05 MHz. 1k2

Port 1 -3 SCT/LINY Multi Channel.   223.46 MHz. 1k2

     Link to W1EDH   Glastonbury, Hartford Cty, CT

     Link to W1WCG-2 North Haven, New Haven Cty, CT

     Link to: NY2LI   Yaphank, Suffolk County,   NY

Port 2 -7 SCT/LINY UHF Multi Channel.   441.050 MHz. 1k2

     Link to: WA2FNQ   Northport, Suffolk County, NY

     Link to: WA2PNU   Huntington, Suffolk County, NY

Port 3   Link to: 430.950 MHz. 9k6

Port 4   Link to: K2PUT   Mt Ninham, Putnam County, NY 421.950 MHz. 9k6

Port 5   Link to: K2PUT   Mt Ninham, Putnam County, NY 223.56 MHz. 1k2

Port 15   Virtual port linked to Packet Bulletin Board W1HAD-4.

The <S>earch command is set via all FlexNet-Digi User ports within CT.

The <M>ail command is set to W1HAD-4 at Shelton, CT

Packet Bulletin Board:

Software: F6FBB version d7.00i

Port 1   Call W1HAD-4. Virtual port linked to W1HAD-0-7 FlexNet-Digi node.

Address: W1HAD.CT.USA.NOAM.

******

Call: W1HAD was adopted as the Club call of the Mohegan Amateur Radio Club.

     Trustee K1EIC. It is dedicated in memory of one of Connecticut's

     Amateur Radio pioneers the late Paul M. Doane, W1HAD 1939 - 1994

Sponsor: Mohegan Amateur Radio Club:

Sysop: Elizabeth L, Doane, K1EIC   Phone: 203-929-7759

     92 Mohegan Road .   PBBS: K1EIC @ W1HAD.CT.USA.NOAM

     Shelton, CT 06484-2440   Internet: k1eic@arrl.org

=>

NODE OPTION "I"

=>

i

System info:

This **FlexNet-Digi node**, W1HAD, is **located at Shelton**, Fairfield County, Connecticut, USA. The **Grid** locator is [**FN31jh**]. It is operating on a **486 PC** using **MS-DOS 6.22** together **with a Packet Bulletin Board**.

These systems are **part of** the USA **Eastnet FlexNet Network**, serving the Connecticut Region RF Network.

For further information please connect to the Eastnet Packet Web site: **http://www.eastnetpacket.net**

NODE OPTION "I"

The <S>earch command is set via all FlexNet-Digi User ports within CT.

The <M>ail command is set to W1HAD-4 at Shelton, CT

Packet Bulletin Board:

Software: F6FBB version d7.00i

Port 1   Call W1HAD-4. Virtual port linked to W1HAD-0-7 FlexNet-Digi node.

Address: W1HAD.CT.USA.NOAM.

******

NODE OPTION "I"

FlexNet_Digi node:

Software: PC/Flexnet version 3.3g.

Call: W1HAD responding to ssid in the range 0 thru 7

Port 0 -2 VHF Local User Channel.   145.05 MHz. 1k2

Port 1 -3 SCT/LINY Multi Channel.   223.46 MHz. 1k2

    Link to W1EDH   Glastonbury, Hartford Cty, CT

    Link to W1WCG-2 North Haven, New Haven Cty, CT

    Link to: NY2LI   Yaphank, Suffolk County,   NY

Port 2 -7 SCT/LINY UHF Multi Channel.   441.050 MHz. 1k2

    Link to: WA2FNQ   Northport, Suffolk County, NY

    Link to: WA2PNU   Huntington, Suffolk County, NY

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Port 15   Virtual port linked to Packet Bulletin Board W1HAD-4.

NODE OPTION "I"

Call: W1HAD was adopted as the Club call of the Mohegan Amateur Radio Club. Trustee K1EIC.

It is dedicated in memory of one of Connecticut's Amateur Radio pioneers the late Paul M. Doane, W1HAD 1939 – 1994.

Sponsor: Mohegan Amateur Radio Club:

Sysop: Elizabeth L, Doane, K1EIC   Phone: 203-929-7759

             92 Mohegan Road , Shelton, CT 06484-2440

PBBS: K1EIC @ W1HAD.CT.USA.NOAM

Internet: k1eic@arrl.org

NODE OPTION "?I"

=>

?i

invalid command

=>

There is no ?i at a NODE.
Only at your TNC and a BBS.

"D", "I", "H", "?H"

QUESTIONS?

TIME FOR A BREAK

Everybody up!

Restrooms!

Chat!

Walk about!

CONNECT EQUIPMENT

If not already done, please connect up your equipment.

➢ Radio to TNC cable connection

➢ Computer to TNC cable connection(s).

➢ Computer to A.C. power.

➢ **Optional:** TNC to A.C. power.

EQUIPMENT TEST 1 - COMPUTER TO TNC

Open Program: **WinPak** v. 6.8 on computer.

CANCEL "Not Registered" screen

Turn ON your TNC

Compare to this:

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DUPLICATION PROHIBITED WITHOUT PERMISSION OF KANTRONICS.

cmd:

LET US KNOW about PROBLEMS.

EQUIPMENT TEST 2 - RADIO TO TNC TO COMPUTER

1) **Turn OFF your TNC**

2) **Turn ON your RADIO**

   - previously set to 145.050 MHz

(3) **Turn ON your TNC**

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cmd:

TNC: HELP DISPLAY

CMD:
H (Return)
CMD: H

TNC: DATE & TIME SET-UP

CMD:
 DAYTIME

CMD:
 DAYTIME (3 SPACES, plus)
130223104530

(Return)

TNC: CALLSIGN SET-UP

CMD:

MYCALL

CMD:

MYCALL WA1SFH

CONNECT TO A BBS

CMD:

c whad-4

Type

C **SPACE** W I HAD-4 (RETURN)

BBS COMMAND: LIST MESSAGES

>

LM   (Return)

BBS COMMAND: LIST CT NTS MSGS

> **>**

LT >06* (Return)

BBS COMMAND: READ MESSAGES

>

R Msg# (Return)

R SPACE Msg#

BBS COMMAND: KILL MESSAGES

>

K Msg# (Return)

ONLY if TO YOU!

BBS COMMAND: LIST TRAFFIC (NTS) MESSAGES

> **>**

LT (Return)

BBS COMMAND: LIST TRAFFIC (NTS) MESSAGES FOR CONNECTICUT

>

LT >06* (Return)

Type
LT SPACE >06*

BBS COMMAND: SENT A MESSAGE

> S K IEIC (Return)

S SPACE K IEIC

BBS COMMAND: SENT A MESSAGE

> Greetings (Return)

BBS COMMAND: SENT A MESSAGE

>

Am now at Classic Packet Radio Workshop in Guilford. Having a great time.
(Return)

73, FirstName - Callsign
(Return)

CONTROL-Z (Return)

BBS COMMAND: EXIT BBS

> **B** (Return)

HOME WORK

- SEND A MESSAGE
- READ A MESSAGE
- READ A MESSAGE TO YOU
- **KILL** A MESSAGE TO YOU (ONLY!)

CONNECT TO NODES

C W1HAD

Then…

C W1WCG (North Haven)

Q   (exit Node)
Gets you back to W1HAD

Now,

C – K2PUT   then Q (exit back to W1HAD)