



DxNet
version 4.2

SYSOP's MANUAL

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DXNET

F5MZN'S DXNET PROGRAM

Overview

A DX cluster (DxNet) provides a useful service to radio amateurs who are interested in DX (long distance contacts). The primary function is to allow the circulation of DX traffic information in a timely fashion. DxNet is only useful in an environment where it is connected via a network to other similar systems. DX information (known as «spots») is sent via the network to each connected user in turn.

DxNet allows access to 4 screens via function keys F1 to F4:

F1: Program
F2: Console
F3: Terminal
F4: Full screen monitor

Updates

The latest version of F5MZN's DxNet is available on Internet from: <http://www.dxnet.free.fr>

Questions and suggestions

Please address questions, suggestions etc by Email to: olecam@online.fr.

You may also send bug reports to the author using the above Email address. Please provide complete and accurate information to provide the best chance of providing an effective cure for your problem.

Ownership

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While DxNet is provided free of charge for non-commercial use, contributions towards the development costs (documentation and C++ compiler, etc) would be welcome. The suggested amount of contribution is 20 US dollars or 150 French Francs.

Acknowledgements

Thanks go to all those radio amateurs who acted as beta testers and sent bug reports and suggestions,

INSTALLATION

Minimum equipment configuration (DOS version)

F5MZN's DxNet requires at least PC compatible, XT computer, 640 KB RAM, VGA monitor and adapter, 1.44 Mb floppy disk drive and minimum of 40 Mb hard disk drive space.

DxNet runs on top of either the G8BPQ SWITCH software (BPQCODE.EXE) or the PC/FlexNet kernel, and allows the simultaneous management of up to 64 streams.

Memory Management (DOS version)

DxNet v4 is able to use either XMS, EMS or virtual (using swap files in the TEMP directory) memory.

G8BPQ SWITCH Configuration

This version of DxNet has been tested with version 4.08 and 4.08a of the G8BPQ SWITCH software. It is important to note that for correct operation, the BPQCFG.TXT file must be edited to provide suitable parameters for your configuration. The BPQCFG.TXT file distributed with the standard distribution of G8BPQ software is suitable for use with DxNet and a standard TNC2, needing only changes to the NET/ROM (NODECALL, NODEALIAS) and BBS (BBSCALL, BBSALIAS) parameters.

Since DxNet appears to the SWITCH code like any other BBS, it is important not to overlook the address (IOADDR), interrupt number (INLEVEL) and the port speed (PORT) to which the TNC is connected. As a convenience, the application name (BBS) may be replaced by DX.

Take special care with the PACLEN parameter. You are advised to set this to the largest possible (255 at F5MZN) since certain protocol exchanges (PC10, PC11, etc) will fail if they are not sent in a single frame.

After making changes to BPQCFG.TXT, don't forget to run the compiler program (BPQCFG.EXE) to ensure the changes are effective.

Note on setting of the PACLEN parameter: The protocol exchanges (PC10, PC11... etc) will fail unless they are transmitted in a single frame, and your connection to the adjacent DxNet will fail. You are therefore advised to use the largest possible PACLEN (255 at F5MZN) on your network connection links.

OH6NJ noticed that the main problem which causes the system crash when using the g8bpq switch is the bpq buffers. When buffers are low and buffer count gets 0 or below, bpq and the whole system crashes.

Added a dxnet switch "-bpql##" where ## is the minimum number of free buffers allowed. If the buffers left is lower than this value, dxnet will exit with the error code 9. This is checked by DxNet every minutes (at second 0).

Example :

dxnet -bpql10

then DxNet will exit if free buffers is lower than 10.

Configuration pour PC/FlexNet

DxNet est utilisé en tant qu'interface de PC/FlexNet sur le port 15 du node. Vous avez juste à déclarer un lien sur ce port pour appeler l'indicatif de votre DxNet. Ci-après, un exemple de LOADFLEX.BAT qui peut être utilisé pour charger le noyau de PC/FlexNet.

```
Rem Exemple de chargement de PC/FlexNet
Rem Utilisation d'une carte USCC4 avec 2 voies modem 1200 et 1 voie modem 9600
lh flexnet
lh uscc /p0x300 /i=7/c=3
lh flexdigi
flex
```

Remarque: ne pas charger flexdigi si l'ordinateur sur lequel est implanté DxNet n'est pas un node Flex. Cela permet d'économiser 100 Kb de mémoire.

Se référer à la documentation de PC/FlexNet pour plus d'informations.

Files Structure

```

C:-----\DxNet-----\language-----\abc.txt
|                                     +-----\def.txt
|                                     +-----\ghi.txt      (up to 10)
|                                     +-----\abc.hlp
|                                     +-----\def.hlp
|                                     +-----\ghi.hlp      (up to 10)
|                                     +-----\abc.mot
|                                     +-----\def.mot
|                                     +-----\ghi.mot      (up to 10)
|                                     +-----\cfilter.txt
|
+-----\script-----+-----\callsign.fwd
|                                     +-----\callsign.cfg
|                                     +-----\callsign.in
|                                     +-----\callsign.out
|                                     +-----\callsign.lf
|
+-----\system-----+-----\dxtodo.dat
|                                     +-----\dxnet.cfg
|                                     +-----\passwd.dat
|                                     +-----\local.dat
|                                     +-----\remote.dat
|                                     +-----\rcmd.dat
|                                     +-----\mode.dat
|                                     +-----\forward.sys
|                                     +-----\language.dat
|                                     +-----\bin-----+-----\userscfg.bin
|                                                         +-----\maxusers.bin
|                                                         +-----\dx.bin
|                                                         +-----\wcy.bin
|                                                         +-----\www.bin
|                                                         +-----\announce.bin
|                                                         +-----\dirmes.bin
|                                                         +-----\lastmail.bin
|                                                         +-----\bid.bin
|
+-----\extcmd-----+-----\...
|                                     +-----\sh-----+-----\...
|
+-----\syscmd-----+-----\...
|                                     +-----\sh-----+-----\...
|
+-----\callbook---+-----\...
|
+-----\logs
|
+-----\mail
|
+-----\source
|
+-----\tmp
|
+-----\database---+-----\mgr.ful
|                                     +-----\mgr.idx
|                                     +-----\qsl.ful
|                                     +-----\qsl.idx
|                                     +-----\cty.dat
|
+-----\users-----+-----\default.cmd
|                                     +-----\callsign.cmd
|
+-----\DxNet.exe

```

Files Structure

Callsign.FWD (SCRIPT directory)

A script consists of a number of sequential commands to make a connection to a remote DxNet node. The files must have the extension FWD (examples: F5MZN.FWD, GJ6TMM.FWD).

The first line of the file script contains the callsign (including SSID, if necessary) of the remote DxNet. TAKE GREAT CARE NOT TO TRY TO MAKE A CONNECTION to a DxNet already connected elsewhere in the network!

The following lines are the node-specific dialogue when connecting via a TheNet, ROSE or FlexNet node (TheNet, ROSE, FlexNet... if there of a) which are between local DxNet and distant DxNet. There may be three or four lines of script for each node.

A typical script file would consist of:-

One line beginning with a period (« . ») character followed immediately by the callsign of the node. THIS LINE IS MANDATORY.

The next line would begin with a hash or pound character (« # ») followed immediately by a numeric parameter which is to be used as the timeout setting for connections to this node. The use of the « # » character is optional. This line is optional, and if not supplied by the SysOp, a default value of 60 seconds is used. THIS LINE IS OPTIONAL.

The third line should begin with a single plus character " + " followed immediately by a string of characters which can be identified from a successful connection to the node. The SysOp-supplied string must provide an exact match (including upper/lower case) other wise the test will fail. Up to a maximum of 7 characters may be supplied, and surplus characters are ignored. The use of the « + » character is optional. THIS LINE IS MANDATORY.

The fourth line should begin with a single question mark character "? " followed immediately by a string of characters which can be identified from a failed connection to the node. The use of the « ? » character is optional. THIS LINE IS MANDATORY.

An optional fifth line may be provided, and if so should conform to the requirements for the fourth line, above. THIS LINE IS OPTIONAL.

NOTE: As part of the connection sequence, the DxNet connection route will be initially via the resident BPQ node software. Therefore, the order of the lines must be as expected by the G8BPQ software.

In the examples given, the lines starting with " / / " are comments. THESE LINES WILL NOT BE EXECUTED as script commands.

Examples

Example of file " SCRIPT\F5MZN.FWD " which is designed to allow F6KBI-3 to directly connect to DxNet F5MZN-3 on port 2 of the G8BPQ node:

F5MZN-3

.C 2 F5MZN-3 //Request BPQ node to connect to F5MZN-3

#30 //Abort after 30 seconds

+to //to is part of a successful connect string

F5MZN-3

?Failure //if unable to connect to F5MZN-3

?Busy //if F5MZN-3 has no available streams

Example of the contents of the script file " SCRIPT\GJ6TMM.FWD " allowing F6KBI-3 to connect to DxNet GJ6TMM-4, using port 1 of the G8BPQ node via three TheNet nodes (F6KCF-2, F5JGS-2 and F6KRM-2).

GJ6TMM-4

```
.C 1 F6KCF-2      //Demande au node BPQ de connecter F6KCF-2
#40              //Abandonne au bout de 40 secondes
+to
?Failure         //Not Busy... but it might be!
.C F5JGS-2       //Connect to second node
#60
+to
?Failure
.C F6KRM-2       //Then the 3rd
#60
+to
?Failure
?Busy           //We know that this node is often saturated!
.C GJ6TMM
#120
+to
?lure           //This also works instead of Failure !
?Busy
```

When deciding upon the contents of a connect script, it is advisable to know in advance the most suitable parameters and the response messages of each node along the route. Note that in particular for ROSE, FPAC and similar systems the first "Connected to " message does not mean that connection is already established.

Caution! Do not insert a CR (Carriage Return = Enter Key) at the end of a Script file, otherwise the script will fail during execution.

Carriage return and some other special characters are supported in a script connection file. If you want to send, say, two strings at once, your script file should be like that :

```
F5MZN-3
.C NO4J          //Connecting a telnet gateway
.f5mzn-3\nguest//Will send first "f5mzn-3" (login),
                //and then "guest" (password)
```

Supported characters are the same than JNOS (DxNet uses the same function): \n \t \v \b \r \f \a \\

If you want to send the '\' character, put '\\' in place of.

Callsign.CFG (SCRIPT directory)

The configuration files (CFG) are used to program different " hop counts " for both the IN and OUT protocol messages. Also specific parameters may be defined for each link. By default, the hop count for all protocol message is set to 99, and all protocol messages are set to ON. The following data is optional.

Function	Command	Protocol
Talk	Talk	PC10
Dx info	DX	PC11
Announcement	Announcement	PC12
Add/delete user	USER	PC16 PC17
Add/delete node	NODE	PC19 PC21
WWVinfo	WWV	PC23
DX/WWV merge request	MREquest	PC25
Dx merge info	MDX	PC26
WWV merge info	MWWV	PC27
Mail forwarding	MAIL	PC28 to PC33, PC40, PC42, PC43, PC49
Remote commands	RCOMmands	PC34, PC35, PC36
User info	UINfo	PC41
Remote DB request	DATABase	PC44 to PC48
Update user count	UCOunt	PC50
Ping	PIng	PC51
WCY spots	WCY	PC73, PC84, PC85

Note: that command has effect only if ENHanced_protocol is enable.

Incoming protocol sets [in]		Following commands apply to the incoming protocols.
Outgoing protocols sets [out]		Following commands apply to the outgoing protocols.
CluLink permission	CLUlink on/off	Allows or not CluLink protocol for that link.
External link	EXTERNAL on/off	Enable or not the external network

New command in .cfg file which can enable some enhanced protocols.

This enhanced protocols have been firstly used by clx, but some other AK1A clones (like DxSpider) supports them as well. Ask your adjacent sysop to know if you can enable them.

Syntax : ENHanced_protocol <on|off>

Enhanced protocols are including :

PC73 : WCY information

PC84 : Same as PC34, but it carries also the user who requested the remote command

PC85 : Same as PC35, but it carries also the user who requested the remote command

If you want to enable the enhanced protocols, put the command line " ENHanced_protocol on " in one of the first lines of the <adjacent>.cfg config file (before the [in] section).

By default, ENHanced_protocol is set to off.

Exemple (F6BEE.CFG)

```
clulink          off
external         off
enh              off
[in]
user             4
node             4
mail             off
rcommands        off
[out]
user             4
node             4
mail             off
mrequest         off
mdx              off
mwww            off
mail             off
rcommands        off
uinfo            4
database         off
ucount           99
ping             on
```

- Added a timeout for the cluster links.

To set up a timeout, add the following command in the script/CALLSIGN.cfg file for the adjacent cluster you want to enable a timeout with :

timeout n1 n2

where - n1 : time in seconds before DxNet PINGs the adjacent.

- n2 : time in seconds before DxNet disconnects the adjacent cluster if nothing is received following to the PING request.

Example : assume you want to enable a link timeout with your adjacent cluster F6BEE to disconnect it after 300 seconds of inactivity. To be sure this is not due to a low activity, it's safe to send a PING request to the adjacent before disconnecting. Assume you want to send this PING request 30 seconds before disconnecting. So :

$$n1 = 300 - 30 = 270$$
$$n2 = 30$$

```
---- script/f6bee.cfg ----
external off
timeout 270 30
[in]
... etc ...
```

Then, after 270 seconds of inactivity (no frame received), DxNet sends a PING request to F6BEE. Then if after 30 seconds there is still no activity (still no frame received), the link is disconnected.

- Added two commands to set up the automatic merge request during the initialization sequence :

```
. MRDX <DxCount>
. MRWWV <WwvCount>
```

Add these lines in the config file (.cfg) of the adjacent cluster you want to request to :

```
-- IK5ZUK.CFG --
clulink off
mrdx 5
mrwwv 2
[in]
...
...
```

- Added a WW filtering feature.

WW filtering is based on the WAZ CQ-zone. This is the first step of developement and only a few protocols are going to be filtered yet, wich are : DX & WWV spots and announcements.

By default, all protocols are accepted. To filter incoming protocols from a particular cluster, add the keyword "filter" into the [in] section of the .cfg file. Use the same way to filter outgoing ones. Following to the keyword "filter" add the WAZ CQ-zone list you want to enable, separated with a space, a comma or a semi-colon. For example, assume you want to only receive european spots from K1XX and to send only american spots to it :

```
k1xx.cfg
-----
[in]
node 1
user 1
... etc ...
filter 14 15 16 17 18 19 20
[out]
node 1
user 1
... etc ...
```


filter 01 02 03 04 05 06 07 08

If you want to enable the whole protocols coming from an entire continent, you can put one the following keyword in place of WAZ CQ-zone list :

NA	North America, zone 01 02 03 04 05 06 07 08
SA	South America, zone 09 10 11 12 13
EU	Europe, zone 14 15 16 17 18 19 20
AS	Asia, zone 21 22 23 24 25 26
OC	Oceania, zone 27 28 29 30 31 32
AF	Africa, zone 33 34 35 36 37 38 39

So, "filter EU" is equivalent to "filter 14 15 16 17 18 19 20", and the example given above can be simplified like this :

```
k1xx.cfg
-----
[in]
node 1
user 1
... etc ...
filter EU
[out]
node 1
user 1
... etc ...
filter NA
```

Callsign.IN – Callsign.OUT (SCRIPT directory)

A message can be send to the local users if a cluster logins or logouts.

This message is contained in a file located into the script directory. Its name is formed by the cluster callsign (in lower case under linux) WITHOUT SSID and has the extension ".in" for logins and ".out" for logouts.

Example :

dxnet\script\f5mzn.in	sent when f5mzn logins
dxnet\script\f5mzn.out	sent when f5mzn logouts

Callsign.LF (SCRIPT directory)

Added a DxNet cluster loop filter. Most of us must to be faced with cluster loops. This new feature should help a bit.

The loop filter is disabled by default. Enter the sysop command ' SET/LFilter on ' to enable it.

Rules are saved in ~/script/<callsign>.lf, where callsign is the adjacent cluster callsign - WITHOUT ssid - you want to enable the loop filter with.

The format of the fields are closed to the .CFG ones :

```
[in]
# Incoming protocol messages section
<cmd>      <hops> <call-list>
...
[out]
# Outgoing protocol messages section
<cmd> <hops> <call-list>
...
```

```
[reject]
# Neighbours reject section
<call> [dx-hops[ann-hops[www-hops]]]
```

[in] and [out] section

```
-----
<cmd>      : one the the following command : DX, Annoucement, WWV
<hops>     : hop count value (from 0 to 99)
<call-list> : callsign list which the rule must be applied for. If
              there is more than one callsign, they must be separated by
              a colon (:).
              You put here the cluster callsigns which the protocols
              are ORIGINATED from. It is not necessary a neighbour, it
              can even be a cluster very far away !
```

In example, assume the following cluster configuration :

```
F5MZN -> PI5EHV
F5MZN -> F6KBF -> F5GHV -> F6KIF -> LX0PRG
```

F5MZN wants to forward, say, both DX and ANNOUCEMENT informations from F6KBF, F5GHV, and F6KIF to PI5EHV (with a hop count of 10), as well as WWV informations from both F6KBF and F5GVH, and to reject anything else.

The .lf file could be similar to the following :

```
--- PI5EHV.LF ---
[in]
# Nothing to do

[out]
*      0      *      # reject everything
dx    10    F*      # but dx info from French clusters,
a      10    F*      # announces
www   10    F6KBF:F5GHV # and WWV, from F6KBF & F5GVH only

[REJECT]
# Nothing to do
```

[reject] section

This section is used to specify the *NEIGHBOUR* protocols you want to reject. The whole protocols coming from a specified neighbour cluster station won't be forwarded, except the DX/ANN/WWV ones (depending of the settings).

```
<call>      : neighbour callsign
[dx-hops]   : hop-counts assigned to the DX protocols (PC11)
[ann-hops]  : hop-counts assigned to the ANNOUNCEMENTS protocols (PC12)
[www-hops]  : hop-counts assigned to the WWV protocols (PC23)
```

Default value for [dx-hops], [ann-hops], [www-hops] is 0.

For example, assume I want to reject the whole protocols which are coming from my adjacent cluster station K1XX to F6KBF-3 :

```
--- F6KBF.LF ---
[REJECT]
K1XX
```

[IN]
Nothing to do

[OUT]
Nothing to do

Ultimate example !

Assume the following rules for F6KBF-3 :

. Reject everything from K1XX but :

Prot	Hops
DX	10
ANN	5
WWV	0

- . Forward DX/ANN protocols coming from any french cluster with a maximum hop-counts of 10
- . Forward WWV protocols coming from any french cluster with a maximum hop-counts of 5
- . Forward any other DX/ANN/WWV protocols with a maximum hop-counts of 1
- . Reject any DX/ANN/WWV protocols coming from, say, Belgium.

--- F6KBF.LF ---

[REJECT]
K1XX 10 5 0

[OUT]
* 1 *
* 0 ON*
dx 10 F*
ann 10 F*
wwv 5 F*

* VERY IMPORTANT *

Take care using the loop filter feature if you don't want to be blamed by other sysops if something is wrong in your settings !!! You need to know exactly what you are doing ! BTW, this would be used by experienced sysop ONLY.

Remark : the .lf files are read each time a protocol is to be forwarded. It means that you don't need to either disconnect/connect the adjacent cluster or to restart dxnet to get modifications effective.

DXNET.CFG (SYSTEM directory)

At each startup, the software will execute the instructions within the DXNET.CFG file. This file must contain the initialization parameters for the cluster, as shown in the following example :

The DxNet callsign is set to F6KBF-3, and acknowledges the callsigns F6BEE and F5GVH-3 as other DxNets. The DXNET.CFG file will contain the following :

```
set/call F6KBF-3
set/node +F6BEE +F5GVH-3
set/sysop +F5GVH
etc ...
```

It is very important that all the software parameters are stored in this file. Any modifications to the operational parameters made at the console are not written to disc, so each time the software is shutdown any modifications will be lost.

Any SET (set/ ? ? ? ?) parameters can be added in this file.

DXTODO.DAT (SYSTEM directory)

This file provides for timed execution of commands. The syntax is as below :-

HHMM Command

For example, if the SysOp decides to connect to F6BEE at 08:30, the following line should be present in DXTODO.DAT:

0830 c F6BEE

For repetitive connections, the syntax is as follows :

- Attempt connection every hour, on the hour :

??00 c F6BEE

- Every 10 minutes, on the 5 minute boundary :

???5 c F6BEE

- Every minute (not recommended !)

???0 c F6BEE

???1 c F6BEE

???2 c F6BEE

....

???9 c F6BEE

Note that ???? is an invalid entry.

There is no limit to the number of commands that may be entered into the file. If the connection is already established, the attempt to set up the new connection will be aborted

Example DXTODO.DAT used to connect to F6KBF-3

```
0100 PURGe/Mail      // See PURGe/Mail documentation (below) and its startup options
??05 c F6BEE         // Every hour, on the 5 minute boundary
??20 c F6BEE         // Every hour, on the 20 minute boundary
??35 c F6BEE         // Every hour, on the 35 minute boundary
??50 c F6BEE         // Every hour, on the 50 minute boundary
??00 FWD             // Forward messages every hour (see mailbox documentation)
```

Note : It is not possible to establish multiple connections via same the node (TheNet and others), since the callsign used for the connection request will always be that of the DxNet (including SSID). An alternative would be to specify " via " as part of the request.

PASSWD.DAT (SYSTEM directory)

This file holds the password of those identified as SysOps by using the SET/SYSOP command. DxNet supports TheNet, MD2 and MD5 password types. The response to the SYSop command returns a prompt for the password. The file format is as follows :

```
F5MZN mypassword
F5GVH ceci est mon mot de passe
F6KBF 58ef65gy82jps3645t36hj
```

LANGUAGE.DAT (SYSTEM directory)

This file is used to store the list of available languages for the help files. The file format is as follows:

french
english
german

Up to 10 languages may be specified.

FORWARD.SYS (SYSTEM directory)

This file defines the mailbox forwarding configuration.

For example, if you wanted to forward bulletins addressed to ALL, DX, FRPA and QSL to F6BEE, but only bulletins addressed to ALL, DX and QSL to F6KIF-3, the file would be as follows :-

```
:F6BEE                # Forward to F6BEE
>ALL                  # Bulletins addressed to ALL
>DX                   # ... and DX
>FRPA                 # ... and FRPA
>QSL                  # ... and QSL
END                   # of F6BEE information
:F6KIF-3              # Forward to F6KIF-3
>ALL                  # Bulletins addressed to ALL
>DX                   # ... and DX
>QSL                  # ... and QSL
@GB7DXA               # plus all messages for users @GB7DXA
END                   # of F6KIF-3 information
END                   # of FORWARD.SYS
```

RCMD.DAT (SYSTEM directory)

This file is a user filter for the remote commands. This allows to accept to forward the remote command protocols through you dxnet without authorising anybody to send a remote command to your own dxnet.

The settings are done in ~/dxnet/system/rcmd.dat file. You can put any number of setting lines.

Syntax :

```
<deny|user|sysop> <cluster1:cluster2:cluster3.....>
```

deny : don't accept remote command from the distant cluster

user : accept user level remote command requests (as well as some sysop commands which are not considered as destructive, like SH/TNC).

sysop : accept sysop level remote command request

DxNet stops searching this file as soon as a match is found. That means you would put the more accurate rules first.

Example :

```
-- ~/dxnet/system/rcmd.dat --
# Accept sysop remote commands from both PI5EHV-8 and F6KBF-3
sysop    PI5EHV-8:F6KBF-3

# Accept user remote commands from any french cluster
user     F*

# Reject any other clusters
deny     *
```

ANNOUNCE.BIN (SYSTEM \ BIN directory)

This file is is the repository for the announce messages. It is not directly editable.

DIRMES.BIN (SYSTEM \ BIN directory)

This file is the repository where the list of mailbox messages is stored. It is not directly editable.

DX.BIN (SYSTEM \ BIN directory)

This file is is the repository for the DX spots. It is not directly editable.

LASTMAIL.BIN (SYSTEM \ BIN directory)

This file is the repository where the number of the last message is stored. It is not directly editable.

MAXUSERS.BIN (SYSTEM \ BIN directory)

This file records the maximum number of users connected to the Dx network. It is not directly editable.

USERSCFG.BIN (SYSTEM \ BIN directory)

This file is the repository of callsigns and personal information regarding the users. It is not directly editable.

WWV.BIN (SYSTEM \ BIN directory)

This file is is the repository for the WWV spots. It is not directly editable.

WCY.BIN (SYSTEM \ BIN directory)

This file is is the repository for the WCY spots. It is not directly editable.

NODEYYMM.LOG (LOG directory)

This file contains a record of connections of this DxNet node to its neighbours. It is text format.

USERYYMM.LOG (LOG directory)

This file contains a record of user connections to this DxNet. It is text format.

PINGYYMM.LOG (LOG directory)

This file contains a record of the PING results send by DxNet to another cluster. It is text format.

PCYYMM.LOG (LOG directory)

This file contains a record of the pavillon protocol errors of DxNet. It is text format.

CLYYMM.LOG (LOG directory)

This file contains a record of the clulink protocol errors of DxNet. It is text format.

DEFAULT.CMD (USERS directory)

This file is used to stores the default list of commands executed for each user connection to the DXNet node.

Example : SH/C
 SH/DX

CALLSIGN.CMD (USERS directory)

Each user may now have DXNet create a personalised set of user commands to be executed at each connection by using the SET/USERCmd option. One file will be created for each user who chooses to use this facility, and for F5MZN the file would be called « F5MZN.CMD ».

Example : SH/C
 SH/DX

LANGUAGES

Overview

DxNet is able to support multiple languages. The messages are stored in a LANGUAGE file. Up to 10 languages may be supported.

- the collection of system messages is named xxx.TXT, where xxx signifies the language.
- the collection of help messages is named xxx.HLP, where xxx signifies the language.
- the file containing the MESSAGE OF THE DAY is named xxx.MOT, where xxx indicates the language.

example : FRENCH.TXT, ENGLISH.TXT, RUSSIAN.TXT, ...
 FRENCH.HLP, ENGLISH.HLP, RUSSIAN.HLP, ...
 FRENCH.MOT, ENGLISH.MOT, RUSSIAN.MOT, ...

The contents of the FRENCH.TXT, FRENCH.HLP and FRENCH.MOT files are given in the appendix.

In order to provide multi-lingual support, you must create a SYSTEM\LANGUAGE.DAT file which specifies the list of available languages.

Example : (SYSTEM\LANGUAGE.DAT) :
 FRENCH
 ENGLISH
 RUSSIAN
 SPANISH
 GERMAN

The ordering of this file is not significant.

Creating additional language files is not difficult. I suggest that they be named using English, particularly if you want to submit them for distribution. However, the choice is yours !

tokens :	%D	Date 'DD-MMM-YYYY'
	%d	Date 'DD-MMM'
	%H	Hour 'HH:MM'
	%I	User name
	%I	User language
	%L	Number of last message
	%O	Callsign of this DxNet
	%o	Callsign of this DxNet without SSID
	%U	User callsign
	%u	User callsign without SSID
	%Z	Number of last message listed by the user
	%x :	Date of the last connection (format : 14-Mar-2000)
	%y :	Time of the last connection (format : 10:14)
	%0-%9	Temporary tokens

These tokens may be used in different messages.

A message situated in a language file can be replaced by a specific one.

This is usefull if you want to define a specific message for your own cluster (e.g. MSG3/CTEXT) without having to rewrite it each time the message file is released (wich is often the case when DxNet is released).

The specific message is saved in a file called LANGUAGE.### where LANGUAGE must be replaced by the language name, and ### by the message number :

```
french.3      will redefine MSG3 of french.txt
english.68    will redefine MSG68 of english.txt
... etc ...
```

Description of the "Message Of The Day " (MOTD)

The "Message Of The Day" is stored in the LANGUAGE directory. Its naming convention follows that for other languages files : xxx.MOT

The SysOp may edit the message by using the SET/MOTD command. Users may read the message by using the SHow/MOTD command.

STARTING THE NODE

TNC

If using a TNC-2 (etc.) which is not equipped with a KISS EPROM, plus must be placed into KISS mode.

Commands to place a TNC into KISS mode

Cmd:KISS ON

Cmd:RESTART

Startup

First, run the G8BPQ switch software (BPQCODE.EXE) and then the DxNet software (DXNET.EXE). Usually these files will be located in different directories, so it may be convenient to create a DXNET.BAT batch file (which must be either in the root directory or a directory accessible via the DOS PATH).

DXNET.BAT file:

```
C:
CD C:\BPQ408
BPQCODE
CD C:\DXNET
DXNET
```

If the PC is dedicated to DxNet it would be preferable to include the above command within the AUTOEXEC.BAT, so that the system may automatically restart in the event of a power failure. Fichier DXNET.BAT (PC/FlexNet):

Startup options:

Support is provided for 43 and 50 line modes on EGA and VGA screens (43 lines EGA only). To select one of these modes, it is necessary to add a switch (either -s43 or -s50) to the startup command (the S must be in lower case). *[I believe that should be « 43 lines, VGA only – G0RDI]*

Examples :

- C:\DXNET>DXNET <- normal, 25 lines
- C:\DXNET>DXNET -s43 <- EGA and VGA, 43 lines
- C:\DXNET>DXNET -s50 <- VGA, 50 lines
- C:\DXNET>DXNET -moff <- Disable node monitoring function. Can be used with -s43 or -s50.

DxNet may be restricted to the number of BPQ streams accessible. If this is required, additional command line switches to specify the first and last streams to use must be provided. These are -fsXX and -lsXX, where XX is the stream number. Default values are 1 for "fs" and 64 for "ls".

If, for example, you wished to restrict DxNet to BPQ streams 10 to 20, the startup command would be :
DXNET -fs10 -ls20

In addition to the "-fs" and of "-ls" switches, the switch "-appl" can be used to install DxNet under another BPQ other than #1. This can be useful if you are running under a multi-tasking environment and wish to run both DxNet and a BBS concurrently. The following example uses the #2 BPQ application : DXNET -appl2

The monitoring function could be disabled with the option "-moff" : DXNET -moff

It is possible for DxNet "lose" the access path to the system files. In this case, the software will respond "Sorry, No spins available" to a command. *[I'm sure it doesn't ☺ - G0RDI]*

The expected directory tree structure is as follows :

```
C:\
+---DOS
+---BPQ408
+---DXNET---- +---LOG
                +---TMP
                +---SCRIPT
                +---SYSTEM
                +---DATABASE
```

Add the following line in your AUTOEXEC.BAT:

```
APPEND=C:\DXNET\LOG;C:\DXNET\SCRIPT;C:\DXNET\SYSTEM;C:\DXNET\DATABASE
```

THE CONSOLE (F2)

All DxNet commands are available at the console.

PAGE-UP and PAGE-DOWN allows setting of the screen window dimensions.

CTRL-C (or CTRL-BREAK) deactivate the console.

Console commands

The following commands are only accessible at the console.

QUIT

Exit to DOS.

SET/Here

This command informs other users who you are available on the console. The parenthesis surrounding your node callsign in the SH/CONFiguration listings will be removed.

When you start DxNet, your default setting will be NOHERE.

Associated command: SET/NOHere.

This commands could be added in dxnet.cfg.

SET/NOHere

This command informs other users who you are not available (for instance, you may have left your shack. Your node callsign will be surrounded by parenthesis in the SH/CONFiguration listings.

When you start DxNet, your default setting will be NOHERE.

Associated command: SET/Here.

This commands could be added in dxnet.cfg.

SET/VERBOSE <ON|OFF>

Both linux/windows version : internal console events monitoring removed from the FBBw client console. This can be enabled again using new console command SET/VERBOSE [ON|OFF].

SHUTdown

Disconnect all users and exit to DOS.

CONNECTION TO SWITCH (F3)

You may connect directly to the BPQ or PCFlexNet switch directly from the console. (DOS version only)

Available commands

The commands available in terminal mode are as follows:

MYCALL <mycall>

Set <mycall>

Connect <call>

Connect <call>

:D

Disconnect

LISTE OF USER COMMAND

Announce Msg

Send « Msg » to all locally connected users.

Example: A Es on 2 meters !! Beaming to 9H1 now

Announce/Full Msg

Send « Msg » to all connected users

Example: A/F Es on 2 meters !! Beaming to 9H1 now

Bye

Disconnect from DxNet. The contents of the HELP\BYE.HLP file are sent to the user before being disconnected.

CONFerence

Added the local conference feature. Command : CONFerence

CONFerence/Full

Added the cluster-wide conference feature. Command : CONFerence/Full

Protocols PC13 PC14 PC15 are now supported by dxnet, as well as the CluLink 140 (=PC13), 141 (=PC14) and 142 (=PC15).

CONVert/C2L <lat-deg lat-min N/S long-deg long-min E/W>

This command converts latitude/longitude into a Maidenhead locator.

Example : CONV/C2L 48 58 N 2 17 E

CONVert/L2C <locator>

This command converts a Maidenhead locator into latitude/longitude

exemple: CONV/L2C JN18DX

DX Freq Dxcall Comments

Send a spot. The frequency must be in kiloHerz. Comments are optional.

Example : DX 144330 LZ1VP 59++ in IN87

 DX 14205.3 FM5CD

DX/callsign

Send a spot by using callsign as writer.

EU <Callsign>

EU <CallSign> allows the sysop to Edit any of the user information of the user database.

A normal user can also modifie only his personnal information using this command.

N <name>	Sets the name
H <homenode>	Sets the Home Node
Q <qth>	Sets the QTH

L <locator>	Sets the locator
WQ	Write the user information and quit
E	Quit without saving

Help ou ?

Sends the contents of LANGUAGE.HLP.

Information

Send local information regarding DxNet node.

Quit

Equivalent to Bye.

SET/Announcement

These commands allow a user to enable the display of announcements. If the user disconnects and reconnects, Announcements will be re-enabled.

SET/BEEP [Announce] [Dx] [Wwv/Wcy] [Talk] [Login]

That can be used to enable BEEP on some protocols only. In example, if you want to enable BEEP on TALK message only, enter SET/BEEP T.

SET/BEEP with no argument enable BEEP for all messages.

SET/DX_announcement

These commands allow a user to enable the display of DX announcements. If the user disconnects and reconnects, DX announcements will be re-enabled.

SET/FILTER <band/all/vlf/hf/vhf/uhf/shf/all/ssb/cw/rtty> <...>...

This command is used to maintain what DX announcements are allowed for each user.

DxFiltering is done by the user. Filtering may be done by mode (CW, SBB or RTTY), and band : 2km, 160m, 80m, ..., 1cm, 6mm.

Some special properties are available :

VLF = 2km

HF = 160m 80m 40m 30m 20m 17m 15m 12m 10m

VHF = 6m 4m 2m 135cm

UHF = 70cm 34cm 23cm 13cm

SHF = 5cm 3cm 1cm 6mm (even if I know that neither 1cm nor 6mm are SHF ...)

all = all bands, all modes

If you precede the property with an exclamation mark (!), it removes the property from the filter.

Examples :

Assuming that the filter feature is disabled, if you issue the following command sequence :

SET/FILTER HF SSB : You'll receive only HF spots in SSB segment

SET/FILTER 180m : 80m meters spots will be rejected

SET/FILTER VHF UHF SHF : Add VHF, UHF and SHF bands to the filter

If you want to receive VHF, UHF and SHF bands only :

SET/FILTER VHF UHF SHF or SET/FILTER ALL !VLF !HF

SET/FILTER with no argument shows the current filter status.

SET/Here

This command informs other users who you are again available. The parenthesis surrounding your callsign in the SHow/Users or SH/CONFIguration listings will be removed.

When you connect to DxNet, your default setting will be HERE.

Associated command: SET/NOHere.

SET/HOME <my_cluster>

This command modifies the user database (and informs other nodes) of your local node identity. This information is used to route personal messages to the correct destination.

SET/LANGuage <n>

This command allows the user to specify their default language. See the SHow/LANGuage command.

SET/LOCAtor <my_locator>

This command modifies the user database (and informs other nodes) of your locator information.

SET/LOGIn

Enables users login/logout messages (SET/LOGIn default mode)

SET/NAME <my_name>

This command modifies the user database (and informs other nodes) of your name. This information can be used to personalise greeting messages.

SET/NOAnnouncement

These commands allow a user to disable the display of announcements. If the user disconnects and reconnects, Announcements will be re-enabled.

SET/NOBEEP [Announce] [Dx] [Wwv/Wcy] [Talk] [Login]

That can be used to disable BEEP on some protocols only. In example, if you want to disable BEEP on both DX and ANNOUCEMENTS only, enter SET/NOBEEP D A

SET/NOBEEP with no argument disable BEEP for all messages.

SET/NODx_announcement

These commands allow a user to disable the display of DX announcements. If the user disconnects and reconnects, DX announcements will be re-enabled.

SET/NOFilter

This command disables any DX announcement filters. All spots will be sent to the user.

SET/NOHere

This command informs other users who you are not available (for instance, you may have left your shack, but wish to remain connected to the node). Your callsign will be surrounded by parenthesis in the SHow/Users or SH/CONFIguration listings.

When you connect to DxNet, your default setting will be HERE.

Associated command: SET/Here.

SET/NOLOGIn

Disables users login/logout messages (SET/LOGIn default mode)

SET/NOPage

This command allows the user to disable the page size feature.

SET/NOwwfilter

Used to disable the DX/WWV/Annoucements filtering. You should create a MACRO command (e.g. SET/WW) to help users.

Remark : this command is not valid until SET/PFILTER is ON.

SET/PAGE <n>

This user command defines the page size.

Syntax : SET/PAGE <n> (0 <= n <= 255)

SET/PAGE 0 disable the page size feature and is equivalent to SET/NOPAGE

This information is saved in the user profile.

SET/QTH <my_qth>

This command modifies the user database (and informs other nodes) of your QTH information.

SET/USERCmd

This command allows each user to create a personal file in which to save a list of commands to be executed each time they connect to DXNet. The file will be their own callsign with the extension of .CMD appended.

SET/WWFilter <area>

This command let users define the DX/WWV/Annoucements spots they want to receive depending of where the spots is originated from.

Possible arguments are : NA SA EU AS OC AF

You should create some MACRO command (e.g. SET/NA, SET/EU, ...) to help Users (e.g. SET/EU will show european spots only).

Remark : this command is not valid until SET/PFILTER is ON.

SHow/Announce[/n]

List recent Announce messages.

SHoW/BAsE

Display a list of available database.

SHoW/BEam <locator>

This command displays distance and azimuth from the user location to the specified locator.

SHoW/CLuster

Display information regarding the node.

SHoW/Configuration

Display list of connected nodes, along with the user list (where available) of each node.

SH/CONF also support a filter : "SH/C F" will show the cluster for which the callsign is starting with a F. More than one letter supported as well. SH/C F6F will show the callsign starting with F6F. Etc ...

SHoW/Configuration/N

Displays what nodes are connected locally and what nodes are reachable from each of them.

SHoW/DATAbase

Display a list of available database.

SHoW/DATE

Display the current date of the cluster

SHoW/DX[/#] [band] [prefix]

Band MUST be a band (in meters or centimetres): 160, 80, 40, 30, 20, 17, 15, 12, 10, 6, 4, 2, 135, 70, 34, 23, 13, 5, 3

Examples :

SH/DX 80	(only 80 m)
SH/DX DL 2	(only DL on 2 m)
SH/DX 2 DL	(same as above)
SH/DX/10 W	(last 10 W spots on all bands)
SH/DX/3 40 JA	(last 3 JA spots on 40 m)

SHoW/LANGuage

Display the list of languages available on this node.

SHoW/PAGe

Display the current page size setting of the user.

SHoW/Prefix <prefix/callsign>

This command shows the DXCC contry (and some various information about) for the specified prefix/callsign. Now displays distance, azimuth, sunrise and sunset.

You need to get the DXCC file CTY.DAT (<http://www.contesting.com/ct/files>, <http://www.k1ea.com>, <http://www.dxnet.free.fr>) copied in the database directory.

SHoW/STation <callsign>

This command displays some information for the specified station call.

SHoW/SUn <prefix/callsign>

This command allows to calculate both the sunrise and the sunset for a specified country (prefix).

Syntax : SHoW/SUn <prefix|callsign>

SHoW/Time

Display the current time of the cluster

SHoW/Users

List the callsigns of locally connected users. (see also SHoW/CONFiguration).

SHoW/USERCmd

List the contents of personal command file. These commands are defined by the use of the SET/USERCmd.

SHoW/VERsion

Display cluster software version number.

SHoW/VERsion <CallSign>

Display cluster software version number <CallSign> cluster.

Example : SH/VER F6KBF-3

SHoW/WCY[/n]

This command allows to show the last WCY spots.

Syntax : SHoW/WCY[/n] n = number of WCY spots to show (n = 5 by default)

SHoW/WWFilter

Show the current WW filtering status. This command is not valid until SET/PFILTER is ON.

SHoW/WWV[/n]

List the last n WWV messages. n is optional..

Talk <Callsign-SSID>

Send a series of messages to user ToCall. If ToCall is not connected to either the local or network-connected nodes, DxNet will send an error message : "ToCall is not connected in anywhere".

Example: T G1ABC <- Request to redirect the following entries to G1ABC

Hello John !

I just QSO'd a EA3 on 144

bye

^Z <- Cancel redirection

If the destination user is apparently not connected anywhere (no entry in either the SH/US or SH/CONF listings) it is possible that his local node may be using a limited protocol link. In this case, it is possible to initiate a talk request using the command « TALK ToCall > NodeCall ».

Talk <Callsign-SSID> Msg

Send the message « Msg » to user ToCall. If ToCall is not connected to either the local or network-connected nodes, DxNet will send an error message : "ToCall is not connected in anywhere".

Example : T G1ABC Hello John

If the destination user is apparently not connected anywhere (no entry in either the SH/US or SH/CONF listings) it is possible that his local node may be using a limited protocol link. In this case, it is possible to initiate a talk request using the command « TALK ToCall > NodeCall ».

WWV

Send a WWV information update. Syntax :
WWV SFI=xxxx A=yyy K=z Forecast

WWV/callsign

Send a WWV information update by using "callsign" as writer.

LIST OF BBS COMMANDS

The commands are based upon those used by the F6FBB mailbox software.

Kill <#n>

Delete message #n.

Liste

List new messages since last connection.

Liste [n1-n2]

List the titles of the messages in the range n1 to n2.

LL <#n>

List last #n messages.

LN

List new messages addressed to you.

LM

List all messages addressed to you.

L> <CallSign>

List all messages addressed to <CallSign>

L< <CallSign>

List all messages sent by <CallSign>

LS <title>

Use this command to display all messages containing at least <title> in the title.

Read <#n>

Ream message #n

Send <CallSign> [@Cluster] [Sender] [\$BID] [+Filename]

Send a personal message to <CallSign>. Only <CallSign> will be able to read it.

<CallSign> can be a group (ALL, INFO,...), the message will then be a bulletin, readable by all.

The other parameters are optional :

[@ Route] : specify the cluster to which the message must be forwarded.
[Sender] : indicate the code of the shipper (*not yet implemented*).

[\$ BID] : specify the BID (*not yet implemented*).
[+ Filename] : specify attached file (*not yet implemented*).

SB <Group>

Send a bulletin to <Group>. The message will be readable by all users.
Examples of <Group > : ALL, INFO, DX, FRPA, QSL ...

SP <CallSign>

Send a personal message to <CallSign>. Only readable by sender and addressee.

LISTE OF SYSOP COMMANDS

Connect <ScriptFileName>

Where ScriptFileName is the name of a file script being in the current directory SCRIPT. Extension FWD should not be given.

Example : C F6BEE <- Execute script commands in F6BEE.FWD

DISConnect/<n>

Disconnect stream n.

DISConnect/ALL

Disconnect all locally connected users and connections to remote nodes. The SysOp is prompted to notify the users by a local announcement.

DISConnect <Callsign>

Disconnects <callsign> from DxNet.

If <callsign> is a cluster, Dxnet sends a PC39 protocol to the adjacent wich must be disconnected and informthe other adjacents that the link is down.

DOS

This command opens a DOS session, where the following DOS command are available in :
CD, DIR, COPY, MD (MKDIR), RD (RMDIR), DEL, MOVE, MEM, REN (RENAME), TYPE, RUN, GET, PUT, MEDIT.

RUN can be use if you want to execute any other command, like a batch file. Use it at your own risk, knowing the DOS session is only able to manage programs wich use the standart input/output (ie don't run EDIT).

GET works like the TYPE command.

MEDIT can be used to edit a file (see MEDIT section in this file).

(DOS version of DxNet only).

EU <Callsign>

EU <CallSign> allows the sysop to Edit any of the user information of the user database.

A normal user can also modifie only his personnal information using this command.

N <name>	Sets the name
H <homenode>	Sets the Home Node
Q <qth>	Sets the QTH
L <locator>	Sets the locator
WQ	Writte the user information and quit
E	Quit without saving

EXIT/<n> [comment]

n: error level to be passed (1 to 9)

comment: optional string which is sent to locally connected users.

This command permits the SysOp to specify an exit from DxNet, passing an error level to another program. See the following example (where DxNet is invoked by GO.BAT).

Under DOS, it would then be possible to run YAPP to transfer updated DxNet files, or reboot the computer, etc.

```
--- GO.BAT ---
rem EXIT/1 invoke YAPP
rem EXIT/2 reboot the computer
DXNET -s43
IF ERRORLEVEL 1 GOTO YAPP
IF ERRORLEVEL 2 GOTO REBOOT
GOTO END
:YAPP
rem invoke TPK and then reboot the computer
TPK
:REBOOT
rem reboot the computer
REBOOT
:END
```

How to restart DxNet running under Windows 95.

```
--- GO.BAT ---
rem EXIT/1 restart DxNet
:START
DXNET -s43
IF ERRORLEVEL 1 GOTO START
```

FA <#msg> <Cluster>

Insert message number <#msg> into the forwarding queue for cluster <@cluster>.

FB [Cluster]

Display the message forwarding queue for <cluster>. The <cluster> parameter is optional, if it is absent, the message forwarding queue for all clusters will be listed.

FD <#msg> <Cluster>

Delete message number <#msg> from the forwarding queue for cluster <@cluster>.

Forward/Opnam <Callsign>

This command is used to forward user information to the whole adjacent nodes in the cluster for <callsign>. This will update his name, QTH, latitude/longitude and home node informations.

Example : FO/O F5MZN

FWd [#msg] [Cluster]

Begin forwarding messages queued for <cluster>. The <#msg> and <cluster> parameters are optional. This command may be invoked from the \SYSTEM\DXTODO.DAT file.

IFNode <cluster_call> <action>

This command tests if <cluster_call> is currently connected to the cluster network. If it is, the command <action> is executed

Example : IFNODE PI5EHV-8 DISC SM7GVH-6

IFNNode <cluster_call > <action>

Same as IFNNode, but the command is executed if the <cluster_call> is NOT currently connected to the cluster network.

Example : IFNNode PI5EHV-8 CONNECT SM7GVH-6

INIT <Cluster >

Request an init sequence to the adjacent cluster <callsign> (both PC38 and PC18 protocols).

MEDIT <filename>

MEDIT is a basic text file editor, which can be used to edit small files (up to 255 lines).

Syntax : MEDIT <filename>

Commands :

: set the line # as current line.

D : delete the current line.

D# : delete # lines from the current line.

I<str> : insert a new line <str> before the current line.

WQ : write (save) file and quit.

E : exit without saving.

/<str> : put the string <str> in place of the current line.

*<str> : put the string <str> at the end of the file.

? : show this help file.

PING <call>

Measure time necessary to send and receive a frame to DxCluster <call>. This command is useful in testing links. Responses are stored in / LOGS/PING.LOG

PING employs the PC51 protocol.

PURGe/Annonce [days]

This command is used to erase announce messages which have reached their maximum (SysOp-defined) age.

This command should be run every night, scheduled by DXTODO.DAT.

The optional startup arguments are as follows:

[days] : specifies the number of days (days] after which to expire bulletin messages.

The default is 30 days.

PURGe/BID [days]

Where days = 120 by default

This command is used to erase BID extensions which have reached their maximum (SysOp-defined) age.

PURGe/Dx [days]

This command is used to erase dx spots which have reached their maximum (SysOp-defined) age.

This command should be run every night, scheduled by DXTODO.DAT.

The optional startup arguments are as follows:

[days] : specifies the number of days (days] after which to expire bulletin messages.

The default is 30 days.

PURGe/Mail [b=days] [p=days]

This command is used to erase mailbox messages which have reached their maximum (SysOp-defined) age.

This command should be run every night, scheduled by DXTODO.DAT.

The optional startup arguments are as follows:

[b=days] : specifies the number of days (#n_days] after which to expire bulletin messages.

The default is 30 days.

[p=days] : specifies the number of days (days] after which to expire personal messages.

The default is 30 days.

Examples : PURGe/Mail p=10 b=15

PURGe/Mail p=20

PURGe/Mail b=30 p=5

PURGe/WCy [days]

This command is used to erase WCY spots which have reached their maximum (SysOp-defined) age.

This command should be run every night, scheduled by DXTODO.DAT.

The optional startup arguments are as follows:

[days] : specifies the number of days (days] after which to expire bulletin messages.

The default is 30 days.

PURGe/WWv [days]

This command is used to erase WWY spots which have reached their maximum (SysOp-defined) age.

This command should be run every night, scheduled by DXTODO.DAT.

The optional startup arguments are as follows:

[days] : specifies the number of days (days] after which to expire bulletin messages.

The default is 30 days.

RCMD/<cluster> <command>

This command should be use to execute commands on remote DxCluster nodes.

Important: see the RCMD.DAT file.

REBOOT

External command. See below!

Allows a system reboot. Use as a last resort!!!

SET/ANN_Age [time]

This command is designed to be used to define how old the announcement dabatase is searched for dupes.

By default, SET/ANN_Age is set to 1 day. It means that the annoucement database is searched for dupes received the last 24 hours.

SET/BBS <+/-callsign1> <+/-callsign2> ...

This command defines which BBS are allowed to forward to your dxnet.

In example : SET/BBS +F6KBF-1 +F6KDS-1

SET/BID [bid]

This command SET/BId <bid> set the BID identifier for the BBS forwarding support.

In example : SET/BID DXMZN

By default, <bid> = cluster callsign (without SSID) but you may want to change this ie if a BBS is in use with the same callsign than your dxnet.

BID is limited to 6 characters long.

DxNet adds a row at the end of the message showing the BID identifier of the messages either posted locally or forwarded by an adjacent BBS.

SET/BLACKlist +Callsign1 +Callsign2 +Callsign3 ...

Specify a list of callsigns which will be denied connection (Black Call). The callsigns must separated by spaces and prefixed by a + sign. Maximum of 80 characters is permissible.

Example : SET/BLACK +TNC2 +NOCALL +F0XXX +P1RAT

You can restrict the command to a specific SSID.

Example :

set/black +f5mzn	: all SSIDs used by f5mzn
set/black +f5mzn-5	: only f5mzn-5
set/black +f5mzn-0	: only f5mzn-0 (=f5mzn) other SSIDs are acceptable
set/black +nocall	: all SSIDs used by nocall

SET/BUFFER_Timeout [timeout]

In case of very slow link (ie many retries), the internal buffer may become very large. To prevent this problem, it has been added a buffer watchdog which disconnects a link when the data stored in the buffer is older than a defined timeout.

By default, the buffer timeout is set to 20 minutes. Use the sysop command SET/BUFFER_Timeout to change this default setting :

Example : SET/BUFFER_T 30m -> 30 minutes timeout

To disable this feature, set 0 as timeout value.

SET/CFILter <level> [+]

A system like C_FILTER is now present. This system is used to filter connections by password. By default, this system is disabled. Use the command SET/CFILter (e.g. in SYSTEM\DXNET.CFG) to enable it :

0: CFILTER is OFF

1: CFILTER in ON - a password is required. If the user send the right password, DxNet works as usual. If not, the user is disconnected.

2: CFILTER is ON - a password is required. If the user send the right password, DxNet works as usual. If not, user can receive the cluster informations but can send datas (like DX, WWV, ...), except a mail to SYSOP.

3: CFILTER is ON - no password is required. If a declared user connects the cluster, DxNet works as usual. If the user is not declared in SYSTEM\PASSWD.DAT, he will receive the whole cluster information but he will not allowed to send datas.

[+] is to disable sending annouements (dx, annouces, wwv, ...) untill the user is validated.

SET/CFILTER <level>[+] where [+] means : "annouements disabled".

SET/CONsole #console <command>

Use this command to set up DXNET for DOS to communicate to another computer (using a terminal program or a logging contest software) via a serial COM port.

Syntax : SET/CONsole #console <command>

where :

#console : console number (either 2 or 3)

<command> : LOCAL (to disable the redirection)

COM1, COM2, COM3, COM4 to set up the COM port.

Some examples :

. SET/CON 2 COM2 4800

> to redirect F2 console to COM2 at 4800 bauds

. SET/CON 3 COM3/9 1200

> to redirect F3 console (terminal) to COM3, IRQ9 at 1200 bauds

. SET/CON 2 LOCAL

> to disable

. SET/CON LOCAL

> it works as well

The communication speed is 9600 by default.

Supported speed are : 1200 2400 4800 9600 19200

Default IRQ : COM1 4

COM2 3

COM3 4

COM4 3

Remarks :

Take care using this command, COM ports aren't checked to see if they are already in use (e.g. by BPQ or

PC/FlexNet).

You can redirect either F2 or F3 screen, but not both of them at once.

SET/Date <yyyymmdd>

Set the date in the computer clock

SET/DIDdle <n>

Where n is the time in seconds after which message #41 is sent to a user connected after a period of inactivity. A frame is also sent to the adjacent clusters. This makes it possible to override the time-out on links to keep the connection established if network activity is low.

SET/DIDdle 0 disables the feature.

The SET/DIDdle command is disabled by default.

SET/DPpage_size [n]

This command set the default page size.

Without arguments, it displays the current default page size.

SET/DX_Age <+time1> <-time2>

Alias for SET/SPOT_age.

SET/DXSsid <ON/OFF>

This new command allows sysop to decide if he wants dxnet to remove or not the ssid of a DX spot sender.

SET/HIDden_user <+/-callsign1> <+/-callsign2> ...

Use that command to declare a user to be hidden when he is connected.

That can be usefull if you want ie to connect a robot to your cluster.

SET/LDEFault <n>

Specifies the default language for this node.

SET/LFilter <ON/OFF>

The loop filter is disabled by default. Enter the sysop command 'SET/LFilter on' to enable it.

SET/LOG_level <cmd1=value1> <cmd2=value2> ...

where " value " is the sum of the log_levels you want to enable

commands	log_file	log_level

System	~/logs/messages	0 = nothing *1 = user/cluster login/logout *2 = bad protocols 4 = bad age, pings, WWV/WCY ... 8 = rejected protocols are logged (dupes, loops, ...)
Debug	~/logs/debug	0 = nothing *1 = internal errors (open file failures, SH/FC, ...) 2 = some traces in the main functions 4 = in/out buffers traced 8 = all debug traces (lots of)
User	~/logs/userYYMM	0 = nothing *1 = user connections log enabled
Cluster	~/logs/nodeYYMM	0 = nothing *1 = cluster connections log enabled

The star (*) indicates the default value.

Remark : debug level 8 is not implemented yet. This will be done when needed.

In example :

SET/LOG_level system=7 debug=5 user=0 cluster=0

will log :

in messages : user/cluster login/logout, bad protocols, bad age, pings, WWV/WCY ...
 in debug : internal errors, in/out buffers

SET/MAIL_Age <days>

Where <days> is the number of days after which a incoming forwarded message is considered obsolete (too old) and then is ignored.

Example : SET/MAIL_A 15d --> 15 days

By default, SET/MAIL_Age is set to 30 days.

This will prevent to received very old mails (some of the ones I received here are about 1 year old !).

SET/MONitor <ON/OFF>

Enable/disable the monitort mode of DxNet.

SET/MYCall <Callsign>

<Callsign> specifies the console callsign when using the F3 terminal mode.

SET/MOTD

Allows the SysOp to edit the Message of the Day

SET/NODE +Callsign1 +Callsign2 -Callsign3 ...

Prefix + specifies the callsigns (including SSID) list as a known cluster nodes. Prefix – removes the callsign (with SSID) as a known cluster node. The list of callsigns must separated by spaces. A maximum of 80 characters is permissible for this command.

Example : SET/NODE +F6BEE +F5GVH-3 -F6XYZ-3

F6BEE and F5GVH-3 are added to the list of known cluster nodes and F6XYZ-3 is removed from it. The SSID is significant.

SET/NOREgister <callsign>

This command allows to delete an entry from the password database.

Syntax : SET/NOREgister <callsign>

SET/NTW_ulogin [ON/OFF]

When ON, the date/time of the cluster-wide user connection will be saved in the user database. Then SHow/STation will show the last cluster-wide user logins.

Take care using this command if dxnet is running on a well old slow computer : it can make high CPU usage during the initialization sequence when you're connecting to a large cluster network.

By default, SET/NTW_ulogin is set to OFF.

SET/PAGE_Timeout [timeout]

This timeout prevents to get the internal buffers becoming too large when the user forget to press return.

By default, the page timeout is set to 5 minutes. Use the sysop command SET/PAGE_Timeout to change this default setting :

Example : SET/PAGE_T 10m -> 10 minutes timeout

To disable this feature, set 0 as timeout value.

SET/PFilter <ON/OFF>

By default, PFilter is set to OFF. You should let it like this if you don't have to manage WW protocol filtering to save CPU usage.

Make sure of the file dxnet/database/cty.dat does exist before setting ON the WW filter.

SET/PORT inet1:nnnn

Reminder the way to declare a telnet access : SET/PORT +inet:nnnn where nnnn is the telnet port number (set to 23 by default).

The callsigns and password you want to allow to connect are saved into system/passwd.dat.

If you want to use a script file to connect a cluster via telnet port, you must use the following syntax :

```
.c inet <CALLSIGN> <IP_ADDRESS> [PORT]
<CALLSIGN> : the call you want to connect to
<IP_ADDRESS> : the IP address of the remote telnet host
[PORT] : the telnet port, wich is by default set to 23
```

I give you as an example the script file I use to connect to SV1AAW :

```
--- SV1AAW.FWD ---
SV1AAW
.C inet sv1aaw 194.219.59.46 9000
+clx
.f5mzn\rmypasswd
+validated
-----
```

SET/REgister <callsign> <password_string>

Tis command allows to add (or replace) an entry in the password database.

SET/SPOT_Age -<time1> +<time2>

This command is designed to be used to define a time window outside which a received dx spot is rejected.

By default, SET/SPOT_age is set to -30m, +15m. It means that a received dx spot is rejected if it is older than 30 minutes in comparaisn with your computer time or if its time exceed the computer time of 15 minutes.

The <time> field can be set in day, hour, minutes. Seconds are accepted as well but are ignored by the algorithm.

Some examples : 15m 1h,15m 1d,15m ...

If no unit is following the value, it is assumed that the value is in minutes. For exemple : 15 is equivalent to 15m.

SET/SPY <port> <hops>

where <port> is the port number and <hops> the hop count you want to use or forwarding the spyed dx spots.

This command is used to listen a cluster link for getting PC11 (dx spots) protocol without the need to be connected.

Take care using this command : you cannot use it if you are connected to the cluster network you are spying. If you did, you will generate a lot of trouble. The best way is to not use this feature except if you really really need it !

This command was available with DxNet v2, and very appreciated by some african guy who have very poor link on HF with the other part of the world, and not so much of cluster activity in their area.

NB : SET/SPY is available for the DOS version only.

SET/SSID

Specify which (if any) SSIDs should not be stripped from the callsigns of connected users.

Example : SET/SSID +5 +6 +7 +8

SET/SYSop +Callsign1 +Callsign2 +Callsign3 ...

Prefix + specifies the callsigns (including SSID) list as a remote SysOps. Prefix – removes the callsign (with SSID) as a known remote SysOp. The list of callsigns must separated by spaces. A maximum of 80 characters is permissible for this command.

Example : SET/SYS +F5MZN-5 +F1NNI -F5OAH-15

Adds F5MZN-5 and F1NNI to the list of remote SysOps, and removes F5OAH-15 from the list. The SSID is significant.

SET/TELnet_access <open/close>

This command SET/TELnet_access <open/close> is only for linux/windows.

. When open, dxnet accepts telnet connections from users even if they are not registred yet. The first time the user log in, dxnet asks the user for a password which is saved in the password database (passwd.dat).

. When close, only registred users can connect to dxnet via telnet.

By default, telnet_access is set to close.

SET/Time <hhmmss>

Set the time in the computer clock (ss is optional).

SET/TZ n

Specify the offset between the computer (local) time and UTC.

SHow/ANN_Age

This command displays the current ANN_AGE setting.

SHow/BUFFER_Timeout

This command displays the current BUFFER_Timeout setting.

SHow/DX_Age

This command displays the current ANN_AGE setting.

SHow/HOPS

Indique la configuration des hops PC16/17, PC19/21 et PC50 pour l'ensemble des clusters connus.

SHow/HOPS <CallSign>

Displays hops in two columns.

SHow/MAIL_Age

This command displays the current MAIL_Age setting.

SHow/MEMleft

Report DxNet memory utilisation..

SHow/MOTD n

Displays the "Message Of the Day" in language n. If n is omitted, displays the "Message Of the Day" in the default system language..

SHow/PAGE_Timeout

This command displays the PAGE_Timeout setting.

SHow/SPOT_Age

This command displays the current SPOT_age setting.

SHow/REgister [callsign]

This command allows to search the password.dat databse.

Syntax : SHow/REgister [callsign]

[callsign] is optionnal. If no callsign is specified, SH/RE shows the whole password database.

SHow/TNC_status

Displays each connected channels status with the following informations.

chan :	DxNet channel number
port :	Port name
callsign :	callsign of the User/Cluster
status :	user cluster terminal (terminal : DOS version only)
buffer :	size of the buffer for this channel

SYS

A user who is designated as a SysOp must use this command before access to the SysOp specific commands is available. The SYSTEM/PASSWD.DAT file contains the list of SysOps, followed by a character string, or secret code (maximum length 255), which will be used to generate their access keys.

When the SYS command is received, and assuming the connected user has been previously identified as a SysOp, the software returns a random number consisting of 5 digits. Each digit corresponds to the position of a character owithin the secret code string.

Example : Assume that PASSWD.DAT contains the following:

F6KBI Thequickbrownfoxjumpsoverthelazysleepingdog0123456789

Then : 0 = T

1 = h
2 = e
3 = q
4 = u
etc... etc...

A typical sequence might be :

SYS	<- User requests remote SysOp access
F6KBI-3 > 10 36 2 9 32	<- Software responds with randon number sequence
rehby	<- User supplies corresponding characters
Ok	<- Software acknowledges acceptable response

If the user's response to the challenge is inscorrect, DxNet will respond with a message : "Unknown Command, standard H for Help". Before further attempts to gain remote SysOp status may be made it will be necessary for the user to first disconnect and then reconnect to the DxNet node.

DxNet additionally supports MD2 password methods. The DxNet response are sent simultaneously as TheNet, MD2 and MD5 types.

See above for information regarding the structure of the PASSWD.DAT file.

UP/CONFig <arg>

Some of the config file are load when dxnet starts or when a cluster connection is established with an adjacent. This is why any mods made in these files won't be effective untill either dxnet is restarted or the link is disconnected/reconnected again.

A new sysop command can now be run to hotly update the config files :

UP/CONFig <all|cfg|db|hops|lang>

where :	all	reload all of the above config files
	cfg	dxnet.cfg
	db	databases : local.dat, update.dat, remote.dat
	hops	script/*.cfg (cluster hops setting)
	lang	languages files

Remark : SET/CALL and SET/PORT (dxnet.cfg) can't be hotly changed, so these commands are ignored during an UPDATE/CONFIG.

EXTERNAL COMMANDS

(extcmd and syscmd subdirectory)

Overview

Any executable program (EXE, COM, BAT) may be placed into these directories. When a user command is received, DxNet looks to see if that command can be found in EXTCMD or EXTCMD/SH. If found, DxNet will execute the command, possibly in preference to a built in (standard) DxNet command. This provides facilities where the SysOp may either define new or modified DxNet commands.

For example, if you wished to create a new command called TEST: put the file TEST.EXE (or .COM / .BAT) in either the \EXTCMD or \SYSCMD directory.

If you wish to create an additional SHOW command called SH/SOMETHINK: put the file SOMETHINK.EXE (or .COM / .BAT) in the \EXTCMD\SH or \SYSCMD\SH directory.

The commands in the \EXTCMD directory are accessible to all users. The commands in the \SYSCMD directory are accessible only to SysOps after successful password validation.

Example : If you place a copy of REBOOT.EXE in the \SYSCMD directory. This new command will be available only from the console or to a remote SysOp.

Examples

Quelques commandes externes utilisées sur F6KBF-3

LASTBOOT

Sends information to the SysOp regarding the date and time when the node was last rebooted.

LASTBOOT.BAT in \SYSCMD directory:

@ECHO OFF

@TYPE C:\DXNET\BOOT_DXN

REBOOT

Needs no explanation ...

REBOOT.EXE in \SYSCMD directory :

MEMXXX

Give an outline of the core memory used by the node.

MEMXXX.BAT in \SYSCMD directory :

@ECHO OFF

@MEM/C

Macro command

Added a macro command feature. Macro commands can be used to define or redefine your own command set. Macro files are placed in either extcmd or syscmd directory and have the .mac extension.

Assuming you want to create a new command SH/ALL wich shows the last DX, WWV and ANNOUNCE spots :

---- macro file c:\dxnet\extcmd\sh\all.mac ----

SH/DX/%1

SH/WWV/%1

SH/A/%1

%1 is an optionnal variable. If the user enter, say, SH/ALL 1, he will get only one spot. You can use in macro the whole variable set of the message files.

There is no recursive problem using macro. The following example, even if it has no interest, works perfectly :

---- macro file c:\dxnet\extcmd\l.mac ----

L

USER CONNECTION TO DXNET

Management of a new connection to DxNet

When a connection request is received, DxNet first tests the callsign (including SSID) to see if it is known as an adjacent cluster node. If it is not, a further test will be made to see if the user has previously been identified as a remote SysOp.

If the connection request is from a user (rather than another node), the SSID will be checked against an criteria previously defined by the SET/SSID command. Any SSIDs which have not been explicitly defined as to be removed will be left appended to the user callsign. (See SET/SSID, above).

Multiple simultaneous connections to other network nodes

It is permissible for a user to be connected to more than one DxNet (cluster) node concurrently.

DATABASES

DxNet supports the use of local databases. The format used is compatible with the existing PacketCluster TM files. To install a database, place the .FUL file in the DATABASE directory and ensure that it is also defined in the SYSTEM\LOCAL.DAT file.

Format of SYSTEM\LOCAL.DAT:

<Command1> <FileName1>

<Command2> <FileName2>

<Command3> <FileName3>

etc...

For example, suppose you wished to add an IOTA and QSL database :

User commands: SHow/IOTA

 SHow/QSL

Database files : DATABASE\IOTA.FUL

 DATABASE\QSLINFO.FUL

Then add the two following lines to :

SYSTEM\LOCAL.CFG:

IOTA IOTA

QSL QSLINFO

Database file format :

key

text

text

text

...

&&

key is the key that DxNet searches on (one per line).

text information follows, and can be in any format.

&& is the end of record marker.

The number of records per database is unlimited.

Some special keys may be used in the .FUL file :

 #LIS Message sent to user if no search criteria entered

 #CAL see #LIS

 #PRE Message to use as prefix to database record output

 #POST Message to use as suffix to database record output

 #NF Message sent to user if no data found from search

These special keys are hardcoded into the software; They are not user editable. Later versions of DxNet will support additional special keys.

The key word '%s' can be used anywhere in the data file and is substituted by the argument supplied to the Sh/QSL command. (example: %s is replaced by TM1C if the user types SH/QSL TM1C).

DxNet supports the chaining of databases, and it is therefore possible to search multiple databases with a single command. For example, let us suppose that you want to chain your QSLNEW database to your QSL database, so that if the search request did not succeed for the QSL database, the QSLNEW will be automatically searched for a match.

To specify chained databases, create an entry in your SYSTEM\LOCAL.DAT which lists the database names alongside the user command.

Example : SYSTEM\LOCAL.DAT

 QSL QSL QSLNEW

 QSLNEW QSLNEW

DxNet supports the use of indexed databases. To create an index, use the FULIDX.EXE utility program which is stored in the DATABASE directory. An approximate decrease in of 1000% in search time may be expected from using indexes ! DxNet is able to detect and automatically use indexed databases without any additional declarations.

NOTE : DxNet index files are not compatible with AK1A index files

UPDATE.DAT (SYSTEM directory)

The update of the data bases is possible if file SYSTEM\UPDATE.DAT were written as follows.

UPDATE_CMD1	DATABASE_CMD1
UPDATE_CMD2	DATABASE_CMD2

For example, you want to allow the users to update your QSL_NEW.FUL database. The search command for this database is SH/QSL (defined in LOCAL.DAT). Include the following line in your SYSTEM\UPDATE.DAT file:

QSL	QSL
-----	-----

The two fields are identical.

The subject is preceded by #, with a maximum length of 80 characters. The format for the UPDATE.DAT file is as follows:

name name # French Nomenclature

[curiously – I didn't understand this AT ALL – GORDI]

LOCAL.DAT (SYSTEM directory)

Refer to the database section for further details of local database support. The current version of DxNet provides support only for the "BuckMaster" database. In a future version of DxNet, support will be provided for SysOp configurable databases, and LOCAL.DAT will be used to define these databases.

The subject (maximum length 80 characters) is prefixed by a # character. The format of LOCAL.DAT is as follows:

QSL	SDX_QSL	IOTA	#QSL manager
IOTA	IOTA		# IOTA database
name_chain	french		
name	name_new	name_chain	#French nomenclature
buck	hamcall	callbook	#International Callbook

The list of available databases may be seen by using either the SHow/DATabase or SHow/Base command.

Access to the base of data HAMCALL of Buckmaster

(version DOS of DxNet)

A CD-ROM is available from BuckMaster which include an international callbook, containing more than 1,250,000 entries (the French listings are not completely up to date, and it is understood that there are inaccuracies in the US listings). The CD-ROM is available from BuckMaster, Route 4, Box 1630, Mineral, Virginia 23117, USA (Tel: 540:894-5777, Fax: 540:894-9141, Internet info@buck.com). The 1995 price was \$50 + \$8 shipping. The HAMCALL may also be accessed from DxNet. It will of course be necessary to install a (minimum) 2x CD-ROM drive on the PC.

To define the access to this CD-ROM, it is necessary to create the file SYSTEM\LOCAL.CFG. The user command must be defined, followed by a space, and then BUCKMASTER. Several commands may be aliased to provide access to the single database.

An interface program (BUCKMSTR.EXE) permits access the BuckMaster Amateur Radio Callsign CD-ROM :

Syntax: Buckmstr < drive > < callsign > [l/xx]
 lecteur : CD-ROM drive letter
 indicatif : callsign to search for

/lxx : BUCKTSR interrupt vector. This argument is optional.

The C source code for this program may be found in SOURCE.ZIP

How to declare the CALLBOOK database

(DOS only)

1/ Create a batch file in the CALLBOOK directory. Refers to the following example (assumes that your CD-ROM drive letter is D :)

```
HAMCALL.BAT
@ECHO OFF
rem you MUST include the directory in the path
C:\DXNET\CALLBOOK\BUCKMSTR D: %1
```

2/ The database must also be declared in the LOCAL.DAT file. Ensure that the word "callbook" appears at the correct position in the record.

```
LOCAL.DAT
BUCK  HAMCALL  callbook  #Buckmaster's callbook
```

where : - BUCK is the DxNet command (SH/BUCK) for access to the database

HAMCALL is the name of the batch file (located in the callbook directory) used to provide access to the CD-ROM

3/ Don't forget to run BUCKTSR.EXE before DXNet.

This may seem to be a little complex, but the scheme provides the possibility of access to other CD-ROMS, provided that an appropriate interface program is available.

When DxNet is running in a Linux environment, access to databases is only available via a DOS session. DOS SORRY!

Configuring a remote database

Remote database implemented (PC44, PC45, PC46). Up to 40 remote databases may be defined. The remote database are defined in SYSTEM\REMOTE.DAT like following :

```
--- system\remote.dat file ---
database_name      cluster      #Optional title
```

IMPORTANT : The field database "database_name" must match exactly the one used by the adjacent cluster.

For exemple, assume you want to allow you DxNet to search the remote database BUCK on F6BEE. Your REMOTE.DAT file will include the following row (the keywords are not case sensitive) :

```
--- system\remote.dat file ---
buck  f6bee  #Buckmaster's callbook database
```

ANNEXURE

PROTOCOLE EXCHANGE BETWEEN DXNETS

Definition of protocol

The protocol employed by F5MZN's DxNet is compatible with AK1A's PacketCluster™ (trade mark of House Software, PO Box 803, Hudson, MA 01749, the USA), but is restricted.

Protocol codes

The exchanges between two DxNets are defined by the following:

PC10 :	Talk message
PC11(*) :	DX spot
PC12 :	ANNouncement
PC13 :	Station joined Cluster-wide conference
PC14 :	Station left Cluster-wide conference
PC15 :	Cluster-wide conference text
PC16(*) :	Add user
PC17(*) :	Remove user
PC18 :	Request initialisation (adjacent node)
PC19(*) :	Add DXCluster
PC20 :	Initialisation complete
PC21(*) :	Remove DXCluster
PC22 :	Acknowledge initialisation complete (PC20 response)
PC23(*) :	WWV information
PC24(*) :	SET/HERE and SET/NOHERE notification to adjacent clusters. HOP COUNT must be set, preferably with the same value as PC16^ and PC17^ and in any case should not be higher
PC25 :	DX/WWV merge request
PC26 :	DX merge information (response to PC25)
PC27 :	WWV merge information (response to PC25)
PC28 to 33, PC40, PC42, PC43, PC49:	Used during mail forwarding
PC38 :	Connected DXCluster list
PC41 :	Update the users Information.
PC44 :	Remote database request
PC45 :	Remote database response
PC46 :	Remote database command complete
PC47 :	Remote database update
PC48 :	Remote user database update
PC50 (*) :	Indicate the number of connected users (network if PC19>0, node otherwise)
PC51 :	PING support

(*) These protocols are skeletal and have limited lifetime. *[Transient ?? – GORDI]*

Function	Command	Protocol
Talk	Talk	PC10
Dx info	DX	PC11
Announcement	Announcement	PC12
Add/delete user	USER	PC16 PC17
Add/delete node	NODE	PC19 PC21
WWVinfo	WWV	PC23
DX/WWV merge request	MREquest	PC25
Dx merge info	MDX	PC26
WWV merge info	MWWV	PC27
Mail forwarding	MAIL	PC28 to PC33, PC40, PC42, PC43, PC49
Remote commands	RCOMmands	PC34, PC35, PC36
User info	UINfo	PC41
Remote DB request	DATABase	PC44 to PC48
Update user count	UCOunt	PC50
Ping	PIng	PC51

WCY spots	WCY	PC83, 84
Incoming protocol sets [in]		Following commands apply to the incoming protocols.
Outgoing protocols sets [out]		Following commands apply to the outgoing protocols.
CluLink permission	CLUlink on/off	Allows or not CluLink protocol for that link.
See protocol CLULINK in appendix.		
WCY spots	WCY	PC73, PC84, PC85
Note: that command has effect only if ENHanced_protocol is enable.		
Incoming protocol sets [in]		Following commands apply to the incoming protocols.
Outgoing protocols sets [out]		Following commands apply to the outgoing protocols.
CluLink permission	CLUlink on/off	Allows or not CluLink protocol for that link.
External link	EXTERNAL on/off	Enable or not the external network

New command in .cfg file which can enable some enhanced protocols.

This enhanced protocols have been firstly used by clx, but some other AK1A clones (like DxSpider) supports them as well. Ask your adjacent sysop to know if you can enable them.

Syntax : ENHanced_protocol <on/off>

Enhanced protocols are including :

PC73 : WCY information

PC84 : Same as PC34, but it carries also the user who requested the remote command

PC85 : Same as PC35, but it carries also the user who requested the remote command

If you want to enable the enhanced protocols, put the command line "ENHanced_protocol on" in one of the first lines of the <adjacent>.cfg config file (before the [in] section).

By default, ENHanced_protocol is set to off.

List of exchanges between DxNets

Function	Protocol Message
Talk	PC10^FromUser^ToUser_1^msg^BellFlag^ToUser_2^FromPC^~
Dx spot	PC11^DxFreq^DxCall^Date^Time^DxMisc^Logger^FromPC^Hops^~
Announcement	PC12^FromUser^ToPC^msg^SysopFlag^FromPC^WxFlag^Hops^~
Station into wide conference	PC13^User^Hops^
Station out of wide conference	PC14^User^Hops^
Conference text	PC15^FromUser^msg^Hops^~
Add user	PC16^FromPC^User Conf Here^User Conf Here^User Conf Here^...^...^...^Hops^
Remove user	PC17^User^FromPC^Hops^
Request Initialization	PC18^ClusterInfo^Version^~
Add DxCluster	PC19^Here^PCCall^Conf^Version^...^Hops^
Initialization done	PC20^
Remove DxCluster	PC21^PCCall^Reason^Hops^
Initialization complete	PC22^

WWV spot	PC23^Date^Hour^SFI^A^K^Forecast^Logger^Hops^~
Here / Not here	PC24^User^Here^Hops^
DX/WWV Merge request	PC25^ToPC^FromPC^DxCount^WWVCount^
Dx Merge information	PC26^DxFreq^DxCall^Date^Time^DxMisc^Logger^FromPC^~
WWV Merge information	PC27^Date^Hour^SFI^A^K^Forecast^Logger^FromPC^~
Send Mail Subject	PC28^ToPC^FromPC^ToUser^FromUser^Date^Time^Private^Subject^?^LineCount^?^?^SendPC^~
Send Mail Text	PC29^ToPC^FromPC^#Msg^text^~
Ack Mail Subject	PC30^ToPC^FromPC^#Msg^~
Ack Mail Text	PC31^ToPC^FromPC^#Msg^~
Complete Mail Forward	PC32^ToPC^FromPC^#Msg^~
Ack Complete Mail Forward	PC33^ToPC^FromPC^#Msg^~
Remote Command	PC34^ToPC^FromPC^Command^~
Remote Command Response	PC35^ToPC^FromPC^Command response^~
Show Command	PC36^ToPC^FromPC^Command^
Needs Database Update	PC37^User^Command^~
Connected DxCluster List	PC38^PCCall,PCCall,.....^~
Remove DxCluster and disconnect	PC39^PCCall^Reason^
PC File Forward	PC40^ToPC^FromPC^Filename^Bulletin-flg^
User Database Information	PC41^User^Type^Info^Hops^~
Abort Forwarding	PC42^ToPC^FromPC^#Msg^
Send External Mail Subject	PC43^ToPC^FromPC^ToCall^Date^Time^Private^Subject^LineCount^~
Remote Database Request	PC44^ToPC^FromPC^Stream^Qualifier^Key^
Remote Database Response	PC45^ToPC^FromPC^Stream^Info^~
Remote Database Complete	PC46^ToPC^FromPC^Stream^
Remote Database Update	PC47^ToPC^FromPC^User^Qualifier^Key^
Remote User Database Update	PC48^ToPC^FromPC^Stream^Qualifier^Key^User^
Bulletin Mail Delete	PC49^Stn^Subject^Hops^
Update User Count	PC50^FromPC^UserCount^Hops^
Ping	PC51^ToPC^FromPC^PingDir^

Version Number exchange

The software version numbers are exchanged between adjacent clusters as a part of the initialization sequence. For DxNet, the coding convention for the version number is of the form 5XXX, where XXX are the three figures denoting the current version. For example, DxNet v2.21e will transmit version number 5221 it's initialisation sequence. The SysOp may inspect the version number of each connected DxNet node by using the SHow/VERsion commend (see the SYSOP Commands section).

Message lifetime

Certain protocol messages have a limited lifetime. This allows, for example, the SysOp to restrict transmission of information regarding connections and disconnections of users to only (say) the nearest five nodes.

Part of the protocol exchange is a HOP COUNT, which effectively sets the "time to live" for each associated protocol message. For instance, when a user connects to F6KBI, a PC16 message will be sent with a hop count = 99 to F6KPF. This message will be passed onto adjacent nodes, with the hop count being decremented at each successive node, until the counter reaches zero.

It is therefore possible to specify the default (starting) hop count on a node-by-node basis, according to individual SysOp preferences.

Note: PC16 / PC17 will logically have the same time to live, and the same is true for PC19 / PC21. The time to live for PC16/PC17 must not be longer than that for PC19/PC21.

Setting Time To Live on a node by node basis

Since version 1.34, DxNet has provided facilities to specify the time to live for various protocol messages according to the destination node. For instance, specification of (non default) parameters for F6BEE would be stored in file SCRIPT\F6BEE.CFG. Any parameters is not specified in this file will have a default value of 99.

Any protocol message which has a null value assigned will not be passed to the node specified ; protocol messages which have a value specified will be transmitted using that value ; all others will default to a value of 99.

Example (F6BEE.CFG)

clulink	off
[in]	
user	4
node	4
mail	off
rcommands	off
[out]	
user	4
node	4
mail	off
mrequest	off
mdx	off
mwww	off
mail	off
rcommands	off
uinfo	4
database	off
ucount	99
ping	on

Loops

At the time of establishing a network connection, it is important to be especially careful to avoid creating loops (one DxNet is connected to two other DxNets, where there is an existing connection between the latter two). Under these circumstances, it is probable that duplicated DX spots would be received and transmitted many times by each node .

PROTOCOLE CLULINK

Initiating a cluster link

Node A

1. Makes connection

Node B

2. Sends PC18 protocol, including in the cluster information field the clulink support identifier :
PC18^CLU- 0.1^5449^~

3. After identifying the protocol support identifier, sends the sends the protocol connection init string, switches to binary link mode, sends node and user table, finishes with message 0.

4. As soon as the protocol connection init string has been received, switches to binary link mode, sends node and user table, finishes with message 0.

Description of the binary messages

Protocol messages are binary, to save valuable network bandwidth. No CRC checking or message acking is normally done, since this should be done at lower layers.

First byte of a message is an unsigned char (BYTE) which indicate the length of the protocol message, in bytes. A protocol message can be up to 255 byte long.

String are stored as pascal-type strings. The first byte indicates the actual length of the string, then follows the string itself.

User and node callsigns are maximum 9 bytes longs (6 characters for the callsign, and 2 or 3 characters for the SSID if any).

Date and time are stored in two bytes, in format used by the rotten FAT file system. It's accurate to two seconds.

Bits	Description
31-27	hours (0-23)
26-21	minutes
20-16	seconds divided by 2
15-9	year - 1980
8-5	month
4-0	day

The second byte of a message indicates the message type.

0 - Remote initialization completed.

1 - Add node(s)

Hop count: byte
NodeCall: pascal-type string
Software ID &

Node status: byte
bit 0 to 5 :
1 - unknown
2 - PacketCluster - type
3 - Clusse
4 - DxNet
bit 6 - nohere ON
bit 7 - conference mode ON
Version: unsigned int
version number is multiplied by 1000

If there are more than one node to add, they'll be added following.

2 - Delete node

Hop count: byte
NodeCall: pascal-type string
Reason: byte
0 - Shutdown
1 - Disconnected by operateur
2 - Hard disconnect
255 - Special reason, the reason string follows ...
Reason String: pascal-type string (maxlength 30)
only send if Reason is 255.

3 - Add user(s)

Hop count: byte
FromNode: pascal-type string
UserCall: pascal-type string
UserFlag: byte

Bit	Meaning	1	0
bit 0 - Here status		here	not here
bit 1 - Conf status		in	not in
others are reserved			

If there are more than one user to add, they'll be added following.

4 - Delete user

Hop count: byte
FromNode: pascal-type string
UserCall: pascal-type string

10 - Change user flag

Hop count: byte
FromNode: pascal-type string
UserCall: pascal-type string
UserFlag: byte (see message #3)

11 - Change user data

Hop count: byte
FromNode: pascal-type string
UserCall: pascal-type string
DataType: byte
1 - Name (max length 22)
2 - Qth (max length 80)
3 - Coordinates (not yet implemented in DxNet)
4 - Home node (max length 9)
5 - Locator (max length 6)
Info: pascal-type string

12 - Ping message

Hop count: byte
 FromNode: pascal-type string
 ToNode: pascal-type string
 pingFlag: byte
 0 - Answer for a ping
 1 - Ping

64 - DX info

Hop count: byte
 FromNode: pascal-type string (max 9 bytes)
 FromUser: pascal-type string (max 6 bytes, without SSID)
 DxFreq: unsigned long (4 bytes)
 Frequency of the DX station in KHz, multiplied by 10
 An integer is used to prevent rounding errors.
 DxCall: pascal-type string (max 14 bytes)
 DateTime: unsigned long
 Comments: unsigned string (max 30 bytes)

66 - Announcement

Hop count: byte
 FromNode: pascal-type string
 FromUser: pascal-type string
 ToNode or
 Distribution: pascal-type string (max 20 bytes)
 DateTime: unsigned long
 Message flags: byte
 Bit Meaning
 bit 0 - Cluster-wide announcement
 bit 1 - To users connected to the specified cluster only
 bit 2 - To a distribution list of users
 Message: pascal-type string (max 80 bytes)

67 - Talk

FromNode: pascal-type string (max 9 bytes)
 FromUser: pascal-type string (max 9 bytes)
 ToNode: pascal-type string (max 9 bytes)
 ToUser: pascal-type string (max 9 bytes)
 DateTime: unsigned long
 Message flags: byte
 Bit Meaning ON OFF
 bit 0 - Bell flag1 0
 Message: pascal-type string (max 80 bytes)

UPDATES

UPDATE 3A3

1/ sysop access -----

The command SET/SYSop sets callsign for which you want to permit a sysop access. This command is used according to the same way than SET/NODE.

SSID is checked if you only define it :

SET/SYS +F5MZN +F6FBB-0 +LA6CU-5

F5MZN : for any SSID

F6FBB : only -0

LA6CU : only -5

Both thenet type and MD2 password are supported.

The whole password are stored in the file system/passwd.dat. Both user callsign and password are on a single line :

F5MZN mypassword

F6FBB hispassword

LA6CU hispassword

2/ local database -----

Local database are now supported. The file system/local.dat contains the local database declaration.

Please consult the version 2 manual to get information about the local database.

Note : - BUCKMASTER is not supported yet.
 - Remote databases are not supported yet.

3/ clulink protocol -----

Some mods in the clulink protocol. See the file CLULINK.TXT.

4/ fixed bugs -----

DxNet was sending back to the adjacent his configuration during the initialization sequence. Fixed.

When a PC17 was coming in for a user not connected or unknown, the linux version was crashing. Fixed. (Tks F1TE and F6FBB).

Some strange things may occur with the user config. Fixed. Tks F1TE.

Talk protocol wasn't send correctly the BEEP flag. Fixed. Tks F1TE, F6BEE, and others.

5/ Miscellaneous

Dx spot checked for dupe.

Pavillon's protocols are checked to see if everything is correct. A rubbish protocol is trashed. This avoid crashes and forwarding of bad protocols.

I received requests from some of you. I'll try to satisfy everybody as soon as possible. Thank you for your comprehension.

UPDATE 3A4

1/ The code used to manage the cluster configuration has been rewritten. SSID's problem (linux version) should be fixed with that. I hope new bugs won't follow ! :-)

2/ New symbols %D, %d, %H for respectivly Date (DD-MMM-YYYY), Date (DD-MMM) and time (HH:MM).

3/ Database updating is allowed. See the doc file.

4/ SHOW/MEMleft gives more information (DOS version only).

5/ Checking the validity of protocols wasn't work properly. Fixed. Tks LA6CU and LA3WAA.

6/ A cluster link using the pavillon software protocol is now disconnected if a non protocol frame is coming in. This can happens if the link uses some NETROM type nodes (in case of disconnection).

7/ I finished to write the code for the PING command. Please try it and give me your comments if any.

UPDATE 3A5

19/11/97 - The update function searches the position of the last "&&" characters and puts the new record just after them. This avoids the insertion of some unneeded characters between two records.

20/11/97 - DxNet was sending some bad protocols (PC16) during the initialization sequence if the adjacent was calling it. Fixed. Thanks to LA3WAA.

 - A crash occured if someone tried to send a talk to the console. Fixed.

 - Sender -0' SSID removed from talk messages (linux version). Tks F1TE.

 - Time added in talk messages.

 - Adding the Quit user command as an alternativ of Bye.

 - Adding new command SET/LOGS. This command will be used by the sysop to define which logs he wants dxnet writes.

Ex : SET/LOGS +USER +NODE +PING

All logs will be saved in the directory dxnet\logs.

Which log	Argument	File
Users connection	USER	logs/userYYMM.log
Clusters connection	NODE	logs/nodeYYMM.log
Ping	PING	logs/pingYYMM.log

where YY is the year, and MM the month.

21/11/97 - Stack size increased to 16 Ko.
- When the first characters of an entered command was '*', the extcmd module crashed. Fixed.

- Adding topic for each database. Topics are following the character '#' and are placed in the last position of the database definition file. For example, you can have the following local.dat file :

QSL	QSL_NEW	QSL	#QSL manager database
IOTA	IOTA		#IOTA database

The list of the whole databases is showed with either SHow/DATAbase or SHow/BAse.
Topic length can't exceed 80 characters.

22/11/97 - A file wasn't properly closed after an extcmd had been executed. Fixed.

- Adding a Message Of The Day (MOTD) feature. The MOTD is saved in the language directory. Its file name is of the form of other language files :

MOTDn.TXT

where n indicates the language number.

The sysop can modify them using the command SET/MOTD n. He can also show them using the command SHow/MOTD n. In these commands, n is optionnal. If n is not specified, it is set by default to the sysop language number.

- Fixed SH/DX <band> which doesn't work properly. Tks F1TE.

- Adding new symbols %o and %u :

%o	Server callsign without SSID
%u	Connected user callsign without SSID

- Adding the command SET/BLACKlist to set which callsigns (whatever SSID) the sysop wants to unauthorize connection.

Ex : SET/BLACK +NOCALL +TNC2 +F5XYZ etc

- Adding the new command SET/SSID to set which SSID the server mustn't clear from the local user callsign when he's connecting.

Ex : SET/SSID +6 +7 +8 +9

UPDATE 3A6

24/11/97 - Script connection timeout function supported. #45 after a connection line in a script file indicates the connection must be established in less than 45 seconds.

After that, the script file is aborted.
By default, timeout is set to 60 secondes.

script file example

```
F5MZN-3
.C F6HPP          connect a KANTRONIC node
#40               40s of timeout
.X F5MZN-3
#120              120s of timeout
+MADE
?FAILURE
```

- 13/12/97 - Adjacent incoming connections wasn't identified as a cluster for SSID different of -0. Fixed. (Tks FlTE).
- 13/12/97 - When running DxNet from a W95 DOS window, the SHUTDOWN command crashed. Fixed.
- 13/12/97 - Adding the new command EXIT. This command is used to exit DxNet with a specified error code. This allows to run any program in place of DxNet, or to reload DxNet. See the following example (assuming DxNet is run from the GO.BAT file).

Syntax : EXIT/n <comments>
 where n is the exit code and <comment> the
 optionnal message send to the local users.

Under MS-DOS, how to either run a YAPP program for uploading a new release of DxNet or to reboot the computer ?
GO.BAT file

```
rem EXIT/1 runs a YAPP program
rem EXIT/2 reboots the computer
DXNET -s50
IF EXITCODE 1 GOTO YAPP
IF EXITCODE 2 GOTO REBOOT
GOTO END
:YAPP
rem Run TPK and reboot the computer
TPK
:REBOOT
rem Reboot the computer
REBOOT
:END
```

Under W95, how to restart DxNet ?
GO.BAT file

```
rem EXIT/1 restarts the computer
:START
DXNET -s50
IF EXITCODE 1 GOTO START
```

I hope distant sysop will appreciate this new command.

- 15/12/97 - The language files management turning out quite complex owing to the lack of identify them with the file name, the language file names have been changed like following :
- * The whole LANGn.TXT are now called xxx.TXT, where xxx designs the language.
 - * The whole HELPN.TXT are now called xxx.HLP, where

xxx designs the language.

* The whole MOTDn.TXT are now called xxx.MOT, where
xxx designs the language.

eg : FRENCH.TXT, ENGLISH.TXT, RUSSIAN.TXT, ...
 FRENCH.HLP, ENGLISH.HLP, RUSSIAN.HLP, ...
 FRENCH.MOT, ENGLISH.MOT, RUSSIAN.MOT, ...

You must set in SYSTEM\LANGUAGE.DAT the languages you
want to allow.

For example :

FRENCH
ENGLISH
RUSSIAN
SPANISH
GERMAN

Of course, you can put languages in the order you want.

As previously, up to 10 languages are supported.

This should ease updating the language files. I suggest
to use english to name these files (particularly if you
send me them for adding in the distribution package), but
everybody can do like he wants !

16/12/97 - Adding the new command SET/TZ #n, which can set the
difference between the local time and GMT.

Example : SET/TZ -5

- Provided a reboot program (REBOOT.EXE) for DOS.

03/01/97 - Providing an interface program (BUCKMSTR.EXE) to access
the hamcall's BuckMaster CD-ROM for DOS.

Syntax : BUCKMSTR <drive> <callsign> [I/xx]

drive : CD-ROM drive letter
callsign : searched callsign
/Ixx : BUCKTSR interrupt number (hexa).
This Argument is optionnal.

Source code in C is available (SOURCE.ZIP).

- Creating the new directory dxnet\callbook. This directory
will be used to access a cdrom callbook database.

How to declare the callbook database (for DOS)

1/ Create a BATH program in the directory CALLBOOK. See
the example below (assuming your CD-ROM letter is D:) :

HAMCALL.BAT

@ECHO OFF
rem You MUST include the directory path
C:\DXNET\CALLBOOK\BUCKMSTR D: %1

2/ Declare the database in dxnet\system\local.dat. For that
you must put the word "callbook" in place of the chain
field.

LOCAL.DAT

BUCK HAMCALL callbook #Buckmaster's callbook

where - BUCK is dxnet command (SH/BUCK) to access the database

- HAMCALL is the program name (locate in the callbook directory) to run the interface program.

3/ Before running DXNET, don't forget to run BUCKTSR.EXE

This is a bit complex, but this will allow sysops to be able to declare any other CD-ROM in place of the one of BuckMaster. He just has to develop an interface program.

BTW, linux sysops are not forgot because they will also be able to access callbook databases via a DOS session (sorry I can't help you for that myself ... linux gurus, go head !)

- Adding an external command directory (called SYSCMD). Same as extcmd, but for sysops only.

- Adding the command SH/U which allows to show the local user configuration.

UPDATE 3A7

- Update the local database wasn't work properly. Fixed. Tks FLTE.

- Create the the new command SET/DIDdle n, where n is the time in second after which the message #41 is send to an user in case of inactivity.

Note that the message #41 cannot be empty.

A diddle frame is send to adjacents cluster as well.

This allows to reset the link inactivity timeout to keep the connection established in case of low activity.

SET/DIDdle 0 disables the command. SET/DIDdle is disabled by default.

- DxNet was sending bad user's SSID in some protocols. Fixed.

- New commands WWV and SH/WWV. Use WWV command like following :
WWV SFI=xxx A=yyy K=z Forecast

- CluLink identifier modified (DxNet sends now "<CLU-x.y>" in PC18 in place of "CluLink x.y"). This will allows to put any other info in this PC18 field.

- SH/VERsion <node> shows the version number of <node>.

- A terminal has been added on F3 (DOS version ONLY). The command SET/MYC allows to define the callsign which will be used on the terminal (eg use it in dxnet.cfg).

Terminal has a few number of command as well :

MYCall <mycall>	Set <mycall>
Connect <call>	Connect <call>

:D

Disconnect

UPDATE 3A8

12/06/98 - A local mailbox is available. Forward is not implemented yet.

*** IMPORTANT ***

You must create the directory "mail", in which messages will be stored.

The new file system\bin\dirmes.bin (created by DxNet) will save the message titles.

The commands are basically the same as the F6FBB's mailbox ones :

List [n1-n2]

This command shows the message titles of new.

The optionnal parameters n1-n2 allows to show headers from the message #n1 and #n2.

Send <Recipient> [@ Route] [< Sender] [\$ BID] [+ FILENAME]

This command sends a mail to <Recipient>. The other parameters are optionnal :

- [@ Route] specifies the cluster on which the message will be forwarded;
- [< Sender] specifies the callsign of the sender;
- [\$ BID] specifies the BID number (unused yet);
- [+ FILENAME] specifies the file name (unused yet).

Both commands SP or SB are supported as well.

Read <#n>

Use this command to read the message #n.

Kill <#n>

Use this command to kill the message #n.

LL <#n>

Show the #n last message titles.

LN

--

Shows the new messages titles which for me.

LM

--

Shows the messages titles which are for me.

13/06/98 - PURGMAIL.EXE program has been created to purge the old messages and killed messages from the mailbox (when the message lifetime is expired).

You must copy this program in SYSCMD directory and you should run this command from DXTODO.DAT file every night.

PURGEMAIL [d=DirMesPath] [m=MailPath] [b=#n_days] [p=#n_days]

where : - [d=DirMes path] specifies the directory in which dirmes.bin file is located.
The default directory is SYSTEM\BIN.

- [m=MailPath] specifies the mail directory.
By default, this directory is set to MAIL

- [b=#n_days] sets the number of day (#n_days) after which a bulletin will be deleted.
By default, this value is set to 30.

- [p=#n_days] sets the number of day (#n_days) after which a private mail will be deleted.
By default, this value is set to 30.

Examples :

```
PURGMAIL p=C:\DXNET\SYSTEM\BIN m=C:\DXNET\MAIL p=10 b=15
PURGMAIL p=20
PURGMAIL b=30 p=5
```

The source code of this program is provided (SOURCE directory).

- New symbols : %L shows the last received message number.
%Z shows the last message number listed by the user.

- The message #55 (language file) is send if there is some mail waiting when an user connects the server (the symbol %1 is used to print the number of new messages).

14/06/98 - The message #56 (language file) is send to a connected user if he receives a new message.

UPDATE 3A9

04/07/98 - Both commands SP and SB are now working.

- Monitor function can be disabled. Start DxNet with the extension -moff.

Example : dxnet -moff

- Creating of the directory dxnet\users. This directory contains files in which there is a list of commands you want to execute each time a usern connects the server.

```
DEFAULT.CMD : list of commands by default
CALLSIGN.CMD : where CALLSIGN is the callsign (without SSID)
                for a specific user. List of commands for this
                user.
```

06/09/98 - Mail forwarding using PC protocol enabled for incoming messages.

10/09/98 - The file SYSTEM\FORWARD.SYS will contain the bulletin forwarding routes. If you want to, say, forward to F6BEE the recipients ALL, DX, FRPA, QSL, and forward to F6KIF-3 the recipients ALL, DX, QSL, the file FORWARD.SYS will contain the following information :

```
FORWARD.SYS
-----
```

```
:F6BEE          #Forward to F6BEE
>ALL            #the recipient ALL
>DX             #and DX
>FRPA          #and FRPA
>QSL           #and QSL
END
:F6KIF-3        #Forward to F6KIF-3
>ALL            #the recipient ALL
>DX             #and DX
>QSL           #and QSL
END
END             #End of file
```

- The command FB [callsign] shows the message waiting in the forwarding queue to [callsign]. <callsign> is optional. If you omit it, you'll show the entire forwarding queue.
- The command FD <#msg> <@Callsign> dequeues a mail from forwarding queue.
- The command FA <#msg> <@Callsign> queues a mail into the forwarding queue.

24/09/98 - The command SET/USERCmd allows users to upload a list of command they want to execute each time they connect to the serveur. This command updates the file USERS\CALLSIGN.CMD where CALLSIGN is the user callsign.

- The commands SHow/USERCmd shows the list of these commands.
- Implementing of the forward protocol (PAVILLON's one only). A lot of job to implement it - the code certainly not free of bugs ! Please your reports !!
The CluLink forwarding protocol will be available soon.
- The command Fwd [#msg] [@Callsign] starts forwarding mails. [#msg] and [@Callsign] are optional. I suggest you to add this command in SYSTEM\DXTODO.DAT
- Clulink forwarding protocol implemented. This is a non compressed, non optimized protocol for now but it should work waiting a better one.

*** Don't forget to create the new directories USER and MAIL *****

*** fix3a9-1

26/09/98 - Display "FROM:" field of incoming messages incorrect. It uses "FromPC" instead of "FromUser" (PC28)

- The "@DXCluster" field in FORWARD.SYS is not used (correctly???). Address a message to a (logged-on) user; in my case G1TLH (who is connected to GB7DJK). I have FORWARD.SYS like this:

```
:GB7DXH
>ALL
>DX
>QSL
@GB7DJK
END
END
```

Fixed.

- *Incoming* messages are left with an entry in the Forward Queue, after they have been received by the DXNet. The "Fwd to" field is null, the date and time of the queue entry is suspicious. In my queue, 25-Sep-1998 00:00z for *every* incoming message. Cannot delete these queue entries using "FD", because they have no @Callsign !

Fixed.

- The date/time stamp of incoming messages is incorrect; seems always to be "today" at 00:00z.

Fixed.

*** fix3a9-2

- User Command doesn't work under linux. Fixed (Tks FLTE).
- If you enter a command line like either S/RR or SP/RR, a "return receipt" mail will be generated as soon as the addressee read the message. Return Receipt is not supported for public mail (=bulletin). Tks GORDI for the help understanding the PC protocol.

**** IMPORTANT **** : You must not set on the CluLink protocol if you are using the 3a9-2 fix when one of your adjacent is still running an older version.

- A killed mail wasn't removed from the forwarding queue. Fixed (tks GORDI).
- Sending a BID number (when uploading a mail) crashed DxNet. Fixed (tks LA3WAA).
- Some terminal problem (F3) are fixed when using the G8BPQ's switch (Tks GORDI and LA3WAA).

*** fix3a9-3

- A PC28 bulletin message arrives with the "StartPC" blank. Due to this ununderstandable things (stupid protocol ?), DxNet was forwarding the message back to the sender !

This "bug" with DxNet since v2 but has never been discovered. I was just thinking that the code of DxNet v2 was so much bad that the mistake could never be fixed. This is why I decided to rewrite to whole code (DxNet v3).

BTW, this allows now to have a multi languages software for both dos and linux platforms.

Thank you very much to Iain, GORDI, who has found this problem.

- DxNet sends a bad PC^0^ protocol. This bug exists since a long time, I just missed to fix it before.

So, fixed.

- Link external problem fixed. You must add the row :

external <n>

in the script\callsign.cfg file, where :

<n> is the hop-count you want to use to send the single PC19 protocol (with the callsign of your

cluster) needed during the initialization sequence. You can also the default value ON (which is equal to 99).

callsign is the callsign (without ssid) of the protocole configuration file of your adjacent with which to want a link external.

If a "link external" link is enabled, the both commands NODE and USER of the protocol configuration file are not used.

- PC41 (Home node data) was wrong. Fixed.
- EU <CallSign> allows the sysop to Edit the user information of the user database.
A normal user can also modifie his personnal information using this command.

N <name>	Sets the name
H <homenode>	Sets the Home Node
Q <qth>	Sets the QTH
L <locator>	Sets the locator
WQ	Writte the user information and quit
Q!	Quit without saving

UPDATE 3A10

- 24/10/98
- The EXTERNAL keyword was by default set to ON which is wrong. Fixed (Tks GORDI).
 - The subcommand WQ of EU does not save the user configuration. Fixed (Tks LA3WAA).
 - After a PURGMAIL, a bad message number for the next message might created. Fixed (Tks F6KBF and LA3WAA).
 - The message number wich is generated for a new mail is now OK. (Tks F6KBF).
- 31/10/98
- The new command SET/DXSSID ON/OFF allows sysop to decide if he wants dxnet to remove or not the ssid of a DX spot sender.
- *****- The format of the binary file SYSTEM\DX.BIN has been changed.
IMPORTANT You *MUST* delete it before running this new release.

- *DOS version* : In case of large traffic, the switch's buffer might be overloaded (and crashed). Fixed.
 - "DX 144300" gets send a spot with a NULL calsign field. Fixed (Tks GORDI).
 - FA with no arguments gets a bad message. Fixed (Tks GORDI).
 - LL lists one more message that you ask for. Fixed (Tks GORDI).
 - LL 10 (say) doesn't list last 10 messages for a normal user. Fixed (Tks GORDI).

Info : If you send me a language files, don't forget to put somewhere (at the top ??) in the files your callsign. This can easy other hams to know

who you are, and how they can contact you if needed. Thank you again for your contribution.

- 21/11/98 - DX/callsign sends the DX spot using "callsign" as logger.
- WWV/callsign sends the WWV spot using "callsign" as logger.
 - The whole code (abt 80 ko) of the syntax analyser (input commands) has been rewritten. This doesn't change anything for users but this makes a more stable code. A lot of bugs fixed, but certainly some new one will appear !
 - When you execute an external command (EXTCMD or SYSCMD directory) DxNet (DOS version only) don't find it if it is located in a subdirectory (e.g. SH/DIR) - Fixed (Tks PA2HBL).
 - The decimal value was sometimes wrong using the linux version of dxnet. Fixed (Tks PA3EZL, WU3V, KJ5SF, K3DI, F6FBB,)
 - PC19 problem (external feature) fixed. (Tks PA3EZL).
 - Dxnet was sending sometimes protocols with a bad hops-count value. Fixed.
 - Talk problem fixed in pre-release 3.A10 (Tks PA3EZL).
- 06/12/98 - Another talk problem fixed ... (Tks LA3WAA and IK3STG).
- External command wasn't take arguments. Fixed.
 - Another bug fixed with the commande LL (Tks SM0RUX & LA3WAA).
 - You are no more allowed to ping to yourself ! (Tks SM0RUX).
 - Dxtodo.dat file don't allow nnnn given as 4 numbers (e.g. 0000). Fixed (Tks F6KBF, SM0RUX and others).
 - (DOS) In the terminal (F3), DxNet was sending the diddle message when the connection was established. Fixed (Tks LA3WAA).
 - (DOS) Binaries packet are no more monitored under BPQ, because characters was clearing the screen (LA3WAA).
 - EU command fixed (Tks LA3WAA) :
 - * uppercase characters are interpreted as well.
 - * ok for non sysop
 - * Q! command moved to (E)xit without saving.
- 04/01/99 - PC50 is supported.

UPDATE 3A11 - 3A12

- 3A11a - User count problem (linux version) fixed (Tks SM5HUA).
- 3A11b - External commands (extcmd directory) crashed if no arguments was specified. Fixed (Tks SM5HUA).
- 3A11c - A problem was occurring if DxNet was receiving a negative hop count value. True, this normally shouldn't happen but as you probably see it does !! Fixed.

- Two New user commands : SET/BEEP & SET/NOBEEP
If SET/NOBEEP is activated, the user will no longer receive the BELL characters for DX, WWV, ANNOUCEMENT and TALK.
- DISC/CALL <callsign> disconnects <callsign> from DxNet.
- SET/SPY <port> <hops> - where <port> is the port number and <hops> the hop count you want to use for forwarding the spied dx spots.

This command is used to listen a cluster link for getting the PC11 (dx spots) protocol without the need to be connected.

```
*****
* Take care using this command : you cannot use it if you are      *
* connected to the cluster network you are spying. If you did,    *
* you will generate a lot of trouble. The best way is to not use  *
* this feature except if you really really need it !              *
*****
```

This command was available with DxNet v2, and very appreciated by some african guy who have very poor link on HF with the other part of the world, and not so much of cluster activity in their area.

NB : SET/SPY is available for the DOS version only.

- Carriage return and some other special characters are supported in a script connection file. If you want to send, say, two strings at once, your script file should be like that :

```
F5MZN-3
.C NO4J           //Connecting a telnet gateway
.f5mzn-3\nguest  //Will send first "f5mzn-3" (login),
                  //and then "guest" (password)
```

Supported characters are the same than JNOS (DxNet uses the same function) : \n \t \v \b \r \f \a \\\

If you want to send the '\\' character, put '\\\\' in place of.

- If you would connect to the cluster for any reason while you are already connected, DxNet crashed. This problem has been fixed by changing the user ssid automaticaly.
- SH/CONF support a filter : "SH/C F" will show the cluster for which the callsign is starting with a F. More than one letter is supported as well. SH/C F6F will show the callsign starting with F6F. Etc ...
- A system like C_FILTER is now present. This system is used to filter connections by password. By default, this system is disabled. Use the command SET/CFILter (e.g. in SYSTEM\DXNET.CFG) to enable it :

SET/CFILter <n>

```
n = 0 : CFILTER is OFF
n = 1 : CFILTER in ON - a password is required. If the user send
      the right password, DxNet works as usual. If not, the
      user is diconnected.
n = 2 : CFILTER is ON - a password is required. If the user send
      the right password, DxNet works as usual. If not, the
      user can receive the cluster informations but can not
      send datas (like DX, WWV, ...), except a mail to SYSOP.
n = 3 : CFILTER is ON - no password is required. If a declared
      user connects the cluster, DxNet works as usual. If the
```

user is not declared in SYSTEM\PASSWD.DAT, he will receive the whole cluster information but he will not allowed to send datas.

If the user is going to be disconnected, or if the connection is limited to the RX mode only, the file "language\cfilter.txt" is sent. This file is used to explain the user he have not a full acces to DxNet. Don't forget to create/edit it !

- Update field added to the cluster information (both at the connection and with the SH/CLuster command).
- Fixing a bug with the PC50 protocol (linux version).

UPDATE 3A13

- SYS command crashed DxNet. Fixed.
- axutils invalid symbol fixed (linux). Special thanks to F6FBB who gave me a hand fixing that. Tks also to the linux beta testers.
- Connection Filter : CTEXT is not sent to an undeclared user. Fixed.
- Update field is wrong after 2h24m of run ... just a math problem which is fixed. Thanks EA3BKZ.
- A message will appair when a message (MSG1, MSG2, ..., in the language files) is required by DxNet but does not exist.
- The linux version was not managing correctly the paclen values set in axports. Fixed. Thank SM5HUA.
- Remote database implemented (PC44, PC45, PC46). Up to 40 remote databases may be defined.

The remote database are defined in SYSTEM\REMOTE.DAT like following :

```
--- system\remote.dat file ---
database_name      cluster          #Optional title
```

IMPORTANT : The field database "database_name" must match exactly the one used by the adjacent cluster.

For exemple, assume you want to allow you DxNet to search the remote database BUCK on F6BEE. Your REMOTE.DAT file will include the following row (the keywords are not case sensitive) :

```
--- system\remote.dat file ---
buck      f6bee      #Buckmaster's callbook database
```

NOTE for linux users : if you are running the buckmaster interface for linux, you must modify your configuration if you want to allow remote access to the buckmaster database. Please read the /doc/README.buck file supplied with the buck_interface-990322 package.

- 3 new utility prgrams created : PURGDX, PURGWWV, PURGANN. Copy this files in the extcmd directory. This 3 programs use the same optionnal arguments :

```
PURGE?? [p=BinPath] [d=#n_days] [v]
```

where : - [p=BinPath] specifies the directory in where the binary file is located.

The default directory is ..\SYSTEM\BIN.

- [d=#n_days] sets the number of day (#n_days) after which a data will be deleted from the binary file.

By default, this value is set to 30.

- [v] prints the version number.

Example : PURGDX p=C:\DXNET\SYSTEM\BIN d=7
PURGWWV d=15
PURGANN p=/usr/local/dxnet/system/bin d=30

- Small bug fixed in PURGMAIL utility.

UPDATE 3A14

- The main buffer size has been widen out to get DxNet more stable.
- The whole PC protocol code has been rewritten. You can now save in a file the rejected protocol. Just add PAVILLON in the SET/LOG command :

SET/LOG +PAVILLON

This will generate a file called PCmmyy.log into the LOG directory.

Month ---+ +--- Year
 | |

- DxNet doesn't support more than 100 clusters per link. Widen out up to 200. Tks IK5ZUK.
- If all users leaves an adjacent cluster, dxnet shows (SH/CONF) a strange number of users connected to this cluster - e.g. (15378 users) -. Fixed.
Tks ??? (don't remamber who reports this bug, sorry) ...
- ANNOUNCE command was not under the CFILTER control. Fixed.
Tks IK5ZUK.

UPDATE 3A15

- Fixed a bug occuring during the link initialization. Tks LA3WAA.
- Fixed a problem with the database command name identification.
Tks PA3EZL.
- Fixed a bug with PC12 protocol (announcements wasn't forwarded to connected users). Tks LA3WAA.
- Fixed a bug in the system\hops.bin file (SH/HOPS) for the adjacent PC19/21 hop count. Tks IK5ZUK.
- Rewrote the whole CluLink part of code. As you can do for the PC protocols, it is possible to save the rejected protocol in a file enabling CLULINK by the SET/LOG command :

SET/LOG +CLULINK

This will generate a file called CLmmyy.LOG into the LOG directory.

- FWD command wasn't work. Fixed. Tks G3RTY.

- Added the following hops configuration commands (Tks IK5ZUK) :
Conference in/out CONference PC13 PC14
Here status info UStatus PC24

Note that conference protocol is still unsupported by dxnet. I added this command thinking to futur developments.

- Added the command SHow/Prefix <prefix>. This command shows the DXCC country (and some various information about) for the specified prefix/callsign.

You need to get the DXCC file CTY.DAT

<http://www.contesting.com/ct/files>)

copied in the database directory.

- Fixed a problem with PC19 protocol - this function was using the hop count defined for PC16/17 protocols. Tks PA3EZL.

- Fixed SET/BEEP - SET/NOBEEP malfunctionning. Tks F1CAY.

- Fixed the CPU overuse (linux version) - now dxnet uses less than 3% of CPU time on my 486DX4-100.

- Fixed incoming mail forwarding protocols dysfunction for private mails. Tks G3RTU & IK5ZUK.

- Updated utilities programs PURGMAIL, PURGDX, PURGWWV and PURGANN (you can found them into \SYSCMD). Theses programs are now pointing the right default directories when they are used from DxNet (as external commands).

Look at both revision 3.a8 and 3.a13 to get more information about these commands.

- Fixed a bug occuring in the HOPS function when either an empty line or an unrecognized command was found in the .CFG file. Tks G3RTU.

- Checked the mail forwarding protocols during the link initialization - found something wrong and fixed.

- Fixed a bug in EU (EditUser) command. Tks F1TE.

- Fixed a default in BUFFERS function occuring when a protocol were received over a span of two ax25 frame.

UPDATE 3A16

- Doesn't send the CFILTER.TXT message when an undeclared user connects and CFILTER is set to 1. Fixed. Tks IK5ZUK.

- Fixed external PC50 bug (bad usercount number). Tks IK5ZUK.

- Bad hop count interpretation with some protocol (like PC16, PC19). Fixed. Thanks Luigi, IK5ZUK.

- SET/BEEP - SET/NOBEEP functions (linux release) still have problems on the console in verbose mode. Should be fixed this time ! Tks agn F1CAY.

- Some datas wasn't sometimes correctly saved by EU command. Fixed.
Tks FLTE.

- Linux 2.2 kernel supported. Due to the ax25 libraries incompatibility, two linux versions for both 2.0 and 2.2 kernel will be provided for a while.

I suggest to switch to the new 2.2 kernel, wich is now stable (less than one hour to get my system working using the Suse 6.2 distribution).

UPDATE 3.0

- Announce message maximum size has been increased up to 200 characters.
The new announce.bin file format is NOT compatible with the older one :

* You MUST delete the file dxnet\system\bin\announce.bin used by 3.a16 relase and older;

* You have to replace the PURGANN utility program wich is also different (into syscmd directory). This is normally done automaticaly if you patched this version.

Tks SM0RUX.

- Frames lost if Pc/FlexNet buffers was full : fixed.

- Fixed an initialization bug : do not send anything else than init protocols during the initialization sequence.

- DxNet sends now the connected node list (PC38) during the link initialization sequence. This is for compatibility only.

- Dx spot dupe checking whatever the logger SSID wich is sometimes changed/removed by some DxClusters. Tks SM7GVF.

- Announces dupes now checked.

- Just one WWV announcement allowed per 3 hours.

- Incoming telnet access rejected callsign with SSID. Fixed.

- Fixed outgoing telnet connexion (linux version). Tks SM7GVF.

Reminder the way to declare a telnet access : SET/PORT +inet:nnnn where nnnn is the telnet port number (set to 23 by default).
The callsigns and password you want to allow to connect are saved into system/passwd.dat.

If you want to use a script file to connect a cluster via telnet port, you must use the following syntax :

```
.c inet <CALLSIGN> <IP_ADDRESS> [PORT]
<CALLSIGN>      : the call you want to connect to
<IP_ADDRESS>    : the IP address of the remote telnet host
[PORT]          : the telnet port, wich is by default set to 23
```

I give you as an example the script file I use to connect to SV1AAW :

```
--- SV1AAW.FWD ---
SV1AAW
.C inet sv1aaw 194.219.59.46 9000
+clx
.f5mzn\rmypasswd
```


+validated

- Fixed a bad hop count value send to the network after an adjacent hard disconnect (on PC21). Tks SM7GVF.
- Logger SSID is not removed from the logger field of a DX protocol even if set/dxssid is set to off. This will avoid dupe checking problem on other cluster systems. Tks SM7GVF.
- SH/HOPS diplays in two columns. Tks SM0RUX for suggestion.
- Fixed buffer overflow problem (dos version). DxNet should not crash anymore if a user want to get a very large bloc of datas wich its size is larger than the available memory (e.g. SH/DX/3000). BUT he will receive a troncated information if the buffer is full. Tks SM0RUX.
- PURGDX showed negative spot numbers if the number of saved spots was larger than 32767. Fixed. Tks G3RTU.
- DxNet now returns a prompt even if it gets a empty command (= just a RETURN). This is needed by some script. Tks F1TE.
- If, during a talk, your recipient disconnects, you get a error message wich tells that the recipient is no more there. I fixed a bug in this message (bad recipient callsign). Tks F1CAY.
- Fixed a bug occuring during the forward (DxNet crashed because it tried to close the forward.sys file even if this file doesn't exist). Tks SM7GVF.
- Implemented remote commands protocols (both PC34 and PC35). You must add a "tmp" directory in the dxnet one to allow these protocols to be managed by DxNet.
- Implemented RCMD/<callsign> <command> sysop function. This command should be use to execute commands on remote DxCluster nodes.
- Implemented SH/TNC_status command wich displays each connected channels status.
- Implemented SH/C/N command wich displays what nodes are connected locally and what nodes are reachable from each og them.
- DISC/CALL <callsign> command moved to DISC <callsign>
If <callsign> is a cluster, Dxnet sends a PC39 protocol to the adjacent wich must be disconnected and informthe other adjacents that the link is down.
- PC39 protocol is now supported.
- Implemented INIT <callsign> command, wich request an init sequence to the adjacent cluster <callsign> (both PC38 and PC18 protocols).

UPDATE 3.0a

- When using DISC <call> for a cluster, the specified cluster is well disconnected but other clusters beyond this cluster still are in memory. Fixed. Thanks SM0RUW & LA3WAA.
- DxNet showed a wrong WWV time if the time was lower than 10. Fixed. Tks LA3WAA & SM0RUX.
- SH/A <string> case sensitivity fixed. Tks SM0RUX.

- Added a 30 seconds timeout when the DX database is searched (SH/DX). If the DX database file (dx.bin) is very large, it can take a very long time to search the entire file on slow computer. It is not needed AMHO to keep this database file growing because a very old DX spot (e.g. one month or more) is not so usefull anyway. Remamber DxNet can manage only one task at once. So if one task take a long time, DxNet can do nothing else during this time and users may even be disconnected by the switch because there is no activity ! :-) Tks ISOHHA.
- Same for announce database (SH/A).
- If dxnet either receives or sends an initialization sequence request (INIT command) it will first remove the whole the users/nodes from the initialized link from memory, and inform other adjacents as well. Tks SM0RUX.
- Hops database (SH/HOPS) will no more be updated for hop counts for itself if the protocol have been looped back (cluster ring / round trip). Tks SM0RUX.
- SET/LOG command fixed. Tks OH6NJ and others.
- RCMD now limited to validated sysop only (after a SYS password identification sequence) instead of "just declared" sysop. Tks IK5ZUK.
- Same for INIT and RINIT. Tks IK5ZUK.
- DX dupe wasn't well checked if the logger callsign have a ssid different than 0. Fixed. Tks SP9UMX.
- Improved annoucement dupe checking. Tks SP9UMX.

UPDATE 3.0b

- Y2K annoucements problem fixed. Tks F1TE.
- Y2K CluLink protocol fixed.
- Remote command protocols not stopped by dxnet even if "rcommands" was set to off in <callsign>.cfg config file. Fixed. Tks IK5ZUK.
- Empty strings coming from an adjacent cluster are now accepted. Empty strings are send by some cluster programs to keep the connection established (low activity). Tks F5LXS.
- Release number moved to 5430 due AR-Cluster liberty wich sends its own protocols if a release number is larger than 5455 ! :-(Tks VO1AF.
- Y2K PURGxxx utilities fixed. Tks for the reports.
- Fixing monitoring problem using PcFlexNet kernel.
- Do not send PC41 protocols on external links. Tks IK5ZUK
- Do not send PC50 protocols on external links except the one wich carry the total user count. Tks IK5ZUK
- Fixing the Y2K log file name.
- Linux source code available for download. The code is under the GNU General Public Licence.

UPDATE 3.1

- Script file initialization problem fixed.
- Checked the clulink Y2K compliance. Everything seems to be OK.
- A message can be send to the local users if a cluster logins or logouts.

This message is contained in a file located into the script directory. Its name is formed by the cluster callsign (in lower case under linux) WITHOUT SSID and has the extension ".in" for logins and ".out" for logouts.

Example :

```
dxnet\script\f5mzn.in          sent when f5mzn logins
dxnet\script\f5mzn.out        sent when f5mzn logouts
```

Tks IS0HHA for the suggestion.

- A message is send to the connected user for users login/logout. Tks IS0HHA for the suggestion.
- SET/LOGIn (user command) enables users login/logout messages (this is the default mode).
- SET/NOLOGIn (user commands) disables users login/logout messages.
- I rewrote the code of the link initialization sequence. This should fix one of the major bug in the Pavillon protocol, wich sends a wrong hop count for both PC16 and PC19 protocols.

DxNet will search the correct hop count in its own database (you can show it with SH/HOPS).

This code is not perfect, and will never be until AK1A fixes this bug in his program himself. The problem is to know if the hop count we receive for either PC16 or PC19 is valid or not. It is possible to have a good idea with the help of the PC50 hop count anyway, assuming this protocol starts with a value of 99.

If we get a PC16/19 hop count lower than the PC50 one, it is *perhaps* okay. If it is upper, it is *probably* wrong. If we don't receive any PC50, or if PC50 hop count does not start with a value of 99, we can not know exactly.

This feature can be disabled starting DxNet with a '-noinit' switch.

* IMPORTANT * : Add the new directory tmp (in lower case for the linux version) into the dxnet one. For example :

```
* DOS      mkdir c:\dxnet\tmp
* LINUX    md /usr/local/dxnet/tmp
```

You will get an error message if this directory is not present.

- Null hop count value (H0) was send during the link initialization sequence for PC16 (user login) protocol. Fixed. Tks SM7GVF.
- Added the buffer left in SH/TNC_STATUS when the BPQ switch is running.
- OH6NJ noticed that the main problem wich causes the system crash when using the g8bpq switch is the bpq buffers. When buffers are low and buffer count gets 0 or below, bpq and the whole system crashes.

Added a dxnet switch "-bpql##" where ## is the minimum number of free buffers allowed. If the buffers left is lower than this value, dxnet

will exit with the error code 9. This is checked by DxNet every minutes (at second 0).

Example : dxnet -bpql10

then DxNet will exit if free buffers is lower than 10.

- Added SET/Date yyyymmdd function. Sysop function.
- Added SET/Time hhmmss function (ss is optionnal). Sysop function.
- Added SHow/Date function.
- Added SHow/Time function.
- Added a macro command feature. Macro commands can be used to define or redefine your own command set. Macro files are placed in either extcmd or syscmd directory and have the .mac extension.

Assuming you want to create a new command SH/ALL wich shows the last DX, WWV and ANNOUNCE spots :

---- macro file c:\dxnet\extcmd\sh\all.mac ----

SH/DX/%1

SH/WWV/%1

SH/A/%1

%1 is an optionnal variable. If the user enter, say, SH/ALL 1, he will get only one spot. You can use in macro the whole variable set of the message files.

There is no recursive problem using macro. The following example, even if it has no interest, works perfectly :

---- macro file c:\dxnet\extcmd\l.mac ----

l

- dxnet\system\bin\dirmes.bin file format has been changed. You MUST DELETE the old file wich is NOT compatible with the new one.

- VE9PT reported that pavillon's cluster use larger recipient field than dxnet in messages. Recipient field size has been increased up to 8 characters.

UPDATE 3.2

- Talk function rewritten. Tks JA3BOA for the suggestion.
 - . If you send a talk to user connected to an adjacent cluster, the user SSID must be specified.
 - . If you send a talk to a local user, you don't have to specify the SSID. The talk message will be sent on each channel the user is connected on anyway (even if the user is connected more than once). For example, my cluster is F5MZN-3, and I'm connected to it using F5MZN-6 as well. The talk message will be received by both F5MZN-3 (cluster) and F5MZN-6 (user). I hope it is understandable !...
- SH/DATAbase command don't work since I added SH/Date command. Note the two commands syntax modification :

SH/DATE
SH/DATABASE

- PC50 was sent through the external links. Fixed. Tks Luigi, IK5ZUK.
- The PC21 protocols coming from an external link wasn't sent. Fixed. Tks IK5ZUK.
- New sysop command : SET/PFilter ON/OFF.

This command is used to enable or disable the WW protocol filtering feature. See later if you want to learn more about.

By default, PFilter is set to OFF. You should let it like this if you don't have to manage WW protocol filtering to save CPU usage.

Make sure of the file dxnet/database/cty.dat does exist before setting ON the WW filter.

- Added a WW filtering feature.

WW filtering is based on the WAZ CQ-zone. This is the first step of development and only a few protocols are going to be filtered yet, which are : DX & WWV spots and announcements.

By default, all protocols are accepted. To filter incoming protocols from a particular cluster, add the keyword "filter" into the [in] section of the .cfg file. Use the same way to filter outgoing ones. Following to the keyword "filter" add the WAZ CQ-zone list you want to enable, separated with a space, a comma or a semi-colon. For example, assume you want to only receive european spots from K1XX and to send only american spots to it :

```
klxx.cfg
-----
[in]
node 1
user 1
... etc ...
filter 14 15 16 17 18 19 20
[out]
node 1
user 1
... etc ...
filter 01 02 03 04 05 06 07 08
```

If you want to enable the whole protocols coming from an entire continent, you can put one of the following keyword in place of WAZ CQ-zone list :

NA	North America, zone 01 02 03 04 05 06 07 08
SA	South America, zone 09 10 11 12 13
EU	Europe, zone 14 15 16 17 18 19 20
AS	Asia, zone 21 22 23 24 25 26
OC	Oceania, zone 27 28 29 30 31 32
AF	Africa, zone 33 34 35 36 37 38 39

So, "filter EU" is equivalent to "filter 14 15 16 17 18 19 20", and the example given above can be simplified like this :

```
klxx.cfg
-----
[in]
node 1
user 1
... etc ...
```

```
filter EU
[out]
node 1
user 1
... etc ...
filter NA
```

- Added the user command : SET/WWFilter

This command let users define the DX/WWV/Announcements spots they want to receive depending of where the spots is originated from.

Possible arguments are : NA SA EU AS OC AF

You should create some MACRO command (e.g. SET/NA, SET/EU, ...) to help users (e.g. SET/EU will show european spots only).

Remark : this command is not valid until SET/PFILTER is ON.

- Added the user command : SET/NOwfilter

Used to disable the DX/WWV/Announcements filtering. You should create a MACRO command (e.g. SET/WW) to help users.

Remark : this command is not valid until SET/PFILTER is ON.

- Added the user command : SHow/WWFilter wich show the current WW filtering status. This command is not valid until SET/PFILTER is ON.

- The sender of a forwarded mail (in CluLink mode) was wrong. Fixed.
Thanks Jean, F6EQZ.

- Added the sysop command SET/CONsole (DOS version only).

Use this command to set up DXNET for DOS to communicate to another computer (using a terminal program or a logging contest software) via a serial COM port.

Syntax : SET/CONsole #console <command>

where :

```
#console : console number (either 2 or 3)
<command> : LOCAL (to disable the redirection)
            COM1, COM2, COM3, COM4 to set up the COM port.
```

Some examples :

```
. SET/CON 2 COM2 4800
-> to redirect F2 console to COM2 at 4800 bauds

. SET/CON 3 COM3/9 1200
-> to redirect F3 console (terminal) to COM3, IRQ9 at 1200 bauds

. SET/CON 2 LOCAL
-> to disable

. SET/CON LOCAL
-> it works as well
```

The communication speed is 9600 by default.
Supported speed are : 1200 2400 4800 9600 19200

```
Default IRQ : COM1  4
              COM2  3
              COM3  4
              COM4  3
```

Remarks : - Take care using this command, COM ports aren't checked to see if they are already in use (e.g. by BPQ or PC/FlexNet).
- You can redirect either F2 or F3 screen, but not both of them at once.

- Added user command : SHow/STation <callsign>

This command displays some information for the specified station call.

- Added two variables :

%x : Date of the last connection (format : 14-Mar-2000)
%y : Time of the last connection (format : 10:14)

- A message situated in a language file can be replaced by a specific one.

This is usefull if you want to define a specific message for your own cluster (e.g. MSG3/CTEXT) without having to rewrite it each time the message file is released (wich is often the case when DxNet is released).

The specific message is saved in a file called LANGUAGE.### where LANGUAGE must be replaced by the language name, and ### by the message number :

french.3 will redefine MSG3 of french.txt
english.68 will redefine MSG68 of english.txt
... etc ...

- Added sysop command FOrward/Opnam <callsign>

This command is used to forward user information to the whole adjacent nodes in the cluster for <callsign>. This will update his name, QTH, latitude/longitude and home node informations.

Example : FO/O F5MZN

- Added user command CONVert/L2C <locator>

This command converts a Maidenhead locator to latitude/longitude.

Example : CONV/L2C JN18DX

- Added user command CONVert/C2L lat-deg lat-min N/S long-deg long-min E/W

This command converts your latitude/longitude into a Maidenhead locator.

Example : CONV/C2L 48 58 N 2 17 E

- Added support of latitude/longitude information for PC41 protocol.

- Added user command SHow/Beam <locator>.

This command displays distance and azimuth from the user location to the specified locator.

- SHow/Prefix now displays distance and azimuth.

- Added a timeout for the cluster links.

To set up a timeout, add the following command in the script/CALLSIGN.cfg file for the adjacent cluster you want to enable a timeout with :

timeout n1 n2

where - n1 : time in seconds before DxNet PINGs the adjacent.
- n2 : time in seconds before DxNet disconnects the adjacent

cluster if nothing is received following to the PING request.

Example : assume you want to enable a link timeout with your adjacent cluster F6BEE to disconnect it after 300 seconds of inactivity. To be sure this is not due to a low activity, it's safe to send a PING request to the adjacent before disconnecting. Assume you want to send this PING request 30 seconds before disconnecting. So :

```
n1 = 300 - 30 = 270
n2 = 30
```

```
---- script/f6bee.cfg ----
external off
timeout 270 30
[in]
... etc ...
```

Then, after 270 seconds of inactivity (no frame received), DxNet sends a PING request to F6BEE. Then if after 30 seconds there is still no activity (still no frame received), the link is disconnected.

UPDATE 3.3

- SET/WWFilter OC was rejected. Fixed. Tks IK5ZUK.
- WW filter was not properly initialized for DxNet console. Fixed. Tks IK5ZUK and LA3WAA.
- Serial output buffer of the direct COM port access (DOS version) overflow problem fixed. Tks JA3BOA.
- Some BEEPs wasn't suppressed in talk messages even if SET/NOBEEP was activated. Fixed. Tks LA3WAA.
- Fixed a bug in the SET/WWFilter command used on the console F2. Tks LA3WAA.
- The low G8BPQ buffer count is now watched every 30 seconds rather every minutes (see release 3.1). Tks OH6NJ.
- Added the sysop command MEDIT. MEDIT is a basic text file editor, which can be used to edit small files (up to 255 lines).

Syntax : MEDIT <filename>

Commands :

```
#      : set the line # as current line.
D      : delete the current line.
D#     : delete # lines from the current line.
I<str> : insert a new line <str> before the current line.
WQ     : write (save) file and quit.
E      : exit without saving.
/<str> : put the string <str> in place of the current line.
*<str> : put the string <str> at the end of the file.
?      : show this help file.
```

- Added the new sysop command "DOS" (DOS version of DxNet only). This command opens a DOS session, where the following DOS command are available in :

```
CD, DIR, COPY, MD (MKDIR), RD (RMDIR), DEL, MOVE, MEM, REN (RENAME),
TYPE, RUN, GET, PUT, MEDIT.
```


- RUN can be use if you want to execute any other command, like a batch file. Use it at your own risk, knowing the DOS session is only able to manage programs wich use the standart input/output (ie don't run EDIT).
- GET works like the TYPE command.
- MEDIT can be used to edit a file (see MEDIT section in this file).
- DX/WWV merge protocols (PC25, PC26, PC27) supported.
- Added to commands to set up the automatic merge request during the initialization sequence :

```
. MRDX <DxCount>
. MRWWV <WwvCount>
```

Add these lines in the config file (.cfg) of the adjacent cluster you want to request to :

```
-- IK5ZUK.CFG --
clulink off
mrdx      5
mrwwv     2
[in]
...
...
```

- Rewrotte the whole WWV functions to get a more efficient code.
- Rewrotte the whole DX functions to get a more efficient code.
- Fixed a bug in clulink protocol.

UPDATE 3.4

- Added MD5 support for sysop identification. MD2 is still usable until every terminal software does not support MD5.
- Temporary files (.\$\$\$), which are used by the DOS gateway wasn't deleted. Fixed. Tks G3RTU.
- Linux version now supports calls from the F6FBB's client programs (either xfbbc or xfbbx). DxNet uses by default the port 3287, excepy if it has been set differently with the -p switch (ie dxnet -p3290).

A new version of xfbbc (in beta test), based on ncurses, has been made by F6FBB. I also wrote a client for windows 95/98/nt.

You can still continue to use DxNet exactly as before anyway. You have nothing to do for that.

Thanks a lot to Jean-Paul (F6FBB) for his help.

- Added xfbbx? client to the linux distribution package.
- Fixed a compilation error in MEDIT.CPP (linux version). Tks SP9UMX.
- The symbol # can be use in .CFG file to put comments.
- Added a DxNet cluster loop filter. Most of us must to be faced with cluster loops. This new feature should help a bit.

The loop filter is disabled by default. Enter the sysop command ' SET/LFilter on ' to enable it.

Rules are saved in ~/script/<callsign>.lf, where callsign is the adjacent cluster callsign - WITHOUT ssid - you want to enable the loop filter with.

The format of the fields are closed to the .CFG ones :

```
[in]
# Incoming protocol messages section
<cmd>      <hops>    <call-list>
...
[out]
# Outgoing protocol messages section
<cmd>      <hops>    <call-list>
...
[reject]
# Neighbours reject section
<call> [dx-hops[ann-hops[wwv-hops]]]

[in] and [out] section
-----
<cmd>      : one the the following command : DX, Annoucement, WWV
<hops>      : hop count value (from 0 to 99)
<call-list> : callsign list which the rule must be applied for. If
              there is more than one callsign, they must be separated by
              a colon (:).
              You put here the cluster callsigns which the protocols
              are ORIGINATED from. It is not necessary a neighbour, it
              can even be a cluster very far away !
```

In example, assume the following cluster configuration :

```
F5MZN -> PI5EHV
F5MZN -> F6KBF -> F5GHV -> F6KIF -> LX0PRG
```

F5MZN wants to forward, say, both DX and ANNOUCEMENT informations from F6KBF, F5GHV, and F6KIF to PI5EHV (with a hop count of 10), as well as WWV informations from both F6KBF and F5GVH, and to reject anything else.

The .lf file could be similar to the following :

```
--- PI5EHV.LF ---
[in]
# Nothing to do

[out]
* 0 * # reject everything
dx 10 F* # but dx info from French clusters,
a 10 F* # announces
wwv 10 F6KBF:F5GHV # and WWV, from F6KBF & F5GVH only

[REJECT]
# Nothing to do

[reject] section
-----
This section is used to specify the *NEIGHBOUR* protocols you want to
reject. The whole protocols coming from a specified neighbour cluster
station won't be forwarded, except the DX/ANN/WWV ones (depending of the
settings).

<call> : neighbour callsign
[dx-hops] : hop-counts assigned to the DX protocols (PC11)
[ann-hops] : hop-counts assigned to the ANNOUNCEMENTS protocols (PC12)
```

[wwv-hops] : hop-counts assigned to the WWV protocols (PC23)

Default value for [dx-hops], [ann-hops], [wwv-hops] is 0.

For example, assume I want to reject the whole protocols which are coming from my adjacent cluster station K1XX to F6KBF-3 :

```
--- F6KBF.LF ---
[REJECT]
K1XX
```

```
[IN]
# Nothing to do
```

```
[OUT]
# Nothing to do
```

Ultimate example !

Assume the following rules for F6KBF-3 :

. Reject everything from K1XX but :

Prot	Hops
DX	10
ANN	5
WWV	0

- . Forward DX/ANN protocols coming from any french cluster with a maximum hop-counts of 10
- . Forward WWV protocols coming from any french cluster with a maximum hop-counts of 5
- . Forward any other DX/ANN/WWV protocols with a maximum hop-counts of 1
- . Reject any DX/ANN/WWV protocols coming from, say, Belgium.

```
--- F6KBF.LF ---
[REJECT]
K1XX      10 5  0
```

```
[OUT]
*      1      *
*      0      ON*
dx    10    F*
ann   10    F*
wwv   5     F*
```

* VERY IMPORTANT *

Take care using the loop filter feature if you don't want to be blamed by other sysops if something is wrong in your settings !!! You need to know exactly what you are doing ! BTW, this would be used by experienced sysop ONLY.

Remark : the .lf files are read each time a protocol is to be forwarded. It means that you don't need to either disconnect/connect the adjacent cluster or to restart dxnet to get modifications effective.

- Fixed (again) a bug in the CluLink protocol (message numbers higher to 127 wasn't interpreted). Tks F6KBF and F5GHV.
- Added the local conference feature. Command : CONFerence
- Added the cluster-wide conference feature. Command : CONFerence/Full
Protocols PC13 PC14 PC15 are now supported by dxnet, as well as the CluLink 140 (=PC13), 141 (=PC14) and 142 (=PC15).
- Dxnet might crash when CONF was defined in the .CFG file. Fixed.

- Added new sysop command : SET/MONitor. This allows to switch ON or OFF the monitoring mode.

Syntax : SET/MONitor ON | OFF

- Added a monitor-like feature under linux.

Only the frames between DxNet and a station which is connected to are monitored. The others are not. Use one the xfbf client to show the monitor.

The "monitor" client feature displays the PC frames.

The "all channels" client feature displays the users frames.

- Fixed a TALK problem : it was impossible to send a talk to a cluster station. Tks PA3EZL, IK5ZUK and IZ8CCW.
- Known bug : both PA3EZL and IK5ZUK reported that if a sysop who is in sysop mode issues a rcmd/cluster_neighbour <command> ALSO the OTHER CONNECTED SYSOP gets the output from cluster_neighbour. I don't know how to fix this problem because the protocol don't carry who requested the remote command. This is why the reply are sent to every sysops.
- Changed format of the file ~dxnet/system/bin/users.bin, which has also changed its name : ~dxnet/system/bin/userscfg.bin

DxNet will convert it to the new format automaticaly the first time you run this version. You have nothing to do.

- New user command : SET/FILTER

SET/FILTER <band|all|vlf|hf|vhf|uhf|shf|all|ssb|cw|rtty> <...> ...

This command is used to maintain what DX announcements are allowed for each user.

DxFiltering is done by the user. Filtering may be done by mode (CW, SBB or RTTY), and band : 2km, 160m, 80m, ..., 1cm, 6mm.

Some special properties are available :

VLF = 2km
HF = 160m 80m 40m 30m 20m 17m 15m 12m 10m
VHF = 6m 4m 2m 135cm
UHF = 70cm 34cm 23cm 13cm
SHF = 5cm 3cm 1cm 6mm (even if I know that neither 1cm not 6mm are SHF ...)
all = all bands, all modes

If you precede the property with an exclamation mark (!), it removes the property from the filter.

Examples :

Assuming that the filter feature is disable, if you issue the following command sequence :

SET/FILTER HF SSB : You'll receive only HF spots in SSB segment
SET/FILTER !80m : 80m meters spots will be rejected
SET/FILTER VHF UHF SHF : Add VHF, UHF and SHF bands to the filter

If you want to receive VHF, UHF and SHF bands only :

SET/FILTER VHF UHF SHF or SET/FILTER ALL !VLF !HF

SET/FILTER with no argument shows the current filter status.

- Added a new data file in ~/dxnet/system : mode.dat

This file contains the frequency range, mode per mode. It is designed to serve for the DX announcement filtering feature.

- New user command : SHow/Filter

This command shows the current DX announcement filter status for the user.

- New user command : SET/NOFilter

This command disables any DX announcement filters. All spots will be sent to the user.

- Fixed a BEEP/NOBEEP problem with the TALK messages.
- Fixed a bug in WWV/DX merge request (PC25/26/27). Tks PA3EZL.
- Fixed the 'language undefined' error message in remote/commands replies.
- DxNet now displays the here/nohere information for the dxcluster station also, as well as the conference/full flag (*).
- Added user commands : SET/DX_announcements and SET/NODx_announcements. These commands allow a user to enable or disable the display of DX announcements. If the user disconnects and reconnects, DX announcements will be re-enabled.
- Added user commands : SET/Announcements and SET/NOAnnouncements. These commands allow a user to enable or disable the display of announcements. If the user disconnects and reconnects, Announcements will be re-enabled.
- Fixed some problem with SH/DX <frequency>. Tks F8BJI.
- CLX always need 2 characters in the time field of the WWV protocol messages, even if only one is needed. Done. Tks PA3EAS and PA3EZL.
- Fixed a problem which sometimes occurred during the initialization sequence
- Merged DX and WWV informations are now sent to the local users.

UPDATE 4.0

- DxNet wasn't responding sometimes to the commands issued by a user. Fixed. Tks PA3EZL, F6FVY.
- Fixed a problem with the mail exchange protocols. Tks PA3EZL.
- Added the sysop command : IFNode <cluster_call> <action>
This command tests if <cluster_call> is currently connected to the cluster network. If it is, the command <action> is executed

Example : IFNODE PI5EHV-8 DISC SM7GVH-6
- Added the sysop command : IFNNode <cluster_call> <action>
Same as IFNode, but the command is executed if the <cluster_call> is NOT currently connected to the cluster network.

Example : IFNNODE PI5EHV-8 CONNECT SM7GVH-6
- Added the sysop command SET/SPOT_age -<time1> +<time2>.
This command is designed to be used to define a time window outside which

a received dx spot is rejected.

By default, SET/SPOT_age is set to -30m, +15m. It means that a received dx spot is rejected if it is older than 30 minutes in comparison with your computer time or if its time exceed the computer time of 15 minutes.

The <time> field can be set in day, hour, minutes. Seconds are accepted as well but are ignored by the algorithm.

Some examples : 15m 1h,15m 1d,15m ...

If no unit is following the value, it is assumed that the value is in minutes. For exemple : 15 is equivalent to 15m.

Tks G1TLH.

- Added the sysop command SHow/SPOT_age which displays the current SPOT_AGE setting.
- Created an alias command for SET/SPOT_Age : SET/DX_Age
- Created an alias command for SHow/SPOT_Age : SHow/DX_Age
- Added the sysop command SET/ANN_Age <time>.
This command is designed to be used to define how old the announcement database is searched for dupes.

By default, SET/ANN_Age is set to 1 day. It means that the announcement database is searched for dupes received the last 24 hours.

Tks G1TLH.

- Added the sysop command SHow/ANN_Age which displays the current ANN_AGE setting.
- Fixed some problem with MEDIT command. Tks IK5ZUK, F1NNI, F6KBF, F5GVH, ...
- Changed the TALK format to get it compatible with some dxcluster terminal softwares.
- Added a forwarding mail dupe checking feature. Note that the AK1A protocol is not able to manage loops in mail forward. DxNet is able to detect (and flush the mail) if it receives the same mail twice, BUT it is NOT able to detect if its adjacents have been already received a mail from another way ! It means that mail dupe checking is managed by and for dxnet, but not for the adjacent nodes.
- The [In] section of .LF (LoopFilter) files was not ignored by DxNet. Fixed.
- In the [OUT] section of .LF (LoopFilter) files, the command field were not interpreted if it contains a joker (*). Fixed. Tks IK5ZUK.
- Bad hop count value for PC15 (Conference Messages) fixed. Tks IK5ZUK.
- Added a new command in .cfg file which can enable some enhanced protocols.
This enhanced protocols have been firstly used by clx, but some other AK1A clones (like DxSpider) supports them as well. Ask your adjacent sysop to know if you can enable them.

Syntax : ENHanced_protocol <on|off>

Enhanced protocols are including :
PC73 : WCY information

- PC84 : Same as PC34, but it carries also the user who requested the remote command
- PC85 : Same as PC35, but it carries also the user who requested the remote command

If you want to enable the enhanced protocols, put the command line " ENHanced_protocol on " in one of the first lines of the <adjacent>.cfg config file (before the [in] section).

By default, ENHanced_protocol is set to off.

- Added support of both protocols PC84 and 85, associated with both CluLink 202 and 203.

See the " ENHanced_protocol " command to know how to use enable these new protocols.

- Added a new user command to calculate both the sunrise and the sunset for a specified country (prefix).

Syntax : SHow/SUn <prefix|callsign>

- Added Sunrise and sunset information in the display of the command SHow/Prefix <prexix|callsign>
- Added support of protocol PC73, associated with CluLink 71. PC73 is used to send WCY information.

PC73 protocols are ignored until ENHance_protocol is enable.

- Added a new command in .cfg file to set the incoming and outgoing hop counts associated with PC73 : WCY <hop_count_value>

By default, WCY is set to 99 for both [IN] and [OUT] section.

Note that command has effect only if ENHanced_protocol is enable.

Tks SM7GVF and DK8LV.

- Added a new user command to show the last WCY spots.

Syntax : SHow/WCY[/n] n = number of WCY spots to show (n = 5 by default)

- Added a sysop command to search the password.dat datatabse.

Syntax : SHow/REgister [callsign]

[callsign] is optionnal. If no callsign is specified, SH/RE shows the whole password database.

- Added a sysop command to delete an entry from the password database.

Syntax : SET/NOREgister <callsign>

- Added a sysop command to add (or replace) an entry in the password database.

Syntax : SET/REgister <callsign> <password_string>

- Fixed an old bug : DxNet crashed when a user connected more than twice. The program might crash as well if a user who connected with a SSID were already connected.
- Added support for the windows telnet client (linux version).

- Fixed a bug with clulink : some bytes (like \n) were not transmitted (linux version).
- Fixed a bad hop count value for the node login protocol (PC19), occurring when the node hops setting and the user hops setting have a different value in the <adjacent>.cfg file. Tks IK5ZUK.
- Added a page size feature. By default, page size is set to 20 lines.
- Added a user commande to define the page size.
Syntax : SET/PAGE <n> (0 <= n <= 255)

SET/PAGE 0 disable the page size feature and is equivalent to SET/NOPAGE (see below).

This information is saved in the user profile.
- Added a user command to disable the page size feature.
Syntax : SET/NOPAGE
- Added a user command to display the page size : SHOW/PAGE
- Cluster station can't connect twice (or more !). Tks SM7GVH.
- Improved the announcements dupe checking : all funny characters are ignored (as well as spaces) when dxnet searches its announce string database.
- Same for the comment field of dx spots.
- Same for the title field of mails.
- My hard drive crash ! :- (I have had to rewrite some part of the code ...
- SH/CLuster now displays the version number of dxnet.
- Added a user filter for the remote commands. This allows to accept to forward the remote command protocols through you dxnet without authorising anybody to send a remote command to your own dxnet.

The settings are done in ~/dxnet/system/rcmd.dat file. You can put any number of setting lines.

Syntax :
 <deny|user|sysop> <cluster1:cluster2:cluster3.....>

deny : don't accept remote command from the distant cluster
user : accept user level remote command requests (as well as some sysop commands which are not considered as destructive, like SH/TNC).
sysop : accept sysop level remote command request

DxNet stops searching this file as soon as a match is found. That means you would put the more accurate rules first.

Example :

```
-- ~/dxnet/system/rcmd.dat --
# Accept sysop remote commands from both PI5EHV-8 and F6KBF-3
sysop      PI5EHV-8:F6KBF-3

# Accept user remote commands from any french cluster
user       F*

# Reject any other clusters
deny      *
```


- Windows portage : first beta test version for win95/98/2K - it has not been tested under winME yet.

This windows version includes the whole linux features :

- ax25 using the SV2AGW packet engine - neither BPQ32 nor Flex32 is supported yet. BTW SV2AGW is a powerfull program which is rock stable and free of charge.
- telnet access.
- fbbC/X/W client support (which is needed to access to the console).

This beta test is compiled as a console WIN32 using visual c++ 5.0

This makes dxnet the only multi OS dxcluster software ! :-)

- Added new command (linux/windows) SET/TELnet_access <open|close> :
 - . When open, dxnet accepts telnet connections from users even if they are not registred yet. The first time the user log in, dxnet asks the user for a password which is saved in the password database (passwd.dat).
 - . When close, only registred users can connect to dxnet via telnet.
- By default, telnet_access is set to close.
- Tks PA3EZL for proposal.

UPDATE 4.1

- Added 5 sysops commands :
 - . PURGe/Mail [b=days] [p=days]
 - b=days : for bulls
 - p=days : for private mails
 - . PURGe/Dx [days]
 - . PURGe/Annonce [days]
 - . PURGe/WWv [days]
 - . PURGe/WCy [days]

These commands are equivalent to the PURG* external ones. Please do not use anymore the external commands.
[days] is always optional. By default, it is equal to 30 days.
Notice that these commands are also supported by the windows version.

- Fixed an algo error in SH/SUN which computed bad sunrise/sunset time from January to July. Tks LA3WAA and OH6NJ.
- WWV was not working properly. Fixed. Tks K1XX, LA3WAA, ...
- The default telnet port (23) for outgoing connection were wrong in the windows version. Tks K1XX.
- K1XX reported for the windows version that some of the telnet connections are never close. This occurs if the connection is not properly ended (ie when they are due to network failure). He also reported that the CPU usages sometimes spikes to 100 percent. I discovered that both of these problems are very dependant. Fixed. Tks K1XX.
- DxNet now supports to entries like "+PC18" in script files. That way a connection can be established even if the distant cluster sends immediatly either a PC38 or a PC18 protocol after the login sequence.

Tks PA3EZL.

- Fixed a very old and known cosmetic bug : the last line of the dxnet.cfg config file is now processed correctly even if it is not ended by a carriage return ... :-)
- Windows version : all telnet connections were lost when dxnet entered into idle mode (which occurs when the AGW pe is shutted down). Fixed.
- PA3EZL fixed a problem in remote command function which might occur when the enhanced PC84/85 protocols are enabled. This bug caused dxnet to crash under linux and might generate hazardous behaviours under dos/windows.
- Modified the format of DX datas (SH/DX) to get dxnet compatible with DXBase logging program. A couple of characters have been removed from the total size of the output string. Tks JA3BOA.
- Fixed both "SH/DX 18" and "SH/DX 24" problems. Tks IS0GQX and LA3WAA.

UPDATE 4.2

- When dxnet merged a WWV, it opened a file but never closed it. Fixed. Tks F6KBF.
- Some bad entries might appair in queue.bin (the file which stores the message to be forwarded), especially under windows. Fixed. Tks F6KBF.
- SHOW/ANN command : all characters of the annoucement string were changed to small characters. Fixed. Tks JA3BOA.
- Added some information in the SH/TNC_status display :
 - chan : DxNet channel number
 - port : Port name
 - callsign : callsign of the User/Cluster
 - status : user | cluster | terminal (terminal : DOS version only)
 - buffer : size of the buffer for this channel
- Added a page timeout. This timeout prevents to get the internal buffers becoming too large when the user forget to press return.

By default, the page timeout is set to 5 minutes. Use the sysop command SET/PAGE_Timeout to change this default setting :

Example : SET/PAGE_T 10m -> 10 minutes timeout

To disable this feature, set 0 as timeout value.

- Added a sysop command to display the page timeout setting :

SH/PAGE_Timeout

- In case of very slow link (ie many retries), the internal buffer may become very large. To prevent this problem, it has been added a buffer watchdog which disconnects a link when the data stored in the buffer is older than a defined timeout.

By default, the buffer timeout is set to 20 minutes. Use the sysop command SET/BUFFER_Timeout to change this default setting :

Example : SET/BUFFER_T 30m -> 30 minutes timeout

To disable this feature, set 0 as timeout value.

- Added a sysop command to display the buffer timeout setting :

SH/BUFFER_Timeout

- Added the sysop command SET/MAIL_Age <time>

where <mail> is the number of days after which a incoming forwarded message is considered obsolete (too old) and then is ignored.

Example : SET/MAIL_A 15d --> 15 days

By default, SET/MAIL_Age is set to 30 days.

This will prevent to received very old mails (some of the ones I received here are about 1 year old !).

- Added a sysop command to display the MAIL_AGE setting :

SH/MAIL_Age

- To prevent buffer overflow in linux, dxnet does not send anymore frame untill the oustanding frame count (unacked frame count) is lower than 10. Notice it has been done in the MS-DOS a long time ago.
- Same for the windows version.
- Fixed the PURG/MAIL PURG/DX ... bug. Tks all.
- When a filter was defined in either [in] or [out] section of a <callsign>.cfg config file, and not in the other section, dxnet might have a odd behaviours on this link. Fixed.
- EU <callsign> : the information set to is user were copied into the sysop profile after a user edit. Fixed. Tks F6KBF.
- A problem when enhanced_protocol was not added in a <callsign>.cfg has been fixed. Tks PA3EZL.
- Fixed a PC44 forward problem. Tks PA3EZL !
- Forwarding mail containing large strings (> 80 characters) crashed dxnet. Fixed.
- Changed the system log : SET/LOGS does no longer exist and is now replaced by :

SET/LOG_level <cmd1=value>, [cmd2=value], ...

where " value " is the sum of the log_levels you want to enable

commands	log_file	log_level

System	~/logs/messages	0 = nothing *1 = user/cluster login/logout *2 = bad protocols 4 = bad age, pings, WWV/WCY ... 8 = rejected protocols are logged (dupes, loops, ...)
Debug	~/logs/debug	0 = nothing *1 = internal errors (open file

failures, SH/FC, ...)
2 = some traces in the main
functions
4 = in/out buffers traced
8 = all debug traces (lots of)

User ~/logs/userYYMM 0 = nothing
*1 = user connections log enabled

Cluster ~/logs/nodeYYMM 0 = nothing
*1 = cluster connections log enabled

The star (*) indicates the default value.

Remark : debug level 8 is not implemented yet. This
will be done when needed.

In example :

SET/LOG_level system=7 debug=5 user=0 cluster=0

will log :

in messages : user/cluster login/logout, bad protocols,
bad age, pings, WWV/WCY ...
in debug : internal errors, in/out buffers

- Added support for BBS forwarding :

- Added sysop command SET/BID <bid> to set the BID identifier.

In example : SET/BID DXMZN

By default, <bid> = cluster callsign (without SSID) but you
may want to change this ie if a BBS is in use with the
same callsign than your dxnet.

BID is limited to 6 characters long.

- DxNet adds a row at the end of the message showing the
BID identifier of the messages either posted locally or
forwarded by an adjacent BBS.

- Added sysop command : SET/BBS <(+|-)callsign> [(+|-)callsign2] ...
This command defines which BBS are allowed to forward to
your dxnet.

In example : SET/BBS +F6KBF-1 +F6KDS-1

- Added sysop command : PURG/BID [days] where days = 120 by default

- Added a way, using SET/CFILTER, to disable sending announcements (dx,
announces, wwv, ...) untill the user is validated :

SET/CFILTER <level>[+]

where [+] means : "announcements disabled".

Tks IK5ZUK.

- Added support of external commands in the windows version of dxnet.
The external commands must be copied in either ~\dxnet\extcmd for
external user commands or ~\dxnet\syscmd for external sysop commands.
Both .EXE and .BAT are supported. See the DOS manual to get more
information on this feature.

- Added support of SET/DATE and SET/TIME in windows version.
- Changed the windows version framework. When you start it, a small icon will now appear in the system tray. The output console does no longer exist.
- Linux/windows version : the wFBB client now show the connected user/cluster/bbs connected. It's also possible to monitor one user/bbs at once using the button 'one channel monitoring'. That's not supported for the cluster yet.
- Linux/windows version : the "all channels monitoring" FBBw client feature now monitors all channels activity, including clusters.
- Linux/windows version : added support of "One channel monitoring" in the FBBw client. Choose a user/cluster first in the list before opening a "One channel monitoring" window.
- Linux/windows version : the wFBB client can be used to edit dxnet configuration file remotly. Tks F6FBB.
- Added sysop command: SET/HIDDEN_user <(+) (-)callsign1> [(+) (-)callsign2] ... Use that command to declare a user to be hidden when he is connected. That can be usefull if you want ie to connect a robot to your cluster.
- Added sysop command : SET/DPpage_size [n]
This command set the default page size. Without arguments, it displays the current default page size.
- Added sysop command : SET/NTW_ulogin [on|off]

When ON, the date/time of the cluster-wide user connection will be saved in the user database. Then SHow/STation will show the last cluster-wide user logins.

Take care using this command if dxnet is running on a well old slow computer : it can make high CPU usage during the initialization sequence when you're connecting to a large cluster network.

By default, SET/NTW_ulogin is set to OFF.

- Some of the config file are load when dxnet starts or when a cluster connection is established with an adjacent. This is why any mods made in these files won't be effective untill either dxnet is restarted or the link is disconnected/reconnected again.

A new sysop command can now be run to hotly update the config files :

UP/CONFig <all|cfg|db|hops|lang>

where :

all - reload all of the above config files
cfg - dxnet.cfg
db - databases : local.dat, update.dat, remote.dat
hops - script/*.cfg (cluster hops setting)
lang - languages files

Remark : SET/CALL and SET/PORT (dxnet.cfg) can't be hotly changed, so these commands are ignored during an UPDATE/CONFIG

- Windows version : outgoing connection might sadly be done on the same stream number. Fixed. Tks F6KBF.
- BEEP is now send for user login/logout. Tks PA3EZL.

- Added arguments to the user command SET/BEEP :

SET/BEEP [Annouce] [Dx] [Wwv|Wcy] [Talk] [Login]

That can be used to enable BEEP on some protocols only. In example, if you want to enable BEEP on TALK message only, enter SET/BEEP T

SET/BEEP with no argument enable BEEP for all messages.

- Added arguments to the user command SET/NOBEEP :

SET/NOBEEP [Annouce] [Dx] [Wwv|Wcy] [Talk] [Login]

That can be used to disable BEEP on some protocols only. In example, if you want to disable BEEP on both DX and ANNOUNCEMENTS only, enter SET/NOBEEP D A

SET/NOBEEP with no argument disable BEEP for all messages.

- Sysop remote commands were rejected even if the cluster call were validated. Fixed.
- Windows version : SHUTDOWN command fixed.
- Added user command L> <callsign>
Use this command to display all messages sent to <callsign>
- Added user command L< <callsign>
Use this command to display all message sent by <callsign>
- Added user command LS <title>
User this command to display all messages containing at least <title> in the title.
- I discovered that a old command has never been described before :
sysop command : INDEX <database>
Use this command to build a database index file. Even if a index file is not needed to get a database working, it's a good idea to build one. This will increase the search speed, up to about 1000 % for a large database.
- Both linux/windows version : the channel 99 row displayed in the connected list of the FBBw client allows to monitor internal console events (all user/cluster connected staff).
- Both linux/windows version : internal console events monitoring removed from the FBBw client console. This can be enabled again using new console command SET/VERBOSE [ON|OFF].
- Both linux/windows version : added support of channel disconnection feature in the FBBw client.

Two buttons are added : Disconnect and Immediate Disconnect

Disconnect : -user are prompted they have been disconnected by the sysop and then are disconnected
 - cluster are disconnected the same way DISC <cluster> works

Immediate disconnected : both user and cluster are disconnected immediatly - no prompt is sent.
- Remote command protocol bug fixed (PC34 were changed to PC84).Tks PA3EZL.

FAQ

How to create a connection script file ?

When you get to the level where you need to make a forward script the best thing to start with is go through the entire connect path 'by hand' and carefully note the text that you get back in each packet. This is helpfull to find the correct 'trigger' text to include in the script. To give you an example.

I want to figure out the path to a neighbour node PA3GOJ-8 (CLX-node). I know my first 'stop' is a gateway, PI5EHV. From there I have to telnet to an ampr.org address on a certain port. After logging in I will then be connected directly to PA3GOJ-8-clx-cluster.

Here is the output (broken down) to find the entries in pa3goj.fwd file.

'>>>' commands that I send BY HAND
'>' Text that I receive back

```
[aurelio@wendy aurelio]$ >>>telnet claudia
~~~~~connect to PI5EHV (claudia.esrac.ele.tue.nl)
>Trying 131.155.192.179...
>Connected to claudia.
>Escape character is '^]'.
>
>FlexNode v0.4c (pi5ehv.ampr.org)
>
>login: >>>pi5ehv-8
~~~~~ I need to login at PI5EHV by sending my callsign, no password required.

>FlexNode v0.4c - ESRAC:PI5EHV - Help: ? - Cluster: DX - Convers: W - Xnet: X
>*** Please NO SOFTWARE downloading via the laps
>*** Last login: Mon Feb 26 19:32:48
>*** From: 131.155.192.173

>=>
>>> t pa3goj 41112
~~~~~ Telnet to pa3goj(.ampr.org) on port 41112

>ESRAC:PI5EHV} Trying pa3goj.ampr.org:41112... Type <RETURN> to abort
>ESRAC:PI5EHV} Connected to pa3goj.ampr.org:41112 (Escape: CTRL-Y)
>Welcome to the clx gateway - you logged in from 44.137.24.19/1472.
>Your callsign:>>>pi5ehv-8
~~~~~ I enter the callsign (normally equal to your dxnet callsign)
>Password:>>> <password>
>Hello pi5ehv-8, you were validated - now connecting to clx.
>*** connected to clx
~~~~~ We are connected! The next packet should have the PC18^ stuff etc..
>>>^Y
^^ I force a disconnect
```

So.. now I have enough information to create the pa3goj.fwd file.
Here you see the result.

```
##### START of pa3goj.fwd
PA3GOJ-8
.c inet PA3GOJ-8 131.155.192.179
```



```
~~~~~ IP number of claudia
Then one packet before the 'login' ext is >FlexNode v0.4c (pi5ehv.ampr.org)
So I will trigger my next command after receiving 'FlexNode' string
+FlexNode
~~~~~ After DXNET sees this string it has to send the login string, i.e. pi5ehv-8
.pi5ehv-8
~~~~~ I have to make sure I'm logged in properly before starting the telnet to pa3goj.
      So wait until 'FlexNode' string is received
      >FlexNode v0.4c - ESRAC:PI5EHV - Help: ? - etc...

+FlexNode
.t 44.137.4.25 41112
~~~~~ Send Telnet command
+Connected
~~~~~ Wait until 'Connected' string is received..
      >ESRAC:PI5EHV} Connected to pa3goj.ampr.org:41112 (Escape: CTRL-Y)

#10
^^Wait 10 seconds to receive the 'Connected' string. If it's not received ABORT connect script.

..pi5ehv-8\n<password>
~~~~~ This might be confusing! DXNET will ONLY evaluate a received line if that
      line was terminated with an EOL character. CLX will NOT send an EOL
      character after:
      '>Your callsign:'. Same goes for '>Password:'.
      The '\n' between pi5ehv-8 and <password> FORCES DXNET to send first
      'pi5ehv-8' then a 'RETURN character' and then the 'password'.

+validated
~~~~~ Now we need to wait for the FIRST packet with 'PC18^'
      string. Here it's important to trigger on a string of
      text in the packet JUST BEFORE the packet with 'PC^18'.
      Of course the line of the trigger string needs to have an
      EOL character. In DXNET 4.1 it's actually NOT necessary to
      trigger on a string out of the packet before the packet
      with PC18. You can instead safely choose 'PC18' as string!!!
      Thanks to Olivier!

#30
^^ Wait 30 seconds for 'validated' string. If it's not received..
  abort connect script.

#### END OF pa3goj.fwd
```

Okay, I hope this elaborate example will shed some light on how to make a working .fwd script file. If there are still things unclear let me know.

++*+*+*+*+*+*+*

How to index a database ?

>Having spent some time tonight playing with the database commands ie QSL/MGR on a Dxnet for
>windows system and not being able to make them work I thought that I would ask here if any body
>has got the databases working on their clusters.

>

>I have the local.dat in the system folder and I have the .ful and .idx in the database folder and I think
>that I have defined the database correctly in the local.dat

>

```
>QSL      QSL      #QSL Info
>MGR      MGR      #QSL Manager
>
>Any Ideas?
```

Hello Keith,

It will be safe to delete all *.idx (database indexes) files from the ~\dxnet\database directory if these indexes has been previously build under a different operating system (ie DOS).

New IDX files can be created entering command " index <db_filename> " from the fbbW windows client. Notice that index files might increase database searching speed for about 1000% if the database if quite large !

++*+*+*+*+*+*+*

How to unvalidate a DxNet command ?

To unvalidate a DxNet command, you have just create an external command using the same name than the command.

Example: to unvalidate the user command Show/DATAbase, create ~\extcmd\sh\data.bat.

++*+*+*+*+*+*+*