

GETTING YOUR OLD DOS MACHINE ON THE INTERNET
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Forward.

Welcome to my little guide on this subject. This started out as a *very* ad-hoc set of packet radio bulletins which were pretty rough and ready and suffered a bit from getting untidy as little bits were added to or revised.

I have attempted to address this with a complete rewrite of the text. It is aimed at beginners who have never had their own machine on the internet or for those that want to know about alternative browsers or just be different!

The great thing about DOS internet is that it puts you back in charge of your machine and what is really happening when you make a connection - just like packet radio. Remember internet is not just about looking at flashy websites (http connections), it includes telnet and ftp and usenet and email.

The DOS approach demands a little more hands on approach than a modern Windows machine, but it sure is a lot more fun and still just as useful.

You learn a great deal from it and for those of us that enjoy our old packet radio system (sadly we're in a minority) you'll feel right at home with this approach. I suppose the only drawback with running dos internet is the lack of software available. This is not a fault of dos but merely represents that since internet became truly popular Windows was already in vogue and most programmers had gone over to writing programs for Windows.

There is still some development (Arachne) in Dos internet stuff but I doubt there will be much more so keep hold of them old dos programs ! But at least it can be done !

YOUR MACHINE

Despite the sales hype - you don't need a fast CPU and modem to make good use of the internet. Even an 8088 will run most of the software described.

The PC I use (apart from others) is no more than an old IBM Thinkpad laptop. Circa 1992 this machine `boasts' a 25Mhz 486 CPU and 4 meg of ram. It is the main workhorse for my internet and packet radio work and utility decoding with a homemade `Hamcomm' interface. All the software has been tested on this machine except Lynx32 which is a Win9x program. My other machine runs Win98se and runs it instead. In fact I have even made up a floppy disk that contains the DOS system files (use sys a: command from dos) and my internet programs and drivers. That means I can take that disk anywhere and go on the net from any machine regardless of operating system and setup. In this age of CD ROMS and DVD - the humble floppy still plays a useful role.

It is a good idea (although not essential) to choose a good DOS operating system on your old PC. I have always recommended DRDOS 7.x since this offers quite a few advantages as standard over MS DOS. On 386 CPU's and above the DRDOS task manager (like Desqview) allows true multitasking as opposed to task switching on MSDOS which means you can still be downloading off the internet whilst using your machine for other things. DRDOS offers task switching mode for 286 or less

processors. DRDOS offers slightly more memory for your programs, which is all very useful on an old machine when you want as much memory for swapping and caching web pages. DRDOS is FREE !

It can be found at www.drDOS.com for the latest DOS programs at:

www.opus.co.tt/dave or www.megspace.com/computers/lightsspeedref/main.html

I have used old machines that run at 12Mhz, yep 12Mhz quite well so I wouldn't worry too much about CPU speed. The monitor can be a mono display since for our purposes we are only interested in downloads and texts rather than flashy but irrelevant graphics. But the better the better the display the more you can do. The modem can be as little as 9k6. Surfing at 9k6 is surprisingly effective because our DOS browsers can be setup to forgets about downloading unwanted graphics and other junk. You'll be surprised how well it works though I must say I don't recommend anything less even though we're attempting to get our old machines on the internet. Besides modems are so cheap now that a 56k external modem can be bought for a few pounds. The reason why I have set a base level of 9k6 is that I use my Psion PDA and laptops whilst out and about along with my Nokia 7110 mobile phone. A mobile phone can if chosen well offer an alternative to a fixed line but you'll have to choose your tariff very carefully. My personal favourite is my Cellnet (now called O2) tariff on pay as you go which offers me 2 pence per minute at the weekends. I am also informed that Orange EveryDay 50 offer 50 free minutes a day which could be used for grabbing and sending emails for nothing if you already have it. This might be a good idea for students at Uni :-)

BEFORE YOU START

You need an ISP account ! So how can you get one. Simple and free. Most ISP's offer online account sign up. Go to a local library since most of them have free internet terminals to use and setup a free account with one. You could start with www.freemove.com, www.tiscali.com or my favourite is www.ukonline.com and once you have setup a free account make note of your email address, username and password and the dialup number which is usually an LOCAL 0845 number (local call rate). Also somewhere you will find the smtp server address and pop3 address, usually something like smtp.ukonline.co.uk and pop3.ukonline.co.uk or similar. Note there is no www at the beginning. You may need the port numbers but see the notes further on for guidance.

THE SOFTWARE REQUIRED

The very first thing you require is a PACKET DRIVER. This is an interface that blends your internet browser software to your modem. There are many drivers about but I will recommend one to make it simple. It is called LSPPP from Ladsoft. It is free and the download is about 40kb which hopefully you can ask a friend to download for you as well as your dos browser to get you started. LSPPP will dial your ISP and log you in as a user with your password etc. The latest link to LSPPP can be found www.opus.co.tt/dave

Here is a sample command line to run LSPPP.

```
LSPPP /Z /d:0845333112 /D:45,6,1 /B:19200 /n:1 /M:at&f&k4 /P:your password /U:your_username
```

You should read the LSPPP docs to understand the parameters but it's not that hard ! Once LSPPP has done it's stuff you can then run your desired web program and get cracking. Take note that some commands are UPPER CASE and some are lower case !

THE BROWSERS

First thing to remember is we are mostly playing real internet now and not the fancy glitzy version typically promoted. Our browsers can work in text mode or graphical mode. Text mode means we don't download or see any fancy graphics or sounds (saves on the phone bill!) and if you look at the screen shots I have provided you can pretty much see that the meat of our information is usually just a few lines of text. That's why we can get away with much slower modem speeds. In text mode the OEM system fonts are used to display the text, like the ones you normally see at the dos prompt. This makes loading and rendering a page very quick. There is an exception to this and that is KNOTS, which generates text in a graphical way. Then there is graphical mode where we see the web page in full technicolour glory.

Arachne is like this, but programs such as MINUET only perform some very rudimentary methods of graphics display/rendering which is pretty stone age.

Arachne:

Arachne is a fully featured graphical browser, ftp and email client which will run well on something like a P90 processor (90Mhz) or better but will run reasonably well on even a 25Mhz processor. Care must be taken to setup

Arachne properly to ensure best loading speed and rendering. It can also be a good external viewer for HTML packet radio bulletins provided you use an earlier version like v1.4 which seems to be OK when a page is piped through to it from another program. It also lacks a certain small commercialism that has crept

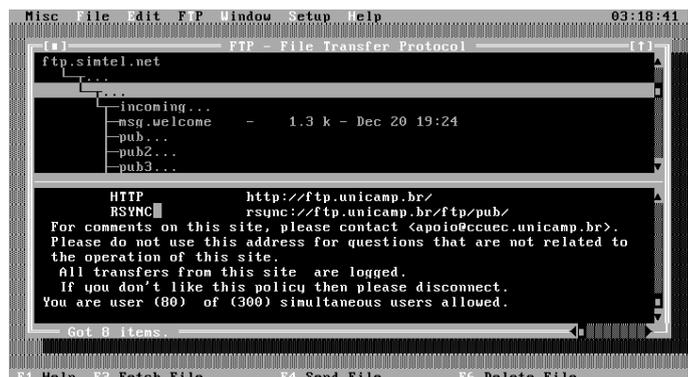
in, in later versions - the option to only turn off banner adverts for registered users. But other than that it can be used free of charge.

If anyone wants to have a real alternative to Internet Explorer on a fast machine then this is the best one. Look at <http://arachne.cz> and yes it is a very short URL !

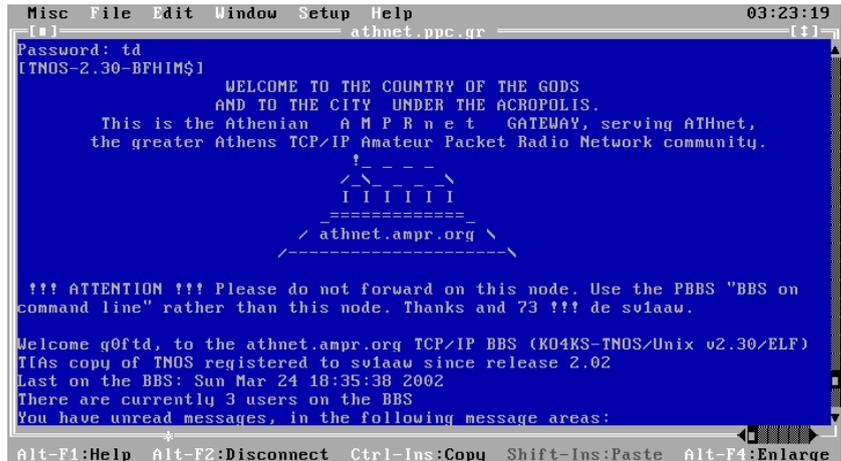


Minuet:

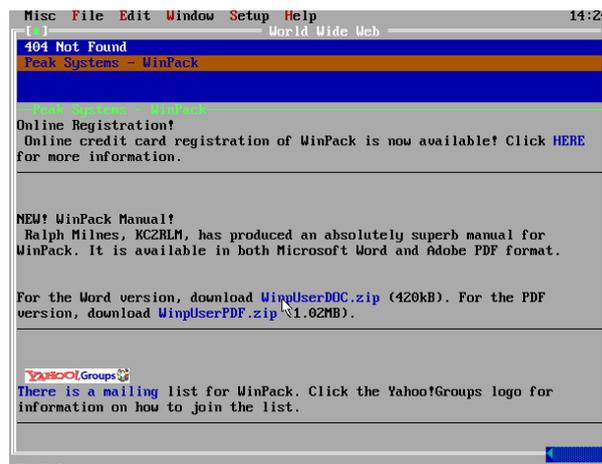
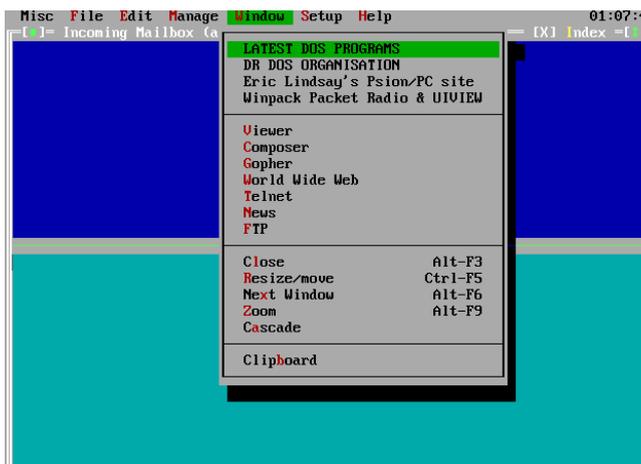
This self contained Telnet, Ping, email, ftp and web browser is an excellent package for DOS enthusiasts and hardcore internet users. It works in both text and graphical mode but renders HTML pages poorly. This means that you see the HTML tags in amongst the text and graphics are pretty naff.



But because Minuet properly saves and caches all the downloaded web pages I usually view them offline with a simple HTML code stripping viewer that shows me the plain text version. The rest of it is excellent and I like it a lot. It can be mouse driven or keyboard driven and customised easily. You can change its text/graphic mode by setting up your monitor options in Minuet.



I like the FTP and Telnet bits and I have used it telnet to packet radio BBS's that are internet linked. Try telnet to athnet.ppc.gr for starters. The GIF file telnet.gif shows Minuet logged into a telnet bbs. I have included some other screen shots of Minuet and for a download you are best off searching the University of Minnesota website (try a google search). Unfortunately Minuet cannot handle HTML forms.



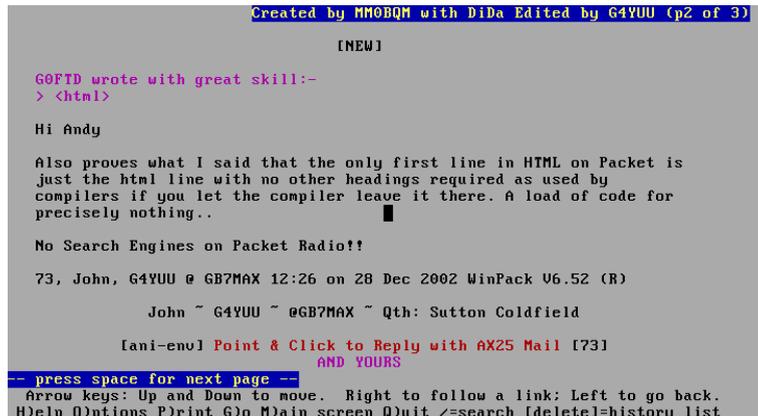
Doslynx:

This little program renders HTML very well and graphics can be downloaded to disk upon request. It is a text mode browser and FTP client and is best used as an alternative to Minuet for *online* web page browsing. It is mouse friendly. Try looking for it at www.flora.org/lynx-dev/html/ for a copy. It's the most friendly HTML page browser in text mode.



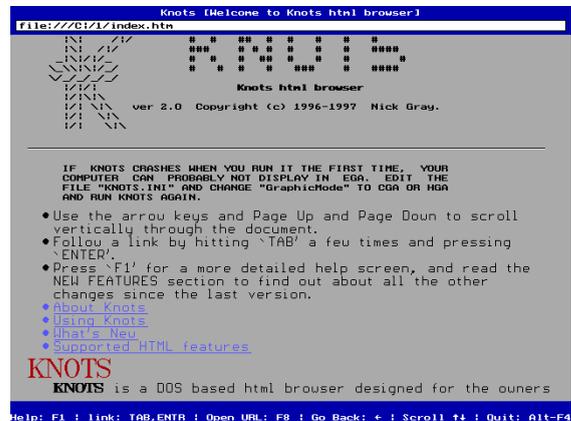
Lynx32:

This is a 32 bit version of the above for Win9x users. It handles forms properly and can download programs and handle cookies. It has no email. It can be used as a pure text mode browser on a Win9x machine and requires NO special setting up since it uses the existing DUN that you have already setup for Internet Explorer. The website for doslynx can also be used for getting a copy.



Knots:

Knots is a simple browser that can be run on the puniest of systems. It lacks quite a few facilities but is meant to be just a simple page viewer online. It uses the "graphical text" mode. The last website known but is not currently working is <http://www.soton.ac.uk/~ng194/knots>



KA9Q NOS:

This is a basic package that many amateur packet users use for tcpip work. I have had very little experience with it at the best of times and the only info I have come from Tony GW4JGU (thanks Tony) who says...

- > to attach nos to the internet use
- > attach packet 0x66 ether 250 250
- > 0x66 being the packet driver interrupt to use and ether just being a name
- > you will also need to tell nos the ip numbers of the name server you use
- > and the ip number of your gateway. As far as I know there is no dhcp stuff
- > written into the nos code. You will need a fixed ip number for the prog as
- > well.

At the time of writing I have yet to do any work with NOS. LSPPPP does allow you to specify a driver interrupt.

I have also tried Bobcat and Nettamer but I was not impressed by them.

USING A MOBILE PHONE

I use a mobile phone a lot for getting on the internet where no landline is available. I have a Nokia 7110 and a serial cable that connects it to my laptop serial port (about €20). A mobile phone MUST have a "hard modem". That is to say that it has hardware in it just like a proper modem. Some mobile phones use a soft modem. That means that you need to use special emulation software and a fast pc to use it on the internet, which for our skinflint purposes is outside the purpose of this document :-). To tell if your mobile phone has a hard modem is if it has an infrared port then it usually has a hard modem. You could also connect to your pc comport by infrared or cable and use your packet terminal program to test it. Setup your packet terminal to the speed that your comport will talk to the mobile phone with (on my 7110 it is fixed at 19k2) and type "AT" without the quotes to it. If it responds with "OK" then you have a hard modem. You could for fun type ATDT08459384903 and see it start dialling the phone number. The modem init string for a Nokia 7110 is the one on the LSPPP command line I mentioned earlier. All modems need an init string, just like a packet TNC to setup things.

If in doubt just try ATZ or AT&F&K4 should do the trick. If you experience binary download problems then double check you do have the init string correct. I came across this problem when I could seem to do everything on my email apart from send attachments and it kept crashing. Normal text email was fine. It was the &K4 bit on the init command that I had missed out on.

A BIT ABOUT EMAIL SERVERS FOR HARDENED PLAYERS

POP3 and SMTP email notes

These notes are provided to aid setting up procedures email programs and provide an insight to what goes on in the background of even the most fancy Windows programs, and its all remarkably amateur packet style !

POP3 is Post Office Protocol for collecting email.
SMTP is Simple Mail Transfer Protocol for sending email.

POP3

Allows you to leave email on a mail server, in a store and forward manner, and access it using various different client computers. POP3 uses Port 110 (the earlier POP2 used 109).

The commands used by POP3 are fairly simple, and you can simply log into Port 110 using Telnet, and manually collect your email in an emergency, or just to see what is happening.

There are three phases to a POP3 session.

Authentication
User name and password

Transaction

Retrieve messages, mark messages to be deleted, statistics shown

Update

After the quit command from the mail client, the message store is updated and the session ends.

You connect using telnet mailserver.domain 110

The commands available then are:

```
user (username)
pass (password)
apop (name) (digest)
quit
stat {shows the total number of messages and their total size}
list [mesg#] {list size of each message}
retr [mesg#] {retrieve a message}
dele [mesg#] {delete a message after you quit}
noop {no operation, but will return an OK message}
rset {resets the delete marker so message isn't deleted}
top [mesg#]
uidl [mesg#] {unique message identifiers, never used again}
quit
```

Don't feed POP3 an empty line and CR. Use noop instead.

SMTP

The commands used by SMTP are fairly simple, and you can simply log into Port 25 using Telnet, and manually send your email in an emergency, or just to see what is happening.

You connect using telnet mailserver.domain 25 (possibly with a colon or comma before the port number).

```
HELO mail.mailsender
mail from:
rcpt to:
data
your message here
.
quit
```

NOTE THE DOT (.) AT THE END !!

USING WINDOWS 3x AND DOS BROWSERS

You will need to prevent Windows from taking charge of the comport your modem is on. You do this by changing the system.ini file under the [386ehh] section to read:

```
[386enh]
comlirq=-1
```

```
com3irq=-1
```

Because com1 and com3 share the same irq you need to disable both. This example assumes you are using com 1 for your modem. Now go back to dos and load your packet driver (LSPPP) and then run Windows. Now run your dos program from within Windows and all should be ok.

This is the same technique you would use to run Winpack with BPQ or TFX drivers on packet radio.

SOME SUGGESTED MODEM INIT STRINGS

```
Generic/UNKNOWN Modem-AT&F^MAT&C1&D2&S1&K3
Generic Modem (9600 baud+)-AT&F^MATX3&C1&D2&S1&K3
Hayes Optima/Ultra compatible (14400)-AT&Q0&C1&D2&K3&S1
Use Factory Settings-AT&F
Use Profile Stored in Modem-ATZ
Amberlogic Mistral-ATF7N0&E0&K5&C1&D2&S1
Amstrad PC Modem-AT&C1&D2&S1
Amstrad SM2400-AT&C1&D2&S1
Anchor Signalman Lightning 24-AT&C1&D2&S1
Anchor 2400E-AT&C1&D2&S1
Anchor 96E4-ATX4\N3\V1%C0\Q3
ATI 2400/ETC MNP-AT&C1&D2&K3&S1
ATI 9600 ETC-ATX4&Q0&C1&D2&K3&S1
AT&T 4000-ATX4F1&C1&D2&S1
AT&T 4024-ATX1&C1&D2&S1
Avatex modems-AT&C1&D2&S1
Best Data Smart One 2400-ATE1X3&Q0&C1&D2&S1
Black Box 2400-AT&Q0&C1&D2&S1
Boca M2400E-AT&C1&D2&K3&S1
Boca M2400I-AT&C1&D2&K3&S1
Boca Fax Modem FM9624-AT&C1&D2&K3&S1
Boca 14.4-AT&C1&D2&K3&S1
BT V.32-ATE1&EO&K0&M
Cardinal 9600/V32-AT&M1&C1&D2&H1&I1&S1
Cardinal MVP24I/MVP24IF-AT&C1&D2&S1
Cardinal MNP 2400-AT&H2&I2&M0&C1&D2&S1
Cardinal V.42bis 2400-AT&M0&K4&C1&D2&S1
Cardinal 9600/V32-AT&M0&C1&D2&S1
Cardinal 14400-AT&M1&C1&D2&K3&S1
CMS-AT\N1Q0V1&C1&D2&S1
Complete Communicator Gold-AT&C1&D2&K3&S1
Complete PC 2400-ATE1X4&C1&D2&S1
Compucom Speedmodem 2400-ATX1\N0&C1&D2&S1
Compudyne 2400-ATX2\N0&C1&D2&S1
Compudyne 9642/V32-AT&Q0&C1&D2&S1
CTS 2424ADH PLUS-ATX4
CTS 2424CTSSM06-AT&C1&D2&S1
Dataflex Comfax II-ATX1\N0%C0&Q0&C1&D2&K3&S1
Dataflex Dynalink-ATB0&C1&D2&K3&S1
Dataflex Quadcom-AT&D2%C0S37=59&C1&S1
Dataflex Rapier+ V32Bis - UK-AT&D2%C0&C1&K3&S1
Digicom Eagle Plus-AT*E0*F1&C1&D2&S1
Digicom 9624LE-AT&M0*E0*F1&C1&D2&S1
Digicom Scout-AT*E0*F3&C1&D2&S1
```

Digicom Scout 14.4 Fax-AT*F0*E0&C1&D2&S1
Digicom 9624LE-AT&M1*E0*F3&C1&D2&S1
Digicom Scout 14.4 Fax-AT*F3*E0&C1&D2&S1
Digitan HI-IQ DS-24 - ATQ0V1\Z1&C1&D2&S1
Dowty Jaguar Quartet L-ATE1&C1&D2&S1
Dowty Mayze-AT&C1&D2&S1
Dowty Quantum 96-AT&E0%C0S7=60&C1&D2&S1
Dowty Quattro SB2422-ATE1X1&E0&C1&D2&S1
Dowty Quattro 96-ATE1%K0&C1&D2&S1
Everex Evercom 24E MNP-ATX4\N0\Q1&C1&D2&S1
Everex Evercom II-24 PS/2-ATX4&C1&D2&S1
Everex EverFax 2496E-AT%C0
Falcom FCM2400-ATX6&C1&D2&S1
Galaxy Pioneer V.22/42-ATX4\N0&C1&D2&S1
Gateway 2000 Internal-AT&Q0&C1&D2&K3&S1
Gateway 2000 Nomad 14400-AT&Q0&C1&D2\Q3&S1
Gateway Telepath-AT&Q0\G1&C1&D2&S1
Hayes Accura-AT&C1&D2S110=1&S1
IBM Mwave Modem 14400-AT&C1&D2\Q3&S1
Info Runner VP9624-AT%C0&C1&D2&S1
Intel 9600 EX-AT\N0\Q3%C0&C1&D2&S1
Intel 14.4 (V.32bis)-AT\N0\Q3&C1&D2&S1
Intel High Speed Faxmodem-AT\N0\Q3&C1&D2&S1
Intel PCMCIA Faxmodem Rel 2-AT\N0\Q3&C1&D2&S1
Intel PCMCIA Faxmodem Rel 3-AT\N0&R1&C1&D2&S1
Intel SatisFAXtion-ATX4\J0\N0\V1%C0&C1&D2&S1
Intel SatisFAXtion 400e-AT&F\Q3\N0%C0&C1&D2&S1
Laser 2400-ATX2&C1&D2&S1
LightCom 14.4F-AT&D2%C0&C1&D2&S1
Lightspeed 2400LE-ATX4\N3\J0\Q3\V1%C0&C1&D2&S1
Master Systems Turbo-AT&D2&C1&S1
Megahertz-AT\N0&K4&C1&D2&S1
Megahertz (Rockwell command set)-AT&C1&D2&K3&S1
Megahertz (Sierra command set)-AT&C1&D2\Q3&S1
Megahertz (-AT&T command set)-AT&C1&D2\Q3&S1
Microcom DeskPorte ES Series-AT&C1&D2&K3&S1
Microcom QX4232hs-AT&C1&D2\Q3&S1
Microcom AX2400-AT&C1&D2&S1
Migent Pocket Modem (1200)-ATX1&C1&D2&S1
Miracom Courier HST-ATS7=58X6&B1&H1&R2&C1&D2&S1
Miracom Courier V32bis-ATS7=58X6&B1&H1&R2&C1&D2&S1
Motorola Codex 3260-AT&K0&N0&Q0*SM0*FL1&C1&D2&S1
Motorola UDS-AT\N0\C0\J0\Q1&C1&D2&S1
MultiTech MultiModem 224-AT&C1&D2&E1&E4&S1
MultiTech MultiModem V.32-AT&C1&D2X4&E1&E4&S1
Multitech Modem II MT1432-ATE1|&F&C1&D2&E1&E4&S1
NEC Laptop-AT&C1&D2\K0\Q3%C1&S1
Nokia Cellular Data Card-AT&F
Nokia Cellular Data Card (Cellnet)-ATS35=6
Nokia Cellular Data Card (Orange)-ATS34=2S35=6
Nokia Cellular Data Card (Vodafone)-ATS34=2S35=6
Okitel 9600-AT\V1\N3X4&B0&K0S27=128&C1&D2&S1
Pace-ATE1S53=2&C1&D2&S1
Pace Eurolink-ATE1S53=2&C1&D2&S1
Pace Linnet FX-AT&C1&D2&S1
Pace Linnet V.32 Quad-AT&K4\P1F6&C1&D2&S1
Pace Microlin-AT\N0%C0&C1&D2&S1
Pace V.32-AT&D2&K2\P0&C1&D2&S1
Penril Alliance-AT&C1&D2&S1\Q1,1
Practical Periph. PM2400-AT&C1&D2&S1
Practical Periph. PM2400 MNP-AT&C1&D2&S1

Practical Periph. PM9600 V.32-AT&C1&D2&K3&S1
Practical Periph. 14.4 Fax-AT&C1&D2&K3&S1
Prometheus 2400G,MNP-ATX4\N0\Q0\S0
Prometheus Home Office Fax Modem-AT&C1&D2&S1
Prometheus Promodem 9.6-AT*F2&C1&D2&S1
Prometheus Ultima 9600-AT\N0\Q0\J0&C1&D2&S1
Psion Dacom Gold Card V34 + Fax-ATX3L1
Psion Dacom Meteor 14.4-ATL1X3
Psion Dacom Quad-ATB0F3&K1V1E1Q0&C1&D2&S1
Quickcom V.32-AT*E0*F1&C1&D2&S1
Racal Maxam V+-AT&E0\C4&D2X1&C1&S1
Shiva-AT&M0&D2&C1&S1
SupraModem 2400-AT&C1&D2&S1
Supra Fax Modem 9600-AT&C1&D2&K3&S1
Supra Fax Modem (UK)-AT&K4\N0%C0X0&C1&D2&S1
SupraModem 14.4-AT&C1&D2&K3&S1
Swan 24/96 Fax Modem-AT\N0&C1&D2&S1
Tandata TM500-AT&D2E1X1&C1&S1
Tandy 25-3532-AT-K0&K4\N0%C0&C1&D2&S1
Telebit Other-ATS58=2S68=2&D2&C1&S1
Telebit Qblazer-ATS58=2S68=2&D2&C1&S1
Telebit T1000-AT&Q0&C1S58=2S68=2&D2&S1
Telebit T1600-AT&C1S58=2S68=2&D2&S1
Telebit T2500-ATS58=2S68=2S95=0X4&C1&D2&S1
Telebit Trailblazer Plus-ATS63=2S95=0S96=0S97=0S98=0^MATX4&C1&D2&S1S58=2S68=2
Telebit WorldBlazer-ATS58=2S68=2&D2&C1&S1
Toshiba 1600-ATX4&C1&D2&S1
Toshiba Advanced V.32bis-ATX3L1
Trusts 1414-AT&FN0&N0&D2&C1&S1
Tricom Business Administrator-AT&C1&D2&S1
Tricom Tempest Quin-ATE1&C1&D2&S1
Tricom Tornado 5/42-AT&C1&D2&S1
Tricom Tornado 12/42-AT%C0\N4&C1&D2&S1
Twincom 24/96 Fax-AT&Q0&C1&D2&S1
Twincom 96/42I-AT\N0&K4&C1&D2&S1
Twincom 14.4 Fax Modem-AT\N0&K4&C1&D2&S1
US Robotics 2400-AT&C1&D2&S1
US Robotics Courier V32bis-ATS7=58X6&B1&H1&R2&C1&D2&S1
US Robotics Courier V34 models-AT&P1&G2
US Robotics Dual Standard-ATB0&B1&H1&R2&R2F1&C1&D2&S1
USR Sportster 9600-AT&B1&H1&R2&C1&D2&S1
USR Sportster Fax 14400-AT&B1&H1&R2&C1&D2&S1
UST 9600-ATB0&A3&B1&K3&N0&C1&D2&S1
VIVA 9600/9642E-AT\N0&K4&C1&D2&S1
VIVA 14.4 Fax-AT&C1&D2&S1
Wang-AT&M0&C1&D2&S1
Winfast V.32bis-AT&K4E1*E0&C1&D2&S1
Worldport 2496-AT&C1&D2&S1
WS3000 II-ATX5&I1\N0%C0&C1&D2&S1
Zenith Quad-ATB0&D2X2&C1&S1
Zoom 96/24 Fax Modem-AT&C1&D2&K3&S1
Zoom 2400 V.42bis-AT&C1&D2&K3&S1
Zoom 9600-AT&C1&D2&K3&S1
Zoom 96/24 Fax Modem-AT\N0&K4&C1&D2&S1
Zoom 14.4/28.8-
ATQ0V1E1W1&D2S95=47X4^MATS37=11N1&K3S82=128^MAT&Q5S36=7S46=138S38=1

A WORD ABOUT RENDERING

When I mention the term rendering I mean the way in which a browser handles what is known as HTML code. HTML is like a script language which can be likened to dos batch files. When you download a web page all you are doing first of all is reading a basic text file. In the text file are commands that tell your browser how it should present the text and where to put the graphics files to make it look right. If you see un-rendered html you will see the commands that look like ` <pre> <source img "... and stuff like this.`

Minuet leaves most of this stuff in, which is why I use an external html viewer for the purpose for offline viewing. There are numerous html viewers and strippers for this purpose. Once again try looking at the www.opus.co.tt/dave website for the latest useful and recent dos programs.

I find that for best results on old machines is to use Minuet for everything except web pages, and use doslynx for page browsing.

ABOUT THE SCREEN SHOTS

The screen shots should be self explanatory and show the differences and layout of the browsers as well as getting a feel for text mode/rendering and graphics displays like with IE (Internet Explorer) that comes with Win9x.

And finally a small note for Win9x users. I also use Win9x machines but I often struggle to wade through bloated and slow websites for downloads. Internet Explorer doesn't help because of the way it doesn't load pages from its disk cache and insists on reloading from fresh when the back/forwards keys are used. The IBM and Microsoft sites are good examples of big websites that make looking for a simple download take a long time. In this case I revert to the FTP.EXE dos program supplied with Windows. Just log on to your ISP as normal and go to the START > RUN menu and type "ftp www.microsoft.com" without the quotes and you can grab files just like you are using dos on your own pc. Learn the commands, like BINARY to setup binary transfers and BGET or MGET commands for downloads and you'll soon see the advantages of command line operation !

Written 22 JAN 2003 by GOFTD