The operating system

eComStation

a bird's-eye view

CONTENT

I. What is eComStation?

eComStation is a totally renewed OEM version of IBM's computer operating system OS/2 Warp 4.5, developed and put on the market by the American company Serenity Systems International and the Dutch company Mensys B.V.

Just like SuSE, Mandrake and Red Hat are distributions of the operating system Linux, eComStation is a distribution of IBM's OS/2 Warp.

When you are familiar with OS/2 Warp version 3 and/or 4 you should be aware that eComStation is based on an essentially other version of OS/2, namely the server version, called Warp Server for e-Business (WSeB).

eComStation is available in English, German and Dutch and is currently at version number 1.2. Sales and worldwide distribution is done by Mensys B.V., The Netherlands (*http://www.mensys.nl*).

II. The eComStation Desktop

People who are not familiar with eComStation are mostly interested in how this operating system looks like and ask if is has a graphical user interface like Windows....

The answer to this is both simple and complex: yes, eCS absolutely has a graphical user interface, called "Desktop", but it surpasses by far other user interfaces like Windows or the various window managers from Linux. Consider usability, flexibility and not to forget the intuitive usage. But just these terms make it difficult to explain to people that have never used it or just learn to know it.
Besides that, there is also a very powerful way of using it via the command prompt.

◆ **WorkPlace Shell**

...is the name of the graphical desktop for OS/2 and eComStation. The WorkPlace Shell, or in short WPS, is a graphical and completely object-oriented interface which gives the user access to the whole system, the data files, storage and all connected peripherals on the computer.

eCS Desktop

As the above picture shows, the WPS uses icons to represent folders and various other objects on the desktop. The WPS also features a standard task bar, which is called the eCenter within eComStation. Moreover, a lot of other familiar objects are visible, like the Trash can, Local Network, Programs and so on.

◆ **Folders**

eComStation uses folders to logically arrange all objects you like to work with (data files, programs, etc.). The user decides which objects should be put in which folder. In principal,

it doesn't really matter which name you assign to a folder or any other object. In contrast to Windows, eComStation is not limiting you in any respect in this (just use the '\' character in an object name if you like).
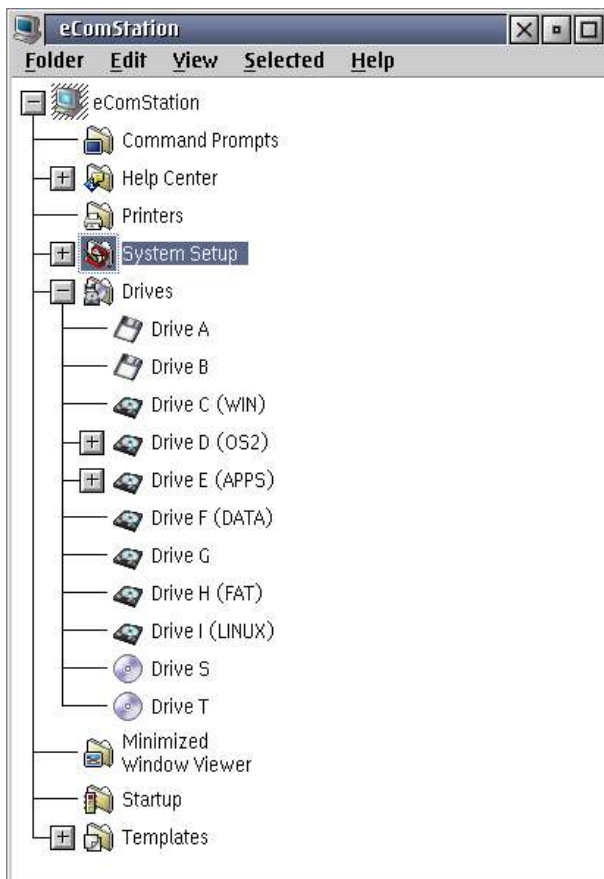

Folder in Icon View

eComStation is also very flexible in the way of showing folders. As you can see in the accompanying pictures, the content can be shown in three different ways, namely: Icon View, Tree View and Details View.

Folder in Details View

A folder can be displayed in one or more views simultaneously. The enormous flexibility which it provides doesn't bring a need for a file manager in eCS, like the Windows Explorer, to administer your data files.

Furthermore it is important to point out that folders in eCS are actually WPS objects, which means that they are all working in a similar way (same class), but also notice that the settings per folder can still be different.

Folder in Tree View

For each folder individually you can define how its contents should be displayed, how the icons should be arranged, which background a folder should have, etc.
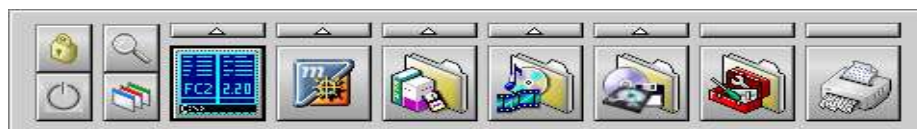
◆ **The eCenter**

With the eCenter you get access to all the applications and data files on the hard disks, CDROMs, etc., just by one mouse click. The so called trays makes it easy to organize your applications into logical groups, by which you never need more then two clicks to start whatever program. In addition the eCenter contains a number of handy monitors which give you an insight of the CPU usage, the free disk space on the hard disk, TCP/IP traffic, the time and date, etc.

eCS contains also a so called Launchpad as an alternative task bar, which you can use to launch applications or to access your data files. The eComStation (and OS/2) Launchpad resembles closely the 'Dock', which Apple introduced with MacOS X!

eCenter

eCS Launchpad

◆ **Internet integration**

Already since 1996, long before "Internet" was a 'buzz word' for other operating systems, OS/2 has a number of advanced options which can be described as 'desktop integrated Internet'.

Especially eCS's URL objects make it easy to maintain and access all kinds of locations on the Internet, like Websites, FTP hosts, but also audio channels directly from your desktop. For instance you can easily create and maintain Bookmarks in folders on your Desktop, without the need of starting up the browser. eComStation offers these possibilities standard on the Desktop of course.

Internet objects integrated into the WPS

III.eComStation Properties

Graphical User Interface

◆ *Object oriented Graphical User Interface*

All icons in the folders and on the eCS Desktop are called "Objects" in eCS terminology. An object is not just a picture but actually the real file on the hard disk or a dynamic representation of it. In fact, an object is nothing else than a connection between data and a certain action. When you double click on a spreadsheet file then it is, for instance, opened in a spreadsheet program which is associated with that file. But at the same time also other programs might be associated with your spreadsheet file.

In eCS objects are organized in so called "Classes", just like the fauna is organized into classes based on the properties of certain groups of animals. Actually a class in OS/2 and eCS is a way of organizing objects based upon their behaviour and layout. All objects of the same class have identical properties. When the class is derived from a higher class, these objects get ('inherit') the properties of that higher class. That's why a program object doesn't behave the same as a folder object, but both have an icon by which you can recognize the object.

Because in eCS everything is based on objects and the variable properties of those, we speak of an "Object oriented" graphical desktop.

Whenever you want to change the properties of an object, you simply click on it with the right mouse button and select "Properties" from the context menu. The window with the coloured tabs that will pop up gives you a lot of possibilities to alter properties or to add new properties to the object.

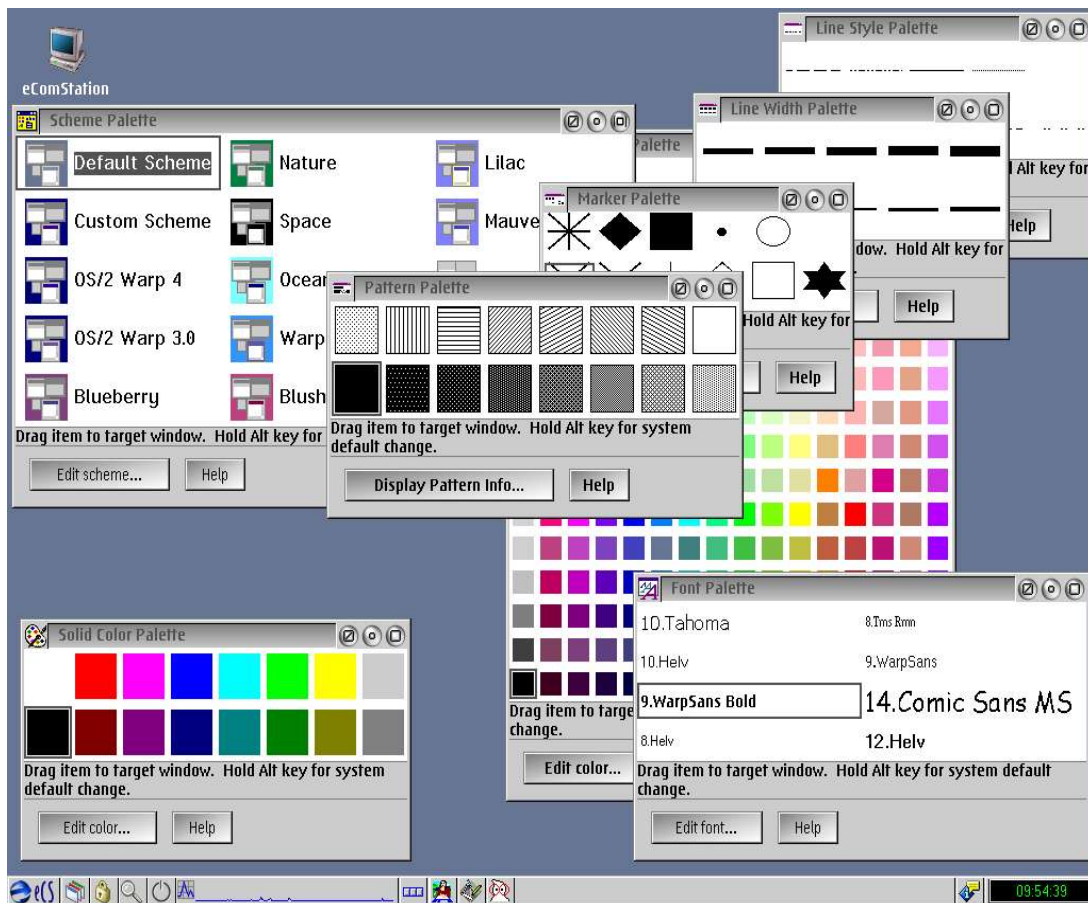*The properties window of the System folder*

The eCS Desktop is based on the unprecedented flexibility of these special properties of WPS objects. Every comparison with the familiar "Desktop" of Windows © fails here.

◆ *Drag and drop*

Drag and drop is very important for an efficient use of the system in a graphical working environment. Better than in any other operating system you can use drag and drop without limits within eComStation. Within eComStation every action you can think of can be done by using drag and drop. Some examples:

- document open, create, copy, move, delete ...
- open a web site in your browser
- give a window another background colour
- change the font of text
- change the colour scheme of your Desktop
- improve and underline cells within spreadsheets
- copy text, save, move...
- change the country settings for your system
- compose MP3 play lists
- change context menus of objects and define file associations

So called Palettes are typical for eComStation. These can be described as containers containing objects from which you can transfer the characteristics to other objects just by using drag and drop. Out of the box eComStation contains a number of standard Palettes, but a user may also create new Palettes. See the picture below for some examples of eComStation Palettes.
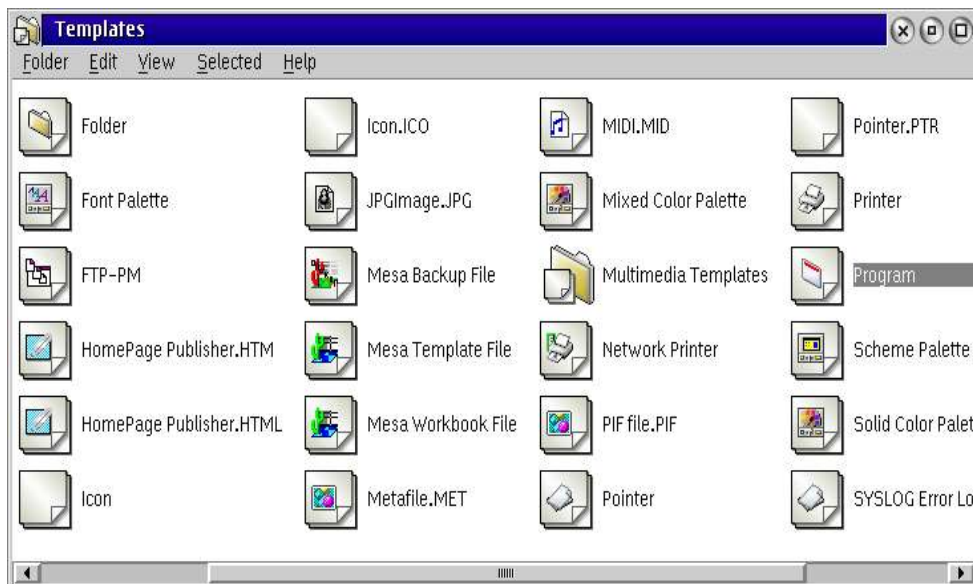
Examples of so called Palettes

◆ **Templates**

Templates are typical WorkPlace Shell objects by which the user can easily create new objects by using drag and drop. You can use templates to create data files (e.g. a standard letter), but also to create program objects, new palettes or any kind of other object.

Templates are both elegant and logical within the 'data-centric' oriented desktop of eComStation. In contrast to most (office) applications for Windows, templates are not limited to only one specific application within eComStation, but are available system wide and to all programs. eComStation delivers a large range of standard templates for about every application, but the user can make new template objects without restrictions as well.

Folder with templates

The command prompt

◆ *CMD.EXE*

Some people don't fancy graphical user interfaces and prefer to use the operating system by typing commands, because this might give more options in some cases or just because it is a lot faster and allows using command scripts (batch files).

eComStation has this option as well of course, and more, you can even modify eComStation in a way that the graphical user interface is deactivated (temporarily) and work with only a command prompt to control the system. On RAM memory constrained systems this is quite often a very useful option.

The default command line interface of eComStation, abbreviated to CLI , is the so called command processor 'CMD.EXE'. You can run this in a window as well as in a full screen session, just which you prefer. This program has its limitations though, especially when you compare it to some CLIs that are in use on Linux.

Fortunately there is a good alternative for CMD.EXE, called '4OS2', by which eComStation users can also enjoy the pure power of a good command shell, like Linux users. You can download '4OS2' for free at JP Software – Downloads (*http://www.jpsoft.com/download.htm*).

```
4OS2 Window                                                    [X][□][⊡]

Volume in drive D is unlabeled     Serial number is 28D1:F415
Directory of  D:\mmedia\cdrecord\*

17/11/02  13:28      <DIR>           0  .
17/11/02  13:28      <DIR>           0  ..
18/08/01  14:31      <DIR>         696  AN_docs
26/08/01   0:16      <DIR>         687  cdcopy
18/08/01  15:33      <DIR>         731  cdda2wav_docs
18/08/01  18:40      <DIR>         922  cdrecord_docs
25/08/01  12:15      <DIR>         655  diag
19/08/01  16:06      <DIR>         808  doc
18/08/01  14:27      <DIR>         908  mkisofs_docs
25/08/01  12:16    151.556          34  cdda2wav.exe
25/08/01  12:16    167.940         264  cdrecord.exe
18/08/01  15:23      6.241           0  cdrecord.ins
18/08/01  14:28         499        197  FILE_ID.DIZ
25/08/01  12:17    323.588          33  mkisofs.exe
25/08/01  12:17     86.020          32  readcd.exe
18/08/01  14:55      2.681         196  Readme.1st
25/08/01  12:17     86.020          34  scgcheck.exe
       824.545 bytes in 8 files and 9 dirs    831.488 bytes allocated
29.001.168.384 bytes free

(0)[d:\mmedia\cdrecord]
```

4OS2 command prompt

Scripting

◆ *REXX*

The programming language REXX is included in eComStation. This language existed before eComStation itself and is also available on other platforms like AIX, Windows, Linux and on IBM mainframes. The real power of REXX shows by its ease of use on one side and by its range of very powerful programming language options on the other side. REXX is extremely useful to automate certain tasks by using simple text, called a script, but you can use REXX also for complex, extensive programs with a graphical user interface.

◆ *WPS integration*

The possibilities of REXX are nowhere used better than with eComStation. 'REXX/2' is extended with a lot of special functions with which the properties of WorkPlace Shell objects can be fully used and controlled.

As an example, the following REXX function creates a folder on the eCS Desktop with the name "OS/2 users group" including the settings that it should contain small icons which are organized in multiple columns. The "F" option tells REXX that the command should not be executed if the folder already exists.

*RC=SysCreateObject('WPFolder', ,
'OS/2 users group', '<WP_Desktop>', ,ICONVIEW=FLOWED,MIN, ,F)*

Extensive REXX documentation is standard with eComStation!

eComStation kernel

- *Multi-tasking*

eComStation uses, like Unix, so called 'pre-emptive' multitasking, which gives the user the opportunity to execute multiple different tasks at the same time on the PC. Within eComStation it is also possible to adjust the multitasking by setting various parameters to values which match the specific application requirements.

- *Multi-threading*

In contrast to for instance Linux, eComStation offers standard support for 'multi-threading'. Multithreading is a very efficient way of using computer resources for a single application (process), by executing multiple application sub-tasks simultaneously. Multi-threaded programs are mostly showing a very good responsiveness.

IV. eComStation Applications

In contrast to the general opinion about eComStation, you can use it for a wide range of different tasks. Because of the high availability it is used frequently for a dedicated mission critical task. In various large companies OS/2 is already successfully used for years as a stable multifunctional server system. Furthermore eComStation becomes used more and more by home users as well as the medium and small businesses because of the low license costs, its reliability and its resistance to Windows viruses. eComStation can be widely used for various applications, like office, Internet, multi-media, etc. The multi platform support within OS/2 and eComStation is also valued highly by its users.

Multi platform support

◆ *Java*

eComStation comes with excellent support for Java. The Java implementation for eCS is not coming directly from Sun though. Apart from the standard IBM Java versions 1.1.8 and 1.3.1 also a (SUN based) version 1.4_02 from Innotek (*http://www.innotek.de*) is included with eComStation.

◆ *DOS*

eComStation has standard a 'Virtual DOS Machine' (VDM) which allows you to run all DOS programs in a full screen session as well as in a window on the desktop. Multiple DOS programs can be executed simultaneously in multiple Virtual DOS machines. The Virtual DOS Machine can be configured separately via a graphical interface for each program, by which it can be adjusted perfectly to the program it should run, and to provide an optimal performance.

eCS indeed offers 'a better DOS than DOS'.

◆ *Windows 3.x*

Besides the perfect support for DOS, eComStation also delivers a very good Windows 3.x emulation. With this it is possible to use all classic 16 bit Windows applications, again in a window on the desktop or in a full screen session.

◆ *Windows*

With the use of Odin (*http://odin.netlabs.org*), a Windows 32 bit API library which is comparable with Wine on Linux, you can use programs on OS/2 and eComStation that would otherwise only run on Windows. Odin is a very complex program, which is still actively developed, so it might not be give a perfect compatibility with Windows yet. Nevertheless, you can already use some very interesting programs with Odin, like Adobe Acrobat, RealPlayer, etc.

◆ *X*

With XFree86/2 eComStation also offers the opportunity to run Unix programs. This can be done by using the included Hoblink X11 in a window on the desktop, or with XFree86/2 in a full screen session.

A popular X-application is The Gimp, a graphical application which can take up the challenge with for instance Photoshop. XFree86/2 is a free, open source implementation of the X-Window system. A lot of information can be found at *http://www.os2world.com/os2files/xfree86/general.html*.

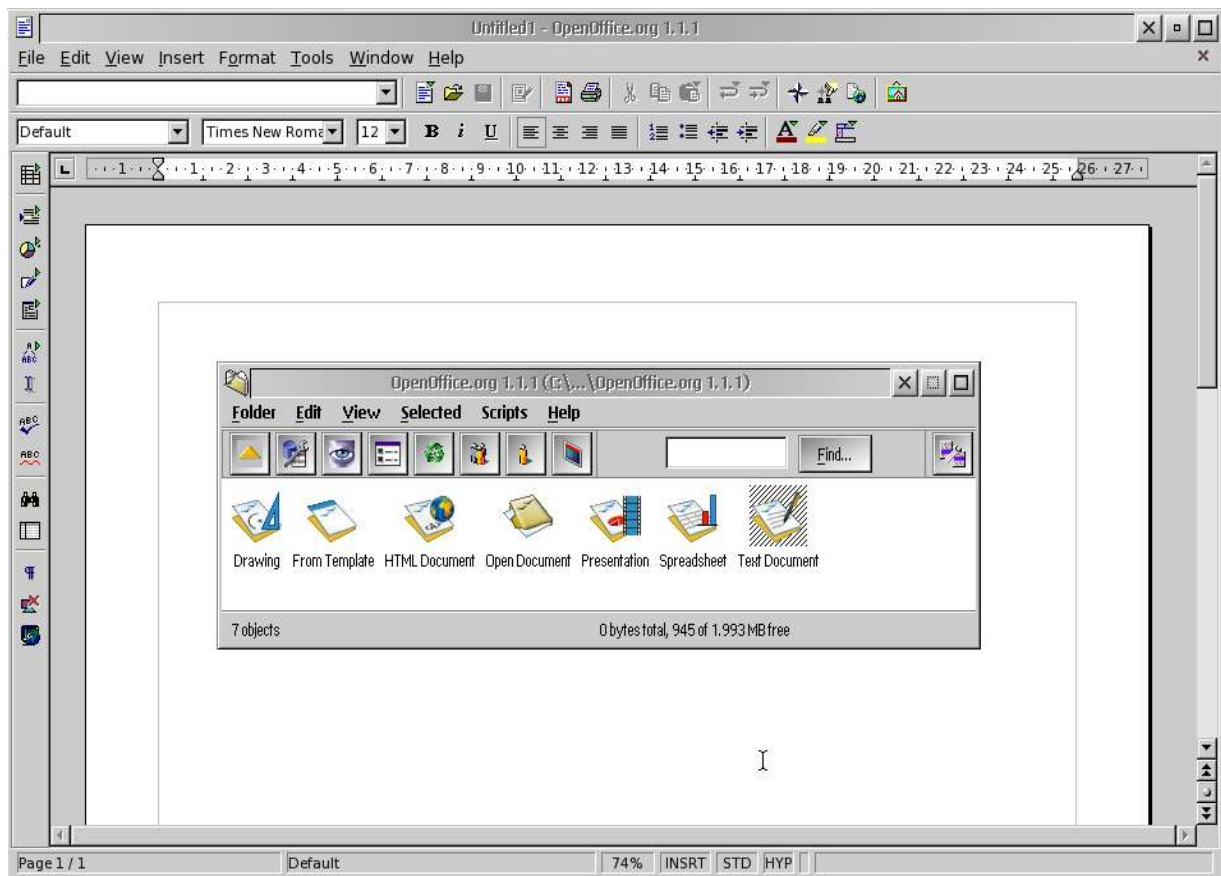*XFree86 with The GIMP in action*

Office

The lack of 100% compatibility with Microsoft Office is not only a big problem for eCS, but actually for each operating system that tries to be an alternative for Windows. This may not apply to the MacOS, as Microsoft Office is also available for that platform.

However the situation isn't that dramatical for OS/2 and eComStation as you might think. There are for instance different office suites available for eComStation which can compete on functionality with Microsoft Office and which offer perfect data compatibility.

◆ **OpenOffice 1.1.1**

The popular 'open-source' brother of StarOffice from Sun is now also available for eComStation, by which the often mentioned criticism about not having a 'serious' package of office applications for the OS/2 platform is finally solved. OpenOffice for OS/2 and eComStation is an excellent program package with an almost perfect exchangeability for data files with MS Office. OpenOffice 1.1.1 for OS/2 can be ordered from the worlds largest OS/2 specialist Mensys, The Netherlands (*http://www.mensys.nl*).
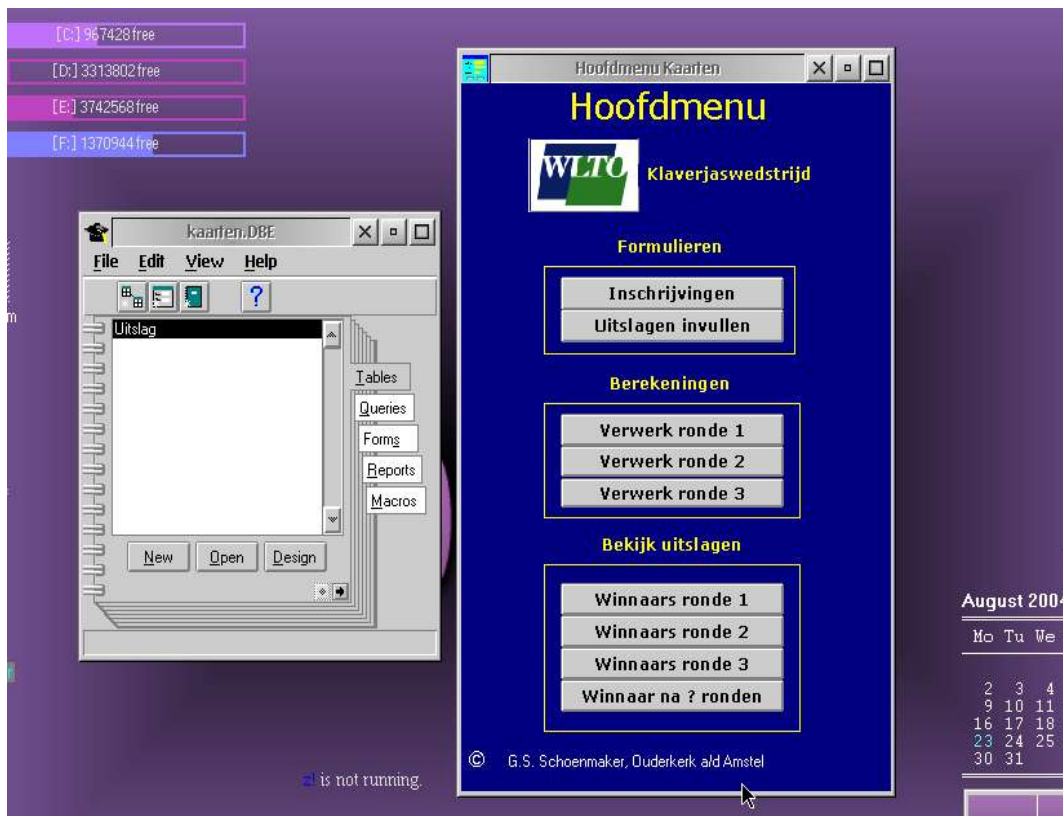
OpenOffice 1.1.1 window in eCS

With OpenOffice almost everything is possible. Creating a PDF file from a document in OpenOffice or Word format is done in a wink, and also exporting a "Microsoft Power-Point" presentation to "Shock Wave Flash" belongs to the possibilities. So even on OS/2 and eComStation it is no longer a problem to open complex MS Word and Excel files anymore.

◆ **Lotus SmartSuite**

This is a complete suite of office applications with a word processor, spreadsheet, database and presentation application. The most appreciated component of SmartSuite is its word processor 'WordPro'. Lotus SmartSuite is part of the eComStation 1.2 Application Pack and offers very good import and export facilities from and to Microsoft Office. Pay a visit to the Mensys website (*http://www.mensys.nl*) for more information.

◆ **Sundial Systems**

Although the company Sundial Systems (*http://www.sundialsystems.com*) doesn't deliver a real office suite, they do deliver some separate programs for tasks like word processing (ClearLook), spreadsheets (Mesa 2), relational databases (DBExpert) and personal information management (Relish). The Sundial Systems applications, especially Mesa 2, are a nice example of how the powerful WorkPlace Shell from OS/2 and eCS can give extra value to applications which know how to take full usage of the special capabilities of the WPS.

Klaverjas game managed with DBExpert
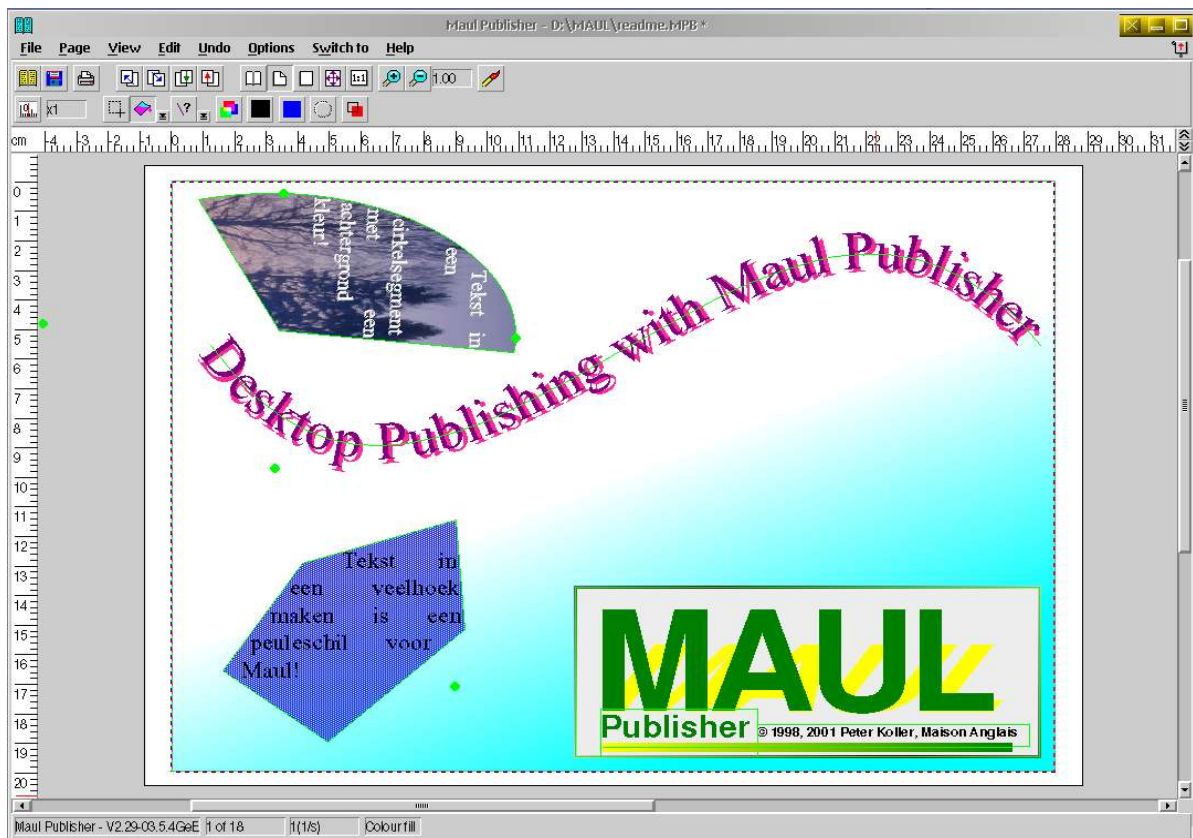
◆ **Desktop Publishing (DTP)**

For professional Desktop Publishing on eComStation and OS/2 the ideal program is Maul Publisher from Peter Koller (*http://www.manglais.com*). Although DTP programs easily take about 100MB disk space under Windows ®, Maul Publisher is satisfied with just about 20 MB already.

Maul is especially useful for making leaflets, posters, magazines and richly illustrated documents in any format. Maul is loaded with a large number of accurate techniques which are specifically meant for usage in the graphical market, like text comparison, printing booklets (leaflets and periodics on A5), add colour separation, exact scaling of bitmaps, etc. ....

Because Maul is designed to work with printer coordinates a far higher accuracy is achieved then with a word processor. You will be surprised by the printing quality of the created documents with Maul.

Here are some real life examples for which Maul can be used, for instance:

- Creating company logos. Text following a flowed line is something that Maul can do with ease.

- Creating high resolution PDF documents. Maul has a special setting for creating PDF documents. For this the free ePDF program is used (*http://www.subsys.de/ePDF*).

- Creating graphs and "flow diagrams". The possibility that Maul can print text vertically is very handy in this case.

OS/2 and eCS Desktop Publishing with Maul Publisher

Internet

With its standard powerful TCP/IP environment, FTP and Telnet servers and Internet integration into the graphical Desktop, OS/2 has everything on board to serve as a great Internet platform.

◆ **Web browser**

Mozilla is the best web browser for eComStation available at this moment (and some think that this is even true for every platform). Mozilla is an 'open-source' project and the program is completely free. This browser has been specifically designed to be as compatible with the international HTML and Internet standards as it can be and can be downloaded from *http://ftp.mozilla.org/pub/mozilla.org/mozilla/releases*.

◆ **Firewall**

eComStation includes a standard firewall, which guarantees the necessary security when your machine is connected to the Internet. This firewall comes from IBM's own AIX Unix operating system and is of excellent quality.
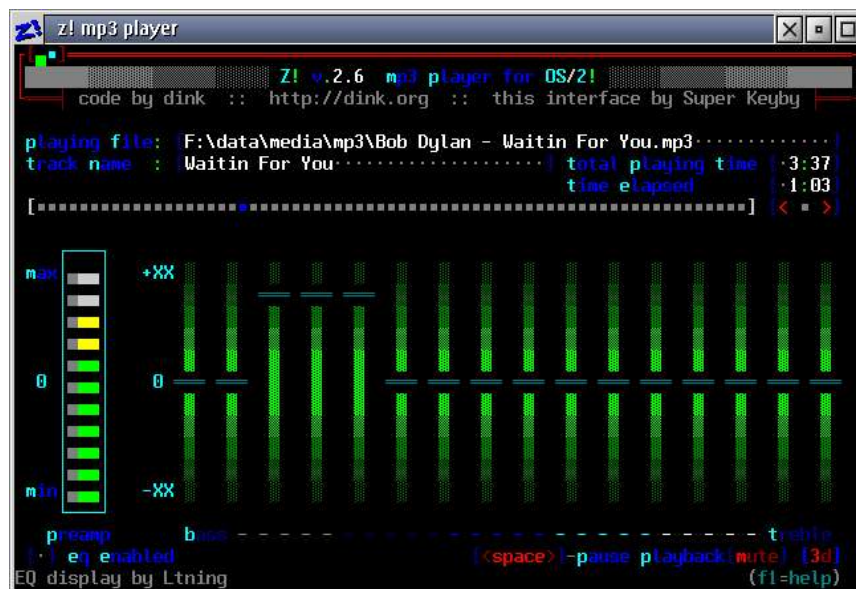
◆ **File Sharing**

Sharing files over so called peer-to-peer networks like Gnutella or OpenNap is very popular. Unfortunately there are currently no native eCS and OS/2 applications available for this kind of work. But Java applications like Xnap (*http://xnap.sourceforge.net*) or LimeWire (*http://www.limewire.com*) run perfectly under eCS and are a good alternative. Gathering MP3 files and movies and having nothing to fear for viruses and Trojan horses is pure luxury these days. This luxury is offered by the operating system eCS.

Multimedia

eComStation is mainly looked at as a "business" operating system, but it has nevertheless very acceptable multimedia capabilities. There is a limited offering in useful multimedia applications, but most games are outdated, so this platform might not be for you when you are a gamer. Thanks to the great DOS capabilities many DOS games can be played very well.

◆ *Audio*

About all digital audio formats are, close to standard, supported by eComStation: WAV, MOD, MIDI, MP3, OGG, etc. There are various programs or 'media players' available by which you can play these audio files. One of the funniest abilities of eCS is that audio files, like MP3s, can be seamlessly integrated into the Desktop and therefore you don't even need a separate program to play the files or modify them.

Z "multi purpose audio" player for OS/2 and eCS

With the diverse "Z" player you can play audio files in MP3, OGG and WAV-format, and it even supports streaming audio (Internet radio). The program contains an equalizer, favourites, id3 editor and it can convert WAV files into MP3 format. The disk space it takes is just 260 Kb! (*http://dink.org/z*)

◆ *Video - DVD*

With eComStation you can view the most current digital video formats. The popular DivX format is supported and also DVD movies are happily played. At the moment the best 'media player' on eCS to play video and DVD is WarpVision (*http://os2.kiev.ua/en/wv.php*). This 'donation ware' program supports streaming video and supports skins, with which you can adjust the appearance to your own liking.
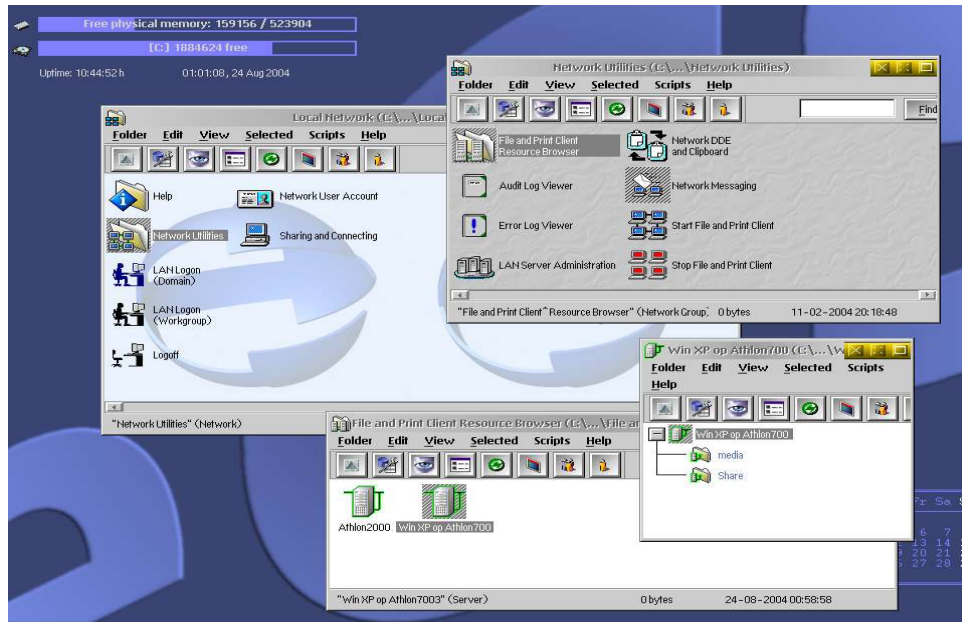
WarpVision control panel (XINE mask)

V.eComStation and Networking

eComStation offers wide support for various network protocols. TCP/IP is nowadays the widest used and most well known protocol, but eCS also supports NetBios (NetBEUI), NetBios over TCP/IP (TCPBEUI), IBM IEEE 802.2 and Novell Netware.
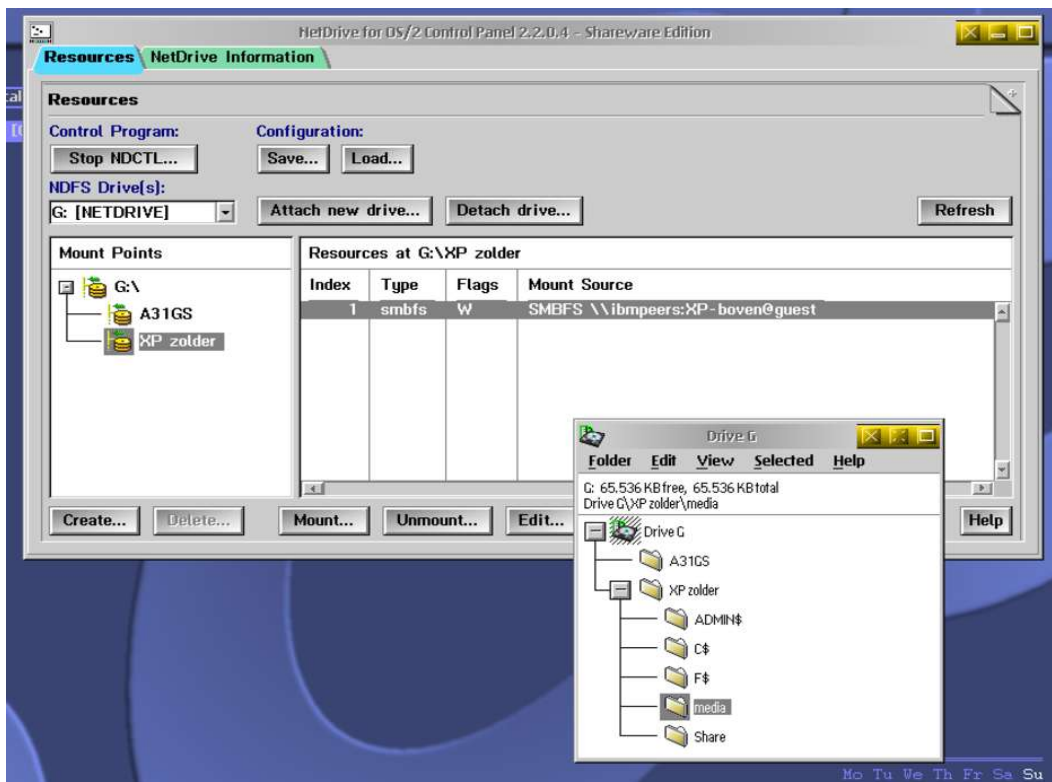
When correctly configured, eCS can communicate to the following systems in the network: Windows 95/98/ME, Windows NT/2000/XP, Linux (Samba) and Netware (Novell).

Folders with network objects in eCS

The picture above shows various folders with eCS network objects. The 'File and Printers Client' has just found a Windows XP machine in the Peer to Peer network.

A Samba client has been developed for eCS (*http://www.netlabs.org*). It works like a plug in with the shareware program NetDrive File System, or NDFS for short (*http://www.blueprintsoftwareworks.com/netdrive*). With this program it is, among other things, possible to mount FTP-sites and computers on the LAN as a drive object. Multiple computers can be mounted on one drive letter.

XP machine in a LAN mounted on drive G with NDFS and SAMBA

VI.Why eComStation?

◆ *Secure...*

- There is hardly any computer virus that can cause damage to eComStation. Viruses that end up on an eComStation system are, in almost all cases, completely harmless. As a result you don't need to purchase an expensive anti virus program. (An anti virus program is included though.)

- With eComStation you are protected against hackers on the Internet, because most TCP/IP ports are closed by default in eComStation against external attacks. And the integrated firewall can be activated for extra security.

◆ *Versatile...*

- By using the standard integrated script language REXX you can extent the possibilities of eComStation yourself. In this way you can, for instance, extent the context menu for each folder on the Desktop with new functionality.

- eComStation can be configured and used the way it suites its user best. Data and program objects, folders and for instance icons, you can change their properties via the graphical desktop to your taste and requirements. The same applies to the way you want to start programs or want to configure the system. The user stays in control of the system and not the other way around.

◆ *Easy...*

- With eComStation and its Workplace Shell you have, without doubt, the most versatile and user friendly graphical desktop at your fingertips.

- In eComStation you accomplish almost everything with 'drag and drop': moving and copying files, programs and even text!, setting the colours and fonts on your desktop, setting the line types and backgrounds of spreadsheets, opening your documents, or creating new documents, etc.

- The graphical desktop and all applications recognize the same key combinations everywhere, making the system very easy usable even without mouse!

- Within eComStation templates are part of the operating system and thereby not connected to just one specific program. You can use these to quickly create a new file. You can also create new templates of any type you want, without being dependent on a specific application.

- An eComStation user stays in control of his system. You decide where programs, drivers and data files will be installed.

◆ *Powerful.*

- eComStation performs very well on older, less powerful PCs, and stays pleasantly fast, thanks to optimized memory management and pre-emptive multitasking.

- Applications that make use of the multi-threading capabilities of eComStation are far more responsive than applications that can't deal with these special capabilities, like in Windows or Linux.

- OS/2 (and of course its distribution 'eComStation'), is already a successful and proven operating system for business applications since its availability, not in the least because of its high level of crash protection, stability and flexibility.

VII. References

On the following websites a lot of information about eCS and OS/2 can be found:

Software and Hardware

- http://hobbes.nmsu.edu
- http://www.mensys.nl
- http://www.netlabs.org
- http://www.os2warp.be

News about activities and applications

- http://www.os2bbs/os2news
- http://www.os2ecs.net/
- http://www.os2world.com/

OS/2 e-Zines

- http://www.os2voice.org/
- http://www.os2ezine.com/

Dutch OS/2 sites

- http://www.os2-gg.nl
- http://www.sjoerd-visser.demon.nl/
- http://www.ecomstation.nl