ALL02 virtualisation possibilities both on eCS and for eCS on other platforms

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Topics to be Covered

Introduction

What is virtualisation (high level view)

What is OS virtualisation used for?

Types of Virtualisation

History of Virtualisation and products on the X86 platform

OS/2 – eComStation hosted products

Products that support OS/2 eComStation on other platforms

Cloud Computing, Dynamic Infrastructure – what do these latest terms mean?

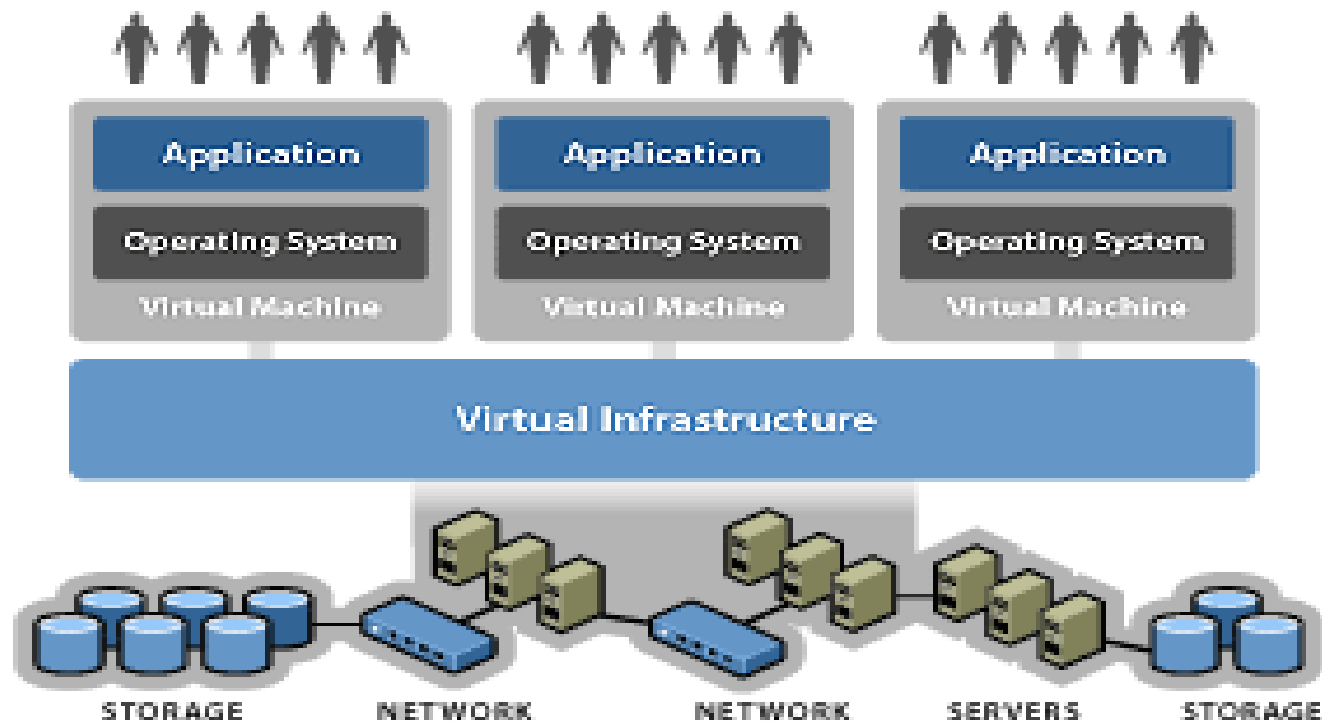Possible future setup of eComStation on unsupported hardware.

AMD & Intel processors that support hardware virtualisation instructions.

Reference URLs for further information.

Introduction

What is virtualisation (high level view)

What is OS virtualisation used for?

Server Virtualisation in data centres

Short term Test and Development environments

Virtual Desktops to Thin PCs/clients

Running different operating systems on top of an installed OS

Data Centre Disaster Recovery

Application Version testing (and revertion if required).

Infrastructure environment modelling.

Types of Virtualisation

Hosted Virtualisation

Hardware Virtualisation

Hardware Emulation and Paravirtualisation

Hardware Pass-Thru

"Bare Metal" Hypervisor Virtualisation

Application Virtualisation

History of Virtualisation.

Solaris partitioning.

MVS

VM

AVT - SystemP

AIX Partitioning

History of Virtualisation products on the X86 platform 1/2

Bochs

Connectix

innotek
innovative business solutions

IBM. VCC

vmware

QEMU
open source processor emulator

SVISTA   Russian

Serenity Systems International   Parallels

TwoOStwo

Xen

Original companies

Warpstock Europe
2009

History of Virtualisation products on the X86 platform 2/2

Bochs

US

Companies after take-overs

OS/2 – eComStation hosted products

The following virtualisation applications have at one time or another run on OS/2 or eComStation as the "hosting" Operating system:

Virtual PC, ported to OS/2 by Innotek.
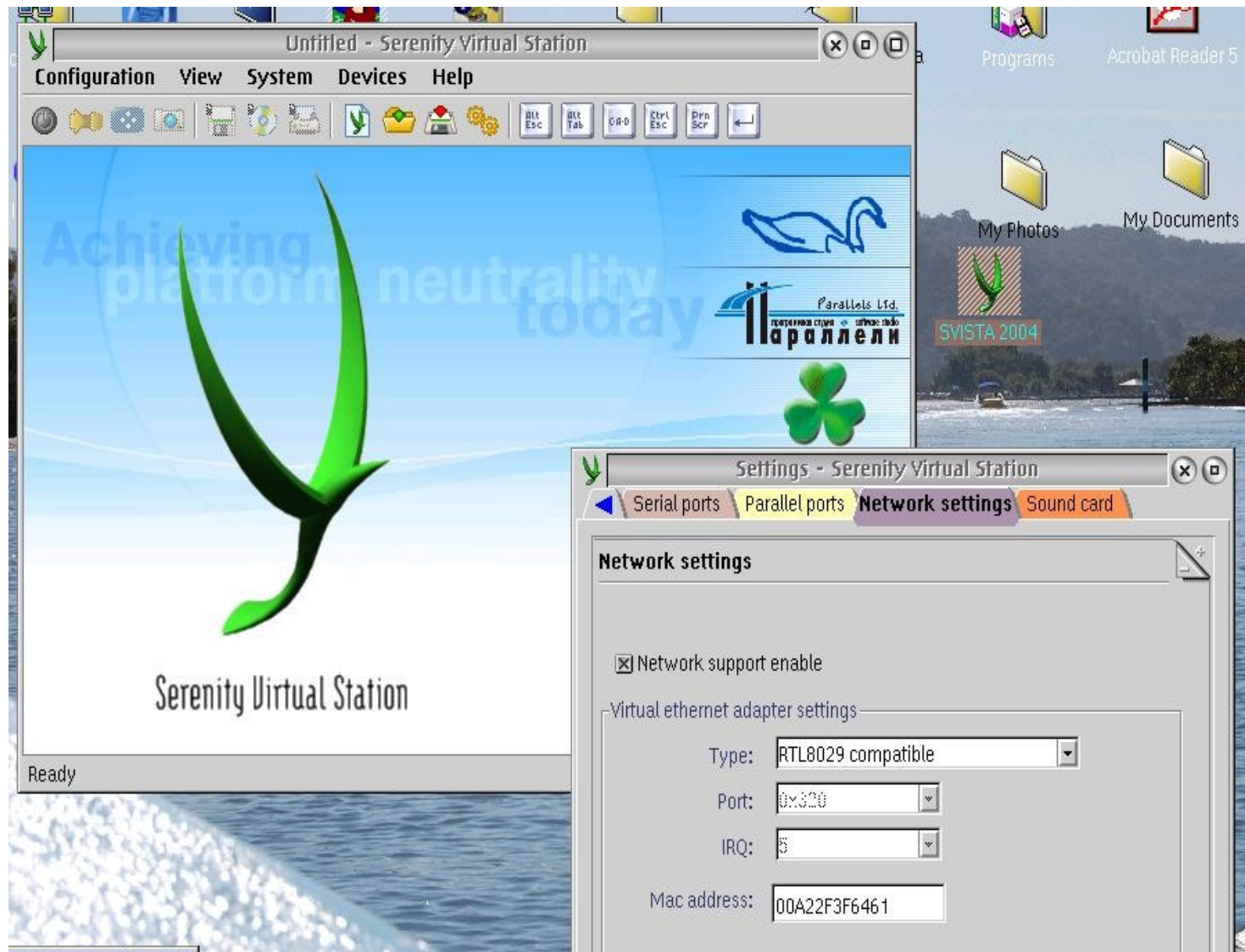
Svista/2 from Serenity Systems by Parallels.
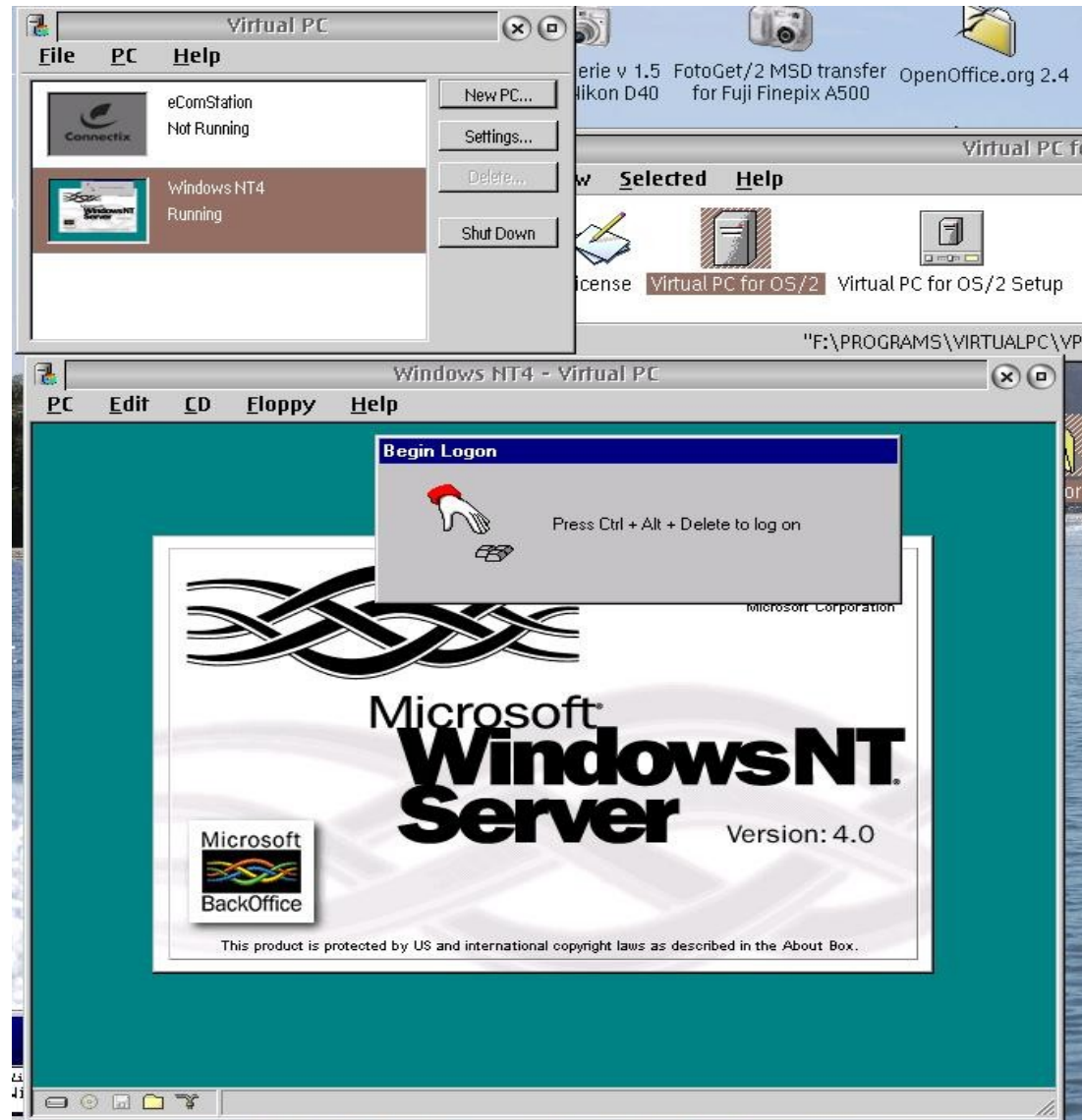
VirtualBox/2 OSE by Sun/Innotek.

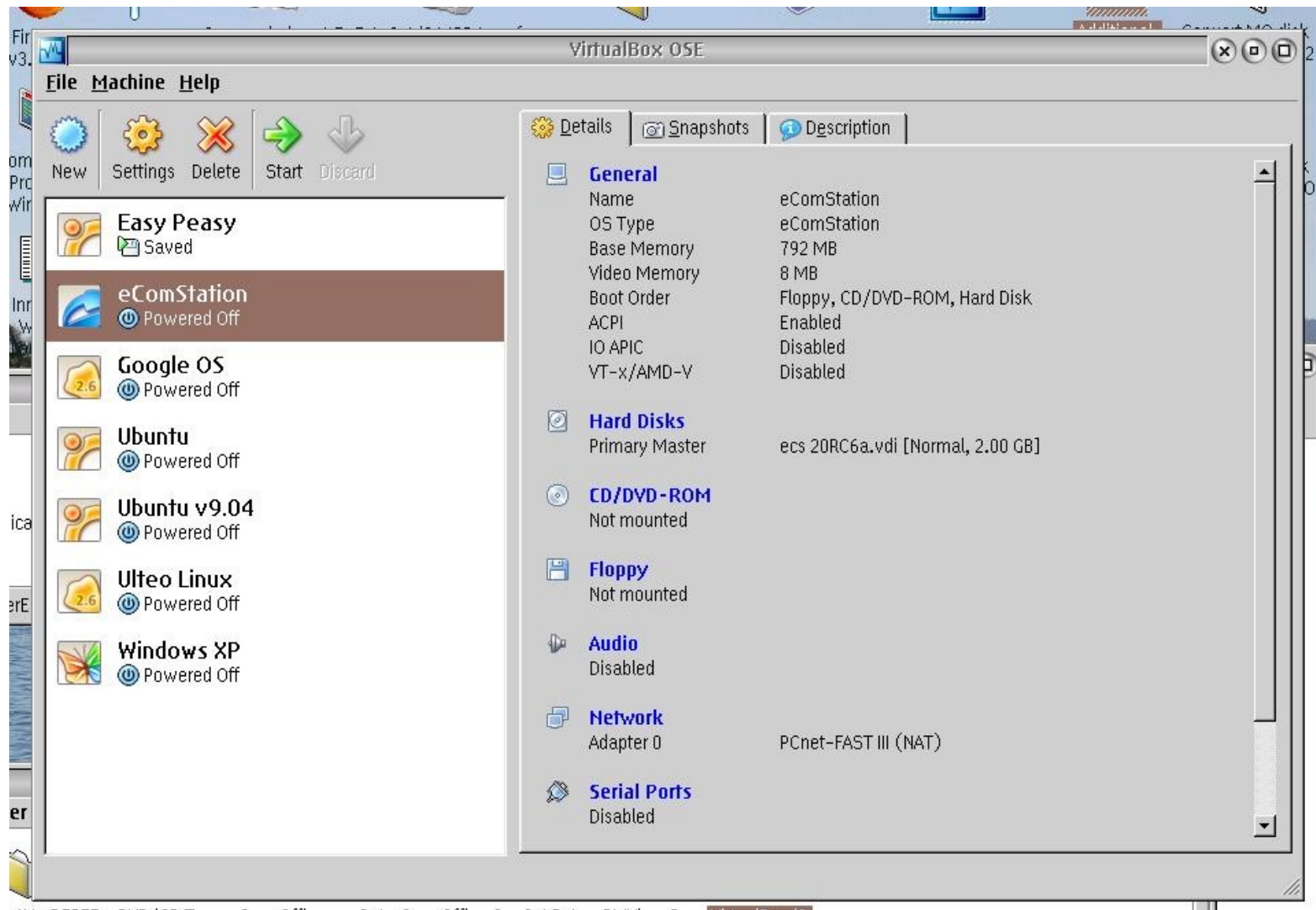QEMU/2

OS/2 – eComStation hosted products

SVISTA 2004

OS/2 – eComStation hosted products

VPC/2

OS/2 – eComStation hosted products

VBOX/2
(OSE)

Products that support / supported OS/2 or eComStation on other platforms

vmware VMWare – ESXi v 4 + VMServer + VMPlayer

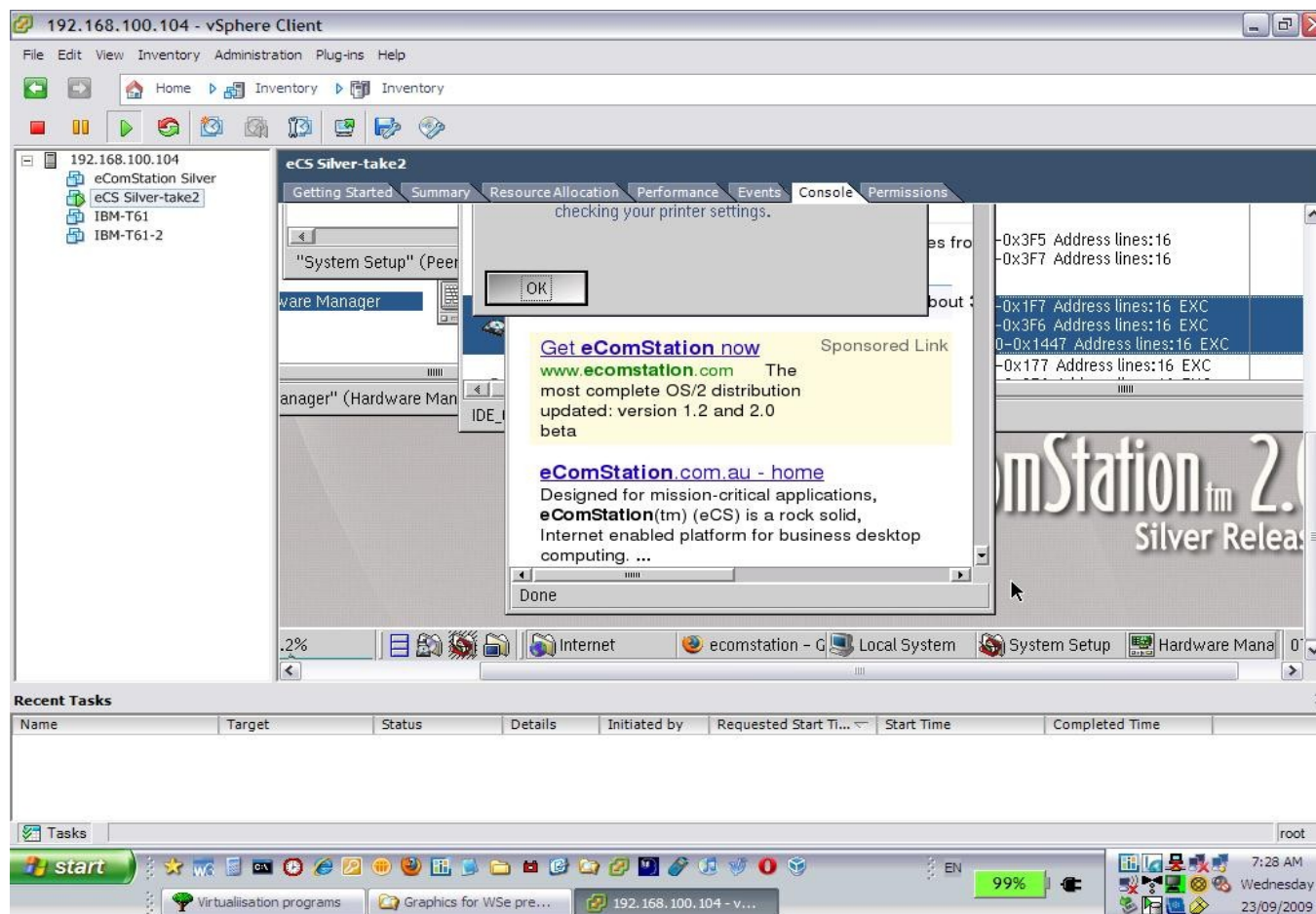SUN VirtualBox

SVISTA 2004   SVista/Win/Linux/BSD

Microsoft VirtualPC 2007 / Virtual Server 2005/ Hyper-V
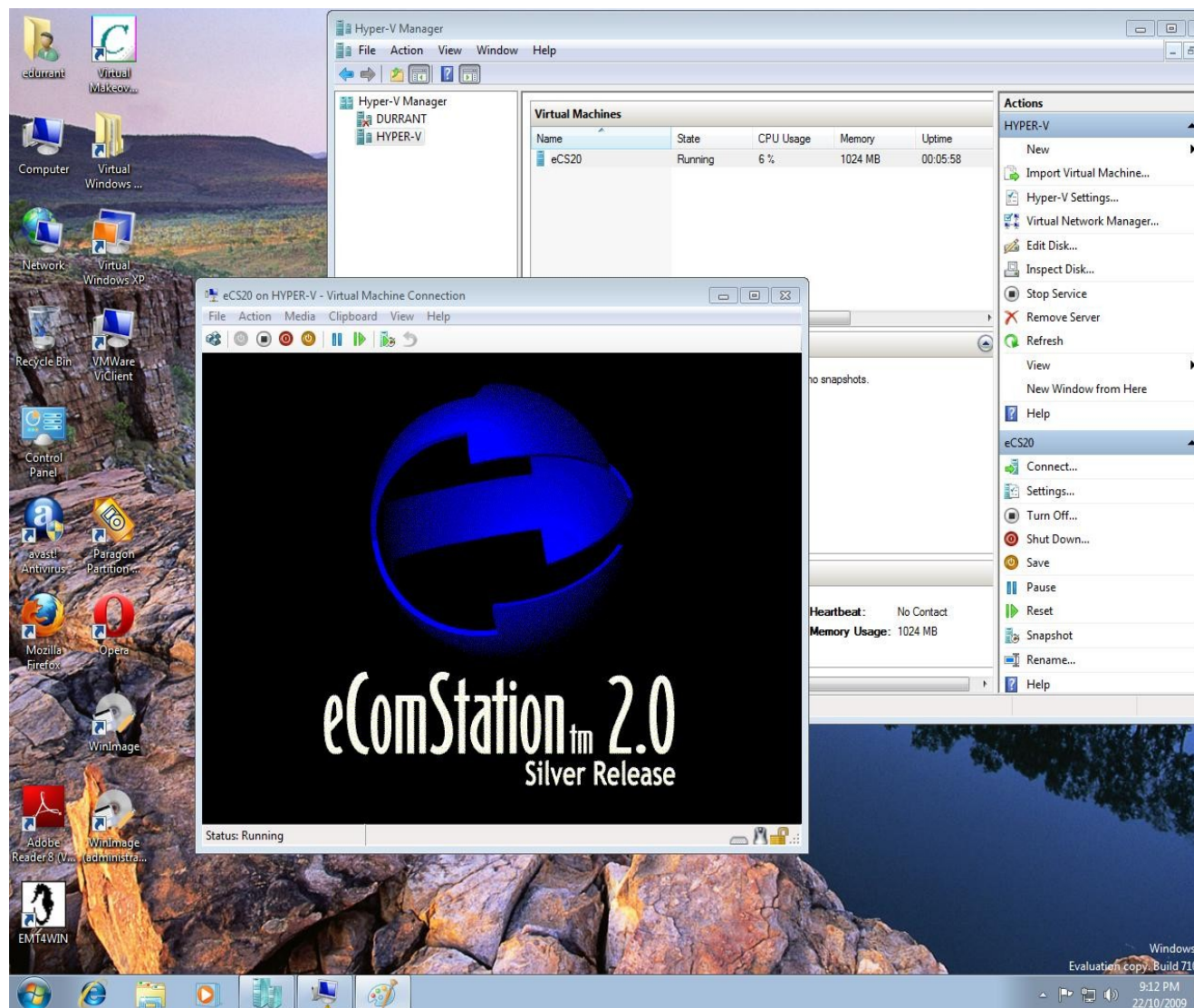
Parallels desktop v4

Others I have not tested but "may" support eCS, OS/2 Parallels bare metal, VMWare Workstation

Products that support / supported OS/2 or eComStation on other platforms

VMWare Vsphere ESXi v 4.01 (Hypervisor type virtualisation)
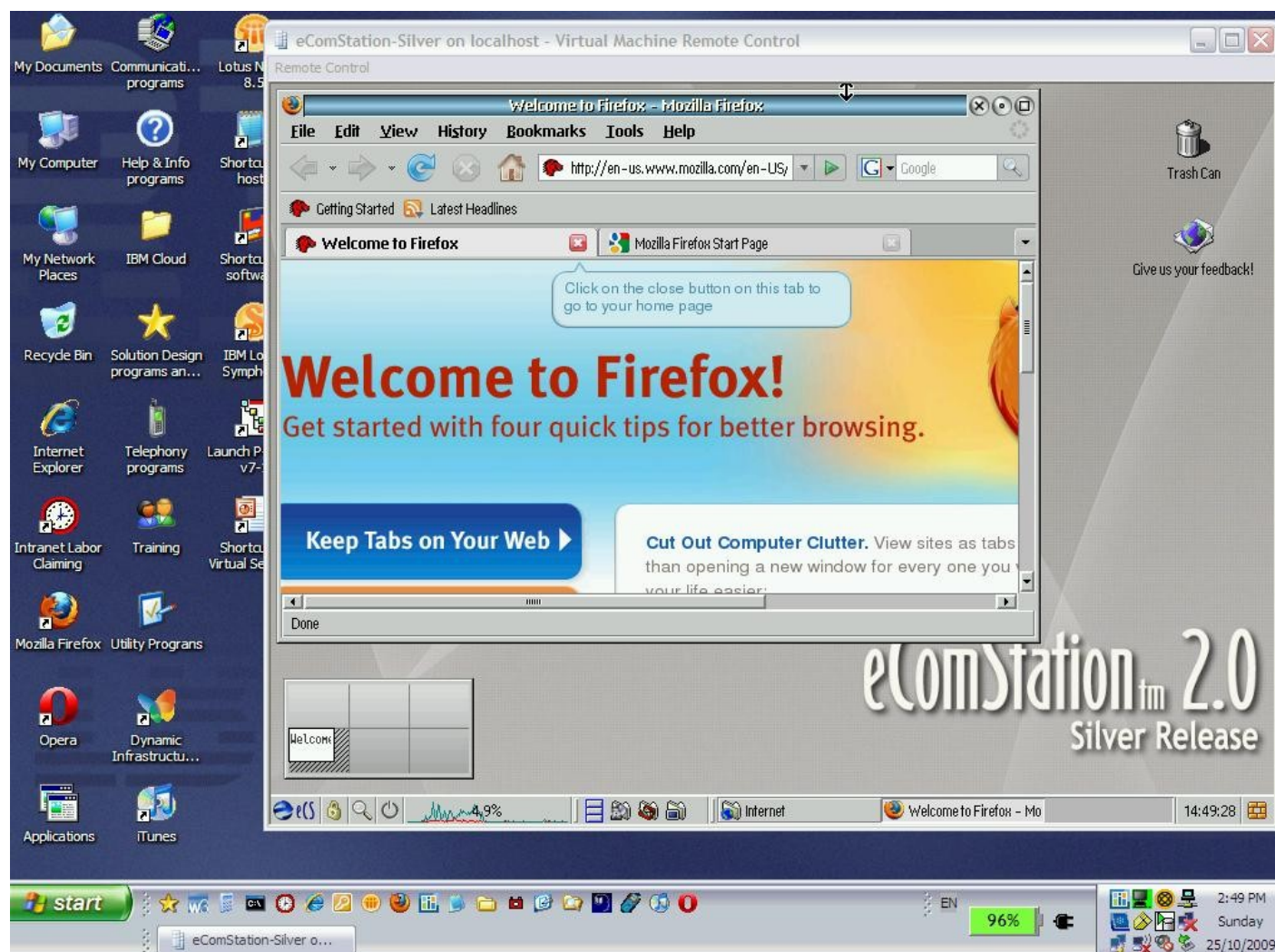
Products that support / supported OS/2 or eComStation on other platforms

Microsoft Hyper-V Server 2008 R2 (Hypervisor type virtualisation)
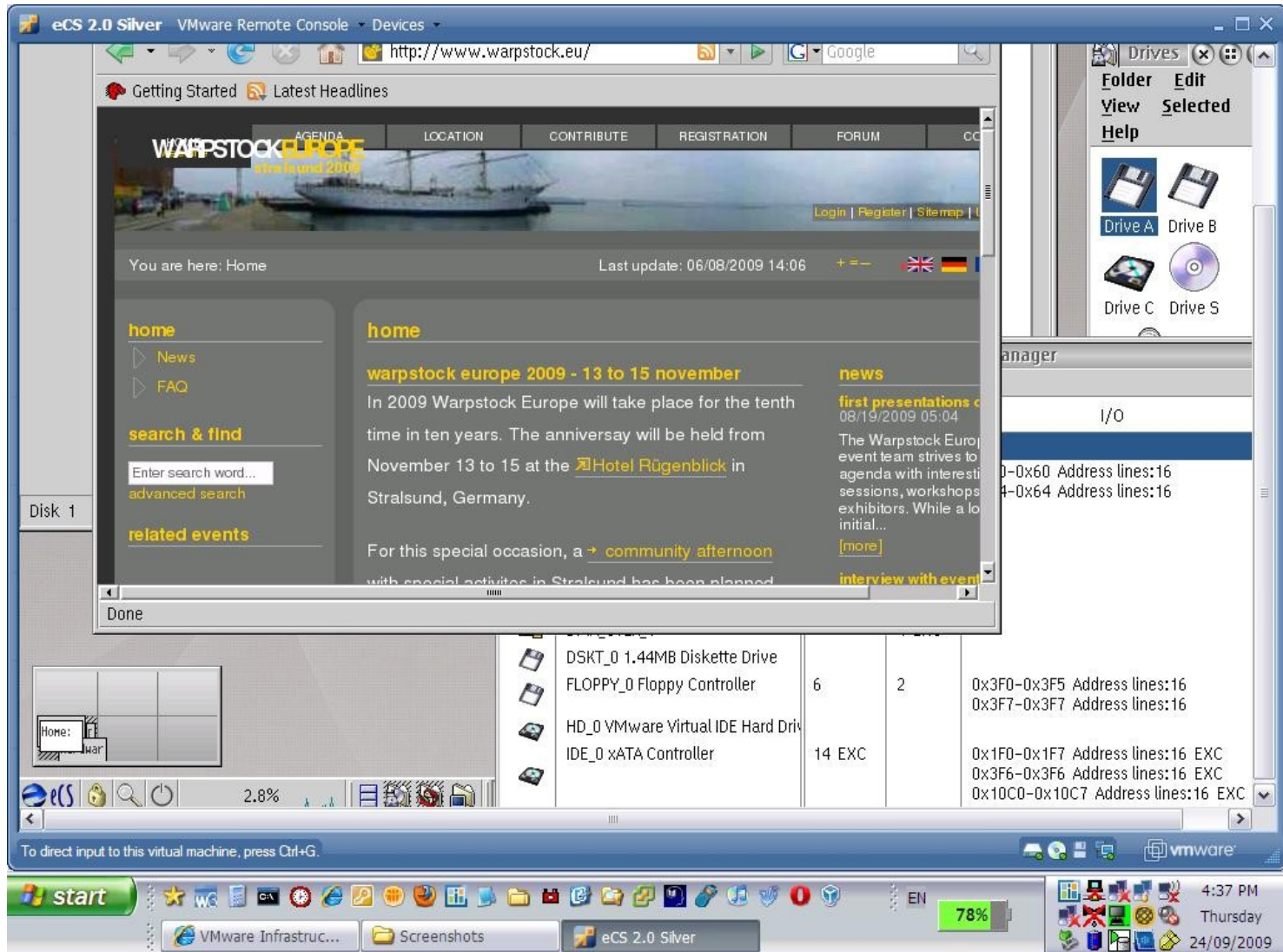
(Not currently working but may be possible)

Products that support / supported OS/2 or eComStation on other platforms
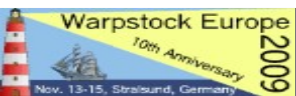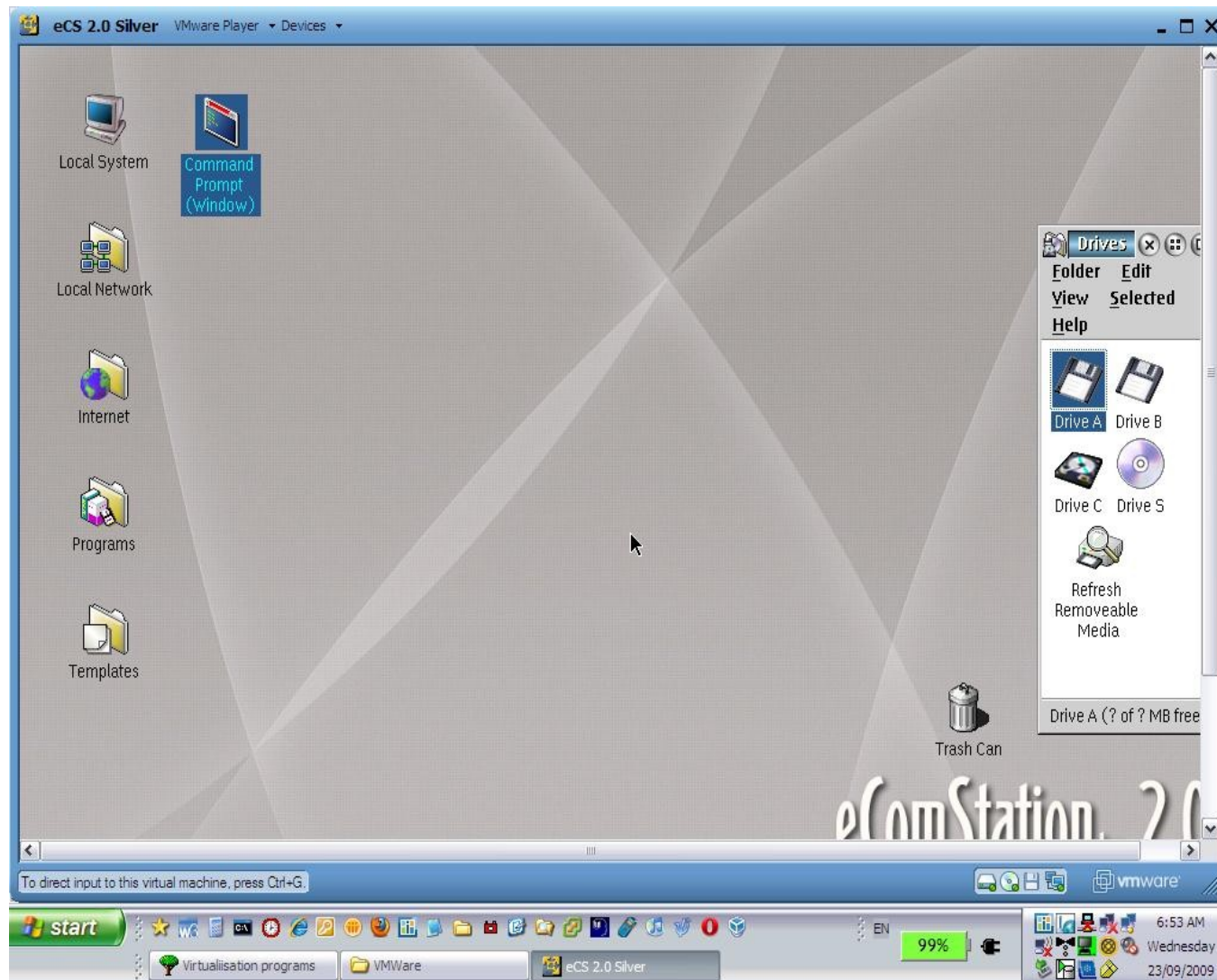

Microsoft Virtual server 2005 R2 SP1

Products that support / supported OS/2 or eComStation on other platforms

VMWare
Server v 2.01
(Hosted
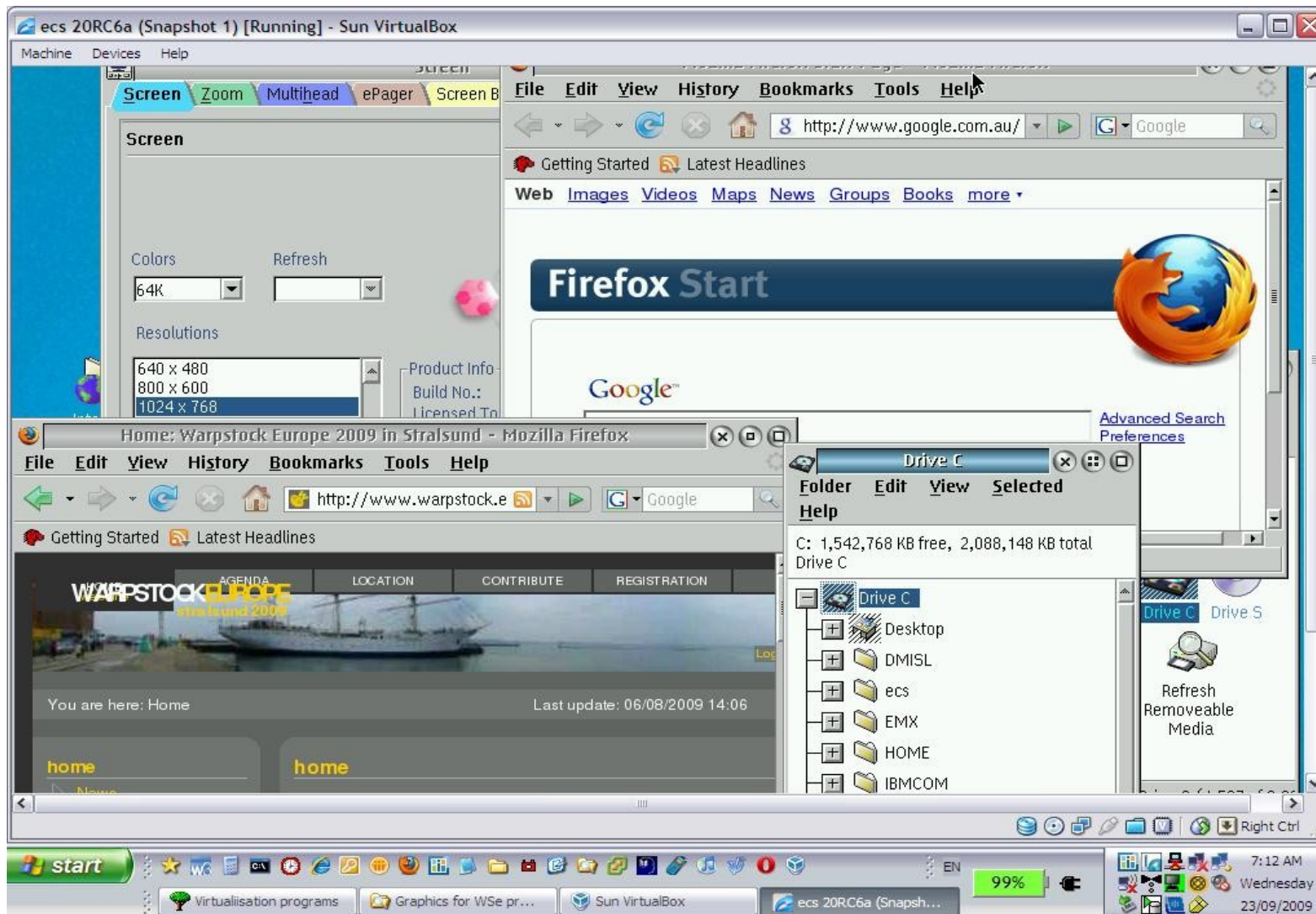server based
virtualisation)

Products that support / supported OS/2 or eComStation on other platforms
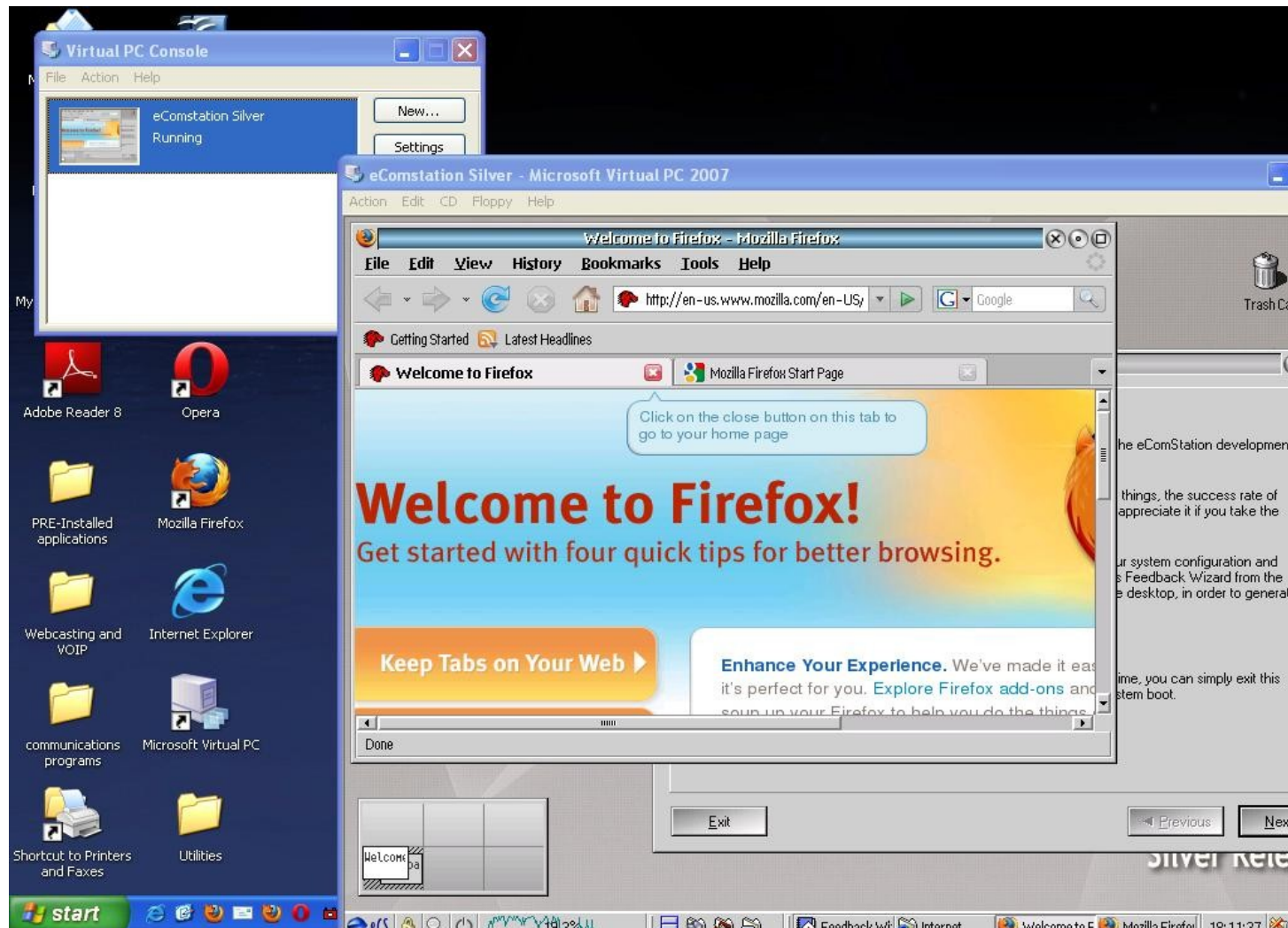

VMWare Player (Desktop PC or laptop hosted virtualisation environment)

Products that support / supported OS/2 or eComStation on other platforms

SUN Virtualbox v 3.06 (Desktop hosted virtualisation)

Products that support / supported OS/2 or eComStation on other platforms

Microsoft VirtualPC 2007 (desktop hosted virtualisation)

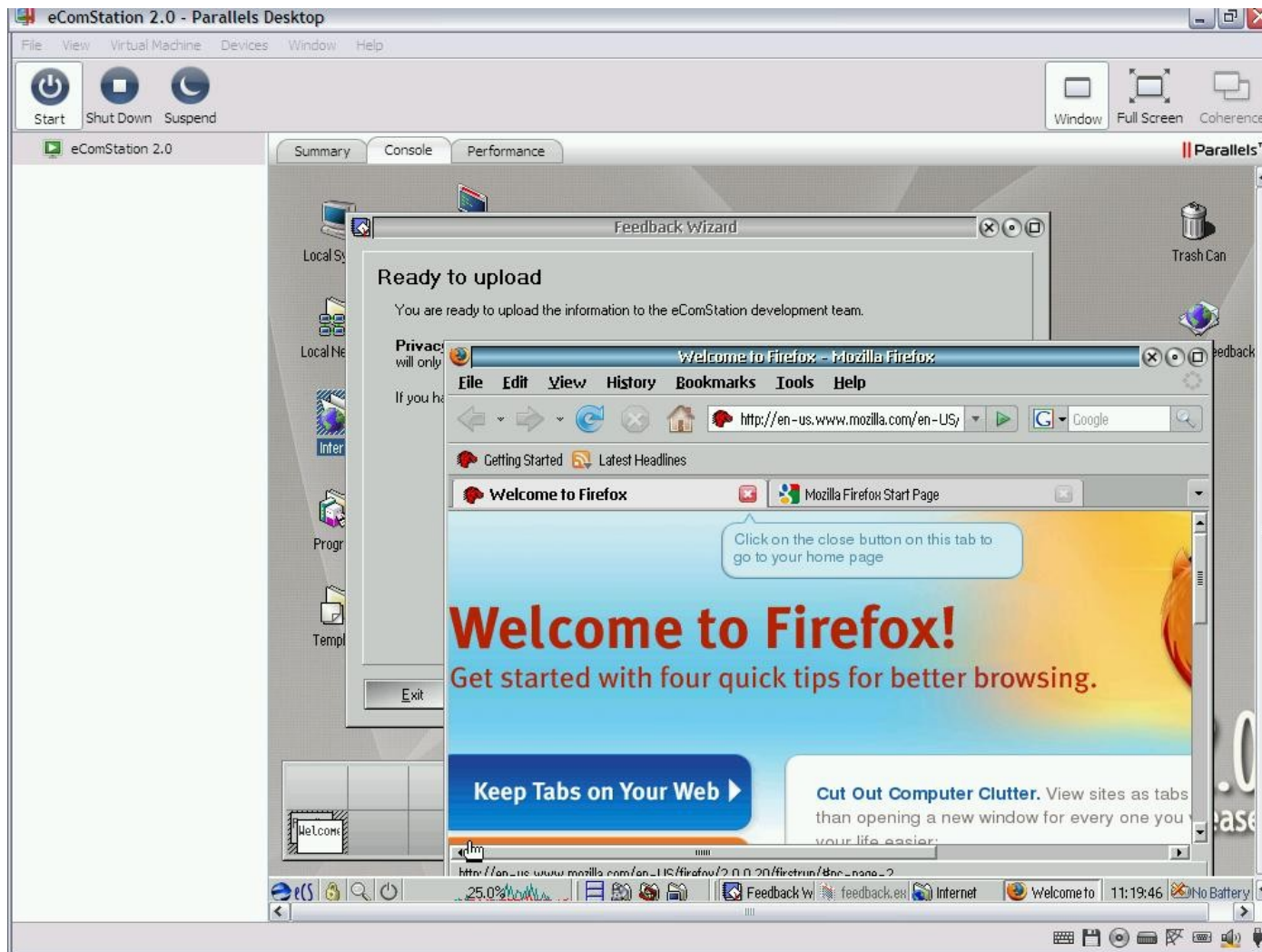# Products that support / supported OS/2 or eComStation on other platforms

Parallels desktop V4 (desktop hosted virtualisation)

Products that support / supported OS/2 or eComStation on other platforms
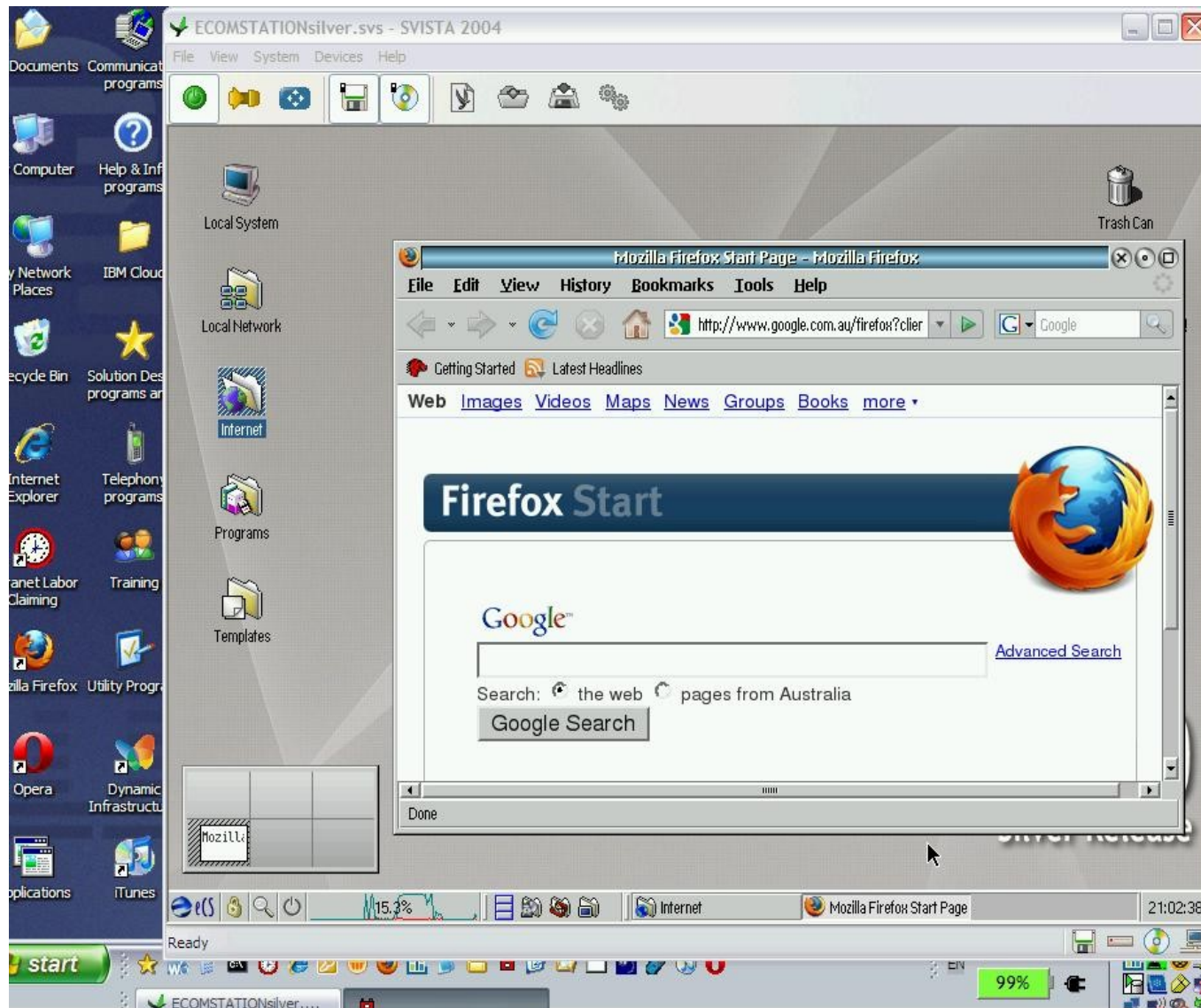

Svista 2004 (win) (desktop hosted virtualisation)

Cloud Computing, Dynamic Infrastructure, Virtual Appliances – what do these latest terms mean?

Consumer Solutions   Enterprise solutions

Possible future set up of eCS on unsupportable hardware

eComStation and WPS (Full screen or remote session)

Virtualisation layer – e.g. VirtualBox (Headerless mode for server)

Operating system layer – e.g. cut-down Ubuntu Linux (even Live CD)

Future PC/Server Hardware

| BT | FW | ACPI | USB3 | Video | LAN | WiFi | SMP | Audio | Webcam |

AMD processors with AMD-V capability

On May 23, 2006, AMD released the Athlon 64 ("Orleans"), the Athlon 64 X2 ("Windsor") and the Athlon 64 FX ("Windsor") as the first AMD processors to support this technology.

AMD-V capability is also available on Athlon 64 and Athlon 64 X2 family of processors with "F" or "G" stepping on socket AM2 (not socket 939), Turion 64 X2, and Opteron 2nd generation[2] and 3rd-generation[3], Phenom and Phenom II processors.

Only Sempron processors except Sable and Huron do not include support for AMD-V.

Beginning with the Barcelona line, AMD Opteron CPUs support a hardware virtualizaton technology called Rapid Virtualisation Indexing, later adopted by Intel as EPT.

So in short most current AMD processors support hardware virtualisation.

Intel is not as straight forward as you will see from the following slides:

Intel processors with VT-X capability 1/2

The following Intel processors include support for VT-X (as at October 2009)

* Pentium 4 662 and 672

* Pentium Extreme Edition 955 and 965 (not Pentium 4 Extreme Edition with HT)

* Pentium D 920-960 except 945, 935, 925, 915

* Core Duo T2300, T2400, T2500, T2600, T2700 (Yonah)

* Core 2 Duo E6300, E6400, E6320, E6420, E6540, E6550, E6600, E6700, E6750, E6850 (Conroe)

* Core 2 Duo E5400, E7600, E8200, E8300, E8400, E8500, E8600 and some versions of the E7400 and E7500 (Wolfdale)

* Mobile Core 2 Duo T5500, T5600, T6570, T7100, T7200, T7250, T7300, T7400, T7500, T7600, T7600G, T7700, T7800 (Merom)

* Mobile Core 2 Duo SU9300, SU9400, SU9600, P7370, P8400, P8600, P8700, P8800, P9500, P9600, P9700, T8100, T8300, T9300, T9400, T9500, T9600, T9800, T9900 (Penryn)

Intel processors with VT-X capability 2/2

* Core 2 Quad Q6600, Q6700 (Kentsfield)

* Core 2 Quad Q8400, Q8400S, Q9300, Q9400, Q9400S, Q9450, Q9550, Q9550S, Q9650 and some versions of the Q8300 (Yorkfield)

* Core 2 Extreme X6800 (Conroe_XE)

* Core 2 Extreme QX6700, QX6800, QX6850 (Kentsfield_XE)

* Core 2 Extreme QX9650, QX9770, QX9775 (Yorkfield_XE)

* Xeon 3300 and +, 5000, 7000 series

* Atom Z520, Z530, Z540, Z550, Z515 (Silverthorne)

* all Intel Core i7 processors

* all Intel Core i5 processors

* Pentium Dual-Core E6300, E6500 and some versions of the E5300 and E5400*

* Celeron E3000 series

Reference URLs for further information.

Ever expanding list of Virtualisation programs across all platforms:

   http://en.wikipedia.org/wiki/Comparison_of_platform_virtual_machines

And

   http://wapedia.mobi/en/Comparison_of_platform_virtual_machines

OS/2 World Wiki with info about working virtualisation packages for eCS

http://www.os2world.com/wiki/index.php/Virtual_Machines

How to Install eCS 2.0 Silver to VMWare ESXi v4.01

   http://ewiki.ecomstation.nl/eCSunderVMWareESXiHowto

End of Presentation

Any questions   ?