Serenity Virtual Station 2004

Introduction and Roadmap

Serenity Virtual Station

Serenity Systems International

6PAC Consulting AG
THE HUMAN TECHNOLOGY PARTNER

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October 2004

Agenda

- What is SVISTA 2004?
- How does it work?
- Features of the Virtual Machine
- Requirements
- Benefits
- Scenarios
- Future Plans
- More about the OS/2 Host
- Demo of the OS/2 Host

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What is SVISTA?

- Todays computers are very powerful
- Some users require more than one “setup”
  - Software testers, developers, support...
  - Access to legacy applications or different operating systems

- Server farms are used to centralize user desktops
  - Lower TCO

- Software solution to run multiple virtual computers on top of one real workstation or server
- Comparable to MS VirtualPC and VMWare
  - But with support for more operating system platforms including OS/2 and FreeBSD

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How does it work?

- Virtualization technology for Intel compatible workstations and servers
  - Runs on x86 CPUs, virtualizes x86 CPU

- SVISTA is launched as an application in the host operating system
  - Consists of application, tools and some device drivers/kernel modules

- A “VM” is created when SVISTA is “powered on”
  - Each VM has it's own virtual CPU, RAM, HDD, FDD...
  - Each VM can run it's own copy of an operating system, simultaneously to the host operating system
  - Full network support is available to all VMs

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How does it work? (con'd)

- Quasi-emulation technology is used
  - Guest code runs in isolated environment
  - Most of the guest code runs native on the CPU
- When possible, routing to the real hardware is used instead of emulation
  - Serial/parallel port, CPU, RAM
- Emulation is needed for the network, graphics and sound card
- Guest operating systems can run full screen or in a window
- A container file is used to hold all data of the guest
  - The guest operating system sees a normal hard drive
  - The host operating system sees one big file

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Features of the Virtual Machine

- Hardware visible to the guest operating system
  - Processor — Intel Pentium 2 with MMX and SSE support
  - Memory — up to 512 MB
  - Graphics — VESA 3.0; VGA, SVGA; 1600x1200x24bit
  - Floppy Drives — One 1.44 MB floppy device
  - Hard Drive — IDE; up to 32 GB
  - CD-Rom Device — One IDE CD-Rom drive
  - Serial Devices — Up to four serial (COM) ports
  - Parallel Devices — Up to three bidirectional parallel (LPT) ports
  - USB Ports — Version 1.1; including printer, mass storage, human interface devices
  - Keyboard — 104-key Windows enhanced keyboard
  - Mouse — PS/2 wheel mouse
  - Network Card — Ethernet network card compatible with NE2000, NE2000plus and Realtek 8029 Token-Ring network card
  - Sound — AC97 Codec
  - BIOS — Phoenix BIOS 1.0

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Features of the Virtual Machine (con'd)

- SMP enabled
- Citrix MetaFrame (XP, Presentation Server) integration

- Supported Host operating systems
  - OS/2 MCP, ACP; eCS 1.x
  - Windows NT4 SP 6, 2000 SP 2, XP, Server 2003
  - Linux 2.4.x, 2.6.x (RedHat, SuSE)
  - FreeBSD 4.x

- Supported Guest operating systems
  - OS/2 Warp 3 and higher
  - eComStation 1.x
  - Windows NT 4, 2000, XP, 2003
  - Windows 95
  - DOS
  - Linux
  - FreeBSD

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Requirements

- Software
  - Supported Host operating system
  - Different requirements for each host operating system

- Hardware
  - Pentium 3 with 700 MHz
  - Memory for Host OS plus memory for each running Guest OS
  - 5 MByte of hard drive space for SVISTA plus additional space for each guest OS container file
  - Any SVGA, XGA graphics card with support for high color
  - Any Ethernet or Token Ring network card that supports promiscuous mode (optional)
  - Any FD, CD or DVD drive (optional)
  - Up to 4 COM and 3 LPT ports (optional)

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Benefits

- Applications may not run on new hardware or software
  - Protecting the investment in software, skills, and training
- Support organizations can recreate every environment on their own equipment
  - Improve response time
  - Isolated environments to test applications and carry out other support activities
- Specialized standard desktops for activities such as training or sales demonstrations
- Developers can create an isolated environment for compiling, debugging, and monitoring software
  - Improvement of productivity
  - Testing of different revisions of software possible
- Create a standard virtual hardware footprint throughout an organization
- ...

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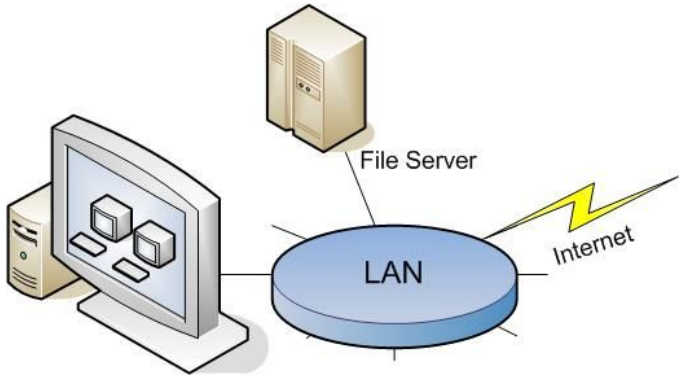
Scenarios

One technology - many environments

Desktop

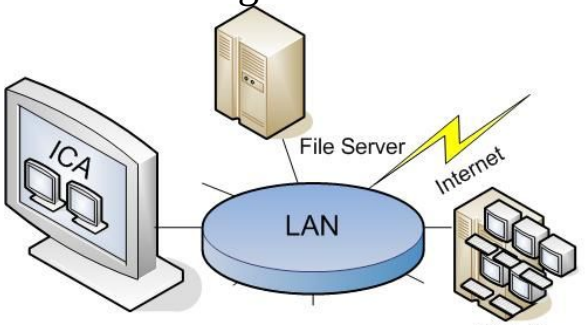
All components locally installed



Terminal services for Windows

VM running in Server farm

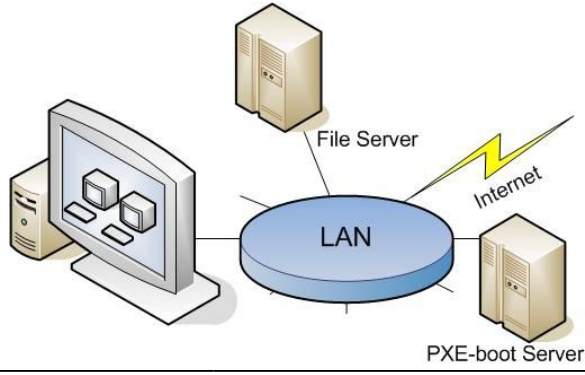
Terminal access through ICA



onDemand Services for LINUX

PXE-Client boots via NFS

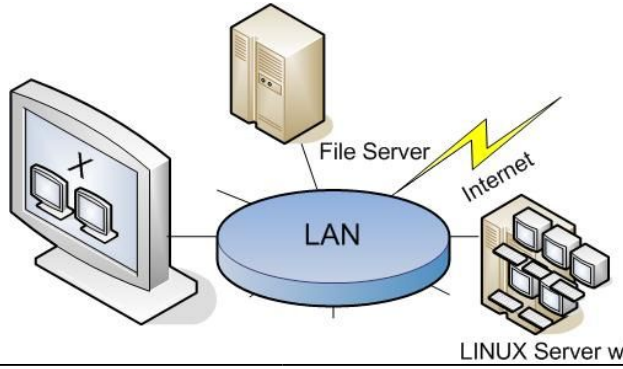
All components running locally



Terminal services for LINUX

VM running in Server farm

Terminal access through X



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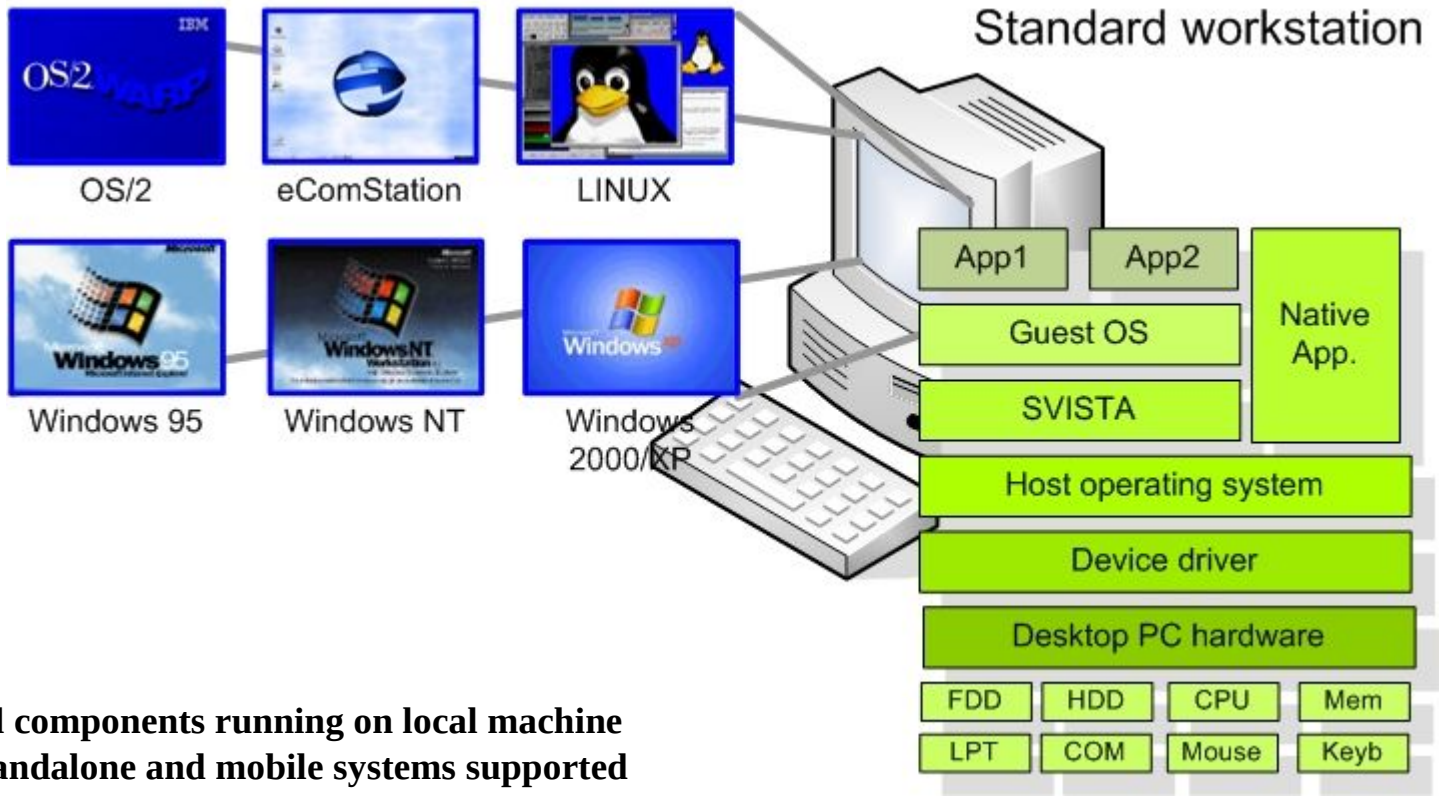
Scenarios (con'd)

SVISTA – Desktop environment



- **All components running on local machine**
- **Standalone and mobile systems supported**

- **Host operating system can be the following Intel based systems:**
  eComStation; IBM OS/2 Warp / Server; Windows NT 4, 2000, XP, 2003; LINUX; FreeBSD

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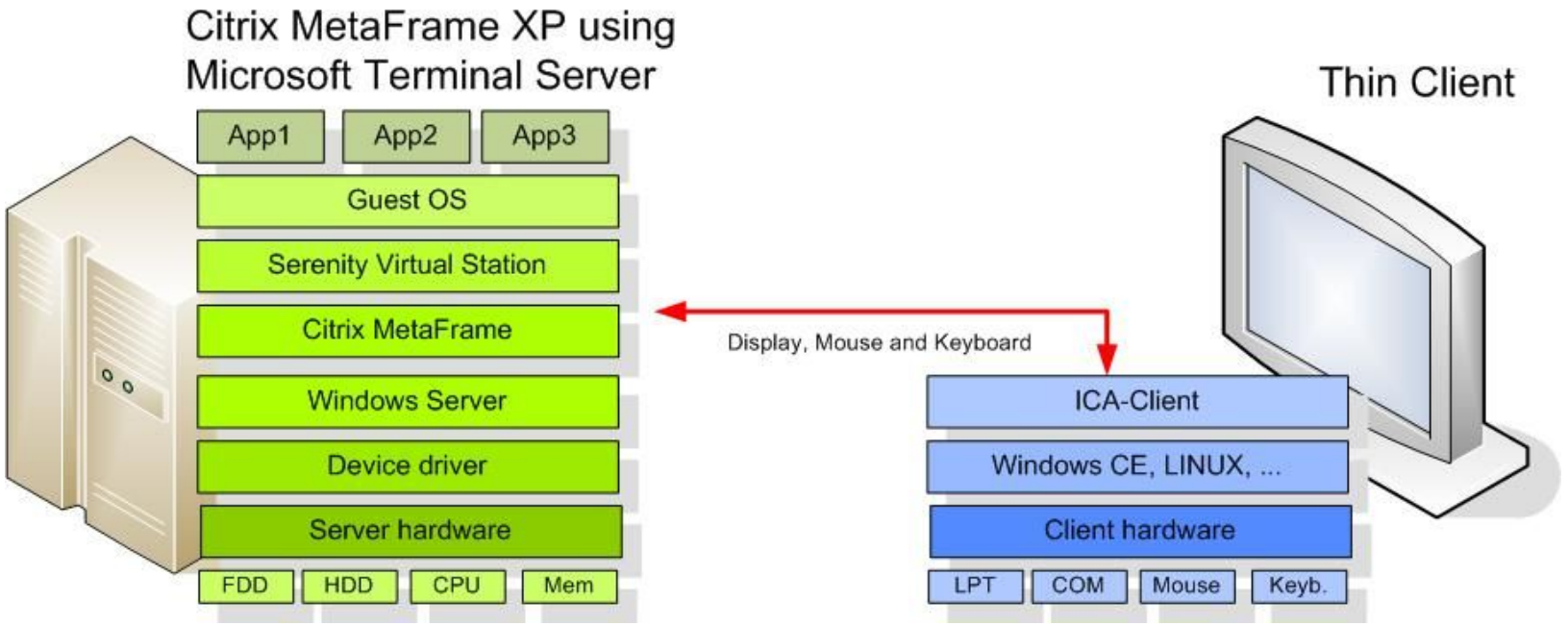
Scenarios (con'd)

SVISTA – Terminal Services for Windows Servers



- **Legacy applications with ICA protocol**
- **Server farm configured to publish SVISTA**
- **Client connects via ICA load-balancing**
- **Session and applications run on server**
- **display forwarded by ICA protocol**

1. **Client automatically starts ICA session**
2. **Loads configuration from Server Farm**
3. **Program neighborhood or configured application is started on remote server**
4. **Display and keyboard redirected by ICA protocol**

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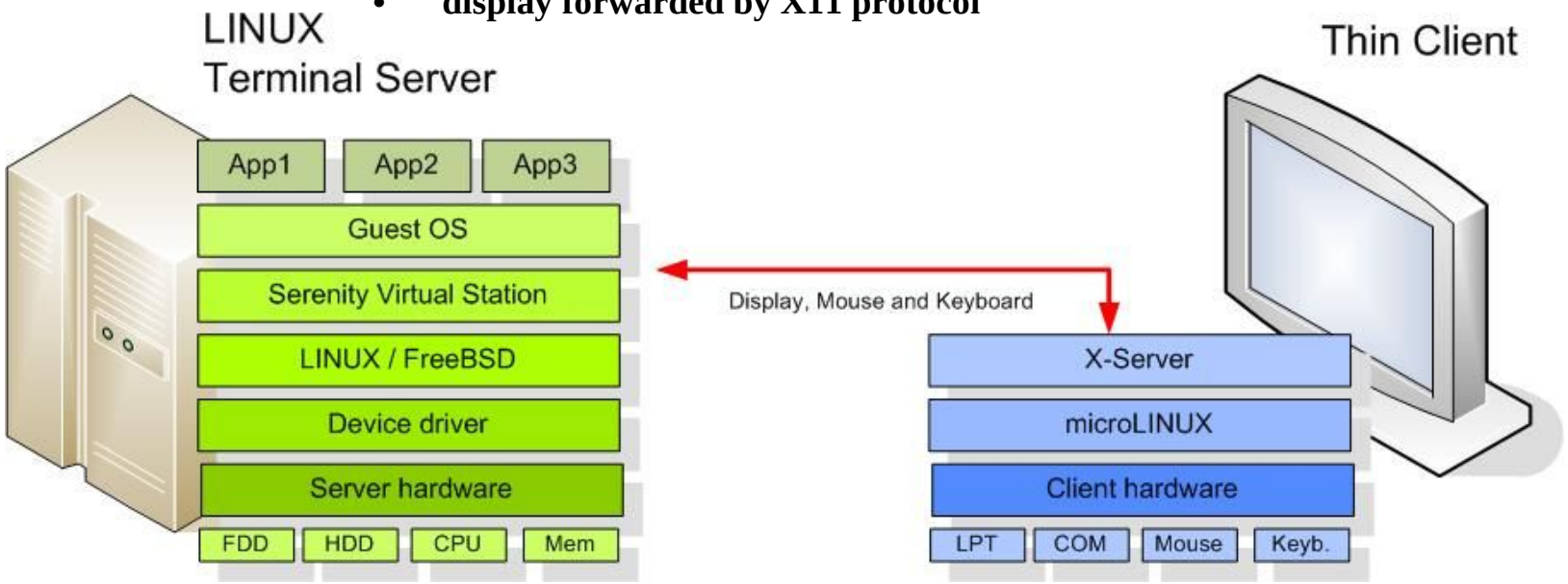
Scenarios (con'd)

SVISTA – Terminal Services for Linux/FreeBSD

- **Legacy applications with X protocol**
- **Server farm configured to use remote X11**
- **Client connects via DNS lookup (round robin)**
- **Session and applications run on server**
- **display forwarded by X11 protocol**



1. **User logs on with local X**
2. **Loads configuration from Logon-Server**
3. **Terminal reports local X-Server address to start SVISTA on remote server**
4. **Display and keyboard redirected by X11-protocol**

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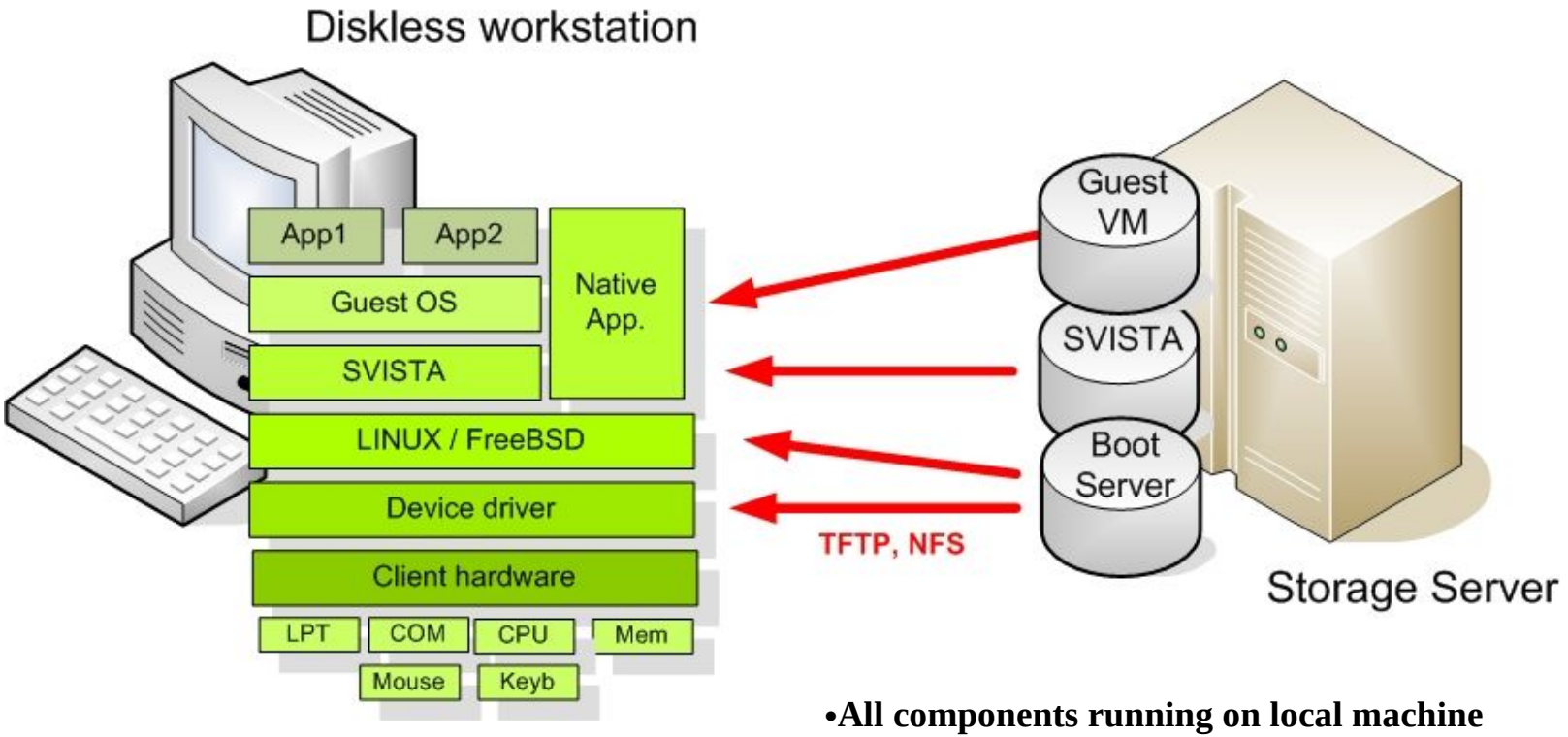
Scenarios (con'd)

SVISTA – on Demand Server Support



1. **Client searches for Boot server**
2. **Loads host OS files**
3. **User logs on**
4. **Appropriate image is selected**
5. **SVISTA starts personally configured**

- **All components running on local machine**
- **System attached to LAN**
- **Operating system boot with PXE or Micro LINUX**

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Future Plans

- SVISTA 2004 October 2004
- SVISTA 2004 Feature Release I End of 2004
- SVISTA 2004 Feature Release II Q2 2005

- All supported Hosts will be released at the same time but may have a slightly different feature set.
- We are committed to all Host platforms!

All items are subject to change without notice.

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Feature Release I

- Improvements to the CPU virtualization
  - SSE2, better Pentium M support...
  - Ring 0 and Ring 3 optimizations, as well as caching
- Extended memory for each virtual machine
  - Up to 2 GB
- Support for more Guest OSes
  - Windows 3.1/98/ME, Accelerated Windows XP
- Shared clipboard for the Linux Host
- USB support
- FreeBSD Host
- Terminal Server Edition will go from dual screen to quad screen support

All items are subject to change without notice.

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Feature Release II

- Enhanced IDE support
  - Up to 4 IDE devices
  - Differential hard drives
- Suspend to disk
- Shared folders
- Enhancements to the network support
- Migration tool set
- Terminal Server Edition will get better support for dual / multiple CPU servers with new management tools

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2005 and later

- Enhanced virtual machine APM support
- Advanced multi head configurations
- Management API to add custom devices and control the VM
- Well defined Host / Guest interfaces
- Virtual SMP support
- Large memory support

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More about the OS/2 host

- Requirements
  - Software
    - eComStation 1.0, 1.1, 1.2
    - OS/2 Warp 4 Fixpak 5 or better
    - OS/2 Warp Server for e-business
    - GRADD based video drivers (SDD or SNAP)
  - Hardware
    - 400 MHz or faster Pentium II compatible CPU
    - 128 MB RAM
    - HighColor or TrueColor display
    - Any Ethernet, Token-Ring or WLAN adapter

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More about the OS/2 host (con'd)

- Supported add-ons:
  - Shared clipboard
  - Sliding mouse

- Special OS/2 host features:
  - Networking is different (in the current version)
    - Works over wireless LAN
    - LAN wizard simplifies network configuration
  - Host-Guest networking also without real NIC
  - Can use RAM-emulated floppies

- Future enhancements for the OS/2 host:
  - Audio support for Guest operating systems
  - USB support
  - “Linux like” networking

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Demo of the OS/2 Host

- Installing the application and the networking support
- Running SVISTA 2004 on OS/2
- Creating a VM configuration
- Installing a Guest operating system
- Running different Guest operating systems

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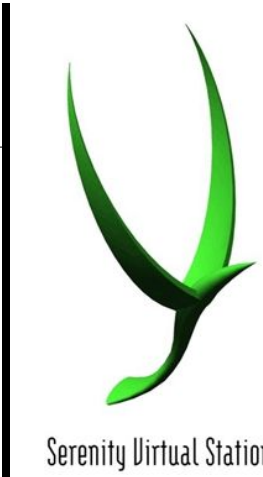
Thank you!



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Questions?

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Special Notices