

Usability Issues Development Priorities

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Removable media support

- Need support to insert/remove media
 - Necessary for paravirtual, but also desirable for full virtual now that the qemu console has been gutted due to security issues. (#159907, 252254, 256568)
 - Many operating systems have add on products requiring post install access to media (CD, DVD, etc.)
 - > Current support is too complex for your typical user
 - Possibly implement as an xm command
 - > Need control via API as well

APIC emulation

- Windows IO performance is extremely slow when APIC is enabled “apic=1”
- Users are constantly playing with settings for ACPI and APIC to get guests to boot in different configurations
- Need Improved APIC support
 - "apic=1" required for some Windows (64 bit and SMP) but again results in poor IO performance
 - May need to find other solutions (software/hardware) to avoid the complex emulation overhead we have today

Legacy OS Support

- Complete real-mode emulation for fully virtualized guests
- Enable support for legacy OS

Graphics Card Issues

- VESA frame buffer is unsupported
- Accelerated Graphics
 - XGL doesn't work under Xen
- Certain graphics cards have problems under Xen

Mouse and Pointer Issues

- Tracking issues
 - Neither PV nor FV Linux track well (#247398)
 - Windows pointers track fine

Networking

- Needs to be easier to configure / more robust
 - Possibly just a distro issue but we could benefit from better xentools/linux integration
- Networking does not work for Windows Vista
 - Just a bug but, but needs to be tracked down. (#260876)
- PV Drivers for FV guests
 - Call to action is to ensure guest specific PV driver issues are not ignored since good IO performance in HVM guests is currently conditional upon support for PV drivers
 - > Experiencing problems booting 32-bit guests (with PV drivers) in 64-bit environment
 - > Experiencing problems running PV Drivers on 64-bit non Linux guests

Power Management

- Support power management in hypervisor
 - ACPI sleep states
 - CPU Frequency Scaling (259985)
 - Feature parity with KVM. (#259985, #200482)
 - Suspend to disk or RAM (163626)
- Especially important for desktop virtualization

Migration Issues

- Authentication
 - Early support in the XenAPI in xen-unstable, but it would be nice to have the authentication mechanism be pluggable.
- Improve Security
 - Encrypt data sent over the wire
- Transactional protocol
 - Protocol needs transactional semantics. If any errors occur, VM should still be running on original machine. (#173821, 180536, 196171, 239782)
 - Needs to ensure that the migration can succeed before it begins
 - Needs to ensure that it did succeed before shutting down VM on original server (239782, 180536, 173821, etc.)

Scheduler

- Improve Credit scheduler
 - Often needlessly moves VMs between physical CPUs. (#262582)
 - Need smarter CPU-VM affinity optimizations
 - Default behaviour for credit scheduler could be more efficient

Performance Issues

- Take performance seriously
 - Need more testing by everyone
 - More effort to ensure code submissions are not only technically correct but do not degrade performance
- Increase IO performance of network bridge
 - 10% performance degradation in the bridge alone

Community and Upstreaming

- Get Xen PV support accepted into upstream Linux!
 - Significantly reduce to work distros have to make Xen technology available to public
 - Enterprise distros stick with a kernel version for the life of the product.
 - > Back porting is extremely painful
- Strengthen community support
 - Hypervisor based virtualization
 - > Workload isolation
 - > Performance isolation
 - > Container security via TPM/hardware support
 - Dom0 tools
 - Management issues

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