Two Enhancements for Native Inferno

Brian L. Stuart

University of Memphis

4th International Workshop on Plan 9
Port/Translation of the new Plan 9 USB subsystem

Kernel Drivers

- Mostly drop-in additions to the Inferno kernel
- kproc(10) has a different number of arguments
- Some memory allocation calls are different
- ilock(10) needed to be released before wakeup(10)
- OHCI initialization needed reordering
USB Library and usbd

- Translated from C to Limbo
- Source files consolidated into usb.b, usb.m, and usbd.b
- usbd local file server omitted
- Lower level parts were a direct translation
Upper-Level USB Drivers

- Existing Inferno USB database retained
- Existing Inferno dynamic loading retained
- New drivers for keyboard, mouse, and mass storage modeled on existing Inferno drivers and new Plan 9 drivers
Further Work

- Fold in most recent changes to Plan 9 code
- More testing and debugging
- Implement other upper-level drivers, e.g. Ethernet
Baseline VGA

- Original VGA hardware limited: best modes 320x200x8 and 640x480x4
- Almost all existing VGA controllers implement these modes
- Only modes common to all controllers
VGA Driver

- Driver programs controller registers on drawinit
- Supports both 320x200x8 and 640x480x4
- Initial 640x480 colormap is a compromise
- Implements software graphics cursor
Further Work

- Debug in qemu
- Mode X?
- VESA 3 protected mode entry points?