Outline

• Motivation and Background
• Proposed Architecture
• Current Status
Motivation and Background
Current Situation

- CPUID handling
- MSR handling
- Hypercall page management
Motivation

- Experiment with progressive para-virtualization
- Support Guest OS specific APIs for enhanced performance
- Vendor specific enhancements
  - Support “Enlightened” proprietary guests
Key Requirements

• Granular extension:
  – Per-domain basis
  – Run-time selectable

• Modular
  – Controlled interaction with core Xen code

• Minimal performance impact

• Extensible
Proposed Architecture
Extension Architecture

Core Xen

Extension Framework

Extension I

Extension II
Extension Framework

• Supports per-domain extension
  - Manages extension binding – domain attributes currently used to specify extension ID.
  - Exposes Xen APIs available for consumption by the extension modules.
  - Hooks to trigger the extension code
Intercepts (work in progress)

- Domain Create
- Domain Destroy
- VCPU Initialize
- VCPU Destroy
- CPUID
- MSR (Read/Write)
- Hypercall handling
- Continuation
Xen Dependencies

- HVM function table
- Memory management
- MMIO handler
- VCPU (Pause/Unpause)
- Time and Timeout management
Current Status
Status & Future Plans

• Everything described here is currently functional.
  - Enlightened longhorn is functional on the Novell extension.
• Experimenting with “Progressive Para-Virtualization”
• Experimenting with different “intercept strategies”
• Experimenting with packaging options
Color Palette

Note:
The gray dotted-line box represents the margins or “working area” into which all text and most graphics and diagrams should conform.

How to Add Novell Colors to Your OpenOffice Color Palette:
1. Go to the “Tools” menu
2. Select “Options”
3. Expand “OpenOffice.org”
4. Select “Colors”
5. Delete existing colors (one-by-one)
6. Add Novell Colors by giving them a name and entering RGB values
7. Click “OK”