

RED HAT :: NASHVILLE :: 2006

SUMMIT



Building blocks for managing virtualized systems

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Overview

- Stable, standard, simple application APIs
- Local administration & control tools
- Services for constructing policy



libVirt API

- Stable, standard, simple
- Interface to the hypervisor
- Library for application development
- Community directed project (<http://libvirt.org>)
- LGPL license



libVirt: Stable API

- Isolation from Xen hypervisor changes
- Isolation from XenD / XenStoreD changes
- Stable library API
- Error handling



libVirt: Standard API

- Vendor neutral library
- Hypervisor portable (QEMU, L4, ...)
- IBM & Novell CIM providers
- Well-defined XML hardware definition
- Distributed in Fedora Core 5+



libVirt: Simple API

- Privileged or unprivileged (read only) usage
- Core C API
- Python & Perl bindings
- Shell scriptable tool



Tools

- Local administration
- Developer / QA assistance
- Layer above libVirt APIs



virsh

- Exposes libVirt functionality
- Command line administration tool
- Interactive administrator shell
- Scriptable batch operations
- Distributed with libVirt in Fedora Core 5+



gnome-applet-vm

- Desktop panel applet
- Status of active virtual machines
- Built using libVirt
- Distributed in Fedora Core 5+
- Interface to manager via DBus



gnome-virt-manager

- Virtual machine management
- Local desktop GUI tool
- Live resource utilization graphs
- Hardware configuration & tuning
- Graphical guest OS console



Services

- Higher level services for applications
- Stateful interaction with guest OS
- Interface for remote services
- Co-operating building blocks



Services: Monitoring

- Hypervisor resource utilization
- Guest OS kernel statistics
- Application performance statistics
- Feed to desktop manager application
- Feed to policy daemon



Services: Events

- Analyse performance statistics
- Generate events for abnormal conditions
- Asynchronous hypervisor events
- Application event feed from guest OS
- Execute scripts associated with events



Services: Resource Policy

- VM resource allocation profiles
- Required hardware capabilities
- Runtime execution SLA
- Hypervisor, realtime policy
- Local host, live policy
- Remote host, long term policy



Review

- libVirt - Stable, simple, standard APIs
- Tools - local administration & developer / QA
- Services – performance, events, resources

