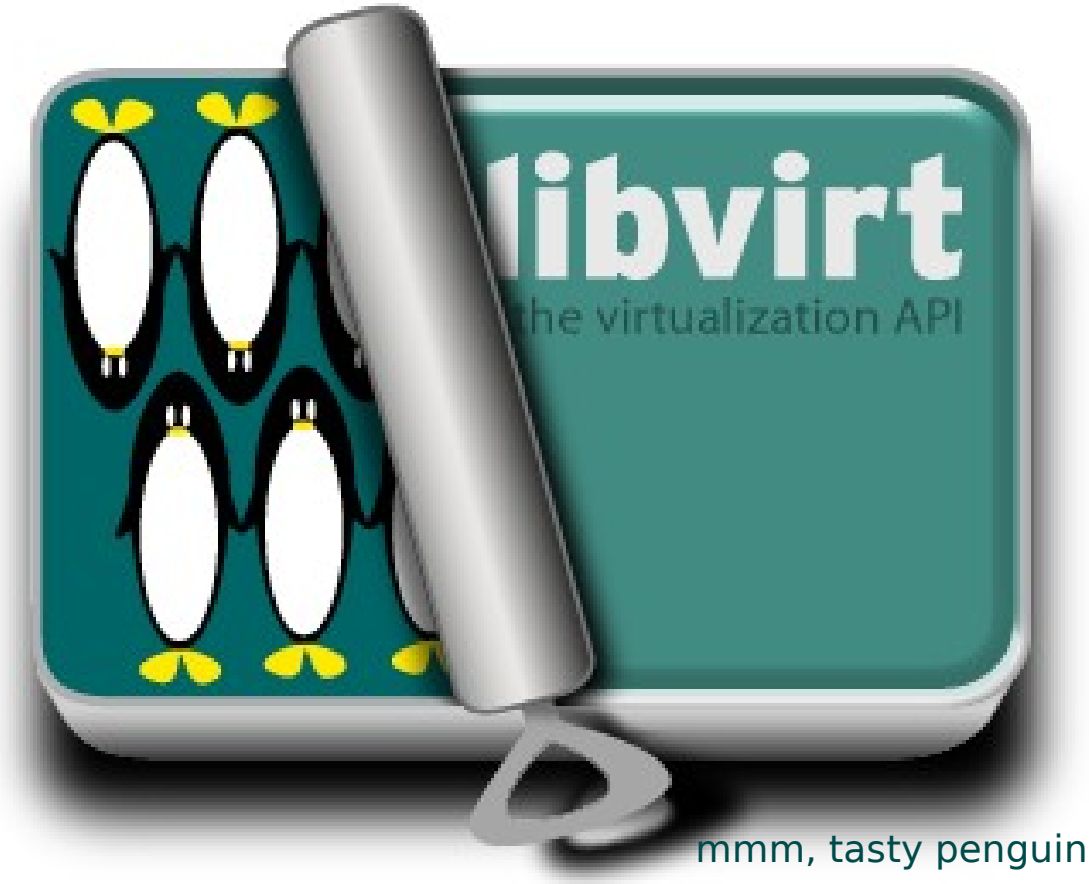
Virtualization Mini Summit, Austin 2008



mmm, tasty penguins...

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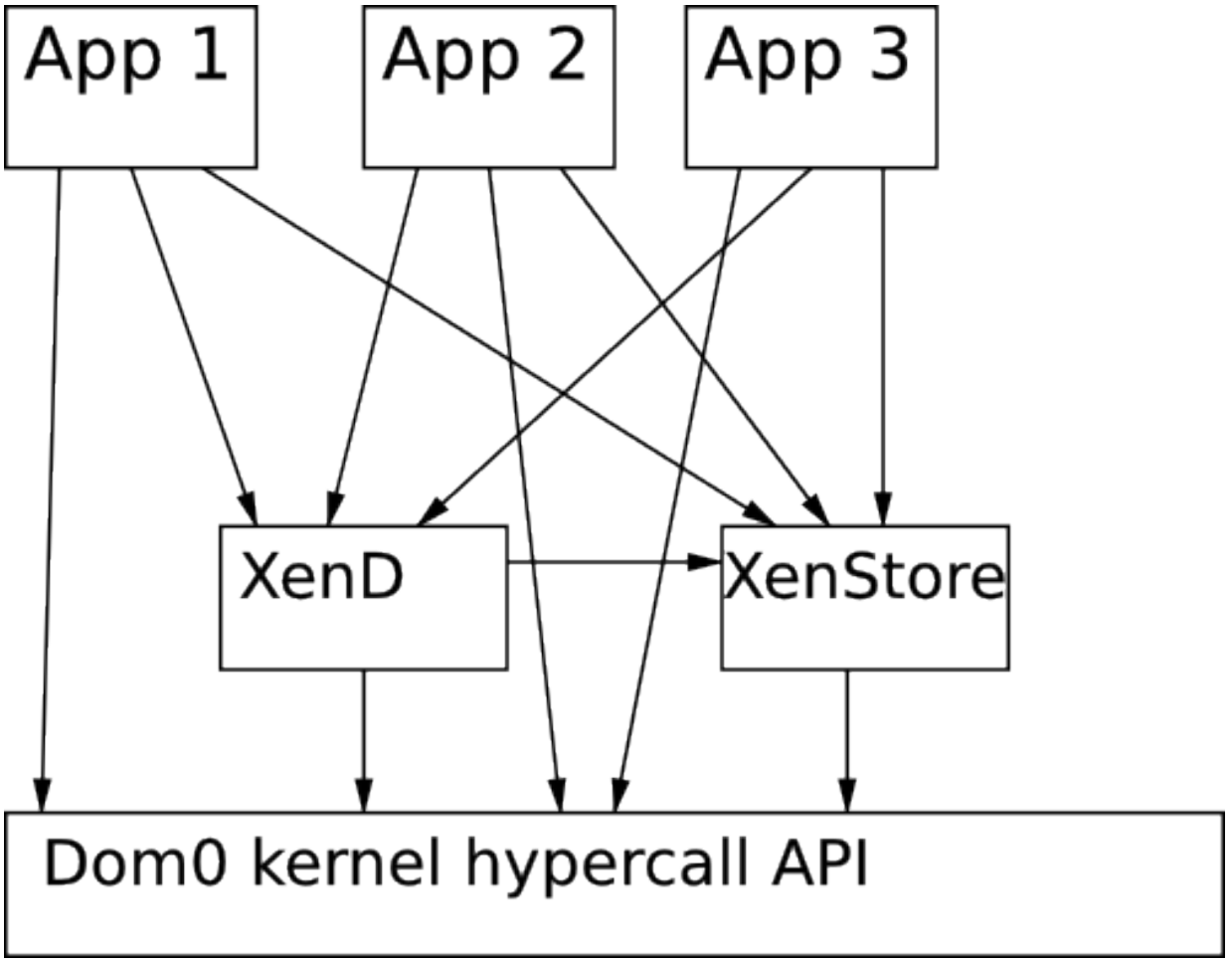
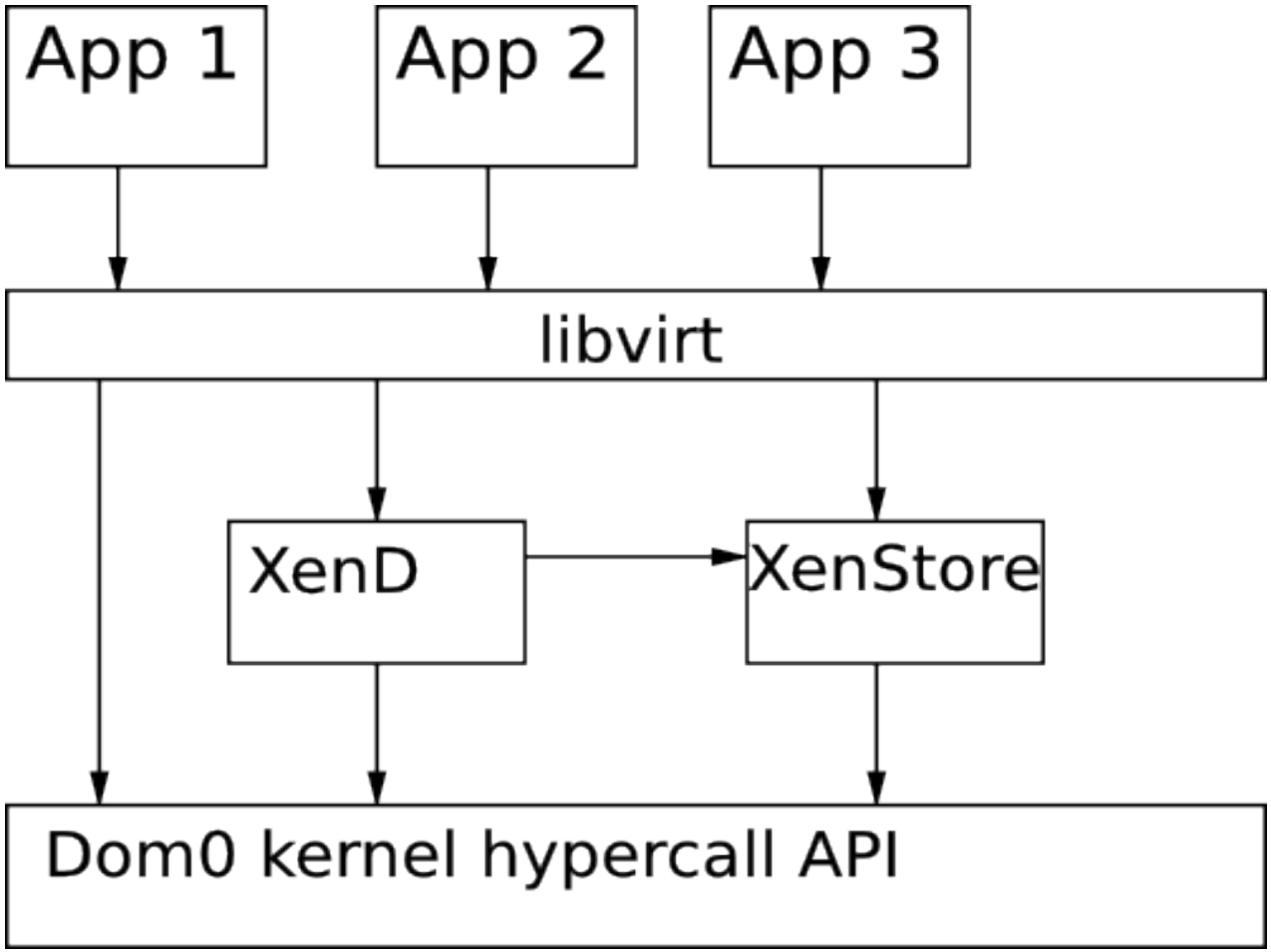
libvirt: Why?

- Stable: isolation from HV API changes
- Standard: portable across HV
- Simple: rapid application development
- Portable: Linux, Windows & OS-X Client
- Secure: TLS + x509, Kerberos, SSH, Polkit

Xen architecture



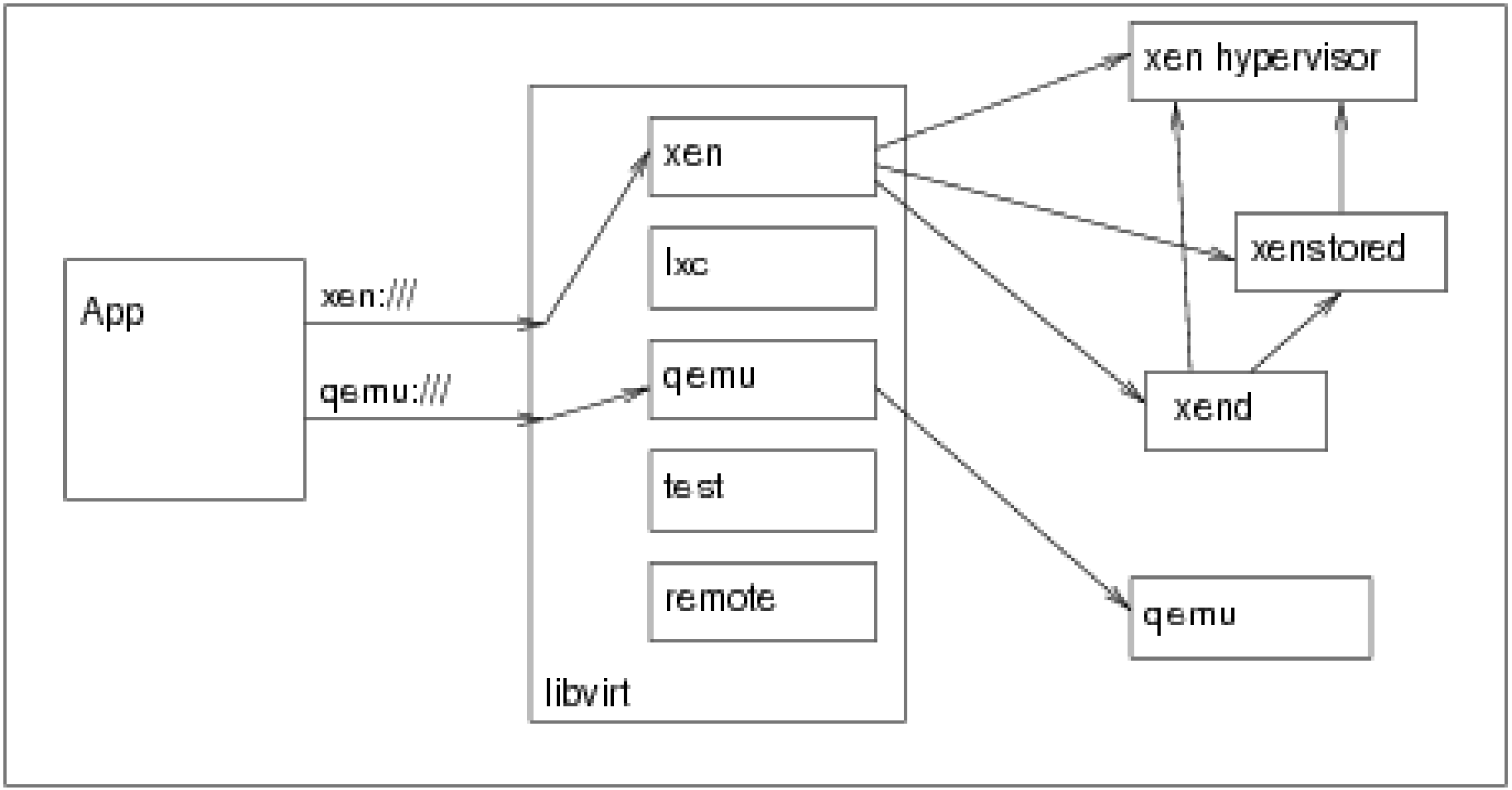
libvirt: Xen Driver



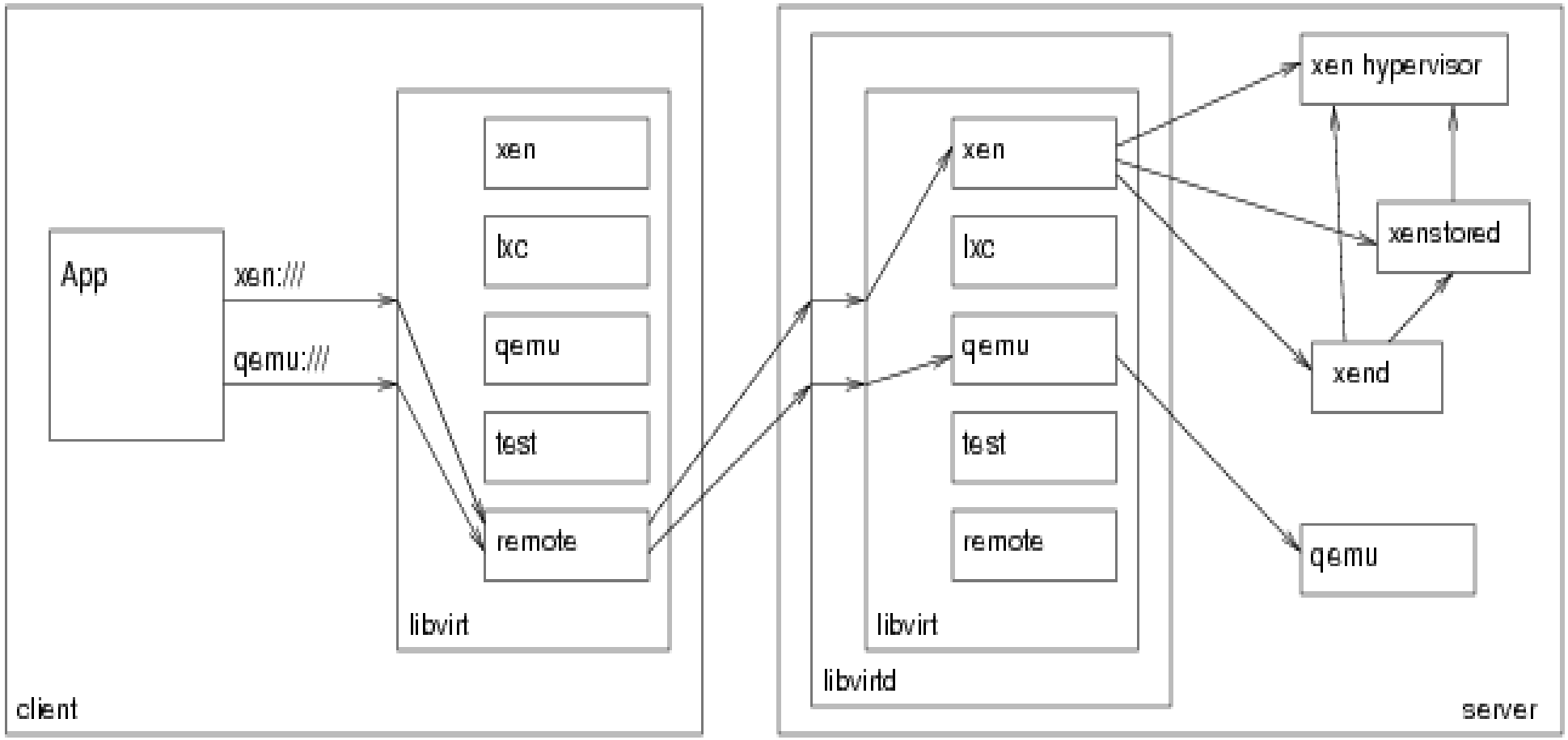
libvirt: What?

- Xen – XenD, XenStoreD, libxc
- QEMU – KVM, KQEMU, QEMU, Xenner
- LXC – native Linux containers
- OpenVZ – alternate containers
- Test – 'mock' hypervisor
- Remote – RPC access to APIs
- Future... VMWare ? Hyper-V ? VirtualBox?

libvirt: How?


App
xen:///
qemu:///
xen
lxc
qemu
test
remote
libvirt
xen hypervisor
xenstored
xend
qemu

libvirt: How?


App
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qemu:///
xen
lxc
qemu
test
remote
libvirt
client
xen
lxc
qemu
test
remote
libvirt
libvirtd
xen hypervisor
xenstored
xend
qemu
server

libvirt: Where?

- virsh: command line admin tool/shell
- gnome-applet-vm: VM monitoring
- virt-manager: desktop manager app
- virt-inst: install, clone, deploy appliance
- cobbler/koan: kickstart over a network
- rhn: red hat network management
- Ovirt: data center management

libvirt: Resource Management

- Mechanism not policy
- Schedular caps/guarantees
- Disk/net I/O priorities
- Disk/net I/O caps/guarantees
- Stats collection / analysis
- User cap (ulimit per user ? Cgroups?)
- Realtime ?

libvirt: Security

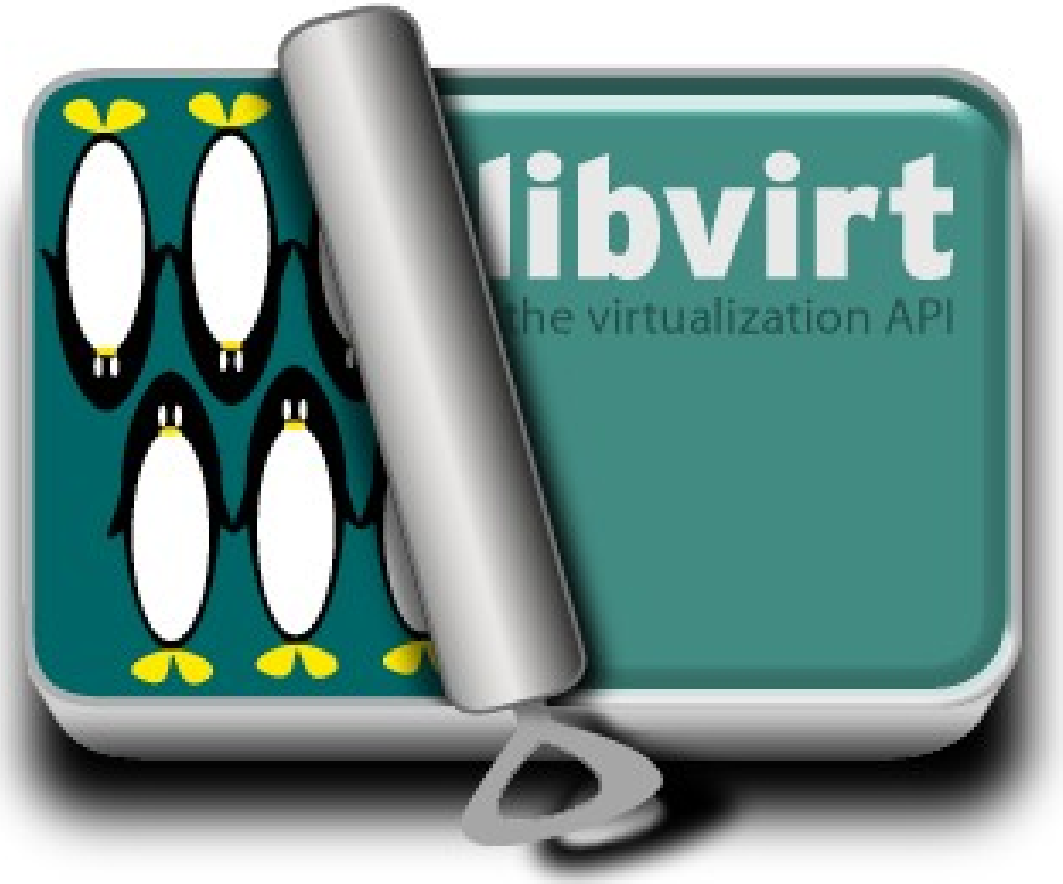
- Mandatory Access Control (SELinux)
- Control user API access
- Protect host from guest (protect disks)
- Protect guest from guest (isolate VMs)
- Protect network from guest (isolate LAN)
- Audit events / operations

libvirt: System Model

- Need for pre-migration “safety” checks
- Storage – no libraries, all CLI :-(
- Network – no libraries, all CLI :-(NM?
- Host devices – sysfs - yuk. HAL - Yay !
- Hypervisor capabilities.

libvirt: QEMU

- Monitor / CLI stability
- VirtIO hotplug
- USB re-directed over wire
- Sound re-directed over wire
- Keyboard mappings
- Kerberize VNC
- 3d accelerated desktop



http://libvirt.org/