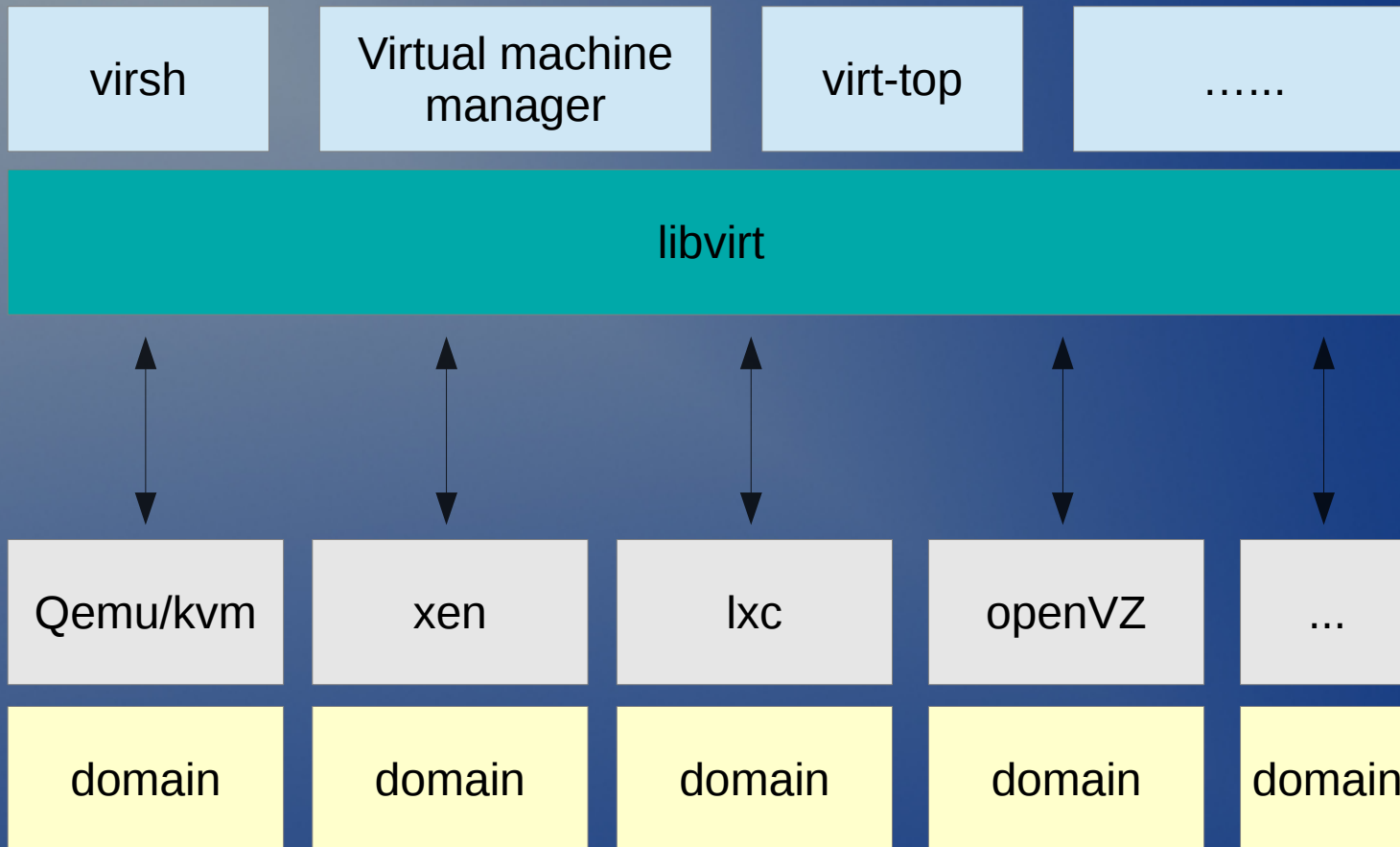# Libvirt Towards Enterprise Use

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Introduction

- kvm is maturing to be an enterprise virtualization solution

- qemu/kvm's UI is complicated

- libvirt: a toolkit to interact with the virtualization capabilities of Linux

Introduction

virsh	Virtual machine manager	virt-top	…...

libvirt

Qemu/kvm	xen	lxc	openVZ	...

domain	domain	domain	domain	domain

how libvirt fit in enterprise virtualization

- easy management of a large number of domains

- resources control of domains

- monitoring of domains

- stability

- security

management of domains

- settings of domains are saved in xml file
- list active and inactive domains
- start up a domain
- shutdown a domain
- forcibly shutdown a domain

Resources Control

- cpu – cpu cgroup and cpuset cgroup

- memory – cpuset cgroup

- disks – blkio cgroup

- network

Resources Control: cpu

- cpu
  - the number of virtual cpus of domain
  - pin virtual cpus on specific physical cpus
  - control cpu bandwidth of a domain
- examples
  - virsh setvcpus dom 2
  - virsh vcpupin dom 0 0-2

Resources Control: memory

- memory
  - set the amount of memory of domain
  - soft/hard limit of memory
  - limit of NUMA nodes
- examples
  - virsh setmem dom 1048576
  - virsh memtune dom –soft-limit 524288

Resources Control: disks

- disk

  - add/hot-plug a disk into a domain

  - remove/hot-unplug a disk from a domain

  - set disk weights for domains

  - set disk io rate for domains

- examples

  - virsh attach-disk dom /path/to/disk/image

  - virsh blkdeviotune dom vda –write-bytes-sec 10000

Resources Control: network

- network
  - add/hot-plug NICs into domains
  - remove/hot-unplug NICs from domains
  - set outbound/inbound network rates for domains
- examples
  - virsh attach-interface dom network default
  - virsh domiftune example-domain "52:54:00:be:77:bf"

domain monitoring

- domain status
  - running
  - paused
  - panic
  - shutoff
- cpu usage
- memory usage

misc

- send-key: send key strokes to domains without opening console

- inject-nmi: inject nmi to domains from host

- automatic dump: automatic dump guests when guest OS panics.

Thank You.