



New qemu technology used in virt-v2v

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virt-v2v converts guests
from VMware, Xen, and Hyper-V,
OVAs and physical machines,
so they run efficiently on KVM

virt-v2v exports to OpenStack, RHEV,
libvirt, plain KVM, and local disk

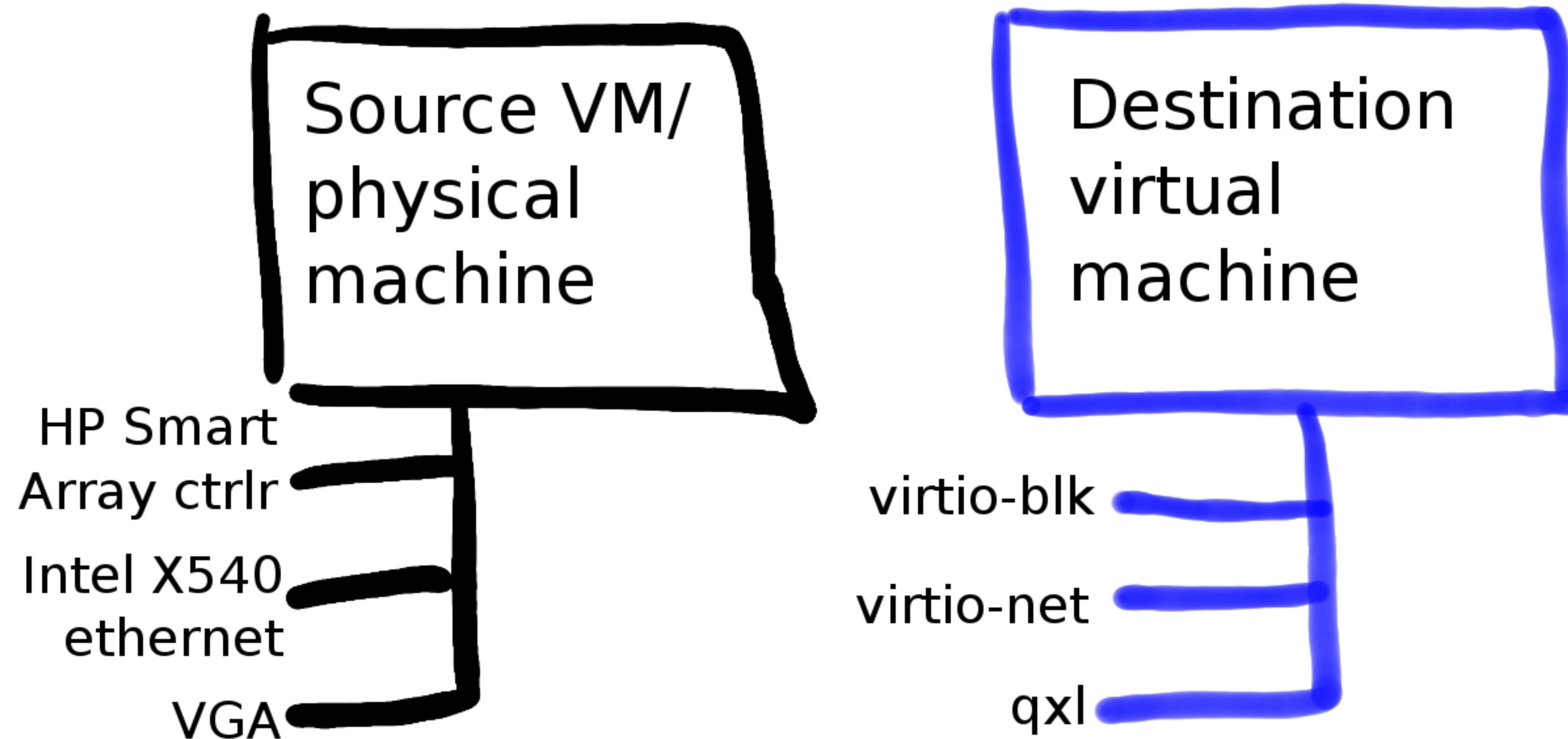
guests supported are: RHEL 3+,
Windows XP — 7, Fedora, OpenSUSE

Running virt-v2v

```
$ virt-v2v -i disk windows.qcow2 -o local -os .
[  0.0] Opening the source -i disk windows.qcow2
[  0.2] Creating an overlay to protect the source from being modified
[  0.6] Opening the overlay
[ 15.0] Initializing the target -o local -os .
[ 15.0] Inspecting the overlay
[ 15.5] Checking for sufficient free disk space in the guest
[ 15.5] Estimating space required on target for each disk
[ 15.5] Converting Microsoft Windows 7 Phony Edition to run on KVM
virt-v2v: This guest has virtio drivers installed.
[ 15.6] Mapping filesystem data to avoid copying unused and blank areas
[ 15.7] Closing the overlay
[ 15.9] Checking if the guest needs BIOS or UEFI to boot
[ 15.9] Assigning disks to buses
[ 15.9] Copying disk 1/1 to ./windows-sda (qcow2)
      (100.00/100%)
[ 16.3] Creating output metadata
[ 16.3] Finishing off

$ █
```

What's the difficult bit?



virt-p2v CD/ISO/PXE



virt-p2v

Connect to a virt-v2v conversion server over SSH:

Conversion server:

SSH port:

User name:

Password:

☐ Use sudo when running virt-v2v

virt-p2v CD/ISO/PXE



virt-p2v

Target properties

Name: p2vtest

vCPUs: 1

Memory (MB): 1024

Virt-v2v output options

Output to (-o): local ▾

Output conn. (-oc):

Output storage (-os): /var/tmp

Output format (-of):

Output allocation (-oa): sparse ▾

☒ Enable server-side debugging
(This is saved in /tmp on the conversion server)

Information

virt-p2v (client) 1.28.1

virt-v2v (conversion server) 1.30.0

Fixed hard disks

Convert	Device	Size (GB)	Model
☒	sda	0	QEMU HARDDISK

Removable media

Convert	Device
☒	sr0

Network interfaces

Convert	Device	Connect to virtual network
☒	eth0 52:54:00:12:34:56 Intel Corporation	default

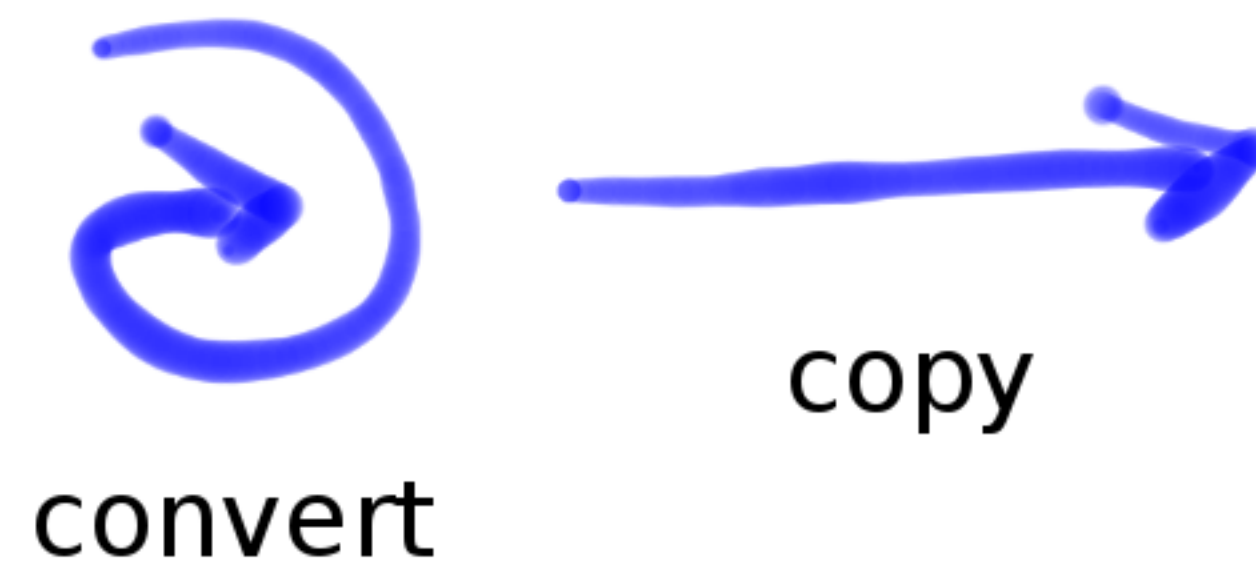
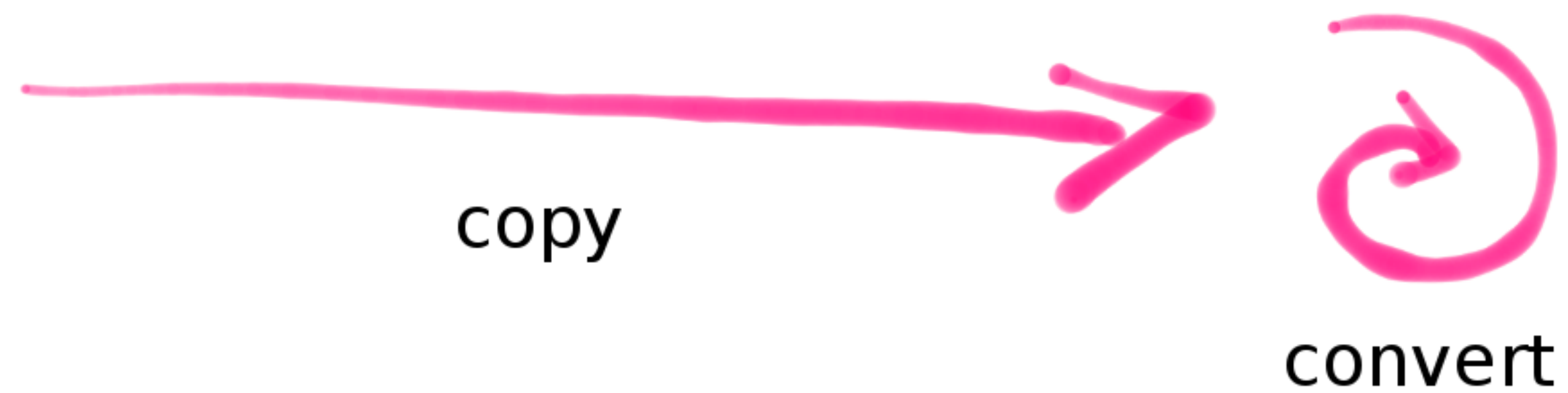
Back

Start conversion

virt-v2v 2009 vs 2014

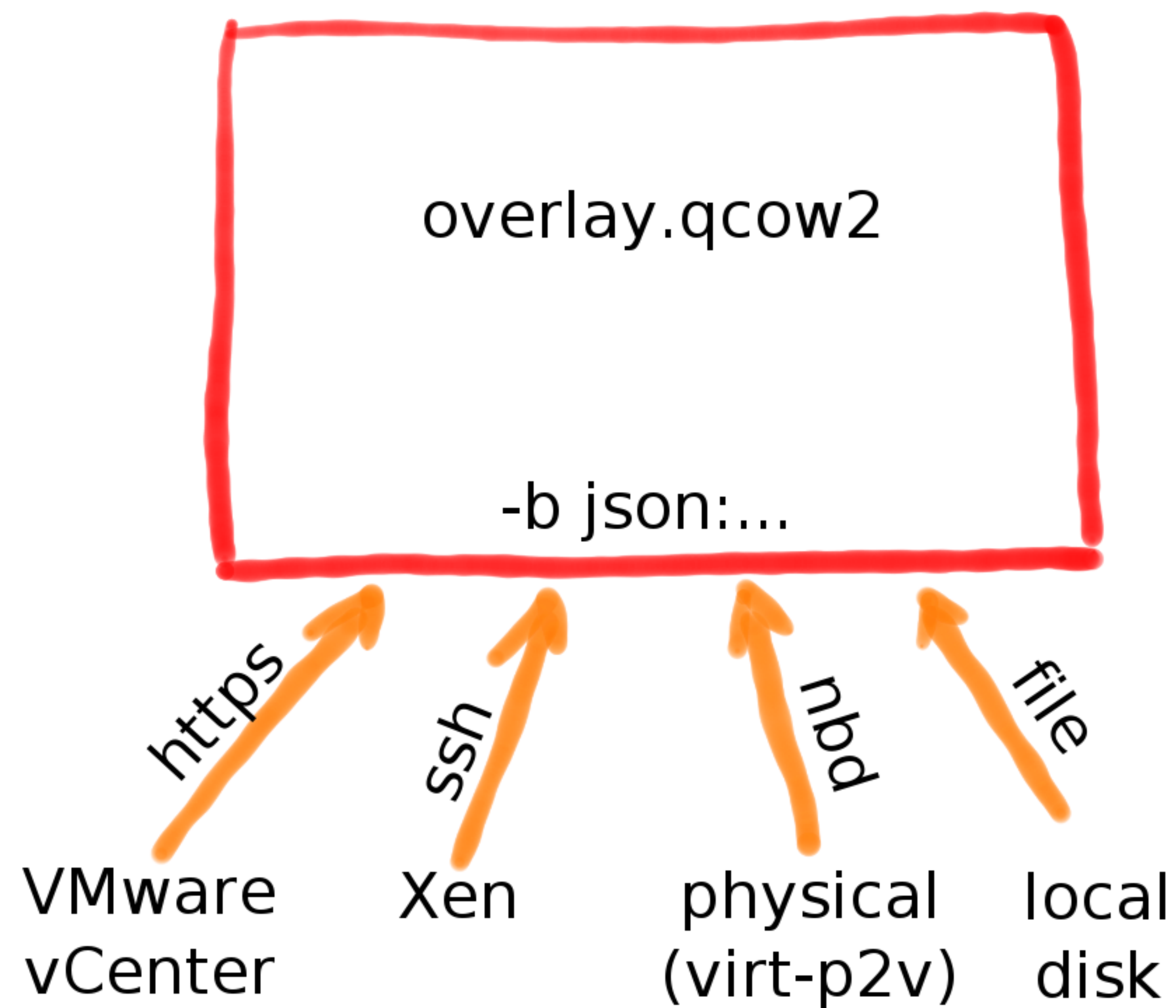


2009 virt-v2v

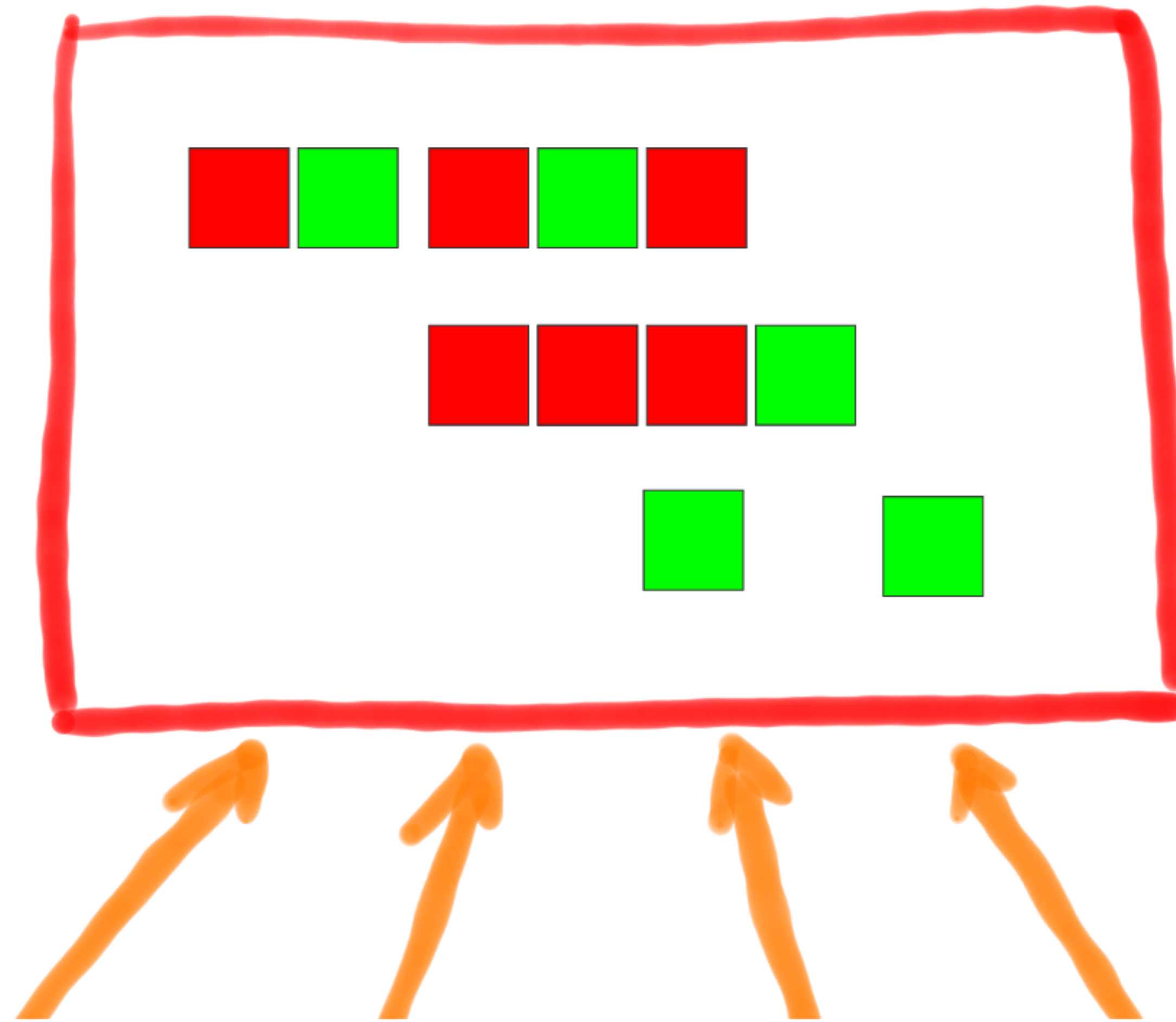


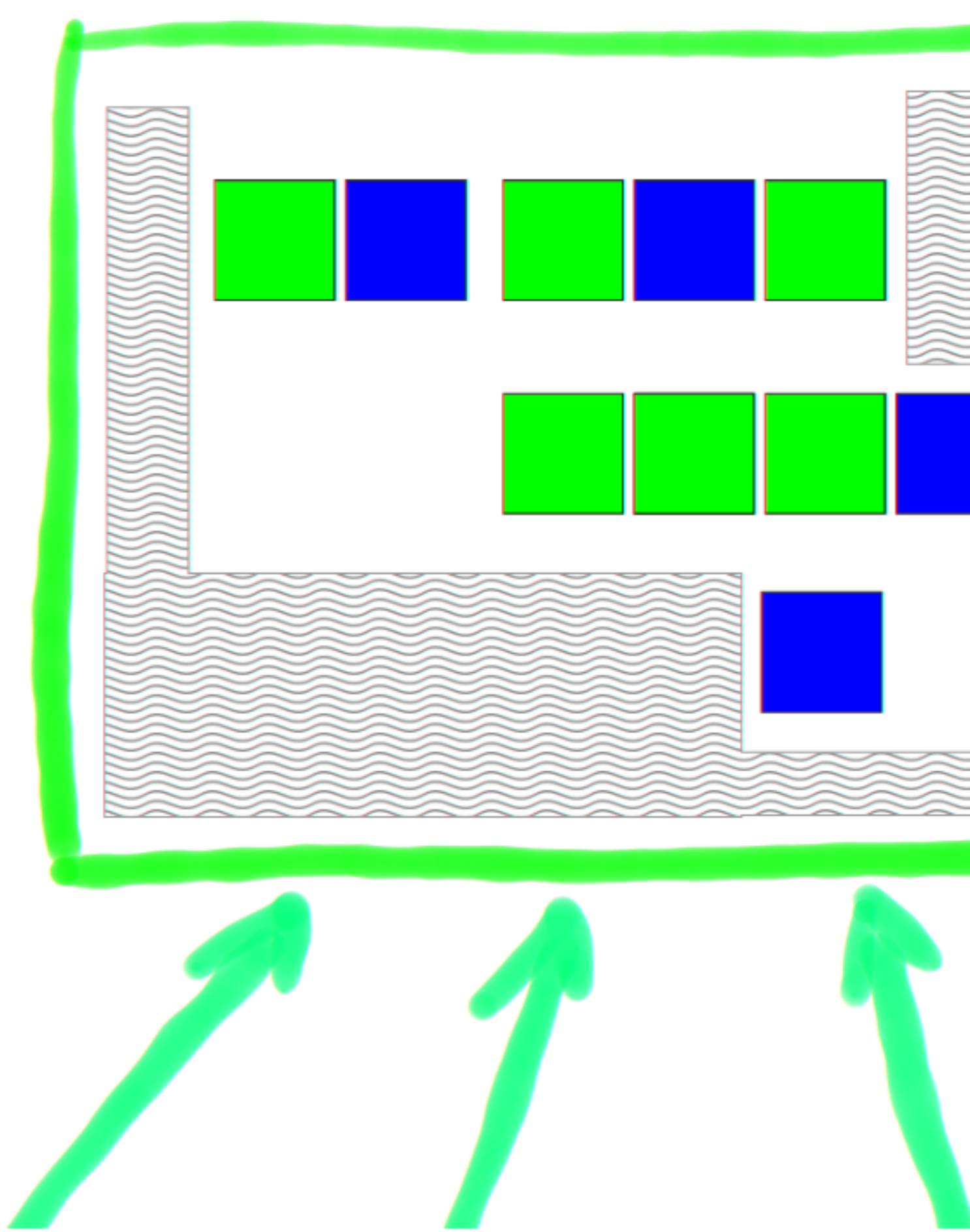
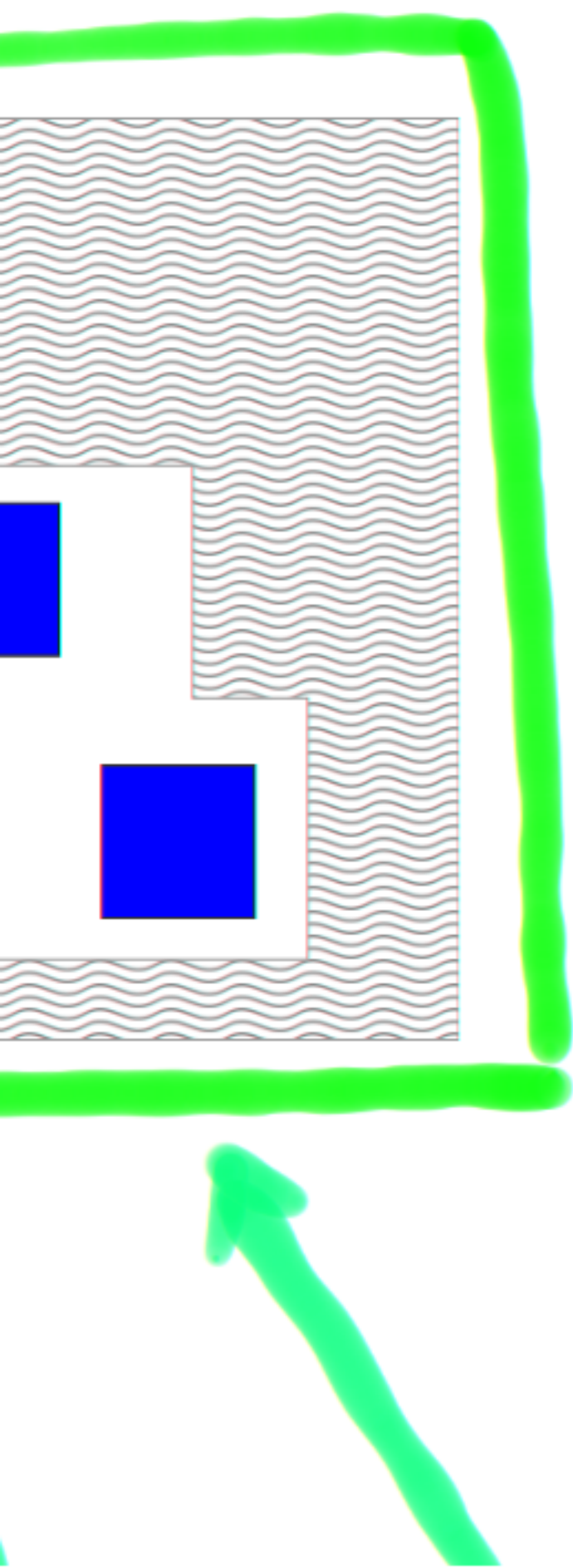
2014 virt-v2v

Overlay with network backing disks

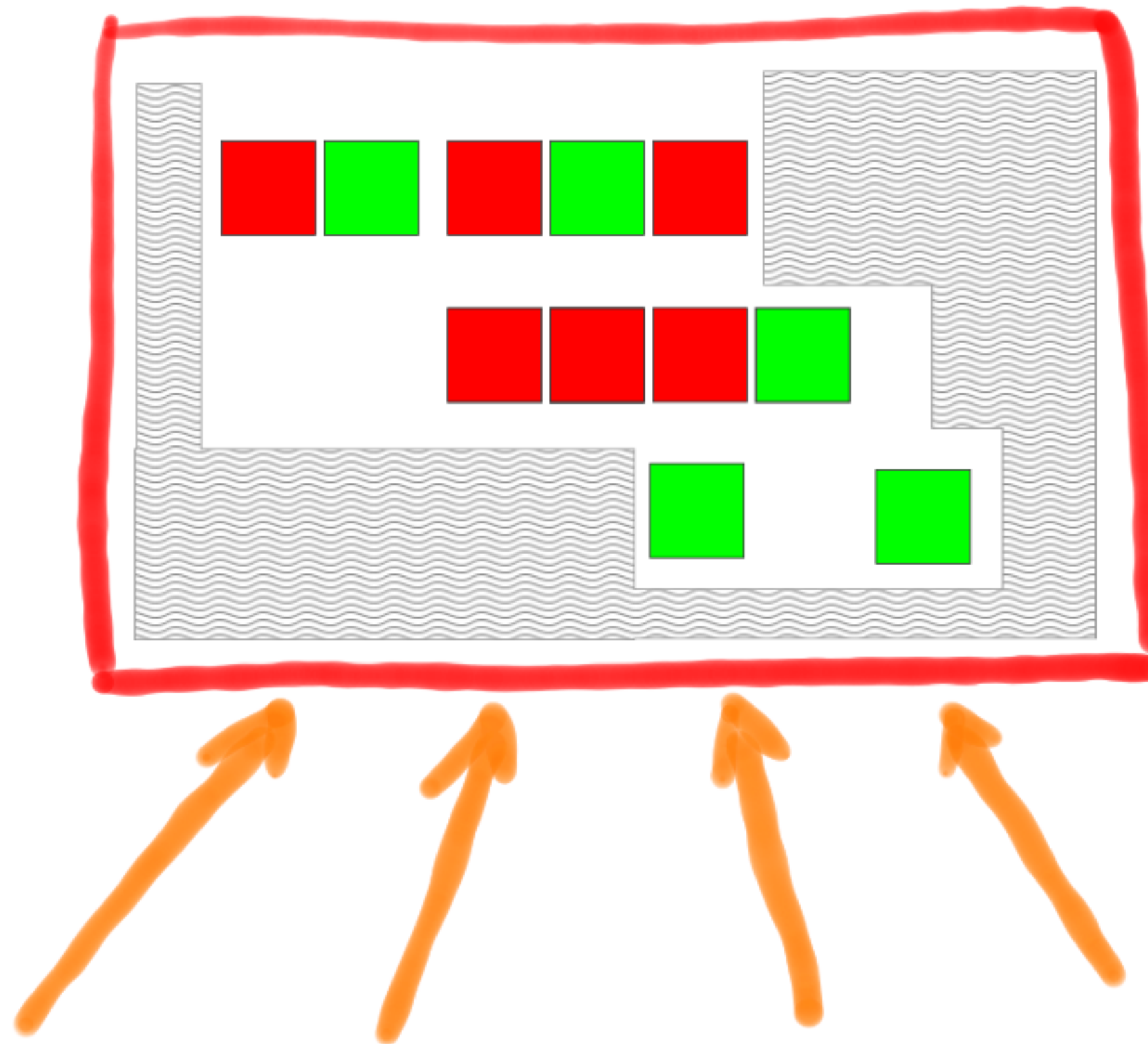


Caching reads and writes





copy & convert



→
qemu-img convert
overlay.qcow2
destination

New features



block/curl

Matthew Booth fixed a few bugs affecting modern curl, and now it works reliably

Daniel Barboza added **timeouts**

I added **cookie** support (for VMware vCenter)

block/ssh

I added this driver (for Xen)

It needs a bit of work still

copy-on-read

discard & fstrim

qemu has had excellent discard support for a few years

I added support for fstrim to **ntfs-3g**

Massively reduces the time taken to copy guests

"json:" paths

Less error-prone than ordinary qemu block paths

qcow2 v3

Several enhancements, but the most important is support for zero clusters

Competitors



virt-v2v & virt-p2v



- Project page and sources:
[lib guest fs.org](http://libguestfs.org)
- <http://libguestfs.org/virt-v2v.1.html>
- <http://libguestfs.org/virt-p2v.1.html>
- Fedora $\geq$ 21, RHEL $\geq$ 7.1, Debian/experimental, Ubuntu 15.x
- Used widely by Red Hat customers