

# Working with the Xen Hypervisor

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**David Clinton**

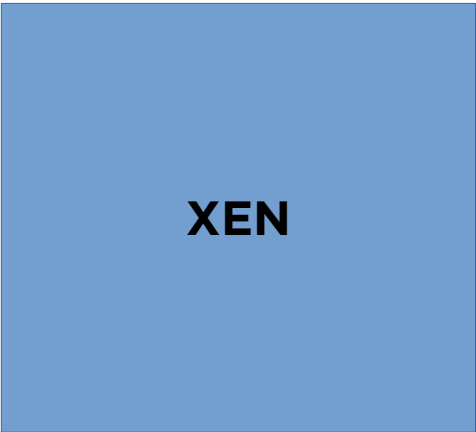
LINUX SYSTEM ADMINISTRATOR

@davidbclinton | [www.bootstrap-it.com](http://www.bootstrap-it.com) | [www.bootstrap-it.com/blog](http://www.bootstrap-it.com/blog)

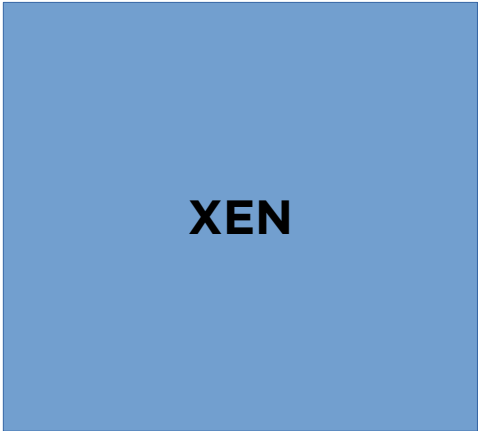
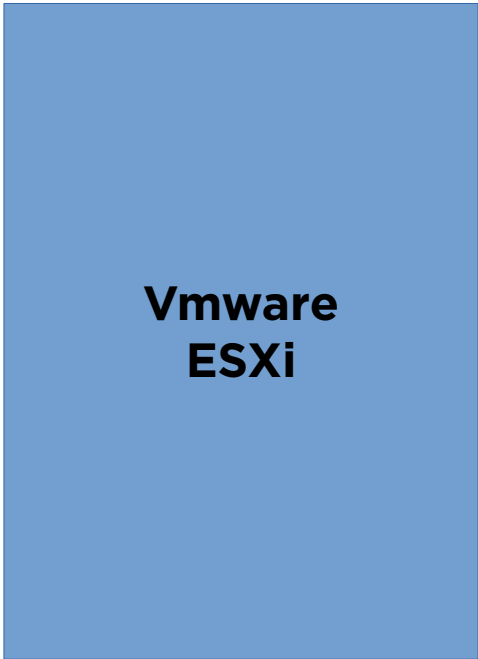
Hypervisor  
Market  
Penetration



Hypervisor  
Market  
Penetration



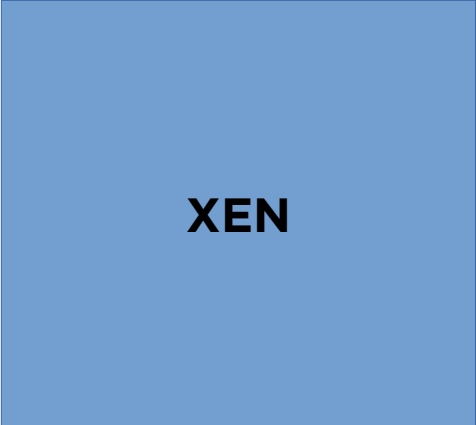
Hypervisor  
Market  
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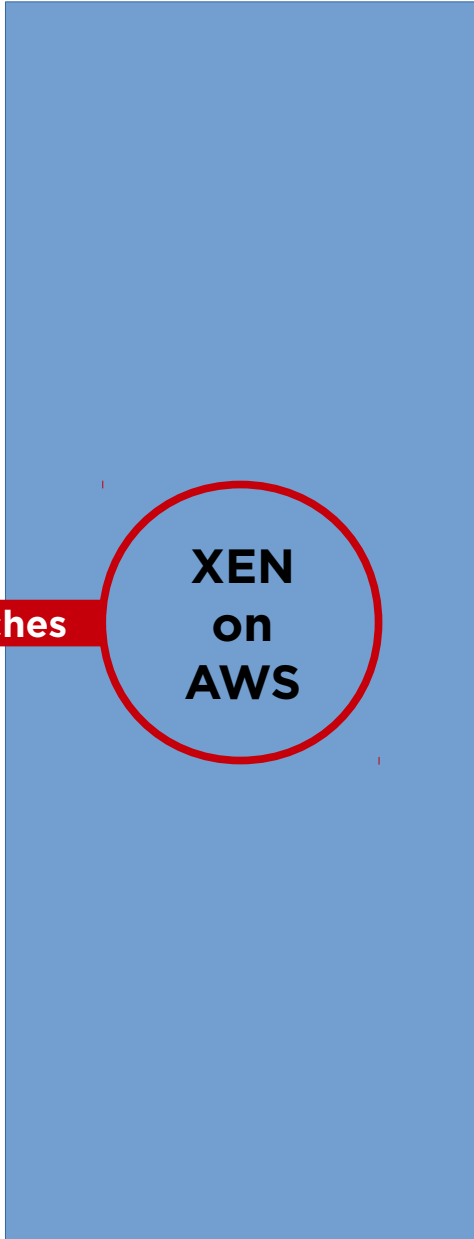
**Vmware  
ESXi**



**XEN**

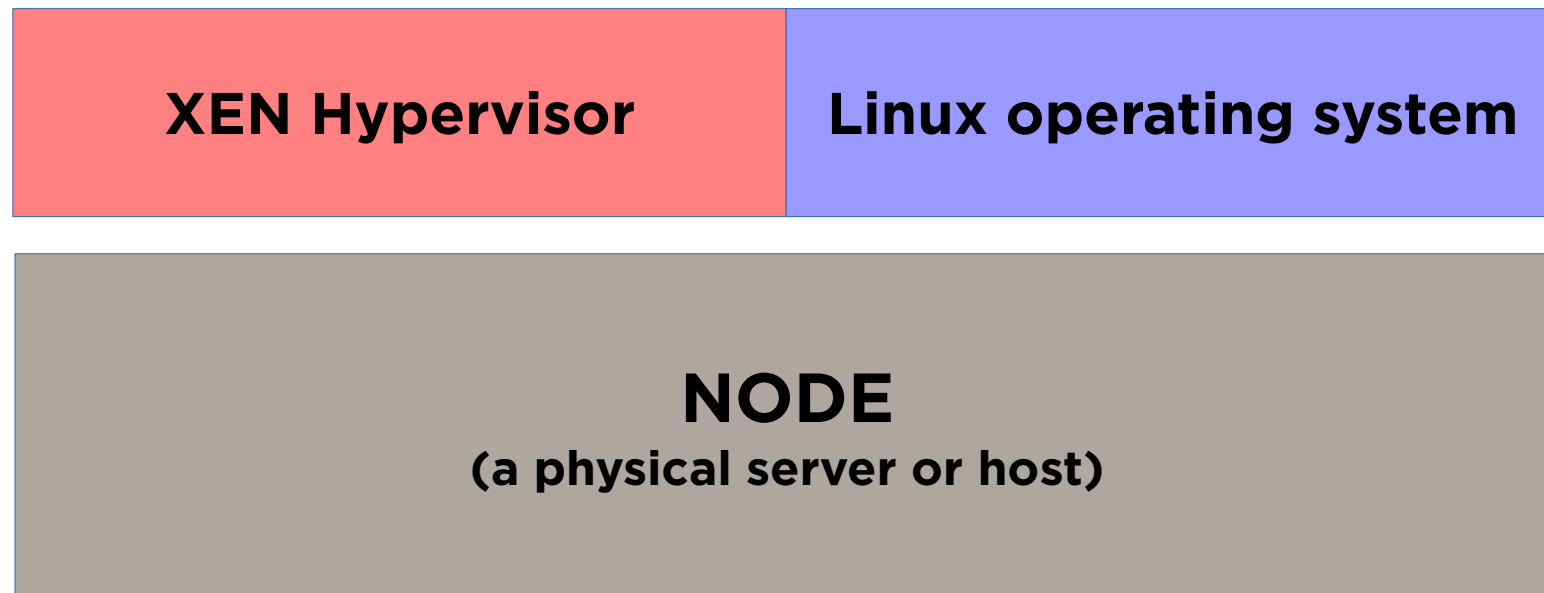


**AWS-generated patches**

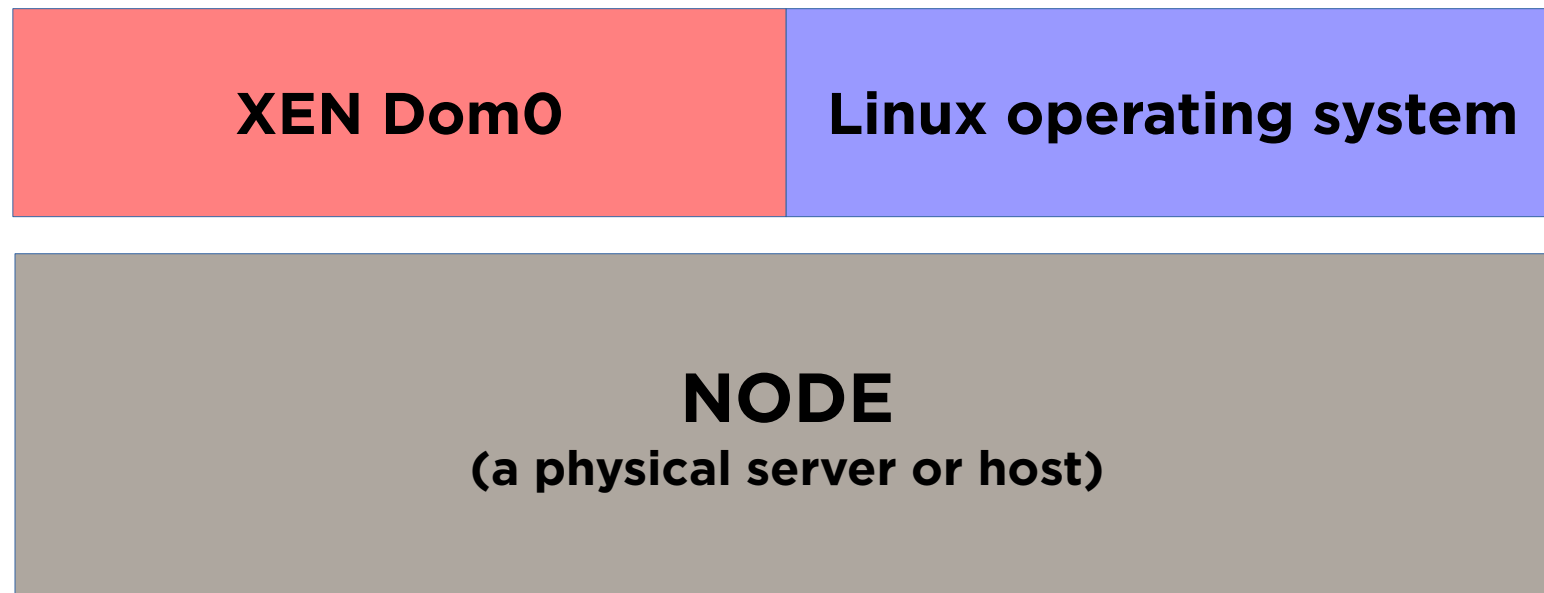


**XEN  
on  
AWS**

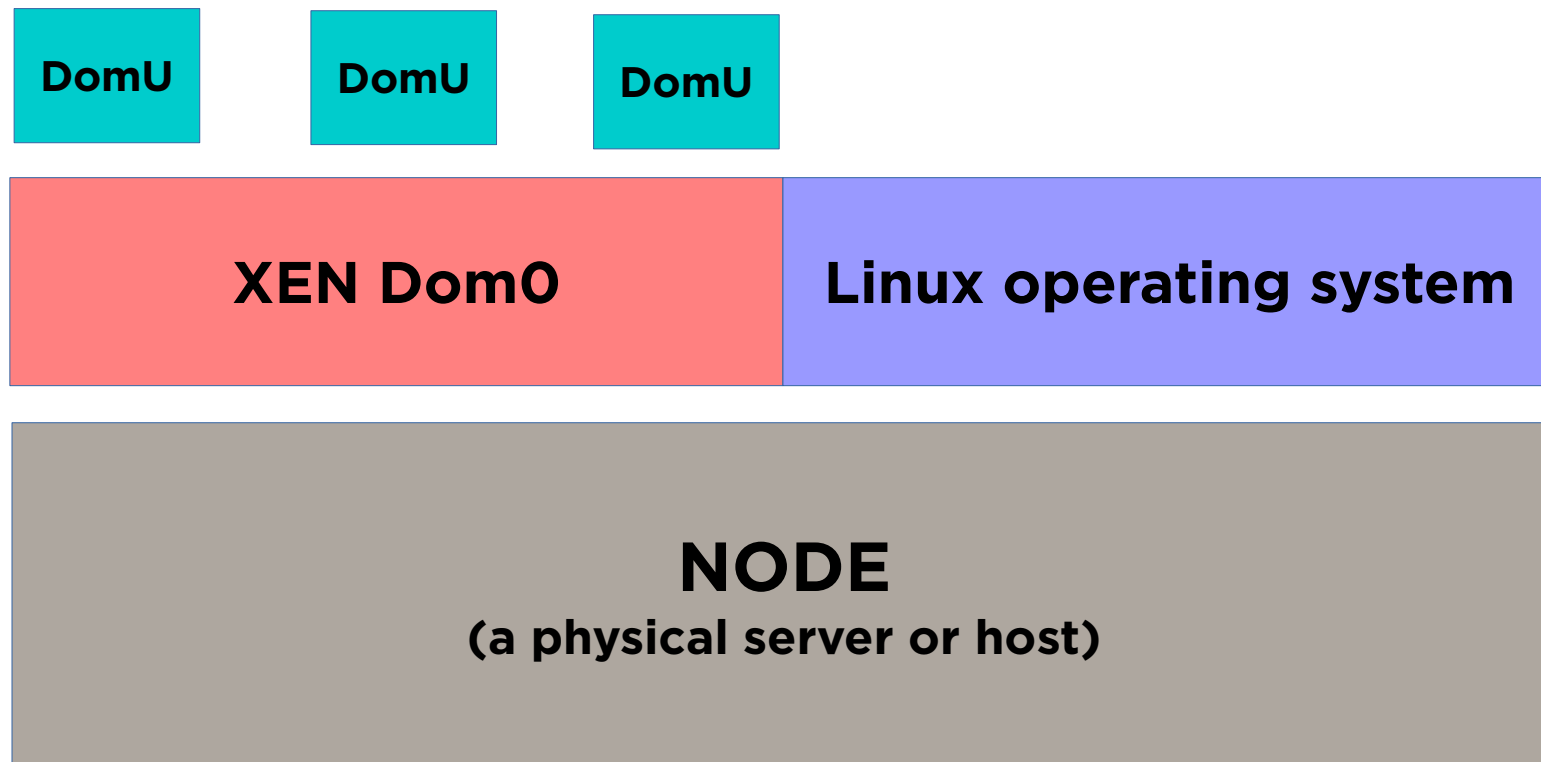
XEN  
Architecture



XEN  
Architecture



XEN  
Architecture





# Xen: Preparing Your Hypervisor

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## Xen: Create a Paravirtual Guest

---

xen-create-image  
Parameters

```
sudo xen-create-image \  
  --hostname=myNewGuest \  
  --memory=512mb -vcpus=2 \  
  --lvm=vgs0 --dhcp --pygrub \  
  --dist=trusty
```

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sudo xen-create-image \  
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  --dist=trusty
```



.cfg file  
(generated by  
xen-create-  
image)

```
# Configuration file for the Xen instance myNewGuest, created
# by xen-tools 4.4 on Mon Feb 29 14:06:24 2016.
# Kernel + memory size
bootloader = '/usr/lib/xen-4.4/bin/pygrub'

vcpus      = '2'
memory     = '512'

# Disk device(s).
root       = '/dev/xvda2 ro'
disk       = [
                'phy:/dev/vg0/myNewGuest-disk,xvda2,w',
                'phy:/dev/vg0/myNewGuest-swap,xvda1,w',
            ]

# Physical volumes
#
# Hostname
#
name       = 'myNewGuest'
# Networking
#
dhcp       = 'dhcp'
vif        = [ 'mac=00:16:3E:59:A0:CD' ]
# Behaviour
#
on_poweroff = 'destroy'
on_reboot   = 'restart'
```

.cfg file  
(generated by  
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```

## Xen: Create an HVM Guest

---

/etc/xen/  
ubuntu-  
hvm.cfg

```
builder = "hvm"  
name = "ubuntu-hvm"  
memory = "2048"  
vcpus = 1  
vif = ['bridge=xenbr0']  
disk = ['phy:/dev/vg0/ubuntu-hvm,hda,w','file:/home/ubuntu/ubuntu-  
14.04-desktop-amd64.iso,hdc:cdrom,r']  
vnc = 1  
boot="dc"
```

/etc/xen/  
ubuntu-  
hvm.cfg

```
builder = "hvm"
```

```
name = "ubuntu-hvm"
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```
memory = "2048"
```

```
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```
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vnc = 1  
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```

# Xen Resources and Migration

---

## Xen Resources

/usr/share/xen-tools

/etc/xen

/var/lib/xen

/var/lib/xen-4.x

/var/log/xen

Scripts

.cfg, .conf, and .sxp files

Configuration data

Binaries, libraries

Logs

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/usr/share/xen-tools

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.cfg, .conf, and .sxp files

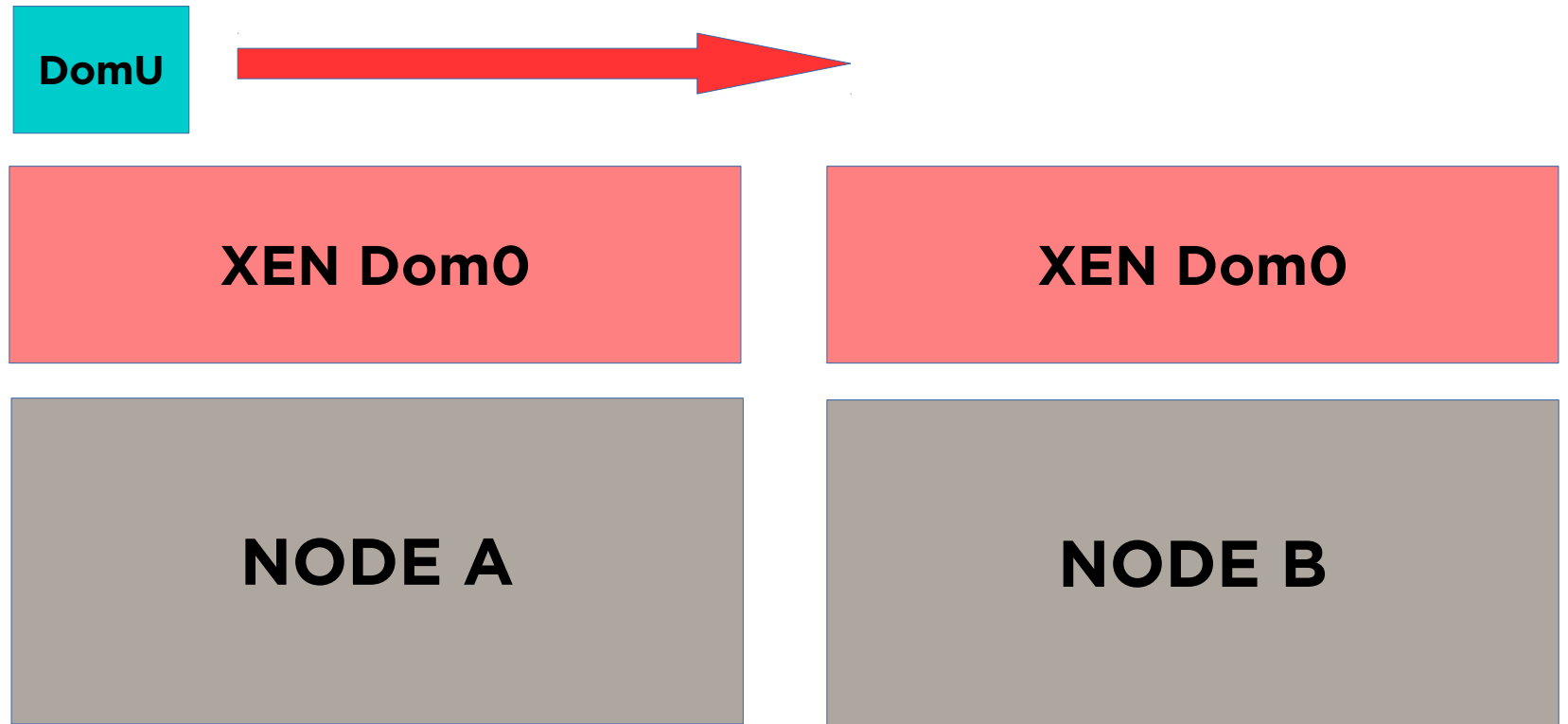
Configuration data

Binaries, libraries

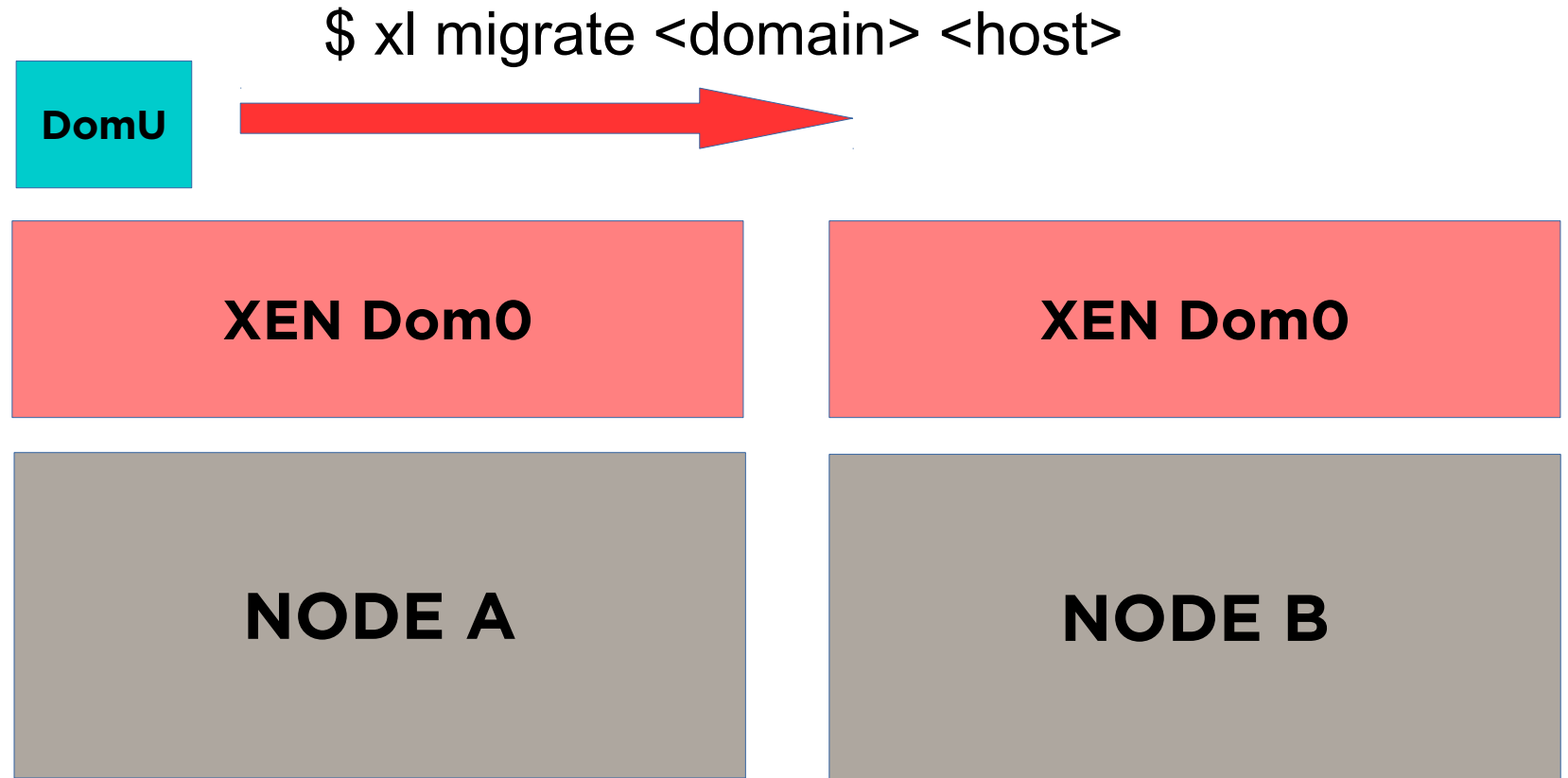
Logs



Xen  
Domain  
Migration



Xen  
Domain  
Migration



nbd  
Storage  
Sharing

Storage  
Device  
(/dev/sda1)

**XEN Dom0**

**Host A**



**XEN Dom0**

**Host B**

## nbd Setup

Add this to /etc/nbd-server/config on server:

```
[<name>]  
    exportname = /dev/sda1  
    Port = 9000
```

Run from client machine:

```
nbd-client hostname-of-source 9000 /dev/nbd1
```

Edit /etc/xen/VMname.cfg on server to use /dev/nbd1

Run:

```
xl migrate <Domain> <new host>
```

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## Review

```
pvccreate /dev/sda5
```

```
vgcreate vg0 /dev/sda5
```

```
apt-get install bridge-utils
```

```
xl list
```

```
xen-create-image --hostname=myNewGuest ...
```

```
xl create -c /etc/xen/myNewGuest.cfg
```

```
lvcreate -n ubuntu-hmv -L 5G vg0
```

```
xl create /etc/xen/ubuntu-hvm.cfg
```

```
xe -s 55.211.34.9 -u ubuntu -pw mypassword vm-list
```

```
xenstore-ls
```

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xl migrate <domain> <host>
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