



Simple Interim Virtualisation

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Aims

- Want to save energy (direct and indirect)
- Want to save on capital expenditure

BUT ...

- Don't want to develop a virtualisation infrastructure in isolation from the rest of the university

SO ..

- Interim simple solution



Attributes

■ Must

- be low cost or free
- be manageable from DICE desktop
- support VLANs, bonded ethernet, multipath fibre
- be stable
- shutdown VMs cleanly on host shutdown
- involve minimal integration work

■ Would like

- management from command line
- serial console support
- close to native performance



Possible solutions

- Considered
 - VMware ESXi
 - Citrix XenServer Express
 - VMware server running on DICE
 - Xen running on DICE
- Didn't consider
 - VMware infrastructure
 - Virtualbox



VMware ESXi

- *Good*

- supports VLANs, bonded ethernet, multipath fibre
- very stable
- OK performance
- works straight out the box
- VMs cleanly shutdown on host shutdown

- *Bad*

- only manageable from Windows client



Citrix XenServer Express

- *Good*
 - very stable
 - good performance
 - supports bonded ethernet
 - serial console support (but would need some DICE integration)
- *Bad*
 - no VLAN support (in free edition)
 - Windows tool required to create and configure VMs
- *Unknown*
 - clean VM shutdowns, multipath fibre support



VMware server running under DICE

■ Good

- very stable
- adequate performance
- DICE, so supports VLANs, bonded ethernet, multipath fibre (+ Nagios ☺)
- manageable from DICE
- VMs cleanly shutdown on host shutdown

■ Bad

- requires a browser plugin (no Safari support)
- no serial console support



Xen running under DICE

- *Good*

- DICE, so supports multipath fibre (+ nagios)
- good performance
- manageable from command line (and hence DICE)
- serial console support

- *Bad*

- not very stable
- Lots of integration work to integrate into DICE (for routing, bonded ethernet, VLANs)
- No clean VM shutdown on host shutdown (for full virtualization)
- Significant work to support para-virtualization



Where we are now ?

- Three Dell Poweredge R805s (8 core, 32Gb)
 - live - circle (15 VMs) and bakerloo (9 VMs)
 - hot spare - district
 - VMs stored on SAN
- Three new Dell Poweredge R710s (8 core, 32Gb) on order
- Further servers planned for AT and KB.



Where next ?

- Want
 - VM migration support
 - LCFG control of VM management
 - serial console support (not a browser plugin)
- University wide convergence on one or two technologies
- New technologies on horizon - eg KVM