

Enterprise VMware Infrastructure in SCD

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Enterprise Virtualisation

- Enterprise-class virtualisation cluster providing virtualisation services for Scientific Computing Department
- Wide range of requirements:
 - Resilience
 - Small, medium, large VMs
 - Easy management, migration of VMs, ...
 - Resilience
 - Accessibility

Current Infrastructure - VMware

- 1 x vCenter server standard which manages the VMs across the following 3 pools of hypervisors on 3 separate L2 network spaces
 - Tier1: 10 x vSphere 7 Enterprise Plus in two age generations
 - Facilities: 5 x vSphere 7 Enterprise Plus in two age generations
 - RIG: 14 x vSphere 7 Enterprise Plus in multiple age generations
- Storage for all pools is iSCSI.
 - Facilities and RIG moved from EqualLogic to PURE in this FY.
 - Tier1 on DELL/EMC Compellent.

Future

- Desire to consolidate on to new larger capacity (CPU+RAM) hypervisors in a single cluster able to provide resilient services to all groups
 - SuperSpine network allows all hypervisors to be visible to all network segments
- Newest PURE iSCSI block storage can be expanded or duplicated as needed
- 16 new 'large' hypervisors not connected yet
 - Migrate and reuse existing VMware licenses

Notes

- Resilient system
- Huge variation in 'size' of VMs from single core / small memory to multi-core / large memory and any variation between
- Multiple network subnet connectivity
 - Needs several high-bandwidth NICs per host
- Consistent system for all services
- Likely expansion in coming FY to provide more resource, later in FY