

Upgrade of the server architecture for the accelerator control system at the Heidelberg Ion Therapy Center

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MOMMU009

Status

- 10 servers spread over three racks
- Very limited redundancy
- Increasing performance problems with ageing servers

Project Goals

- Modernization of server architecture
- Consolidation of servers
- Improved redundancy
- Performance improvement



Solution

- State of the art Blade Center with 11 of 16 slots free
- Identical blade servers for redundancy – hot spares
- Computing power to spare:
 - two 8-core CPUs @2,54 GHz
 - 24 GB of RAM
 - Windows Server 2008R2 64-bit
 - Internal 10 Gb/s Flex-10 Ethernet
 - Redundant dual 1Gb/s external Ethernet



Conclusion

- Improved network and server redundancy
- Substantial performance gains:
 - Interpolation procedures: 4 hrs → 1,5 hrs
 - Data download: 38 min → 12 min
 - Cycle overhead: 1000ms → 740ms per cycle
 - Less cycle time and overhead variance
- Planned for 2012:
 - More spare blades
 - SAN for image backup and restore
 - Virtualization for gateway servers