

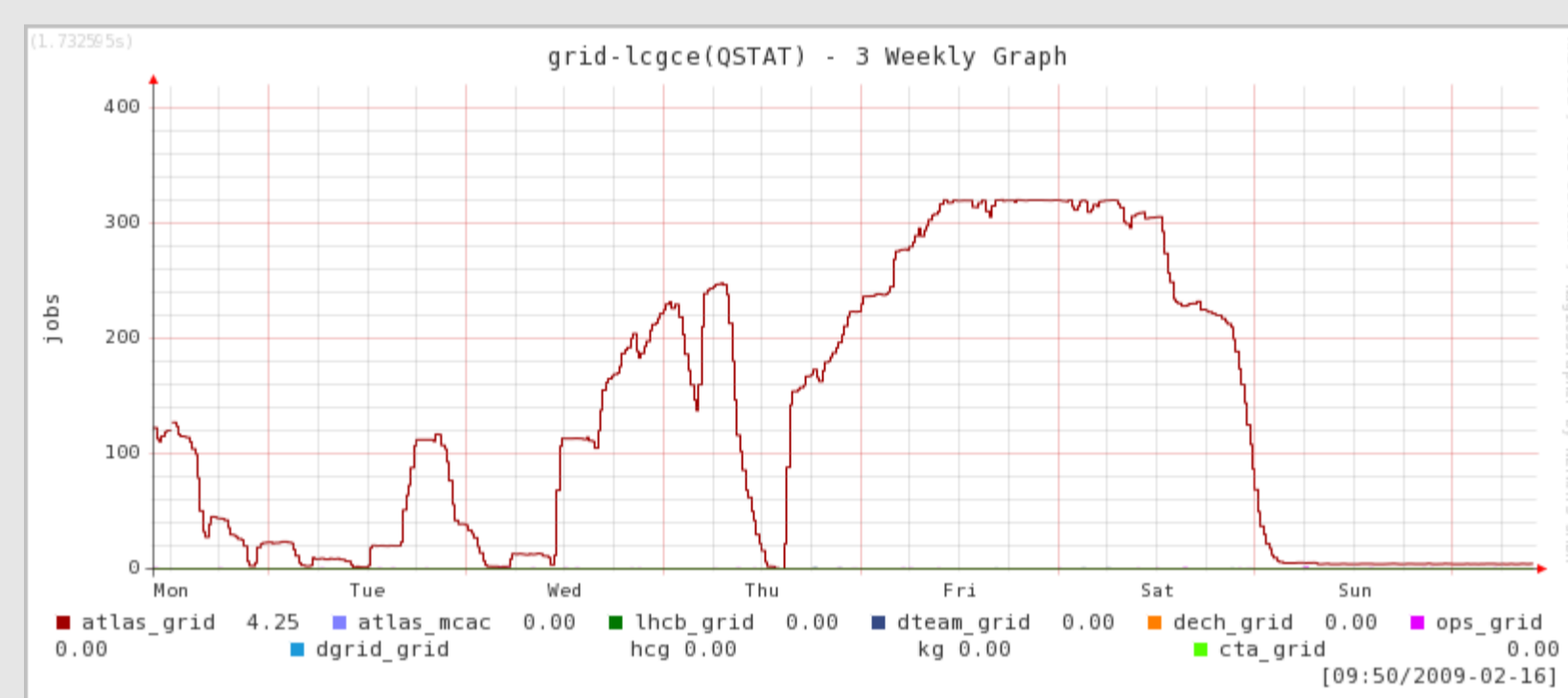
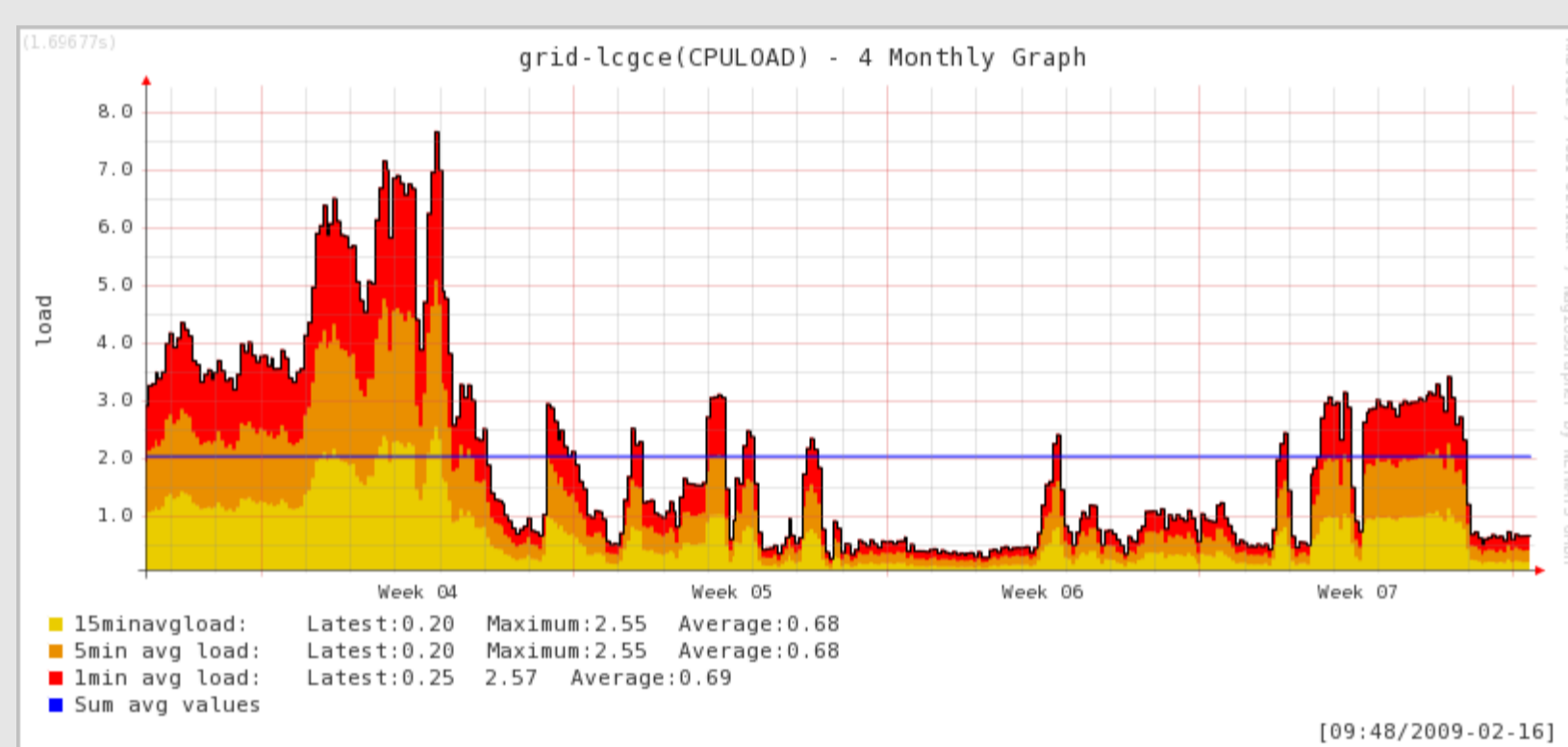
Problem

- Server grade hardware is expensive
 - Some services don't even load one CPU
 - Separation of services on different machines facilitates operation
- Some services require old operating systems
 - Difficult to buy hardware for old operating systems

Solution:
Virtualisation

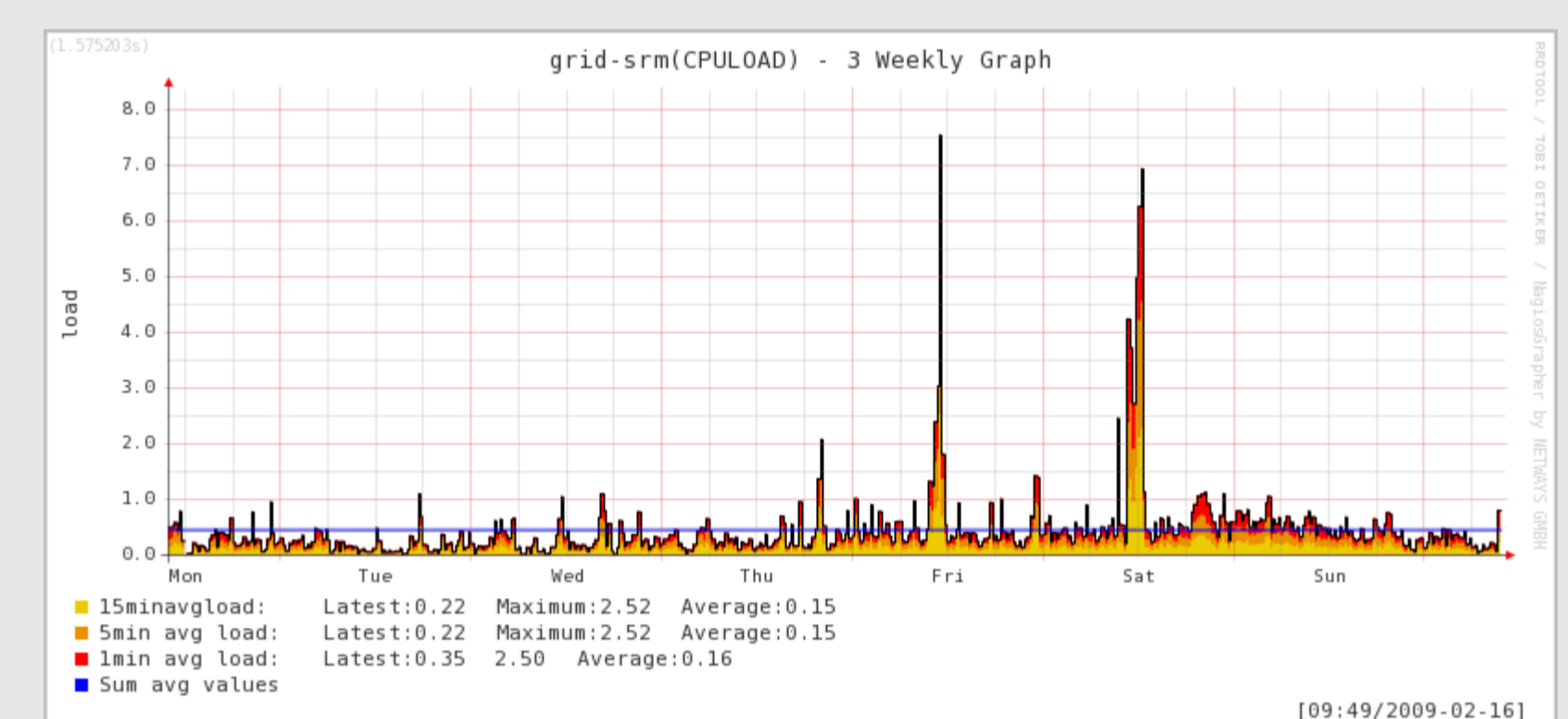
Compute Element

Scientific Linux 4.6 64 bit
 3 CPUs
 2 GB RAM

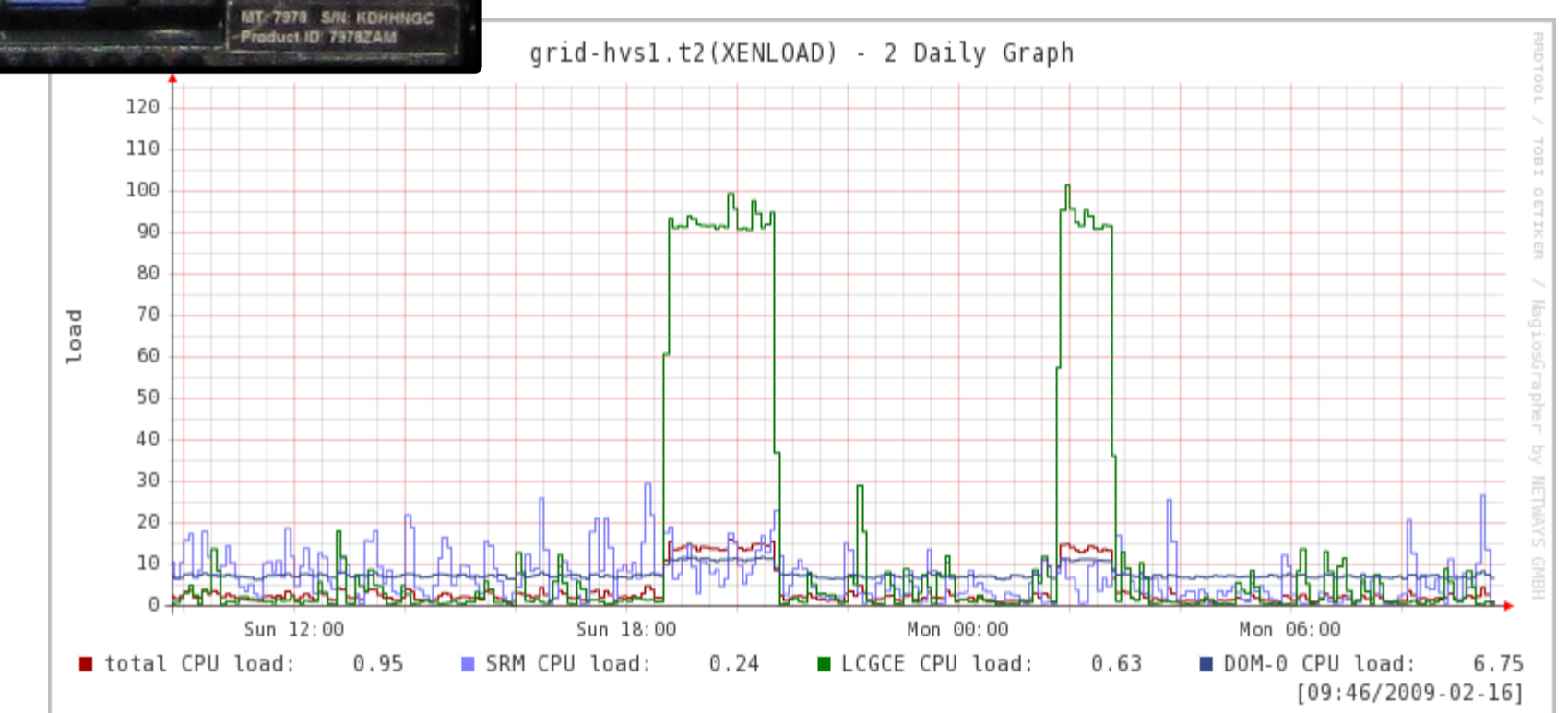
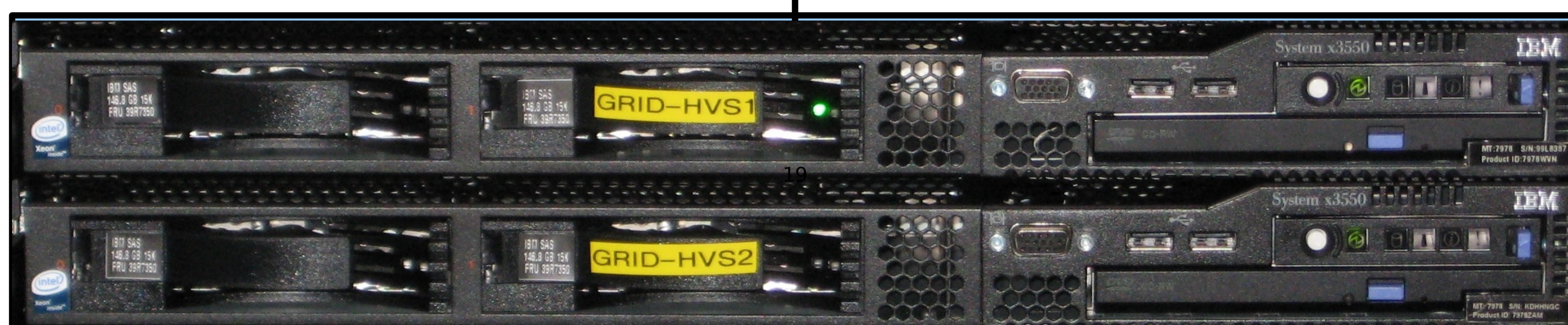


Storage Element

Scientific Linux 4.6 64 bit
 3 CPUs
 6 GB RAM



Two server grade machines
 1: 8 cores 12 GB RAM
 2: 4 cores 8 GB RAM
 Host OS: Ubuntu 7.10



Site BDII

Scientific Linux 4.6
 32 bit
 1 CPU
 2 GB RAM

Monitoring Box

Scientific Linux 4.6
 32 bit
 1 CPU
 2 GB RAM

Nagios

Scientific Linux 4.6
 32 bit
 1 CPU
 1GB RAM

Not virtualised:

- Dcache
 - Data storage system
 - High I/O requirements
- worker nodes
 - CPU performance is important

Advantages

- Only two physical machines for five servers
- Easy to change assignment of CPUs
- Virtual hardware can be configured even for old OS
- Flexible testing environment
- Easy backup and rollback

Disadvantages

- Some performance loss (< 5%)
- Not suitable for I/O intense machines