



Enabling Grids for E-science

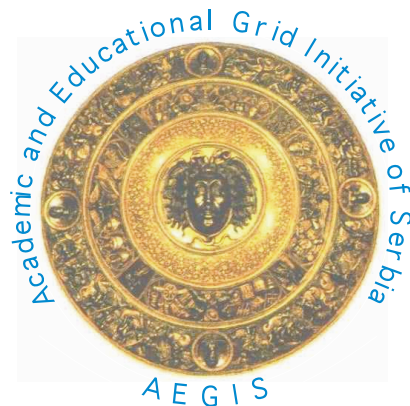
# High-End Computing - Clusters for Beginners

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SEE-GRID-SCI  
SEE-GRID infrastructure for regional eScience



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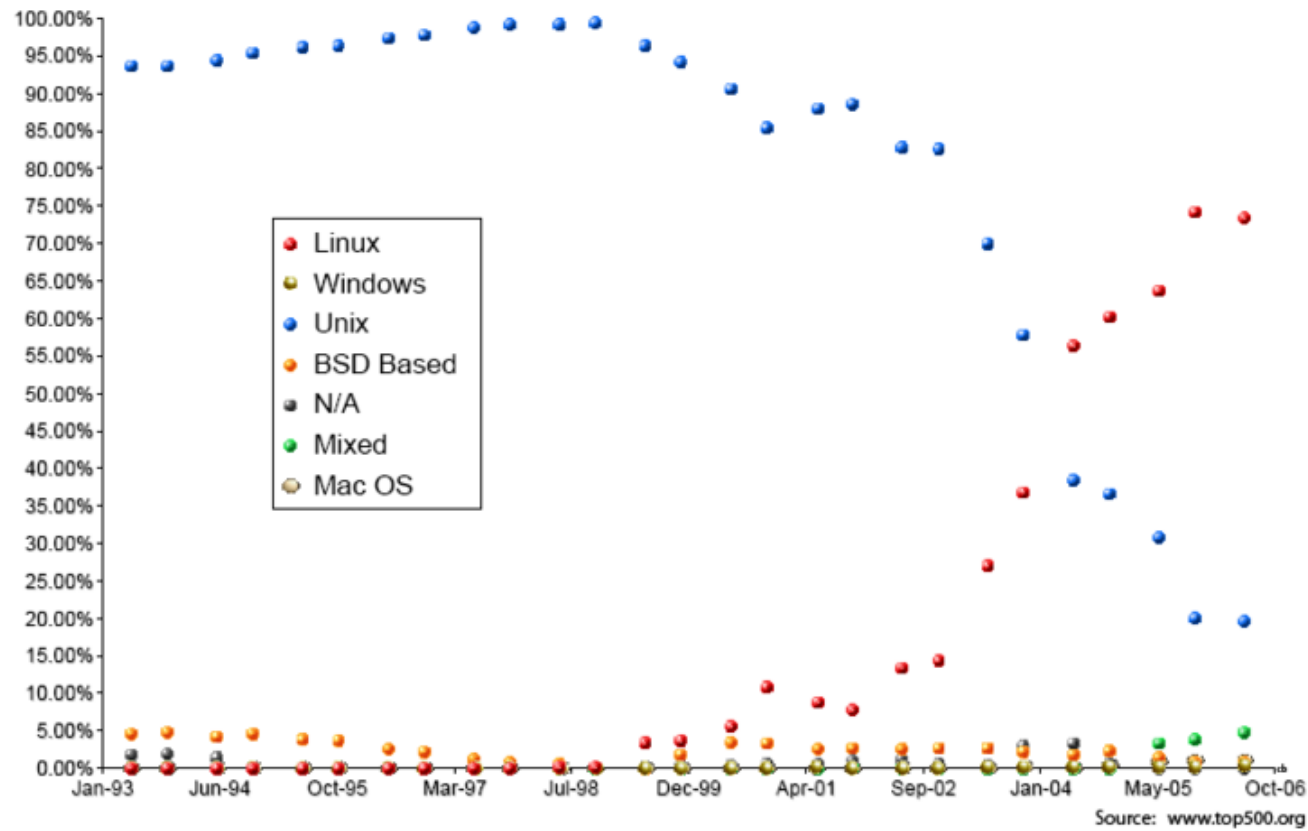
[www.eu-egee.org](http://www.eu-egee.org)



- **Trivial:**
  - text editing, Internet services
  - elementary visualization, multimedia, special functions, ...
- **Nontrivial:**
  - differential eq.,
  - large linear systems,
  - searching combinatorial spaces
  - statistical data analysis
  - complex visualization, ...
- **Advanced:**
  - stochastic simulations
  - part functions/functional integrals
  - risk assessment in complex systems
  - dynamics of the systems with many degrees of freedom, ...

- top500.org

Operating Systems Used On Top500 Supercomputers



- **Commodity hardware become available in the last 10 years**
- **Local network 100-1000 Mbps easily deployed**
- **Linux mature and widely available**
- **Software available and even standardized - MPI**

- **BATCH systems**
- **Single jobs**
- **Parallel jobs, MPI**