

Categories: Performance

- **Category I: Uniquely Exascale**

- Extremely-scalable performance methods and tools (online reduction and filtering, clustering), analysis (clustering, data mining), and visualization (hierarchical) \Rightarrow Handle billions of HW + SW components
- Performance measurement and modeling in presence of noise / faults / power adaption related changes

- **Category II: Exascale plus trickle down**

- Automated / automatic diagnosis / autotuning
- Predictive future large-scale system design
- Vertical integration across software layers (app, middleware, runtime, OS)
- Performance-aware design and implementation
- Performance optimization for other metrics than time (e.g. power)

- **Category III: Primarily Sub-exascale.**

- Support for heterogeneous hardware and hybrid programming models including analysis and modeling of asynchronous tasks