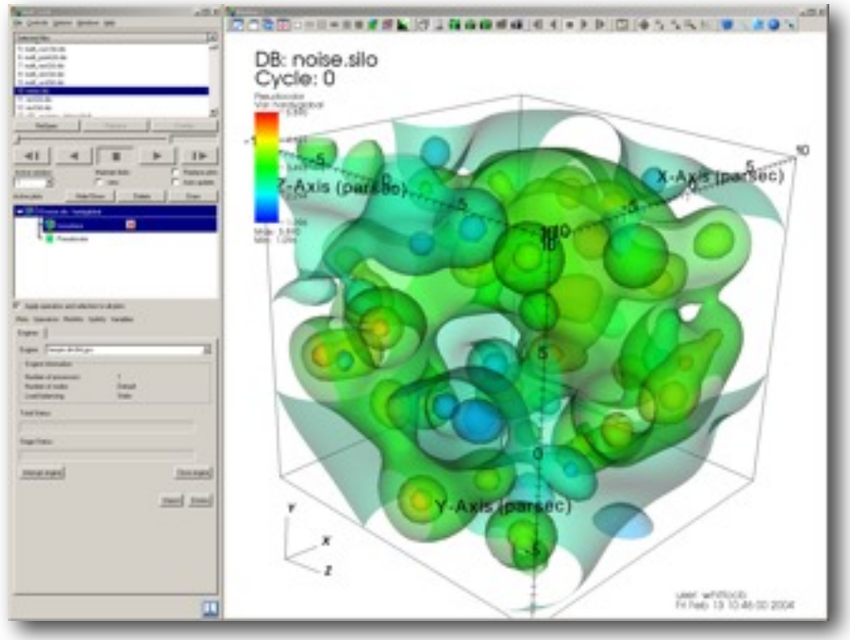
Analytics and Visualization Panel

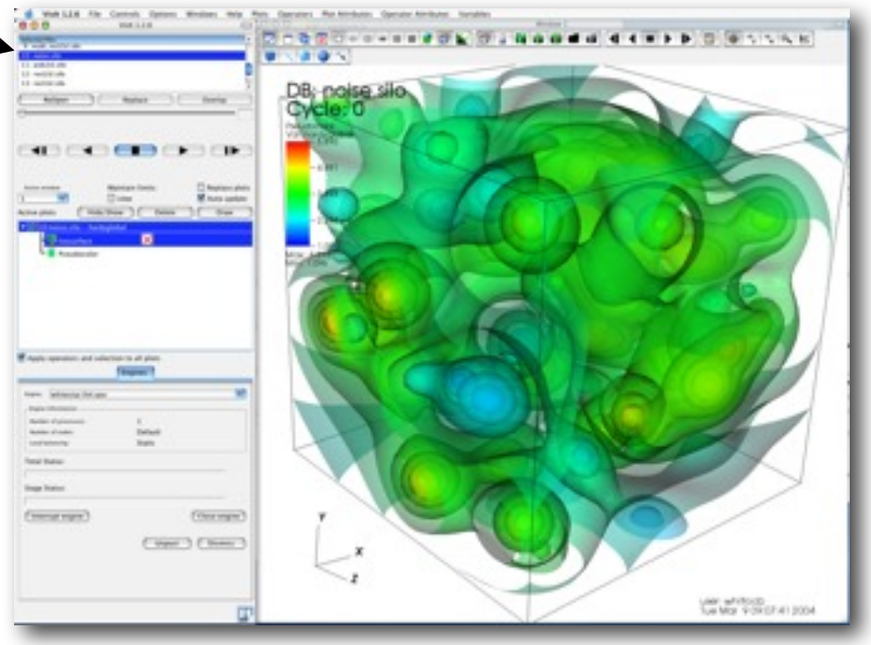
VisIt Demo

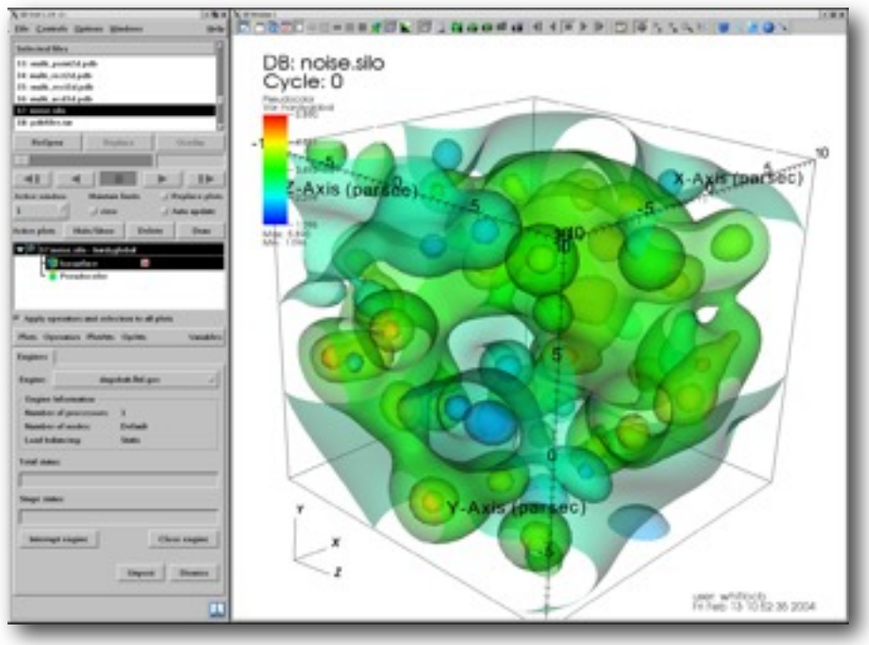
- Tomorrow 10:30 AM
- VisIt with FITS data

VisIt runs where you want to work

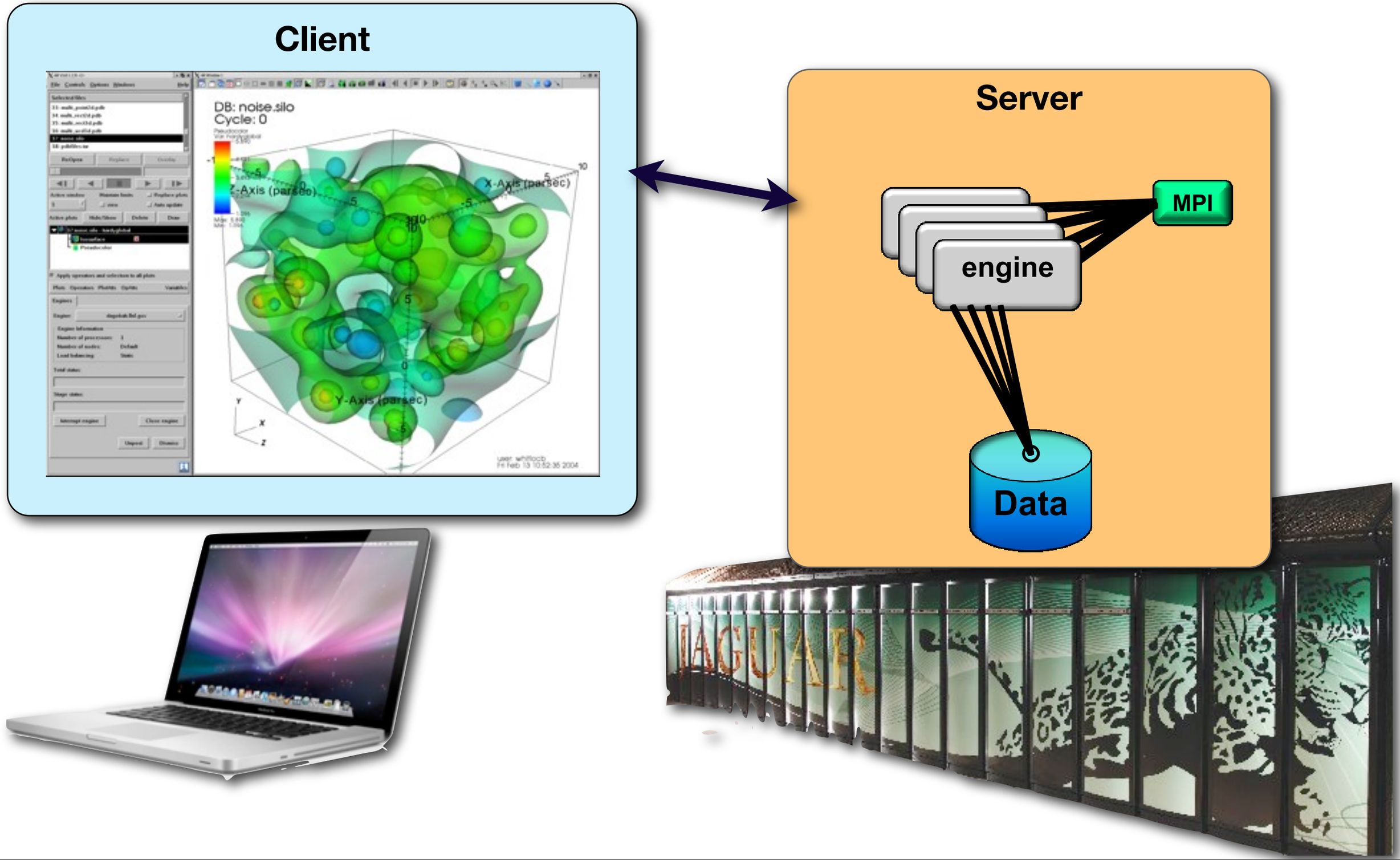
- Same user interface on each platform
- Platforms
  - Windows
  - MacOS X
  - Linux



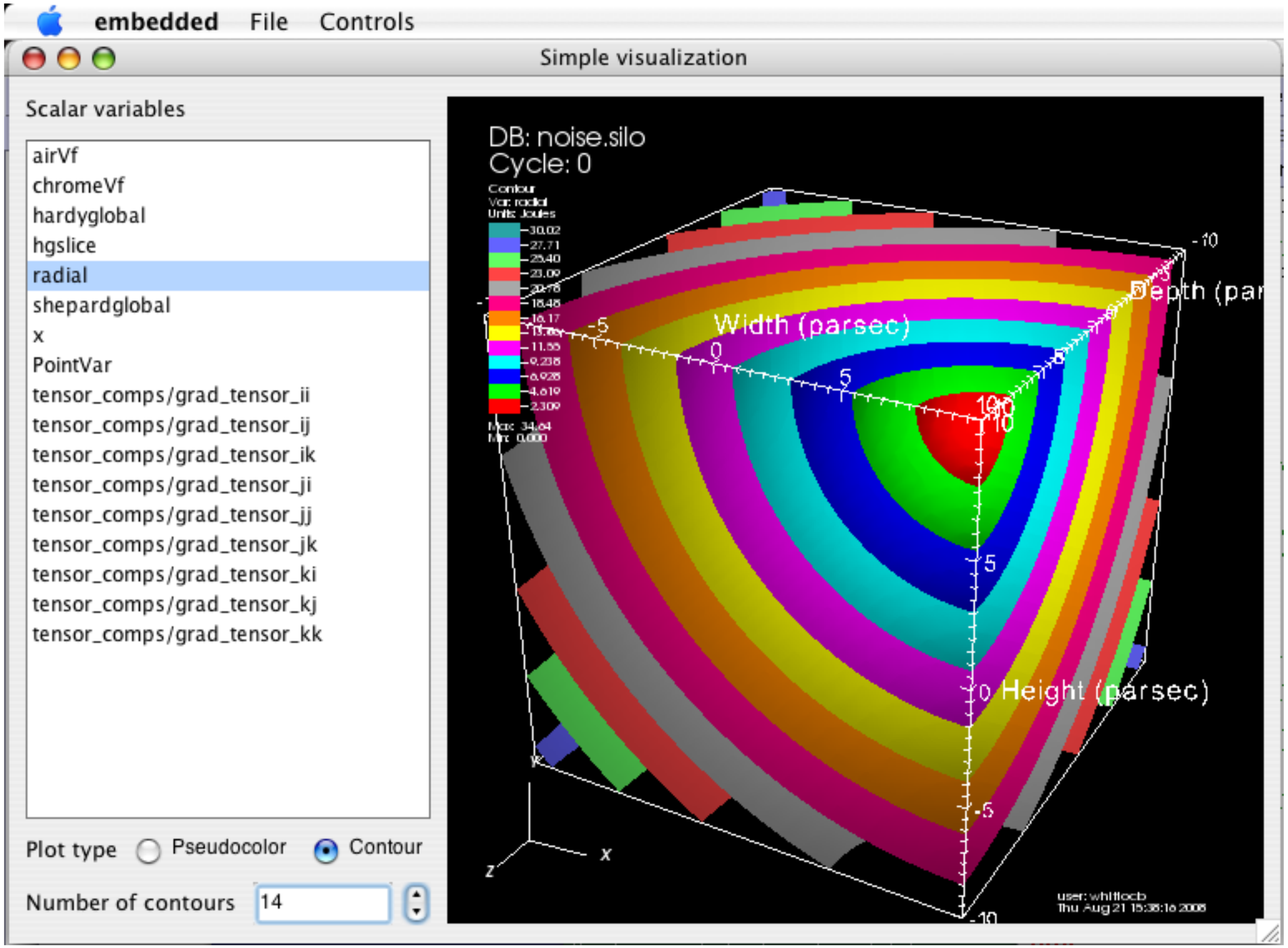




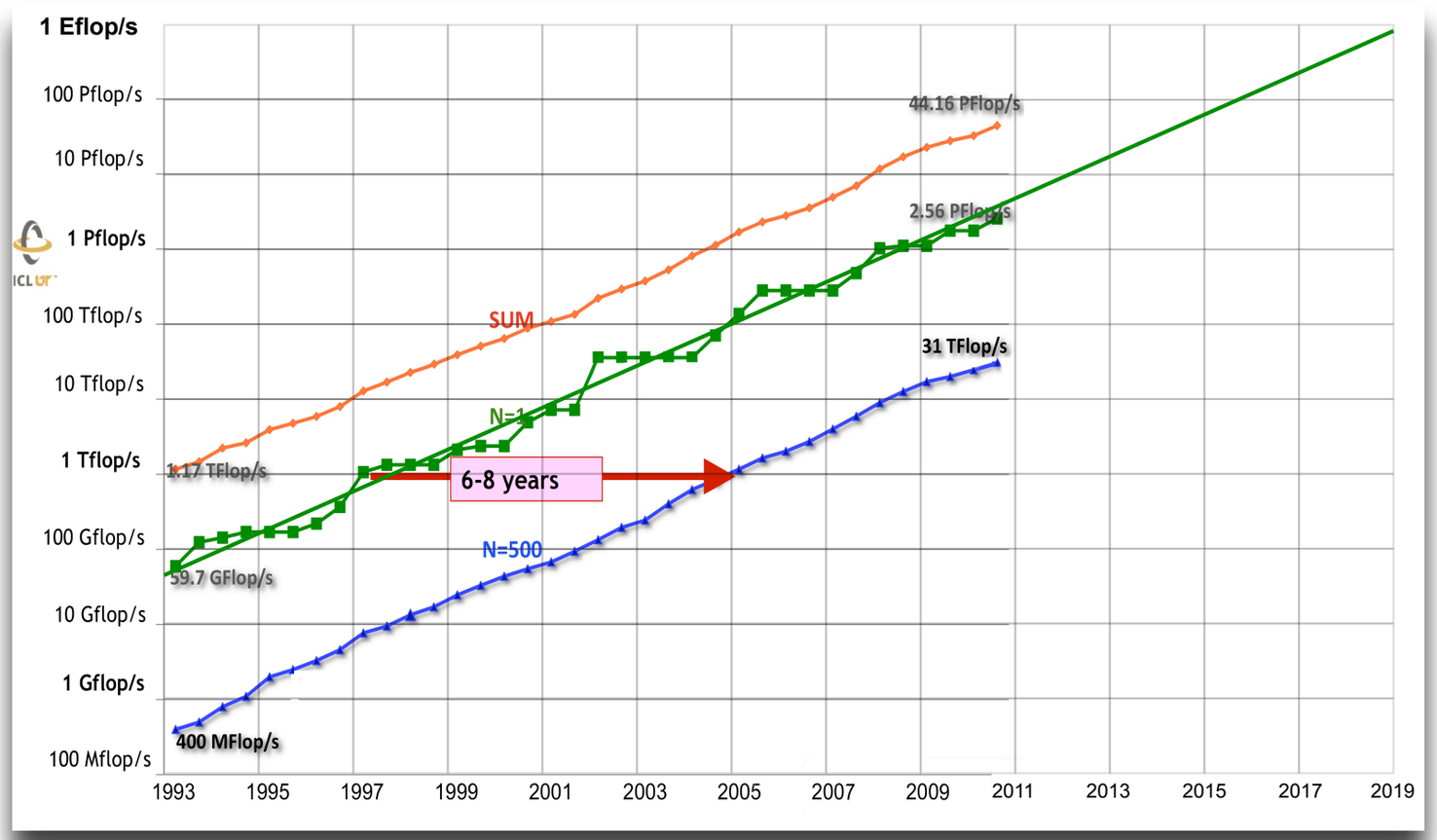
VisIt Architecture



Application focused applications



Exascale is coming.....



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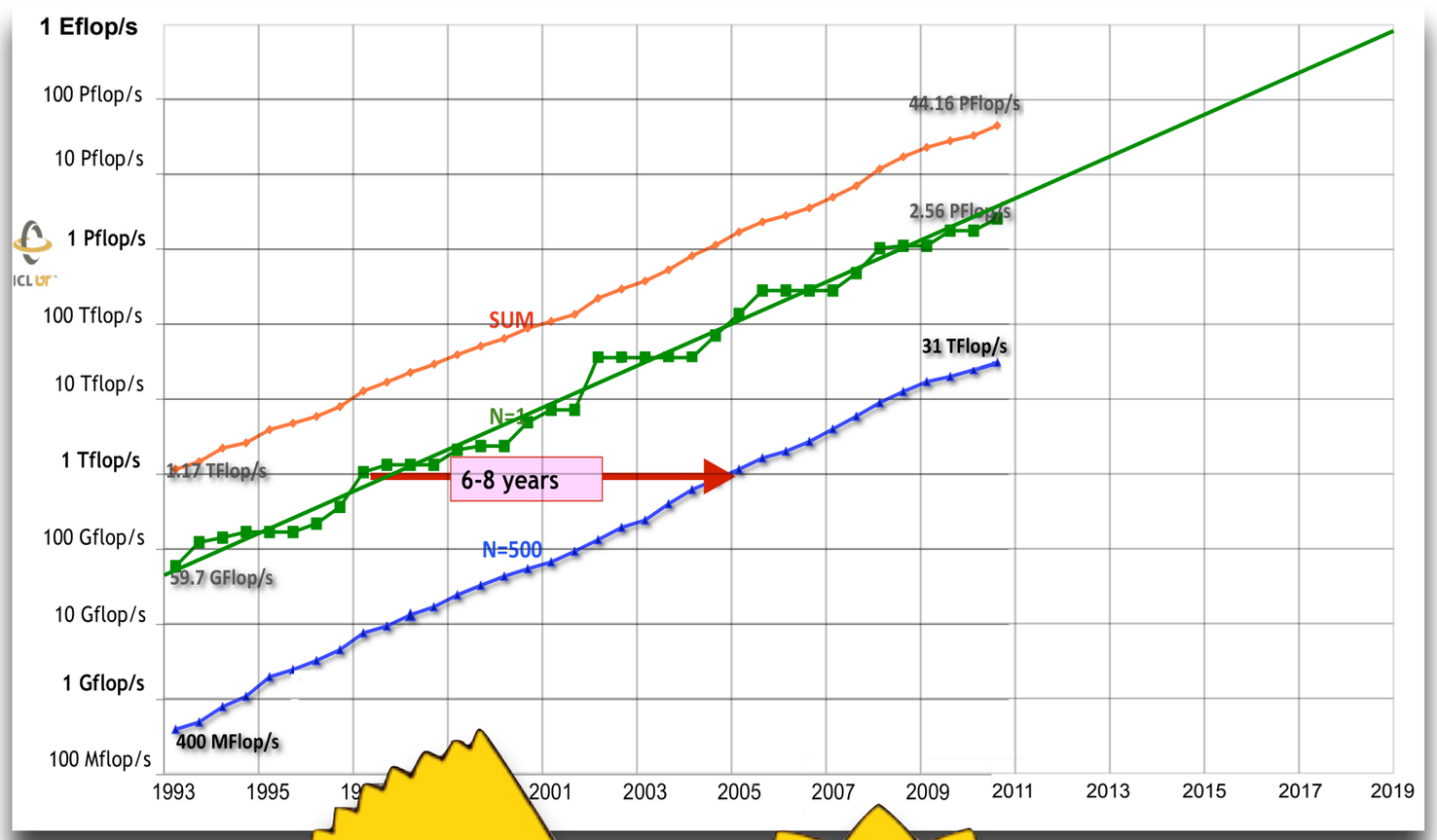
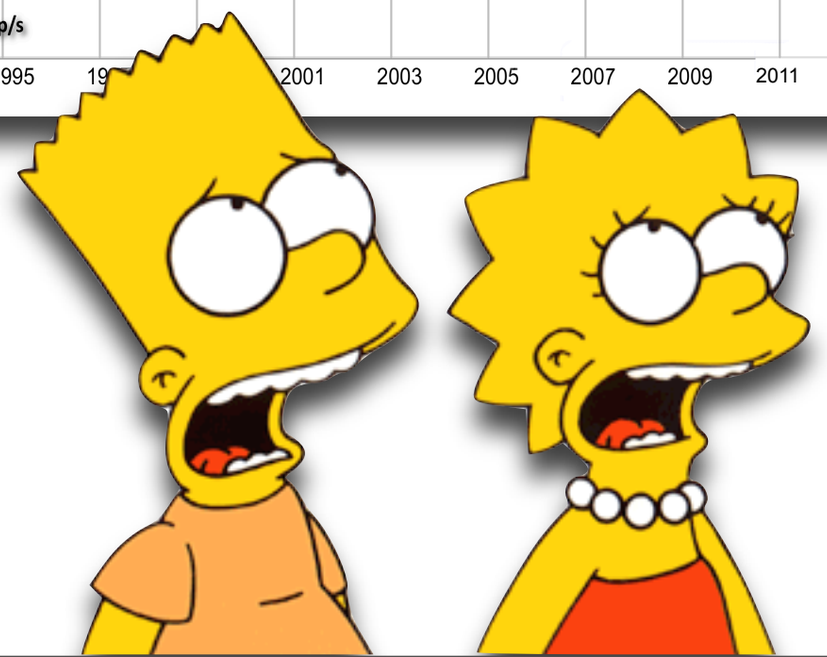




Exascale computer is *very* different

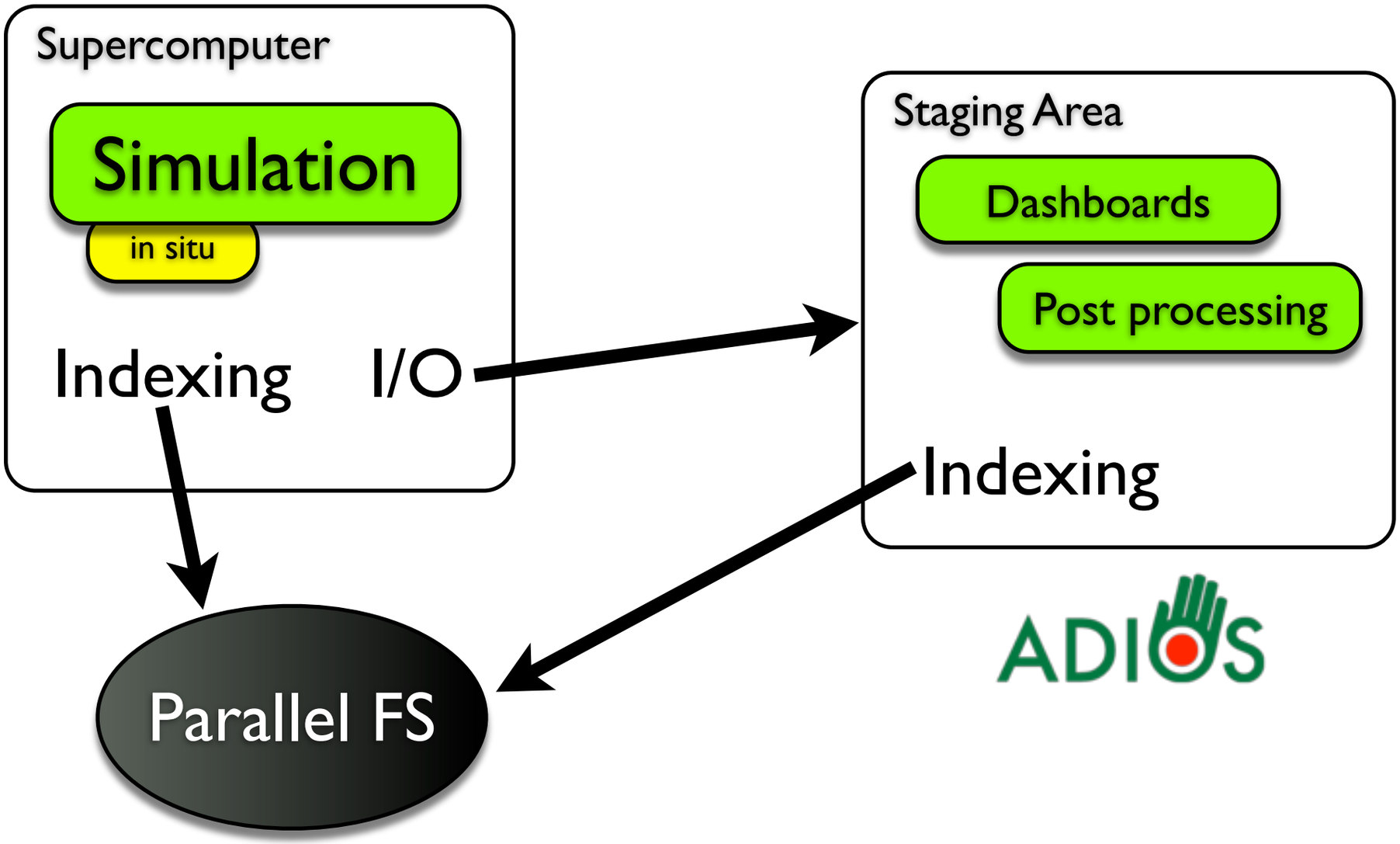
Sandia National Laboratories | Oak Ridge National Laboratory | Los Alamos National Laboratory EST. 1943

Science Partnership for Extreme-scale Computing

System architecture targets are aggressive in schedule and scope.

System attributes	2010	"2015"		"2018"	
System peak	2 PF/s	200 Petaflop/sec		**≥ 1 Exaflop/sec**	
Power	6 MW	15 MW		**≤ 20 MW**	
System memory	0.3 PB	5 PB		**64 PB**	
Node performance	125 GF/s	500 GF/s	5 TF/s	**1 TF/s**	**10 TF/s**
Node memory BW (consistent with 0.4 B/F)	25 GB/s	200 GB/s	2 TB/s	**400 GB/s**	**4 TB/s**
Node concurrency	12	100	1,000	**1,000**	**10,000**
System size (nodes)	18,700	400,000	40,000	**1,000,000**	**100,000**
Node link BW (consistent with 0.1 B/F)	1.5 GB/s	50 GB/sec	0.5 TB/sec	**100 GB/s**	**1 TB/sec**
Mean time before application failure	days	≥ 24 hours		**≥ 24 hours**	
IO	0.2 TB/s			**60 TB/s**	

Preparing for data analysis at the Exascale



Discussion Questions

- What does the community need/want?
  - What would we do with it?
- What tools are you using?
  - Scalability?
- In situ:
  - What can you compute on the fly
  - What can't you compute on the fly
- What analytics are needed?
  - R and VisIt coming
- Provenance

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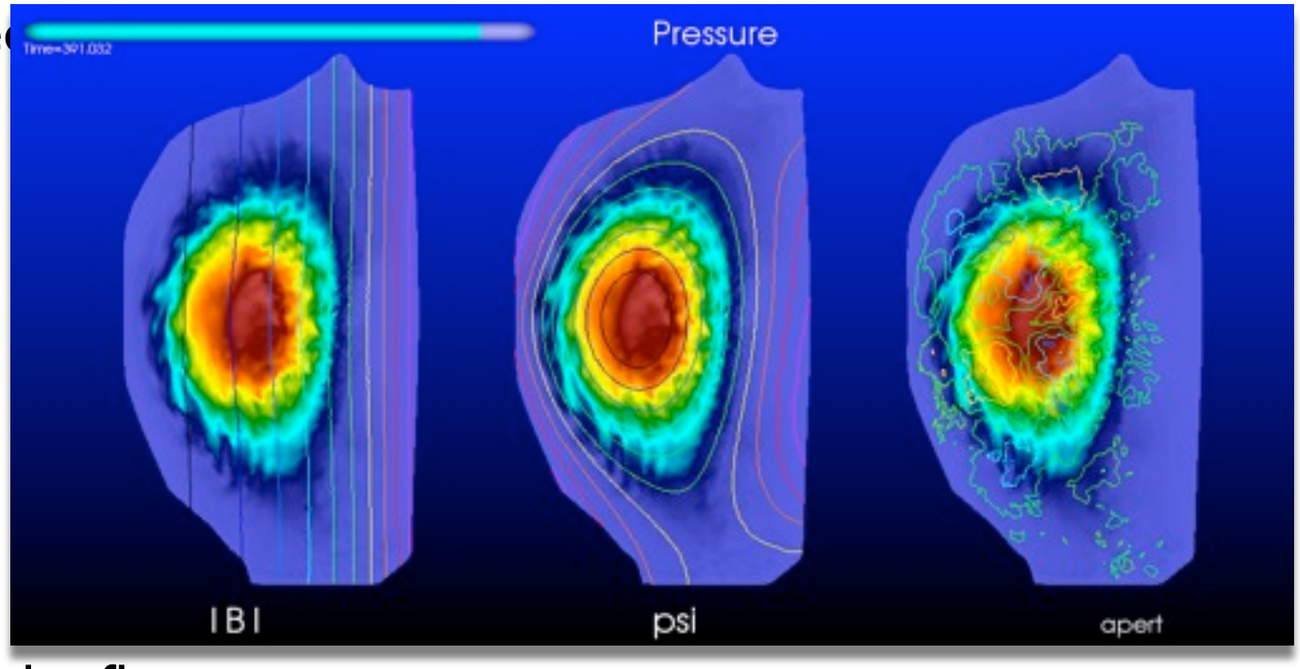

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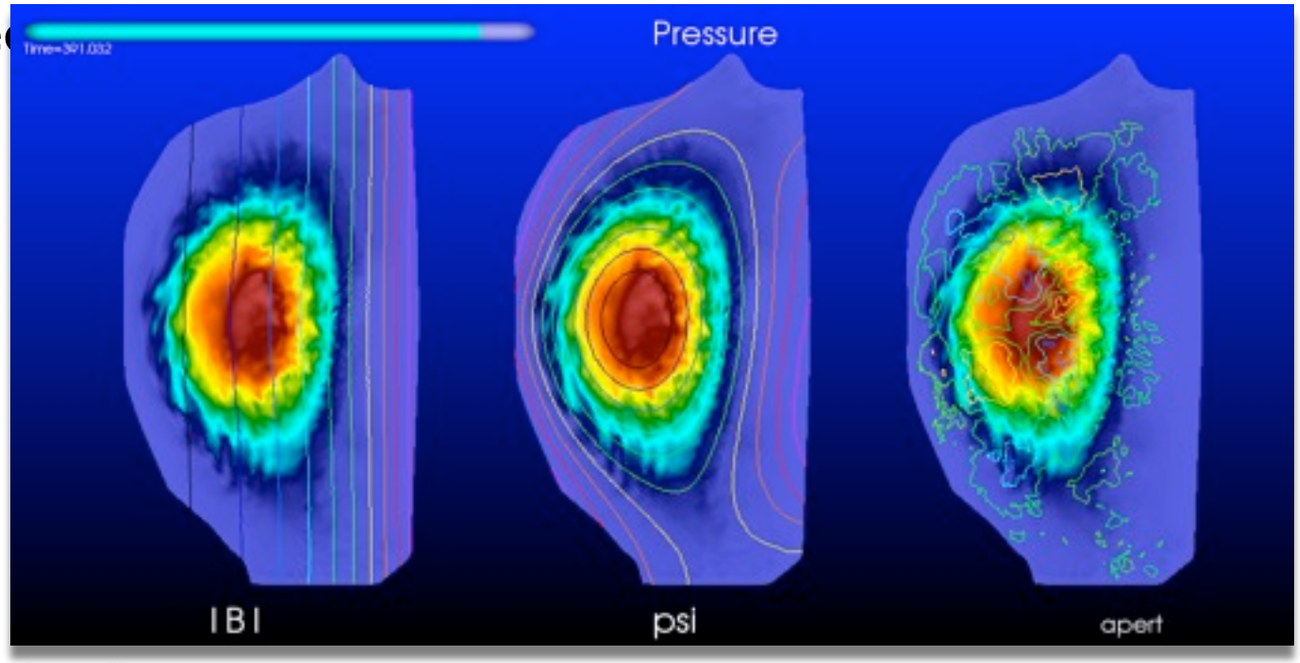

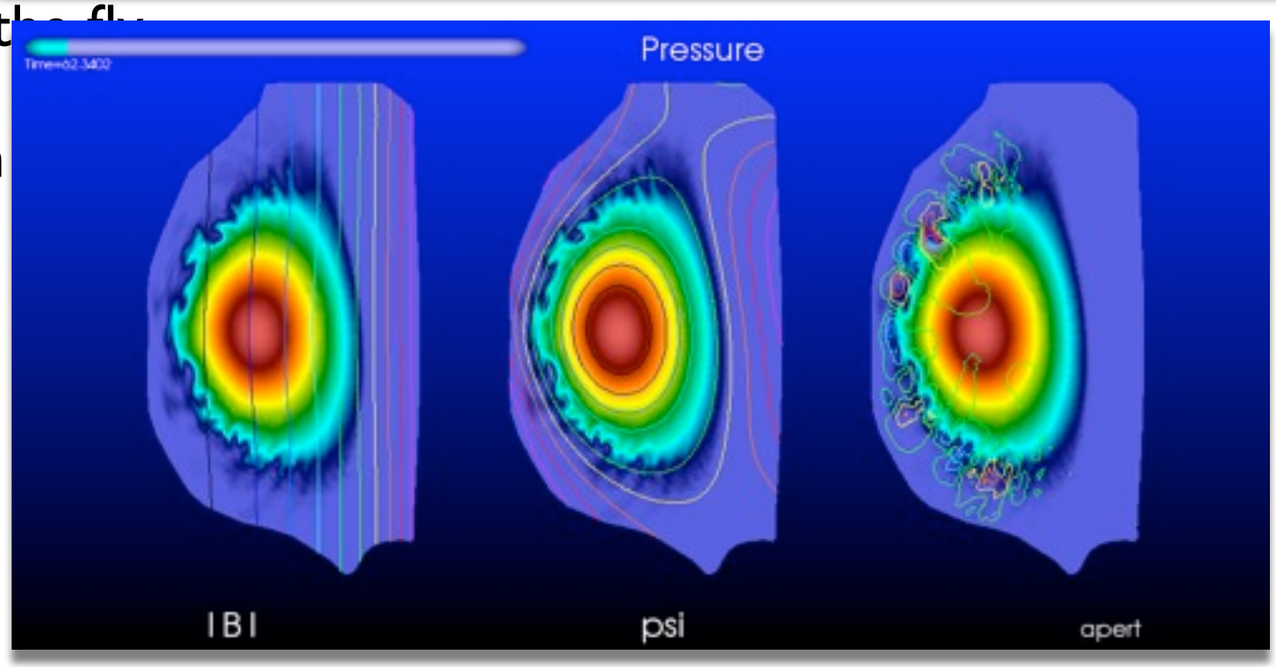

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