



Some Odds and Ends About Computational Infrastructure

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Computing Infrastructures



- Local Laptop/Desktop Short jobs with small data
- Local Cluster Larger jobs and larger data but subject to availability
- HPC Prime performance with parallelized code
- HTC Sustained computing over a long period for serialized
- Cloud Need deeper permission on an
 OS and have deeper pockets



Some Examples of Academic Cls Worldwide



HTC

- EGI (formally European Grid Initiative)
- OSG (Open Science Grid)
- ASGI (Asia Pacific Grid Initiative)
- NorduGrid
- Earth System Grid (ESG)
- Many other regional and national infrastructures





Some Examples of Academic (RDA Cls Worldwide



HPC

- XSEDE (eXtreme Science and Engineering **Discovery Environment)**
- PRACE (Partnership for Advanced) Computing in Europe)
- Compute Canada
- Greek Research and Technology Network (GRNET)
- Many other national infrastructures





Some Examples of Academic (Cls Worldwide



Cloud

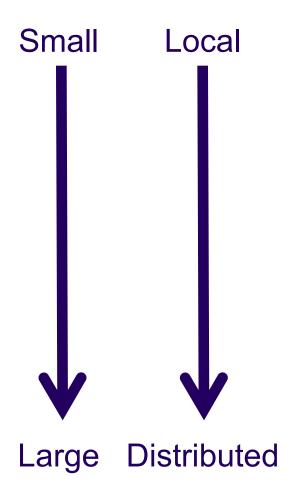
- EGI Federated Cloud
- NeCTaR National eResearch
 Collaboration Tools and Resources
- Jetstream (Part of XSEDE)
- SwissACC (Swiss Academic Computing Cloud)
- Many other national cloud infrastructures





Let's take one step at a time





- Can you run one job on one computer?
- Can you run one job on another computer?
- Can you run 10 jobs on a set of computers?
- Can you run a multiple job workflow?
- How do we put this all together?

This is the path we'll take





Let's do a real statistical simulation



The **Z boson** is a neutral elementary particle which - along with its electrically charged cousin, the W - carries the weak force. Discovered in 1983 by physicists at the Super Proton Synchrotron at CERN, the **Z boson** is a neutral elementary particle.

Can you find the Z?





Questions?



- Questions? Comments?
 - Feel free to ask me questions now or later:
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Exercises start here:

https://twiki.grid.iu.edu/bin/view/Education/RDASummerSchool/RDASchoolMaterials

Presentations are also available from this URL.

