Physics Overview and File Transfer

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Outline
- *Overview of Physics Strategy*
- *File transfer Speed Test*

Overview of Physics Strategy

- Choose a specific model/theory (SUSY, extra dimension etc.)
- Simulate experiments (signal and background) Compare the simulation and real data

- Typical data size is estimated as follows...

Typical File Size

File Size Estimate for Simulation

Process	#Events (k)	Size (TB)
SUSY(LM1)	478	1.05
tt_bar	913	2.01
WW+jets	197	0.43
Z+jets	606	1.33
DY->2tau	916	2.02
DY->2mu	514	1.13
Zbb->llbb	621	1.37
tt_bar bb_bar	50	0.11
ZZ+jets	37	0.08
W+jets	1765	3.88
Sum	6097	13.41

Chiorboli et al, SUSY searches w/ Opposite Sign Dilepton w/ CMS

* Size of real data ~ Tera Bytes ?
* Size of simulation data ~ 10 TB

Questions

- Real Data + Simulation ~ 20 TB
Does T2 provide us enough disk space?

- T3 to process "filtered" data
How long does it take to download 1TB?

File Transfer Speed

- Transferred from FNAL (Illinois) to Davis (California)
  - File size = 444 Mega Bytes
  - Test cycle ~ 1 day (Kerberos ticket)

SCP			SCP			GRID		
Location	Day	Speed (MB/sec)	Location	Day	Speed	Location	Day	Speed
Office	Fri	0.423	Head node	??	??	Office	??	??
Office	Sat	0.429				Head node	??	??
Office	Sun	0.426						
Office	Fri	0.367						
Office	Sat	0.256						
Office	Mon	0.374						
Average		0.379						

Conclusion

It will take a month to download a 1 TB large file from FNAL!
We are looking for significant improvements on file transfer speed