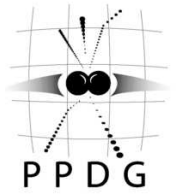

STAR HRM

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PPDG BNL Site Visit

September 9-10, 2002

STAR HRMs: Overview

STAR has computing facilities at BNL & LBL (RCF, PDSF)

- **STAR computing model: Replicate all DSTs, all simulations and some raw data from RCF to PDSF**

First run in 2000:

- **Produced 5 TB raw data, a few TBs DST**

Second run ended Jan. 2002

- **Produced ~50 TB raw data, MuDsts ~ 5 TB each production**

Third run to begin Jan. 2003

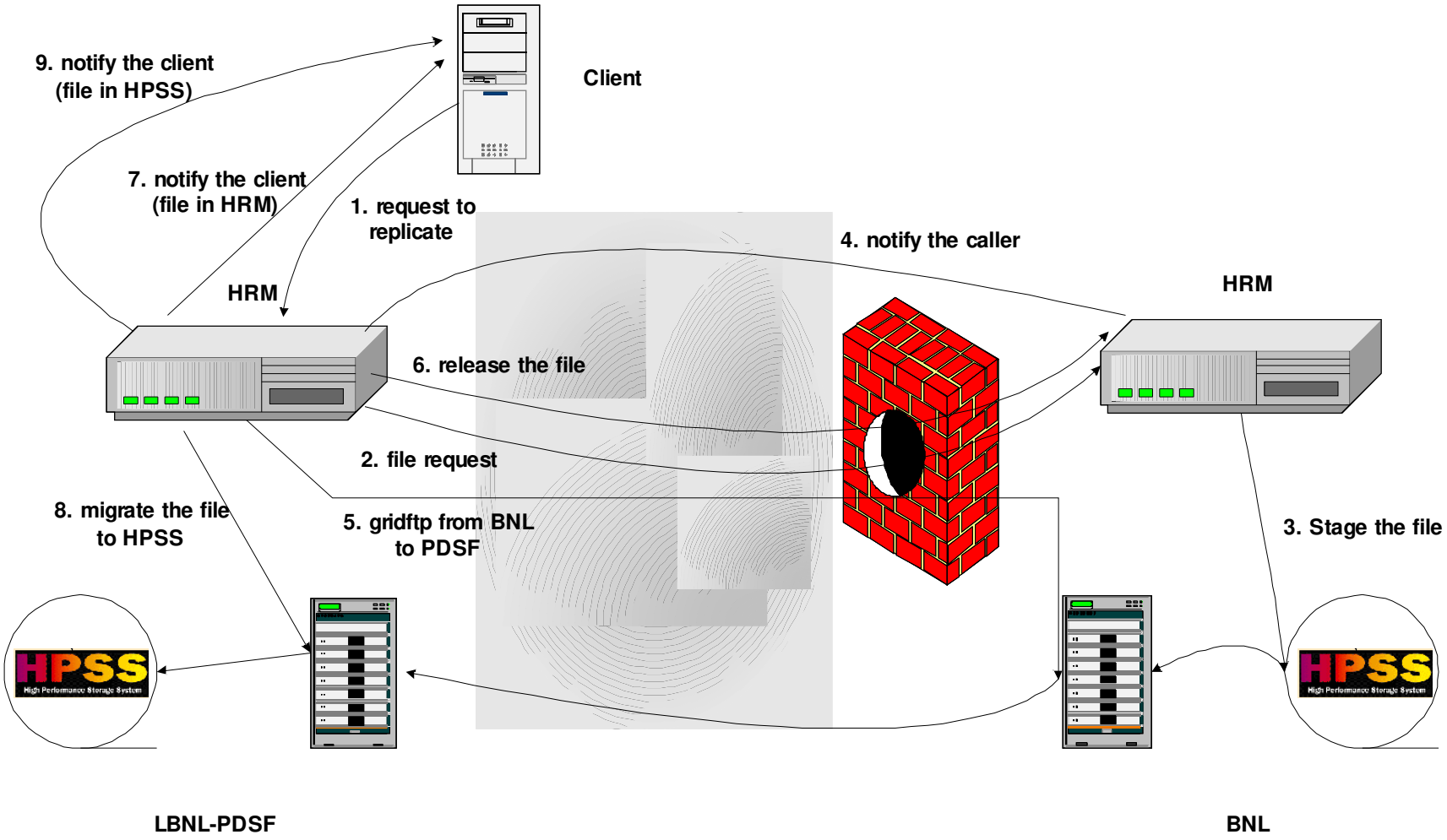
- **Will need to transfer ~1 TB/week or more**

HRM status

- **In use for all STAR data transfer since 7/02**
- **Testbed for HRMs and gridFTP**

Architecture

(from A. Sim)



STAR HRM recent upgrades

OC12 at both sites (7/02)

- Single gridftp session ~2 MB/s
- 20 MB/s or more possible with parallel sessions
- WAN does not limit transfer rate

GridFTP reliability much improved

- One small memory leak remains not a problem

Grid nodes upgraded at both sites

- Local (non-nfs) disk used for caches
- Gb local networking
- Stability problems on stargrid02 for >5 MB/s

HRM adapted to get files from nfs disks

- RCF HPSS access is too slow hardware limitations

Status of current transfer

ProductionMinBias/FullField/P02gc/2001
  Total: Files = 2219 Size = 72224427667
  Done: Files = 2219 Size = 72224427667

ProductionMinBias/FullField/P02gd/2001
  Total: Files = 5230 Size = 170838965222
  Done: Files = 5205 Size = 169899231310

ProductionMinBias/ReversedFullField/P02gc/2001
  Total: Files = 2481 Size = 78236912931
  Done: Files = 2475 Size = 78236446184

ProductionMinBias/ReversedFullField/P02gd/2001
  Total: Files = 9968 Size = 280379132628
  Done: Files = 1042 Size = 30676838504

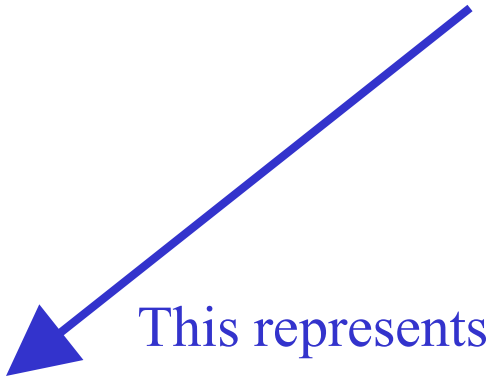
MinBiasVertex/ReversedFullField/P02ge/2001
  Total: Files = 11255 Size = 272904825041
  Done: Files = 11255 Size = 272904825041

Central/FullField/P02gc/2001
  Total: Files = 356 Size = 14315337753
  Done: Files = 0 Size = 0
---
productionCentral/FullField/P02gc/2001
  Total: Files = 1835 Size = 82546770872
  Done: Files = 499 Size = 22297630054
---
productionCentral/FullField/P02gd/2001
  Total: Files = 3332 Size = 135130583115
  Done: Files = 3037 Size = 123185490802
---
productionCentral/FullField/P02ge/2001
  Total: Files = 16405 Size = 647215181998
  Done: Files = 9206 Size = 351395522801

---
productionCentral/ReversedFullField/P02gc/2001
  Total: Files = 1111 Size = 48512747722
  Done: Files = 1108 Size = 48377975087
---
productionCentral/ReversedFullField/P02gd/2001
  Total: Files = 0 Size = 0
  Done: Files = 0 Size = 0
---
productionCentral/ReversedFullField/P02ge/2001
  Total: Files = 23348 Size = 985288790151
  Done: Files = 19193 Size = 809058765945
---
productionCentral600/FullField/P02gc/2001
  Total: Files = 3681 Size = 141749835842
  Done: Files = 0 Size = 0
---
productionCentral600/ReversedFullField/P02gc/2001
  Total: Files = 3430 Size = 130355176779
  Done: Files = 0 Size = 0
---
productionCentral1200/FullField/P02gc/2001
  Total: Files = 1127 Size = 44852010396
  Done: Files = 0 Size = 0
---
productionCentral1200/ReversedFullField/P02gc/2001
  Total: Files = 497 Size = 19707009843
  Done: Files = 0 Size = 0

Summary:
  Total Files = 86275 Size = 3124257707960
  Total Done: Files = 55239 Size = 1978257153395

At present MuDsts are being transferred. 2 TB and 55k files transferred, 1.1 TB and 30k files to go



This represents a large part, but not all, of the 2001 data.

Summary/Future plans

HRMs in use as a production tool in STAR

Issues limiting transfer rate being addressed

Transfers managed by a simple set of scripts which provide enough automation to meet present needs

GDMP to be considered to improve automation of HRM transfers once installation of VDT at PDSF is complete (after RH 7.2 install 9/02)