

# Status of UTA MC production farm and Its Software

*Karthik Gopalratnam*

*Drew Meyer*

*Tomasz Wlodek*

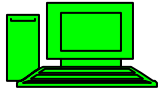
*Jae Yu*



# UTA D0 Monte Carlo Farm

- **UTA operates 2 Linux farms: HEP and CSE**  
**HEP farm:** 6-566 , 36-866 MHz processors, 3 file servers, (250 GB) one job server, 8mm tape drive.  
**CSE farm:** 10 866 MHz processors, 1 file server (20 GB), 1 job server
- **Control software** (job submission, load balancing, archiving, bookkeeping, job execution control etc) **has been developed entirely in UTA** by former UTA student, Drew Meyer, currently *Meyer Systems*
- , <http://wwwhep.uta.edu/~mcfarm/mcfarm/main.html>

## **Main server (Job Manager)**



*Can read and write to all other nodes  
Contains executables and job archive*

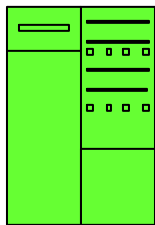
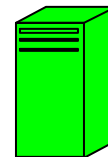
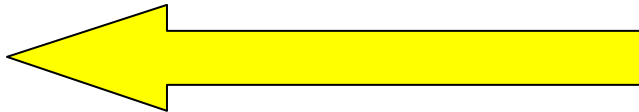
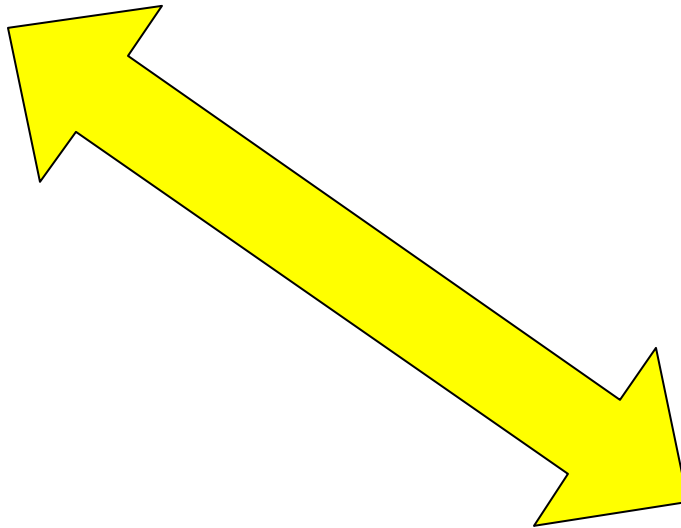
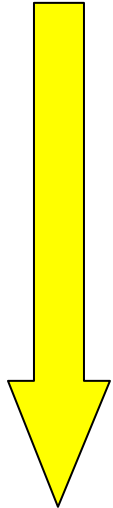
## **Execution node**

*(The worker)*

*Mounts its home*

*directory on main server*

*Can read and write to file  
server disk*



## **File server**

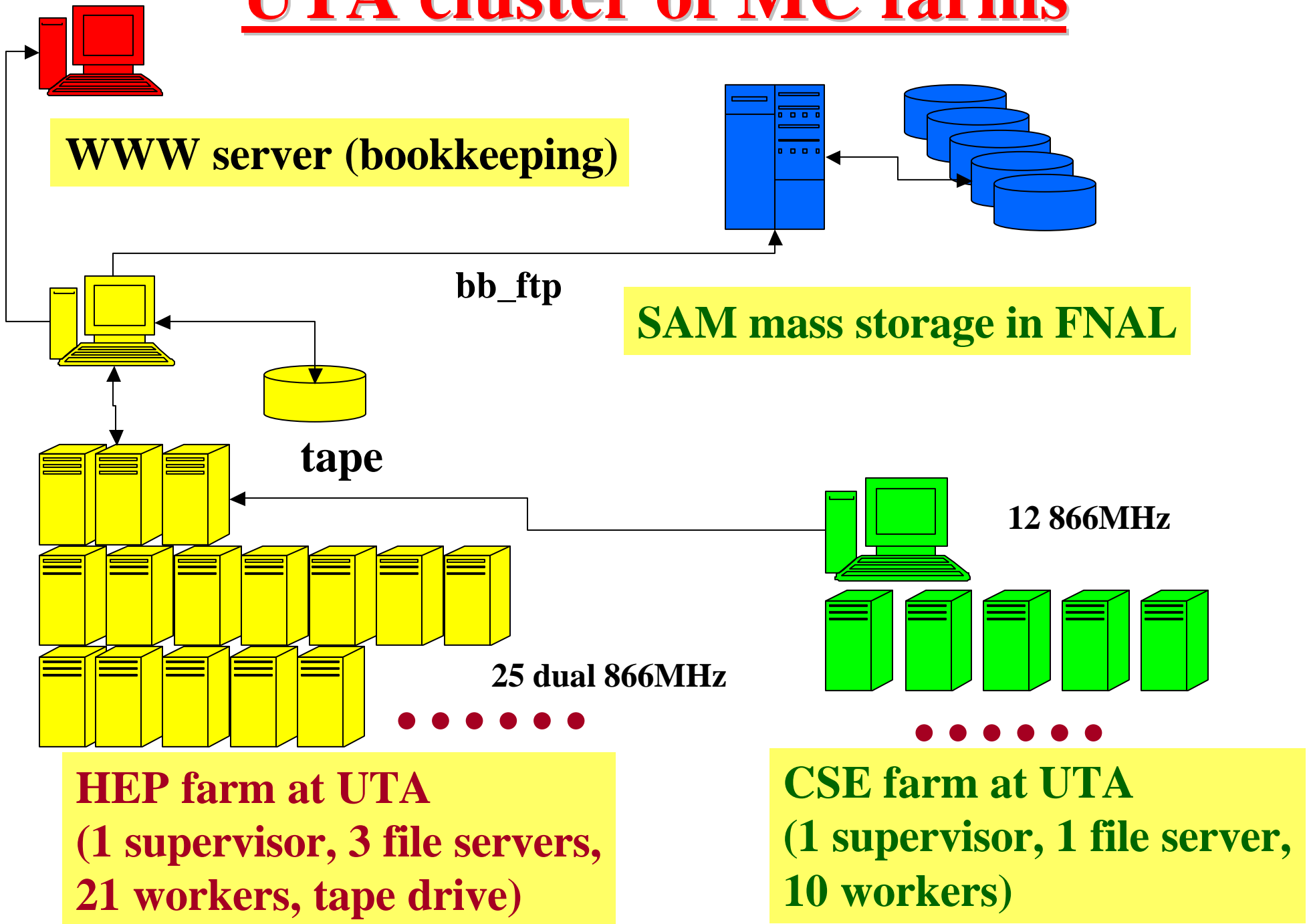
*Mounts /home on main server*

*Its disk stores min bias and  
generator files*

*bnd is rw by everybody*

**Both our farms follow  
the same design  
principle**

# UTA cluster of MC farms



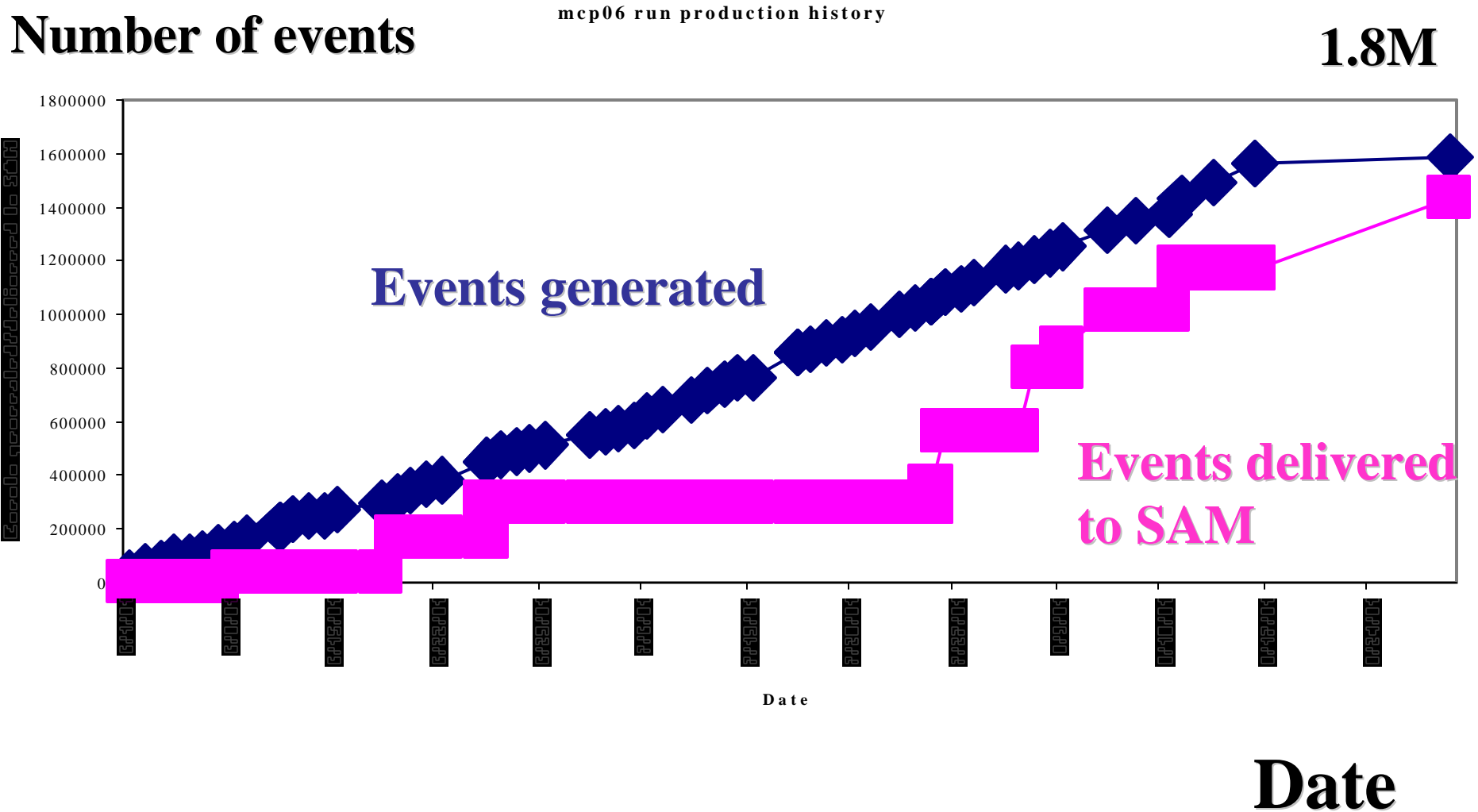
# MC production status

- **HEP farm started in summer 2000, 7 nodes**
  - **Late 2000: upgraded to 25 dual nodes**
  - **Major overhaul Dec 2000-Feb 2001**
  - **Full time production resumed in Mar 01**
  - **Summer 01: CSE farm added**
  - **Sept 01: network data transfer to FNAL instead of tape started**
1. **Mcp05 : Mar-May 2001 1.8M events**
  2. **Mcp06: Jun- Aug 2001: 1.5M events**
  3. **Mcp08: Sept 2001 : 180k events**
  4. **Mcp10: Oct 2001-now: 0.5M events so far**

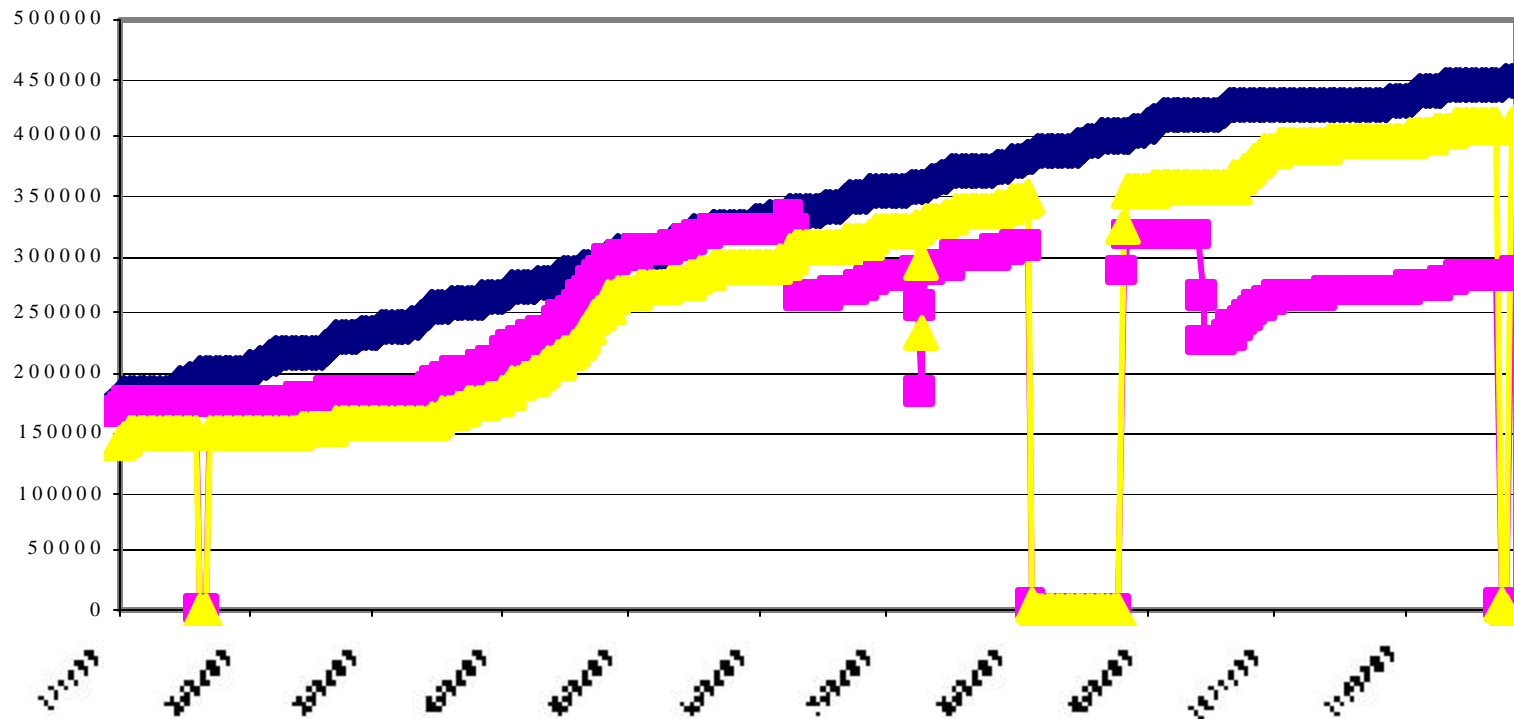
# Data transfer to FNAL

- In the past we have been using tapes to send results to FNAL – *not very convenient, expensive!*
- Starting with mcp08 **we have switched to network transfer to SAM**
- We have installed and configured relevant software
- At present data is being transferred to SAM storage system automatically

# Mcp05 production (Mar-May 01)



# Current production (mcp10) Oct 30-Nov 12 2001



Events generated

Reco events in SAM,  
recoA events in SAM



# Q: How do we stand in comparison to other farms?

<u>Farm</u>	processors	Events in mcp05	Per processor	Events in mcp06	Per processor
<b>Prague</b>	32	492k	15.4k	737k	23k
<b>Lyon</b>	many	0	0	0	0
<b>Lanc</b>	200	379k	1.9k	1.5M	7.5k
<b>Nikhef</b>	100	1.4M	14k	2.4M	24k
<b>UTA</b>	42	1.86M	44k	1.5M	36k

**A: Rather well**

# Plans

- Interface MCFARM to Condor and Globus –

we would like to convert our software into GRID tool

- Add third farm

we consider adding third farm, 32 processors, from UTA computing services

# **Conclusions:**

- **The UTA farm is very successful**
- **Around 4.5M events delivered so far (in 2001 only)**
- **UTA MCFARM software is solid and robust**
- **The production is very efficient. We are not the largest farm in d0, however we deliver more MC data/CPU than any other farm in d0.**
- **We would like to expand our farm, either by using resources from UTA computing center or by buying more nodes.**