McFarm on Generic Clusters

Outline:

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- Generic Cluster/Batch System Setup
- Possible Workarounds for current McFarm software
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Introduction

- McFarm is a very nice piece of Software which can almost Fully Automate D0 MC Production and Storage into SAM, including Bookkeeping

- Installation requires root access, though

- Made lot of Progress to reduce root Dependence and the extent to which the Cluster expected to be dedicated to McFarm Production

- But still not Completely Independent
Generic Cluster/Batch System Setup

- Ideally, McFarm should be Installable in a regular user account without root access and Configurable with Environment Variables rather than Soft Links in root controlled areas.

- McFarm should submit the MC Jobs to the Local Batch Scheduler, rather than deciding what node to run on.

- With fast Network Connections and Large Disks on all Worker Nodes, Locality of Input/Output files no longer That Critical.
Possible Workarounds for current McFarm software

Attempt to use Current McFarm Software to create “Virtual McFarms” under existing PBS Scheduler:

- Submit Multi-Node PBS Job (up to 32 Nodes)
- Setup McFarm inside that PBS job, as if it were a dedicated Cluster
- Run McFarm Request, gather Output back to the “Head Node” – PBS Master Node, and from there back to OUHEP Sam Station
- Break Down McFarm Cluster at the end of the PBS Job
Progress

- Biggest Hurdle until this Week: Intercommunication between OSCER Batch Nodes not possible because of Security Concerns

- Solved that Problem with Home-Cooked Scripts which can be called like ssh

- Now Work can continue with Implementation of “Virtual McFarms”

- Will not be Trivial because Automation of McFarm setup not Easy
Summary

- Ideally, in the Not-Too-Distant Future, McFarm should be able to run on Generic Shared Clusters like OSCER
- This will require quite a bit of Work, and Resources are Limited
- Short Term Solution would be to implement “Virtual McFarms” under existing Multi-Node Batch Systems
- That requires full Automation of McFarm Setup, which is Non-Trivial
- First Step has been accomplished at OSCER
- Plenty More Work to Do