

Grid Endgame Proposal

Step 1: Temporary Administration Machine

Install 32-bit Ubuntu Server OS on the spare Dell PowerEdge 2600, and assign hostname grid-control. I will then set it up as the NFS and NIS master for the grid, migrating the data off of grid1. Will then wipe and reinstall grid1 as a node. This configuration will work fine, so long as no one tries to execute the 64-bit MPI/SGE software from the PowerEdge.

Step 2: Install Sun Grid Engine

Install SGE on the grid, with grid-control being the admin console, submit host, and Berkley DB spooling server. Grid1 will be the Master Host, and the rest of the nodes will be the Execution Hosts. This will maintain the grid as a 64-bit execution environment.

Step 3: Migrate

Migrate all user operations off of the current grid0 onto the new grid.

Step 4: Re-appropriate grid0 Hardware

Install 32-bit Ubuntu Server OS onto the current grid0, and clone the root partition from grid-control. Then configure the system to take advantage of the extra storage, and change the hostname to grid0.

Step 5: Reconfigure Grid Master

Change the grid configuration to look at grid0 as the master, instead of grid-control.

Step 6: Re-appropriate grid-control Hardware

Reformat grid-control, install 32-bit Ubuntu Server OS, and configure as monitoring server using Zenoss.

Justification

The current grid0 contains a large amount of storage (1.4TB), making it an ideal candidate for the grid storage host. Since neither of the PowerEdge systems is 64-bit, they are not candidates for inclusion into the grid as Master or Execution hosts. The current configuration of grid0 is a remnant from an earlier iteration of the grid, and is not compatible with the new solution.

Elon University SGE Worksheet

Parameter	Value
sgc-root directory	/sgc (NFS-mounted on each node)
Cell name	elon
Administrative user	sgc (NIS user)
sgc_qmaster port number	536/tcp
sgc_execd port number	537/tcp
Master host	grid1
Shadow master hosts	--
Execution hosts	grid2 through grid8
Administration hosts	grid0
Submit hosts	grid0
Group ID range for jobs	31000 - 315000 (allows for 500 concurrent jobs)
Spooling mechanism (Berkeley DB or Classic spooling)	Berkley DB
Berkeley DB server host (the master or another host)	grid0
Berkeley DB spooling directory on the database server	/var/spool/grid
Scheduler tuning profile (Normal, High, Max)	normal
Installation method (interactive, secure, automated, or upgrade)	interactive

Notes:

The host `grid0` on this document is the proposed successor to the current `grid0`. This configuration is valid only if we can re-appropriate the current `grid0`; otherwise, for all fields containing `grid0`, substitute `grid1`.