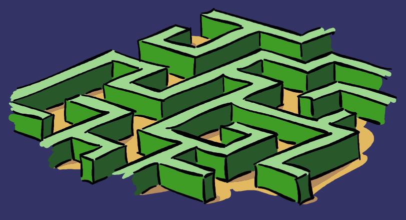
Costs (last 5 years)

- Capital costs
  - 5x1Tb disks   £235(*)
  - 5xsata power cables £5
- Development costs
  - Approx 15 days (install of SL5 and GPFS)
- Operating costs
  - Support time ?? but not high
  - <cough> power, when we start paying for it

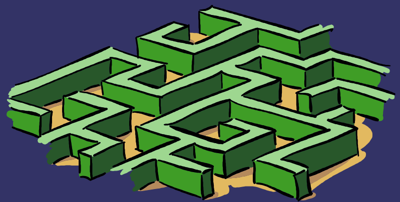
(*) currently selling for £250 on ebay



Power usage

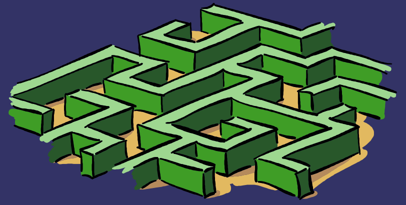
(@10p/kwh, not including pile of desktops)

- GPFS NSDs
  - 5xPE750 (0.45A idle 0.69A loaded)
  - = ***£460-£700/year***
- Infrastructure nodes
  - 2xPE750 (0.45A idle 0.69A loaded)
  - 1xPE1425 1cpu (0.58 idle 0.81 loaded)
  - = ***£300-£450***
- Worker nodes
  - 24xPE1425 1cpu (0.58 idle 0.81 loaded)
  - 34xPE1425 2cpu (0.79 idle 1.25 loaded)
  - = ***£8,300-£12,600***
- Total cost: ***£9,100-£13,000/year***



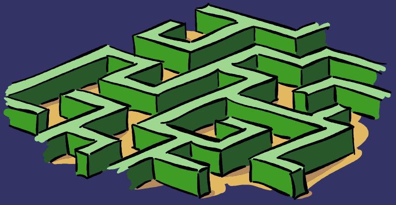
Usage

- Gridengine
  - ~20 user/year ~39% usage (of total cputime)
  - Usage tends to be in spikes and is slowly falling off
  - Tends to get used:
    - Because software not available on Eddie
    - Eddie is too busy
    - Want sole access to whole cluster
- Hadoop
  - Extreme MSC computing students & degree course
  - Research usage
  - About 40% usage



Possible savings

- Bin the whole cluster
  - Save ~£11K
- What about the current users?
  - Replace with new kit - £50K+
  - Replace with same number of cores £30K
  - Replace with discards/kit in storage and some spending ?
- Leverage some/all of school share in Eddie
  - Admin difficult with hardware at ECDF
  - Need ~10% of eddie nodes for at least semester 1



Possible savings

- Double up CPUs in single CPU nodes
  - Saves £900-£1100/year
  - But reduces the memory/cpu ratio
- Bin the single CPU 1425s
  - Saves £1800-£2900/year
  - Reduces the core count by 48
- Switch off the cluster when not in use
  - Saves ~£5,800
  - Hard to implement in hadoop