Neon System Configuration Options
December 20, 2012

Below is a draft list of possible system configurations for the Neon cluster. All costs are best estimates. On the compute nodes we are likely to get better pricing since we will be purchasing a number of systems but that can't be guaranteed. All equipment includes a five-year warranty.

Additional questions that we need to answer that I have come up with are:
- Is Infiniband desired? (Add ~$1000 per node.)
- Is GPU acceleration desired?
- Is Xeon Phi acceleration desired?
- Should we have a configuration with more local disk space?

Compute Nodes
Medium Speed (12 Cores) - Expected Cost of $4500
  2 x Xeon E5-2640, 2.5GHz, 6 Core, 1333MHz Memory
  128GB Ram (16x8GB) (Upgrade to 256GB for $1400)
  2TB Local Hard Drive
  1Gb Ethernet

High Speed (16 Cores) - Expected Cost of $6000
  2 x Xeon E5-2670, 2.6GHz, 8 Core, 1600MHz Memory
  128GB Ram (16x8GB) (Upgrade to 256GB for $1400)
  2TB Local Hard Drive
  1Gb Ethernet

512GB Intel Node (24 Cores) - Expected Cost of $15,000
  4 x Xeon E5-4610, 2.4GHz, 6 Core, 1333MHz Memory
  512GB Ram
  4TB Local Hard Drive
  1Gb Ethernet

512GB AMD Node (64 Cores, 64 Integer, 32 Floating Point) - Expected Cost of $13,000
  4 x Opteron 6276 2.3GHz, 16-Core, ???? Memory Speed
  512GB Ram
  4TB Local Hard Drive
  1Gb Ethernet

Note: Despite the lower core counts on Xeon processors most of what I’m seeing indicates that they are faster than the Opteron processors. It would be simpler if we stuck with a single architecture (Intel is what we have currently).
**Storage Servers**

Note: Storage servers are not high availability but do have redundant components and are configured using triple parity raid.

**Small Storage Server:**
- 10 Bay Storage Server (25TB Max)
- Base Price - $4500 - No Hard Drives
- 14TB - $6000
- 25TB - $9000

System Information
- 5 Year Warranty - Including Hard Drive Replacements
- 32GB, 12 Core AMD Processor, Mirrored Boot Drive
- No SSD Cache Acceleration
- No Included SAS Expansion
- CIFS/NFS Filesharing
- Qty 2 1Gb Ethernet Ports

**Large Storage Server:**
- 36 Hard Drive Bay Storage Server (108TB Max, larger with expansion chassises)
- Base Price - $6000 - No Hard Drives
- 32TB - $12,000
- 54TB - $15,000
- 108TB - $23,000

System Information
- 5 Year Warranty - Including Hard Drive Replacements
- 64GB Ram, 12 Core Xeon Processor, Mirrored Boot Drive
- SSD Cache Acceleration
- SAS Connectivity to Expand System Up to 126 Drives using External Chassises
- CIFS/NFS Filesharing
- Qty 6 1Gb Ethernet Ports