Detailed Configuration

The Avalanche cluster consists of the following hardware:

avastg01

- 2 x Intel E5-2640 CPUs (12 cores total)
- 24GB of DDR3 RAM clocked at 1333MHz
- QDR Qlogic QLE7340 IB HCA
- Broadcom Corporation NetXtreme BCM5720 NICs
- 14 x 1TB 7.2K HDD for cluster storage
- 2 x 300GB 10K HDD for local storage

avafat01

- Dell PowerEdge R720 chassis
- 2 x Intel E5-2650 CPUs (16 cores total)
- 128GB of DDR3 RAM clocked at 1333MHz
- QDR Qlogic QLE7340 IB HCA
- Broadcom Corporation NetXtreme BCM5720 NICs
- 1 x 500GB 7.2K SATA HDD for local storage
- NVIDIA Tesla 20-Series M2075

ava01-21

- Dell PowerEdge R420 chassis
- 2 x Intel E5-2450 CPUs(16 cores total)
- 68GB of DDR3 RAM clocked at 1600MHz
- QDR Qlogic QLE7340 IB HCA
- Broadcom Corporation NetXtreme BCM5720 NICs
- 1 x 500GB 7.2K SATA HDD for local storage

cfp01-cfp06

- Supermicro 2U Twin2 chassis
- 2 x Intel E5-2650 CPUs (16 cores total)
- 64GB of DDR3 RAM clocked at 1600MHz
- QDR Mellanox MT27500 IB HCA
- Intel Corporation I350 Gigabit NICs
- 1 x 500GB 7.2K SATA HDD for local storage

cfp07

- Supermicro
- 2 x Intel E5-2640 CPUs (10 cores total)

- 132GB of DDR4 RAM
- 2x Intel Corporation I350 Gigabit NICs
- 1 x 1TB 7.2K SATA HDD for local storage

cfp08

- Supermicro
- 2 x AMD EPYC 7301 16-Core Processor (32 cores total)
- 256GB of DDR4 RAM
- 2x Intel Corporation I350 Gigabit NICs
- 240GB 7.2K SATA HDD for local storage

inegi01-inegi02

- Supermicro 2U Twin2 chassis
- 2 x Intel E5-2680 v2 CPUs (16 cores total)
- 64GB of DDR3 RAM clocked at 1866MHz
- QDR Mellanox MT27500 IB HCA
- Intel Corporation I350 Gigabit NICs
- 1 x 500GB 7.2K SATA HDD for local storage

ceft01

- Supermicro SYS-6028TR-D72R
- 2 x Intel E5-2683 v4 CPUs (32 cores total)
- 128Gb of DDR4 Synchronous 2400 MHz
- I350 Gigabit Network Connection
- 1 x 126GB SuperMicro SSD
- 55TB LSI2208

ceft02

- Supermicro SYS-6028TR-HTR
- 2 x Intel E5-2650 v4 CPUs (24 cores total)
- 64Gb of DDR4 Synchronous 2133 MHz
- I350 Gigabit Network Connection
- 1 x 126GB SuperMicro SSD
- 29TB LSI2208

InfiniBand

The cluster nodes (excluding inegi01-inegi02) are linked by a single Qlogic 12200 switch.

GFLOPS Performance

Each E5-2450 is capable of 134.4 GFLOPS, each E5-2650 is capable of 128 GFLOPS, each E5-2680v2 is capable of 448 GFLOPS. This gives the cluster a total performance of 5644.8 + 1792 + 896 = 8332.8 GFLOPS.

The Tesla M2075 provides a further 515 dual precision GFLOPS to give a total of 8847.8 GFLOPS.