



## **Project Cherry Creek**

You are receiving this message because either you or your Principle Investigator on your research project has requested that you receive a user account for the Cherry Creek Supercomputer.

In order to receive your account information you must sign and return the attached user agreement. If you are located in Las Vegas, this must be done in person. If you are remotely located, you may fax the signed agreement to 702-895-4156. No accounts will be issued without a signed agreement on file.

### **Things to know / frequently ask questions:**

#### **What is the Cherry Creek Project?**

It consists of two major subprojects:

- The Cherry Creek Supercomputer and the
- UNLV Dedicated Research Network

#### **Who are the partners of the Cherry Creek Project?**

In addition to the UNLV National Supercomputing Center; Switch Communications, Intel Corporation, Penguin Computing, and Altair Engineering Inc. are major partners in this project.

#### **Where is Cherry Creek located?**

The physical machine is located in the SUPERNAP7 data center of SWITCH Communications in Las Vegas. Because it is housed in a secure facility, it is normally not possible to see it in person.

#### **Why Cherry Creek 2.0?**

The name Cherry Creek was used by Intel when they built and demonstrated the machine at trade shows. We started using the name internally and it just stuck. The original Cherry Creek was used as a demo machine at several trade shows and conferences. It was ranked on the top 100 Green machines and in the top 500 supercomputer lists.

We are hoping to again upgrade Cherry Creek to version 3.0 in the fall of 2015.

#### **What is the UNLV Dedicated Research Network?**

The research network provides a high speed network between the UNLV campus researchers and SWITCH SUPERNAP7. It also provides a high speed 10Gb/s connection to the Internet.

Currently, the connection between UNLV and SWITCH runs at 20Gb/s (redundant 10Gb circuits) over dedicated fiber optic connections. The Research Network will be upgraded to 200Gb/s (redundant 100Gb circuits) sometime in Fall 2015.

#### **What hardware does Cheery Creek contain?**

The original Cherry Creek (1.0) had 48 nodes. Each node had 2 Intel Xeon E5-2697v2 (2x12 cores), 128Gb Ram, and 3 Intel Xeon Phi 7120P coprocessors (with 61 cores each).

Cherry Creek 2.0 has the following: 48 Penguin Computing Relion nodes each with 2 Xeon E5-2640v3 (2x8 cores), 128Gb Ram, and 4 Intel Xeon Phi 31S1P (with 57 cores each). It also contains 24 Intel manufactured nodes with 2 Xeon E5-2697v2 (2x12 cores), 192Gb Ram, and 2 Intel Xeon Phi 7120P coprocessors (with 61

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cores each).

**How fast is Cherry Creek?**

Cherry Creek 2.0 currently has the following capabilities: theoretical peak speed of 495 TFlops/s (Trillion Floating-Point operations per second), total Memory: 32.470 TB (TeraBytes), and total scratch storage of 46.32 TB.

**What kind of programs are suited for Cherry Creek?**

The type of programs that are suited for Cherry Creek are large computationally intensive programs. Parallel programs written in C/C++ or Fortran 90+ using MPI are best suited for using the Phi coprocessors. Other programs may be run but if they do not use MPI, performance will be less.

One area of investigation is to try and provide improved support of Java programs so they may make better use of the Phi coprocessors.

**Future Training?**

Intel training workshops will begin in fall 2015. The Center will contact you and your group as soon as dates are locked in. The workshops will be taught by instructors from Intel.

**How can I find out more information?**

Contact the UNLV National Supercomputing Center at 702-895-4153 or on the web at: <http://www.nscee.edu>.