

Systems at PDC

System

- 11 cabinets with a total of 528 blades that contain 2,060 compute nodes and 26 service nodes
- 2 x Intel CPUs per node:
 - 9 of the cabinets have Xeon E5-2698v3 Haswell 2.3 GHz CPUs (16 cores per CPU)
 - 2 of the cabinets have Xeon E5-2695v4 Broadwell 2.1 GHz CPUs (18 cores per CPU)

Performance

- Peak performance 2.438 PFLOPS
- 156.4 TB RAM:
 - 64 GB per Haswell node
 - 128 GB per Broadwell node
- High speed network Cray Aries (Dragonfly topology)
- 5 PB Lustre file system

Usage

- available for academic research via SNIC and PRACE
- also used for some industrial research
- operation currently funded till Q4 2020

Beskow



Cray XC40

fastest academic supercomputing system in Scandinavia

Elsa Beskow is one of the most well-known authors and illustrators of children's books in Sweden. Alice Tegnér was a Swedish music teacher, poet and composer, who was recognized as the foremost composer of Swedish children's songs during the late 19th century and the first half of the 20th century. Elsa and Alice worked together to create many charming song books for children, with Alice composing the music and Elsa illustrating the books. Both Alice and Elsa lived in Djursholm in Stockholm and now, almost a century later, the systems Tegnér and Beskow are cooperating in a similar manner, albeit a little farther south at PDC in Norra Djurgården.

The panels on Beskow feature illustrations by Elsa Beskow from "Children of the Forest" (Tomtebobarnen) on the left, "The Land of Long Ago" (Resan till Landet Längesen) on the right, and the centre panel is from "Mother's Little Ollie" (Mors lilla Olle) which was a collaboration between Elsa and Alice Tegnér.

System

- **5 fat nodes with 2 TB RAM**
 - 4 x 12 cores Intel E7-8857v2 Ivy Bridge
 - 2 TB RAM - 48 cores
 - 2 x NVIDIA Quadro K420
- **5 fat nodes with 1 TB RAM**
 - 4 x 12 cores Intel E7-8857v2 Ivy Bridge
 - 1 TB RAM - 48 cores
 - 2 x NVIDIA Quadro K420
- **46 thin nodes**
 - 2 x 12 cores Intel E5-2690v3 Haswell
 - 512 GB RAM - 24 cores
 - 1 x NVIDIA Quadro K420
- **9 thin nodes with GPU**
 - 2 x 12 cores Intel E5-2690v3 Haswell
 - 512 GB RAM - 24 cores
 - 1 x NVIDIA Tesla K80
- **2 file transfer nodes**

Tegnér



Usage

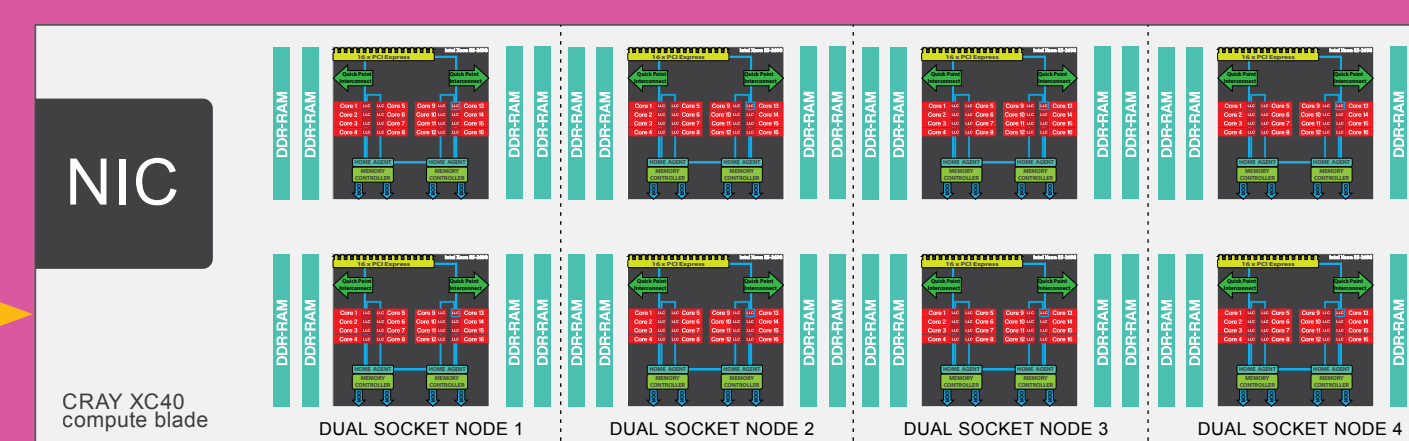
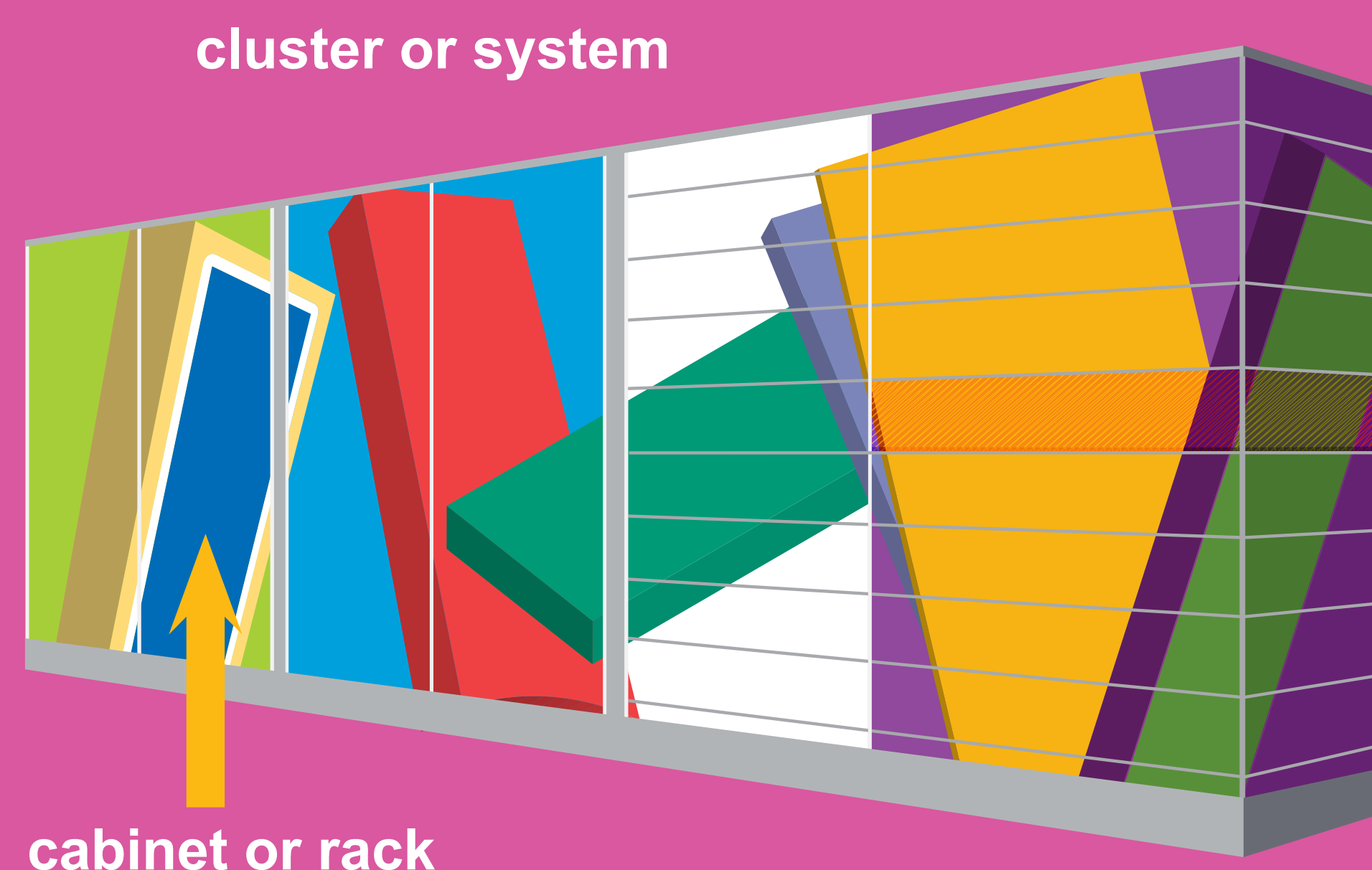
- primarily used as a pre- and post-processing system for Beskow (a small time allocation on Tegnér is automatically included in all Beskow time allocations)
- also available to academic researchers in the Stockholm region for general computational processing
- operation currently funded till Q4 2020

Performance

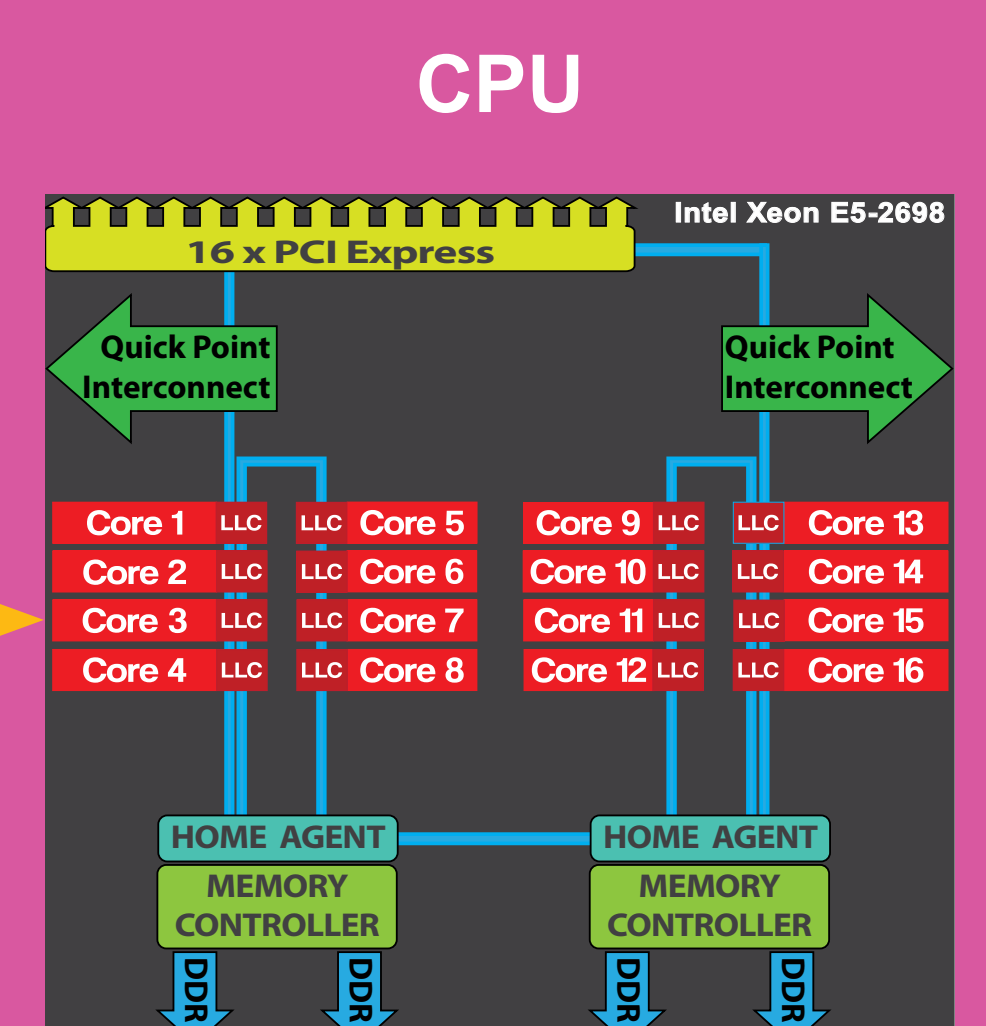
- Peak performance 66 TFLOPS CPU, 48 TFLOPS GPU
- 42.5 TB RAM
- Full bisectional Infiniband EDR (12 GB/s, less than 1.4 μ s MPI-latency)
- 5 PB Lustre file system



Supercomputer anatomy



This blade has 4 nodes side by side. Nodes are individual computers that consist of one or more CPUs together with memory; in this particular case there are two CPUs in each node.



Cores are individual processors. Central Processing Units (CPUs) used to have just a single core, so "core" and "CPU" were used interchangeably. Now most CPU chips are multiprocessors made with multiple cores.

Access QR codes or visit www.pdc.kth.se for more information.