CASE STUDY 1: Intel Cherry Creek Cluster
Liquid Cooling a Supercomputer

HPC Setup

- CoolIT Rack DCLC™ AHx35 (no facility water)
- Supermicro FatTwin (4-node GPU front I/O)
- 7 chassis per rack
- 28 servers per rack
- Intel Xeon Processors and Coprocessors
- 3x Intel Xeon Phi and 2x Intel Xeon CPU’s
- Featured 9,936 cores
- TrueScale Infiniband
- Cluster to run live at SC13, Denver CO
CASE STUDY 1: Intel Cherry Creek Cluster
Liquid Cooling a Supercomputer

Results
- Achieved peak performance of 131.2 Teraflops
- Less than 75kW of power consumed
- Cluster ran live at SC13 Denver, CO
- Awarded:
  - #400 on Top500 Supercomputers list
  - #41 on Green500 list
- Cluster now housed at SWITCH data center for UNLV
- Overall power savings enables a 24% decrease in annual operating expenses and ROI in less than 1 year
CASE STUDY 2: Poznan Supercomputing and Network Center
Via system integrator ITprojekt

HPC Setup

- CoolIT Systems Rack DCLC™ CHx40
- Chassis: Huawei E9000 chassis
- Server: Huawei CH121
- Xeon E5-2697 v3
- Memory Modules: DDR4 8GB
- Brantley EP Motherboard
- 128 servers in 3 racks
- CPU and Memory cooled by liquid
CASE STUDY 2: Poznan Supercomputing and Network Center

Via system integrator ITprojekt

Liquid Path

Return
Supply
CASE STUDY 2: Poznan Supercomputing and Network Center
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CASE STUDY 2: Poznan Supercomputing and Network Center

Via system integrator ITprojekt

Results

- 30kW per rack (3 racks)
- 910 GFLOPS per node (116 TFLOPS total)
- 40°C primary fluid supply temperature
- 80% of total IT load managed by liquid cooling
- 75% fan speed reduction (run at minimum)
- First ever Huawei liquid cooled cluster developed
- First DLC machine installed at PSNC