

HPC at CURC

Introduction to Infrastructure

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Data Centers

CU Boulder

- **HPCF** - Alpine, Summit, Blanca HPE chassis, most new infrastructure
- **SPSC** - older infrastructure, Blanca Dell chassis
- **COMP** - rarely if ever used by RC

Teams

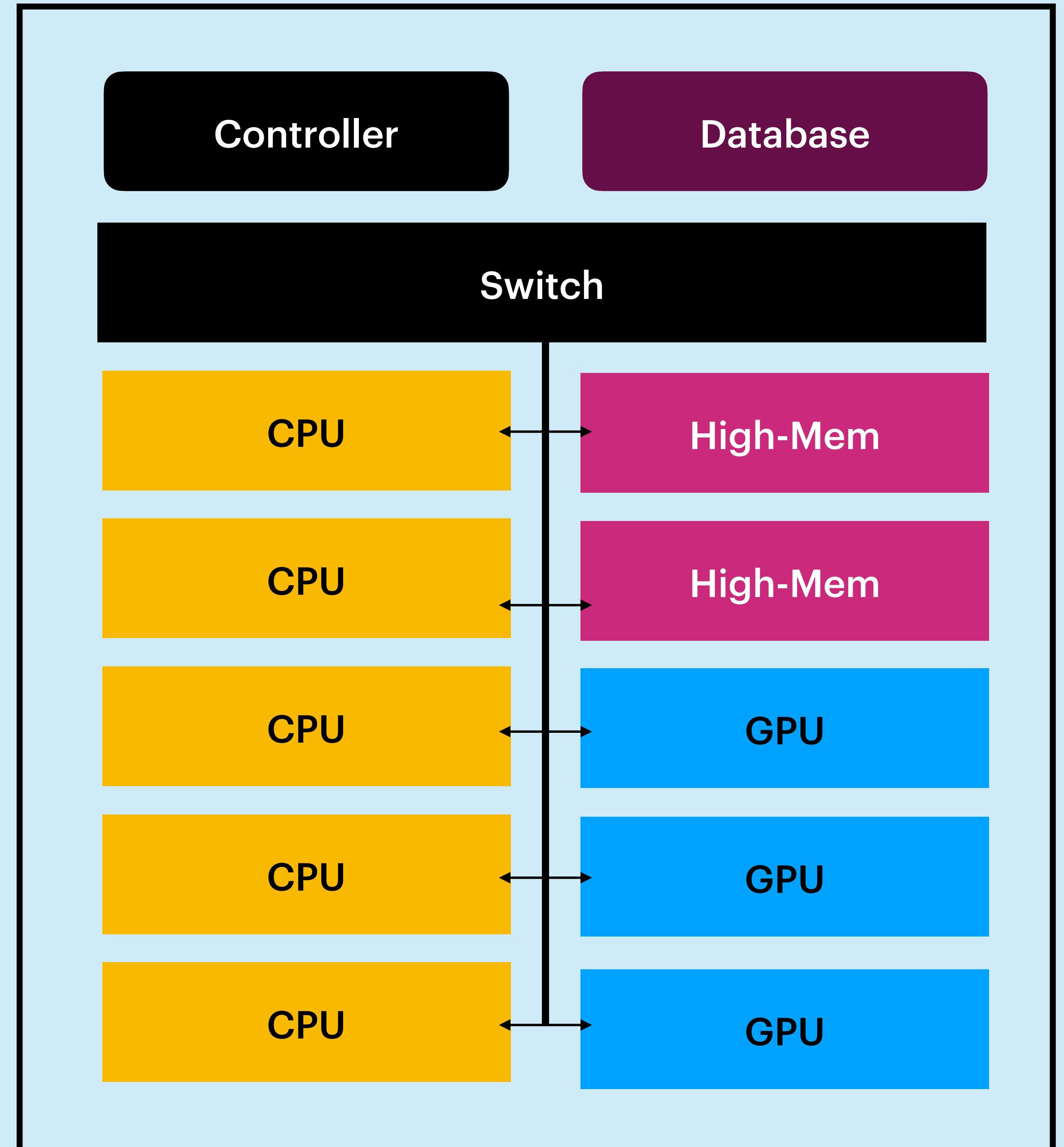
CU Boulder

- **Research Computing (RC):** Us!
 - Ground team: HPC, storage, user support
 - Cloud team
- **Data Center Operations (DCOPS):** Hardware installation, maintenance, coordination with Facilities Management (FACMAN)
- **Network Engineering Operations (NEO):** Switches, cables, routing

Summit

2nd Generation HPC

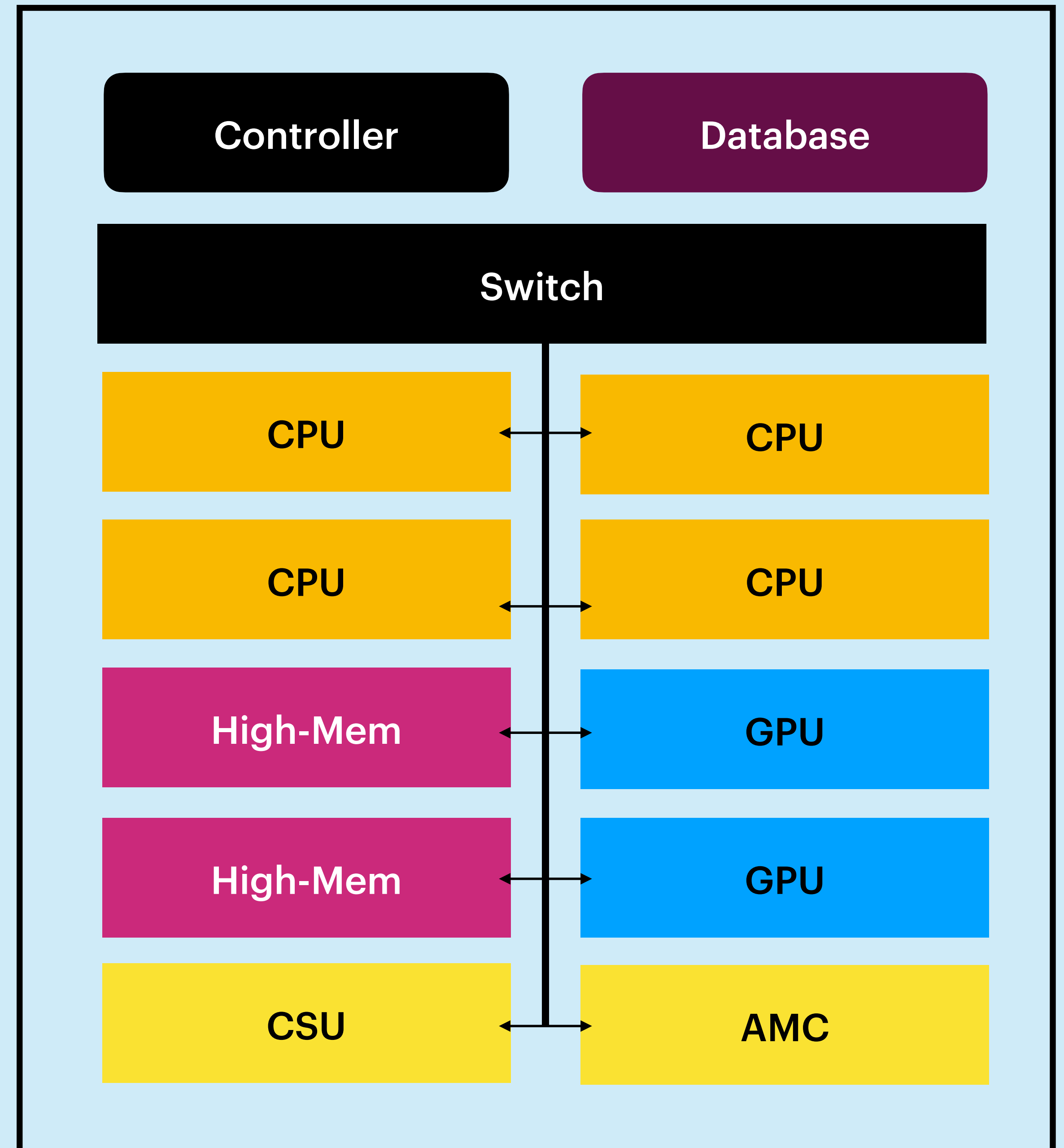
- >400 nodes
- 1.2PB scratch storage
- 12,000 cores
- Intel Xeon “Haswell” CPU’s
- Scratch storage out of warranty at end of September
- Challenges: decommissioning schedule



Alpine

3rd Generation HPC

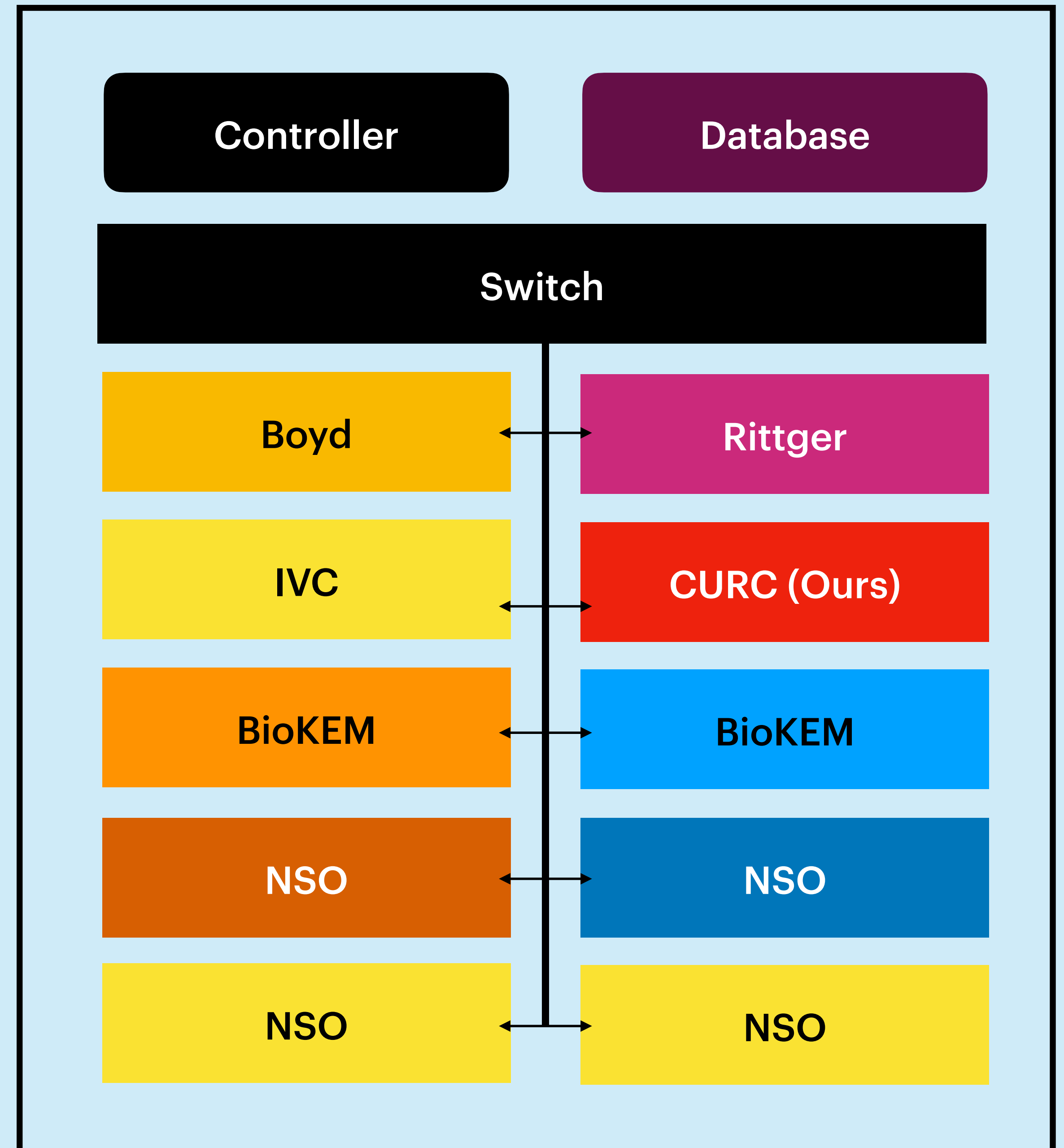
- 64 CPU nodes, 16 GPU nodes
- 12,000 cores
- 1.8PB scratch storage
- AMD CPU's
- “Pod” architecture
- Vendor: Dell
- HPCF
- Challenges: expansion, imaging



Blanca

Condo Cluster

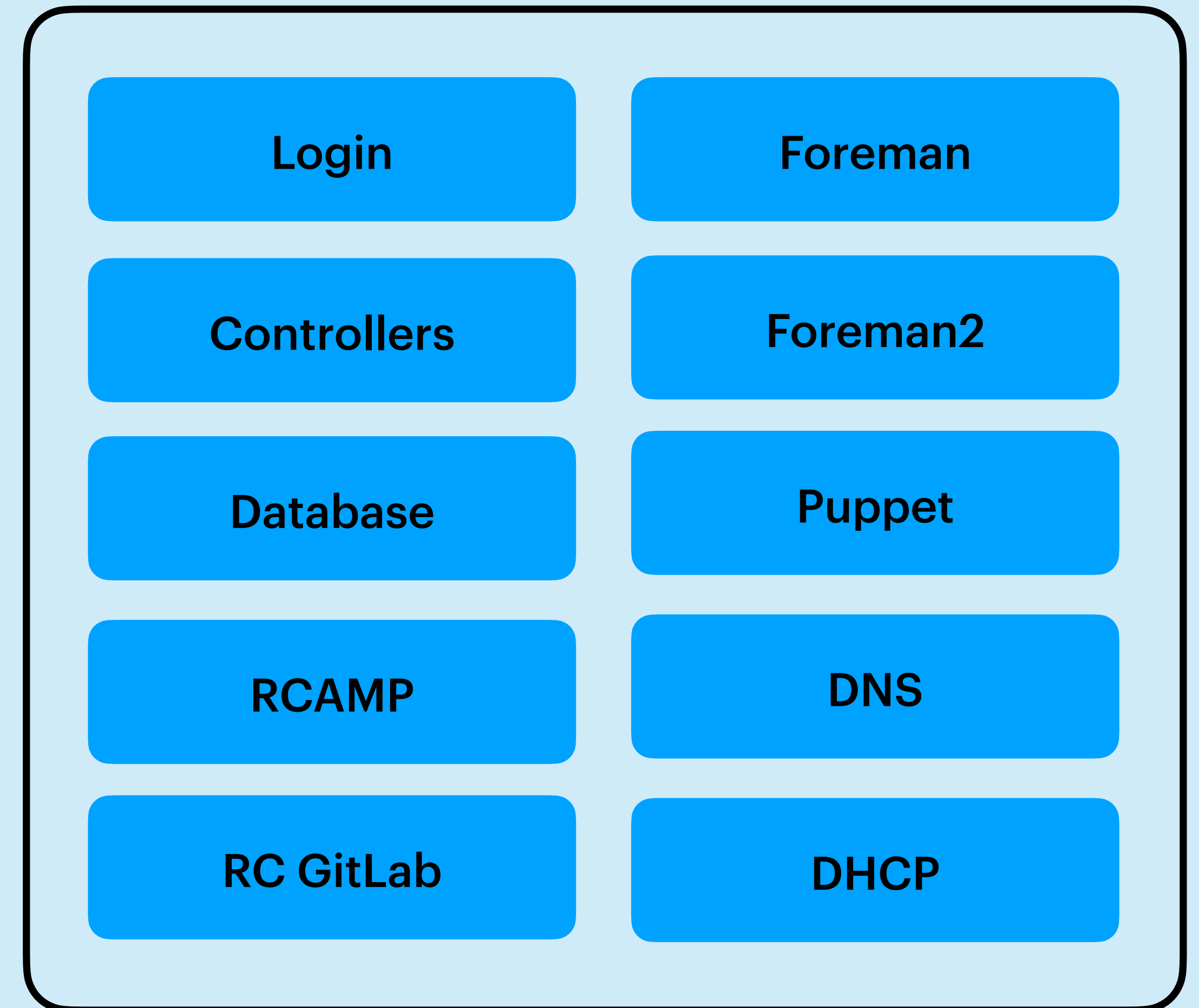
- Researchers purchase nodes, we provide management and support
- Mostly blade-and-chassis, plus a few rack-space nodes
- Vendor: HPE, Dell
- HPCF and SPSC
- Challenges: “pervasively heterogeneous”



Wilde

Virtual Machines

- Login nodes
- Slurm controllers
- Databases
- Core infrastructure



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