CompF4: Storage and processing resource access (Facility and Infrastructure R&D)

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Topical group activities and links

- **Mailing list:**
  - https://snowmass21.org/computational/start#topical_groups
- **Aug 2020** (link) - Computational Frontier workshop - 2 days: seeded with presentations, with plenty of discussion (notes)
- **Late 2020 -** LOI submissions (link)
- **Oct 2020:** Community planning meeting: Frontier led sessions
- **Mar 2022:** Whitepaper submissions
  - https://snowmass21.org/submissions/compf
- **Apr 2022:** Snowmass CompF4 Topical Group Workshop
  - https://indico.fnal.gov/event/53251/

Timeline and deliverables

https://snowmass21.org/computational/start#time_schedule

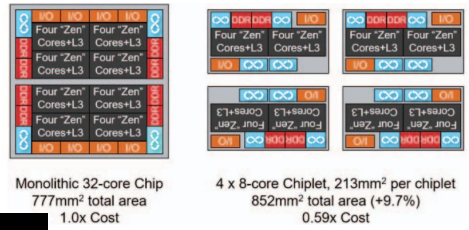
- ~~January 31, 2022: White Paper title and abstract to conveners~~
- ~~March 15, 2022: Official deadline for white paper submission to arXiv~~
- ~~May 31, 2022: Preliminary reports by the Topical Groups~~
- ~~June 30, 2022: Preliminary reports by the Frontiers~~
- July, 2022: Snowmass Community Summer Study (CSS) at UW-Seattle
- September 30, 2022: All final reports by TGs and Frontiers
- October 31, 2022: Snowmass Book and the on-line archive documents

Computational Frontier Report

- Topical Group Report v0
  - https://www.dropbox.com/s/b1uzzmajcfnt10u/SnowmassBook_CompF4_draft_v0.pdf?dl=0

A time of challenges and opportunities in *resources*

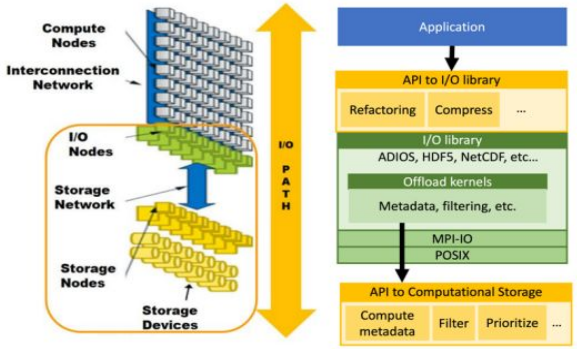
Increased specialization and heterogeneity

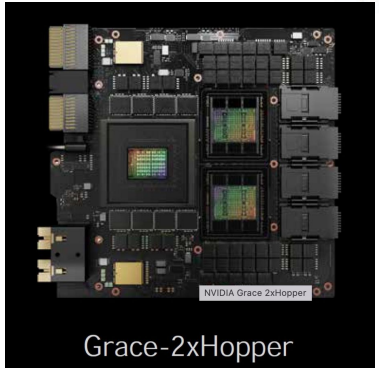


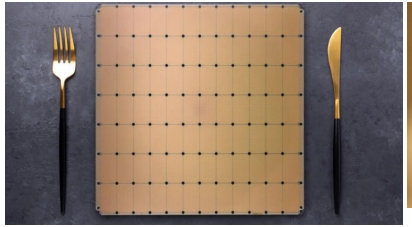
Cpu chiplets

Processing in Storage

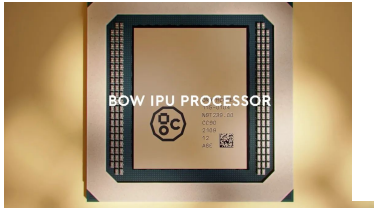
Image from Bonnet et al. ASCR position paper



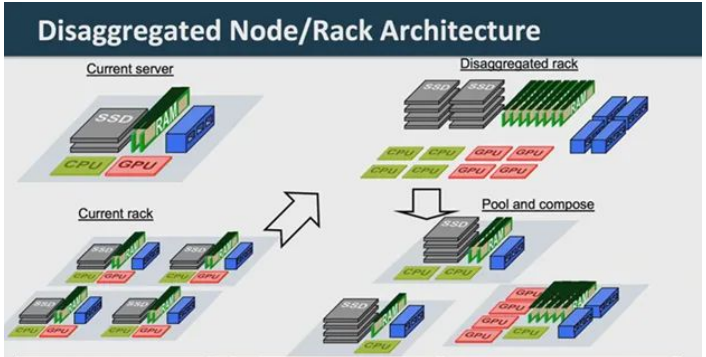




AI hardware



Disaggregation and more efficient use of resources



A time of challenges and opportunities in *interfaces*

Huge investments from the cloud that can be exploited. But it is reshaping the market

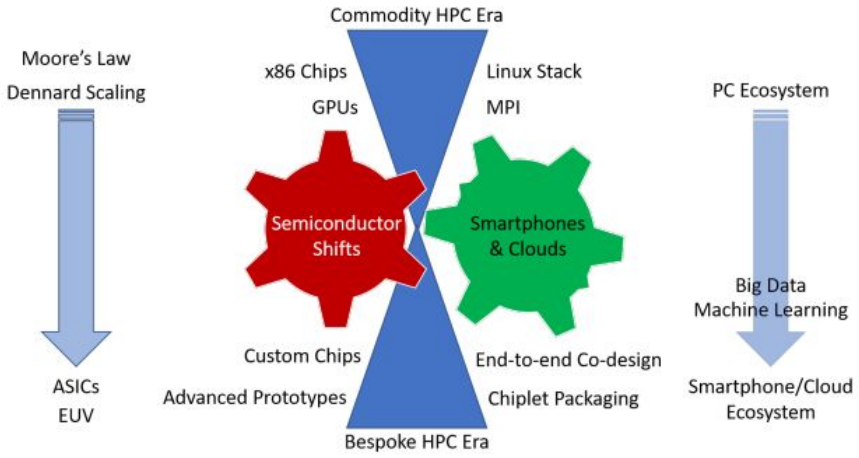


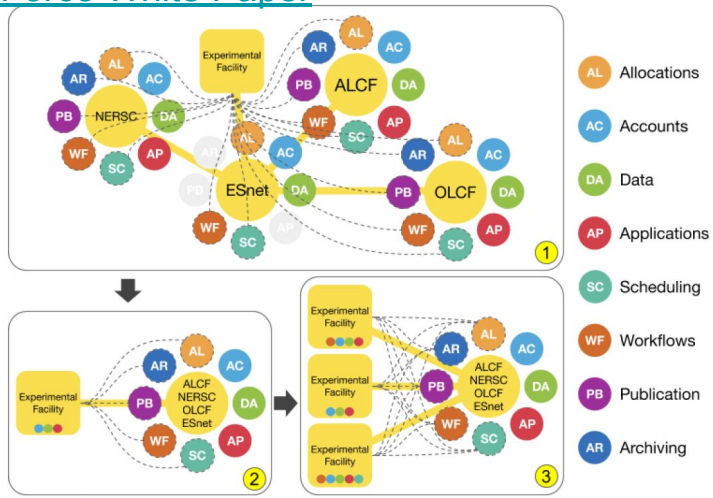
Figure 1: Technical and Economic Forces Reshaping HPC

E.g. Reed, Gannon, Dongarra Reinventing High Performance Computing: Challenges and Opportunities arXiv:2203.02544

Push towards APIs and integrated access to resources

COmanage™ jupyter kubernetes SHIFTER

Integrated Research Infrastructure Task Force White Paper



CompF4 Topics and leads

Processing: Meifeng Lin and Ian Fisk

AI Hardware: Javier Duarte and Nhan Tran

Storage: Carlos Maltzahn, Peter Van Gemmeren and Bo Jayatilaka

Analysis facilities: Oksana Shadura, Mark Neubauer and Gordon Watts

Edge Services: Ofer Rind and Benjamin Weaver

Networking: Eli Dart, Chin Guok and Shawn McKee

Live notes for today:
https://docs.google.com/document/d/1aSApF_kom57R8ZnjttuEvfYCkUcsIewPTvgx_nE80QI/edit