



# The Need and Challenges of Interoperating UFS Across Multiple Clouds

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## Characteristics of UFS - decision tool:

- Time sensitiveness of NWP, AI weather products/services
- Huge amount of data (Peta byte scale)
- Complicated model physics and data structures
- **HPC hardware and comprehensive software stacks**

## The needs of distributed UFS operations:

- Disaster recovery/continue operation
- Stay with latest HPC technologies
- Closer to business delivery end points
- Mitigate the lock-in risk of business

**Goal:** Collectively achieve the economies of scale

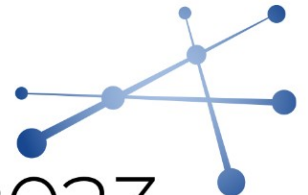


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## The challenges:

- Characteristics of UFS as a decision tools:
  - Time sensitiveness of NWP, AI weather products/services
  - Huge amount of data (Peta byte scale)
  - Complicated model physics and data structures
  - **HPC hardware and comprehensive software stacks**
- Different APIs for similar operations
- Obscure global view of computing resources
- Latency - Dealing with failures timely
- Cost of operating over multiple clouds



## Recommendations?

- How?
  - EPIC - the leading role
  - HPC hardware vendors
  - Cloud service providers
  - ISO or One AMI
  - Open-source software stacks
  - Community Participants
- Best practice guideline

