



# Storage I/O and Data Management for Exascale Architectures

## About IO-SEA

IO-SEA aims to provide a **novel data management** and storage platform for exascale computing based on hierarchical storage management (HSM) and on-demand provisioning of storage services. The platform will efficiently make use of storage tiers spanning NVMe and NVRAM at the top all the way down to tape-based technologies. System requirements are driven by data intensive use-cases, in a very strict co-design approach. The concept of ephemeral data nodes and data accessors is introduced that allow users to flexibly operate the system.

Multi-tiered Storage

Ephemeral Data Life Cycle Management

Advanced Instrumentation

Package of New API's



# Our Approach

## Data Workflow

Significantly improvement by allowing applications to tag data and therefore to add information about its future usage.

## Instrumentation

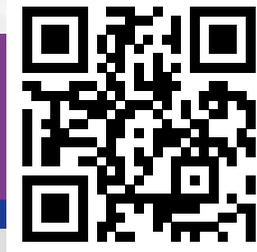
Extension of tools in order to build applications and workflows models focusing on data creation and data consumption.

## API

Design of Data Access and Storage application Interface (DASI) to abstract those structures from their actual storage form and tier location.

## HSM

Making it possible to use NVMe devices, HDD, SSD and tapes inside the same tier and complete the whole data lifecycle inside the same system.



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