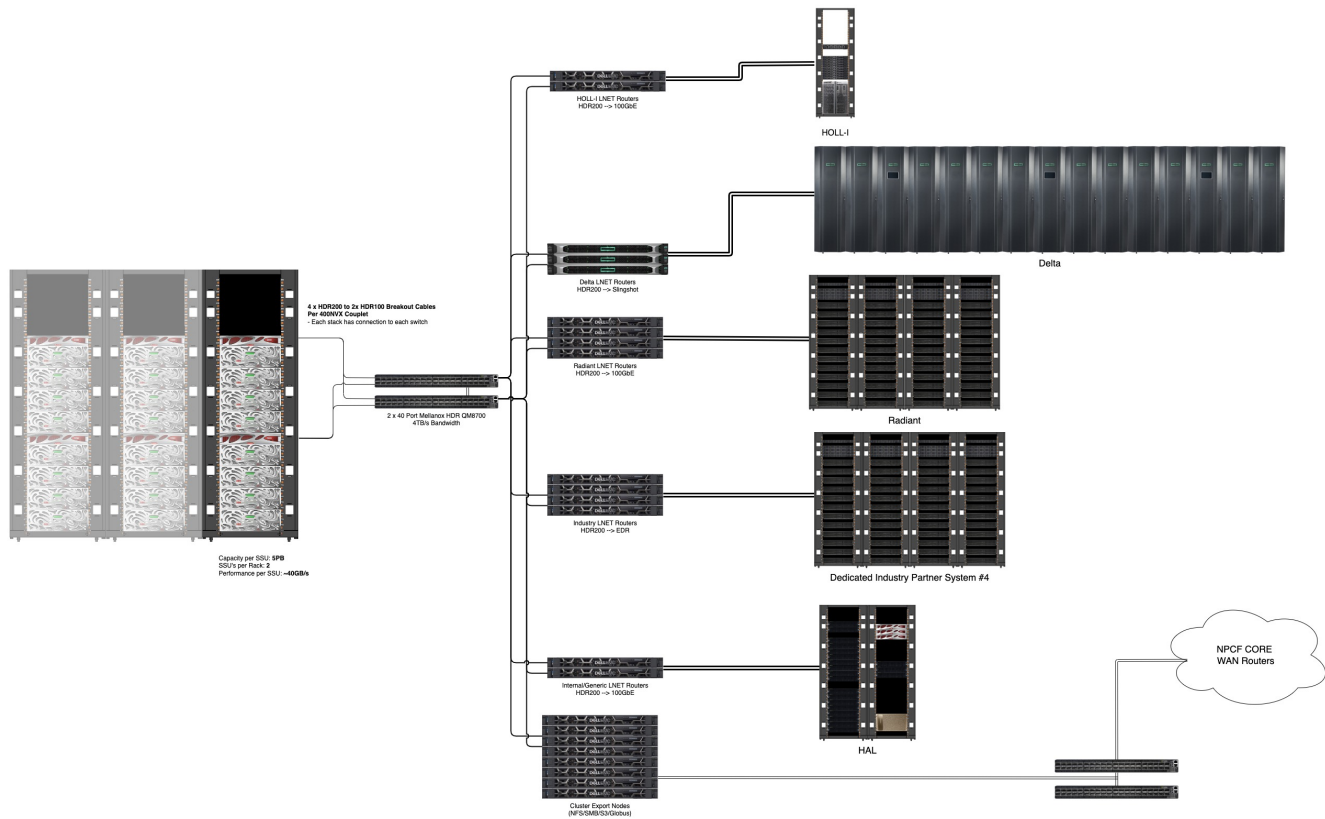


# Taiga Architecture

## Architecture Diagram



## SSU (Scaleable Storage Unit)

The building block for the *Taiga* system is known as an SSU (Scaleable Storage Unit). Each SSU is composed of a DDN ES400NVXE unit containing 12 x 15.36TB NVME drives, with 4 SS9012 enclosures attached containing a total of 352 18TB SAS drives. This gives each SSU a capacity of ~5PB usable after formatting and data protection. Two SSUs are housed per rack, with room at the top for service nodes, DTN nodes, and switches. *Taiga* is built to scale out with more of these SSUs as demand for the system grows over time.

## Interconnect Fabric

*Taiga* is built on a Mellanox HDR fabric with an aggregate bandwidth of 4TB/s. All DDN controller couplets, cluster LNET routers, and Cluster Export Services nodes connect to a pair of Mellanox QM8700 40-port Managed HDR switches. This fabric serves as the backbone for the storage infrastructure. LNET routers placed in each system provide the network translation to their own fabric type.

## File System

DDN's ExaScaler Lustre appliance was chosen for use on *Taiga* currently running Exa 6 based on Lustre 2.14. Lustre is a highly scalable and performant HPC file system with a growing number of features that help support bare metal workloads but also VMs and Containers. Newer Lustre features such as sub-directory mount, PFL, and DNE3 are being leveraged on *Taiga* in addition to tools and features provided by DDN's ExaScaler platform such as snapshots and the Stratagem policy engine.