

Applications

Open MPI / MPICH

OpenSHMEM / UPC /
PGAS

PyTorch / Tensor Flow

Legion / Parsec

NCCL/MVAPICH

UCC_internal API

CORE Component

Algorithm
Primitives

Topology

CONTEXT
Storage

UCC Services

UCS

Basic
CL

OPT
CL

UCG
CL

Vendor
CL

Schedule
Builder

Hierarchy-aware
Task

Deadline-based
task

UCC_TL_internal API

UCP
TL

NCCL
TL

SHARP
TL

SHARED
Memory
TL

Schedule
Execution
Engine

Hierarchical
Engine

Reactive
Engine

Verbs

UCX

Shared Memory

SHARP/Hardware Collectives