Project Olympus Goals for OCP

Standardization of Universal motherboard
• Reduce fragmentation within OCP community
• Supports side-by-side high-performance CPUs over 200W
• BOM and Firmware minimization for robust qualification

Flexible, Modular Design for use across OCP
• Adaptable to different server node chassis designs and racks
• Different Data Center environmental and usage models

Agility to adapt to new technologies
• Larger form factor, more I/O slots more adaptable

Cost Reduction across full lifecycle
• Lowest bare bones costs for empty chassis cost and transportation
• Lower solution costs
Choose the components you need

Universal Motherboard

OCS Project Olympus

Open Rack

EIA 19"

Other 19”/21”
Project Olympus — Components

Universal Motherboard

- 42U & 48U 1200mm EIA Rack
- Rack Management
- World-wide Power Solution
- Management GbE
- Server
- 88 HDD JBOD
Universal Motherboard

Optimized for Performance, I/O flexibility
- High-performance CPUs, up to 32 DIMMs
- Three Standard PCI-Express Gen3 slots
  - OCP Mezzanine on card carrier
- Up to 16 CloudSSD M.2 NVMe Flash cards

Management flexible to meet your needs
- BMC Gigabit Ethernet (Redfish or IPMI)
- NCSI side-band through OCP Mezz
- KVM enabled on motherboard

Power and Thermal
- Cabled power connector adapts to the chassis
- Side-by-side CPUs for lower fan power
Project Olympus – Components

- 42U & 48U
- 1200mm EIA Rack
- Rack Management
- World-wide Power Solution
- Management GbE
- Motherboard
- Server
- 88 HDD JBOD
Server

Front Cabled I/O and Cold Aisle Service
- Three PCIe x16 slots
- Blind mate rear power and management
- Latching at the chassis, pull to release

CloudSSD Optimized Storage
- Up to 16 CloudSSD M.2 NVMe Flash slots
- LFF and SFF slots intended for low-cost boot drives

Embedded PSU and Fans
- 680W PSU: Dual-feed, three-phase, N+1 high availability solution (1020W total)
- Six N+2 fans for high-availability, lower per rack CFM
- Customized high-performance vapor chamber remote heatsink
Project Olympus – Components

Power Supply

- 42U & 48U 1200mm EIA Rack
- Rack Management
- World-wide Power Solution
- Management GbE
- Motherboard Server
- 88 HDD JBOD
680W High Availability Power Supply

Three x 340 PSUs Fully Integrated
- N+1 HA → no repair on failure
- 680W N+1 (1020W total power capability)
- Dual-feed auto-selection (IVS)
- Three-phase balanced AC power

Fault Mode Resiliency
- AC feed failure, automatic fail over
- PSU failure throttles if necessary
- Double fault will be extremely rare

Normal mode
680W
- 340W
- 340W
- 340W

Fault mode
680W
- 340W
- 340W
- 0W
Project Olympus – Components

42U & 48U 1200mm EIA Rack

Management GbE
Motherboard
Server
88 HDD JBOD

Rack Management

World-Wide Power Solution
World-Wide Power Solution

Supports high availability data centers
  • Dual-feed, three-phase Power to every slot
  • Rack power monitoring and throttling

Power and Management Distribution Unit (PMDU)
  • Distributes power and management
  • Integrated Rack Manager
  • Supports blind-mate servers

AC “7-Wire” Adapter for world-wide deployments
  • Three phases plus ground return
  • Data Center whips under development
    • 208V-30A, 208V-50A, 415V-30A, 400V-32A
Project Olympus – Components

- 42U & 48U 1200mm EIA Rack
- Rack Management
- World-wide Power Solution

- Management
- GbE
- Motherboard
- Server
- 88 HDD JBOD

- Rack Management
Management Architecture

**Rack Management**
- Restful API I/F – i.e. Redfish via external Ethernet
- Rack Manager (RM) ARM CPU running Linux

**Blade Management flexible to your needs**
- GbE I/F to each blade’s BMC
- NCSI enabled on motherboard with cable to OCP Mezz Carrier
- KVM enabled on motherboard

**Deployments**
- Integrated into PMDU for rack scale deployments
- Standalone, 1U rack mount version for hardware that does not use the PMDU
Project Olympus – Components

42U & 48U 1200mm EIA Rack

Rack Management

Management GbE

Motherboard

Server

World-wide Power Solution

88 HDD JBOD
JBOD – High Density Storage

4U JBOD – 88 HDDs / chassis
- Drawer design – slide out for repair
- Hot-plug HDDs, front-serviceable expanders
- Front cabled to compute blade head-node

Robust Feature Set
- BMC gathers HDD temps and status info
- Individual HDD on/off to minimize NTF

Configuration
- One head node, 88 HDD each
- Two head nodes, 44 HDD each
- Four head nodes, 22 HDD each
Project Olympus

- Components

42U & 48U EIA 19” Rack

- Rack Management
- World-wide Power Solution
- Management GbE
- Motherboard
- Server
- 88 HDD
- JBOD