

# Specification sheet of Application Specific Computing Hardware

## 1. General

### (1) General Provision

This document details the specifications for application specific computing hardware for use by researchers at Okinawa Institute of Science and Technology Graduate University School Corporation.

### (2) Configuration

- Compute nodes	16 sets
2-1. CPU	2 units
2-2. Memory	512 GB
2-3. Hard Disk	1 unit
2-4. Ethernet interface	1 unit
2-5. Infiniband interface	1 unit
2-6. Dedicated remote management interface	1 unit
2-7. Redundant high efficiency power supplies	2 units

Note: We accept the following nodes/chassis configurations as long as the quantities and the nodes will meet the below specifications:

- 16 single nodes
- 2 chassis with 8 nodes inside
- 4 chassis with 4 nodes inside
- 8 chassis with 2 nodes inside
- 1 chassis with 16 nodes inside

In case of other configurations or questions please write your proposal with an explanation to [tender@oist.jp](mailto:tender@oist.jp)

- Very large memory nodes	1 set
2-8. CPU	minimum 2 units
2-9. Memory	3 TB
2-10. Hard Disk	1 unit
2-11 Ethernet interface	1 unit
2-12 Infiniband interface	1 unit
2-13 Dedicated remote management interface	1 unit
2-14 Redundant high efficiency power supplies	2 units
2-15 Infiniband cables	18 sets

### (3) Specifications and Performances

#### - Compute nodes

##### 3-1. CPU

- Frequency: minimum 2,5GHz, maximum 2,6GHz
- 12 to 16 cores per socket
- CPU TDP ≤145 Watt

##### 3-2. Memory

- 512GB DDR4
- Maximum frequency
- Optimized DIMM configuration

##### 3-3. Hard disk

- 300 GB SATA or SAS HDD or larger

##### 3-4. Ethernet Interface

- 1Gb/s or better copper

##### 3-5. Infiniband Interface

- FDR 56Gb/s

##### 3-6. Remote management interface

- Dedicated 10/100 Mb Ethernet Interface
- Remote console capability
- Remote power management capability
- Compatible with IPMI version2

##### 3-7. Power supplies

- Redundant High Efficiency

#### - Very large memory nodes

##### 3-8. CPU

- Frequency: minimum 2,0GHz
- Up to 18 cores per socket
- CPU TDP ≤135 Watt

##### 3-9. Memory

- 3 TB DDR4
- Maximum frequency (memory speed must be detailed in the proposal if different)
- Optimized DIMM configuration

##### 3-10. Hard disk

- 300 GB SATA or SAS HDD or larger

##### 3-11. Ethernet Interface

- 1Gb/s or better copper

##### 3-12. Infiniband Interface

- FDR 56Gb/s

##### 3-13. Remote management interface

- Dedicated 10/100 Mb Ethernet Interface
- Remote console capability
- Remote power management capability
- Compatible with IPMI version2

##### 3-14. Power supplies

- Redundant High Efficiency

### 3-15. Infiniband cables

- Active Fiber cable
- 4x QSFP
- FDR (56GB/s)
- 15 meters

Required features for both the sets:

- All the servers delivered must conform to the physical power, heat and space limitations therein (refer to Appendix 1)
- All the hardware components must have the latest released and stable working firmware.
- The system must be delivered with software which can configure BIOS and remote management controller settings from the host operating system environment. The software shall be provided through a link to the website, USB key or CD.

#### (4) Place of delivery

A Place designated by the school personnel at Okinawa Institute of Science and Technology Graduate University School (1919-1, Tancha, Onna-son, Kunigami-gun, Okinawa Okinawa Institute of Science and Technology Graduate University School, Onna Campus)

#### (5) Delivery deadline

November 30, 2015

#### 4. Documents to be submitted

- Evidence of prior HPC deployments at the scale of our actual system (400 computing nodes) or larger in Japan
- MAC addresses of all the Ethernet and Management interfaces are to be provided to OIST through excel file.
- Operation manual in English (two set)

#### 5. Warranty

4 (four) years next business day warranty after acceptance which includes hardware maintenance and support.

#### 6. Others

If questions on specification that are not written in this specification sheet should arise, both party will conduct mutual consultation, and vendor must the will of this school to the extent possible.

On delivery, the vendor must submit the delivery plan to the school's facility personnel beforehand, and give sufficient consideration to the existing facility by using sheet curing etc.

The vendor must collect packaging materials and wood scraps.

The vendor must pay for the cost of delivery and pipe arrangement for installation.

If special tools are required for the usual operation and maintenance, the vendor must supply them at the delivery.

#### Appendix 1: Installation Environment

The installation environment consists of:

- 30 x AR3300 APC Racks
  - 18kW cooling capacity per rack
  - 24kW of power capacity per rack
    - Using 4 x AP8841 APC PDUs
    - N + 1 Redundancy
- A total power capacity of 420kW for the computing nodes
- PDU installed in every rack: AP8841