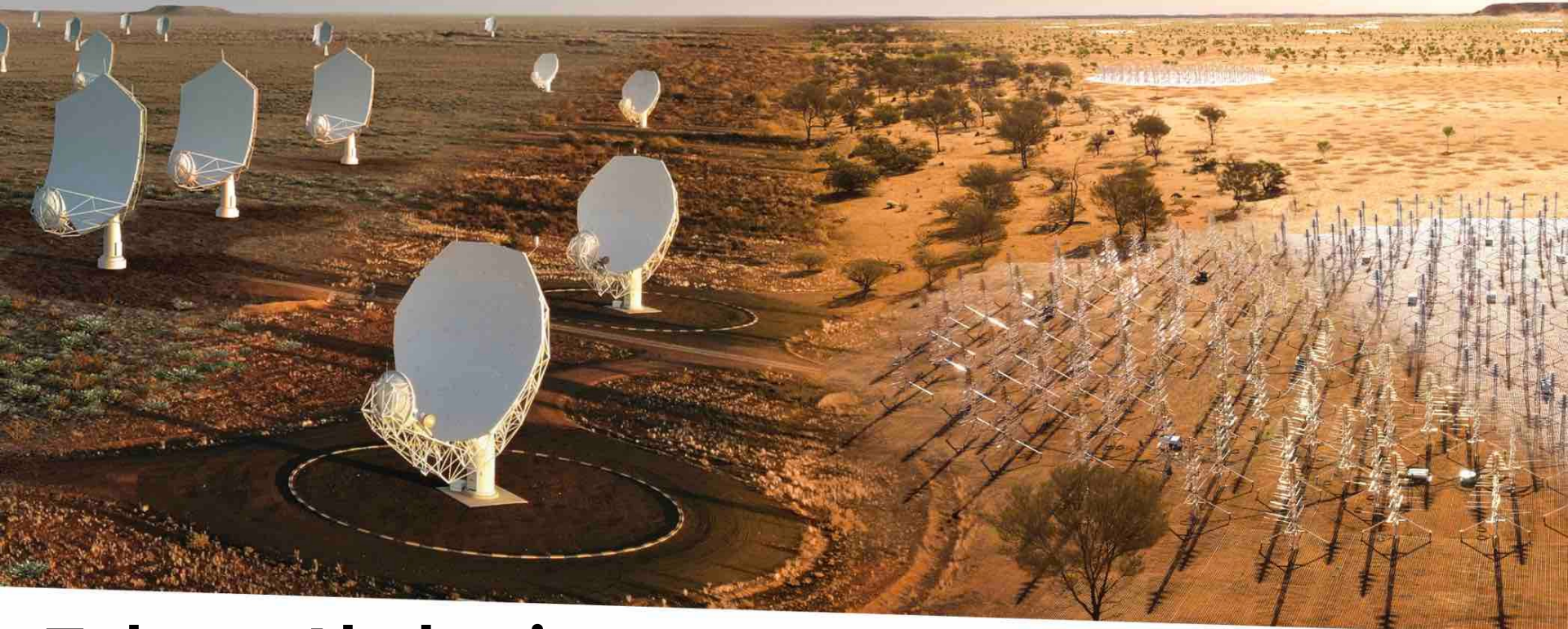




JP-SRC Cloud Specification



Takuya Akahori
JPSRC, BLT, Olive, SRCSC

NAOJ SKA1 STUDY GROUP
国立天文台SKA1検討グループ

JP-SRC OpenStack (OS) Prototype All-in-one system (Aug 2022)



OS All-in-one (prototype)

jp-src-p002.mtk.nao.ac.jp

CPU: Xeon E5-2687W v3, 3.1 GHz, 20C

GPU: GT710/1GB

Memory: 8 GB x 16 DDR4-2133 ECC

Storage: 480 GB SATA SSD

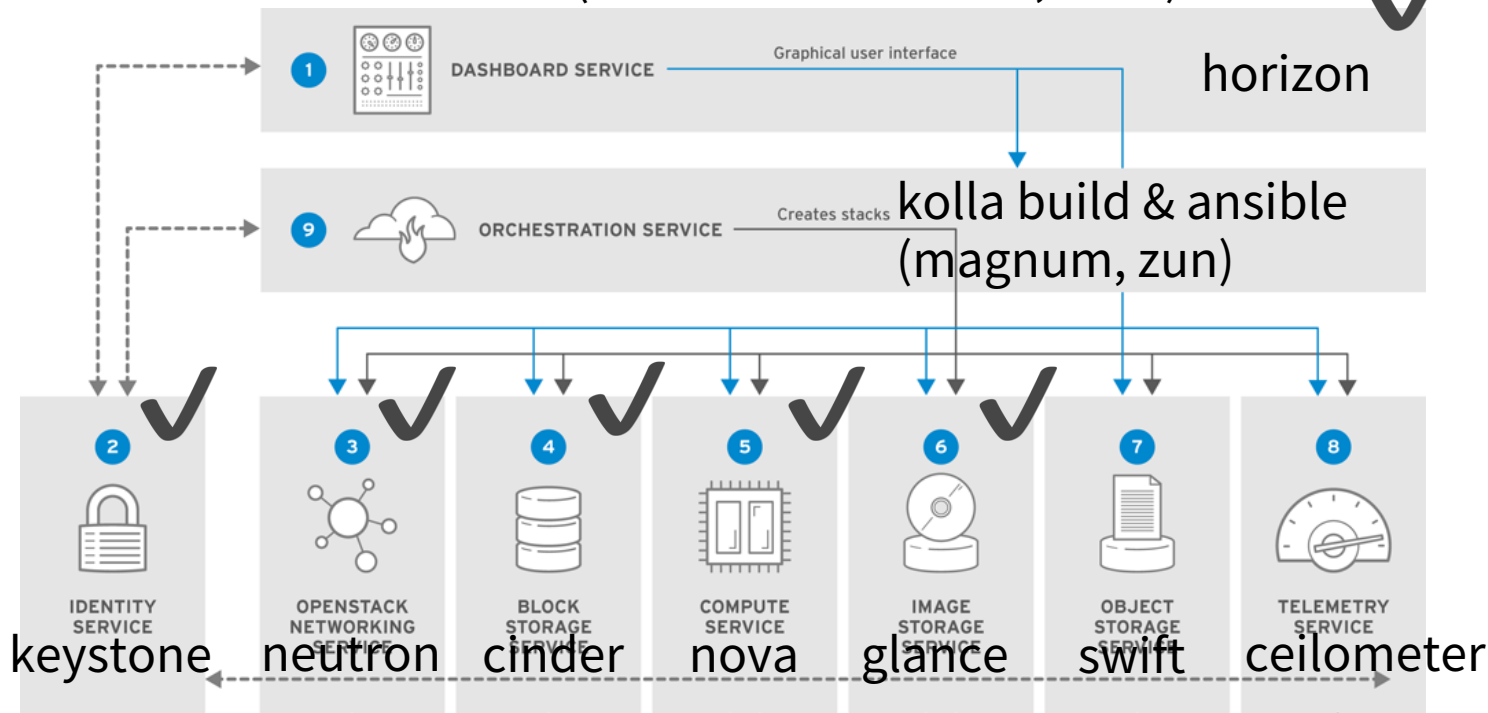
OS: Ubuntu 20.04.1

NAOJ Intranet

OpenStack YOGA

(Release date Mar 30, 2022)

Checks has been installed

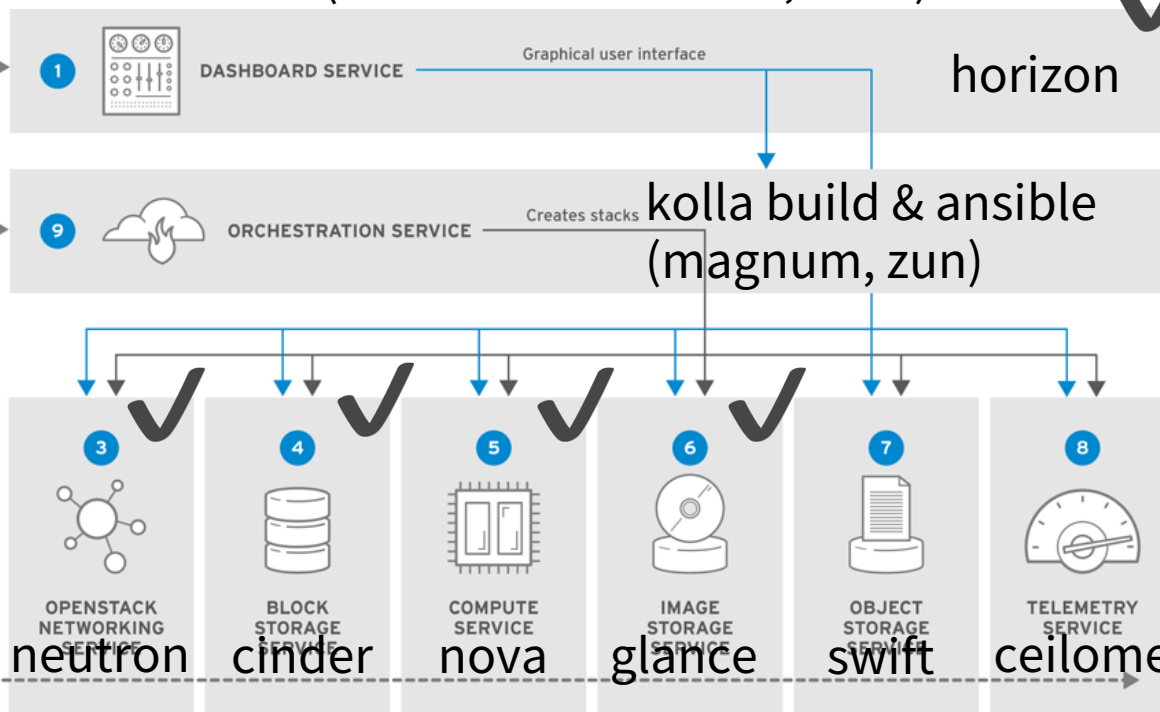


JP-SRC OpenStack (OS) Prototype PI 17.1 & .2 (14 Dec–10 Jan)

OS Control NAOJ Intranet

jp-src-p003.mtk.nao.ac.jp
 CPU: Xeon Gold 6210U, 2.5 GHz, 20C
 GPU: N/A
 Memory: 32 GB x 4 DDR4-2933 ECC
 Storage: 1 TB NVMe SSD
 OS: Ubuntu 22.04

OpenStack YOGA
(Release date Mar 30, 2022)



Task (Olive):
Setup OpenStack
Kolla Ansible on
OS Control node

← k8s is another option

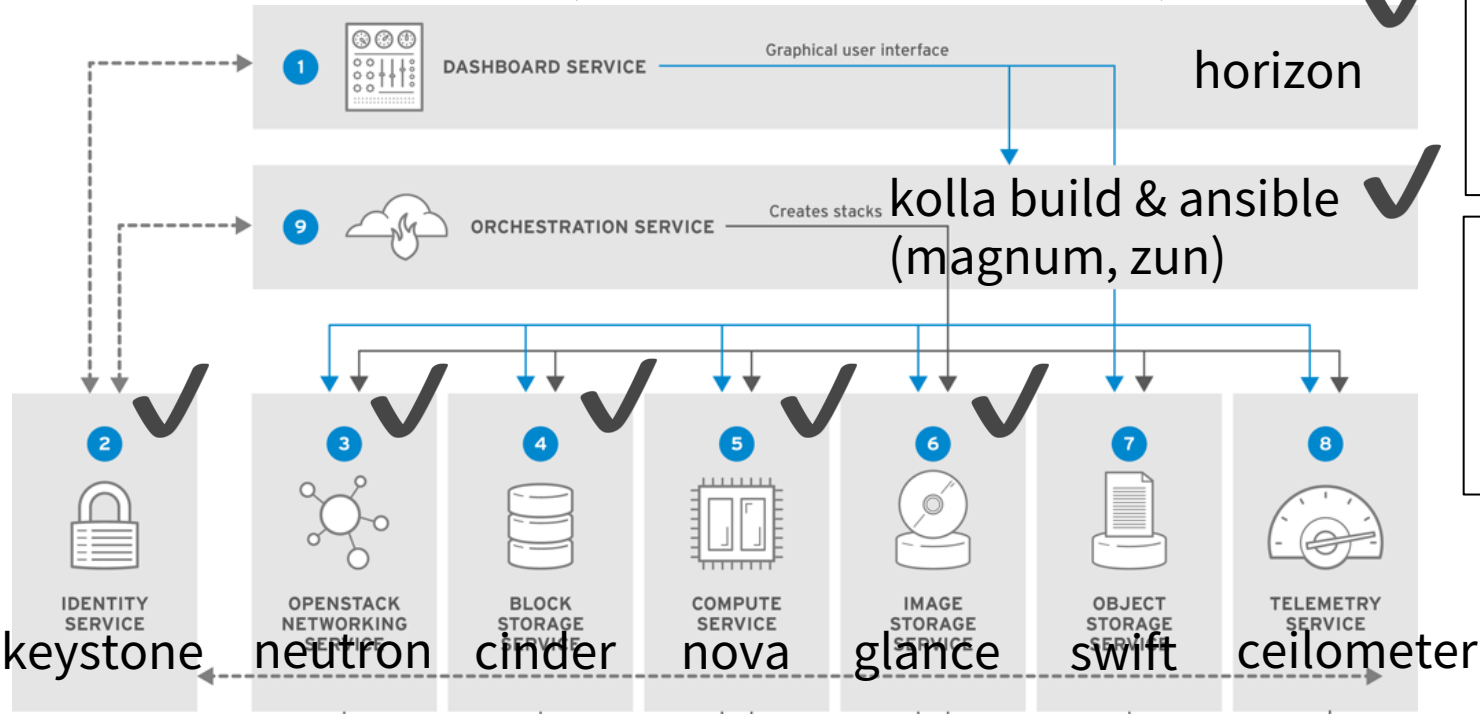
JP-SRC OpenStack (OS) Prototype PI 17.3 (11 Jan – 24 Jan)

OS Control NAOJ Intranet

jp-src-p003.mtk.nao.ac.jp
 CPU: Xeon Gold 6210U, 2.5 GHz, 20C
 GPU: N/A
 Memory: 32 GB x 4 DDR4-2933 ECC
 Storage: 1 TB NVMe SSD
 OS: Ubuntu 22.04

Harbor as Container Management System (CoMS)

OpenStack YOGA
(Release date Mar 30, 2022)



Task (Olive):
Setup container images for OS control node and compute node

Task (Olive):
Deploy control and compute nodes (JP-JP) and test part 1

JP-SRC OpenStack (OS) Prototype PI 17.4 (25 Jan – 7 Feb)

— OpenStack cloud

StoRM WebDAV

NAOJ DMZ

Rocio Storage Element

jp-src-s000.mtk.nao.ac.jp

CPU: vCPU x2, Memory: 4 GB, Storage: 100 GB
OS: CentOS 7

VM

Internet

VPN

OS All-in-one

jp-src-p002.mtk.nao.ac.jp

CPU: Xeon E5-2687W v3, 3.1 GHz, 20C
GPU: GT710/1GB
Memory: 8 GB x 16 DDR4-2133 ECC
Storage: 480 GB SATA SSD
OS: Ubuntu 20.04.1



OS Compute(CPU/STR)

jp-src-p004.mtk.nao.ac.jp

CPU: Xeon E5-2687W v4, 3.0 GHz, 24C
GPU: GT710/1GB
Memory: 16 GB x 16 DDR4-2400 ECC
Storage: 480 GB SATA SSD, 16TB x6
OS: Ubuntu 22.04



NAOJ Intranet



OS Control

jp-src-p003.mtk.nao.ac.jp

CPU: Xeon Gold 6210U, 2.5 GHz, 20C
GPU: N/A
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 1 TB NVMe SSD
OS: Ubuntu 22.04



OS Compute(GPU)

jp-src-p001.mtk.nao.ac.jp

CPU: Xeon W-2223, 3.6 GHz, 4C
GPU: GP100/16GB
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 250 GB SATA SSD
OS: Ubuntu 20.04



OS Compute

TBD

CPU: 48-64C
GPU: RTX4090~A6000
Memory: 512~768 GB
Storage: 500 GB SSD
OS: Ubuntu

OS Compute(CPU/GPU/STR)

kumamoto.ac.jp

CPU: AMD EPYC 7302P 3.0 GHz, 16C
GPU: RTX 3090/24GB x 2
Memory: 8 GB x 8 DDR4-3200 ECC
Storage: 250 GB NVMe SSD, 12TB x4, 18TB x1
OS: Ubuntu 20.04



OS Compute(GPU)

nagoya.ac.jp

CPU: Xeon W-2223, 3.6 GHz, 4C
GPU: GP100/16GB
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 250 GB SATA SSD
OS: Ubuntu 20.04



**Task (Olive):
Deploy control
and compute
nodes (JP-JP)
and test part 2**

JP-SRC OpenStack (OS) Prototype PI 17.5 (8 Feb – 21 Feb)

OpenStack cloud

StoRM WebDAV

NAOJ DMZ

Rocio Storage Element

jp-src-s000.mtk.nao.ac.jp

CPU: vCPU x2, Memory: 4 GB, Storage: 100 GB
OS: CentOS 7

VM

Internet

VPN

OS All-in-one

jp-src-p002.mtk.nao.ac.jp

CPU: Xeon E5-2687W v3, 3.1 GHz, 20C
GPU: GT710/1GB
Memory: 8 GB x 16 DDR4-2133 ECC
Storage: 480 GB SATA SSD
OS: Ubuntu 20.04.1



OS Compute(CPU/STR)

jp-src-p004.mtk.nao.ac.jp

CPU: Xeon E5-2687W v4, 3.0 GHz, 24C
GPU: GT710/1GB
Memory: 16 GB x 16 DDR4-2400 ECC
Storage: 480 GB SATA SSD, 16TB x6
OS: Ubuntu 22.04



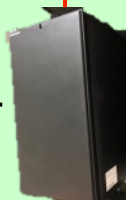
NAOJ Intranet



OS Control

jp-src-p003.mtk.nao.ac.jp

CPU: Xeon Gold 6210U, 2.5 GHz, 20C
GPU: N/A
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 1 TB NVMe SSD
OS: Ubuntu 22.04



PI17.6



OS Compute(GPU)

jp-src-p001.mtk.nao.ac.jp

CPU: Xeon W-2223, 3.6 GHz, 4C
GPU: GP100/16GB
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 250 GB SATA SSD
OS: Ubuntu 20.04

PI17.6

OS Compute

TBD

CPU: 48-64C
GPU: RTX4090~A6000
Memory: 512~768 GB
Storage: 500 GB SSD
OS: Ubuntu

OS Compute(CPU/GPU/STR)

kumamoto.ac.jp

CPU: AMD EPYC 7302P 3.0 GHz, 16C
GPU: RTX 3090/24GB x 2
Memory: 8 GB x 8 DDR4-3200 ECC
Storage: 250 GB NVMe SSD, 12TB x4, 18TB x1
OS: Ubuntu 20.04



OS Com

nagoya.ac.jp

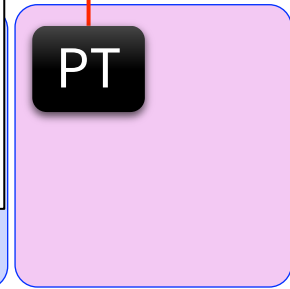
CPU: Xeon
GPU: GP100
Memory: 32
Storage: 250 GB SATA SSD
OS: Ubuntu 20.04



Task (Olive):
Add compute
nodes (PT) into
JP-SRC OS

VPN

PT




StoRM WebDAV




VPN

VPN




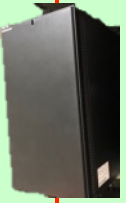
OS All-in-one
jp-src-p002.mtk.nao.ac.jp
 CPU: Xeon E5-2687W v3, 3.1 GHz, 20C
 GPU: GT710/1GB
 Memory: 8 GB x 16 DDR4-2133 ECC
 Storage: 480 GB SATA SSD
 OS: Ubuntu 20.04.1




OS Compute + RSE
jp-src-p004.mtk.nao.ac.jp
 CPU: Xeon E5-2687W v4, 3.0 GHz, 24C
 GPU: GT710/1GB
 Memory: 16 GB x 16 DDR4-2400 ECC
 Storage: 480 GB SATA SSD, 16TB x6
 OS: Ubuntu 22.04

NAOJ Intranet






OS Control
jp-src-p003.mtk.nao.ac.jp
 CPU: Xeon Gold 6210U, 2.5 GHz, 20C
 GPU: N/A
 Memory: 32 GB x 4 DDR4-2933 ECC
 Storage: 1 TB NVMe SSD
 OS: Ubuntu 22.04



OS Compute(GPU)
jp-src-p001.mtk.nao.ac.jp
 CPU: Xeon W-2223, 3.6 GHz, 4C
 GPU: GP100/16GB
 Memory: 32 GB x 4 DDR4-2933 ECC
 Storage: 250 GB SATA SSD
 OS: Ubuntu 20.04

OS Compute
TBD
 CPU: 48-64C
 GPU: RTX4090~A6000
 Memory: 512~768 GB
 Storage: 500 GB SSD
 OS: Ubuntu

Extend NAOJ Network or VPN



OS Compute(CPU/GPU/STR)
kumamoto.ac.jp
 CPU: AMD EPYC 7302P 3.0 GHz, 16C
 GPU: RTX 3090/24GB x 2
 Memory: 8 GB x 8 DDR4-3200 ECC
 Storage: 250 GB NVMe SSD, 12TB x4, 18TB x1
 OS: Ubuntu 20.04

Task (Olive):
 Add compute nodes (UK) into JP-SRC OS

Task (Olive):
 Do performance tests using JP-PT-UK+ OS

OS: Ubuntu 20.04

PT

UK

others

JP-SRC OpenStack (OS) Prototype PI19??

— OpenStack cloud

Mini SRC Net

Task (Olive):
Integrate JP-SRC OS Cloud
into Mini-SRC Net

VPN

StoRM WebDAV

VPN



Backup

jp-src-p002.mtk.nao.ac.jp
CPU: Xeon E5-2687W v3, 3.1 GHz, 20C
GPU: GT710/1GB
Memory: 8 GB x 16 DDR4-2133 ECC
Storage: 480 GB SATA SSD
OS: Ubuntu 20.04.1



OS Compute + RSE

jp-src-p004.mtk.nao.ac.jp
CPU: Xeon E5-2687W v4, 3.0 GHz, 24C
GPU: GT710/1GB
Memory: 16 GB x 16 DDR4-2400 ECC
Storage: 480 GB SATA SSD, 16TB x6
OS: Ubuntu 22.04

NAOJ Intranet



OS Control

jp-src-p003.mtk.nao.ac.jp
CPU: Xeon Gold 6210U, 2.5 GHz, 20C
GPU: N/A
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 1 TB NVMe SSD
OS: Ubuntu 22.04



OS Compute(GPU)

jp-src-p001.mtk.nao.ac.jp
CPU: Xeon W-2223, 3.6 GHz, 4C
GPU: GP100/16GB
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 250 GB SATA SSD
OS: Ubuntu 20.04

OS Compute

TBD
CPU: 48-64C
GPU: RTX4090~A6000
Memory: 512~768 GB
Storage: 500 GB SSD
OS: Ubuntu

Extend NAOJ Network or VPN



OS Compute(CPU/GPU/STR)

kumamoto.ac.jp
CPU: AMD EPYC 7302P 3.0 GHz, 16C
GPU: RTX 3090/24GB x 2
Memory: 8 GB x 8 DDR4-3200 ECC
Storage: 250 GB NVMe SSD, 12TB x4, 18TB x1
OS: Ubuntu 20.04



OS Compute(GPU)

nagoya.ac.jp
CPU: Xeon W-2223, 3.6 GHz, 4C
GPU: GP100/16GB
Memory: 32 GB x 4 DDR4-2933 ECC
Storage: 250 GB SATA SSD
OS: Ubuntu 20.04