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☐ CPU/RAM/HDD

- CPU: Intel Xeon E5-2680 v3 (12 Cores, 30MB Cache, 2.50 GHz, 9.6 GT/s QPI)
- RAM: 4 Channels, DDR4-2133 ECC RDIMM, Bandwidth: 136 GB/s
- Storage: Huawei Oceanstor 5500 V3, 2.5-inch 10Krpm SAS □ 2.5-inch SSD SAS □□□□
- Network: 2\*10 Gigabit Ethernet



100Mb/1Gb Ethernet

1/10/25/40/100Gb Ethernet

20/40/56/100/200Gb DDR/QDR/FDR/HDR InfiniBand, 100Gb Omni-Path Architecture



- CPU 100% + 100%
- CPU 100% + 100% + 100%
  - 100%
  - 100% [brequeue <JOBID> 100% SSUSP 100%]
- 100% fairshare 100% 100%
- 100%
- 100% fairshare 100%



- 329
- CPU 691
- CPU 13776
- GPU 125
- GPU CUDA 1179264
- 70944 GB
- 2568 GB
- CPU GPU 871.016 TFLOPS (CPU: 711.756, GPU: 159.26)
- GPU 3871.552 TFLOPS



- CPU e52692v2ib e52680v3ib e5v3ib e52630v4 e52640v4 e52650v4 e52680v4ib e52682v4 5218 7702ib 5220r 6230r 6330ib 7k83 9654 6458q
- CPU e74820v4 6140ib 5218q 9242opa
- CPU e52643tgb 6226rib
- 6338

- `000000x75420e7v4ib`
- `0000GPU0e5v3k40ib0e5v4p100ib06148v100ib062v100ib083a100ib`
- `000GPU0722080tiib072rtxib081308007230800723090ib08140800734090ib075434090ib`
- `CPU000cpu1`

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SSD□

x7542

# e52692v2ib

- ██████████16.896 TFLOPS
- █████75%████25%
- 40\*Inspur NX5440
- Hostname: i01n01-i01n20 i02n01-i02n20
- CPU: 2\*Intel Xeon E5-2692 v2 (12 Cores, 30MB Cache, 2.20 GHz, 8 GT/s QPI)
- RAM: 64 GB (8x8GB), 4 Channels, DDR3-1866 ECC RDIMM, Bandwidth: 119.4 GB/s
- HDD: 600 GB 2.5in 10Krpm 6Gb/s SAS
- Network: Gigabit Ethernet, 40 Gbit/s QDR InfiniBand

# e52680v3ib

- ██████████24.96 TFLOPS
- █████100%
- 26\*HP BladeSystem ProLiant BL460c Gen9
- Hostname: s03n01-s03n13 s04n01-s04n13
- CPU: 2\*Intel Xeon E5-2680 v3 (12 Cores, 30MB Cache, 2.50 GHz, 9.6 GT/s QPI)
- RAM: 128 GB ([s03n01-s03n13 s04n01-s04n02] 8x16GB | [s04n03-s04n13] 16x8GB), 4 Channels, DDR4-2133 ECC RDIMM, Bandwidth: 136 GB/s
- HDD: 300 GB 2.5in 10Krpm 6Gb/s SAS
- Network: Gigabit Ethernet, 56 Gbit/s FDR InfiniBand

# e5v3ib




- ██████████72 TFLOPS
- █████100%
- 70\*Lenovo Flex System x240 M5 5\*Lenovo System x3650 M5
- Hostname: f01n01-f01n14 f02n01-f02n14 f03n01-f03n14 f04n01-f04n14 f05n01-f05n14 x013-x017 x013-x017
- CPU: 2\*Intel Xeon E5-2680 v3 (12 Cores, 30MB Cache, 2.50 GHz, 9.6 GT/s QPI)
- RAM: 4 Channels, [f01n01-f05n14] DDR4-2133 ECC RDIMM, Bandwidth: 136 GB/s | [x013-x017] DDR4-1866 ECC RDIMM, Bandwidth: 119.4 GB/s
  - [f01n01-f05n04] 128 GB (8x16GB)
  - [f05n05-f05n14] 256 GB (8x32GB), -R mem384g [-R largemem █████]
  - [x013-x017] 384 GB (24x32GB), -R mem384g [-R largemem █████]
- SSD: 2.5in SATA 6Gb/s
  - [f01n01-f05n14] Samsung Enterprise SSD PM863, 32-layer 3D TLC, 120GB 170TBW
  - [x013-x017] Samsung SSD 850 PRO, 32-layer 3D TLC, 512GB
- Network: Gigabit Ethernet, 56 Gbit/s FDR InfiniBand

# e5v3k40ib



- ██████████3.82 TFLOPS
- █████100%

- 1\*Lenovo System x3650 M5
- Hostname: x001
- CPU: 2\*Intel Xeon E5-2680 v3 (12 Cores, 30MB Cache, 2.50 GHz, 9.6 GT/s QPI)
- RAM: 128 GB (8x16GB), 4 Channels, DDR4-2133 ECC RDIMM, Bandwidth: 136 GB/s
- GPU: 2\*NVIDIA Tesla K40 (2880 Cores 875MHz, 12GB 384-bit GDDR5 3.0GHz 288GB/s, PCIe3.0 x16)
- HDD: 300 GB 2.5in 10Krpm 6Gb/s SAS
- Network: 10 Gigabit Ethernet, 56 Gbit/s FDR InfiniBand



## e52630v4

- 1.408 TFLOPS
- 100%
- 2\*Inspur NX5460M4
- Hostname: i04n01-i04n02
- CPU: 2\*Intel Xeon E5-2630 v4 (10 Cores, 25MB Cache, 2.20 GHz, 8 GT/s QPI)
- RAM: 64 GB (4x16GB), 2 Channels, DDR4-2133 ECC RDIMM, Bandwidth: 68.3 GB/s
- HDD: 2\*300 GB 2.5in 10Krpm 12Gb/s SAS RAID1
- Network: 10 Gigabit Ethernet

## e52640v4

- 0.768 TFLOPS
- 100%
- 1\*Inspur NF5280M4
- Hostname: n001
- CPU: 2\*Intel Xeon E5-2640 v4 (10 Cores, 25MB Cache, 2.40 GHz, 8 GT/s QPI)
- RAM: 128 GB (8x16GB), 4 Channels, DDR4-2133 ECC RDIMM, Bandwidth: 136.6 GB/s
- HDD: 2\*600 GB 2.5in 10Krpm 12Gb/s SAS RAID1
- Network: Gigabit Ethernet

## e52650v4

- 2.5344 TFLOPS
- 100%
- 3\*Inspur NF5270M4
- Hostname: n003-n005
- CPU: 2\*Intel Xeon E5-2650 v4 (12 Cores, 30MB Cache, 2.20 GHz, 9.6 GT/s QPI)
- RAM: 128 GB (8x16GB), 4 Channels, DDR4-2400 ECC RDIMM, Bandwidth: 153.6 GB/s
- HDD: [n003-n004] 4\*300 GB 2.5in 10Krpm 12Gb/s SAS RAID5 | [n005] 3\*300 GB 2.5in 10Krpm 12Gb/s SAS RAID5
- Network: Gigabit Ethernet

## e52680v4ib

- 20.4288 TFLOPS

- ██████████84.21%██████15.79%
- 19\*HPE BladeSystem ProLiant BL460c Gen9
- Hostname: s04n14-s04n16 s05n01-s05n16
- CPU: 2\*Intel Xeon E5-2680 v4 (14 Cores, 35MB Cache, 2.40 GHz, 9.6 GT/s QPI)
- RAM: 128 GB (8x16GB), 4 Channels, DDR4-2400 ECC RDIMM, Bandwidth: 153.6 GB/s
- SSD: Samsung Enterprise SSD PM863, 32-layer 3D TLC, 120GB 170TBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet, 56 Gbit/s FDR InfiniBand

## e52682v4opa

- ████████████████25.6 TFLOPS
- ██████████100%
- 20\*Inspur NX5440M4
- Hostname: i03n01-i03n20
- CPU: 2\*Intel Xeon E5-2682 v4 (16 Cores, 40MB Cache, 2.50 GHz, 9.6 GT/s QPI)
- RAM: 64 GB (8x8GB), 4 Channels, DDR4-2400 ECC RDIMM, Bandwidth: 153.6 GB/s
- SSD: Intel SSD DC S3500, 20nm MLC, 240GB 140TBW
- SSD: 2.5in SATA 6Gb/s, [i03n01-i03n10] Samsung Enterprise SSD PM863, 32-layer 3D TLC, 960GB 1400TBW | [i03n11-i03n20] Intel SSD DC S3610, 20nm MLC, 800GB 5.3PBW
  - SSD mounted at /ssd & /tmp/ssd
- Network: Gigabit Ethernet, 100 Gbit/s Omni-Path Architecture

## e74820v4



- ████████████████1.28 TFLOPS
- ██████████100%
- 1\*Dell PowerEdge R930
- Hostname: r012
- CPU: 4\*Intel Xeon E7-4820 v4 (10 Cores, 25MB Cache, 2.00 GHz, 6.4 GT/s QPI)
- RAM: 256 GB (16x16GB), 4 Channels, DDR4-1333 ECC RDIMM
- HDD: 2\*600 GB 2.5in 15Krpm 12Gb/s SAS RAID1
- Network: Gigabit Ethernet

## e7v4ib



- ████████████████2.1504 TFLOPS
- ██████████100%
- 1\*Dell PowerEdge R930
- Hostname: r011
- CPU: 4\*Intel Xeon E7-4850 v4 (16 Cores, 40MB Cache, 2.10 GHz, 8 GT/s QPI)
- RAM: 1024 GB (32x32GB), 4 Channels, DDR4-1333 ECC RDIMM
- SSD: 2\*Intel SSD DC S3610, 20nm MLC, 200GB 1.1PBW, 2.5in SATA 6Gb/s RAID1
- Network: 10 Gigabit Ethernet, 56 Gbit/s FDR InfiniBand

## e5v4p100ib





- 10.296 TFLOPS
- 100%
- 1\*Lenovo System x3650 M5
- Hostname: x002
- CPU: 2\*Intel Xeon E5-2660 v4 (14 Cores, 35MB Cache, 2.00 GHz, 9.6 GT/s QPI)
- RAM: 128 GB (8x16GB), 4 Channels, DDR4-2400 ECC RDIMM, Bandwidth: 153.6 GB/s
- GPU: 2\*NVIDIA Tesla P100 PCIe 16GB (3584 Cores 1328MHz, 16GB 715MHz 4096-bit HBM2 732 GB/s, PCIe3.0 x16)
- HDD: 300 GB 2.5in 10Krpm 6Gb/s SAS
- Network: Gigabit Ethernet, 56 Gbit/s FDR InfiniBand





## 6140ib

- 84.7872 TFLOPS
- 100%
- 16\*H3C B7800 G3
- Hostname: b01n01-b01n08 b02n01-b02n08
- CPU: 4\*Intel Xeon Gold 6140 (18 Cores, 24.75MB Cache, 2.30 GHz)
- RAM: 384 GB (24x16GB), 6 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 511.2 GB/s
- SSD: Micron 5100, TLC, 240GB, M.2 2280, SATA 6Gb/s
- Network: 10 Gigabit Ethernet, 100 Gbit/s EDR InfiniBand



## 6148v100ib

- 10.072 TFLOPS
- 100%
- 1\*Lenovo ThinkSystem SR650
- Hostname: x003
- CPU: 2\*Intel Xeon Gold 6148 (20 Cores, 27.5MB Cache, 2.40 GHz)
- RAM: 192 GB (12x16GB), 6 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 255.6 GB/s
- GPU: NVIDIA Tesla V100 PCIe 16GB (5120 CUDA Cores 1380MHz, 16GB HBM2 877MHz 4096-bit 900GB/s, PCIe3.0 x16)
- SSD: LITEON, 128GB, M.2 2280, SATA 6Gb/s
- Network: Gigabit Ethernet, 56 Gbit/s FDR InfiniBand



## 5218

- 1.1776 TFLOPS
- CPU/ Intel
- 1\*Intel S2600WFT
- Hostname: o003
- CPU: 2\*Intel Xeon Gold 5218 (16 Cores, 22MB Cache, 2.30 GHz)
- RAM: 192 GB (12x16GB), 6 Channels, DDR4-2666 ECC RDIMM
- SSD: Intel SSD DC S3500, 20nm MLC, 275TBW 480GB, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet



## 5218q

- 2.3552 TFLOPS
- 100%
- 1\*Inspur NF8480M5
- Hostname: n032
- CPU: 4\*Intel Xeon Gold 5218 (16 Cores, 22MB Cache, 2.30 GHz)
- RAM: 256 GB (8x32GB), 4 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 170.7 GB/s
- HDD: 2\*600 GB 2.5in 10Krpm 12Gb/s SAS RAID1
- Network: Gigabit Ethernet



## 62v100ib

- 65.6 TFLOPS
- 100%
- 1\*Inspur NF5468M5-S
- Hostname: n002
- CPU: 2\*Intel Xeon Gold 6248 (20 Cores, 27.5MB Cache, 2.50 GHz)
- RAM: 768 GB (24x32GB), 6 Channels, DDR4-2933 ECC RDIMM, Bandwidth: 281.6 GB/s
- GPU: 8\*NVIDIA Tesla V100 SXM2 32GB (5120 CUDA Cores 1530MHz, 32GB HBM2 877MHz 4096-bit 900GB/s, NVLink 300GB/s, PCIe3.0 x16)
- SSD: 2\*Samsung Enterprise SSD PM883, TLC 3D NAND, 480GB 683TBW, 2.5in SATA 6Gb/s, RAID1
- SSD: 2\*Intel SSD DC P4510, 64-Layer TLC 3D NAND, 2TB 2.61PBW, U.2 15mm, PCIe3.1 x4 NVMe, RAID0
  - SSD mounted at /ssd & /tmp/ssd
- Network: 10 Gigabit Ethernet, 100 Gbit/s EDR InfiniBand

## 9242opa

- 141.312 TFLOPS
- 100%
- 20\*Intel S9248WK2HAC
- Hostname: s001-s020
- CPU: 2\*Intel Xeon Platinum 9242 (48 Cores, 71.5MB Cache, 2.30 GHz)
- RAM: 384 GB (24x16GB), 12 Channels, DDR4-2933 ECC RDIMM, Bandwidth: 563.2 GB/s
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 480GB 1.2PBW, M.2 2280, SATA 6Gb/s
- Network: Gigabit Ethernet, 100 Gbit/s Omni-Path Architecture

## 7702ib

- 57.344 TFLOPS
- 100%
- 14\*Asus RS720A-E9-RS24V2
- Hostname: a001-a014

- CPU: 2\*AMD EPYC 7702 (64 Cores, 256MB Cache, 2.0 GHz)
- RAM: 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
  - [a001-a010] 256 GB (16x16GB)
  - [a011-a014] 512 GB (32x16GB), -R largemem ||||
- SSD: Samsung SSD 970 EVO Plus, V-NAND 3-bit MLC, 250GB 150TBW, M.2 2280, PCIe3.0 x4 NVMe 1.3
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 722080tiib

- CPU||||||||||3.072 TFLOPS
- GPU||||||||||215.168 TFLOPS
- ||||||100%
- 4\*Gigabyte G242-Z10
- Hostname: g001-g004
- CPU: 1\*AMD EPYC 7302 (16 Cores, 128MB Cache, 3.0 GHz)
- GPU: 4\*NVIDIA GeForce RTX 2080 Ti 11GB (4352 CUDA Cores 1545MHz, 11GB GDDR6 7000MHz 352-bit 616 GB/s, PCIe3.0 x16)
- RAM: 256 GB (8x32GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 204.8 GB/s
- SSD: Intel SSD DC S4600, 3D NAND TLC, 240GB 1.40PBW, 2.5in SATA 6Gb/s
- SSD: Intel SSD DC P4510, 64-Layer TLC 3D NAND, 2TB 2.61PBW, U.2 15mm, PCIe3.1 x4 NVMe
  - SSD mounted at /ssd & /tmp/ssd
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 72rtxib



- CPU||||||||||2.304 TFLOPS
- GPU||||||||||195.744 TFLOPS
- ||||||100%
- 3\*Gigabyte G242-Z10
- Hostname: g005-g007
- CPU: 1\*AMD EPYC 7302 (16 Cores, 128MB Cache, 3.0 GHz)
- GPU: 4\*NVIDIA TITAN RTX 24GB (4608 CUDA Cores 1770MHz, 24GB GDDR6 7000MHz 384-bit 672 GB/s, PCIe3.0 x16)
- RAM: 256 GB (8x32GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 204.8 GB/s
- SSD: Intel SSD DC S4600, 3D NAND TLC, 240GB 1.40PBW, 2.5in SATA 6Gb/s
- SSD: Intel SSD DC P4510, 64-Layer TLC 3D NAND, 2TB 2.61PBW, U.2 15mm, PCIe3.1 x4 NVMe
  - SSD mounted at /ssd & /tmp/ssd
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 5220r



- ||||||||||5.0688 TFLOPS
- ||||||100%

- 3\*Inspur NF5280M5
- Hostname: n006-n008
- CPU: 2\*Intel Xeon Gold 5220R (24 Cores, 35.75MB Cache, 2.20 GHz)
- RAM: 192 GB (6x32GB), 3 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 127.8 GB/s
- SSD: 2\*Intel SSD DC S4500, 3D NAND TLC, 480GB 0.90PBW, 2.5in SATA 6Gb/s, RAID1
- Network: Gigabit Ethernet



## 6226rib

- 65.3312 TFLOPS
- 100%
- 22\*Huawei FusionServer Pro 1288H V5
- Hostname: f001-f022
- CPU: 2\*Intel Xeon Gold 6226R (16 Cores, 22MB Cache, 2.90 GHz)
- RAM: 192 GB (12x16GB), 6 Channels, DDR4-2933 ECC RDIMM, Bandwidth: 281.6 GB/s
- SSD: Huawei ES3610C V5, 3D TLC, 1.6TB 8.76PBW, HHHL, PCIe3.0 x4 NVMe 1.3
- Network: Gigabit Ethernet, 100 Gbit/s EDR InfiniBand



## 6230r

- 10.4832 TFLOPS
- 100%
- 3\*Inspur NF5280M5
- Hostname: n009-n011
- CPU: 2\*Intel Xeon Gold 6230R (26 Cores, 35.75MB Cache, 2.10 GHz)
- RAM: 192 GB (6x32GB), 3 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 127.8 GB/s
- SSD: 2\*Samsung PM883, TLC 3D NAND, 480GB 683TBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet

## 6330ib

- 57.344 TFLOPS
- 100%
- 16\*Inspur NF5180M6
- Hostname: n016-n031
- CPU: 2\*Intel Xeon Gold 6330 (28 Cores, 42MB Cache, 2.00 GHz)
- RAM: 256 GB (16x16GB), 8 Channels, DDR4-2933 ECC RDIMM, Bandwidth: 375.5 GB/s
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 240GB 0.9PBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 6338

- 16.384 TFLOPS
- 100%
- 4\*Inspur NF5180M6
- Hostname: n012-n015

- CPU: 2\*Intel Xeon Gold 6338 (32 Cores, 48MB Cache, 2.00 GHz)
- RAM: 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
  - [n012 n013] 1024 GB (32x32GB)
  - [n014 n015] 2048 GB (32x64GB), -R largemem ||||
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 240GB 0.9PBW, 2.5in SATA 6Gb/s
- Network: 10 Gigabit Ethernet

## 7k83

- ||||| 15.6672 TFLOPS
- ||||| 100%
- 2\*Gigabyte R182-Z90 1\*Asus RS700A-E11-RS4U
- Hostname: g008-g009 a016
- CPU: 2\*AMD EPYC 7K83 (64 Cores, 256MB Cache, 2.55 GHz)
- RAM: 256 GB (16x16GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 480GB 1.2PBW, 2.5in SATA 6Gb/s
- Network: 10 Gigabit Ethernet

## 83a100ib




- ||||| 82.9248 TFLOPS
- ||||| 100%
- 1\*Supermicro SYS-420GP-TNAR+ (Powerleader PR4908WV)
- Hostname: m001
- CPU: 2\*Intel Xeon Platinum 8358 (32 Cores, 48MB Cache, 2.60 GHz)
- RAM: 512 GB (16x32GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
- GPU: 8\*NVIDIA A100 SXM4 40GB (6912 CUDA Cores 1410MHz, 40GB HBM2 1215MHz 5120-bit 1555GB/s, NVLink 600GB/s, PCIe4.0 x16)
- SSD: Samsung 983 DCT, V-NAND 3-bit MLC, 960GB 1.366PBW, M.2 22110, PCIe3.0 x4 NVMe 1.2b
- SSD: 2\*Intel SSD D7-P5520, 144-Layer TLC 3D NAND, 3.84TB 7.0PBW, U.2 15mm, PCIe4.0 x4, NVMe 1.4, RAID0
  - SSD mounted at /ssd & /tmp/ssd
- Network: 10 Gigabit Ethernet, 200 Gbit/s HDR InfiniBand

## 813080




- CPU||||| 7.9872 TFLOPS
- GPU||||| 476.32 TFLOPS
- ||||| 100%
- 1\*Supermicro SYS-4029GP-TRT 1\*Asus ESC8000 G4
- Hostname: m004 a018
- CPU: [m004] 2\*Xeon Platinum 8163 (24 Cores, 33MB Cache, 2.50 GHz) | [a018] 2\*Xeon Platinum 8168 (24 Cores, 33MB Cache, 2.70 GHz)
- RAM: [m004] 64 GB (4x16GB), 2 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 85.3 GB/s | [a018] 128 GB (8x16GB), 4 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 170.7 GB/s

- GPU: 8\*NVIDIA GeForce RTX 3080 10GB (8704 CUDA Cores 2100MHz, 10GB GDDR6X 9501MHz 320-bit 760.3 GB/s, PCIe3.0 x16)
- SSD: [m004] Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 480GB 1.2PBW, 2.5in SATA 6Gb/s | [a018] Intel SSD D3-S4610, 64-Layer TLC 3D NAND, 240GB 1.4PBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet




## 723080

- CPU  4.608 TFLOPS
- GPU  238.16 TFLOPS
-  100%
- 1\*Asus ESC8000A-E11
- Hostname: a015
- CPU: 2\*AMD EPYC 7B12 (64 Cores, 256MB Cache, 2.25 GHz)
- RAM: 128 GB (16x8GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
- GPU: 8\*NVIDIA GeForce RTX 3080 10GB (8704 CUDA Cores 2100MHz, 10GB GDDR6X 9501MHz 320-bit 760.3 GB/s, PCIe4.0 x16)
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 240GB 0.9PBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet

## 723090ib

- CPU  4.3008 TFLOPS
- GPU  569.28 TFLOPS
-  100%
- 2\*Supermicro AS -4124GS-TNR (Roycom)
- Hostname: m002-m003
- CPU: 2\*AMD EPYC 7402 (24 Cores, 128MB Cache, 2.8 GHz)
- RAM: 512 GB (16x32GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
- GPU: 8\*NVIDIA GeForce RTX 3090 24GB (10496 CUDA Cores 2100MHz, 24GB GDDR6X 9751MHz 384-bit 936.2 GB/s, PCIe4.0 x16)
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 480GB 1.2PBW, 2.5in SATA 6Gb/s
- SSD: 2\*Intel SSD D7-P5520, 144-Layer TLC 3D NAND, 3.84TB 7.0PBW, U.2 15mm, PCIe4.0 x4, NVMe 1.4, RAID0
  - SSD mounted at /ssd & /tmp/ssd
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 814080

- CPU  4.1472 TFLOPS
- GPU  194.960 TFLOPS
-  100%
- 1\*Supermicro X11DPG-QT
- Hostname: m009
- CPU: 2\*Xeon Platinum 8168 (24 Cores, 33MB Cache, 2.70 GHz)

- RAM: 64 GB (4x16GB), 2 Channels, DDR4-2666 ECC RDIMM, Bandwidth: 85.3 GB/s
- GPU: 4\*NVIDIA GeForce RTX 4080 16GB (9728 CUDA Cores 3105MHz, 16GB GDDR6X 11201MHz 256-bit 716.8 GB/s, PCIe4.0 x16)
- SSD: Samsung PM883, TLC 3D NAND, 240GB 341TBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet

## 734090ib

- CPU██████████5.7344 TFLOPS
- GPU██████████1321.28 TFLOPS
- ████████100%
- 2\*Supermicro AS -4124GS-TNR (Wuzhou S748E4)
- Hostname: m005-m006
- CPU: 2\*AMD EPYC 7543 (32 Cores, 256MB Cache, 2.8 GHz)
- RAM: 512 GB (16x32GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
- GPU: 8\*NVIDIA GeForce RTX 4090 24GB (16384 CUDA Cores 3105MHz, 24GB GDDR6X 10501MHz 384-bit 1008 GB/s, PCIe4.0 x16)
- SSD: Samsung PM883, TLC 3D NAND, 480GB 683TBW, 2.5in SATA 6Gb/s
- SSD: 2\*Intel SSD D7-P5520, 144-Layer TLC 3D NAND, 3.84TB 7.0PBW, U.2 15mm, PCIe4.0 x4, NVMe 1.4, RAID0
  - SSD mounted at /ssd & /tmp/ssd
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 75434090ib

- CPU██████████5.7344 TFLOPS
- GPU██████████1321.28 TFLOPS
- ████████100%
- 2\*Supermicro AS -4124GS-TNR (Wuzhou S748E4 | Roycom)
- Hostname: m007-m008
- CPU: 2\*AMD EPYC 7543 (32 Cores, 256MB Cache, 2.8 GHz)
- RAM: 512 GB (16x32GB), 8 Channels, DDR4-3200 ECC RDIMM, Bandwidth: 409.6 GB/s
- GPU: 8\*NVIDIA GeForce RTX 4090 24GB (16384 CUDA Cores 3105MHz, 24GB GDDR6X 10501MHz 384-bit 1008 GB/s, PCIe4.0 x16)
- SSD: Samsung PM883, TLC 3D NAND, 480GB 683TBW, 2.5in SATA 6Gb/s
- Network: Gigabit Ethernet, 100 Gbit/s HDR100 InfiniBand

## 9654

- ██████████7.3728 TFLOPS
- ████████100%
- 1\*Asus RS720A-E12-RS12
- Hostname: a017
- CPU: 2\*AMD EPYC 9654 (96 Cores, 384MB Cache, 2.4 GHz)
- RAM: 384 GB (24x16GB), 12 Channels, DDR5-4800 ECC RDIMM, Bandwidth: 921.6 GB/s
- SSD: Intel SSD D3-S4510, 64-Layer TLC 3D NAND, 480GB 1.2PBW, 2.5in SATA 6Gb/s

- Network: 10 Gigabit Ethernet

6458q

- ██████████25.3952 TFLOPS
- █████100%
- 4\*Nettrix R620 G50
- Hostname: u001-u004
- CPU: 2\*Intel Xeon Gold 6458Q (32 Cores, 60MB Cache, 3.10 GHz)
- RAM: 1024 GB (16x64GB), 8 Channels, DDR5-4800 ECC RDIMM, Bandwidth: 614.4 GB/s
- SSD: Samsung PM883, TLC 3D NAND, 480GB 683TBW, 2.5in SATA 6Gb/s, RAID1
- Network: 10 Gigabit Ethernet

cpu1

- █≤24 cores ██████████CPU██ e5v3ib 6140ib 7702ib 6330ib ████████████████████
- 



5150

- ██████████1.788 TFLOPS
- 42\*IBM BladeCenter HS21
- Hostname: c01n01-c04n14
- CPU: 2\*Intel Xeon 5150 (2 Cores, 4M Cache, 2.66 GHz, 1333 MHz FSB)
- RAM: 16GB / 8GB / 4GB
- Network: Gigabit Ethernet

e5620

- ██████████0.076.8 TFLOPS
- 1\*IBM BladeCenter HS22
- Hostname: c01n14
- CPU: 2\*Intel Xeon E5620 (4 Cores, 12M Cache, 2.40 GHz, 5.86 GT/s QPI)
- RAM: 48 GB
- Network: Gigabit Ethernet

e5430

- ██████████2.383 TFLOPS
- █████50%████50%
- 28\*HP BladeSystem ProLiant BL260c G5
- Hostname: s01n01-s01n14 s02n01-s02n14
- CPU: 2\*Intel Xeon E5430 (4 Cores, 12M Cache, 2.66 GHz, 1333 MHz FSB)



- RAM: 16 GB
- HDD: 146 GB 2.5in 10Krpm 3Gb/s SAS
- Network: Gigabit Ethernet

## x5550ib

- ██████████23.8336 TFLOPS
- ████████100%
- 280\*IBM BladeCenter HS22
- Hostname: c08n01-c08n14 c09n01-c09n14 c10n01-c10n14 ... c27n01-c27n14
- CPU: 2\*Intel Xeon X5550 (4 Cores, 8M Cache, 2.66 GHz, 6.40 GT/s QPI)
- RAM: 48 GB(c17,c18)/24 GB(c15,c16,c19,c20,c21)/12 GB, 3 Channels, DDR3-1333 ECC RDIMM, Bandwidth: 64 GB/s
- HDD: 146 GB 2.5in 10Krpm 6Gb/s SAS
- Network: Gigabit Ethernet, 20 Gbit/s DDR InfiniBand
- -R largemem ████████(24G/48G)██(c15,c16,c17,c18,c19,c20,c21)
- -R mem24g ████24GB████(c15n01-c15n14,c16n01-c16n14,c19n01-c19n14,c20n01-c20n14,c21n01-c21n14)
- -R mem48g ████48GB████(c17n01-c17n14,c18n01-c18n14)

## e52660

- ██████████2.253 TFLOPS
- ████████100%██████100%█
- 8\*████TC4600
- Hostname: t01n01-t01n08
- CPU: 2\*Intel Xeon E5-2660 (8 Cores, 20M Cache, 2.20 GHz, 8.00 GT/s QPI)
- RAM: 32 GB, 4 Channels, DDR3-1600 ECC RDIMM, Bandwidth: 102.4 GB/s
- HDD: 300 GB 2.5in 10Krpm 6Gb/s SAS
- Network: Gigabit Ethernet

## 7742

- ████AMD
- 1\*QCT QuantaGrid D52BQ-2U
- Hostname: o001
- CPU: 2\*AMD EPYC 7742 (64 Cores, 256MB Cache, 2.25 GHz)
- RAM: 256 GB, 8 Channels, DDR4-2666 ECC RDIMM
- SSD: Micron 1100 3D TLC 256GB 2.5in 6Gb/s SATA
- Network: 10 Gigabit Ethernet

## 7502

- ████CPU: AMD████: ███
- 1\*Asus RS720A-E9-RS24V2
- Hostname: o002

- CPU: 2\*AMD EPYC 7502 (32 Cores, 128MB Cache, 2.5 GHz)
- RAM: 256 GB, 8 Channels, DDR4-2933 ECC RDIMM
- SSD: Samsung SSD 970 PRO 512GB M.2 NVMe
- Network: Gigabit Ethernet

## x5650

- ██████████3.57504 TFLOPS
- ████████100%████50%████50%█
- 28\*IBM BladeCenter HS22
- Hostname: c06n01-c06n14 c07n01-c07n14
- CPU: 2\*Intel Xeon X5650 (6 Cores, 12MB Cache, 2.66 GHz, 6.40 GT/s QPI)
- RAM: 48 GB, 3 Channels, DDR3-1333 ECC RDIMM, Bandwidth: 64 GB/s
- HDD: 146 GB 2.5in 10Krpm 3Gb/s SAS
- Network: Gigabit Ethernet, iWARP 10 Gigabit Ethernet

## x5650ib

- ██████████35.7504 TFLOPS
- ████████100%
- 280\*IBM BladeCenter HS22
- Hostname: c08n01-c08n14 c09n01-c09n14 c10n01-c10n14 ... c27n01-c27n14
- CPU: 2\*Intel Xeon X5650 (6 Cores, 12MB Cache, 2.66 GHz, 6.40 GT/s QPI)
- RAM: 48 GB(c17,c18)/24 GB(c15,c16,c19,c20,c21)/12 GB, 3 Channels, DDR3-1333 ECC RDIMM, Bandwidth: 64 GB/s
  - -R largemem ████████(24G/48G)██(c15,c16,c17,c18,c19,c20,c21)
  - -R mem24g ████24GB████(c15,c16,c19,c20,c21)
  - -R mem48g ████48GB████(c17,c18)
- HDD: 146 GB 2.5in 10Krpm 3Gb/s SAS
- Network: Gigabit Ethernet, 20 Gbit/s DDR InfiniBand

## e5645



- ██████████0.4608 TFLOPS
- ████████100%
- 4\*IBM System x3650 M3
- Hostname: x004-x007
- CPU: 2\*Intel Xeon E5645 (6 Cores, 12MB Cache, 2.40 GHz, 5.86 GT/s QPI)
- RAM: 16 GB, 2 Channels, DDR3-1333 ECC RDIMM, Bandwidth: 42.6 GB/s
- HDD: 4\*300 GB 2.5in 10Krpm 6Gb/s SAS RAID5
- Network: Gigabit Ethernet

## e52660tgb

- ██████████4.506 TFLOPS
- ████████100%

- 16\*Dell PowerEdge 12G M620
- Hostname: m02n01-m02n16
- CPU: 2\*Intel Xeon E5-2660 (8 Cores, 20MB Cache, 2.20 GHz, 8.00 GT/s QPI)
- RAM: 32 GB (8x4GB), 4 Channels, DDR3-1600 ECC RDIMM, Bandwidth: 102.4 GB/s
- HDD: 600 GB 2.5in 10Krpm 6Gb/s SAS
- SSD: Intel SSD 730, 20nm MLC, 480GB 128TBW, 2.5in SATA 6Gb/s
  - SSD mounted at /ssd & /tmp/ssd
- Network: 10 Gigabit Ethernet

## e52660ib

- 3.379 TFLOPS
- 100%
- 12\*Dell PowerEdge 12G M620
- Hostname: m03n01-m03n12
- CPU: 2\*Intel Xeon E5-2660 (8 Cores, 20MB Cache, 2.20 GHz, 8.00 GT/s QPI)
- RAM: 32 GB (8x4GB), 4 Channels, DDR3-1600 ECC RDIMM, Bandwidth: 102.4 GB/s
- HDD: 600 GB 2.5in 10Krpm 6Gb/s SAS (m03n01-m03n06) / 300 GB 2.5in 10Krpm 6Gb/s SAS (m03n07-m03n12)
- Network: Gigabit Ethernet, 56 Gbit/s FDR InfiniBand



- 2.8 PiB



- bbfs
- fsa fs04 fs08 fs09 fs10 fs12 fs13 fs14
- /archive



<https://table.nju.edu.cn/dtable/view-external-links/custom/hpc-storage/>



Tier 0

/bbfs

NVMe SSD Burst Buffer

- bbfs
- 100%
- 117 TiB
- IO4\*HPE ProLiant DL380 Gen10: bb01 bb02 bb03 bb04

- CPU: 2\*Intel Xeon Gold 5122 (2 Cores, 16.5MB Cache, 3.60 GHz)
- RAM: 192 GB (12x16GB), 6 Channels, DDR4-2666 ECC RDIMM
- Network: 2\*25 Gigabit Ethernet, 100 Gbit/s EDR InfiniBand, 100 Gbit/s Omni-Path
- SSD: 8\*Intel SSD DC P4510, 64-Layer TLC 3D NAND, 4TB 6.3PBW, 2.5in U.2 15mm, PCIe 3.1 x4 NVMe
- 

## /bbfs/fs\*/

/fs\*//bbfs/fs\*/ /fs\*/ /bbfs/fs\*/ /fs\*/ /bbfs/fs\*/

/fsa/home/yaoge/in/bbfs/fsa/home/yaoge/in

/bbfs/fsa/home/yaoge/outSSD/fsa/home/yaoge/out

## /bbfs/scratch/

30atimecheckpoint.tmp .temp

Check Point/bbfs/scratch/yaogeSSD

# Tier 1

.snapshot

/fsa/fsa/.snapshots/fsa/.snapshots/20220804-1800202284180

## /fsa

- 100%
- 361 TiB
- IO2\*HP ProLiant DL380 Gen9: io01 io02
- 2\*10 Gigabit Ethernet, 56 Gbit/s FDR InfiniBand
- DDN SFA7700X32GB
- Data: 10TB 3.5-inch 7.2Krpm 12Gb/s SAS10RAID65RAID6Metadata: Toshiba Enterprise SSD PX02SMU040 MLC 10DWPD 400GB 2.5-inch 12Gb/s SAS10RAID6

## /fs04

- 100%
- 14 TiB
- IO Dell PowerEdge 12G R720xd: io08
- 2\*10 Gigabit Ethernet
- RAID Dell PERC H710P Mini (LSI SAS2208 ROC), 1GB cache with Intelligent Battery Backup Unit
- 900GB 2.5-inch 10Krpm 6Gb/s SAS 5 RAID5 4 RAID5 2

## /fs08

- 100%
- 14 TiB
- IO 2\*Inspur NF5270M3: io10 io11
- 2\*1 Gigabit Ethernet, 40 Gbit/s QDR InfiniBand
- Inspur AS500H (NetApp E2600) 4GB Write caching with mirroring, High
- 900GB 2.5-inch 10Krpm 6Gb/s SAS 5 RAID5 4 RAID5 2

## /fs09

- 100%
- 24 TiB
- IO 2\*Inspur NF5270M3: io10 io11
- 2\*1 Gigabit Ethernet, 40 Gbit/s QDR InfiniBand
- Inspur AS500H (NetApp E2600) 4GB Write caching with mirroring, High
- 3TByte 3.5-inch 7.2Krpm 6Gb/s NL-SAS 12 Disk Pool 1 2 Virtual Disk

## /fs10

- 100%
- 9.9 TiB
- IO Inspur NF5270M3: io12
- 2\*1 Gigabit Ethernet, 40 Gbit/s QDR InfiniBand
- RAID LSI MegaRAID SAS 9271-8i (LSI SAS2208 ROC), 1GB
- 900GB 2.5-inch 10Krpm 6Gb/s SAS 5 RAID5 3 RAID5 1

## /fs12

- 100%

- 14 TiB
- IO2\*HP ProLiant DL380 Gen9: io01 io02
- 2\*10 Gigabit Ethernet, 56 Gbit/s FDR InfiniBand
- HP MSA 2040 SAN 4GB
- 900GB 2.5-inch 10Krpm 6Gb/s SAS5RAID54RAID53

## /fs13

- 100%
- 30 TiB
- IO2\*HP ProLiant DL380 Gen9: io01 io02
- 2\*10 Gigabit Ethernet, 56 Gbit/s FDR InfiniBand
- HP MSA 2040 SAN 4GB
- 4TByte 3.5-inch 7.2Krpm 6Gb/s SAS6RAID62RAID61

## /fs14

- 100%
- 262 TiB
- IODell PowerEdge R730: io13
- 2\*10 Gigabit Ethernet
- RAIDDell PERC H730P Mini (LSI SAS3108 ROC), 2GB NV cache with Intelligent Battery Backup Unit
- 8TByte 3.5-inch 7.2Krpm 12Gb/s SAS6RAID6
- RAIDDell PERC H830 (LSI SAS3108 ROC), 2GB NV cache with Intelligent Battery Backup Unit
- JBOD8TByte 3.5-inch 7.2Krpm 12Gb/s SAS6RAID68RAID6



## /fs00

- 100%
- 3.3 TB
- IOHP ProLiant DL380 Gen9: io01 io02
- 2\*10 Gigabit Ethernet, 56 Gbit/s FDR InfiniBand
- HP MSA 2040 SAN 4GB
- 900GB 2.5-inch 10Krpm 6Gb/s SAS2RAID12RAID11
- IOInspur NF5270M3: io10 io11
- 2\*1 Gigabit Ethernet, 40 Gbit/s QDR InfiniBand

- Inspur AS500H (NetApp E2600) 4GB Write caching with mirroring, High
- 900GB 2.5-inch 10Krpm 6Gb/s SAS RAID1
- IO Inspur NF5270M3: io12
- 2\*1 Gigabit Ethernet, 40 Gbit/s QDR InfiniBand
- RAID LSI MegaRAID SAS 9271-8i (LSI SAS2208 ROC), 1GB cache with Battery Backup Unit
- 900GB 2.5-inch 10Krpm 6Gb/s SAS RAID1
- RAID1+

## Tier 2

## /archive

- 100%
- 1.91 PiB
- IO Dell PowerEdge R740xd: stor.nju.edu.cn
- 2\*25 Gigabit Ethernet
- RAID-Z 3
- 

/zfs/snapshot

/archive/archive/.zfs/snapshot/archive/.zfs/snapshot/20220904-000020229400

## Tier 2

## s3.nju.edu.cn

- 100%
- 2.12 PB
- UniverStor P20000
- 12\*10 Gigabit Ethernet
- Large object: 15/4, Small object: 6/4



- 阿里云S3
- Endpoint: http://s3.nju.edu.cn OR https://s3.nju.edu.cn
- Region: “华东” 即 us-east-1
- 阿里云AccessKeyID



- 阿里云AccessKeySecret
- 24小时阿里云服务器公网IP地址

/tmp/ /var/tmp/

阿里云OSS Bucket名称

/dev/shm/

阿里云OSS Bucket名称

/ssd/ /tmp/ssd

阿里云OSS Bucket名称



/fs04

- 阿里云885 GB
- IO阿里云IBM System x3650: io03
- RAID阿里云IBM ServeRAID 8k (Adaptec), 256MB cache with battery
- 阿里云146GB 3.5-inch 10Krpm 3Gb/s SAS 5个阿里云RAID5 1个2个阿里云RAID5 1个1个

/fs02

- 阿里云7.3 TB
- IO阿里云IBM System x3650 M3: io05
- 阿里云Chelsio 20 Gigabit Ethernet

- 1 IBM System Storage DS3200, 1GB cache with battery backup
- 2TB 3.5-inch 7.2Krpm 3Gb/s SATA 6 RAID6

## /fs06

- 443 GB
- IO HP ProLiant DL380 G5: io09
- 20 Gbit/s DDR InfiniBand
- RAID HP Smart Array P400, 512MB Battery-Backed Write Cache
- 146GB 2.5-inch 10Krpm 3Gb/s SAS 5 RAID5 1

## /fs07

- 7.3 TB
- IO HP ProLiant DL380 G5: io09
- 20 Gbit/s DDR InfiniBand
- HP StorageWorks MSA2312sa G2
- 1TB 3.5-inch 7.2Krpm 3Gb/s SATA 6 RAID6 2 RAID6

## /fs05

- 1010 GB
- IO HP ProLiant DL380 G5: io04
- RAID HP Smart Array P400, 512MB Battery-Backed Write Cache
- 300GB 2.5-inch 10Krpm 3Gb/s SAS 5 RAID5 1

## /fs05b

- 932 GB
- IO HP ProLiant DL380 G5: io04
- RAID HP Smart Array P400, 512MB Battery-Backed Write Cache
- 1TB 2.5-inch 7.2Krpm 3Gb/s NL-SAS 1 RAID0

## /fs03

- 2.2 TB
- IO Dell PowerEdge 12G R720: io07
- RAID Dell PERC H710P Mini (LSI SAS2208 ROC), 1GB cache with Intelligent Battery Backup Unit
- 600GB 2.5-inch 10Krpm 6Gb/s SAS 5 RAID5 1

## /fs11

- 16 TB
- IO Dell PowerEdge 12G R720: io07
- Dell MD3200i 2GB cache with battery backup

- 2TByte 3.5-inch 7.2Krpm 6Gb/s NL-SAS 12 Disk Pool 1 Virtual Disk

## /fs01

- fs01
- 100% 50% 50%
- 4.4 TB
- IO IBM System x3650 M3: io05 io06
- Chelsio 2\*10 Gigabit Ethernet
- RAID IBM ServeRAID M5015 (LSI SAS2108 ROC), 512MB cache with Battery Backup Unit
- 300GB 2.5-inch 10Krpm 6Gb/s SAS 5 RAID5 2 4 RAID5 1