

## **Wikiprint Book**

**Title: File Systems**

**Subject: DEEP - Public/User\_Guide/Filesystems**

**Version: 36**

**Date: 05.05.2024 01:50:23**

## Table of Contents

|                        |          |
|------------------------|----------|
| <b>File Systems</b>    | <b>3</b> |
| Stripe Pattern Details | 3        |
| Additional infos       | 4        |
| Footnotes              | 4        |

## File Systems

The following table summarizes the characteristics of the file systems available in the DEEP and DEEP-ER systems:

| Mount Point | User can write/read to/from | Cluster   | Type                                 | Global / Local | SW Version   | Stripe Pattern Details  | Maximum Measured Performance (see footnotes)                                   | Other   |
|-------------|-----------------------------|-----------|--------------------------------------|----------------|--------------|---|--|---|
| /home[a-b]  | /home[a-b]/\$USER           | DEEP, SDV | GPFS exported via NFS                | Global         |              |   |  | Home directory; not suitable for performance relevant applications or benchmarking        |
| /gpfs-work  | /gpfs-work/\$USER           | DEEP, SDV | GPFS exported via NFS                | Global         |              |   |  | GPFS work file system; not suitable for performance relevant applications or benchmarking |
| /work       | /work/\$USER                | DEEP      | BeeGFS                               | Global         | 2015.03.1r11 | Type: RAID0, Chunksize: 512K, Number of storage targets: desired: 4 | 2170 MiB/s write, 2111 MiB/s read ~21000 ops/s create ![1]                     | Work file system  |
| /sdv-work   | /sdv-work/\$USER            | SDV       | BeeGFS                               | Global         | 2015.03.1r10 | Type: RAID0, Chunksize: 512K, Number of storage targets: desired: 4 | 425 MiB/s write, 67 MiB/s read 15202 ops/s create, 5111 ops/s remove ![2]      | Work file system  |
| /nvme       | /nvme/tmp                   | SDV       | NVMe device                          | Local          |              | Block size: 4K  | 1145 MiB/s write, 3108 MiB/s read 139148 ops/s create, 62587 ops/s remove ![2] | 1 NVMe device available at each SDV compute node  |
| /mnt/beeond | /mnt/beeond                 | SDV       | BeeGFS On Demand running on the NVMe | Local          | 2015.03.1r10 | Block size: 512K  | 1130 MiB/s write, 2447 MiB/s read 12511 ops/s create, 18424 ops/s remove ![2]  | 1 BeeOND instance running on each NVMe device   |

### Stripe Pattern Details

It is possible to query this information from the deep login node, for instance:

```

manzano@deep $ fhgfs-ctl --getentryinfo /work/manzano
Path: /manzano
Mount: /work
EntryID: 1D-53BA4FF8-3BD3
Metadata node: deep-fs02 [ID: 15315]
Stripe pattern details:
+ Type: RAID0
+ Chunksize: 512K
+ Number of storage targets: desired: 4

manzano@deep $ beegfs-ctl --getentryinfo /sdv-work/manzano
Path: /manzano
Mount: /sdv-work
EntryID: 0-565C499C-1
Metadata node: deeper-fs01 [ID: 1]
Stripe pattern details:
+ Type: RAID0
+ Chunksize: 512K
+ Number of storage targets: desired: 4

```

Or like this:

```

manzano@deep $ stat -f /work/manzano
File: "/work/manzano"
  ID: 0      Namelen: 255      Type: fhgfs
Block size: 524288      Fundamental block size: 524288
Blocks: Total: 120178676  Free: 65045470  Available: 65045470
Inodes: Total: 0        Free: 0

manzano@deep $ stat -f /sdv-work/manzano
File: "/sdv-work/manzano"
  ID: 0      Namelen: 255      Type: fhgfs
Block size: 524288      Fundamental block size: 524288
Blocks: Total: 120154793  Free: 110378947  Available: 110378947
Inodes: Total: 0        Free: 0

```

See <http://www.beegfs.com/wiki/Striping> for more information.

## Additional infos

Detailed information on the **BeeGFS Configuration** can be found [?here](#).

Detailed information on the **BeeOND Configuration** can be found [?here](#).

Detailed information on the **Storage Configuration** can be found [?here](#).

Detailed information on the **Storage Performance** can be found [?here](#).

## Footnotes

! [1] Performance tests (IOR and mdtest) reports are available in the BSCW under DEEP-ER → Work Packages (WPs) → WP4 → T4.5 - Performance measurement and evaluation of I/O software → Jülich DEEP Cluster → Benchmarking reports:

- <https://bscw.zam.kfa-juelich.de/bscw/bscw.cgi/1382059>

! [2] Test results and parameters used stored in JUBE:

```

user@deep $ cd /usr/local/deep-er/sdv-benchmarks/synthetic/ior
user@deep $ jube2 result benchmarks

user@deep $ cd /usr/local/deep-er/sdv-benchmarks/synthetic/mdtest

```

```
user@deep $ jube2 result benchmarks
```