

Glossary of Technical Terminology

*Ruhr-Universität Bochum
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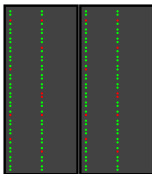
Nodes
Storage
RAM
CPUs

Cores
GPUs
Processes
Threads

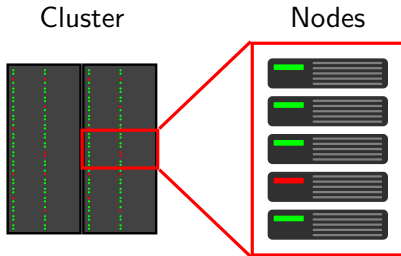
This glossary defines a list of terms which anyone should be familiar with, in order to follow the contents of the “Introduction to Linux” and “Introduction to HPC” training courses.

An HPC-Cluster

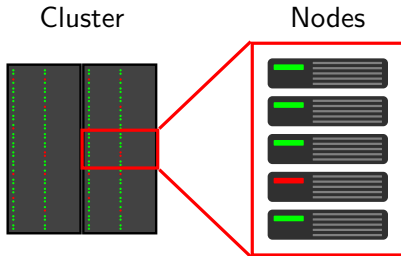
Cluster



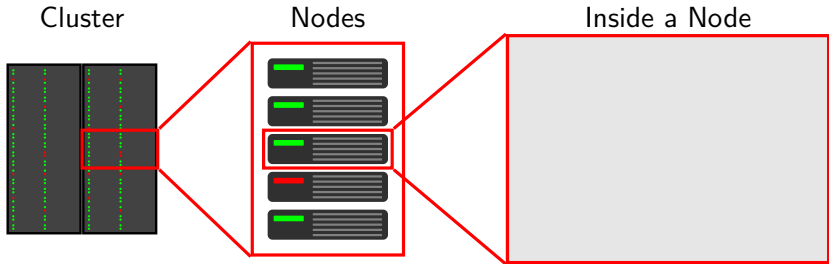
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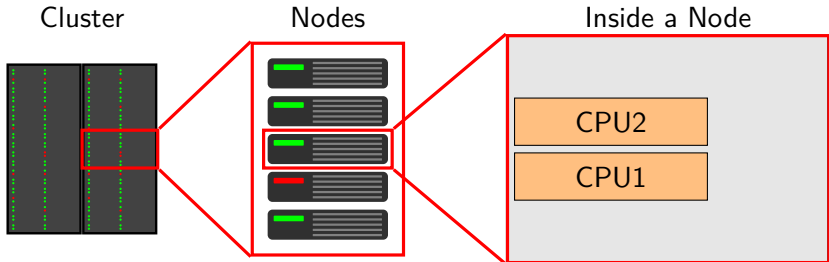
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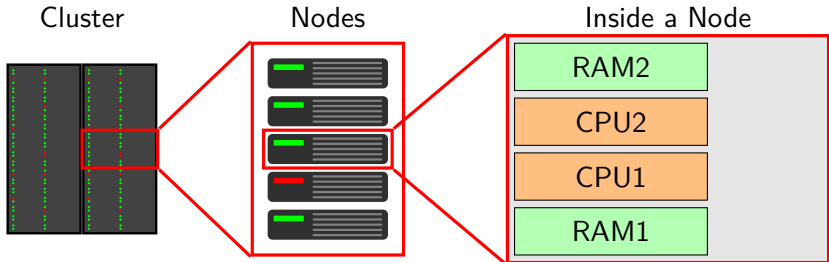
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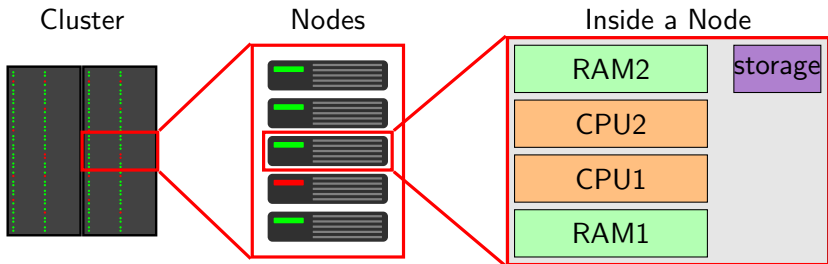


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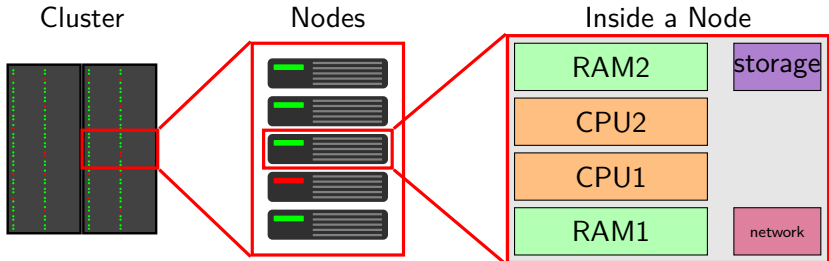
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- RAM** (Random Access Memory),
- storage** (Harddrive, SSD, or NVMe),



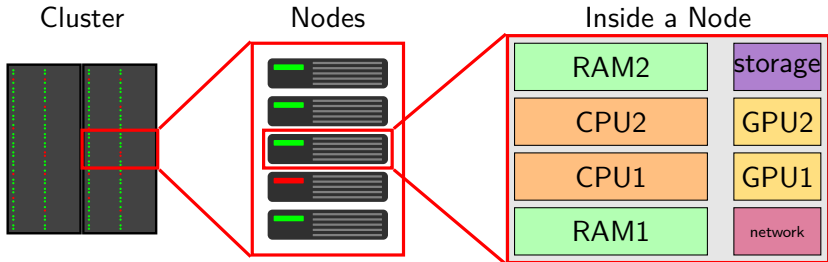
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- network interface (for communication with other nodes)



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- RAM** (Random Access Memory),
- storage** (Harddrive, SSD, or NVMe),
- network interface (for communication with other nodes)
- optionally multiple accelerators e.g. **GPUs**.



Storage provides permanent place to store files.

Common storage medias are:

- Hard Disk (slow mass storage)
- SSD/NVMe (fast storage)

Storage can be:

- local (within the node)
- network storage (shared between nodes)

RAM (random access memory) is fast short term memory for data that is utilized during computations.

CPU (central processing unit) is a set of **cores** that can work independently of each other.

Cores perform operations and calculations on data located in RAM.

GPUs (graphics processing unit), originally intended for 3D-animation, are separate computing devices developed for massive data processing.

Processes are instances of programs that utilize a section of **RAM** provided by the operating system and instruct a **CPU** to perform calculations.

Threads are parts of a **process** which execute certain parts of the program. All threads of a **process** utilize the same **RAM** section, but can utilize a different **core** of a **CPU** to enable concurrent calculations.