NI4OS-Europe on-boarding procedure

On-boarding of generic services

Overview

- ❏ Generic service categories
- ❏ HPC/HTC services
- ❏ Cloud services
- ❏ Storage services
- ❏ Collected RDTs

Generic Service Categories

- ❑ HPC/HTC services
- ❑ Cloud services
- ❑ Storage services

HPC/HTC services

- ❑ High Performance Computing
    - ❑ Has specific architecture which applications must conform to in order to extract more performance
    - ❑ Technical details are important for informing users on specific programming and technology requirements
- ❑ High Throughput Computing
    - ❑ aka. Grid computing
    - ❑ Fits similar description as HPC

Data collected about HPC/HTC (1)

Basic information

Peak performance	Theoretical peak performance of the resource in TFlops, including CPUs and accelerators.
Server specification	Vendor specific information about servers.
Number of servers	

Data collected about HPC/HTC (2)

CPU details

CPU specification	Vendor and model of the CPU.
CPUs per server	
Cores per CPU	
RAM perserver	in GB
RAM per core	in GB
Total number of CPU cores	Total number of CPU cores for the entire system.
Max number of parallel processes	Max number of parallel process allowed for end user.
CPU peak performance	CPU theoretical peak performance of the system in TFlops.

Accelerator details

Accelerator specification	Vendor and model of the accelerator.
Total number of accelerators	
Accelerators per server	
Max number of accelerators per server	
Accelerators peak performance	Accelerators theoretical peak performance of the system in TFlops.

Interconnection

Interconnect type	Interconnection technology between servers.
Interconnect latency	in μs
Interconnect bandwidth	Interconnection bandwidth between nodes, in Gbps.

Data collected about HPC/HTC (4)

Filesystem details

Local filesystem type	Shared filesystem type for interconnecting nodes.
Total storage	in TB

Software details

Operating system	
Batch system/scheduler	
Development tools	
Libraries	
Applications	

Cloud services

❑ Infrastructure as a Service (IaaS)
❑ Dynamical deployment and scaling of services on virtual machines

Details collected about Cloud (1)

Basic information

Server specification	Vendor specific information about servers.
Number of server	

CPU details

CPU specification	Vendor and model of the CPU.
CPUs per server	
Cores per CPU	
RAM per server	in GB
RAM per core	in GB
Total number of CPU cores	Total number of CPU cores for the entire system.

Details collected about Cloud (2)

Filesystem details

Total storage	in TB

Virtual machine specification

Minimum number of CPU cores per VM	
Minimum amount of RAM per VM	in GB
Maximum number of CPU cores per VM	
Maximum amount of RAM per VM	in GB
Maximum amount of storage per VM	in GB

Details collected about Cloud (3)

Software details

VM management type	Cloud software stack deployed.
Supported interfaces	Interfaces available for managing the cloud (Web, API).

Storage services

❑ Cloud services that enable safe and secure storage of data.
❑ Different technology and software stacks with different access models and interfaces.

Details collected about Storage

Basic information

| Storage specification	Software stack used for the storage service.
Total strage	in TB
Storage technology	Technology used for storing the data (SSD, SAS, SATA..)
Storage performance	IOPS

Software details

Supported interfaces	
Supported storage types	

Collected RDTs (1)

- Cloud:
  - AVITOHOL-CLOUD, BG
  - OpenStack, GR
  - FINKI Cloud, MK
  - OpenStack, GE
  - RENAM Scientific Cloud, MD
  - ICIPRO, RO
  - ETFBL-CC01, BA
  - UoM Cloud, ME

Collected RDTs (2)

- HPC:
  - AVITOHOL, BG
  - ARIS, GR
  - Isabella, HR
  - PARADOX-IV, RS
  - Data analysis service, RS
- Storage:
  - AVITOHOL-STORAGE, BG
  - Data discovery service, BG
  - Archival service, GR
  - RenamStor, MD
  - PARADOX storage system, RS
  - Simple storage service, RS

Distribution of generic services
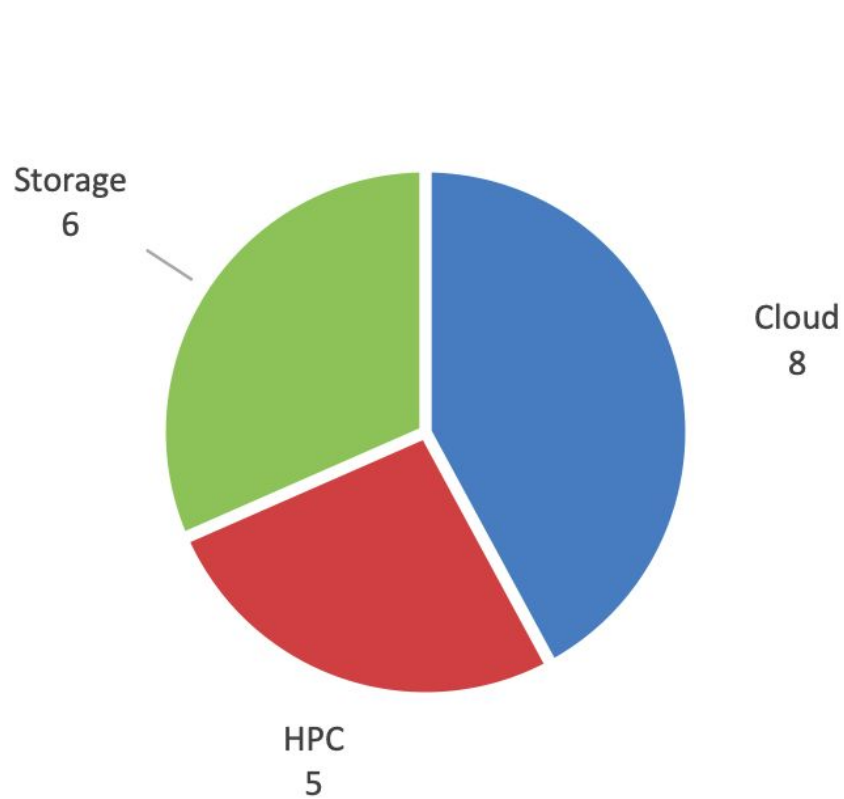
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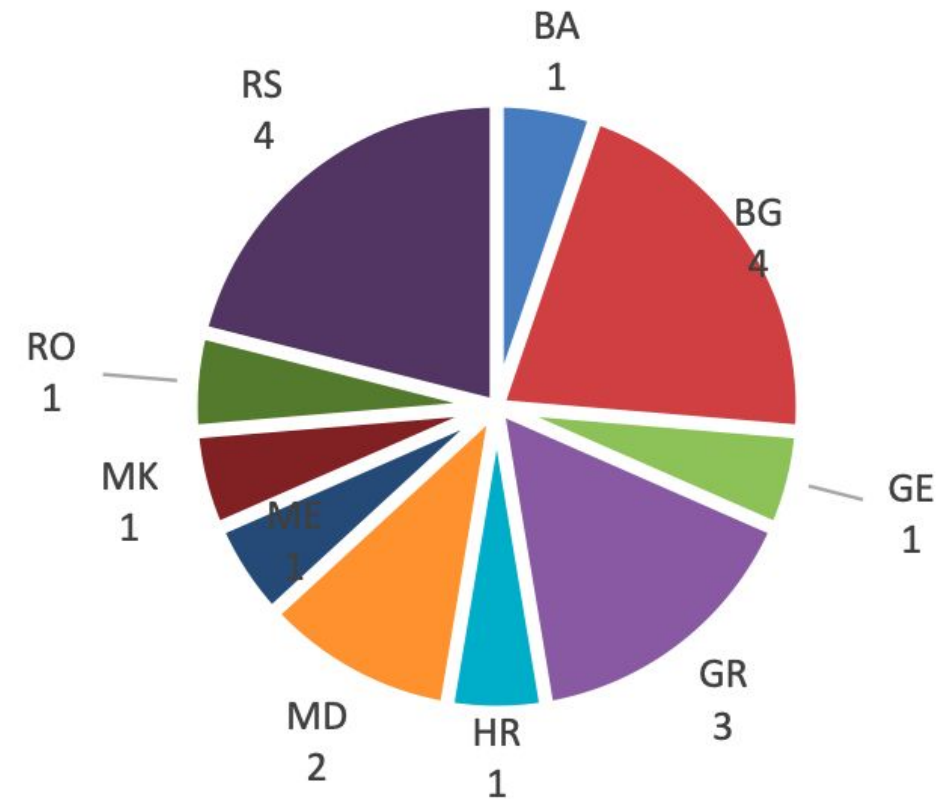
Distribution by country..

Quick-win generic service examples

- Data analysis service at IPB
  - Hadoop cluster within PARADOX cluster installation
  - TRL8
- FINKI Cloud at FCSE, UKIM
  - OpenStack cloud platform used by research and education communities
  - TRL9

Thank you for your attention