QUOTE no. **021/2022** of **2022-08-23**

RECIPIENT

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DESCRIPTION	AMOUNT
HPC Cluster reengineering Remote consultancy Software services - team members are HPC Senior Administrator and HPC Junior System Administrator	€ 18,000.00

NOTES

HPC cluster reengineering and reinstall, from a Bright Cluster Manager setup to an installation with an open source Cluster Manager. Objects of the reinstall are the following Dell servers and devices:

• 2 master servers
• 2 login servers
• 4 computing nodes
• 4 lustre servers (2 MDS and 2 OSS)
• 1 monitoring server
• 4 storage (1 ME4012, 1 ME4024, 2 ME4084)

Network layout is left as is, as well as cabling and stacking on the racks in the datacenter.
Server roles (2 masternodes, 2 login, 4 computing nodes, 4 lustre servers, 1 monitoring) are well defined and are left as is. Please note that existing data will be destroyed, or in any case a backup is highly recommended.
The operating system to choose is based on RedHat-like distribution. The options are based on CentOs 7 or other Community distribution (Rocky Linux 8 - https://rockylinux.org, Alma Linux 8 - https://almalinux.org).

The procedure requests a reinstall of the HPC Cluster, with main steps as follows:

• by means of master-02, reinstall master-01
• by means of master-01, reinstall master-02
• configure masternodes with an open source Cluster Manager (we propose xCAT, www.xcat.org)
• configure masternode in high availability, with shared storage on the ME4012
• by means of configured masternode, reinstall computing nodes and storage servers
• configure NFS for users' home and scientific software
• configure queue system (Slurm or OpenPBS)
• configure services (InfiniBand)
• install scientific software (compilers, libraries)
• run HPL Linpack benchmark to verify performance of the HPC Cluster
• re-create users and restore users' data from backup
• reinstall and configure monitor server with open source monitoring solution (we propose Zabbix)

At the end of the installation services, documentation on how to use the system will be released.

TOTAL QUOTE
€ 18,000.00