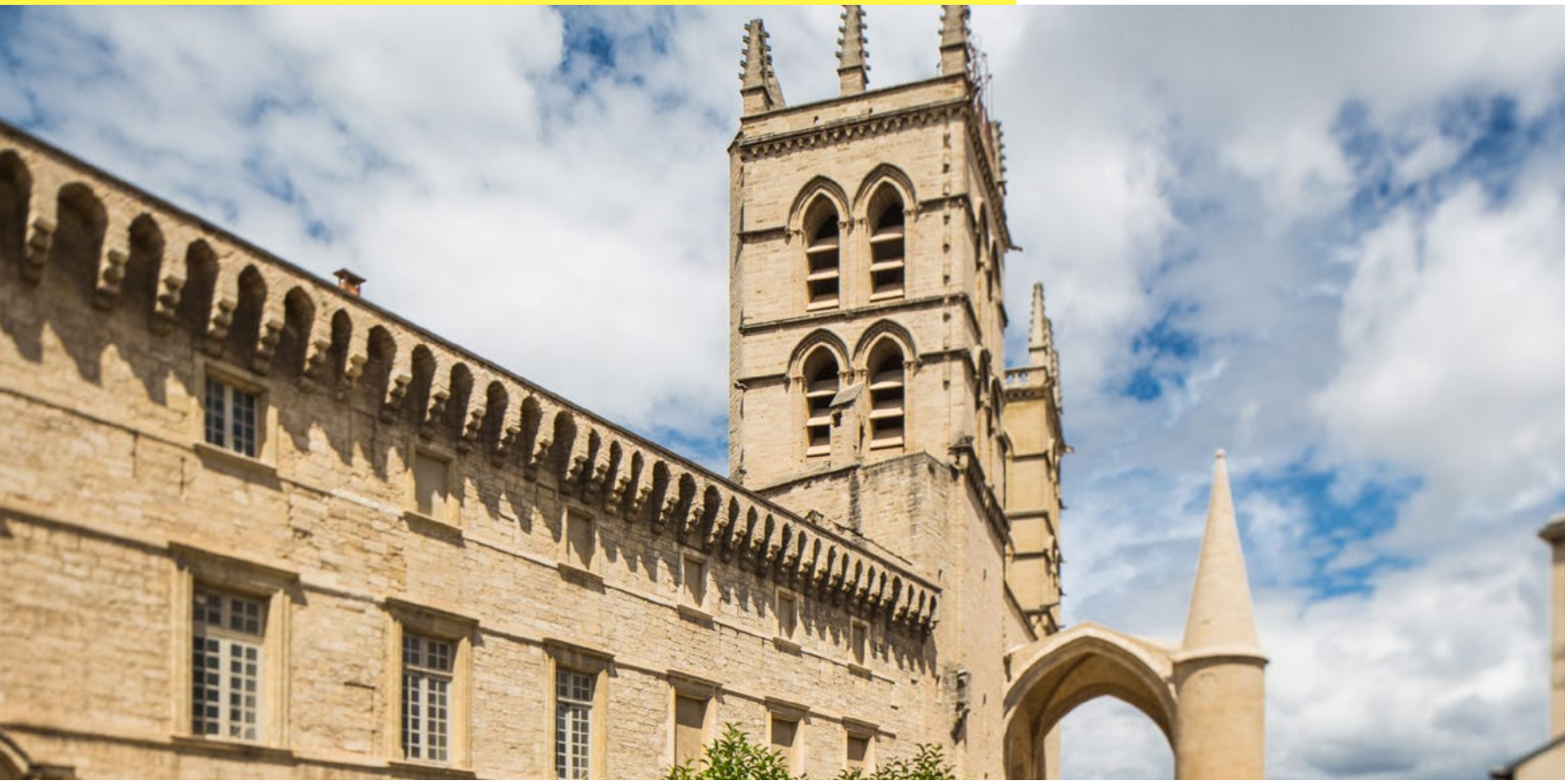
CUSTOMER SUCCESS STORY

# The University of Montpellier leaps forward in its data storage and sharing abilities

NetApp



UNIVERSITÉ DE MONTPELLIER

**To meet multidisciplinary demand for digital resources, the university uses NetApp technologies in MESO@LR.**

In response to multidisciplinary demand that constantly requires and consumes digital resources, the University of Montpellier has just breathed new life into its “mesocenter” storage abilities. Now it benefits from the advantages of NetApp® technologies. With this major transition, the MESO@LR platform, more than ever before, provides its users with a solid technical base for intensive research into the major societal challenges of our time.

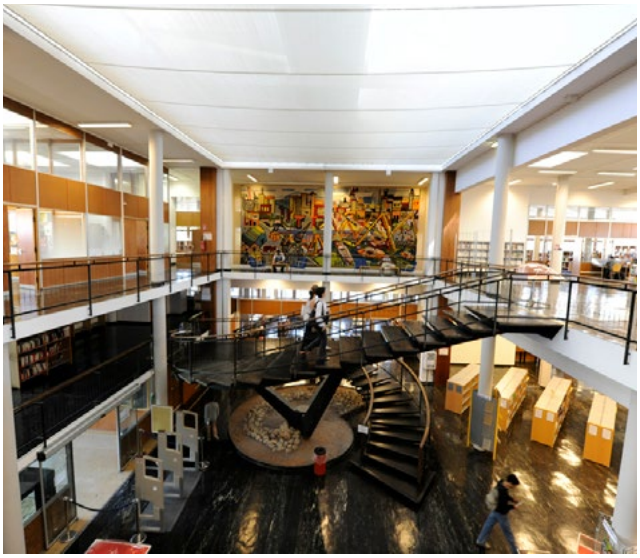
Within a major university and research center, handling the question of supercomputers is multifaceted. First, you must demonstrate the ability to respond to a multitude of users whose work might vary significantly and have varied needs, from the development of lines of code to mass data analysis or monitoring training cycles. For partner schools and laboratories, French or foreign research institutions, or businesses collaborating on a given project, the CIOs of a university pool must respond effectively to multidisciplinary demands. And they must consider matters from the perspective of resource pooling within a private cloud infrastructure.

**15PB global usable storage volume, delivered to over 60,000 users in the MUSE Foundation**

*"With the significant increase of our storage capacity by NetApp from 1.3PB to 15PB, we improved functionality of our processor cores which, until now, had suffered from data overload. We can also now provision a highly available and secure storage service, offering ideal conditions for everything related to research data."*

**Alexandre Dehne Garcia**
**INRAE Engineer, coordinator of the Storage project at Meso@LR**

Since 2017, with the development of the MESO@LR platform, the University of Montpellier has succeeded in this objective. It now offers pooled resources for the intensive processing and mass storage of data to all academic stakeholders, whether public or private, that gravitate to its ecosystem. NetApp provided the technologies and the know-how to drive this success.



**On the origins of the MESO@LR platform**
"From the start, we had two ambitions," recalls Jean-Luc Oms, a research engineer for Centre National de la Recherche Scientifique (National Center for Scientific Research) and the technical director at MESO@LR. "We wanted to rationalize our growing requirements in processing power and storage capacity, while ensuring that we were aligned with the great variety of needs of our users. Even if it meant having a solution that had less capacity overall, the idea was really to meet, as closely as possible, the potential needs that researchers, professors, or businesses may have in their work. For example, it had to be capable of handling sensitive medical data and educational resources, including research corpora and student profiles."

Funded from its beginnings in 2016 by the Occitanie Region and the Montpellier Mediterranean Metropolis, MESO@LR was officially rolled out in 2017 within the MUSE (Montpellier Université d'Excellence) Foundation, which was created the same year. It was finally integrated into the ISDM (Institut de Science des Données de Montpellier) organization in 2019. Over the years, the MESO@LR platform has become increasingly important. It is "at the heart of an ambitious tertiary education and research project, serving the region and major societal challenges," summarizes Anne Laurent, professor at the University of Montpellier and director of MESO@LR.

From the start, MUSE and its consortium of 19 institutions, including national research organizations, major universities, and health establishments, has had a clear objective. As Laurent explains, the objective has been "to develop, with the technical backing of MESO@LR, a thematic university for intensive research, internationally recognized for its work in fields associated with the environment, agriculture, and health." As proof of its success, more than 60,000 users, in the context of the MUSE Foundation, now employ MESO@LR for their work.

**NetApp technologies at the heart of increasing storage capacity**
Faced with such ambitions, the technical infrastructure had to be up to the challenge and, in particular, be scalable to meet the increasing needs. In 2020, the University of Montpellier issued a call for proposals to expand the storage capacities of its MESO@LR platform. Already in use and recognized for the high quality of its IT management solutions in the IT department at the University of Montpellier, NetApp was ultimately selected to deliver this project. With the support of integration specialist SCC, the new storage arrays were delivered in early 2021.

"Installation was completed within a few weeks," recalls Alexandre Dehne Garcia, INRAE engineer and coordinator of the Storage Project at MESO@LR. "Then the setup phase was conducted within a few months in order to achieve a satisfactory level of functionality. In July, the solution was open for the first tests and, by autumn 2021, for all users, confidentially at first, then wider in scope."

Currently, thanks to NetApp® technologies, the "MESO@LR platform has made a real leap forward in its storage capacity, going from 1.3PB to 15PB of global usable volume, before deduplication and compression performances," notes Dehne Garcia.

MESO@LR is hosted within the CINES (Centre Informatique National de l'Enseignement Supérieur) premises as two distinct infrastructures. One is for primary storage at a volume of 10PB, and the other is for replicating data, with a capacity of 5PB. The MESO@LR platform now offers all the benefits of highly available, top-performance, and secure mass storage. It can respond to any type of data flow, whether in files, objects, or blocks.
"This replicated hybrid configuration offers greater latitude in data access protocols while ensuring a solution that is still suited to the desired use case," observes Dehne Garcia. "All that provides an increased feeling of calm for the users, thanks to native anti-ransomware protection provided by the cutting-edge data replication and Snapshot services in the NetApp ONTAP operating system."

**Providing a wide range of uses**
Thanks to its resilience, its robustness, and its scalability, the MESO@LR platform now hosts a wide variety of data in a unified and sustainable offering.
"With the significant increase of our storage capacity provided by NetApp, we are now better able to respond effectively to two essential requirements. We improved functionality of our processing cores which, until now, suffered from data overload, which severely impacted their performance. We can also provide a highly available and secure storage service, offering ideal conditions for everything related to research data," explains Dehne Garcia.

Although the strength of the MESO@LR platform can now cover all scientific fields, the MUSE Foundation prioritizes the installation of a collective intelligence to serve a fragile planet that is facing constant population increase and changing ecosystems.

Among the numerous projects conducted in this way, an example is the EquipexGeosud consortium. This organization seeks to democratize the use of satellite imagery for as many people as possible through a freely available, national infrastructure to enable better management of natural environments and their resources. Another project is Litto CMS, which enables better protection of coastal zones through a platform of innovative solutions that offer enhanced tools to predict disasters and to assist with real-time management if floods or tidal waves occur.
"As they consume a lot of storage resources for their digital modeling stages, these two projects now take full advantage of our MESO@LR platform," concludes Dehne Garcia.

**NetApp solutions**

- NetApp FAS systems
- NetApp StorageGRID® object-based storage solution

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