

CASE STUDY

IFOM, The FIRC Institute for Molecular Oncology, obtains access times to data about 10 times faster with InfiniBox.

Founded in 1998, IFOM, The FIRC Institute for Molecular Oncology is a cancer research institute focused on the study of cancer formation and development at a molecular level. Specifically, Francesco Ferrari's lab focuses on the identification and study of non-coding regulatory elements in the genome, and in particular on how they are involved in the regulation of physiological and pathological biological processes. The group uses data of functional genomics (transcription, epigenetic markers, three-dimensional organisation) and other genomic data obtained (such as the re-sequencing of patients) with massive sequencing methods.

In Search of a Better Storage Solution

As this research data grows, demands also grow for more performance in the system. Massive analyses of genomic data is driving the need to deploy increasingly innovative software and hardware solutions to continue managing, and efficiently analysing, large data sets. The Institute became increasingly aware that its existing DDN Lustre based storage system would become completely inefficient against the Institute's future needs. It was slow, unreliable and far from optimised.

In September 2018, to address these issues, IFOM implemented an InfiniBox™ storage solution from INFINIDAT.

The Challenge: Providing Improved System Performance

The urgency within IFOM to find a new storage solution was driven by a need for both improved system performance and availability. Researchers need to have high performance IT platforms accessible to them in order to save time during the analysis of large amounts of data. Any delay, or need to repeat workloads due to unavailability of the systems, must be avoided if they are to get all the information they need - and be the fastest team in the world in their field. Each result they are able to secure can lead to new series of funding for their research so efficiency, availability and response time were all fundamental elements in the review process.

As part of the due diligence process Igal Janni, CIO Research at IFOM, set up a roundtable with the top genomic researchers in the field to better understand their needs. The technical level of the research being conducted at the Institute highlighted just how critical it was to implement a truly innovative IT solution, in order to cope with, manage and analyse the very large data sets that would come from processing genomic data. All the researchers needed high performance computational clusters with very fast and concurrent access to storage data, without exception.

A comprehensive RFP was created and a review of the solutions available in the market was completed across a three-month period.

Solution Advantages for IFOM



**Over 900k
IOPS of
Performance**



**Automated
Provisioning
Management**



**Unprecedented
99.99999%
Availability**

The Solution: InfiniBox

IFOM opted for the InfiniBox F4260, with 1PB of net physical capacity to substitute the former storage architecture. The InfiniBox F4260 was connected to the Institute computational cluster for genomic studies connected through NFS protocol.

"After a very successful technical discussion and presentation from the INFINIDAT team, we quickly progressed to set up a one-month Proof of Concept (POC)," explained Janni. The trial period was incredibly positive, so we immediately transferred the solution in to its normal procurement workflow and began implementation. Janni explains, "It was critical that this process ran smoothly." Implementation was, in fact, cited as being faultless."

The InfiniBox is next-generation enterprise storage at a compelling price point. Its patented Infinidat Storage Architecture, delivers highly efficient, multi-petabyte capacity in a single rack. The InfiniBox solution also offers mainframe-class reliability, with an unprecedented 99.99999% availability. Automated provisioning, management, and application integration create a system that is incredibly efficient and easy to use.

Benefits to date for IFOM have already been significant according to Janni. "We can finally rely on a very efficient storage system and our pipeline now works smoothly and without errors. My advice to anyone considering a change in storage protocols would be this - invest in innovation. It's the only way to combine price, performance and reliability."

Impressive Results:

INFINIDAT's storage capabilities, along with detailed collaboration from Janni and his team, has allowed the researchers to now obtain access times to data about 10 times faster than the previous infrastructure did. This is also a unique level of reliability in the market.

Future Plans:

With InfiniBox, all future upgrades are also transparent, with no interruption to production, which was another compelling element that IFOM gave consideration to during the procurement process. Capacity on demand was critical. "When we consider our future plans, we expect these to include introducing InfiniSync in to the IT infrastructure next year, as our Disaster Recovery solution," Janni concluded.

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**Igal Janni,
CIO Research at IFOM**