IN SCIENTIFIC RESEARCH

Even once the data coming from the LHC experiments has been reduced by the trigger systems, the CERN data centre processes hundreds of petabytes of data annualy. The CERN data centre in Meyrin is the heart of CERN's entire scientific, administrative, and computing infrastructure. All services, including email, scientific data management and videoconferencing use equipment based in the data centre. The centre hosts around 10,000 dual-CPU servers with approximately 300,000 processor cores.

The servers undergo continual maintenance and upgrades to make sure that they will operate in the event of a serious incident. Critical servers are held in their own room, powered and cooled by dedicated equipment.

Around 150 PB of data are stored on disk at the Meyrin site, with over 200 PB on tape.

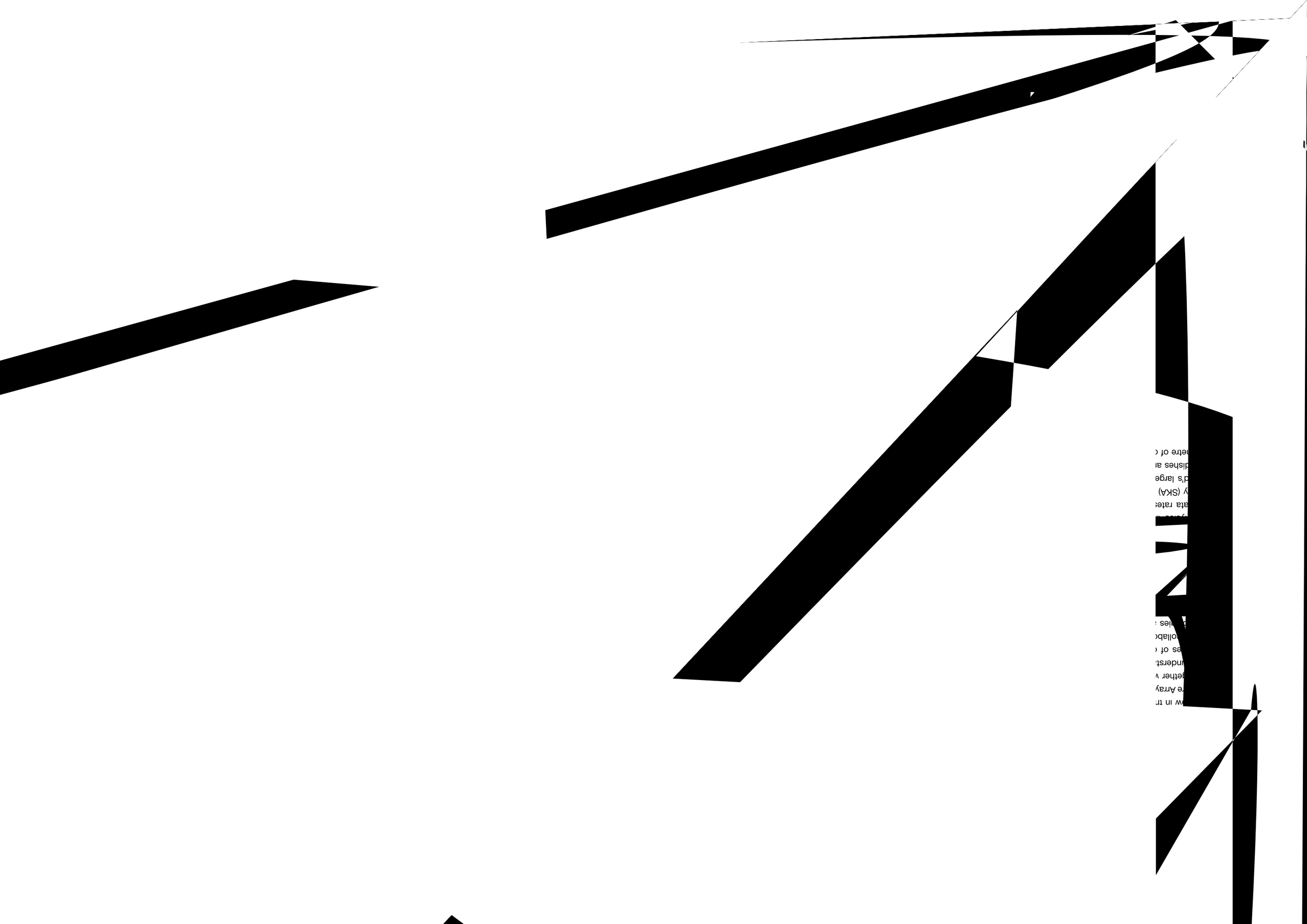
rated. It serves as an extension to the main data centre in Meyrin, Switzerland. Today, the Wigner data centre hosts 3500 dual-CPU servers, with approximately 100,000 processor cores. It also offers around 100 PB of disk space.

The equipment in Wigner is managed and operated from CERN, in the same way as the equipment in the CERN data centre. Only activities requiring physical access to the equipment are

The LHC has been designed to follow a carefully set out programme of upgrades. The LHC typically produces particle collisions for a period of around three years (known as a 'run'), followed by a period of about two years for upgrade and maintenance work (known as a 'long shutdown', which is commonly abbreviated to LS). This is illustrated below.

Over the next decade, two significant upgrade periods are foreseen for the LHC, known as LS2 and LS3. Improvements to both the accelerator complex and the detectors during each of these periods will result in a dramatic increase in the computing needs of the laboratory, so as to ensure that the full physics potential is exploited.

also have to be developed.



ADDITIONAL INFORMATION

RELATED EVENTS

CERN OPENLAB TECHNICAL WORKSHOP
8-9 December 2016
http://cern.ch/go/Bqk8

CERN OPENLAB WORKSHOP ON DATA-CENTRE TECHNOLOGIES AND INFRASTRUCTURES
1 March 2017
http://cern.ch/go/66ks

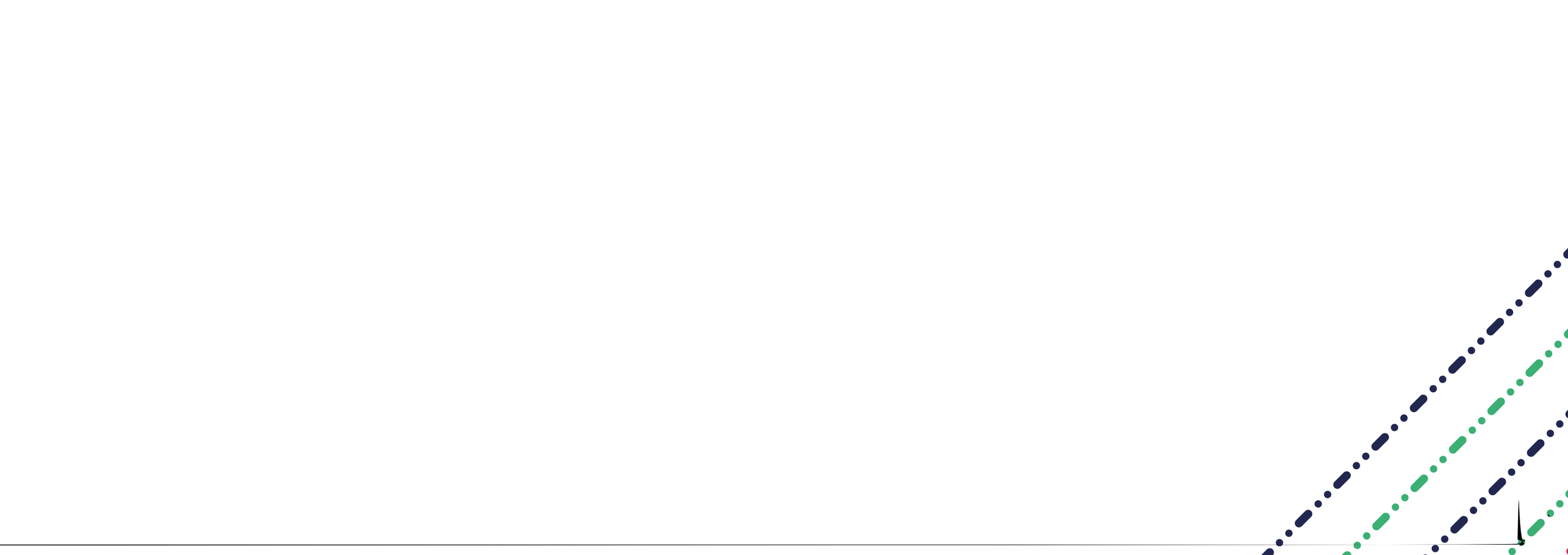
CERN OPENLAB WORKSHOP ON COMPUTE PLATFORMS AND SOFTWARE
23 March 2017
http://cern.ch/go/Nc9m

CERN OPENLAB WORKSHOP ON MACHINE LEARNING AND DATA ANALYTICS
27 April 2017
http://cern.ch/go/7ShK

CERN OPENLAB 'OPEN DAY'
21 September 2017
http://cern.ch/go/T8ff

RELATED DOCUMENTS

CERN OPENLAB WHITE PAPER ON FUTURE IT CHALLENGES IN SCIENTIFIC RESEARCH 2014
http://cern.ch/go/JR8g

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