English / ENGLISH

THE CERN DATA CENTRE

Where data becomes knowledge

www.cern.ch/it-opendays

- The **CERN Data Centre** is the **heart of CERN's entire scientific, administrative and computing infrastructure**. All services, including e-mail, scientific data management and videoconferencing use equipment based here.
- The **LHC experiments** produce **massive amounts of data**! The **challenge** is to **transform this data into knowledge**.
- This data is **'reconstructed'** and **stored permanently** in the CERN Data Centre. It is then **sent to a network** of about **170 data centres** in more than **40 countries**, the **Worldwide LHC Computing Grid (WLCG)**. The mission of WLCG is to provide global computing resources to **store**, **distribute** and **analyse** the LHC data.
- **Collaboration** (by uniting people, countries, institutes / with other scientific fields and with the IT industry through CERN openlab / through projects funded by the European Commission, etc.) **is essential**.

The CERN Data Centre Key Numbers *(as of September 2019)*:

- About **15 000 servers** and **260 000 processor cores.**
- About **130 000 disks** and **30 000 magnetic tapes.**
- **115 petabytes (115 million of gigabytes)** of new data written to magnetic tape in 2018.
- About **340 petabytes (340 million of gigabytes) of data permanently archived** on magnetic tapes (equivalent to more than 2 000 years of HD quality video content)
- Linked to the LHC experiments by **> 50 000 km of optical fibres (more than earth circumference)**

WLCG Key Numbers *(as of September 2019)*:

- About **170 data centres** in more than **40 countries.**
- Up to **900 000 processor cores** available to the LHC experiments.
- **> 12 000 physicists** accessing LHC data.
- **> 300 000 physics analyses** running concurrently.

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