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DARTS on-demand computing : heavy-duty data treatment for all

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Figure 1: DARTS

The **Data Analysis Remote Treatment Service (DARTS)** [1] is a remote desktop service that launches virtual machines in the cloud, and displays them in your browser.

These machines can be used for e.g. scientific data treatment (reduction/analysis). A user indicates how many CPU cores and how much memory he wishes, can optionally request a GPU for heavy-duty computations, and can be customized at start-up. The sessions typically start in about 10 seconds, and can be shared with

colleagues within their life-time (typically 7 days). Each user can manage all his active sessions (connect, stop, share).

This service can be installed and configured within a few minutes (`sudo apt install qemu-web-desktop`), and it requires minimal maintenance. The source code is fully open-source, and relies on very simple elements (Apache web-server and QEMU). Give it a try !

We provide at Synchrotron SOLEIL a set of prepared environments with plenty of scientific software for e.g. crystallography, spectroscopy, imaging, tomography, etc. The usual environment is based on Debian/Ubuntu with hundreds of pre-installed scientific software and libraries. A Windows 10 system is also available. A specialized environment has also been set-up for AlphaFold protein structure prediction. These environments are available on the beam-lines, and connected to our data storage.

[1] DARTS <https://gitlab.com/soleil-data-treatment/soleil-software-projects/remote-desktop>

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