Stato Farming ed evoluzione

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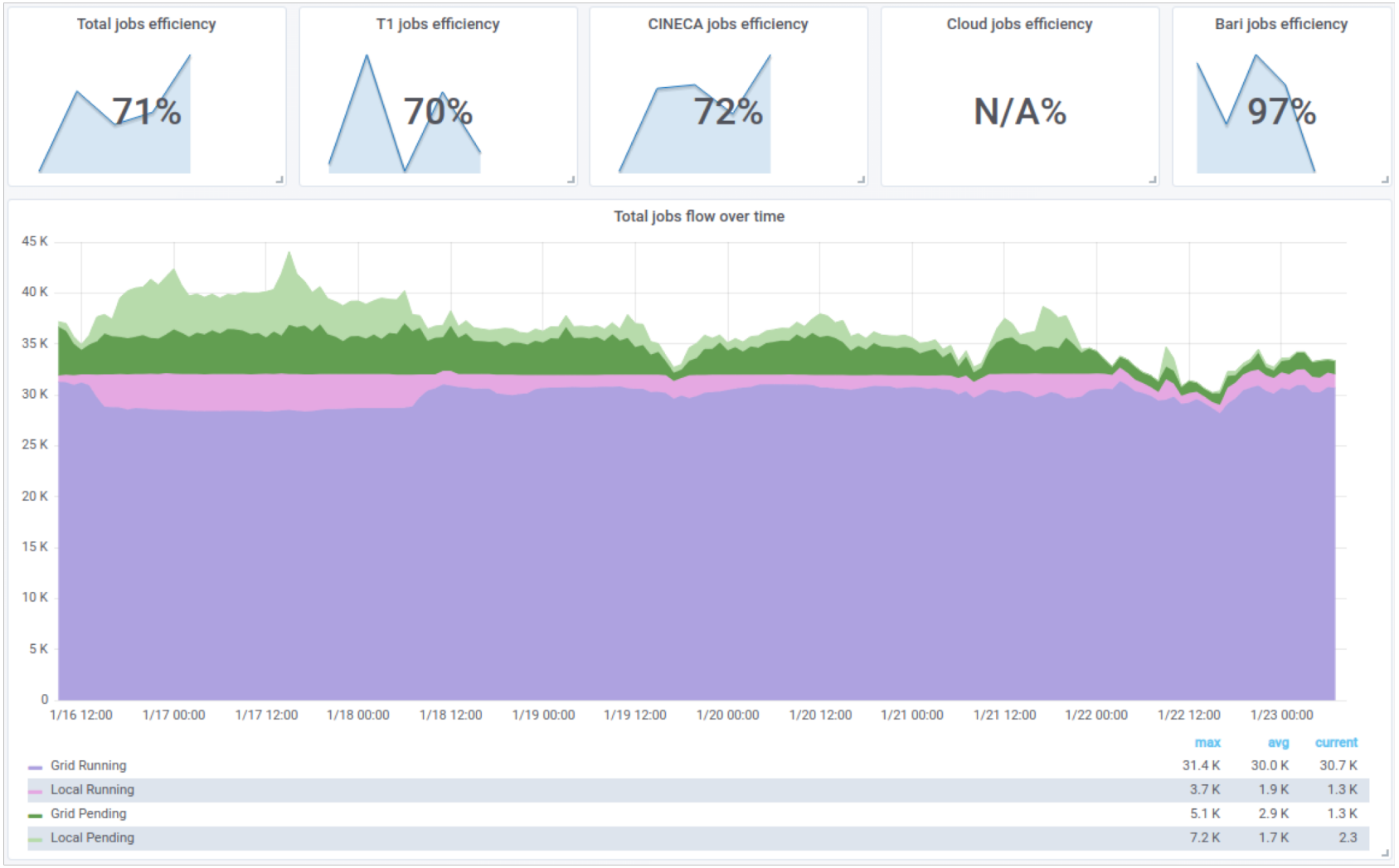
Job trends


Total jobs efficiency
71%
T1 jobs efficiency
70%
CINECA jobs efficiency
72%
Cloud jobs efficiency
N/A%
Bari jobs efficiency
97%
Total jobs flow over time
45 K
40 K
35 K
30 K
25 K
20 K
15 K
10 K
5 K
0
1/16 12:00
1/17 00:00
1/17 12:00
1/18 00:00
1/18 12:00
1/19 00:00
1/19 12:00
1/20 00:00
1/20 12:00
1/21 00:00
1/21 12:00
1/22 00:00
1/22 12:00
1/23 00:00
max avg current
Grid Running 31.4 K 30.0 K 30.7 K
Local Running 3.7 K 1.9 K 1.3 K
Grid Pending 5.1 K 2.9 K 1.3 K
Local Pending 7.2 K 1.7 K 2.3

Computing resources

- Farm power: approx. 410 KHS06
- 2017 tender (EPYC 7351) running at full capacity
  - Power consumption 22 KW (vs an average of 13)
- CINECA: too many cores, difficult to exploit 100%. Reduced job slots to 62
  - And configured disks with raid0
- Still using extra-pledge for Virgo, should be decommissioned feb19 (approx. 56 KHS06)

CentOS 7

- Migration to CentOS 7 complete
  - All VOs can run
  - If VO does not support CentOS 7, singularity can be used to run on SL6
    - Belle2 (still a small fraction of resources on sl6)
- No critical updates requiring reboot were applied during the last period
- Patched Systemd vulnerability that allows privilege escalation (applied last week)
- Update CentOS to 7.6, cvmfs to 2.5.2

DB Services

- 2 servers run DB for generic farm usage
- 2 experiments have data too (CUORE, CUPID)
- Situation has been recovered after flood, finally
  - 2 servers with 2TB san storage, double controller, HA configuration
  - 1 server with **CUORE** hot-standby replica (LNGS)
    - Heavily used by experiment
    - Upgrade foreseen soon
    - After upgrade, will become a ro replica of other server

Deployment of HTCondor pilot

- Small test instance running.
  - Used to prepare puppet configuration classes.
- New hardware purchased at end of 2018 will be used to install production HTCondor-CE and HTCondor-manager.
  - Final solution will be a mix of real and virtual machines.
- Activity is a priority of farming group.

- LSF licenses expired 31 Dec 2018.
  - Still usable, but no updates or patches can be applied after that date.

HTCondor Task force

- Proposta di Stefano Dal Pra per «costituire una knowledge base INFN e codificare linee guida, convenzioni e best-practices specifiche per il caso d'uso dei nostri siti Grid»
  - Milano, Bari, Padova, Legnaro coinvolti
- wiki su wiki.infn.it con link utili e mailing-list per supporto italiano

Cloud@CNAF

- Production infrastructure ready:
  - High Available core services.
  - ~ 1400 core, ~1,2TB RAM, 16TB shared storage, 28TB local storage, ~200 VMs, ~100 users in ~ 60 projects
  - User Support unit handles both grid and cloud requests.
    - Experiments that already use Cloud@CNAF:
      - EEE, Fazia, Virgo.
  - Used by H2020 European Projects:
    - INDIGO-DataCloud, eXtreme-DataCloud, DEEP-HybridDataCloud, EOSC-Hub/DODAS Thematic Service.
  - Internal use cases:
    - CNAF staff.
    - Support for courses (CNAF, University).

Cloud@CNAF

- New infrastructure deployment ongoing.
  - Latest OpenStack release.
  - High Available **shared** core services, distributed across CNAF resources (T1, SDDS).
  - Direct access to T1 resources for WLCG experiments.
    - Dynamic resource scaling between Grid and Cloud infrastructures according to experiments pledges.
  - Dedicated resources for non WLCG experiments on SDDS infrastructure.
  - Authn/Authz based on INFN AAI through INDIGO-IAM
    - INFN AAI: all INFN users.
    - INDIGO-IAM: CNAF «local» users (mapped on local resources) and external users.
  - Activity involving all T1 groups.
  - Now working on puppet classes for services configuration.