

VIRGO at CNAF

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IGWN AP: `igwn-ap.cr.cnaf.infn.it`

- Openstack VM instance, FQDN: `vm-131-154-224-234.cr.cnaf.infn.it`
- 16GB RAM, 160GB disk, 8 core
- Almalinux 9.6, HTCondor 24.11.2
- *Storageless* (no large room to host user's data files). This is much like common User Interfaces (mainly used for direct job submission to the local HTC pool)

IGWN specifics

- HTC configuration: adapted from other LIGO APs
- Kerberos credentials to update users list
- HTC IDTOKENs to authenticate with the pool

Currently different

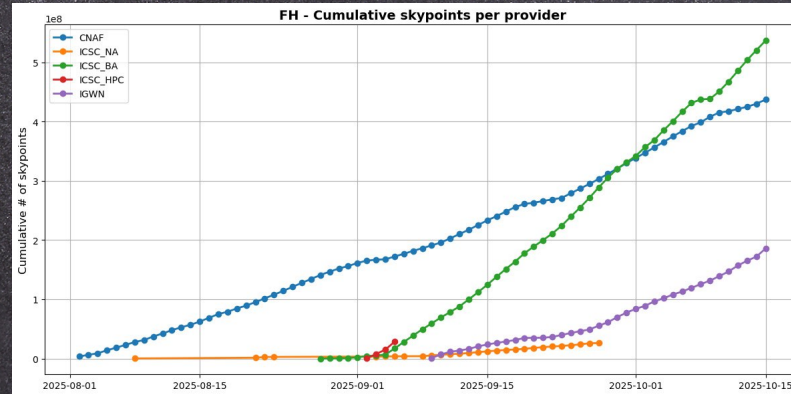
No direct login. Users need an account at CNAF (locally verified identity)

Free-form account name. CNAF accounts are mostly free-form. To enable submission an `UserMap` file (`Unix_username` → `LigoSearchUser`) is locally managed

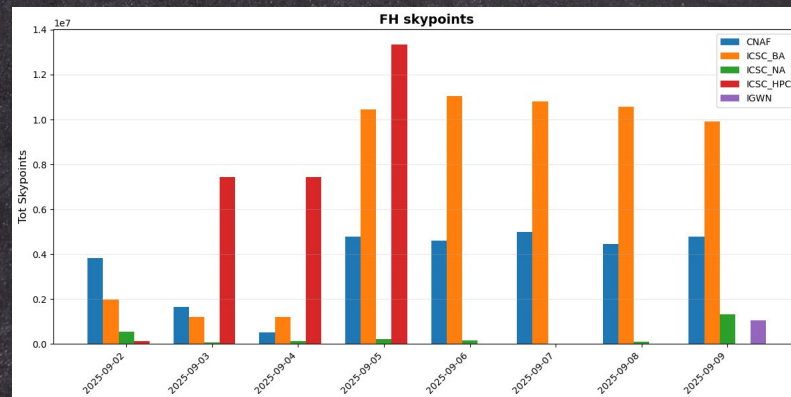
User side. We set `transfer_output_files = undefined` (job upload files to CNAF Storage using IAM token for auth*n)

Current activity

- currently running **FH_analysis** for O4b (started August 1st) and **5-vector resampling**, CNAF only
- uniform jobs submission to five different providers:



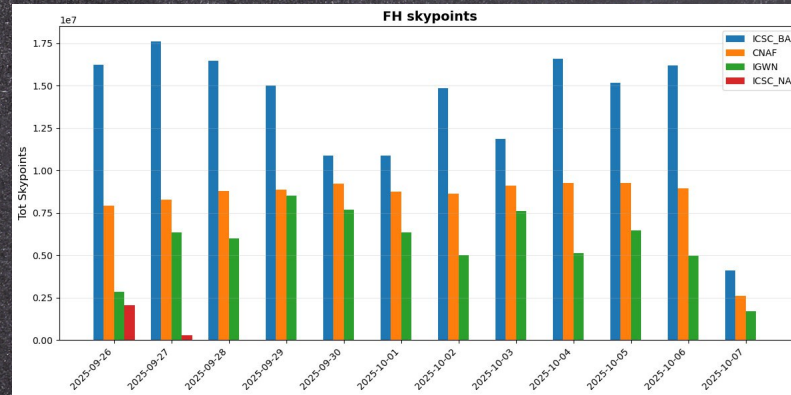
Cumulative skp/day per provider



Skp/day, CPU vs GPU

Current activity

- We consider $\#skypoint/hour$ as a benchmark; in fact, this is proportional to HEPSCORE



skp/day per provider

provider	n	wct_ Mh	avg_wct_ h	tot_ Mskip	skp_ h	avg_skp_job	est_ HS
ICSC_ BA	392681	6.28	15.99	552.23	87.96	1406.31	16.31
CNAF	394625	4.73	11.99	454.31	93.07	1151.23	17.80
IGWN	132548	0.98	7.41	203.6	183.56	1536.06	38.43
ICSC_ HPC	976	10811.5 [h]	11.08	28.36	2622.83	29053.96	486.33
ICSC_ NA	23153	628458.94	27.14	27.30	43.56	1179.05	8.05

Note All these data are collected from successfully finished jobs
(failed jobs not accounted here)

Checkpointing

- There is a HTC bug which affects checkpointing jobs: after a job exit for checkpointing, the START expr is not evaluated: most often the job restarts in the same glidein it just left

```
[sdpvirgo@igwn-ap o4b_jobs]$ egrep '^TimetoLive nearly gone' std_11954.37.out
TimetoLive nearly gone; terminate run_FH_analysis.sh and exit with status 85
[sdpvirgo@igwn-ap o4b_jobs]$ egrep '^STARTED AT ' std_11954.37.out
STARTED AT 1759982780.2627783
STARTED AT 1760005367.6222954
STARTED AT 1760005376.837313
STARTED AT 1760005391.0248106
STARTED AT 1760005402.0031304
[...]
[sdpvirgo@igwn-ap o4b_jobs]$ egrep '^STARTED AT ' std_11954.37.out | wc -l
70
```

If the glidein expires while the job is in, then it is **restarted from scratch** → **New datafile transfer**

Storage:

New OSDF/Pelican Cache up & running, (Thanks Storage / Lucia M.!) great improvement.