



VISA@ESRF

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These projects have received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreements No 857641 and No 823852.

# Setting the scene

- Work done under the umbrella of PaNOSC (WP4 and WP6)
- Initial setup ready in Jan 2022:
  - Openstack (latest production release, HA – 2 DataCenters, KOLLA-ANSIBLE)
  - Currently 2 VISA (OS) compute nodes (2TB, 64 Cores, 2 pGPUs NVIDIA A40)/Node
  - Access to 6 HPC nodes with 4 additional A40
  - Keycloak as SSO
  - NFSv4 on dedicated storage network (25Gb/s)
  - Ubuntu 20.04 (migration to 22.04 this fall)
  - VISA app in containers as delivered by ILL
- Since then, adaptation to BL/Instruments/users needs for preparing the general rollout.



# GPUs

- Clear user needs
- Currently exploratory work
  - Is this the right model?
  - SLURM nodes vs VMs?
- 1 GPU = 1 VM (no partitioning)
- Manage through CYBORG (OS component)

```
$ openstack flavor set --property 'accel:device_profile=gpu_a40' esrf.gpu.a40.xlarge
```



## New compute instance

Please fill in the details below to create a new compute instance. For information about VISA please checkout the [documentation](#).

### Experiments

Select the experiments you wish to associate with your compute resource.

☒ Instance not associated to any specific experiments

### Computing Environment

Choose an environment

|                     |             |           |
|---------------------|-------------|-----------|
| <br>Desktop staging | <br>Desktop | <br>Bliss |
|---------------------|-------------|-----------|

Choose hardware requirements

|                                      |                                      |   |   |
|--------------------------------------|--------------------------------------|---|---|
| 4 Cores<br>4GB memory<br>esrf.medium | 8 Cores<br>16GB memory<br>esrf.large | 16 Cores<br>32GB memory<br>esrf.gpu.a40 | 32 Cores<br>128GB memory<br>esrf.gpu.a40.xlarge |
|--------------------------------------|--------------------------------------|---|---|



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# HPC - SLURM

- Required by some processing workflows and Software
- Setup of a SLURM cluster dedicated to VISA (Separation from the BL processing)
- VISA VM in configless mode (i.e. configuration sent by the SLURM controller)
- 6 Compute nodes at the moment



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# NEXT

- Open to all BLs'users at the end of Sept
- Foster the use of Singularity amongst the developer community
- 100+ Software to move to Singularity
- Provide clear documentation on <https://visa.readthedocs.io/en/latest/index.html>
- Windows Software solution?
- Refine the way we distribute BL scripts.
- Open to non ESRF BL users, i.e. Open VISA to people interested by the Open Datasets ?
- Listen to our user community needs.

