

TRAINING TREX@CALMIP

- Duration :
 - 21st ,22nd , 23rd of Novembre
- Location
 - Facility : Espace Clément Ader
 - Data Center in Region Occitanie
 - Co-hosting french Weather-Forecast

Espace Clément ADER = Data Center in region Occitanie

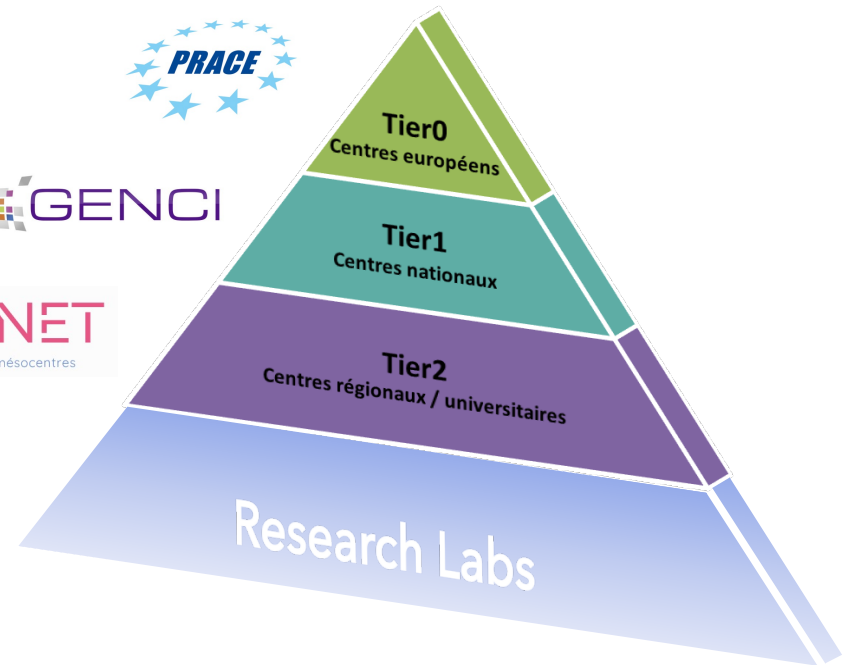


CALMIP : Mesocenter (Tier2) in Occitanie Region (UAR 3667 : CNRS – University of Toulouse).

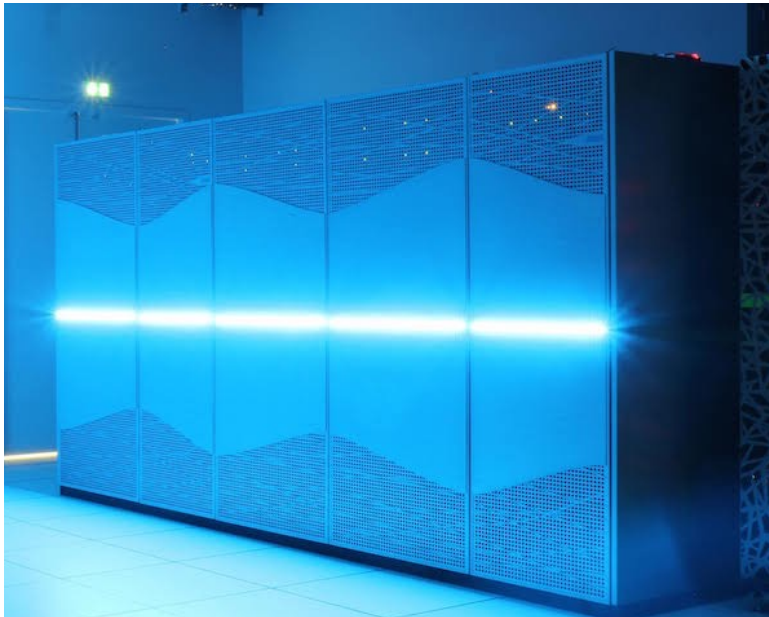
- Funding Support :



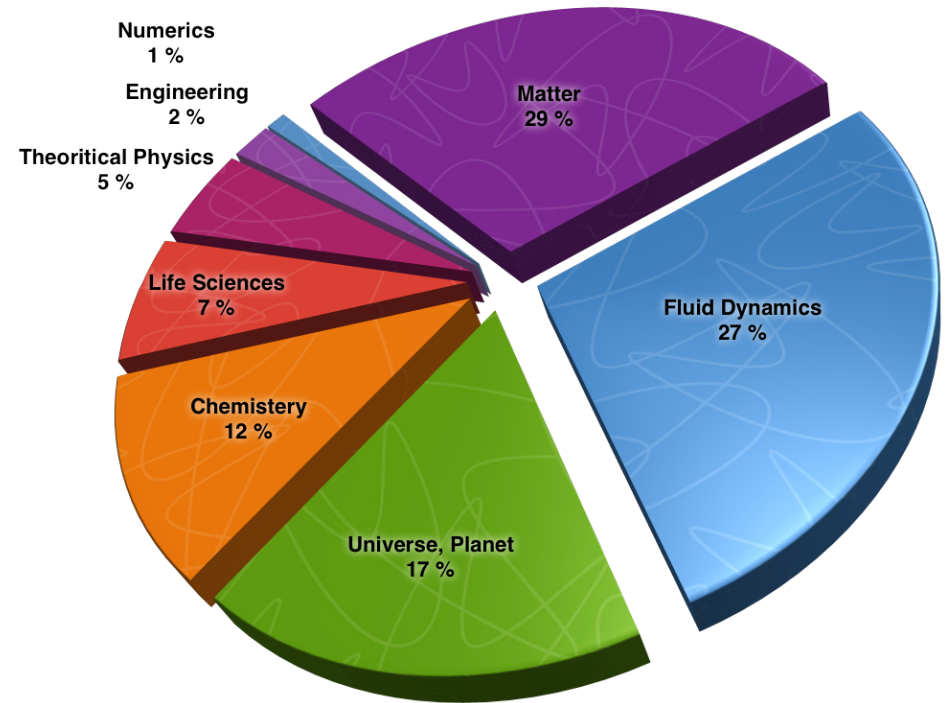
- CALMIP regional supercomputing center :
 - propinquity (direct link with local researchers)
 - multi-domain (large spectra scientific topics)
 - reliability / availability (production environnement)
 - Training/support in HPC for a large community (2+ decades)



CALMIP : Supercomputer Olympe and Usage



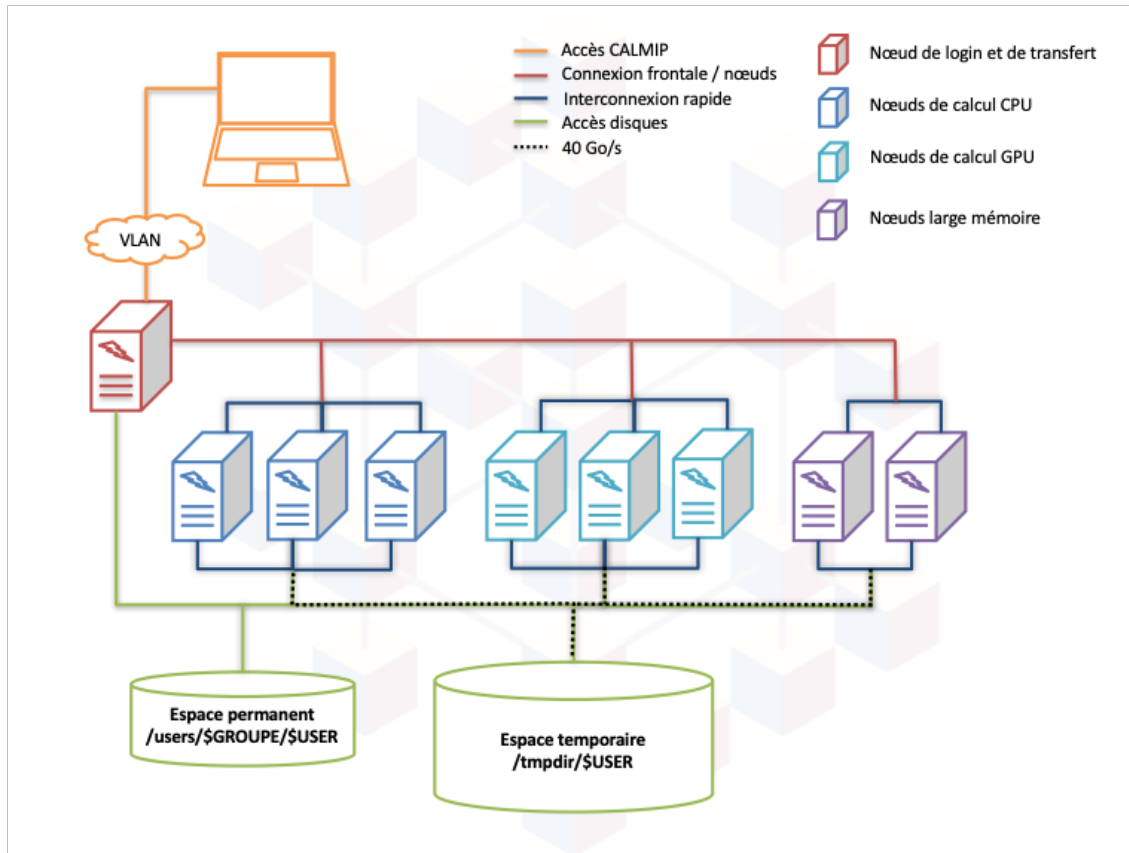
**SUPERCALCULATEUR OLYMPE - 1 365 TFLOPS PEAK
ATOS BULLSEQUANA ARCHITECTURE**



Distribution of calculation hours by theme



Olympe scheme



Frontales de connexion :

- ▶ 3 x (36-cores, 192 GB RAM)

Cluster distribué Sequana (Atos-Bull) :

- ▶ 12 960 cores - 360 nodes
- ▶ Intel® Skylake 2,3 Ghz 2x18-cores
- ▶ 192 GB RAM / nœud
- ▶ Interconnection : Infiniband EDR

Nœuds GPU :

- ▶ Intel® Skylake 2,3 Ghz 2x18-cores
- ▶ 12 nœuds (4 GPU, 384 GB RAM)
- ▶ Cartes GPU Nvidia Volta (V100)

Nœuds large mémoire :

- ▶ Intel® Skylake 2,3 Ghz 2x18-cores
- ▶ 1,5 TB RAM / nœud



TREX@CALMIP

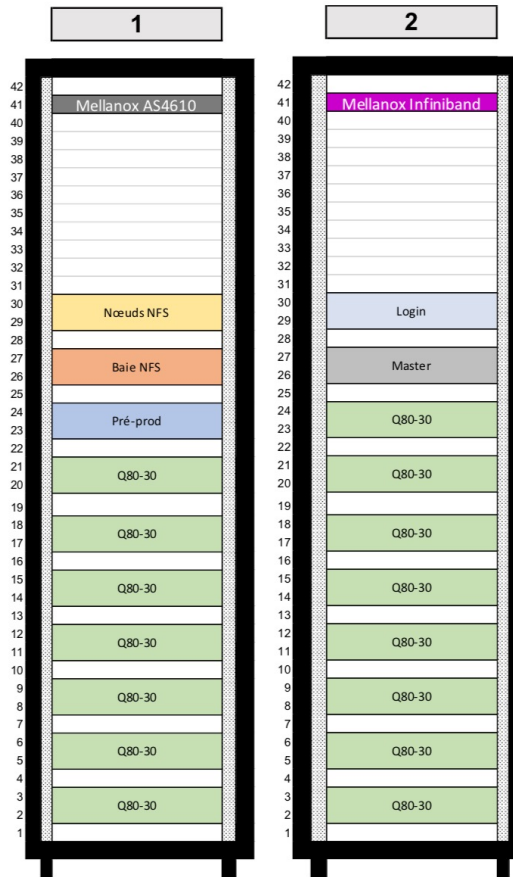
- Connexion to Olympe :
 - Wifi (eduroam, local account)
 - VPN : see <https://www.calmip.univ-toulouse.fr/>
<https://www.calmip.univ-toulouse.fr/espace-utilisateurs/doc-technique-olympe/se-connecter-olympe/connexion-olympe-le-vpn-de-calmip>
- Slurm : réservation TRES :=> 10 nodes (36 cores SKL/192 GB ram)
 - scontrol show res
ReservationName=trex StartTime=2022-11-21T08:00:00 EndTime=2022-11-23T18:00:00
Duration=2-10:00:00
Nodes=olympcomp[270-276,278-280] NodeCnt=10 CoreCnt=360 Features=(null)
PartitionName=exclusive Flags=REPLACE_DOWN
TRES=cpu=720
 - #SBATCH –reservation=trex
 - Online doc :
<https://www.calmip.univ-toulouse.fr/espace-utilisateurs/doc-technique-olympe/lancer-un-calcul>



Machine prototypage ARM-MESONET : TURPAN

MESONET

Le mésocentre des mésocentres



Général :

- Cluster de calcul : 700 TF/s Peak (CPU+GPU)
- 15 noeuds ARM Nvidia interconnectés en Infiniband
 - Processeur ARM 80 coeurs 2,8 Ghz
 - GPU Nvidia A100-80 (80 Go HBM2)
- Stockage+admin cluster (400 To)
- Frontales (#2) de connexion au Cluster ARM
- Serveurs de pré- et post-traitement (#2)

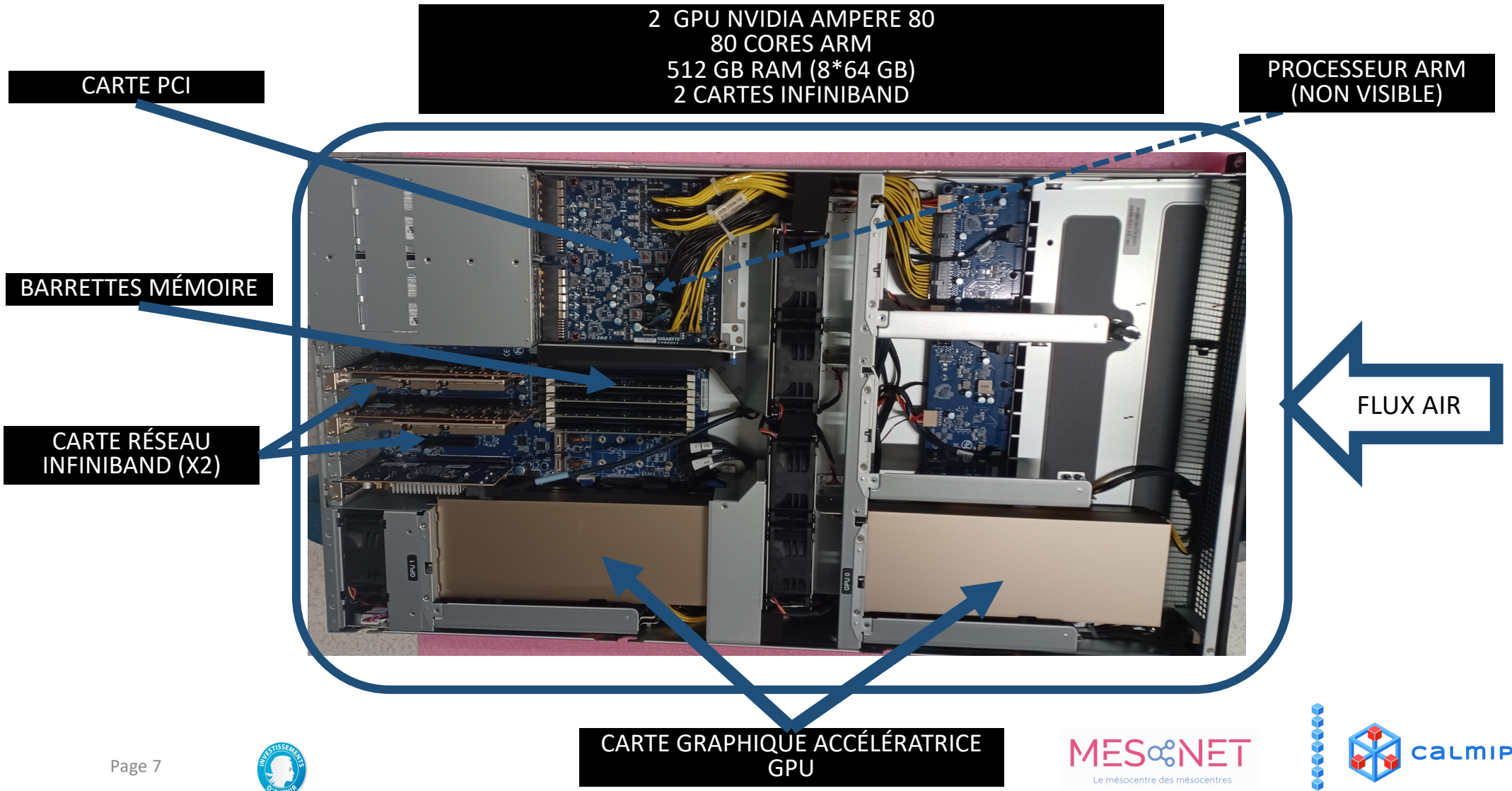
Hébergement : POD1/DROCC

Opérateur : UAR 3667 CALMIP

Calendrier : pré-ouverture début 2023



TURPAN, NOEUD ARM : 1 noeud de calcul (Cores + mémoire + 2 GPU)

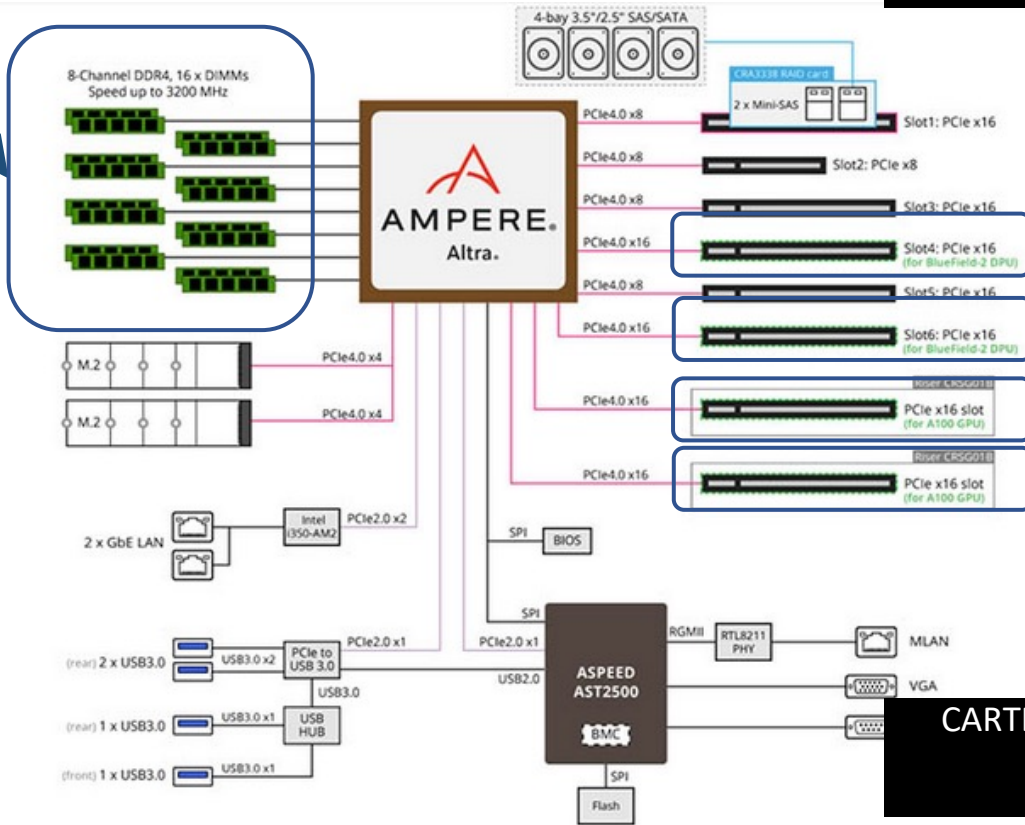


Machine prototypage ARM-MESONET 'TURPAN' : Diagramme nœud de calcul

**8X64 GB
512 GB RAM**

6 TO HDD

2X INFINIBAND HDR (2X200GB/S)



**CARTE ACCÉLÉRATRICE : 2 X GPU NVIDIA A100-80
80GB HBM2
19,5 TFLOP/S**

