



Finanziato
dall'Unione europea
NextGenerationEU



Ministero
dell'Università
e della Ricerca



Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA



Validation of event reconstruction code on ARM Spoke 2 use case

F. Noferini, D. Spiga, T. Boccali, L. Anderlini, C. Bozzi, L.
Rinaldi, L. Carminati, M. Veltri

People involved in this use case

Participating Institutions

- Leader: INFN (Francesco Noferini, Daniele Spiga, Tommaso Boccali, Lucio Anderlini, Concezio Bozzi)
- Participants: INFN, UNIBO
- Experiments: ALICE (F. Noferini), CMS (D. Spiga, T. Boccali), ATLAS (L. Rinaldi, L. Carminati), LHCb (L. Anderlini, M. Veltri)

KPI

KPIs

KPI ID	Description	Acceptance threshold
KPI2.2.5.1	Software validation on ARM in the full GRID chain	50% (2/4 LHC experiments)
KPI2.2.5.2	Presentation at conferences	≥ 2
KPI2.2.5.3	Technical notes (in experiments and ICSC)	≥ 2

- **First period (tentatively month 13-22 - aligned with MS8): procure and configure ARM machines in order to provide access to the experiment software and storage via a production infrastructure; select and document workflows to be benchmarked from the most representatives; prepare a validation strategy agreed with the experiments.**
- Second Period (tentatively month 23-36 - aligned with MS10): test and validate the selected workflows (most probably from data reconstruction and simulation); validate the submission infrastructure and perform O(1 week) exclusive tests as needed by the validation strategy. Report the results to the experiments and in the ICSC documentation; disseminate the results at topical conferences.

Current resources at CNAF

There are 2 ARM nodes (one already available)

- 256 cores
- 512 GB ram

Current setting (still work in progress)

- Cvmfs available
- Network: access to external network
- Gpfs client -> not available for ARM
- Condor -> not yet available

Opening access request was announced at the last CNAF CdG

Some experiments already got access and start to play with it.

Data displayed in the following table are available in csv format in the github repository of [HEPIX-Forum](#)

Show

10

entries

Search:

CPU	SMT enabled	Online CPUs	# Sockets	Cores/Socket	Threads/core	L2 cache	L3 cache	# Meas	Score	Spread	RAM	SWAP	Site	hash
filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter
AMD EPYC 9654 96-Core Processor	1	0-383	2	96	2	1024K	32768K	26	6000.578	0.714	1 TiB	4 GiB	IHEP	71892
AMD EPYC 9654 96-Core Processor	0	0-191	2	96	1	1024K	32768K	25	4955.599	0.421	1 TiB	4 GiB	IHEP	71892
Neoverse-N1	0	0-255	2	128	1	256 MiB (256 instances)	not_available	3	3767.707	0.989	497 GiB	500 GiB	INFN-T1	71892

It is in third position in the Hepscore23 DB

Plan (my proposal to be discussed)

What to do in the last months of 2023

- Push main (LHC) experiments to get access and start setting basic workflows
- Discussing the right policy on the node with CNAF framing support (who can have super user rights to install packages) and collecting requirements
- Asking for a condor/grid queue
- Goals
 - Having some workflows able to run, at least in interactive mode, by the end of the year
 - Setting condor/grid submission
 - Converging on some internal monthly(?) meetings