
CERN

Windows to Linux HPC migration

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Introduction

- Some historic background
  - Two HPC services used to coexist in the past
    - Windows HPC service managed by IT-CDA
    - Linux clusters in HTCondor and SLURM managed by IT-CM
- IT Strategy is to consolidate compute intensive jobs in Linux
  - Making a better use of resources
  - Moreover…
    - This is also in line with CERN IT strategy to reduce its dependencies on MS products

Batch in Linux at CERN

	Cores	RAM	OS	Comments
HTCondor	8 cores	16 GB	SLC6 by default CC7 also available	Open access
	16/32 cores	500 GB		
	24 cores	1 TB		Big Memory nodes. Access needs to be granted
	48 cores	500 GB	CC7	
SLURM	16 cores with HT	128 GB	CC7	Low-latency 10Gbit Ethernet
	20 cores	128 GB		Infiniband. Access needs to be granted

HPC Engineering Applications

- The following applications are supported on the Linux clusters:
  - ANSYS Classic/Mechanical
  - ANSYS CFX (*)
  - ANSYS Fluent
  - COMSOL
  - CST (**)

- In purple: applications that we recommend to run in SLURM
  - (*) Depending on the type of simulation
  - (**) Wakefield solver

For more information:
https://cern.service-now.com/service-portal/article.do?n=KB0003575

Migration Status

- All supported engineering applications are ready to run in Linux Clusters
  - Detailed documentation:
    - https://cern.service-now.com/service-portal/article.do?n=KB0005869
  - COMSOL and CST are running for several months now
  - For Ansys users, there's a 2h tutorial organised to get started
    - Thursday 25th April
    - https://indico.cern.ch/event/811481/
- Windows HPC cluster will be decommissioned on 2nd May
    - https://cern.service-now.com/service-portal/view-outage.do?n=OTG0049161