Updates on HPC landscape in Brazil

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SDumont Supercomputer (1 Petaflop)

Hosted by LNCC (National Laboratory for Scientific Computing)
Tier-0 of SINAPAD (national HPC initiative)
Manufactured by ATOS/BULL
Top 500 rank = 146
Numbers:
• 18,144 cores (cpu+gpu)
• 1.7 Petabytes of storage
• Network: 3Gbps (being upgraded)
Tupã Supercomputer (258 Teraflops)

Hosted by INPE (National Institute for Space Research)
Used in the Center for Weather Forecasting and Climate Studies (CPTEC)
Manufactured by CRAY
Top 500 rank = 347

Numbers:
• 31,104 cores
• ~4,6 Petabytes of storage
• Network: 10Gbps
  (Science DMZ)
HPC4E project (1/2)

High Performance Computing for Energy
Selected by the 3rd EU-BR coordinated call
2M€ + R$ 6.4M

General objective:

• “Develop beyond-the-state-of-the-art high performance simulation tools that can help the energy industry to respond future energy demands and also to carbon-related environmental issues using the state-of-the-art HPC systems.”

• Atmosphere (wind farm productions)
• Biomass (performance investigation)
• Geophysics (benchmark suite for exascale geophysical applications)
HPC4E project (2/2)

Brazilian partners:
1. COPPE/UFRJ - Institute for Graduate Studies and Research in Engineering
2. LNCC - National Laboratory for Scientific Computing
3. ITA - Aeronautics Institute of Technology
4. Federal University of Rio Grande do Sul
5. Federal University of Pernambuco
6. PETROBRAS

European partners:
1. Barcelona Supercomputing Center - ES
2. CIEMAT - ES
3. INRIA - FR
4. Lancaster University - UK
5. Repsol S.A. - ES
6. Iberdrola Renovables Energía S.A. - ES
7. Total S.A. - FR
Future network landscape in south Atlantic

Monet cable (Miami)
- Google + 3 Telcos in Brazil, Uruguay, and Angola
- LSST plans to purchase 300 GHz of spectrum on one fiber pair (Currently enough for 6 X 100G)
- 2/3 of this is proposed to be used by RNP and ANSP

South Atlantic Cable System (Luanda)
- Owned by Angola Cables
- Shorter Africa – US Route

euLaLink (Lisbon)
- Major stakeholders are Telebras (Brazil) and IslaLink (Spain)
Thank you / Obrigado

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