



T LARTop
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FIRST LISTA

LAS SUPERCOMPUTADORAS MAS RÁPIDAS DE AMÉRICA LATINA

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LARTop50 tiene por finalidad crear y mantener actualizada la LISTA con las estadísticas de los sistemas de supercomputación con mejor desempeño computacional de América Latina

WEBSITE

<http://www.lartop50.org>

The screenshot shows the homepage of the LARTop 50 website. The header includes the LARTop 50 logo, navigation links (Home, Listado, Estadísticas, Submission, Quienes Somos, Links), and a Twitter follow button. The main content area features the title "Las 50 supercomputadoras más rápidas de América Latina" and a bar chart showing the top 5 supercomputers. Below the chart, there is a text box with information about data sources and a deadline for participation.

Las 50 supercomputadoras más rápidas de América Latina

LARTop 50

Rank	Supercomputer Name	Processor
(1)	Sequoia	BlueGene/Q, Power BQC 16C 1.60 GHz, Custom
(2)	K computer	SPARC64 VIIIfx 2.0GHz, Tofu interconnect
(3)	Mira	BlueGene/Q, Power BQC 16C 1.60GHz, Custom
(4)	SuperMUC	iDataPlex DX360M4, Xeon E5-2680 8C 2.70GHz, Infiniband FDR
(5)	Tianhe-1A	NUDT YH MPP, Xeon X5670 6C 2.93 GHz, NVIDIA 2050

Los datos utilizados son gentileza de top500.org y son solo de demostración.

Si tienes un equipo de SuperComputación o trabajas en un Centro que tiene uno, te invitamos a que participes de la lista Top50 para América Latina. Para ello, debes [registrarte](#) y luego cargar el equipo ingresando en la [aplicación](#).

DEADLINE
1 de noviembre de 2012.



Mis centros

[+ Crear centro](#)

Nombre	Siglas	Segmento	Pais	Ciudad	Acciones
Laboratorio UNSL	LIDIC	Investigación	Argentina	San Luis	▾

Mis centros / LIDIC

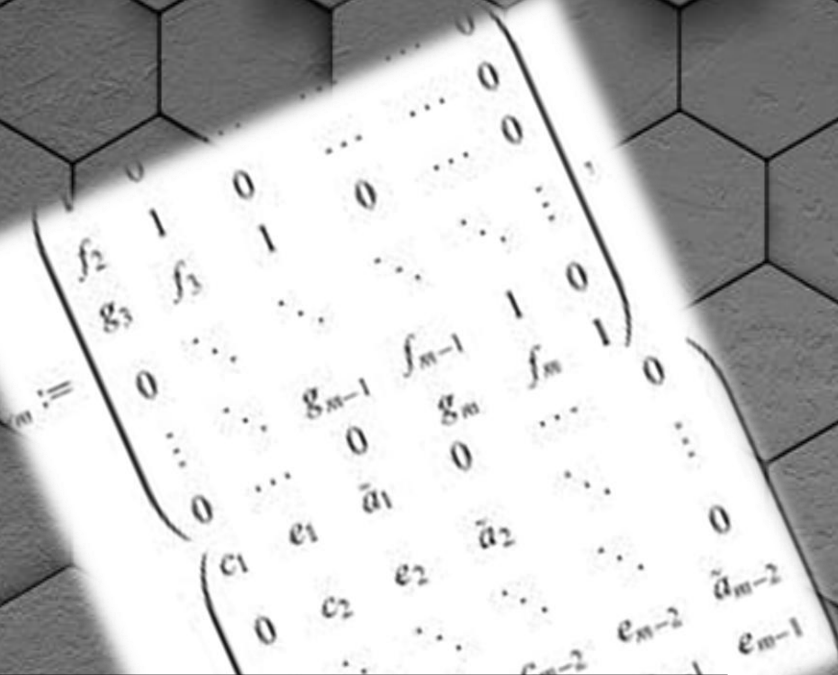
[+ Registrar equipo](#)

Equipo	Estado	Area	Vendedor	Instalación	Acciones
Cluster 1	Activo	Computación Numérica	Intel	02/02/2009	▾

Mis centros / LIDIC / Cluster 1

[+ Agregar componente](#)

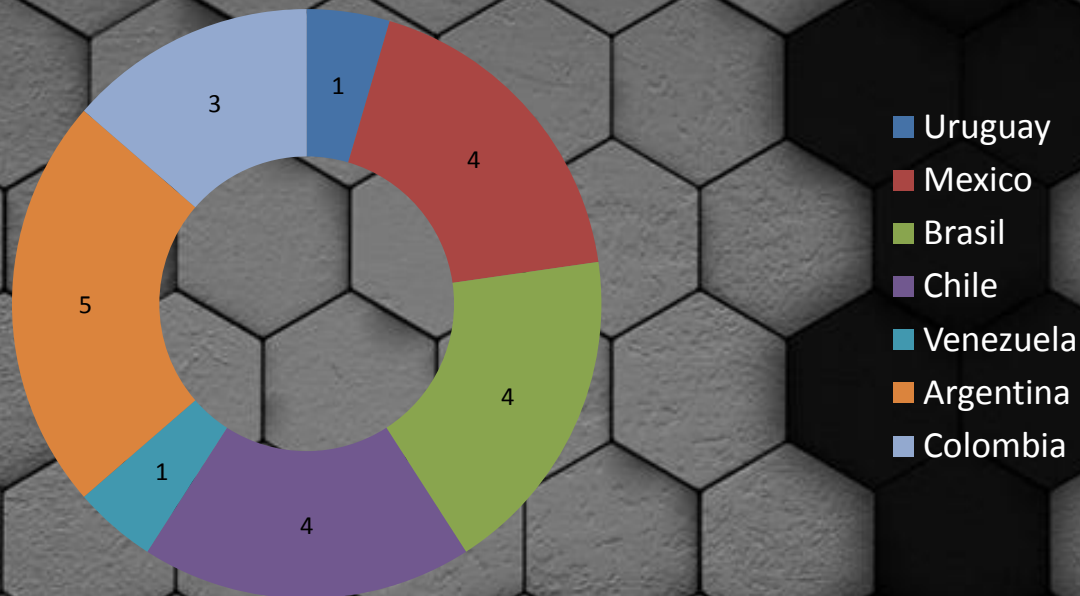
Nombre	Modelo	Vendedor	Nº de nodos	Procesador	Acciones
Lidic	Xeon	Intel	24	Xeon 5.2	▾



El benchmark LINPACK asiste a los usuarios del paquete LINPACK proveyendo información de los tiempos de ejecución requeridos para resolver un sistema de ecuaciones lineales.

HPL - Highly Parallel LINPACK
(<http://www.netlib.org/benchmark/hpl/>)

- 22 Centros registraron su sistema:



13 sitios completaron los resultados generados por benchmark Linpack

List July 2013 (1-13)

Rmax values are in GFlops

RANK	Name	Site	Country	Vendor	Model	Processor	Number of nodes	Number of cores	Rmax
1	MIZTLI	UNAM	Mexico	Hewlett Packard	HP Cluster Platform 3000SL	Intel E5-2670	332	5280	89429
2	CENAPAD-SP IBM P750	CENAPAD-SP	Brazil	IBM	P750	PowerPC_ POWER7	40	1280	27020
3	LEVQUE	NLHPC	Chile	IBM	iDataPlex	Xeon Nehalem X5550	66	528	4847
4	MEDUSA	CIO	Mexico	Lufac Computación S.A. de C.V.	LCI-40	Xeon X5675	36	432	4842

1

MIZTLI
(2012)

MIZTLI, the supercomputer installed at the Universidad Nacional Autónoma de México (UNAM) is the **top 1** of the first HPC ranking of Latin America with a performance of 89428 gigaflop/s on the Linpack benchmark.

MIZTLI, is a Hewlett Packard cluster Platform 3000, with 332 nodes, each with two Intel® Xeon® Processor E5-2670 (8C). Its total number of cores is 5280. Interconnection: Infiniband QDR 40 Gbps.

MIZTLI is a computer available to all researchers at the UNAM. There are approximately 60 research groups using this equipment. The most representative areas of research and development are Materials Sciences, Biochemical Sciences, Chemical Sciences, Astrophysics and Atmospheric Sciences.

2

The supercomputer **IBM P750** installed at the National Center of High Performance Processing (Centro Nacional de Processamento Alto Desempenho em Sao Paulo CENAPAD SP, Brazil) is the number 2 of the first HPC ranking of Latin America with a performance of 27020 gigaflop/s on the Linpack benchmark.

CENAPAD-SP has an **IBM P750 cluster**, with 40 nodes Power7, each with 32 cores and 128 Giga de RAM. Its total number of cores is 1280. Inteconnection: Infiniband.

There are approximately 130 research groups using **CENAPAD-SP/IBM P750**. The most representative areas of research and development are Physics, Chemistry, Astronomy, Biology, Computing, Engineering, Statistics and Mathematics.

CENAPAD-SP
IBM P750
(2010)

3

LEVQUE, the supercomputer installed at National Laboratory for High Performance Computing (Universidad Nacional de Chile, Chile) is the number 3 of the first HPC ranking of Latin America with a performance of 4.847 gigaflop/s on the Linpack benchmark.

LEVQUE is a IBM iDataplex cluster 1350, with 66 nodes, each with two Intel® Xeon® Processor X5550 (4C) with 24 Gb RAM for computing in production and HCA infiniband (Mellanox ConnectX) with two port QDR 4x (40 Gbit/s) either one. Its total number of cores is 528 cores. Interconnection: QLogic Infiniband Director 12800-180 (QDR).

LEVQUE is a cluster of general purpose that is part of the infrastructure of National Laboratory for High Performance Computing (NLHPC) of the University of Chile. It currently has over 120 members who come from seven Chilean Universities and Science for Life Foundation. Its main use, according to the percentage of CPU usage is: Molecular Simulation (40%), Bioinformatics (20%), Climate Model (10%), and the rest distributed between Quantum Chemistry, Mathematics Mechanics and Fluid Mechanics, among other areas.

LEVQUE
(2010)

4

MEDUSA is the supercomputer of the Research Center of Optic (Centro de Investigaciones en Óptica, México) is the number 4 of the first HPC ranking of Latin America with a performance of 4.842 gigaflop/s on the Linpack benchmark.

MEDUSA is a LCI-40, with 36 nodes, each with two Intel® Xeon® Processor X5675 (6C, 12M Cache, 3.06 GHz, 6.40 GT/s Intel® QPI). Its total number of cores is 432 cores. Interconnection: Infiniband QDR.

The main use of the **MEDUSA** is to perform first principles calculations of the optical properties of materials. In addition, some users perform calculations related to the Areas of Photonic Crystals and Chaos.

MEDUSA
(2010)

List July 2013 (1-13)

Rmax values are in GFlops

RANK	Name	Site	Country	Vendor	Model	Processor	Number of nodes	Number of cores	Rmax
5	ISAAC	CNEA GTIC/DCAP	Argentina	SIASA (INTEL)	Heterogeneo	Xeon X32207/ Xeon E5420	162	644	2922
6	Sunhpc	CENAPAD-RJ, LNCC	Brazil	Sun	Sun Blade X6250	Xeon E5440	72	568	1881
7	TROQUIL	CMCC-UFRO	Chile	SGI	Altix UV 2000	Xeon MID-BIN	12	96	1547
8	Cluster FING	FiNG - UNLAR	Uruguay	HP DELL	HP Proliant DL 585 PowerEdge HP Proliant DL 380	Opteron 6172 Xeon E5430 Xeon E5520	11 10 4	408	1143,4

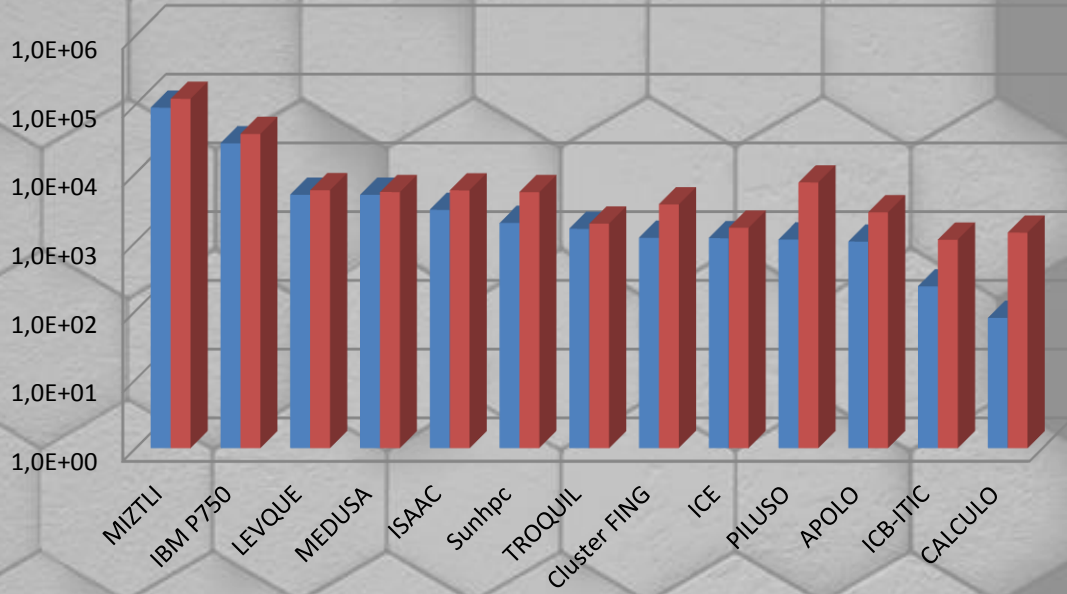
List July 2013 (1-13)

Rmax values are in GFlops

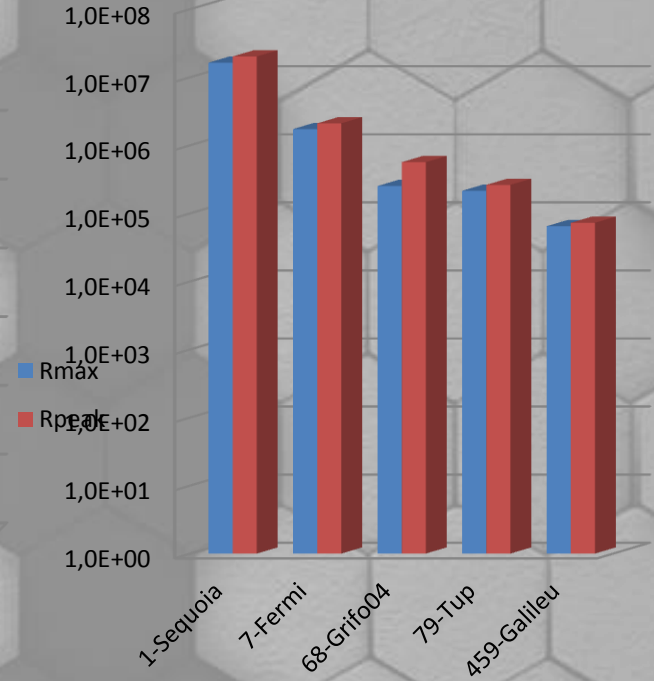
RANK	Name	Site	Country	Vendor	Model	Processor	Number of nodes	Number of cores	Rmax
9	ICE	CENAPAD-RJ, LNCC	Brazil	SGI	ICE 8400	Xeon X5650	15	150	1131
10	Piluso	Rosario HPC - HPCROS	Argentina	Dell Sun	Dell PowerEdge R715	AMD Opteron 6100	22	704	1080
11	APOLO	APOLO	Colombia	HP DELL	DL140G3	Xeon E5410	36	288	1009,57
12	ICB-ITIC	ICB- ITIC	Argentina	Vertex	A+ Server 4042G-6RF	AMD Opteron 6272	2	128	225,6
13	CALCULO	UnCaFYQT - INIFTA	Argentina	Intel	Heterogeneous	Intel Quad Core Intel Core 2 Duo E6750	30 17	128	78,6

Efficiency

LARtop Rmax vs Rpeak



Top500: Rmax vs. Reak



REMARKS

Collect useful information about installed computer equipment in Latin America dedicated to tasks of High Performance Computing

Provide the collected information to the members of the HPC community: government, universities, hardware vendors, software developers, system integrators, and current and potential users, so that all members have a better understanding of the market supercomputers in the region.

Encourage the development and improvement of the supercomputing community dedicated to promoting intellectual exchange, discussion of the results and facilitating the realization of collaborations

Analyze the difficulties of the centers of LA to execute the benchmark
Analyze and propose strategies to increase the number of registered centers



Thanks!

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