

Welcome to NSC'09



- Presentation of PRACE prototype systems
- Examples and demonstrations of PRACE systems usage
- User presentations (SNIC Interaction)
- 20 years of Swedish HPC



Programme, Tuesday 13 October

Session I: PRACE part 1 — Peta/Exa FLOP computing and PRACE (chair: Peter Münger, NSC)

- *Sverker Holmgren, SNIC* **Swedish eInfrastructure for Research**
- *Gabriel Carteni, BSC* **MariCel: the PRACE prototype at BSC**
- *Daniel Ahlin, PDC* **Prototype system at PDC**
- *Erwin Laure, PDC* **DEISA**

Session II: SNIC Interaction part 1 — user presentations (chair: Bengt Persson, NSC)

- *Biplab Sanyal, Uppsala University* **Ab-initio studies of advanced multifunctional materials**
- *Mikael Lund, Lund University* **Mesosopic simulations of many-body protein interactions**
- *Carl-Johan Rubin, Uppsala Univ.* **Whole genome resequencing reveals loci under selection during chicken domestication**
- *Florian Hug, Lund University* **Constructing error-correcting codes with huge distances**
- *P-O Östberg, Umeå University* **The GIRD Grid Job Management Framework**

Anniversary banquet at Östergötlands länsmuseum



Programme, Wednesday 14 October

Session III: PRACE part 2 — Optimisation of programs for peta/exa FLOP computing (chair: Erik Lindahl, Stockholm University)

- *Ron Dror, D.E. Shaw Research, New York* Performance Tuning for Anton, a Specialized Molecular Dynamics Machine
- *Jesus Labarta, BSC, Spain* Advanced profiling of GROMACS
- *Berk Hess, Stockholm University* High performance computing with GROMACS

Visit to NSC computer hall and Lunch at Kårallen

Session IV: 20 year anniversary — NSC and High performance computing during 20 years (chair: Bengt Persson, NSC)

- *Karl-Fredrik Berggren, Linköping University* NSC during 20 years
- *Mattias Sillén, Saab Aerosystems, Linköping* Perspective on aircraft design and HPC development over 20 years
- *Per Undén, SMHI* History of the SMHI and NSC partnership
- *Hans Wallberg, SUNET* SUNET during 20 years

Session V: SNIC Interaction part 2 — user presentations (chair: Peter Münger, NSC)

- *Matts Karlsson, Linköping University* HPC in Cardiovascular Medicine — the need for LES and FSI
- *Sinisa Krajnovic, Chalmers* Shape optimization and active flow control for improved aerodynamic properties
- *Shiwu Gao, University of Gothenburg* Quantum Aspects of Surface Plasmons in Reduced Dimensions — insights from computational studies
- *Sergei Simak, Linköping University* Theory of simple and complex materials
- *Klas Markström, Umeå University* Computational Combinatorics and Experimental Mathematics
- *Mattias Marklund, Umeå University* Laser-matter interactions and particle acceleration
- *Philipp Schlatter, KTH, Stockholm* Numerical Simulation of Turbulent Boundary-Layer Flows

Dinner at Bondens bord



Internet access

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Netlogon: påloggning

*Din dator är ansluten till ett nätverk som kräver påloggning innan du får komma vidare.
För hjälp, kontakta UNIT:s kundcenter på 013-282828 (anställda) eller 013-285898 (studenter).*

IP-adress: 130.236.216.178
Ethernet-adress: 00:1F:3B:BC:6C:D7

Användartyp: Tillfälligt konto

Användarnamn: nsc0953

Lösenord: ●●●●●●

Spara användarinfo: (lösenord sparas inte)

[Select this link to switch to English text](#)

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*Your computer is connected to a network that requires you to log on before getting further.
To get help, contact the UNIT helpdesk at 013-282828 (employees) or 013-285898 (students).*

IP address: 130.236.216.178
Ethernet address: 00:1F:3B:BC:6C:D7

User type: Temporary account

User name: nsc0953

Password: ●●●●●●

Save user info: (password will not be saved)

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Expanding computational power

National Supercomputer Centre
Linköping University, Sweden



NSC – National Supercomputer Centre

- Founded 1989 (originated from collaboration with Saab)
- One of the largest academic supercomputing centres in Sweden
- Offering access to a diversity of computational and data storage solutions
- Serving several scientific disciplines, e.g. physics, chemistry, bioinformatics and further life sciences
- Over 200 scientific users from all over Sweden
- Partners SMHI and Saab
- Focus on our users through all aspects of HPC
- Competence in hardware, software & e-science
- Total NSC staff of ~20 persons
- About 40 MSEK (~4 MEUR) turnover in 2009



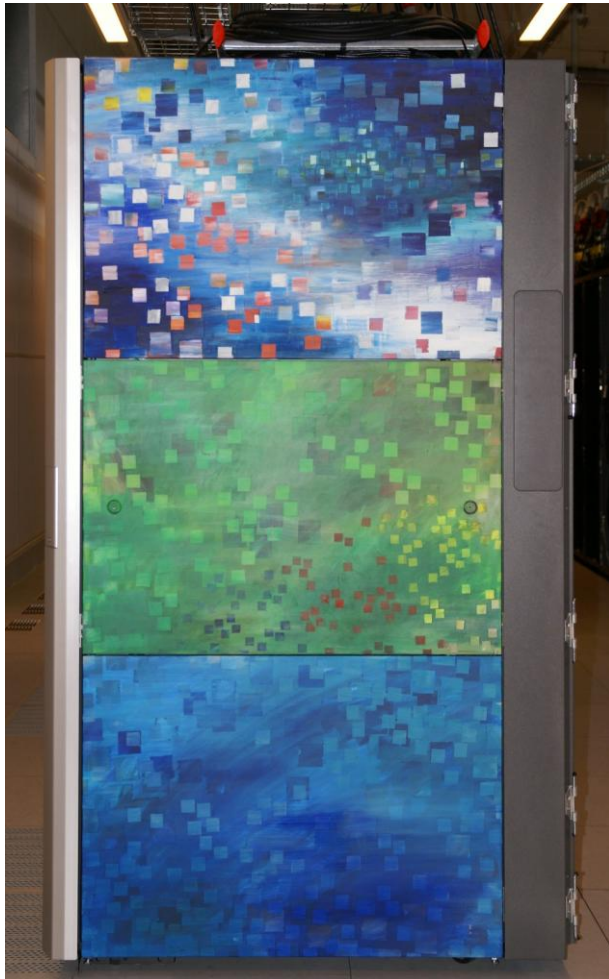
Swedish National Infrastructure for Computing



- Organisation within the Swedish Research Council
- Coordination of six centres in Sweden
 - Umeå HPC2N
 - Uppsala UPPMAX
 - Stockholm PDC
 - Linköping NSC
 - Göteborg C3SE
 - Lund LUNARC



Art in the NSC computer hall



Bore/Gimle



Neolith

Artwork by Kristin Winander

NSC

20 YEARS IN HPC 1989-2009