From:	Training-announce <training-announce-bounces@lists.snic.se> on behalf of training-announce@lists.snic.se
Sent:	den 23 september 2022 10:11
To:	training-announce@lists.snic.se
Subject:	[Training-announce] Training in computing, high performance computing and visualisation
Attachments:	ATT00001.txt

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SNIC training news letter No 159
23 September 2022

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Welcome to the latest edition of the SNIC newsletter which contains a large number of new training events over the previous edition. We newly advertise a course in Message Passing (MPI), a Julia course which is offered in collaboration with ENCCS and the UppASD Autumn school.   ENCCS asked us to share a few of their own events and we have visualisation training from Infravis.

We re-advertise events on job submission systems, singularity and programming Formalism.

Please note the date for the next zoom-in is the 13th October.

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Overview
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Introduction training for new users
- **Online training seminar: Cluster architecture and job submission, 5th October 2022 at 13:30**

Training to use the Alvis system, dedicated to machine learning
- **Online Seminar: Introduction to Alvis - 12 Oct 2022, 13:15-17:00**

Containers
- **Online training workshop: Basic Singularity: Running and building Singularity containers, 28 September 2022**

Programming training
- **Online course: An introduction to parallel programming using Message Passing with MPI, 17 - 20 October 2022**
- **Programming Formalism Course - October 24-28 (online)**
- **Online workshop: Julia for High-Performance Scientific Computing, 8 - 10 November, 9:00-12:30 CEST**

Application specific training
- **UppASD Autumn School, 10 - 13 October 2022**

ENCCS training events:
- **Developing Applications with the AMD ROCm Ecosystem, 29th November - 2nd December, 13:00-17:00 CEST**
- **ENCCS/MaX-CoE workshop: Efficient electronic structure calculations on HPC with Quantum Espresso, Yambo and BigDFT, 17- 14 November, 9:00-13:00**

Infravis training events:
- **Course on visualising data of varying dimensions**, **17th October, Uppsala**

- **Course on visualising of geographic data, 18th October, Uppsala**

Online interactive support and discussion forum:
- **SNIC zoom-in - a virtual open-house, 13th October from 14:00 until 15:00**

Self-paced online course for users with Alvis and Chalmers accounts
- **Practical Intro to Computer Clusters - Always on**

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Introduction training for new users
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Online training seminar: Cluster architecture and job submission, 5th October 2022 at 13:30

This event explains key features of a contemporary HPC cluster, such as deployed at LUNARC and throughout SNIC. It will explain the principles behind the job scheduler and how the scheduler can be used to accomplish your computational work in an efficient manner. The examples will utilise the SLURM scheduler, which is deployed on the SNIC resources.

Time: 5 October at 13:30

For more information and registration visit: https://www.lunarc.lu.se/training/cluster-architecture-and-job-submission-5-october-2022/

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Training to use the Alvis system, dedicated to machine learning
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Online seminar: Introduction to Alvis - 12 October 2022

Introduction seminar for Alvis users. In this online seminar we will show you how to use Alvis. Zoom meeting will be at 13:15-17:00 here. The second part of this seminar will be an optional workshop where users can go through a tutorial with help available and on reserved nodes on Alvis. To get access to the reserved resources you need to request membership to project SNIC 2021/7-120 two days before the seminar at the latest. If you are going to participate in the workshop you should either be connected through SUNET or use a VPN with which you can connect to Alvis.

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Containers
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Online training workshop: Basic Singularity: Running and building Singularity containers, 28 September 2022

The online workshop is an introduction to the basic concepts of containerised software environment solutions within the Singularity framework https://sylabs.io/singularity/.

During the workshop you will have the opportunity to follow the interactive guide on how to run Singularity containers how to build your own good (and bad) practices on designing and building Singularity recipes build and/or host container remotely and what are the limitations.

To fully benefit from the workshop, basic Linux system administration experience is highly desirable i.e. knowledge of package management and common tools for building and managing software: git, pip, conda, wget, curl...

Please follow the instructions at https://pmitev.github.io/UPPMAX-Singularity-workshop/installation/ to install Singularity on your computer before the workshop.

For more information and access to registration, please visit the web page: https://www.uppmax.uu.se/support/courses-and-workshops/singularity-workshop-announcement

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Programming training
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Online course: An introduction to parallel programming using Message Passing with MPI, 17 - 20 October 2022

Message Passing is presently a widely deployed programming model in massively parallel high performance computing. Message Passing is suitable for programming a wide range of current computer architectures, ranging from multi-core desk top equipment to the fastest HPC systems in the world, offering several hundred thousand processing elements.

This online course is at the beginners level and assumes no prior experience in parallel computing. The concepts behind message passing and distributed memory computing will be introduced and the syntax of the key MPI calls will be explained. The course will include point-to-point communications, non-blocking communication and the collective communications calls. Live demonstrations and practical sessions to deepen the understanding of the lectures will be part of the course. At the end of the course participants should be able to write their own MPI programs at an intermediate level. The teaching language will be English.

For more information and access to registration, please refer to the event pages at HPC2N and LUNARC:
* https://www.hpc2n.umu.se/node/928
* https://www.lunarc.lu.se/training/an-introduction-to-parallel-programming-using-message-passing-with-mpi-17-20-october-2022/

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Programming Formalism Course - October 24-28 (online)

This full 5-day course aims to give life scientists, bioinformaticians, and other scientists with some experience in programming and scripting an understanding of the underlying principles of software development, design, and programming. The course aims to strengthen the understanding of more advanced programming concepts, ability to produce more reusable scripts through modular programming and to enable a better understanding of how to evaluate a script or programs performance.

We will cover an introduction to Algorithms and Data structures, Programming Paradigms especially structured and object oriented programming, and to give an overview of other paradigms like functional programming. Modular development and (code) reusability, testing and optimisation.

We will cover theory with bridging practical examples and applications to enhance the theoretical understanding of the principles.

For more information and registration, please visit: https://www.uppmax.uu.se/support/courses-and-workshops/programming-formalisms/.

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Online workshop: Julia for High-Performance Scientific Computing, 8 - 10 November, 9:00-12:30 CEST

This event is in collaboration with ENCCS

Julia is a fast, high-level and open source general-purpose language. Many of its features are particularly useful for numerical scientific computation, and a wide range of both domain-specific and general libraries are available for statistics, machine learning and numerical modelling. The language supports parallelisation for both shared-memory and distributed HPC architectures, and native Julia libraries are available for running on GPUs from different vendors.

After attending the workshop you will:
• Be comfortable with Julia's syntax, in-built package manager, and development tools.
• Understand core language features like its type system, multiple dispatch, and composability.
• Be able to write your own Julia packages from scratch.
• Have an overview of Julia's parallelisation and GPU-porting strategies and the know-how to get started using them.
• Be familiar with crucial Julia libraries for scientific modelling, visualisation, and machine learning.

For further information and registration please visit https://enccs.se/events/2022-11-julia/

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Application specific training:
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UppASD Autumn School, 10 - 13 October 2022

This three-day school on modelling of atomistic spin dynamics includes an overview of the physics background and tutorials for using the UppASD program to simulate magnetisation dynamics as modelled by the atomistic- and multi-scale versions of the Landau-Lifshitz-Gilbert (LLG) equation. The school will also describe how to simulate coupled magnetisation and lattice vibration dynamics as modelled by spin-lattice dynamics.

Time: Tue 2022-10-11 09.00 - Thu 2022-10-13 17.00

Location: KTH main campus, Stockholm

For more information and registration visit: https://www.pdc.kth.se/about/events/uppasd-autumn-school-2022-1.1187827

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ENCCS training events:
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Developing Applications with the AMD ROCm Ecosystem, 29th November - 2nd December, 13:00-17:00 CEST

This four half-day workshop will be presented by experts from AMD. It will cover how to develop and port applications to run on AMD GPU and CPU hardware on top AMD-powered supercomputers (for example Dardel at PDC in Stockholm and LUMI in Finland). Participants will learn about the ROCm software development languages, libraries, and tools. They will also get a developer's view of the hardware that powers the system. This workshop will focus mostly on how to program applications to run on the GPU.

Participants will be expected to have some prior experience developing HPC applications, and some understanding of recent HPC computer hardware and the Linux operating system.

For further information and to register for this event, please visit https://enccs.se/events/2022-11-amd-gpu-workshop/

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ENCCS/MaX-CoE workshop: Efficient electronic structure calculations on HPC with Quantum Espresso, Yambo and BigDFT, 17- 14 November, 9:00-13:00

More details to come soon on https://enccs.se/events/

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Infravis training events:
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Four-hour course on visualising data of varying dimensions, 17th October, Uppsala

Get hands-on insight into how to create your own visualisations using MATLAB as a tool and figure out which visualisation technique works best for your data, from 2D to 3D put to multidimensional data.

For more information and registration: https://infravis.se/2022/08/25/course-on-visualizing-data-of-varying-dimensions/.

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Four-hour course on visualising of geographic data, 18th October, Uppsala

Gain insights into alternative ways of representing geographically referenced data and learn how to visualise this kind of data in combination with standard plotting/visualisation techniques for data visualisation.

For more information and registration: https://infravis.se/2022/08/25/infravis-course-on-visualisation-of-geographic-data/.

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Online interactive support and discussion forum:
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SNIC zoom-in - a virtual open-house, 13th October from 14:00 until 15:00

You are invited to a virtual meeting room. Inside the meeting room we like to discuss services offered by the SNIC centres and how they can be used for your computational needs, help you process your data and visualise your results. Participants are highly encouraged to pose their own questions.

See http://docs.snic.se/wiki/Zoom-in for more information on Zoom-in.

The zoom-link for the session on 13th October is: https://lu-se.zoom.us/j/68741202522?pwd=OThvS2VSSzFZdWExRW1CWC9YRldJZz09

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Self-paced online course for users with Alvis and Chalmers accounts
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Practical Intro to Computer Clusters - Always on

This is a self-paced online course available for everyone with a Chalmers log-in including those with an account at Alvis. The course is hosted at the Chalmers Canvas https://chalmers.instructure.com/courses/21205

The course structure is:
- Linux basics
- Computer clusters
- Software
- Specific topics

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Training overview:
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SNIC training webpage

In addition to these news letters we also provide a SNIC training webpage: http://docs.snic.se/wiki/Training

This webpage currently gives an overview on all courses currently planed. It provides links to more information and the actual registration. The webpage also includes training which is expected to be mostly of interest to individual SNIC centres. Information will be added to this page as it becomes available.