

Arm HPC User Group (AHUG) at ISC 2020 (Frankfurt, DE)

1. Workshop scope

- Programming for Arm-compatible platforms
- Code strategies to vectorisation using SVE
- Arm HPC Tools (including for SVE)
- Profiling tools developed by partners and Arm
- Experiences with Arm
- Co-design
- Scalability
- Latest Arm systems
- HPC Users, Programmers, Practitioners interested in sharing their experience with the ecosystem
- Data-center Analytics
- AI at the Edge, and Edge Computing to HPC
- Arm with Accelerators
- Arm in ML

2. Relevance and impact of workshop for ISC

After the success and great interest from the last 3 years, the 4th annual Arm HPC User's Group at ISC will be bringing an even more diverse and exciting panel of topics ranging from the latest Arm-based systems, to programming for arm, co-design, to new HPC areas, such as deep learning and data-center analytics.

The Arm HPC Users Group (AHUG) enables attendees to take in technical presentations by fellow applications programmers and tool authors who are currently using Arm platforms.

AHUG is about sharing experiences and knowledge. Attendees will gain from the first-hand know-how of experienced scientific application programmers writing for Arm systems, including topics such as: memory systems, scalability, vectorisation, and accelerators with Arm.

Content specifically focuses on HPC, Edge, and everything in between. Specifically, we will include talks related to applications and cross-over/emerging application areas such as machine learning, deep learning, bioinformatics, and analytics; all on Arm-compatible platforms.

3. List of tentative program committee members and/or steering committee

The program and steering committee is formed by:

- Jeffrey Young
- Oscar Hernandez
- Jeff Young
- Jonathan Beard
- Roxana Rusitoru

4. Format for the workshop (e.g. talks, panel sessions, keynote)

The workshop is intended to take a full day.. We intend to have the following format (NOTE: *speakers and institutions can be swapped in based on availability. Number of talks and schedule may also slightly vary.*):

Time (Thursday, 2019)	Duration	Description	Who is inviti ng and is confi rmed ?	Statu s
09:00-09:05	5 min	Welcome remarks		
<i>Arm HPC Software, Tools and Initiatives</i>				
09:05-09:20	15 min	Linaro SIGHPC		
09:20-09:35	15 min	Arm tools		

09:35-09:50	15 min	Mont-Blanc		
09:50-10:05	15 min	EPI - Atos		
10:05-10:20	15 min	CEA - SiPearl		
10:20-10:40	20 min	UK Catalyst Programme - Arm, Suse, University of Leicester, EPCC, University of Bristol		
10:40-11:00	20 min	University of Bristol		
11:00-11:30		Break		
<i>Arm HPC Gov't and Academic Collaborations</i>				
11:30 - 11:45	15 min	Fujitsu		
11:45 - 12:00	15 min	National Institute of Advanced Industrial Science and Technology (AIST)		
12:00 - 12:15	15 min	Research Organization for Information Science and Technology (RIST)		
12:15 - 12:30	15 min	RIKEN		
12:30 - 12:45	15 min	Sandia National Labs		
12:45 - 13:00	15 min	DoE/DoD - Project 38		
13:00 – 14:00		Lunch		
<i>Arm HPC Gov't and Academic Collaborations</i>				
14:00 - 14:15	15 min	Los Alamos National Lab		

14:15 - 14:30	15 min	Pacific Northwest National Lab		
14:30 - 14:45	15 min	Barcelona Supercomputing Center		
14:45 - 15:00	15 min	High Performance Computing Center Stuttgart		
15:00-15:15	15 min	Juelich		
15:15-15:30	15 min	Bavarian Supercomputing Alliance		
15:30-15:45	15 min	Portugal INSTEC		
15:45-16:00	15 min	STFC Hartree		
16:00 – 16:30		Break		
<i>Edge to HPC</i>				
16:30 - 16:45	15 min	Nvidia		
16:45 - 17:00	15 min	Xilinx - Reconfigurable HPC at the Edge		
17:00-17:20	20 min	Edge to HPC - Argonne		
17:20-17:40	20 min	Ampere		
17:40 - 17:55	15 min	Marvell		
17:55-18:00	5 min	Buffer and closing remarks		
18:00		Workshop End		

5. Expected outcome from the workshop

Workshop attendees will gain insight into how Arm partners are preparing their applications in diverse fields ranging from Bioinformatics, Molecular Dynamics to Machine Learning to Arm platforms. In addition, attendees will learn more about Arm's latest software optimization tools and hardware systems from our multiple silicon partners.

6. Strategies to advertise and attract attendees

Our advertisement strategy is to primarily contact partners directly and our colleagues from the European and US projects we are involved in. In addition to this, we can publicise the workshop on Arm Research's main page, our web page, and on social media. Our invitees will also advertise through their channels, e.g., vendors will have pre-printed handouts at their booths.