



# INTRODUCTION TO HIGH PERFORMANCE COMPUTING FOR UPOL

14-15 DECEMBER 2020

PART 0  
**COURSE INFORMATION**

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# OUTLINE



- Course goals & Audience
- Trainers & Presenters
- Course parts & Timing
- Using Zoom
- Training accounts



Cray-1 supercomputer (source: wikipedia.org)



- **General introduction to High Performance Computing (HPC)**
- The supercomputing infrastructure at the **IT4Innovations National Supercomputing Center (IT4I)** reflected (e.g. in examples)
  - => in particular useful for (future) users of the IT4I
- **Expected audience:**  
primarily **application users** with some experience from smaller platforms (desktops, workstations), who (potentially) need to take advantage of HPC to solve their problems in larger scale
  - typically scientists from various application fields, who are not developers of the application employed
  - but want to understand better what is “behind the scene”
    - e.g. how parallelization works
  - computer beginners, advanced users or code developers are not targeted here



Young researchers from several IT4I labs and Ph.D. students

- Martin **Beseda** (Parallel Algorithms Research Lab )
- Jakub **Beránek** (Advanced Data Analysis and Simulations Lab)
- Ondřej **Meca** (Infrastructure Research Lab)
- Radim **Vavřík** (Infrastructure Research Lab)
- Ondřej **Vysocký** (Infrastructure Research Lab)

# COURSE PARTS & TIMING



## **Day 1** (Mon 14/12/2020)

10:10 - 11:40, Beseda

### **Part 1: HPC systems architecture, IT4I infrastructure intro**

(lunch break)

12:45 - 14:15, Beránek

### **Part 2: Accessing and working on the IT4I clusters**

(coffee break)

14:45 - 16:15, Beránek

### **Part 3: Code development on the cluster – an overview for application users**

See Timetable <https://events.it4i.cz/event/111/timetable/#all>) for full info





## **Day 2** (Tue 15/12/2020)

09:00 - 10:30, Meca

### **Part 4: Parallel programming basics**

(coffee break)

11:00 - 12:30, Vavřík

### **Part 5: Efficient system usage – profiling, tuning, optimization**

(lunch break)

13:30 - 15:00, Vysocký

### **Part 6: Development of HPC architectures – path to exascale**

15:00 - 15:30

**Q & A**



- **Questions:** any time via
  - Chat window
  - raising hand
  - voice
    - Push to Talk: The Push to Talk feature allows you to remain muted throughout your Zoom meeting and hold down the spacebar when you want to be unmuted and talk
- If you do not mind, please **show your video** when asking questions after the presentation or in Q & A, to make this event as interactive as possible



- We want to provide you with **temporary training accounts** to get some practice on the IT4I infrastructure
- If you are interested, please add your mobile phone number to your registration data
  - will be used to deliver your account credentials





Enjoy the training