

# CLASS Program Advanced Skills training - Inaugural Cohort

Internet2 has partnered with major cloud providers and a select group of research universities to develop the [Cloud Learning and Skills Sessions \(CLASS\) program](#). This program will provide participants the necessary training to effectively leverage cloud platforms for research workflows. A combination of vendor-neutral guidance for leveraging cloud platforms, and training on the tools and technologies supported by public cloud providers will allow a broad range of research use-cases to more effectively leverage these important resources.

The initial cohort will focus on advanced research computing and data professionals with existing knowledge of cloud platforms and the interest/need to develop more complex workflows that leverage advanced services and capabilities (subsequent offerings in the CLASS program will provide foundational training for a broader audience). The program will emphasize hands-on learning and utilize a cohort model for peer-to-peer learning and community.

The advanced cohort program is summarized in the figure below. The core training elements are:

- I. **Structured Training** on architectural principles and practices for building computationally- and data-intensive workflows on cloud-based platforms. The course is multi-cloud, emphasizing general cloud architecture principles and their implementation in Amazon, Azure, and Google clouds. Topics range from *Cloud storage, Networking and Data Movement, and Computing and Elasticity, to Containerization, Performance Optimization, and Cost Management*.
- II. **Workshop Intensives** for hands-on exploration of specific areas of technology. Participants indicated interest in a number of areas, the first two of which will be covered in these sessions (with others to follow in the ongoing community discussions). For each of these two topics, architects from each of the three cloud providers will take participants through support on their platform (for a total of 6 intensives):
  - A. Container Workflows, continuous integration/continuous deployment, and orchestration.
  - B. Networking and Data Movement - cost, performance, and technologies including storage models, inter- and intra- data-center data movement, database services, storage tiering, etc.
- III. **Architectural Review** of use-cases contributed from the community. The cohort will discuss and select two real world use-cases (either current cloud implementations, or an existing workflow that will be moved to the cloud). Architects from each of the three cloud providers will conduct an architectural review of each use-case, noting best practices, porting concerns, potential issues, etc. (6 architectural reviews in total).

Participants will meet and get oriented at a program kickoff in December. After the course is complete, the CLASS program will facilitate ongoing community meetups for additional workshop intensives, architectural reviews, and discussion/sharing of experience among the participants.

*Elements of the CLASS Program Advanced Skills training*

