libIS and SENSEI in transit architecture

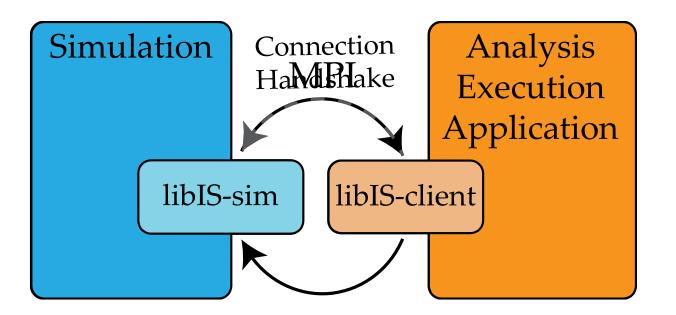
Silvio Rizzi srizzi@anl.gov IXPUG In Situ Hackathon Santa Fe, NM May 2019

Slides courtesy: Will Usher, SCI Institute, Univ. of Utah and Intel Corp.
Burlen Loring, Berkeley Lab and the SENSEI team

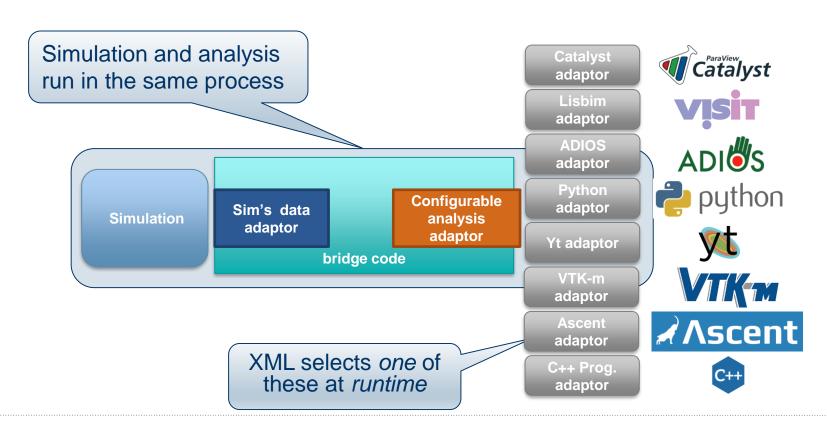
The libIS library

Simulation acts as a data server providing timesteps to clients

Clients can connect/disconnect for on-demand execution



Usher, W., Rizzi, S., Wald, I., Amstutz, J., Insley, J., Vishwanath, V., Ferrier, N., Papka, M.E. and Pascucci, V., 2018, November. libIS: a lightweight library for flexible in transit visualization. In *Proceedings of the Workshop on In Situ Infrastructures for Enabling Extreme-Scale Analysis and Visualization* (pp. 33-38). ACM.



SENSEI In situ architecture

XML selects **SENSEI** In transit architecture one of these ADIOS 1,2 ADIOS analysis Configurabl HDF5 Sim's data HF **Simulation** e analysis analysis adaptor adaptor bridge code LibIS analysis Simulation runs in 1st job transport Catalyst Catalyst moves data adaptor across network End-point runs in 2nd job **VISİT** Lisbim adaptor ADIOS 1,2 python **Python** data.adaptor adaptor Configurabl **SENSEI** Configurabl HDF5 e in transit e analysis Yt adaptor In transit data.adaptor data adaptor adaptor end-point VIKM LibIS VTK-m data.adaptor adaptor ∧Scent XML selects adaptor XML selects one of these one of these C++ Prog. adaptor

Progress

- Based on ADIOS1 implementation by Burlen
- Added libIS data adaptor, analysis adaptor and endpoint
- Commits in Kitware Gitlab repo https://gitlab.kitware.com/sensei/sensei/merge_requests/154
- Still work in progress

To-Do

- Finalize implementation
- Regression tests
 <u>https://gitlab.kitware.com/sensei/sensei/tree/in_transit_data_adaptor/sensei/testing</u>