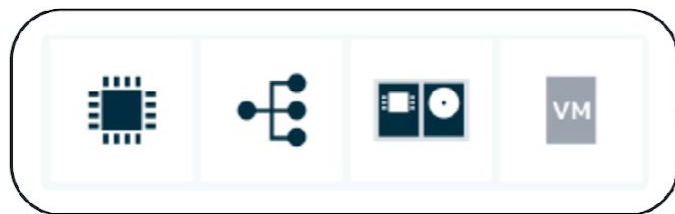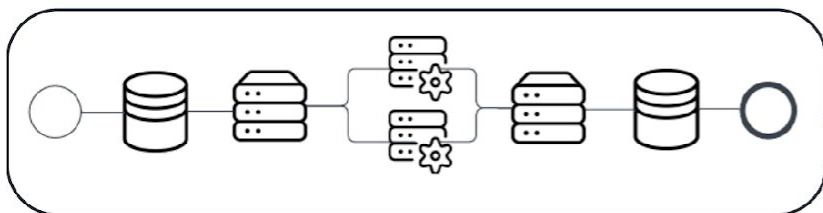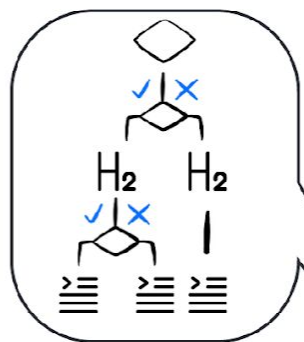# LivePublication:
Extending Globus Compute with RO-Crate provenance models

Augustus Ellerm, University of Canterbury
Mark Gahegan, University of Auckland
Benjamin Adams, University of Canterbury
Nelis Drost, University of Auckland

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

LivePublication: From Data, To Computation, To Publication
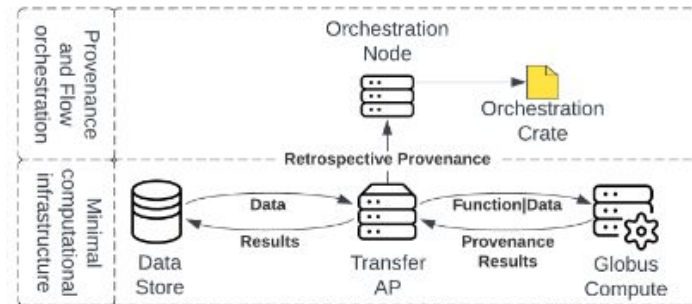
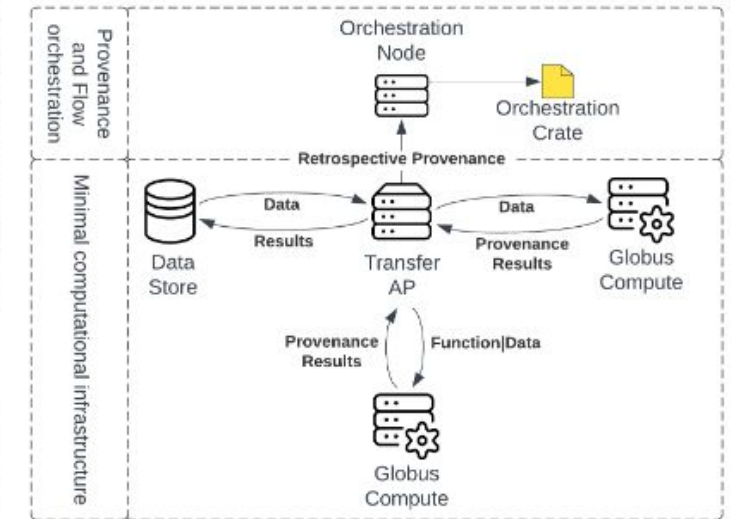# Minimal WMS infrastructure w/ Globus Compute

- Support three patterns of configuration
  - LP Action Provider
  - LP Globus Compute
  - Mixed
- Across federated environments
- For re-executing, long lasting flows
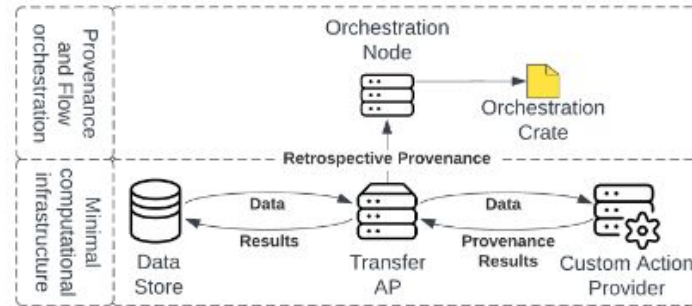
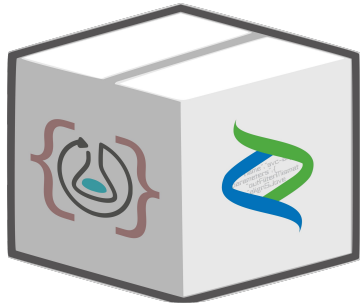(a) Action Provider infrastructure
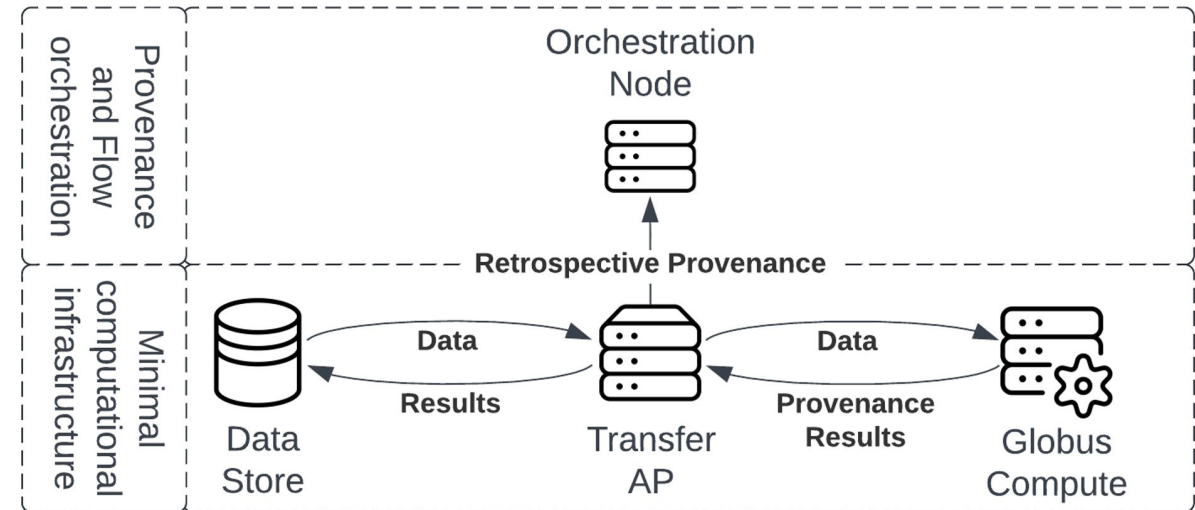
(b) Globus Compute infrastructure

(c) Mixed compute provider infrastructure

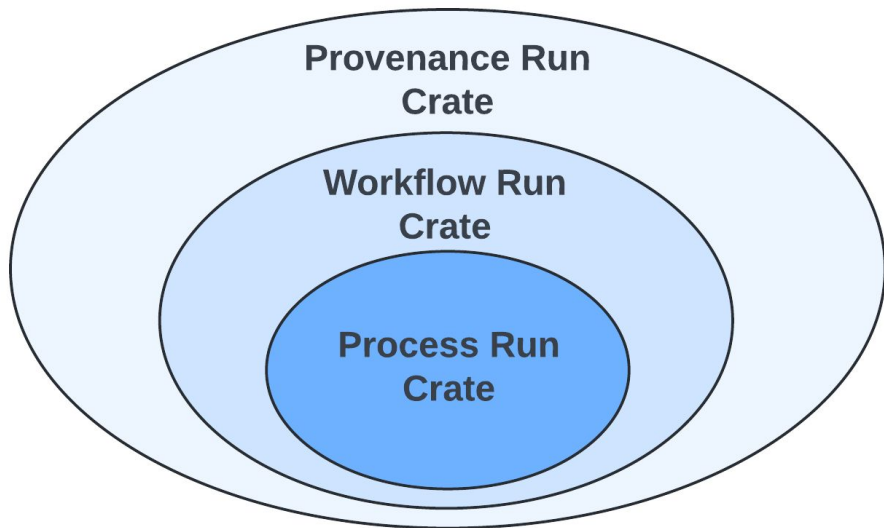Globus Flows provenance aware configurations
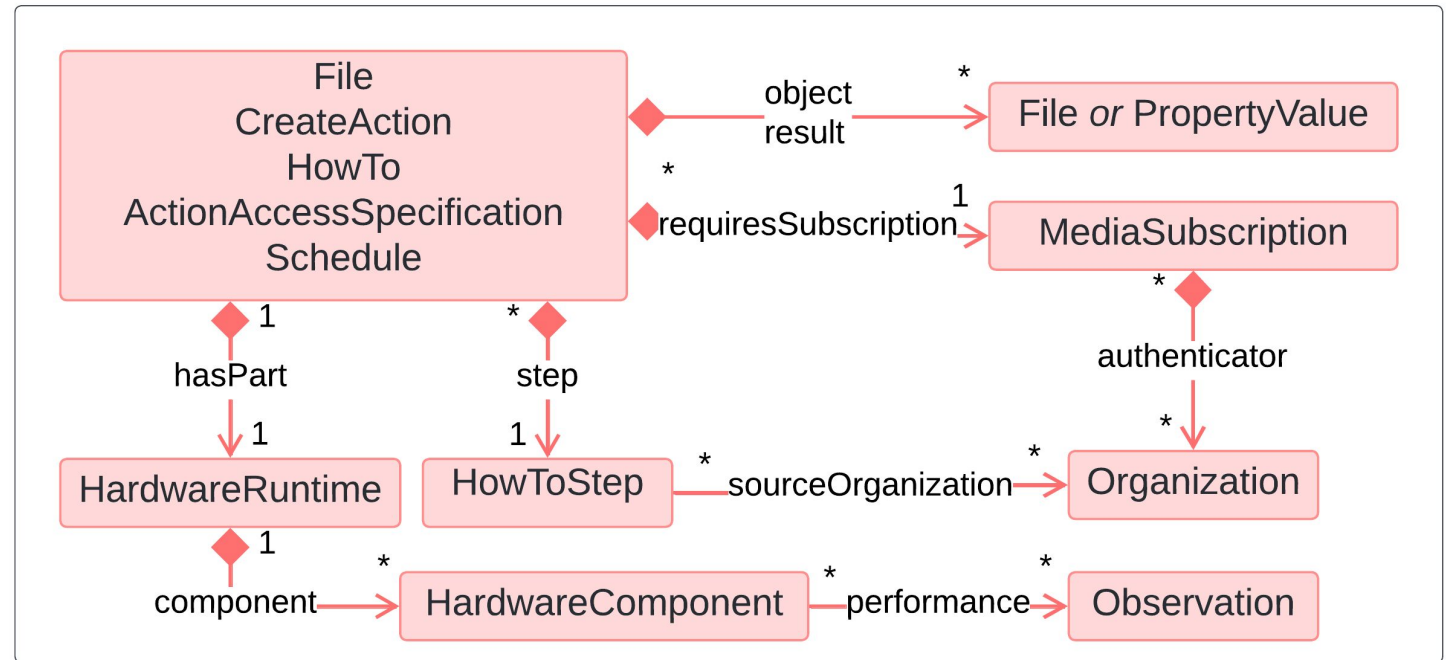
Workflow Provenance

- Provenance Container

- Represents discrete runs of workflows, formal parameters, and domain specific metadata

- Standardization of this artefact can enable interoperable WMS & Programmatic Article technologies

LivePublication Provenance

RO-Crate

Provenance Run Crate

Workflow Run Crate

Process Run Crate

Provenance Granularity

File
CreateAction
HowTo
ActionAccessSpecification
Schedule

object
result → File *or* PropertyValue *

* requiresSubscription → MediaSubscription 1

1 hasPart

* step

authenticator *

1 HardwareRuntime

1 HowToStep * sourceOrganization * → Organization

1 component

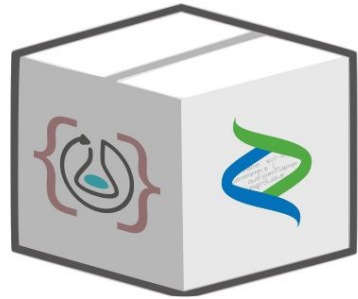* HardwareComponent * performance * → Observation

Distributed Step Crate
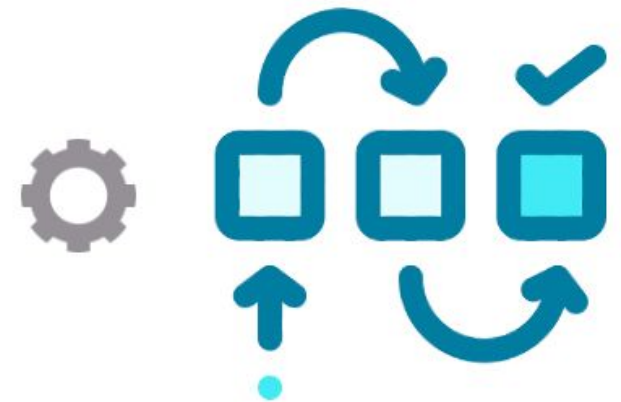Entity Graph

Globus Flows + Compute, Tooling

Globus Compute

Distributed Step Crate

Gladier

Modified Flow Definition
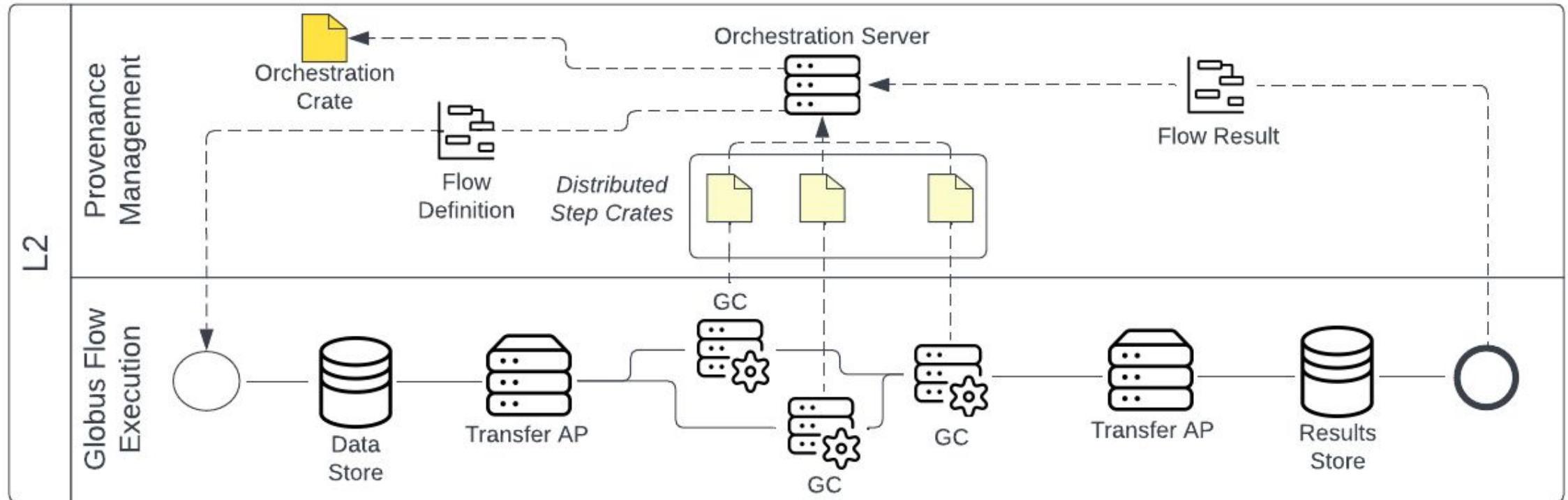
Globus Compute & Distributed Step Crates

Editor

Select flow

**LID FLOW**

LID - SUB FASTTEXT

LID - SUB LANGDETECT

Editor

Data store G-UUID

d6215ec8-244a-11ee-80c1-a3018385fcef

Test data path

/home/ubuntu/LiD_Datastore/input_data.txt

Validation data path

/home/ubuntu/LiD_Datastore/validation.txt

Version Label

demo

TRIGGER FLOW

Select format

MANUSCRIPT V1.2

MANUSCRIPT V1.1

MANUSCRIPT V1

MANUSCRIPT - FT

MANUSCRIPT - LD