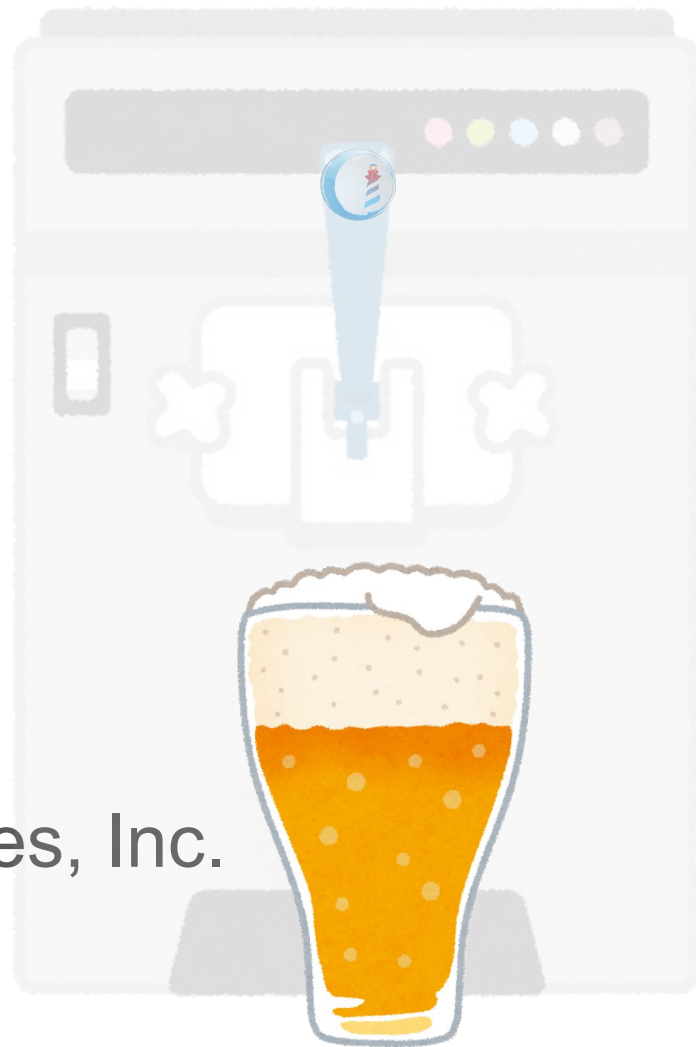# *PintGlas*

fresh Pharo on tap

Tomohiro Oda
Software Research Associates, Inc.
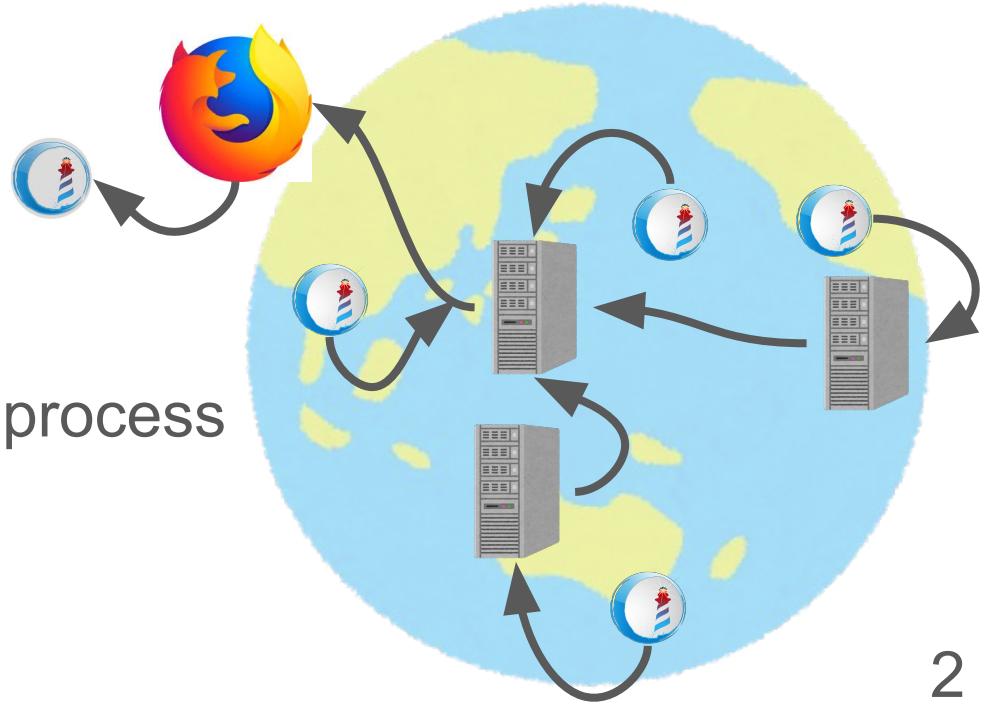
PintGlas

= **P**haro **I**mage **N**etwork **T**ransfer - **GL**obal **A**ccess **S**ervice

PintGlas system

takes, manages and deliver snapshots of remote Pharo process by live requests

2

Agenda

1. background
2. design
3. demo
4. todos & summary

background

2. background

challenges in scientific computing (e.g. multi-agent simulations)

- ## exploratory
  - write once, run once
  - no detailed plan, no systematic testing
  - hard to estimate computing time
- ## diverse architecture
  - supercomputers to laptops
  - trade-offs between FLOPS and UI

image-based process VM can help

2. background

challenges in scientific computing (e.g. multi-agent simulations)

- ## exploratory
  - write once, run once
  - no detailed plan, no systematic testing
  - hard to estimate computing time
- ## diverse architecture
  - supercomputers to laptops
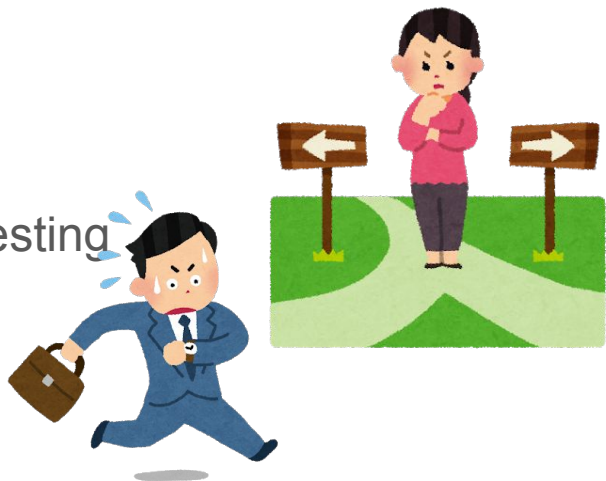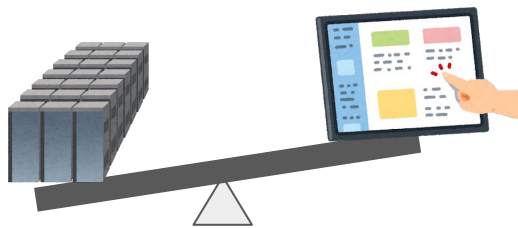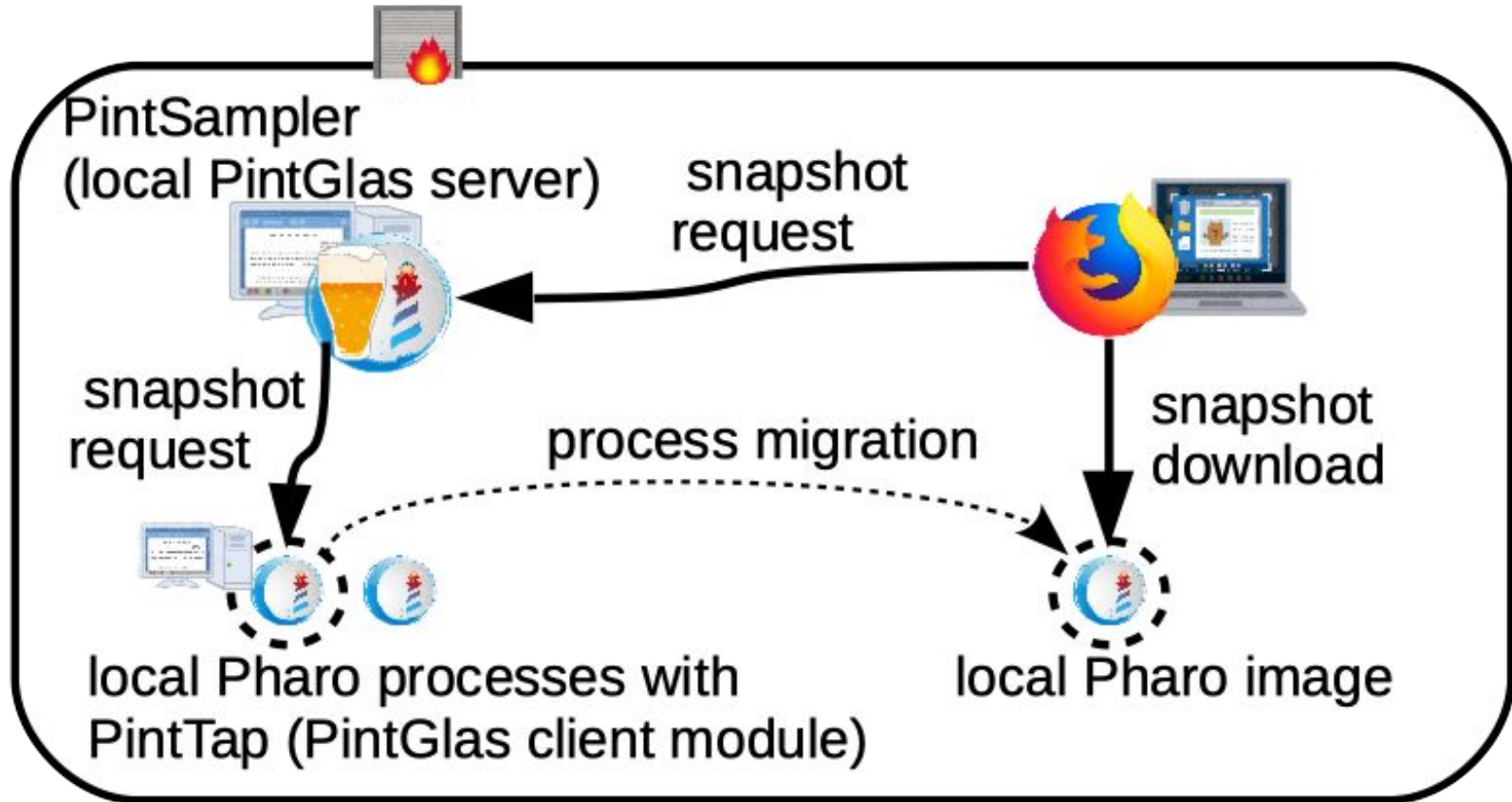 - trade-offs between FLOPS and UI

Process migration can help

design

current prototype

PintSampler
(local PintGlas server)

snapshot request

snapshot request

process migration

snapshot download

local Pharo processes with
PintTap (PintGlas client module)

local Pharo image

Final configuration

global PintGlas
server

snapshot
request

snapshot
request

local PintGlas
server

PintGlas
Launcher

snapshot
request

process migration

launch
snapshot

local Pharo processes with
PintTap module

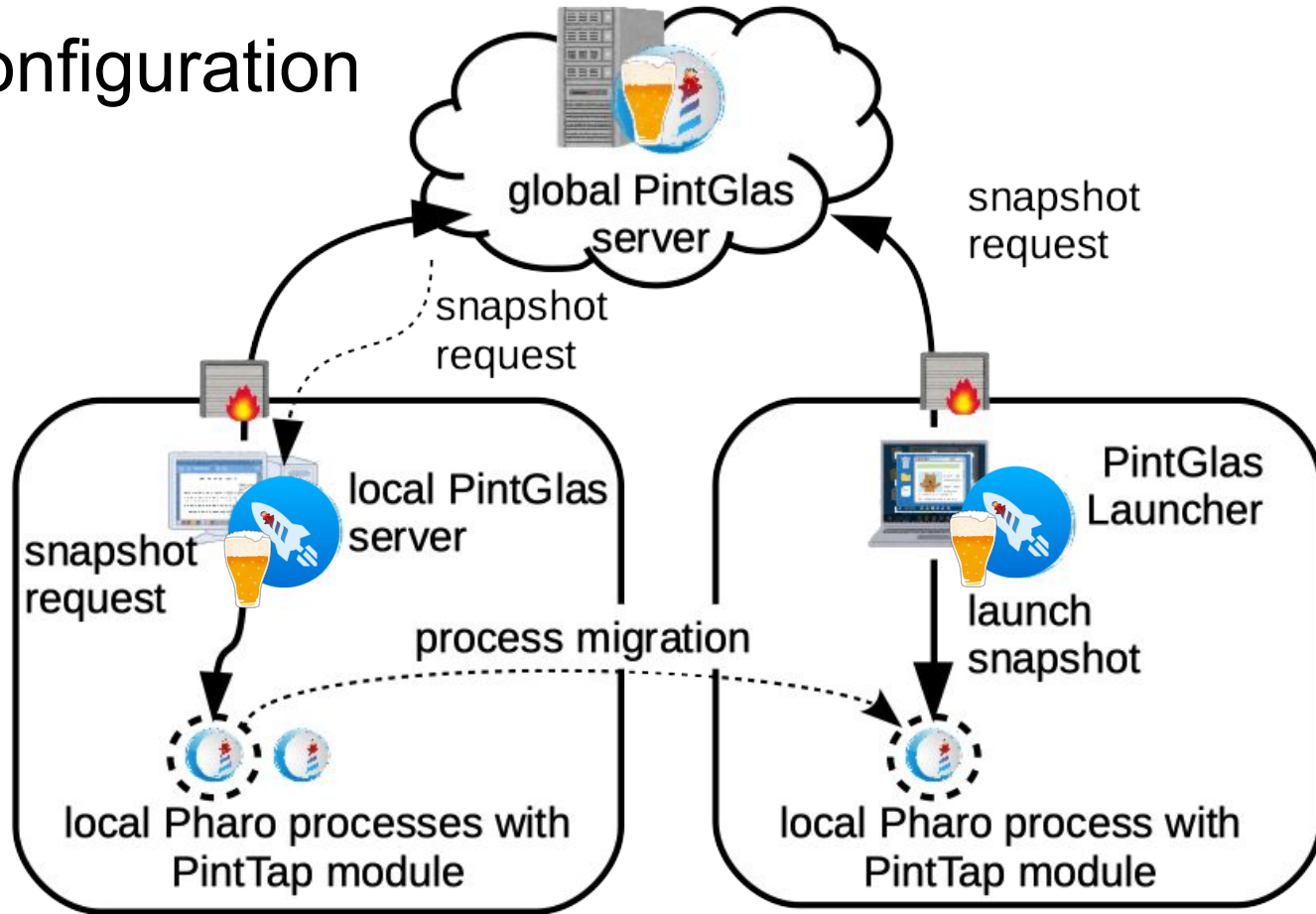local Pharo process with
PintTap module

image metadata

- glas-id: "22043def4440bd72a8fa99a6fdf72f6a" (32 chars hash string)
- version: [0, 0, 1]
- hostname: "deutsch.local"
- path: "/Users/tomohiro/Pharo/images/ViennaTalk-7/"
- image name"ViennaTalk-7"
- date: "2019-08-19T12:53:17.657011+09:00"
- size: 31542872
- image-id: "6b707e7d2ab3bc273c6bdc0d2bac6a785b300fbf-56ef-61c1-1133"

For versioning, a local pharo process appends to image-id random 4 letters with a hyphen prefix at every snapshot.

image contents

- .image
- .changes
- .sources
- meta-inf.ston
- pharo.version
- pharo-local/*
  - including epicea files and iceberg repos.

Related work

- organizing exploratory process
  - Jupyter Notebook
  - ActivePapers
  - Roassal
- sharing data
  - IPFS
- launching process
  - TaskIt
  - PharoLauncher

demo

todos

todos and summary

PintGlas is still at the early prototyping stage.

a pile of todos

1. user authentication
2. credential information removal
3. PharoLauncher integration
4. UI for image versions
5. local server ↔ global server
6. less impact on snapshot taking
7. periodic snapshot taking

https://github.com/tomooda/PintGlas