FAIR Distribution & Deployment

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Introduction (1)

- We are building a common research infrastructure
- Tools need to be **distributed** properly by tool developers
- Tools need to be **deployed** in the infrastructure *as a service* by operators.
- De-coupling between **application provider** (distribution) and **infrastructure provider** (deployment)

This epic/shared service provides the embedding for this. Logical successor of the DevOps IG (RIP)

Introduction (2)

- **Distribution of tools**
  - How can CLARIAH developers publish their tools?
  - Facilitate installation for end-users and infrastructure providers
- **Deployment of tools**
  - Install a tool locally
  - Deploy a tool as a service in an infrastructure

Scope: aspects of distribution & deployment (1)

- **Version control**
- **Packaging**
- **Containerisation**
- **Container Orchestration**
- **Infrastructure as Code** (decoupling)

Scope: aspects of distribution & deployment (2)

- **Security**
  - Authentication and Authorization
  - Tools to Data / Data to Tools
  - Automated vulnerability scanning
- **Scalability**
  - Load balancing
  - Horizontal scaling
- **Monitoring**
  - Service availability monitoring (from end-user point of view)
  - Service usage monitoring
  - Infrastructure monitoring
- **Workflows**:
  - accommodating/pushing existing workflow solutions (DANE, NextFlow) within our infrastructure context

Broad scope! Most is covered by existing WP2 tasks.

Out of scope

We focus on the shared *technical* dimension here, so out of scope are:

- Governance
- Service License Agreements etc. . .
- Hardware acquisition

Although we will give our technical input to the person and/or group who must cover the above.

User Stories

- **As a scholar, I** want to apply a processing tool on a (possibly large) data set in the CLARIAH infrastructure, either using computational resources provided by the CLARIAH infrastructure in order to be able to do quick and efficient processing on (large) data sets without needing my own infrastructure.
- **As a scholar, I** want to apply a processing tool on a large data set *within my own infrastructure* in order to take the tools to my (possibly restricted) data and work in my own secure environment.
- **As a scholar, I** expect to have access to low-level CLARIAH tools in industry-standard ways **in order to** use the tools in my own development setting.

Deliverables

- **Technical Requirements**
  - Software Requirements
  - Infrastructure Requirements
  - Already worked on in 2021 and first version is available for further review (RFC)
- **Provisioning services with documentation** (WP2)
  - Docker Registry
  - Authentication & Authorization Provider (federated, single sign-on)
  - Version control platform for infrastructure as code
  - Version control platform for services/tools
  - Monitoring Solutions for services, usage and operations
  - Continuous Integration/Deployment
  - Research data store (storing results)
  - Computational resources for test drives and limited deployments
  - Support tools (wiki, servicedesk, maintenance tools) to support the end-users and IT-staff

Gaps and Challenges

- Coordinating this, transparently, over multiple institutes
  - Not a KNAW HuC only endeavour!
- Providing clear documentation
- Distribution and deployment solutions for distributed computing workflows (DANE, NextFlow)
- To find (test) end-users who are willing to take the jump and use it
- Legal terms and conditions

Questions and or Suggestions

- Please ask now! or
- Submit an issue at https://github.com/CLARIAH/clariah-plus/issues