d4science

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SUMMARY

The D4Science-II project aims to build a Knowledge Ecosystem by promoting, defining, and implementing interoperability between the D4Science e-Infrastructure and other data e-Infrastructures. This Ecosystem will therefore be composed by multiple resources of different nature, provided by geographically distributed organizations. In order to create such ecosystem, the project will focus on the deployment and exploitation of mechanisms and policies for the interoperability of application-level infrastructure and infrastructural services.

The objective is the D4Science-II SA1 Knowledge Ecosystem Operation work package is to deploy and maintain the central services of the D4Science e-Infrastructure to allow the interoperability with other e-Infrastructures, and the creation of multiple Virtual Organizations (VOs) and Virtual Research Environments (VREs) supporting different scientific scenarios.

The D4Science e-Infrastructure is composed by different resources (hardware, data, services) provided by project members and other external organizations. This deliverable presents the hardware resources allocated by D4Science partners to the project e-Infrastructure by providing detailed information about the hardware characteristics and the deployment plan to exploit such nodes.

This deliverable also presents the procedures defined by the D4Science Service Activity to efficiently operate the Ecosystem. The implementation of these procedures is carried out by a well defined set of roles and is based on a number of collaboration tools. These roles and tools are also described in the deliverable.

DELIVERABLE DOCUMENTATION

The objective of the D4Science-II Service Activity is to provide a Knowledge Ecosystem linking the D4Science e-Infrastructure with other data e-Infrastructures to allow the deployment of scientific environments supporting virtual collaboration among scientists.

In particular, the D4Science Knowledge Ecosystem:

- Interoperates with four major e-Infrastructures. The GENESI-DR [4] and DRIVER [2] repository e-Infrastructures created in the framework of FP7 projects. The INSPIRE [5] and AquaMaps [6] infrastructures, important thematic multi-type repositories maintained by large stakeholder international organizations;
- Provides five scientific scenarios related to major global research challenges. The INSPIRE VRE for computationally intensive processing of bibliometric information. The DRIVER VRE to enhance the off-line capabilities of the DRIVER infrastructure. The AquaMaps VRE to create more precise species distribution maps. The FCPPS VRE for the production of country-level fisheries and aquaculture reports. The ICIS VRE to harmonize fisheries and aquatic resources datasets;
- Exploits the resources of the EGEE [3] production infrastructure for executing computationally intensive tasks in a completely transparent way.

To efficiently coordinate the operation of such large ecosystem, composed by multiple infrastructures, different resource type, and contrasting VREs, a dedicated web site has been set up for the D4Science Service Activity (SA) [1].

This web site gathers all relevant information concerning the D4Science-II SA tasks: this includes the operation of the D4Science Ecosystem (SA1 work package), the operation of VOs and VRE (SA2 work package), and the release of the gCube software (SA3 work package).

This deliverable, DSA1.1a, is therefore hosted in the SA web site. The deliverable consists of several pages grouped under the SA1 wok package context (SA1 Home):

https://service.wiki.d4science-ii.research-infrastructures.eu/service/index.php/SA1_Home

To improve the access to its content, direct links to different pages have been made available in a panel situated on the left side of the web site. Being based on a wiki tool, the site allows an active and efficient collaboration between the partners involved. As a consequence, the information reported in this deliverable is expected to evolve during the course of the project, reflecting the changes needed to maintain and improve the D4Science ecosystem.

In particular, DSA1.1a is composed by the following sections:

- Procedures: Presents the procedures needed for the instantiation, management and operation of the ecosystem and the tools used to support the execution of such procedures.
    - Deployment
    - Certification
    - Downtime
    - Accounting
    - Monitoring
    - Incident Management

- Roles: Defines the roles needed to manage and operate the ecosystem as involved parties in the aforementioned procedures:
  - Site Manager
  - Infrastructure Manager
  - Support Team
- Nodes: Describes the planning of the infrastructure regarding the resources allocated, how they are exploited, and how they can be upgraded:
  - Hardware
  - gCube Nodes
  - gLite Nodes
  - Nodes Upgrade

REFERENCES

[1] D4Science Service Activity [Online] https://service.wiki.d4science-ii.research-infrastructures.eu/service/

[2] DRIVER: Digital Repository Infrastructure Vision for European Research [Online] http://www.driver-repository.eu

[3] EGEE Enabling Grids for E-science in Europe [Online] public.eu-egee.org

[4] GENESI-DR: Ground European Network for Earth Science Interoperations – Digital Repositories [Online] www.genesi-dr.eu

[5] INSPIRE [Online] https://twiki.cern.ch/twiki/bin/view/Inspire

[6] Kaschner, K.; Ready, J. S.; Agbayani, E.; Rius, J.; Kesner-Reyes, K.; Eastwood, P. D.; South, A. B.; Kullander, S. O.; Rees, T.; Close, C. H.; Watson, R.; Pauly, D.; Froese, R. AquaMaps: Predicted range maps for aquatic species. [Online] http://www.aquamaps.org August 2008