PaN-data ODI

Deliverable D8.6

D8.6 Demonstrate capabilities reported in reports D8.3 and D8.5 (Month 21)

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Abstract

Demonstrate capabilities reported in reports D8.3 and D8.5 (Month 21) - Prototype Report

Keyword list

PaN-data ODI, Scalability

Document approval

Approved for submission to EC by all partners on 18.11.2013

Revision history

Issue	Author(s)	Date	Description
1.0	Bill Pulford	17 Nov 2013	Complete version for discussion

Table of contents

1.   Introduction

The PANData ODI project sets out to optimize coordination between research groups working at one or more different large experimental facilities across Europe and with the potential of expanding its scope across the scientific world. There are a number of components to the project such as common authentication, application software and federated searchable data storage systems. This report relates to a joint research activity, Work Package 8 **Scalability,** which concerns standardization of file formats and research to identify supporting data storage architectures to optimize speeds and data storage capacity.

The timeline for this workpackage:

- D8.1: Definition of pHDF5 capable Nexus implementation – Software – Report Delivered Aug 2012

- D8.2: Evaluation of Parallel file systems and MPI I/O implementations - Report Delivered Aug 2012

- D8.3: Implementation of pNexus and MPI I/O on parallel file systems – Report Delivered Oct. 2013

    o   Note that in the WP description there is no D8.4, so the numbering 8.5,8.6,8.7 correspond to 8.4,8.5,8.6 in the DoW.

- D8.5 Examination of Distributed parallel file system

- D8.6: Demonstrate capabilities on selected applications (Month 21 June 2013) – **This report**

    o   A demonstration application is distributed and is in daily use by many users and at a number of European facilities see DAWNScience.

- D8.7: Evaluation of coupling of prototype to multi-core architectures (Month 27 Dec 2014) - Report - Work continuing in the community.

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2.   The Chosen Demonstration Application

During the development of this workpackage, it has been realized that the DAWNScience open source application, which is being developed by collaboration (http://www.dawnsci.org/home) between Diamond, ESRF, EMBL (Grenoble) and the commercial company iscenia (www.iscencia.be), would provide an excellent vehicle to demonstrate the capabilities of the combination of parallel file systems and NeXuS file formats which have been developed in this workpackage. Therefore, no bespoke software development was performed for this report and the resources initially foreseen for this part of the workpackage were diverted to the bridge between ImageCIF/CBF and NeXuS. PaNdataODI funding was used only to a small extent (<5%) to support Tobias Richter and Mark Basham in integrating the work described in reports D8.3 and D8.5 respectively into the DAWNScience framework otherwise DAWNscience was completely funded by the collaborating institutions. This work is therefore demonstrated through its use in the DAWNscience software.