ADMIRE D3.8 — ADMIRE Platform Release 5

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<td>1.0</td>
</tr>
</tbody>
</table>

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Contents

Executive Summary 2

1 Overview 4

2 ADMIRE Platform Release 5 5
   2.1 ADMIRE Platform R5: Virtual Machine Image . . . . . . . . . . . . . . . . . 5
   2.2 ADMIRE Platform R5: Gateway Services . . . . . . . . . . . . . . . . . . 6
      2.2.1 ADMIRE Gateway Service . . . . . . . . . . . . . . . . . . . . . . . 6
      2.2.2 OGSA-DAI Services . . . . . . . . . . . . . . . . . . . . . . . . . . . 6
      2.2.3 ADMIRE Registry Service . . . . . . . . . . . . . . . . . . . . . . . . 7
      2.2.4 ADMIRE Repository Service . . . . . . . . . . . . . . . . . . . . . 7
   2.3 ADMIRE Platform R5: Workbench Components . . . . . . . . . . . . . . . . 7

3 ADMIRE Testbed 8
   3.1 Integrated Test and Monitoring Platform . . . . . . . . . . . . . . . . . . . 8

4 Summary 9
Executive Summary

ADMIRE Platform Release 5 is the final software release for the ADMIRE project. It is based on the previous platform and includes many extensions, improvements and bug fixes for all of the components. The main intention of this release is to have a stable, end-to-end knowledge-discovery software platform capable of executing all of the ADMIRE use cases.

The strategic sites forming the ADMIRE Testbed have been updated with this final release of the ADMIRE Platform software and the remaining sites with release 4.

The ADMIRE Platform and Testbed progress up to PM30 is described in D3.6 [1]. The key goals for PM36 were the following:

Enhance Gateway: achieved – The latest version of the Gateway includes the most advanced DISPEL parser ever.

Enhance Registry: achieved – The Registry now fully supports functions as well as structural and domain types.

Enhance Workbench: achieved – A new improved version of the Workbench is available from the ADMIRE Update Site including many updates which make it more user friendly. The Workbench is described in detail in D5.6 [2].

Enhance Repository: achieved – The latest release of the Repository offers two storage backends and more metadata about the files stored.

Enhance/install Portals on Testbed: achieved – We have crafted several portals tailored to the use cases. These are described in detail in D6.6 [3].


Create a version of ADMIRE Image for Amazon Compute Cloud: not achieved – The demand for this component has not been high enough to warrant the creation of a new version.

Roll out ADMIRE Platform Release 4 onto the nodes of all partners: achieved

Add tests to the Dashboard, probing the ADMIRE Repository: achieved – Tests were added and the Repository proved to be stable.
1 Overview

This report is a description of Deliverable D3.8, the ADMIRE Platform Release 5, as defined in the ADMIRE Description of Work [4]. We describe the fifth and final release of the ADMIRE Platform and the current state of the ADMIRE Testbed.

The ADMIRE Platform is a collection of tools, services and software engines designed to demonstrate the current state of knowledge discovery research and development within ADMIRE. Every release of the Platform gathers the most recent stable components into a logical package, each time building on the previous release;

The ADMIRE Testbed is an instantiation of the ADMIRE Platform across a number of compute and data resources shared across the ADMIRE consortium.

For more detailed conceptual definitions of the ADMIRE Platform and Testbed, and the full description of activities within Workpackage 3, please see ADMIRE D3.4 [5].
2 ADMIRE Platform Release 5

The fifth and final release of the platform includes updated versions of most of the components. One of the most important changes this period was the switch from the underlying USMT platform to the lightweight RESTful architecture. This change improved not only the performance, but also the accessibility of the services.

A combined overview of platform, tools and testbed is presented in Figure 1.

2.1 ADMIRE Platform R5: Virtual Machine Image

The ADMIRE Virtual Machine Image (VMI) is a snapshot of ADMIRE Platform Release 5 and captures the latest stable versions of the ADMIRE software. The VMI comes with the software stack preconfigured with some sample data ready to be used. The VMI is thus the “all-in-one instance” of the ADMIRE Platform, including the Gateway Services and the Workbench. It lets prospective users of the ADMIRE technology try it out ‘out of the box’.

Figure 1: General overview of ADMIRE.
It will also be used in tutorials and to generate demos to publicise ADMIRE even further.

The VMI is built with Ubuntu 11.4 using virtualisation software from VMware\(^1\). The VMI for this release is around 4.6 GB in size. It was planned this way so it can be easily burned onto one DVD.

The content of the VMI is presented in the following sections (Section 2.2 and 2.3). In addition to the ADMIRE Platform software, the VMI has a MySQL database installed and populated with synthetic data which could be used in simple data mining experiments. There is a sample project ready in the Workbench with examples of DISPEL documents.

### 2.2 ADMIRE Platform R5: Gateway Services

On the Gateway side, Release 5 includes the following services:

- ADMIRE Gateway Service v2.1.0 (includes DISPEL Parser v1.4.0);
- OGSA-DAI Services v4.1.0;
- Registry Service v2.0.0;
- Repository Service v1.0.0.

#### 2.2.1 ADMIRE Gateway Service

In the final period, the ADMIRE Gateway moved away from the USMT container and is now RESTful (Representational State Transfer style of software architecture). This change improved the performance and made the Gateway lightweight and more accessible., and is further discussed in D4.6 \(^2\). Additionally, there were some minor bugs fixed. The Gateway includes the latest release of the DISPEL Parser, which now supports advanced features of the DISPEL language.

#### 2.2.2 OGSA-DAI Services

The ADMIRE Platform currently uses the OGSA-DAI data workflow engine as an enactment environment to provide all the functionality of ADMIRE Processing Elements (PEs). Previously, core OGSA-DAI services were deployed within the USMT container. This is no longer required as the Gateway no longer uses USMT. As a result of this change, OGSA-DAI can be used out-of-the box. It is worth noting that the ADMIRE Platform now uses the latest version of OGSA-DAI which is 4.1. Full OGSA-DAI user documentation can be found online\(^2\).

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1. [http://www.vmware.com](http://www.vmware.com)
2.2.3 ADMIRE Registry Service

The ADMIRE Registry provides access to the canonical descriptions of the Processing Elements, types and functions designed by the ADMIRE end users. It is a semantic registry based on the WS-DAI-RDF specification, which is queried using SPARQL. ADMIRE Platform R5 includes an updated version of the Registry as described in D4.6 [6].

2.2.4 ADMIRE Repository Service

The ADMIRE Repository is a RESTful service with a Hadoop file system (HDFS) backend described in D4.6 [6]. Its main task is to provide a permanent store for different kinds of files used within ADMIRE – DISPEL documents, classifier trees etc.

2.3 ADMIRE Platform R5: Workbench Components

The ADMIRE Workbench denotes the main ‘client side’ tool developed for the composition, submission and monitoring of DISPEL workflows. This release of the ADMIRE Platform includes updated versions of different plugins, especially the Process Designer and the Process Manager. For a comprehensive description of the plugins please see D5.6 [2].

As in the previous releases, the Eclipse ADMIRE Update Site is used to install and update the plugins. It is located at:

http://www.admire-project.eu/ADMIREUpdateSite/.
3 ADMIRE Testbed

The ADMIRE Testbed is an instantiation of the ADMIRE Platform across the ADMIRE consortium. At the time of writing, there are six ADMIRE Gateways and main instances of both the ADMIRE Registry and Repository are deployed on the ADMIRE Testbed. Figure 2 offers a sketch of its current state.

Figure 2: Current ADMIRE Testbed (at project month 36), spanning six sites: EPCC, IISAS, Comarch, NeSC, U.Vienna, UPM and FLE.

There are no important changes at the sites compared to the previous version of this deliverable – D3.6 [1].

3.1 Integrated Test and Monitoring Platform

The ADMIRE Dashboard continues to test and monitor ADMIRE Testbed. In this work period it has been extended by tests for the ADMIRE Repository. The Dashboard is now located at the following address:

http://admire7.epcc.ed.ac.uk:8080/hudson/

It is still proving useful, especially as a first step when trying to identify any problems with running instances of the Gateways, Registry and Repository.
4 Summary

A variety of tools and testing techniques have been used to deliver, every six-months, ADMIRE Platform Releases of high quality. The ADMIRE Platform Release 5 is the fifth and last of the series of the releases. The releases have matured over time and provide a set of software facilitating the knowledge discovery process in a multiplicity of disciplines. This release will be made available outside of the ADMIRE Consortium so the community can benefit from the work done in the ADMIRE Project.
References


