
Planets Testbed User Guide for Experimenters

Using Testbed version 1.2

Document Control

Contributors

| Person | Role | Organisation | Contribution |
|--------------|--------|--------------|--------------|
| Brian Aitken | Author | HATII | |

Document Approval

| Person | Role | Organisation |
|-----------------|------|--------------|
| Andrew Lindley | QA | AIT |
| Andrew Jackson | QA | BL |
| Edith Michaeler | QA | ONB |

Distribution

| Person | Role | Organisation |
|--------------------|------|--------------|
| Publicly Available | / | / |

Revision History

| Issue | Author | Date | Description |
|-------|--------------|------------|--|
| V1 | Brian Aitken | 18/05/2010 | First version started based on existing user guide for version 1.1 |
| V1.1 | Brian Aitken | 24/05/2010 | Version finalised. |
| | | | |

Contents

| | |
|--|-----------|
| CONTENTS | 3 |
| 1 INTRODUCTION | 5 |
| 2 SYSTEM REQUIREMENTS | 5 |
| 3 REQUESTING A USER ACCOUNT | 5 |
| 4 LOADING THE TESTBED | 5 |
| 5 LOGGING IN | 6 |
| 6 THE EXPERIMENTER WELCOME PAGE | 7 |
| 7 THE EXPERIMENT WIZARD | 7 |
| 7.1 STAGE 1: DEFINE BASIC PROPERTIES..... | 8 |
| 7.1.1 <i>General Information</i> | 9 |
| 7.1.2 <i>Contact Information</i> | 9 |
| 7.1.3 <i>References</i> | 9 |
| 7.1.4 <i>Further Information</i> | 10 |
| 7.1.5 <i>Required Information</i> | 10 |
| 7.1.6 <i>Saving and Continuing</i> | 10 |
| 7.2 STAGE 2: DESIGN EXPERIMENT..... | 10 |
| 7.2.1 <i>Experiment Types</i> | 11 |
| 7.2.2 <i>Selecting Services</i> | 11 |
| 7.2.3 <i>Service Parameters</i> | 12 |
| 7.2.4 <i>Selecting Digital Objects</i> | 13 |
| 7.2.5 <i>Saving and Continuing</i> | 15 |
| 7.3 STAGE 3: RUN EXPERIMENT..... | 16 |
| 7.4 STAGE 4: EXPERIMENT RESULTS..... | 16 |
| 7.4.1 <i>Overall Experiment Execution Results</i> | 16 |
| 7.4.2 <i>Service Execution Reports</i> | 17 |
| 7.4.3 <i>Performance Analysis</i> | 18 |
| 7.4.4 <i>Downloading statistics for offline analysis</i> | 19 |
| 7.5 STAGE 5: ANALYSE RESULTS..... | 19 |
| 7.5.1 <i>Comparing input and output digital objects</i> | 20 |
| 7.6 STAGE 6: EVALUATE EXPERIMENT..... | 23 |
| 7.7 COMMENTING ON EXPERIMENTS..... | 24 |
| 7.8 THE EXPERIMENT PROGRESS PANE..... | 25 |
| 8 MY EXPERIMENTS | 25 |
| 8.1 THE 'RIGHT CLICK' MENU..... | 26 |
| 8.2 REQUESTING AN EXPERIMENT DELETION..... | 26 |
| 8.3 IMPORTING AN EXPERIMENT..... | 27 |
| 8.4 THE 'RELEVANCE' COLUMN..... | 27 |
| 9 BROWSE EXPERIMENTS | 27 |
| 9.1 THE EXPERIMENT REPORT VIEW..... | 28 |
| 10 BROWSE SERVICES | 29 |
| 10.1 SERVICE BROWSER..... | 29 |
| 10.2 PATHWAY BROWSER..... | 31 |
| 10.3 SERVICES BY FORMAT..... | 32 |
| 10.4 LIST ALL PATHWAYS..... | 33 |
| 11 DIGITAL OBJECTS BROWSER | 33 |
| 11.1 THE TESTBED CORPORA..... | 34 |
| 11.2 VIEWING FILES IN THE DIGITAL OBJECT BROWSER..... | 34 |
| 11.3 UPLOADING FILES TO THE TESTBED USING FTP..... | 35 |

| | | |
|-----------|--|-----------|
| 12 | EDITING USER DETAILS | 36 |
| 13 | EXECUTABLE PRESERVATION PLAN EXPERIMENTS..... | 37 |
| 13.1 | PLANETS WORKFLOWS AND CONFIGURATION XML FILES | 41 |
| 14 | APPENDIX A: VERSION 1.2 RELEASE NOTES | 43 |

1 Introduction

This document is a guide to the Planets Testbed version 1.2 for Experimenters. This version of the Testbed is the final version that will be released as part of the Planets project, and several key additions have been included, such as manually measurable properties, experiment rating options and property evaluation. Although this final release is still technically considered a 'beta' release the software is stable, feature-rich and fully usable by both Planets members and others who have an interest in testing preservation tools and strategies within a controlled environment.

The user guide gives an overview of the main features of the Testbed; it presents a complete walkthrough of a sample experiment and covers all of the other features contained, such as the data and service browsers and executable preservation plan experiments.

2 System Requirements

The Planets Testbed is a web-based application and it should be possible to access it using any of the mainstream web browsers such as Firefox and Internet Explorer. The following web browsers are recommended:

- Firefox Version 3.5 or higher
- Internet Explorer Version 8 or higher

Please note that due to incompatibilities with Javascript the Safari browser is not officially supported.

Your browser must have Javascript and cookies enabled in order to successfully log into the Testbed. Most browsers generally have Javascript and cookies enabled by default.

There are no other hardware or software requirements, although the speed of your internet connection will have an impact on the responsiveness of the Testbed. It is not recommended that you try to use the Testbed if using a dial-up modem, for example. Your screen resolution will also affect the usability of the Testbed. It is recommended that a resolution of at least 1024x768 is used when viewing the Testbed.

3 Requesting a User Account

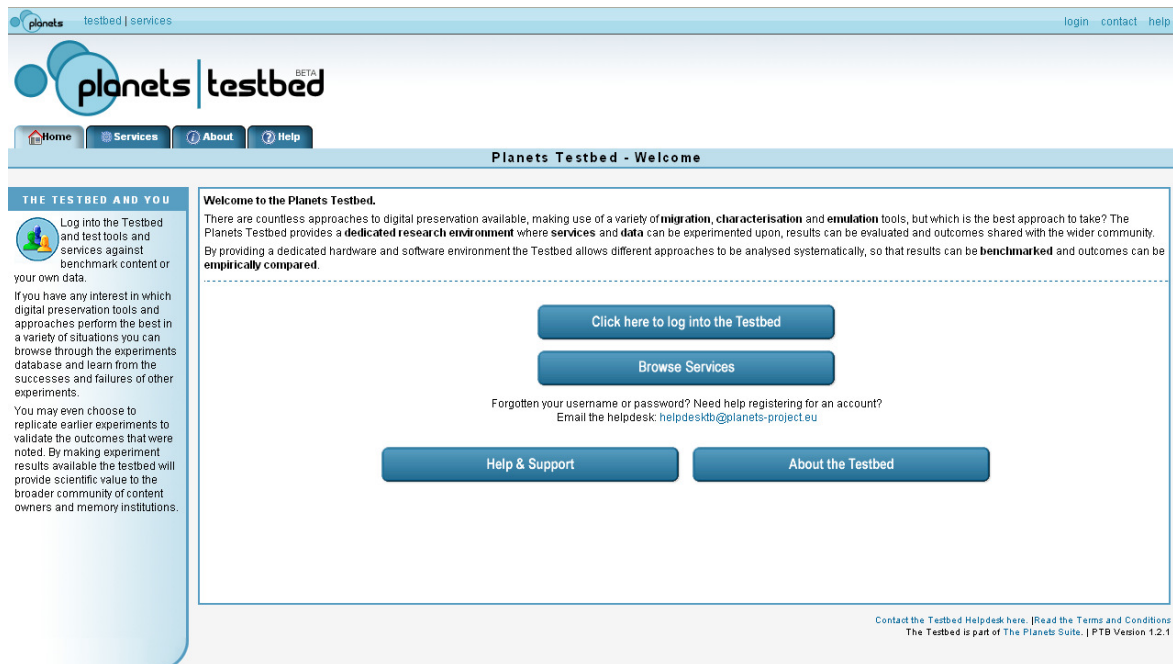
In order to access the Testbed you will need a user account. You can request a new user account by emailing the Testbed Helpdesk: helpdesktb@planets-project.eu. The helpdesk is staffed during office hours and your enquiry should be dealt with within one working day.

4 Loading the Testbed

Once you have received your Testbed user account details open your web browser and go to the following web page:

<http://testbed.planets-project.eu/testbed/>

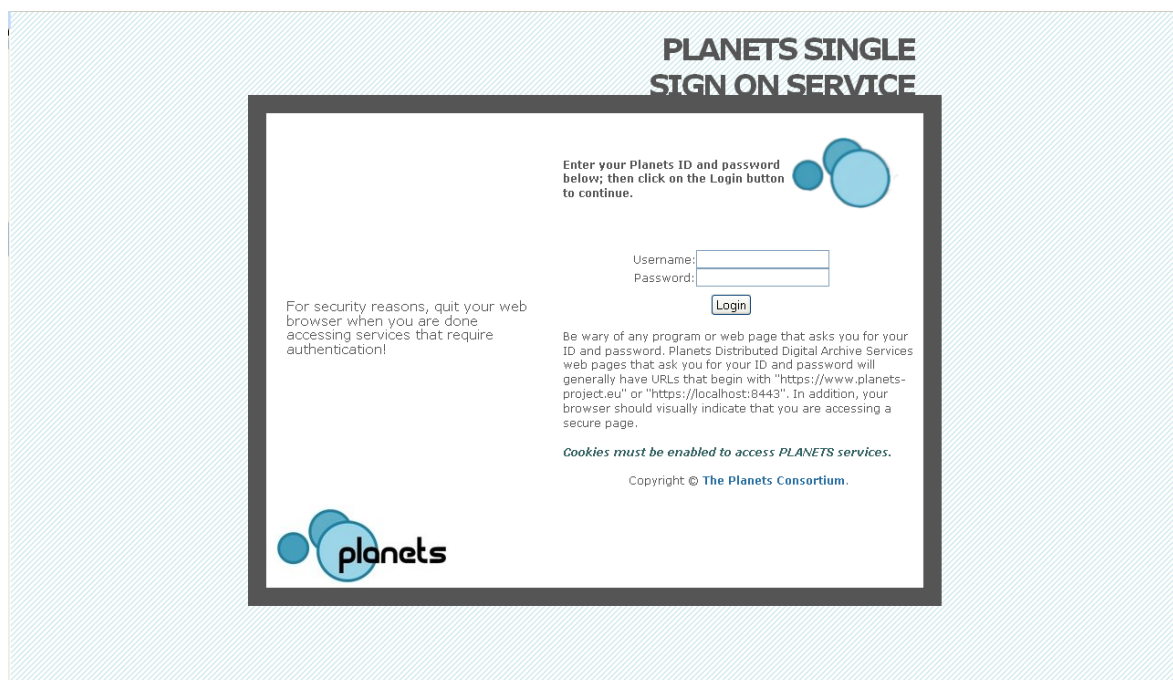
This should load a page similar to the following screenshot:



Screenshot 1: Testbed Welcome page

5 Logging in

To log into the Testbed click on the button labelled ‘**Click here to log into the Testbed**’ on the welcome page. The following page should load:



Screenshot 2: Testbed Log-in page

Enter your Testbed username and password into the appropriate boxes and click on the ‘**Login**’ button to continue.

Note: Both the username and password fields are case sensitive.

6 The Experimenter Welcome Page

If you have successfully logged in as an experimenter you will be presented with the following welcome page:

The screenshot shows the Planets Testbed welcome page. At the top left is the logo 'planets testbed BETA'. Below it is a navigation bar with tabs for Home, Experiments, Services, Digital Objects, About, and Help. The main heading is 'Planets Testbed - Welcome'. On the left, a sidebar titled 'THE TESTBED AND YOU' contains text about logging in, browsing experiments, and replicating results. The main content area is titled 'Welcome to the Planets Testbed.' and contains a paragraph about digital preservation approaches. Below this are four buttons: 'Browse Services', 'Browse Experiments', 'Browse Data', and 'Perform An Experiment'. At the bottom of this section are two buttons: 'Help & Support' and 'About the Testbed'. At the very bottom right, there is small text: 'Contact the Testbed Helpdesk here. | Read the Terms and Conditions. The Testbed is part of The Planets Suite. | PTB Version 1.2.1'.

Screenshot 3: Experimenter welcome page

The tabs across the top of the main section of the page can be found on every page within the Testbed and they enable you to access all of the main features of the Testbed. Each of these tabs will be explained in the following sections.

The large buttons in the main section of the page also provide access to the main features of the Testbed, and additionally provide some extra information about each option.

7 The Experiment Wizard

The six step experiment process can either be accessed for a new experiment or by reloading a previously saved experiment. The six stages are represented in the following diagram and this section provides a walkthrough of the six stages for a new migration experiment. Emulation experiments follow a practically identical workflow while executable preservation plan experiments are discussed in Section 13 below.

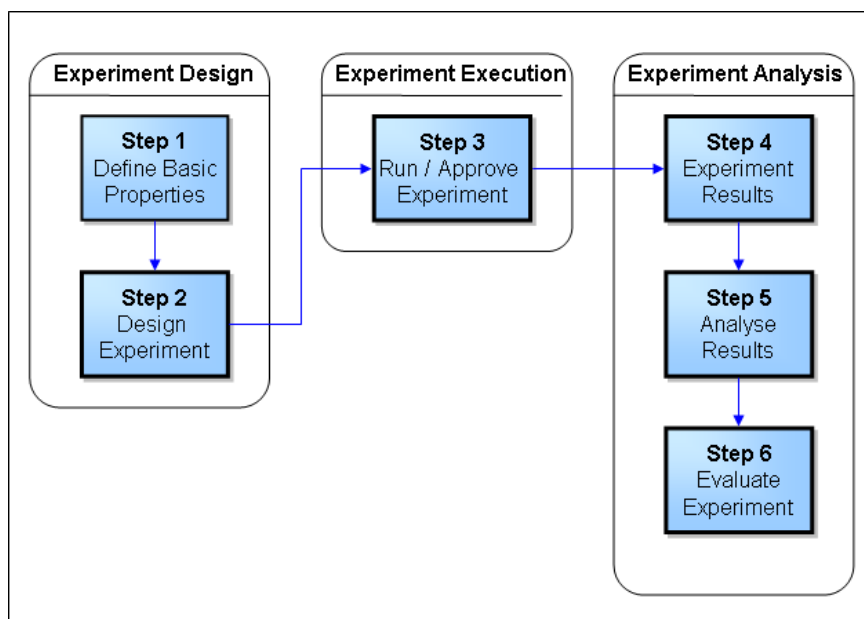


Figure 1: The Six-Step Experiment Process

7.1 Stage 1: Define Basic Properties

In order to begin a new experiment click on the 'Experiments' tab and then click on the 'New Experiment' button, which will load Stage 1 of the experiment process. This stage allows you to supply the basic properties for your experiment, such as the experiment name, information about the purpose and focus of your experiment, contact information and references, as screenshot 4 demonstrates (note that the screenshot only shows part of the form):

The screenshot shows the 'planets testbed' interface. The main content area is titled '1. Define Basic Properties' and contains the following form sections:

- General Information:**
 - Experiment Name:
 - Summary:
 - Participants:
- Contact Information:**
 - Contact Name:
 - Contact Email:
 - Contact Tel:
 - Contact Address:
- References:**
 - External Reference ID:
 - Experiment References: + Add
 - Literature References:
 - Author:
 - Title:

Screenshot 4: Stage 1 of the experiment process

Hint: To find out more information about the various input boxes move your mouse over the '?' icon beside a box. This icon appears on many of the experiment pages.

Note: Any fields marked with a red asterisk (*) are mandatory.

7.1.1 General Information

In this section you can supply a **Name** and a **Summary** for your experiment and you can specify the experimenters who are working with you on this experiment, if necessary. In order to add more experimenters to the '**Participants**' box enter a comma after your username then start typing the username of the required experimenter. All the matching usernames will be displayed in a list and you can click on one to add the experimenter, as demonstrated in the following screenshot. Add as many experimenters as required by repeating this process.

The screenshot shows a form with two main sections: 'General Information' and 'Contact Information'. In the 'General Information' section, there are three input fields: 'Experiment Name' (with 'User Manual Walkthrough Experiment'), 'Summary' (with 'This experiment has been created in order to gather the necessary screenshots for the Testbed user manual'), and 'Participants' (with 'brian, an'). A dropdown menu is open below the 'Participants' field, showing a list of usernames: 'anj', 'andy', and 'andyj'. In the 'Contact Information' section, there is one input field: 'Contact Name' (with 'Brian Aitken'). Each input field has a red asterisk (*) indicating it is mandatory and a question mark icon (?) for help.

Screenshot 5: Selecting multiple experiment participants

7.1.2 Contact Information

The fields in this section allow you to specify the contact details for your experiment. The information defaults to the contact information for the logged in user but you may replace this with other details if required, such as an organisational email address. Contact information will be visible to other Testbed users.

7.1.3 References

Three types of references may be added to this section of the form if required. The '**External Reference ID**' field may be completed if you wish to assign an ID to your experiment that will be used beyond the Testbed environment.

The '**Experiment References**' field enables you to select one or more existing Testbed experiments that have directly or indirectly influenced your current experiment. If you enter some characters into this box any experiments that contain these characters in their titles or summaries will be listed. Click on an experiment title to select it then click on the '**Add**' link to attach the experiment. Repeat this as many times as required.

References

External Reference ID:

Experiment References:

- TNA Test Jan 09 (5)
- + Add

Literature Reference:

- usability testing #11
- usability testing #12
- usability testing #13
- Test using Safari in OSX

Description:

URI:

Title:

Author:

[Add another literature reference.](#)

Screenshot 6: Adding multiple experiment references

If you wish to remove a selected experiment click on the trashcan icon beside the listed experiment.

The final type of reference that can be specified is the **Literature Reference**. You may add any number of literature references and these can point to either online or printed materials. Add more literature references by clicking on the **'Add another literature reference'** link. Literature references may be used to reference background information, further reading, externally documented research questions.

7.1.4 Further Information

The boxes in this section allow you to supply additional information about the purpose, focus and scope of your experiment and an additional box enables you to supply any further considerations that you may wish to note.

7.1.5 Required Information

Stage 1 of the experiment process contains a lot of boxes for entering or selecting information, but you don't need to fill them all in straight away. The only fields that are required are the **Experiment Name** and **Summary**, and the **Contact Name** and **Email**. You may return to Stage 1 to edit or augment the information at any point until you execute your experiment.

7.1.6 Saving and Continuing

At the foot of stage 1 there are buttons allowing you to **'save'** or **'save and continue'**. Clicking on **'save'** stores your experiment information and reloads stage 1, allowing you to make further changes. Clicking on **'save and continue'** saves your experiment information and loads the next stage in the experiment process.

Once your experiment has been saved you may load it again whenever you log into the Testbed. All your experiments are listed in the **'My Experiments'** page, which is explained in Section 8 below.

7.2 Stage 2: Design Experiment

The second stage of the experiment process is where you can specify the design of your experiment. This consists of selecting the **type of experiment** you wish to execute, choosing and configuring one or more **preservation services** that will be tested and selecting any number of

digital objects that will be passed through the selected services. Upon reaching Stage 2 the following page will load:

The screenshot shows the Planets Testbed interface. At the top, there's a header with the Planets Testbed logo and navigation links. Below that, a breadcrumb trail indicates the current page: 'Planets Testbed - 'User Manual Walkthrough Experiment v1.2' : Stage 2: Design Experiment'. The main content area is titled '2. Design Experiment' and contains a description of the stage: 'At this stage you can specify the design your experiment. This involves selecting an **experiment type** and one or more **preservation services** in the top section of the page, and selecting the **digital objects** you wish to pass through your chosen services in the lower section of the page.' Below this description, there are five experiment type options, each with a brief description: 'Migration' (Test how well a service transforms digital objects from one file format into another), 'Load Test Migration' (Transform large numbers of digital objects and focus on a tool's speed and stability), 'Characterisation' (Test how effectively a service extracts the characteristics from digital objects), 'View in Emulator' (Load digital objects into an emulated environment to test how accurately the objects are presented), and 'Execute Preservation Plan' (Perform experiments on a PLATO preservation plan). At the bottom of the main content area, there is a comments section titled 'Comments on "User Manual Walkthrough Experiment v1.2"' with a link to 'Add a new comment on this experiment'. The left sidebar contains navigation links for 'EXPERIMENT PAGES' (New Experiment, My Experiments, Browse Experiments), 'EXPERIMENT PROGRESS' (1. Define Basic Properties, 2. Design Experiment, 3. Run Experiment, 4. Experiment Results, 5. Analyse Results, 6. Evaluate Experiment), 'TESTBED FTP AREA' (you may upload data to the Testbed FTP area using the details provided during registration), and 'CONNECTION DETAILS' (Host name: ftp:testbed.planets-project.eu, Port number: 21).

Screenshot 7: Stage 2 of the experiment process

7.2.1 Experiment Types

Three experiment types are currently available in the Planets Testbed:

1. **Migration:** With this experiment type one or more digital objects can be passed through a migration service which will attempt to transform each digital object into a new format that you may specify. In addition to this you may optionally run characterisation and identification services on the input and output files after execution to compare the results.
2. **View in Emulator:** This experiment type allows you to pass one or more digital objects to an emulator, which will then open within your web browser.
3. **Execute Preservation Plan:** With this experiment type you may take an existing executable preservation plan that has been generated by the Plato tool and test the plan within the Testbed environment. See Section 13 below for more information on this particular experiment type.

Note that while a dedicated **Characterisation** experiment type is not available in this version of the Testbed it is possible to run a variety of characterisation services on experiment data during Stage 5 of a migration experiment (see section 7.5 below) and it is also possible to apply characterisation services directly to files through the digital object browser (see Section 11 below).

Although the **Load Test Migration** experiment type is also not available it is possible to configure migration experiments or executable preservation plan experiments to focus on aspects relating to load test.

7.2.2 Selecting Services

To select an experiment type, click on its icon. Once an experiment type has been selected you will be able to tailor your experiment design by means of a series of lists of options. Depending on the chosen experiment type you may be able to specify input and output formats for digital objects and select the services you would like test. More detailed information about the services can be found in the **Browse Services** tab (see Section 10 below).

The following screenshot shows the design of a migration experiment that will migrate files from JPEG to PNG using the Gimp graphics package:

The screenshot displays the '2. Design Experiment' section of a web application. At the top right, there are 'Save' and 'Save and submit for approval' buttons. Below the header, a text block explains that users can specify the design of their experiment by selecting an experiment type and preservation services. The main area is divided into two sections: 'Experiment Type' and 'Migration Experiment'.

The 'Experiment Type' section contains five buttons: 'Migration' (highlighted with a green checkmark), 'Load Test Migration', 'Characterisation', 'View in Emulator', and 'Execute Preservation Plan'. Each button has a brief description of its function.

The 'Migration Experiment' section shows a workflow diagram. It starts with a yellow box: 'For every Digital Object, migrate from input format: JPEG'. A green arrow points down to a blue 'Migrate' box. Inside this box, it says 'Pass Through This Migration Service:' followed by a dropdown menu showing 'Gimp26Migration (@testbed.planets-project.eu)' and an 'Edit Parameters' button. Below this is a 'Service Parameters' section. Another green arrow points down to a final yellow 'Result' box: 'A new Digital Object of format: PNG'.

Screenshot 8: Example design for a migration experiment

Note that when you first select the migration experiment type you will see a **warning that the workflow configuration is invalid**. Once you select a service and an input and output format this warning message will disappear.

You can also choose to **download your workflow configuration** as well. Selecting this option will present you with an XML based representation of your experiment workflow.

7.2.3 Service Parameters

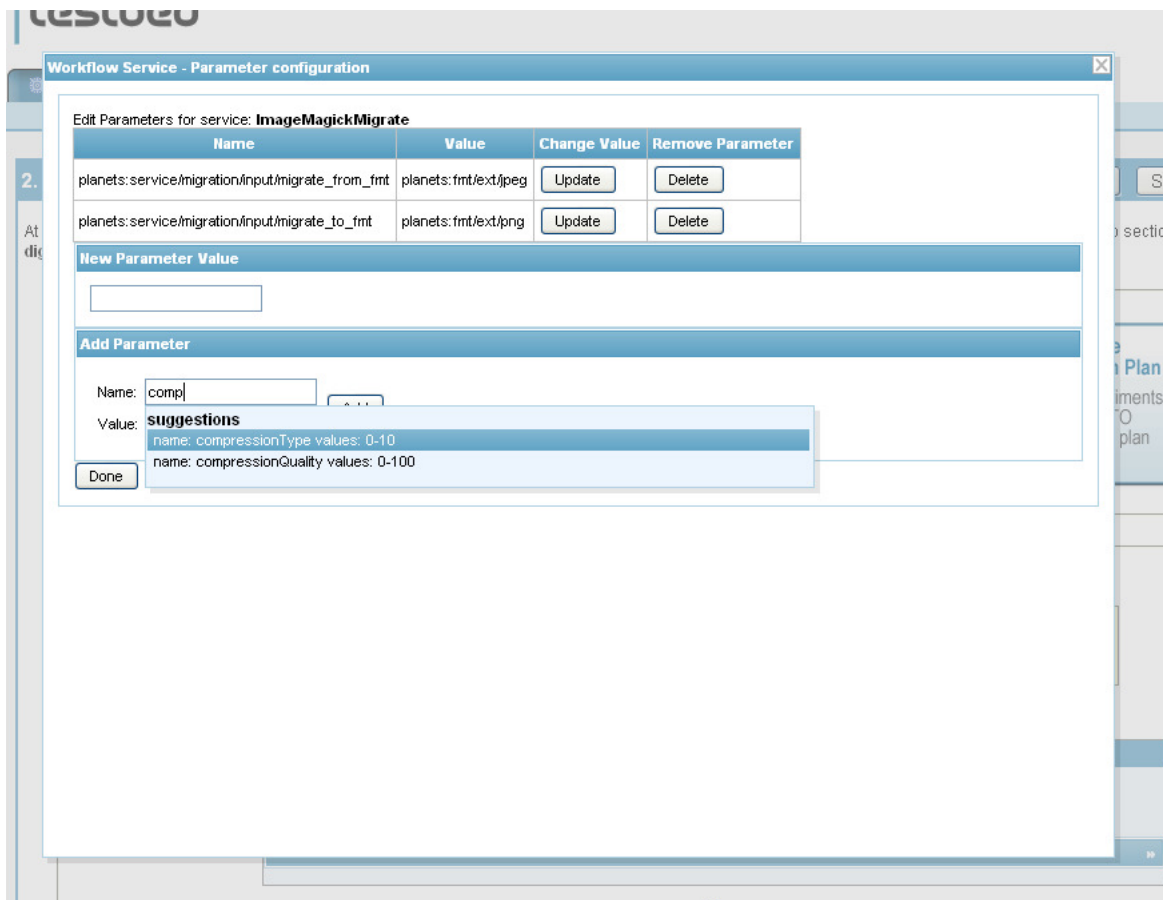
In addition to selecting a service you may also configure the service by supplying and editing service parameters. Service parameters represent a selection of configurable tool options that are available to tailor the service for your experiment. For example, if you run a migration experiment with JPEG as the output format you may wish to specify the compression level used when the tool generates the file.

To specify a parameter click on the **'Edit Parameters'** button beside your selected service, as shown in the above diagram. This will open up a pop-up containing several parameter customisation options, as the following screenshot demonstrates. Several elements are available in this pop-up and each are described in turn.

Towards the top of the pop-up is a **list of parameters** that are already specified for the service. By default this will include the input and output formats for migration services, based on your earlier selection of formats using the drop-down boxes. Note that it isn't possible to edit or delete these parameters, even though such options are presented in the current user interface.

You can add a new parameter through the **Add Parameter** section of the pop-up towards the bottom. In the current version of the Testbed you must search for a parameter to add, and this can be achieved by typing some characters into the **'Name'** box. As you type, a number of matching

suggestions will appear. This will include both the parameter name and the range of values that are accepted for the parameter. This is demonstrated in the following screenshot.



Screenshot 9: Service Parameter specification

To select a parameter simply click on a listed parameter name, which will add it to the 'Name' box. You must then enter an acceptable value into the 'Value' box. Once you have done this click on the '**Add**' button and the new parameter will be added to the list of selected parameters towards the top of the page.

You may remove a selected parameter from the list by clicking on the '**Delete**' link in the corresponding row of the selected parameters table.

If you wish to supply a **New Parameter Value** for a selected parameter, enter a valid value into the box in the 'New Parameter Value' section of the pop-up. Then click on the '**Update**' button in the corresponding row of the selected parameters table and the value you entered will replace the existing value.

Finally, to save your parameter updates, click on the '**Done**' button to close the pop-up. You may then view your selected parameters in the main page of stage 2 by clicking on the **Service Parameters** text underneath your service selection. If you need to make further updates to the parameters simply press on the '**Edit Parameters**' button again and make any necessary changes.

7.2.4 Selecting Digital Objects

In order to test the services that you have selected you need to select the digital objects that will be passed through them. You can either find digital objects in the **Data Registry** or you can upload files directly during Stage 2. To upload files directly, click on the '**Add**' button, find the required file on your computer, click on it and then click on the '**Open**' button to select it. You may repeat this process as many times as necessary, building up a list of files to upload, as the following screenshot demonstrates. Once you are ready to upload, click on the '**Upload**' button to transfer all your selected files to the Testbed server.

Specified input data:
The list of Digital Object to experiment upon.

Add Digital Objects to this Experiment

Use the buttons below to add more Digital Objects to this experiment. You can select data from the data registry (including data you've uploaded using your FTP account), or you can upload files to this experiment one at a time using the 'Upload Data' option.

Select Data from the Data Registry

Upload Data

| | |
|-------------------|------------------------|
| 100_1130.jpg | Cancel |
| 100_0868.jpg | Cancel |
| 2006_08260026.JPG | Cancel |
| | |

This multiple file uploader will not work on all browsers.
If you are having problems, you should return to the experiment designer page and add files one-by-one using the simple upload option.
[Click here to use the simple file uploader.](#)

Screenshot 10: File Upload Options

If you experience any difficulties using the standard file upload facilities you may choose to use a **simple file uploader**. To load this upload option click on the 'Click here to use the simple file uploader' link at the bottom of the 'Upload Data' section, and this will load a file browser as follows:

Upload Data

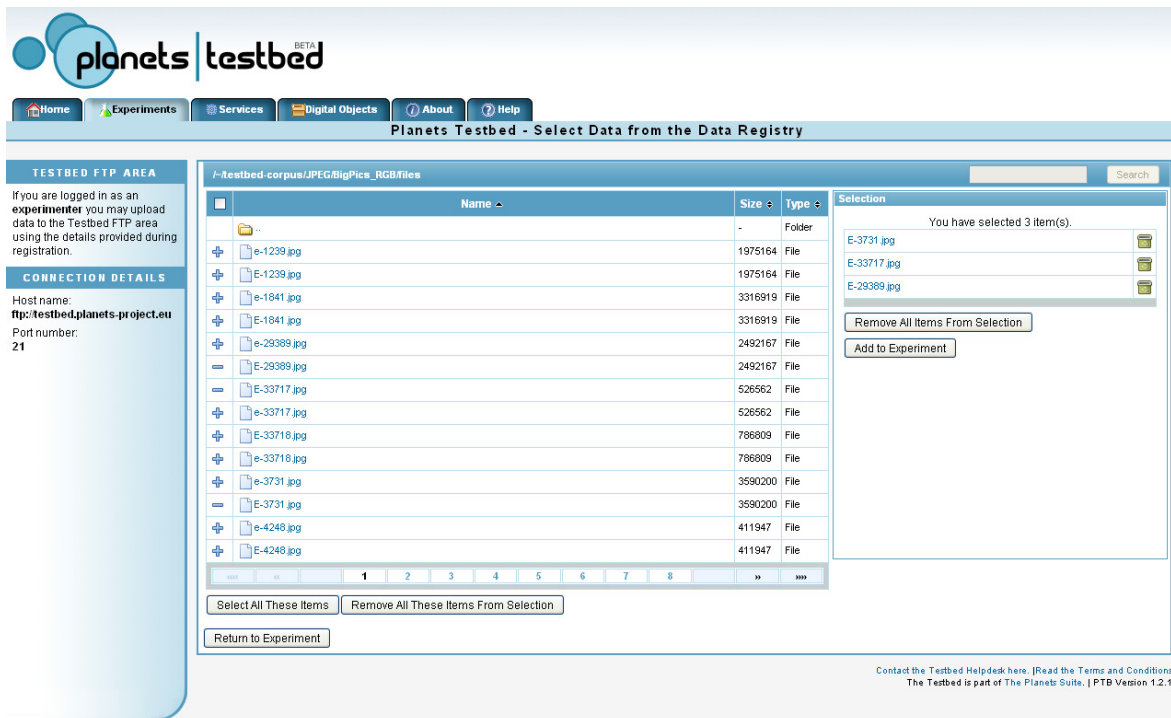
[Click here to use the advanced multiple-file uploader.](#)

Screenshot 11: Simple File Upload Facility

To attach a file using this option, click on the **Browse** button then navigate to the file you would like to upload. Once selected click on the **Open** button then click on the **Add** link to upload your chosen file.

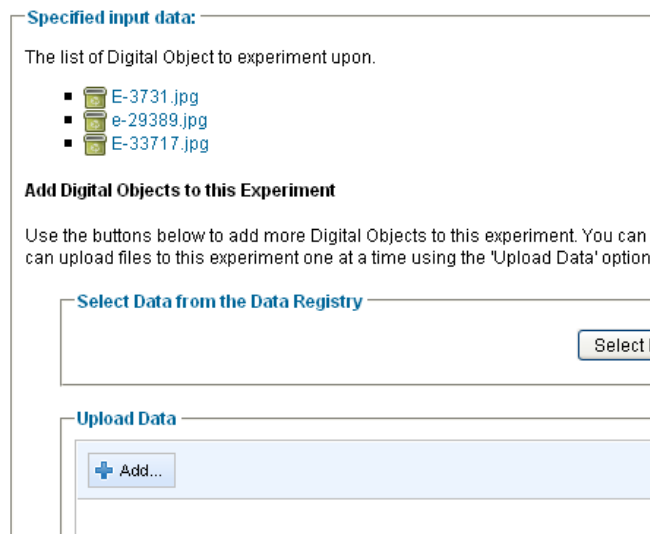
Alternatively you may add files from the **Data Registry**. To add files from the Data Registry click on the **'Select Data from the Data Registry'** button. This will load the data browser, from which you can access your **File Upload Area** (see Section 11.2 below), the **Planets Corpora** (see section 11.1 below) and other available data sources. Please see Section 11 below for a more detailed look at the functionality of the data browser.

Once you have navigated to the files you wish to add, click on the 'plus' icon beside each appropriate file to add it to your selection. You may navigate between different folders in the data browser to find the files you're interested in and once you've chosen your files click on the **'Add to Experiment'** button to attach these files to you current experiment:



Screenshot 12: Selecting digital objects from the Data Registry

Once the 'Add to Experiment' button is clicked, Stage 2 of the experiment process will reload with the selected files attached, as the following screenshot demonstrates:



Screenshot 13: Digital objects attached to the experiment

From the list of selected files you may click on a filename to open or save a file or click on the trashcan icon to remove the file from your experiment. Note that this doesn't delete the file from the Testbed, it simply removes the association to your experiment.

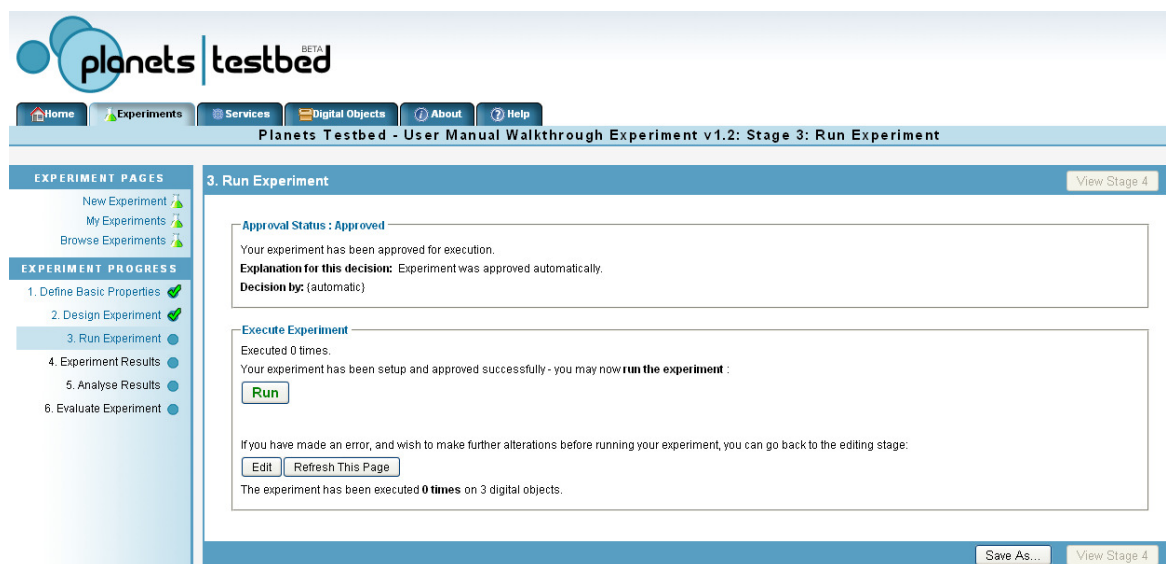
7.2.5 Saving and Continuing

Once you have selected an experiment type, chosen the required services and attached one or more digital objects you may then save your experiment and continue to the next stage in the experiment process. You may also choose to save your experiment as a new experiment if, for example, you wish to use the information you've previously entered as the basis of a slightly different experiment. In order to do this click on the 'Save As...' button.

7.3 Stage 3: Run Experiment

During Stage 3 of the experiment process the experiment workflow that you have designed can be executed. If your experiment is very complex or involves a large number of input files it may have to be **manually approved** by the Testbed administrator, in which case you will be emailed when your experiment has been scheduled for execution.

However, generally your experiment will be automatically approved and you will be able to execute it immediately. In order to begin the execution process click on the large green **'Run'** button as shown in the following screenshot:



Screenshot 14: Stage 3 of the experiment process

Once the 'Run' button is clicked your experiment workflow will be executed. At this point each of your selected input files will be passed through the services you have selected and a variety of service and server-level statistics that can be automatically measured will be logged in the system. This process may take some time, depending on the services and the size and quantity of digital objects you selected. During execution a progress bar will be displayed in the 'Execute Experiment' section of the page, giving you a rough estimate of how much longer your experiment will take to complete. A unique workflow ticket number will also be assigned to your execution to enable tracking of your experiment and for future reference.

Once execution has completed the progress bar will disappear and the text towards the bottom of the page will inform you that the experiment has been executed once. To continue with the experiment process click on the **Refresh This Page** button and then click on the **View Stage 4** button.

7.4 Stage 4: Experiment Results

This stage contains all of the information that was generated and logged during the execution of the experiment, including information about the duration of execution for each digital object, and service execution reports.

7.4.1 Overall Experiment Execution Results

The top section of Stage four presents the overall experiment results, as the following diagram demonstrates. This table contains information about each input object with one object per row.

The screenshot shows the Planets Testbed interface. At the top, there is a navigation bar with links for Home, Experiments, Services, Digital Objects, About, and Help. Below this is a breadcrumb trail: Planets Testbed - User Manual Walkthrough Experiment v1.2: Stage 4: Experiment Results. The main content area is titled '4. Experiment Results' and contains a table of execution results. The table has the following data:

| Digital Object | Execution | Execution Started | Execution Ended | Success | Report |
|----------------|-----------|--------------------|--------------------|---------|------------------------------|
| e-29389.jpg | ↓ ✓ | 5/19/10 3:04:23 PM | 5/19/10 3:04:29 PM | ✓ | View Report. |
| E-3731.jpg | ↓ ✓ | 5/19/10 3:04:29 PM | 5/19/10 3:04:36 PM | ✓ | View Report. |
| E-33717.jpg | ↓ ✓ | 5/19/10 3:04:36 PM | 5/19/10 3:04:39 PM | ✓ | View Report. |

Screenshot 15: Overall Experiment Execution Results

From the Execution Results table it is possible to open the service execution report for each digital object by clicking on the object's filename or the '**View Report**' link. More information about the execution report can be found in the following section. It is also possible to download or view the input files by clicking on the **green arrow** beside a digital object name, and information about the start and end times of execution are also displayed.

The results table includes two columns containing information about the success or failure of the experiment, labelled **Execution** and **Success**. These criteria differ in the following way:

Execution represents whether the preservation service could be successfully invoked and whether it responded to requests by the Testbed. If the service proved to be reachable and operational when a digital object was passed to it you will see a **green tick** in this column. If there is a problem invoking the service, for example if when the object was passed to the service it failed to respond, then a **red cross** will be displayed in this column instead.

The **Success** column represents whether the service managed to successfully execute its designated preservation action, for example migrating the input digital object to a new format in the case of migration services. For migration services, if an output file fails to be generated then a **red cross** will be displayed in this column. If the service does successfully return an output file then a **green tick** will be displayed in this column. Note that just because a service successfully returns an output file this does not necessarily mean that the experiment can be deemed a complete success. Further analysis of the returned output file will need to be undertaken in order to understand the quality of the output file, or if the generated output file is in the desired format or is well formed. Such analysis can be carried out in Stage 5 of the experiment process.

7.4.2 Service Execution Reports

Clicking on a digital object name or **view report** link in the table of execution results will open a pop-up containing a report of service execution for the input file in question. This report contains a complete log from the execution engine and the log returned by the service. The logs contain a lot of information relating to the service invocation and may be used to pinpoint any problems that may have arisen during execution. The 'Measurements' section also contains all of the service properties that were automatically measured and stored during execution. For more information about a particular measurement move the mouse cursor over the blue question mark icon beside the measurement name. Note that in the case of time measurements, values are given as Unix timestamps to millisecond accuracy.

The screenshot shows a web-based execution report for a file named 'e-29389.jpg'. The report is organized into several sections:

- Measurements:** A table with three columns: Stage, Measurement, and Value.

| Stage | Measurement | Value |
|---------------------|------------------------------|---------------|
| [1] migration.final | service execution start time | 1274281463030 |
| [1] migration.final | service execution end time | 1274281469658 |
- Output:** A section indicating the result type is 'PropertiesList'.
- Report Log for Input Object:** A scrollable text area containing the following log entries:

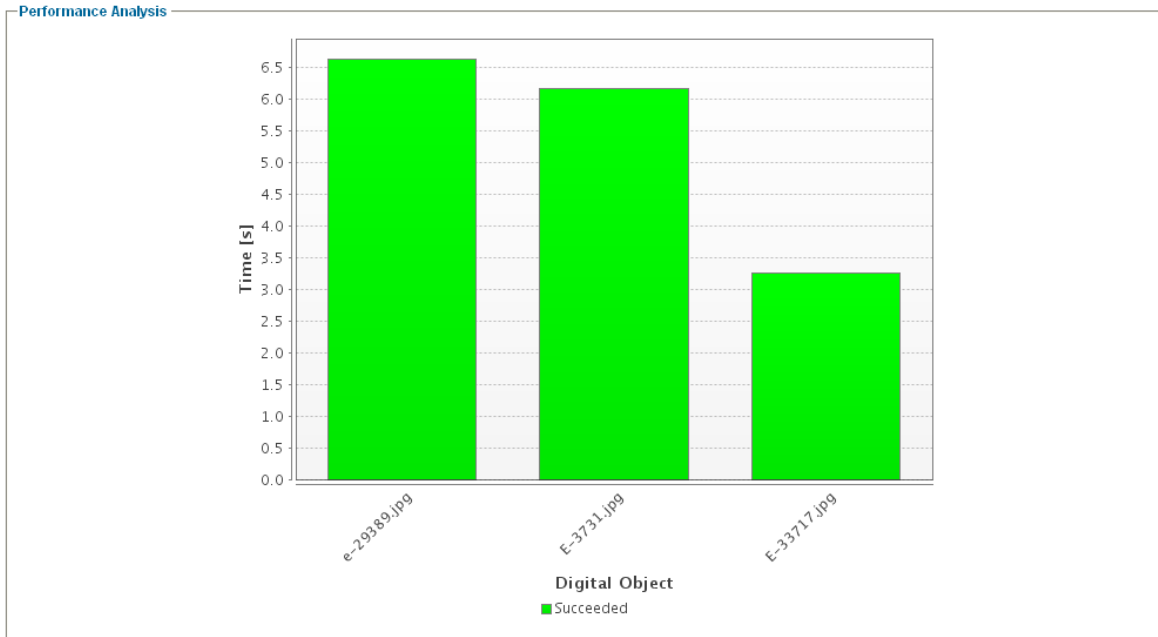

```

      working on workflow template:
      eu.planets_project.ifr.core.wee.impl.templates.TestbedMigrationExperimentTemplate_v1_22122009
      workflow-instance id: 09297351-4a7b-4437-9b5a-7af0c13edbcd
      starting migration A-B
      completed migration A-B
      successfully completed workflow for digitalObject with permanent uri:DigitalObject: id
      'planets://testbed.planets-project.eu:80/dr/testbed-corpus/JPEG/BigPics_RGB/files/e-29389.jpg', title
      'e-29389.jpg'; 1 content elements, 0 events, 0 fragments; type 'null', manifestation of 'null', checksum '',
      metadata '0'
      
```
- Overall Batch Report Log:** A section stating 'This is the workflow execution report for the whole experiment, i.e. for all files.' and providing a link to download the batch processor log.

Screenshot 16: Execution Report pop-up

7.4.3 Performance Analysis

Beneath the experiment results section there is a further section labelled 'Performance Analysis'. This section contains a graphical representation of service execution time for each of the input digital objects, as the following screenshot demonstrates:



Download Raw Results

[Click here to download data from all runs, in CSV format...](#)
[Click here to download the batch processor log...](#)

Screenshot 17: Performance Analysis

7.4.4 Downloading statistics for offline analysis

It is also possible to download statistics relating to experiment execution for further analysis offline. You may do so by clicking on the 'download data' link that appears beneath the graph, as demonstrated in the above screenshot. Statistics will be saved in a comma delimited CSV file that you can then open in a spreadsheet such as Excel. You can also download the complete batch processor log as an XML file for detailed analysis of the workflow execution process.

7.5 Stage 5: Analyse Results

In this stage of the experiment process you may analyse the experiment results. For migration experiments this involves viewing and comparing the input / output file pairings in order to better understand the success or limitations of the selected migration experiment.

When initially loaded, Stage 5 will list the input and output pairings in a table, as shown in the following screenshot:

planets testbed BETA

Home Experiments Services Digital Objects About Help

Planets Testbed - User Manual Walkthrough Experiment v1.2: Stage 5: Analyse Results

EXPERIMENT PAGES

- New Experiment
- My Experiments
- Browse Experiments

EXPERIMENT PROGRESS

1. Define Basic Properties
2. Design Experiment
3. Run Experiment
4. Experiment Results
5. Analyse Results
6. Evaluate Experiment

5. Analyse Results Proceed to Evaluation

| Original Digital Object | Migrated Digital Object | Analyse Migration |
|-------------------------|---------------------------------|------------------------|
| E-3731.jpg | E-3731.jpg.png (6262536 bytes) | Compare these objects. |
| E-33717.jpg | E-33717.jpg.png (2021871 bytes) | Compare these objects. |
| e-29389.jpg | e-29389.jpg.png (5173061 bytes) | Compare these objects. |

Download Raw Analysis Results

[Click here to download analysis data, in CSV format...](#)

Save As... Proceed to Evaluation

Screenshot 18: Stage 5

From the input / output pairings table you may open or download an input or output digital object by clicking on its filename. You may also initiate analysis procedures for a pairing by clicking on the relevant '**Compare these objects**' link for the pairing.

Beneath this table there is an option to download all of the property measurements made during Stage 5. Initially this file will be empty, but it will fill up with property measurements as you compare individual input and output pairings, as described in the following section.

7.5.1 Comparing input and output digital objects

After clicking on a 'Compare these objects' link for an input / output pairing, a page will load that presents you with a series of automated and manual analysis options for the pairing in question. The top part of this page (as shown in the following screenshot) presents some general information about both the input and the output files side by side, including the filenames and locations, file sizes, thumbnail images if applicable and options to open or save the files.

Beneath this section is a table where all the digital object properties that you measure for this input / output pairing will be listed. When you first load the compare page for a pairing this table will be empty, as shown in the screenshot below, but once measurements are made the table will be populated.



Screenshot 19: Object comparison showing summary information and direct comparison

There are two ways in which you can gather measurements of digital object properties for your input / output pairing. Firstly you may select one or more services that can automatically extract digital object property measurements, and secondly, you may choose properties to measure manually, either from a pre-defined list of properties or by creating your own.

7.5.1.1 Automatic property extraction

The available automatic property extraction, identification and comparison services are displayed in a drop-down list underneath that table of extracted properties. To run a service simply select it from the list and click on the 'Run' button. While the service executes on your input and output files the screen will be greyed-out and a 'loading' icon will be displayed and after execution each property that the selected service can measure will be loaded into the table of extracted properties, as shown in the following screenshot:

| Property | In First Object | In Second Object | Comparison | Equivalence |
|---------------|--|--|------------|------------------|
| WRITE | true | true | EQUAL | Exactly the Same |
| URL | file:/tmp/planets1233246127627113608.tmp | file:/tmp/planets4499273852088189597.tmp | DIFFERENT | Quite Different |
| URI | file:/tmp/planets1233246127627113608.tmp | file:/tmp/planets4499273852088189597.tmp | DIFFERENT | Quite Different |
| TYPE | image/jpeg | file/unknown | DIFFERENT | Quite Different |
| TIMEPATTERN | HHmmssSSS | HHmmssSSS | EQUAL | Exactly the Same |
| TIME | 104013000 | 104013000 | EQUAL | Exactly the Same |
| SEPARATOR | / | / | EQUAL | Exactly the Same |
| READ | true | true | EQUAL | Exactly the Same |
| PROCESSOR | unknown | unknown | EQUAL | Exactly the Same |
| PID | null | null | EQUAL | Exactly the Same |
| PATH | /tmp/planets1233246127627113608.tmp | /tmp/planets4499273852088189597.tmp | DIFFERENT | Quite Different |
| PARENT | /tmp | /tmp | EQUAL | Exactly the Same |
| OID | null | null | EQUAL | Exactly the Same |
| MODIFIED | 2010-05-21 10:40:13 | 2010-05-21 10:40:13 | EQUAL | Exactly the Same |
| HIDDEN | false | false | EQUAL | Exactly the Same |
| FILENAME | planets1233246127627113608.tmp | planets4499273852088189597.tmp | DIFFERENT | Quite Different |
| FILELENGTH | 2492167 | 5173061 | DIFFERENT | Quite Different |
| FILE | true | true | EQUAL | Exactly the Same |
| FID | null | null | EQUAL | Exactly the Same |
| EXTENSION | tmp | tmp | EQUAL | Exactly the Same |
| DIRECTORY | false | false | EQUAL | Exactly the Same |
| DATEPATTERN | yyyyMMdd | yyyyMMdd | EQUAL | Exactly the Same |
| DATE | 20100521 | 20100521 | EQUAL | Exactly the Same |
| CANONICALPATH | /tmp/planets1233246127627113608.tmp | /tmp/planets4499273852088189597.tmp | DIFFERENT | Quite Different |
| ABSOLUTEPATH | /tmp/planets1233246127627113608.tmp | /tmp/planets4499273852088189597.tmp | DIFFERENT | Quite Different |

Compare using Planets services...

Compare
 Characterise using New Zealand Metadata Extractor Service (@testbed.planets-project.eu) Run

Screenshot 20: Extracted properties table and the list of automated services

As the above screenshot demonstrates, extracted properties are listed in a tabular manner, with the property name in the first column, the measurement made for the input and output files in the second and third columns, and comparison options in the remaining columns. See below for more information about comparison.

Beside each measurement is a blue question mark and if you move your mouse cursor over this a pop-up will display some further information about the property in question, including the property name, the value, the agent used to measure the property and the time the property was measured. The table of properties can be reordered by clicking on a column heading and as there may be a large number of properties the table is split over multiple pages. Click on the navigation options at the bottom of the table (as shown in the above screenshot) to navigate between different sections of the results.

You may re-run a previously executed service to gather a new set of property measurements by selecting it from the list of services and clicking the 'Run' button again. Doing so will not overwrite the previously gathered values but will instead augment them. You may also choose to run any other available service and the property measurements made by a selected service will also be added to the table of properties.

7.5.1.2 Manual property extraction

Beneath the list of automated property extraction, identification and comparison services there is a further section dedicated to manual property extraction and comparison. This section includes a drop-down list of all previously defined manually measurable properties, featuring properties

identified as important by the Planets project and also any properties that other users have previously defined. It should be noted that the properties listed here are not limited based on your input and output file types so many of the properties will not be appropriate for your experiment.

To manually measure a pre-existing property for your input / output pairing select it from the list and information about the property, including its name, a description and information about whether the property was user-created or created by the Planets project will appear beneath the property list. In addition to this, two text boxes will be displayed where you can enter the measured value for your input and output files, as the following screenshot demonstrates.

The screenshot shows a window titled "Compare manually...". Inside, there is a section "Add a property measurement" with a dropdown menu for "Property" set to "image_width". Below this is a "Manage user properties..." button. Underneath, the "Selected Property:" section shows "image_width" with a description: "Identifies the width of the image.. Size from left to right.. appearance. This is a standard property (not user-created)". Two input fields are shown: "Value in first object: e-29389.jpg" with the value "2400" and "Value in second object: e-29389.jpg.png" with the value "2400". A "Store" button is at the bottom of this section. Below is an "Environment where manual properties measured" section with a text area and a "Store" button.

Screenshot 21: Manually measured property selection and measurement input

Once you have entered your measured values click on the 'Store' button and the property and measurements will be added to the table of extracted properties, as with automatically extracted properties. In addition to taking measurements manually and uploading them you may also supply some information about the environment where the measurements were made in a free-text area, also shown in the above diagram. You may supply any information you think is important to record here, such as the operating system and hardware of the computer where the measurements were made, or specific information about software, codecs and renderers.

If the property you would like to manually measure is not already listed you may create a new property. To do this click on the **Manage user properties...** text as shown in the above screenshot and a new section will load with boxes where you can supply a property name and a description, as shown below.





The screenshot shows a window titled "Manage user properties...". It contains a form with two input fields: "Name" and "Description". Below the form are two buttons: "Add" and "Remove".

Screenshot 22: Adding a new manually measured property

After supplying the information you would like to include for your new property click on the **Add** button and the property will be added to the list of manually measured properties for you and other users to select.

7.5.1.3 Removing property measurements

At the bottom of the 'Compare' page is a table listing each agent that you have used to measure properties for the input / output pairing and the time when the measurements were made. If you no longer wish to store the measurements made by a particular agent at a specific time you can remove all these measurements by clicking on the trashcan icon, as shown in the following screenshot.

| Agent | Agent Type | Date | Delete |
|--|------------|------------------|---|
| XcdlCharacteriseExtractor | SERVICE | 21.05/2010 11:26 |  |
| New Zealand Metadata Extractor Service | SERVICE | 21.05/2010 11:06 |  |
| New Zealand Metadata Extractor Service | SERVICE | 21.05/2010 10:40 |  |
| brian | USER | 21.05/2010 10:40 |  |

Screenshot 23: List of property measurement runs with option to delete

7.5.1.4 Comparing and evaluating properties

In addition to extracting property measurements you can also compare the measurements made for the input and output files. The Testbed automatically compares any supplied input and output values, whether automatically or manually measured. The 'Comparison' column as shown in Screenshot 20 above contains this information, with potential values comprising of 'Equal', 'Different' and 'Missing' depending on the measurements.

In addition to this automatic comparison of property values there is also a further column labelled 'Equivalence' which contains a drop-down list enabling you to manually evaluate the input and output property measurements. Seven different values are available in this list:

- Blank: Choose not to manually evaluate the property
- Exactly the same: property measurements for the input and output files are identical
- Quite Similar: property measurements are different but you consider this difference to be minimal
- Quite different: property measurements are different and you consider this difference to be significant
- Completely different: property measurements are totally different
- Missing data: cannot compare: Either the input or output measurement for the property hasn't been extracted and recorded.
- Comparison is not appropriate: the property is not of a sort where direct comparison of input and output measurements is applicable.

If the automated comparison for a property notes that the input and output values are equal then the list of manual evaluation options will appear in green and the 'Exactly the same' option will be automatically selected. If the input and output values are not equal then the manual evaluation options will be listed in red and an appropriate evaluation option (e.g. 'quite different' or 'missing data') will be automatically selected. In either case you can manually override the automatically chosen option.

7.6 Stage 6: Evaluate Experiment

In Stage 6 of the experiment process you can provide an overall evaluation for your experiment. This should include information based on the analysis of the service outputs that was undertaken during Stage 5. It should also ideally relate to your initial experiment aims and objectives and give future users an indication of any aspects of service performance that you found to be unexpected or unacceptable. Similarly any aspects of performance that you consider to be acceptable or to have exceeded expectations should also be recorded here, as the following screenshot demonstrates.

Screenshot 24: Stage 6 of the experiment process

Underneath the experiment report section of Stage 6 you may also provide two ratings related to your experiment. The first is an overall rating for your experiment, representing how useful you consider your experiment to be. You should bear in mind that even if a service failed this could still represent a useful and valuable experiment outcome that should be given a higher experiment rating. The second rating relates to the services used, and a high rating should be given if you consider the service to be effective and to have met or exceeded your expectations.

In addition to supplying a textual evaluation report you may also upload any number of supporting files, such as files containing external analysis, diagrams or statistics. As when selecting input files for your experiment during Stage 2, you may either upload files directly to Stage 6 using the in-page file uploader or you may upload files to the data registry and then attach them to Stage 6 using the digital object browser.

Once you have uploaded all your required evaluation materials you may then choose to finalise your experiment. This signs off your experiment and prevents any further editing. To complete your experiment in this manner simply click on the **'Finalise Experiment'** button.

7.7 Commenting on Experiments

At the bottom of every stage of the experiment process is a section where you may post comments about your experiment. Click on the **'Add new comment on this experiment'** link to submit your comment using a form similar to the one shown below:

General Information

Experiment Name: User Manual Walkthrough Experiment

Summary: This experiment has been created in order to gather the necessary screenshots for the Testbed user manual.

Participants: brian, an, andy

Contact Name: Brian Aitken

Add a new comment on this experiment (at stage Experiment Evaluation)

Title * ?

Comment * ?

Screenshot 25 Submitting a comment

Once submitted, your comment will appear on the experiment page for other users to see and reply to, as the following screenshot demonstrates:

Comments on 'User Manual Walkthrough Experiment'

This is a comment title

This is a comment

brian (30-Apr-2009 10:32:23 - Experiment Evaluation) [Edit](#) [Reply](#)

[Expand All/Collapse All](#)

[Add a new comment on this experiment](#)

Screenshot 26: Display of comments

7.8 The experiment progress pane

On the left-hand side of every page in the experiment wizard is a section that displays the six stages of the experiment process. As you complete each stage this will be marked with a green tick and once you proceed to a subsequent stage you may navigate to any previously completed stage by clicking on it within the experiment progress pane:



Screenshot 27: Experiment progress pane

8 My Experiments

You can access a list of all the experiments you have created by clicking on the 'Experiments' tab and then either clicking on the '**My Experiments**' button or clicking on the relevant link in the left-hand column. The My Experiments page displays the details for each of your experiments in a table, as the following screenshot demonstrates:

Planets Testbed BETA

Home Experiments Services Digital Objects About Help

Planets Testbed - My Experiments

EXPERIMENT PAGES
 New Experiment
 My Experiments
 Browse Experiments

LISTING OPTIONS
 No. experiments per page: 20 Set
 You have 58 experiments in the Planets Testbed.

IMPORT EXPERIMENT
 Import Experiment

Click on an experiment's name to open it. Click on a column heading to change the ordering of the table. You may also download an experiment as an XML file or request an experiment deletion.

| Experiment Name | Type | # Inputs | Start Date | Execution Date | Current Stage | Relevance | Export as XML | Request Delete |
|------------------------------------|------------------------------|----------|--------------|---------------------|-----------------------|-----------|---------------|----------------|
| Test | Migrate | 4 | Feb 12, 2010 | 2/12/10 11:46:11 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| User Manual Walkthrough Experiment | Migrate | 3 | Feb 10, 2010 | 2/10/10 3:54:26 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| User Manual Walkthrough Experiment | Migrate | 3 | Feb 10, 2010 | 2/10/10 3:54:26 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| User Manual Walkthrough Experiment | Migrate | 3 | Feb 9, 2010 | 2/9/10 3:59:30 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| graph test | Migrate | 2 | Feb 9, 2010 | 4/8/10 1:27:08 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| links test | Migrate | 6 | Feb 9, 2010 | | Experiment Setup | ★★★★★ | ↓ | 🗑️ |
| Migration test 5 | Migrate | 2 | Feb 9, 2010 | 2/9/10 10:52:26 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| Migration test 4 | Migrate | 3 | Feb 9, 2010 | 2/9/10 10:46:47 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| PP experiment test | Executable Preservation Plan | 2 | Feb 9, 2010 | 2/9/10 10:04:16 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| JPG to PNG | Migrate | 2 | Feb 9, 2010 | 2/9/10 9:27:00 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| migration test 3 (copy) | Migrate | 1 | Feb 8, 2010 | 2/8/10 4:10:15 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| User Manual Walkthrough Experiment | Migrate | 3 | Feb 8, 2010 | 2/8/10 4:07:01 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| User Manual Walkthrough Experiment | Migrate | 3 | Feb 8, 2010 | 2/8/10 3:51:55 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| User Manual Walkthrough Experiment | Migrate | 3 | Feb 8, 2010 | 2/8/10 3:50:43 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| Xena test again | Migrate | 4 | Feb 8, 2010 | 2/8/10 12:11:20 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| migration test 3 | Migrate | 1 | Feb 8, 2010 | 2/8/10 12:03:59 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| migration test 2 | Migrate | 2 | Feb 8, 2010 | 2/8/10 12:01:15 PM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| Xena OD test 2 (copy) (copy) | Migrate | 2 | Feb 8, 2010 | 2/8/10 11:54:06 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| Xena OD test 2 (copy) | Migrate | 2 | Feb 8, 2010 | 2/8/10 11:10:59 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |
| Xena OD test 2 | Migrate | 1 | Feb 8, 2010 | 2/8/10 11:01:28 AM | Experiment Evaluation | ★★★★★ | ↓ | 🗑️ |

Screenshot 28: 'My Experiments'

By clicking on a column heading you can order your experiments by that column, for example if you wish to order your experiments by execution date. If you wish to view an experiment simply click on the experiment name to jump into the experiment wizard.

From the 'My Experiments' page you may also **export your experiment as an XML file** by clicking on the green 'download' icon in the 'Export as XML' column. Doing so will save an XML representation of your experiment onto your computer. Note that this does not include the experiment input and output digital objects, which should be downloaded separately.

8.1 The 'Right click' menu

If you click the right-hand mouse button when hovering over an experiment name a menu will appear that lists the actions you may perform on your experiments, namely editing the experiment, saving the experiment as a new experiment and exporting the experiment.

8.2 Requesting an experiment deletion

From the 'My Experiments' page you can select to delete an experiment from the Testbed. If you click on the trashcan icon beside a listed experiment a 'mail' icon will appear next to the trashcan, as the following screenshot demonstrates:

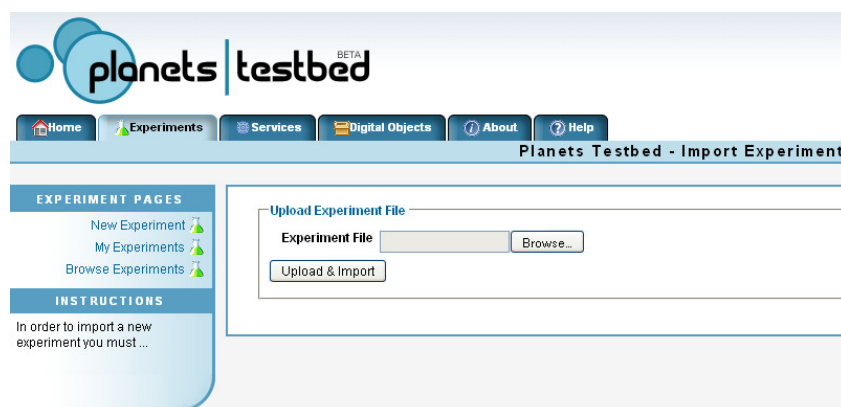


Screenshot 29: Request Deletion

Clicking on the mail icon will send a deletion request to the Testbed administrator. You will then be sent an email notification when your experiment has been deleted.

8.3 Importing an experiment

From the 'My Experiments' page you can import an experiment that has previously been downloaded as an XML file. Attach a valid experiment XML file to the import form, as show in the screenshot below, and then click on the '**Upload & Import**' button. If the file is well formed a new experiment will be created based on the information contained within.



Screenshot 30: Experiment Import

8.4 The 'Relevance' Column

In the list of experiments there is a column labelled 'Relevance' that features a set of stars, ranging from zero stars to five red stars. This column aggregates the ratings that have been given to experiments, both by the creator of the experiment through Stage 6 and by other experimenters through the read-only 'Experiment report' view of the experiment pages (see Section 9.1 below). You can order the list of experiments by this column to see which experiments have been rated the highest in the Testbed.

9 Browse Experiments

The Browse Experiments page works in a similar manner to the 'My Experiments' list but includes the experiments belonging to all Testbed experimenters. As with the 'My Experiments' page it is possible to change the order of the table by the column headings, and to click on an experiment name to view its details. You can also right click on an experiment name to select from a list of options that include saving and exporting the selected experiment, and editing experiments that you have created.

You may reuse and repeat other users' experiments by first saving them as your own through the right-click menu on the browse experiments page.

You may also perform a search for experiments by typing a word or phrase into the search box in the left-hand column of the page. Once you have performed a search you can clear the results and return to the full experiment listing by clicking on the '**Clear**' button.

Planets Testbed - Browse Experiments

Click on an experiment's name to open it. Click on a column heading to change the ordering of the table.

| Experiment Name | Type | # Inputs | Start Date | Execution Date | Current Stage | Relevance | Experimenter Name |
|---|------------------------------|----------|--------------|---------------------|-----------------------|-----------|-------------------|
| Orate - firewall issue | View in Emulator | 1 | May 20, 2010 | 5/20/10 9:44:02 AM | Experiment Evaluation | ★★★★★ | matt |
| Randy_Test_Hannover | View in Emulator | 1 | May 19, 2010 | 5/19/10 4:31:28 PM | Experiment Evaluation | ★★★★★ | dsuhodoletz |
| User Manual Walkthrough Experiment v1.2 | Migrate | 3 | May 19, 2010 | 5/19/10 3:06:41 PM | Experiment Evaluation | ★★★★★ | brian |
| User Manual Walkthrough Experiment v1.2 | Migrate | 0 | May 19, 2010 | | Experiment Setup | ★★★★★ | brian |
| preservation plan experiment test 3 | Executable Preservation Plan | 1 | May 19, 2010 | | Experiment Execution | ★★★★★ | brian |
| PP test for Brian 2 (updated)(copy) | Executable Preservation Plan | 3 | May 19, 2010 | 5/18/10 12:06:37 PM | Experiment Setup | ★★★★★ | andrew |
| preservation plan experiment test 2 | Executable Preservation Plan | 3 | May 19, 2010 | 5/19/10 11:12:11 AM | Experiment Evaluation | ★★★★★ | brian |
| mdb to siard (copy) | Migrate | 1 | May 19, 2010 | 5/19/10 10:39:00 AM | Experiment Setup | ★★★★★ | umeyer |
| another ORATE test | View in Emulator | 1 | May 19, 2010 | 5/19/10 10:43:11 AM | Experiment Evaluation | ★★★★★ | broberb |
| mdb to siard (copy) | Migrate | 1 | May 19, 2010 | 5/19/10 10:38:48 AM | Experiment Setup | ★★★★★ | umeyer |
| mdb to siard | Migrate | 1 | May 19, 2010 | 5/19/10 10:39:00 AM | Experiment Finalized | ★★★★★ | umeyer |
| parameter test | Migrate | 0 | May 19, 2010 | | Experiment Setup | ★★★★★ | brian |
| siard - external end point | Migrate | 1 | May 19, 2010 | 5/19/10 9:04:05 AM | Experiment Evaluation | ★★★★★ | matt |
| Orate - bug fixed | View in Emulator | 1 | May 19, 2010 | 5/19/10 8:57:37 AM | Experiment Evaluation | ★★★★★ | matt |
| simple test | Migrate | 3 | May 18, 2010 | 5/18/10 1:38:08 PM | Experiment Evaluation | ★★★★★ | brian |
| preservation plan experiment test | Executable Preservation Plan | 0 | May 18, 2010 | | Experiment Setup | ★★★★★ | brian |
| Orate - new PP | Executable Preservation Plan | 1 | May 18, 2010 | 5/18/10 1:48:02 PM | Experiment Evaluation | ★★★★★ | matt |
| PP test for Brian 2 (updated) | Executable Preservation Plan | 3 | May 18, 2010 | 5/18/10 12:06:37 PM | Experiment Evaluation | ★★★★★ | andrew |
| PP test for Brian 2 | Executable Preservation Plan | 0 | May 18, 2010 | | Experiment Setup | ★★★★★ | matt |
| PP test for Brian | Executable Preservation Plan | 0 | May 18, 2010 | | Experiment Setup | ★★★★★ | matt |

Screenshot 31: Browse Experiments

9.1 The Experiment Report view

Clicking on an experiment name from the 'Browse Experiments' page opens the **experiment report** page for the experiment in question. This page displays all the experiment information from each of the six stages on one single page, allowing you to easily scroll through the available information such as input and output files, selected services and properties and evaluation reports. You may also choose to give a rating to the experiment you are viewing, based on how useful and interesting you find the experiment to be. To do this, find the rating section of the experiment report, as shown in the following screenshot then click on the number of stars you would like to assign the experiment. By clicking on the **rate experiment** button your rating is then stored in the Testbed. You may change your experiment rating at any time by repeating the process, and a summary of all ratings appears in the left-hand column of the experiment report view.

Planets Testbed - Experiment Name: mdb to siard

Please rate this experiment to provide meaningful results for other users. How useful do you consider the current experiment to be:
 ⚪ ⭐ ⭐ ⭐ ⭐ ⭐

mdb to siard

Stage 1: Basic Properties

General Information

Experiment Name: mdb to siard
 Summary: mdb to siard test
 Participants: umeyer

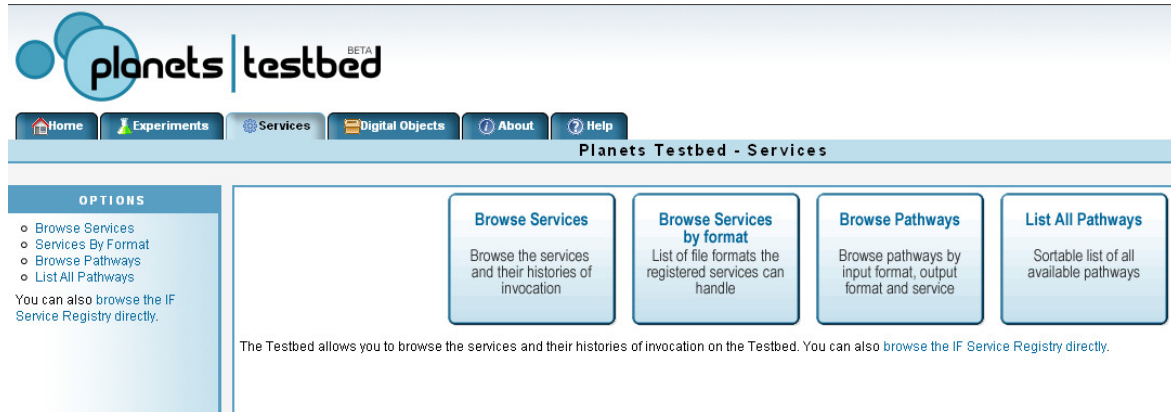
Contact Information

Contact Name: Urs Meyer
 Contact Email: Urs.Meyer@bar.admin.ch
 Contact Tel:
 Contact Address:

Screenshot 32: Experiment Reports view featuring experiment rating

10 Browse Services

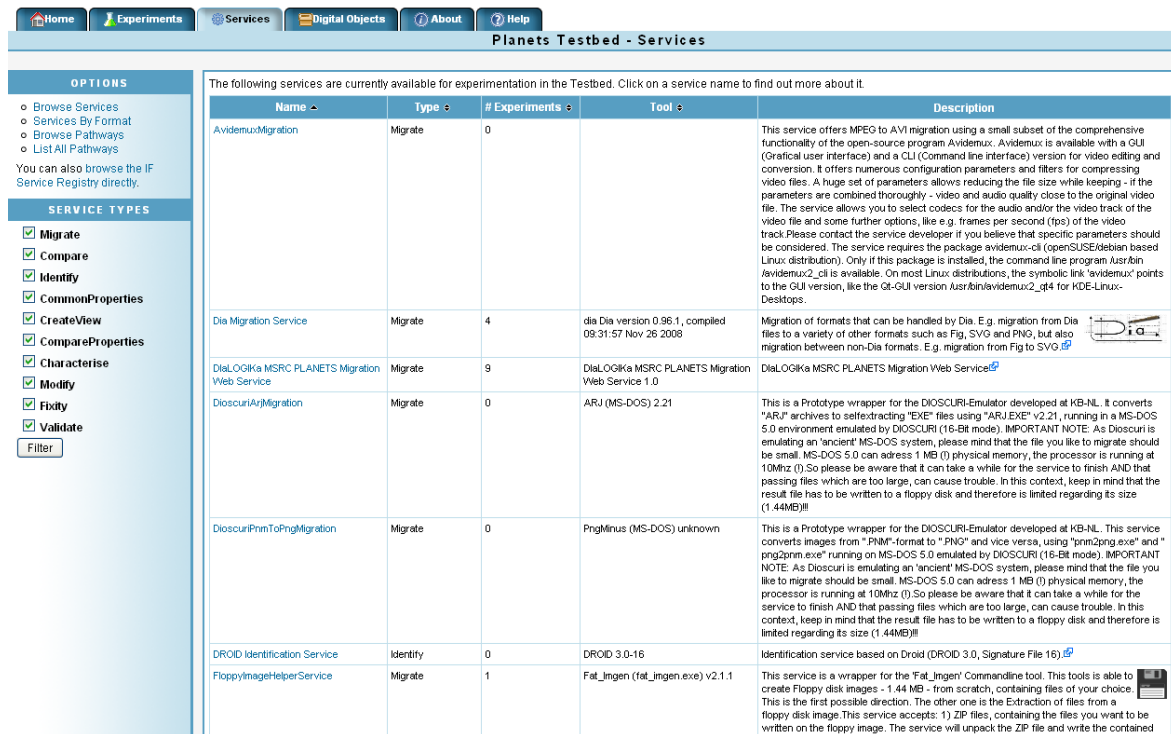
Clicking on the Browse Services tab will display the four different ways in which the services contained within the Testbed can be browsed, as the following screenshot demonstrates:



Screenshot 33: Browse Services

10.1 Service Browser

In order to display a list of all the services that are available in the Testbed click on the 'Browse Services' button. This will load a page that displays some details about every service that is available for testing within the Testbed, as the following screenshot demonstrates:



Screenshot 34: Service Browser

You can change the ordering of the information by clicking on a column heading. For example if you wish to see which service has been experimented upon the most you can click on the '#

Experiments' column. You may also limit the listed services to one or more **service types** using the checkboxes in the left-hand column. To find out more information about a service click on a service name, which will load the service information page. For example, the screenshot below shows the information page for the Dia service:

planets testbed BETA

Home Experiments Services Digital Objects About Help

Planets Testbed - Inspecting Service Dia Migration Service

OPTIONS

- Browse Services
- Services By Format
- Browse Pathways
- List All Pathways

You can also browse the IF Service Registry directly.

Service Description

Dia Migration Service

Description
Migration of formats that can be handled by Dia. E.g. migration from Dia files to a variety of other formats such as Fig, SVG and PNG, but also migration between non-Dia formats. E.g. migration from Fig to SVG.

Further information
For further information about this service, you can follow this link.

Type
Migrate

Endpoint
@testbed.planets-project.eu

Active
true

Used
true

Author
"Thomas Skou Hansen <tsh@statsbibloteket.dk>"

Class name
eu.planets_project.services.migration.dia.impl.DiaMigrationService

Input Formats
FIG
Dia Graphics Format

Output Formats
Scalable Vector Graphics 1.0
Dia Graphics Format
Portable Network Graphics 1.2

Instructions
Install Dia version 0.96.1 on the system providing this dia migration service and make sure that the run-time configuration (the pserv-pa-dia.properties file) for is properly configured to use this version of dia.

Service Provider
HATI

Version
1.00

Identifier
-5d63eed75f0c4a8a3442749412b12a66

Testbed Service Instance Identifier
Hashcode of service description: -334381452

Migration Matrix

| To | From | From SVG 1.0 | From PNG 1.2 | From FIG | From DIA |
|----|---------|--------------|--------------|----------|----------|
| To | SVG 1.0 | ✗ | ✗ | ✗ | ✓ |
| To | PNG 1.2 | ✗ | ✗ | ✗ | ✓ |
| To | FIG | ✗ | ✗ | ✗ | ✗ |
| To | DIA | ✗ | ✗ | ✓ | ✗ |

In The Testbed

Experiments

Dia Migration Service has been used in 4 experiment(s).

| Name | Type | User | Inputs | Runs |
|--|---------|----------|--------|------|
| Dia | Migrate | matt | 1 | 1 |
| Dia want to? | Migrate | matt | 1 | 1 |
| Just curiously poking around... | Migrate | tshansen | 2 | 1 |
| Just curiously poking around... part II - odd things happened. | Migrate | tshansen | 2 | 1 |

Versions

| Name | Endpoint | Version | Active? | Used? | Result Rate | Average Time [s] | Min Time [s] | Max Time [s] | Throughput [KB/s] |
|-----------------------|-----------------------------|---------|---------|-------|-------------|------------------|--------------|--------------|-------------------|
| Dia Migration Service | @testbed.planets-project.eu | 1.00 | true | true | 1/1 | 3.158 | 3.158 | 3.158 | 0.7938 |
| Dia Migration Service | @testbed.planets-project.eu | 1.00 | false | true | 5/5 | 2 | 1 | 4 | 7.42812 |

Screenshot 35: Service Information

The service information page contains detailed information about the service plus a list of all of the experiments that have made use of the service. If different versions of the service have been made available within the Testbed then information about each version will also be published on this page. If any experiments have been conducted using the service these will also be listed, allowing you to access the experiment information. In addition to these options there is also a 'Migration Matrix' for migration services that provides a graphical representation of the different input and output formats that the service can deal with.

Screenshot 36: Service information showing the migration matrix, experiments and service versions

10.2 Pathway Browser

In addition to the service browser, it is possible to navigate through the available migration services using the pathway browser. Click on the **'Browse Pathways'** button from the main browse services page to open the pathway browser. The pathway browser allows you to select a migration service, an input format and/or an output format in order to see which options are available for your selection.

Select an input format, migration service or output format to see what pathway options are available within the Testbed. For example, click on an input format to find out which services accept it, or click on a service to find out what formats it is capable of handling.
Hint: Once you've selected an option you can deselect it by clicking on it again.

| Input Format | Migration Service | Output Format |
|--|---|---|
| <input type="checkbox"/> AIW | <input type="checkbox"/> SanselanMigrate | <input type="checkbox"/> ART |
| <input type="checkbox"/> ARJ | <input type="checkbox"/> InkscapeMigration | <input type="checkbox"/> AVI |
| <input type="checkbox"/> ART | <input type="checkbox"/> J2000 Migration Service | <input type="checkbox"/> AVS |
| <input type="checkbox"/> AVI | <input type="checkbox"/> XenaOOMigration | <input type="checkbox"/> Acrobat PDF 1.4 - Portable Document Format 1.4 |
| <input type="checkbox"/> AVS | <input type="checkbox"/> ImageMagickMigrate | <input type="checkbox"/> Acrobat PDF/A - Portable Document Format 1 |
| <input type="checkbox"/> Acrobat PDF 1.0 - Portable Document Format 1.0 | <input type="checkbox"/> FloppyImageHelperService | <input type="checkbox"/> BMP |
| <input type="checkbox"/> Acrobat PDF 1.1 - Portable Document Format 1.1 | <input type="checkbox"/> PdfBoxMigration | <input type="checkbox"/> CII |
| <input type="checkbox"/> Acrobat PDF 1.2 - Portable Document Format 1.2 | <input type="checkbox"/> DiaLOGiKa MSRC PLAIETS Migration Web Service | <input type="checkbox"/> CIP |
| <input type="checkbox"/> Acrobat PDF 1.3 - Portable Document Format 1.3 | <input type="checkbox"/> Im4JavalmagickMigrate | <input type="checkbox"/> CLIP |
| <input type="checkbox"/> Acrobat PDF 1.4 - Portable Document Format 1.4 | <input type="checkbox"/> XcdMigrateExtractor | <input type="checkbox"/> CMYK |
| <input type="checkbox"/> Acrobat PDF 1.5 - Portable Document Format 1.5 | <input type="checkbox"/> JavalmagelOMigrate | <input type="checkbox"/> CUR |
| <input type="checkbox"/> Acrobat PDF 1.6 - Portable Document Format 1.6 | <input type="checkbox"/> JTidy | <input type="checkbox"/> DOCX |
| <input type="checkbox"/> Acrobat PDF/A - Portable Document Format 1 | <input type="checkbox"/> Jasper19Migration | <input type="checkbox"/> DPX |
| <input type="checkbox"/> Acrobat PDF/X - Portable Document Format - Exchange 1:1999 | <input type="checkbox"/> DioscuriPnmToPngMigration | <input type="checkbox"/> EPS |
| <input type="checkbox"/> Acrobat PDF/X - Portable Document Format - Exchange 1:2001 | <input type="checkbox"/> Gimp26Migration | <input type="checkbox"/> EPT |
| <input type="checkbox"/> Acrobat PDF/X - Portable Document Format - Exchange 1a:2001 | <input type="checkbox"/> OpenJpegMigration | <input type="checkbox"/> EXE |

Screenshot 37: Pathway Browser with no options selected

If you select an input format, migration service or output format within the pathway browser the listed items will automatically reload to show you which options are available for your selection. For example, if you select PCX as an input format the browser will only display the migration services that can handle PCX files as an input format. The output format column will also be restricted to only those formats that the migration services can convert PCX files into, as the following screenshot demonstrates:

| Input Format | Migration Service | Output Format |
|---|--|-------------------------------|
| <input checked="" type="checkbox"/> PCX | <input type="checkbox"/> ImageMagickMigrate @E | <input type="checkbox"/> ART |
| | <input type="checkbox"/> Im4JavImageMagickMigrate @E | <input type="checkbox"/> AVS |
| | | <input type="checkbox"/> BMP |
| | | <input type="checkbox"/> CII |
| | | <input type="checkbox"/> CIP |
| | | <input type="checkbox"/> CLIP |
| | | <input type="checkbox"/> CMYK |
| | | <input type="checkbox"/> CUR |
| | | <input type="checkbox"/> DPX |
| | | <input type="checkbox"/> EPT |
| | | <input type="checkbox"/> EXR |
| | | <input type="checkbox"/> FAX |
| | | <input type="checkbox"/> FITS |
| | | <input type="checkbox"/> FTS |
| | | <input type="checkbox"/> GIF |
| | | <input type="checkbox"/> GRAY |

Screenshot 38: Pathway Browser with PCX selected as input format

10.3 Services by Format

It is also possible to view a list of formats that are accepted by each registered service. This tabular based page displays all available formats together with their file extensions, and displays which services accept each format as input or as output. This page is useful if you have files of a known type and you would like direct access to the services that can handle the type. As with the more general Browse Services page, it is possible to limit the list to one or more service types.

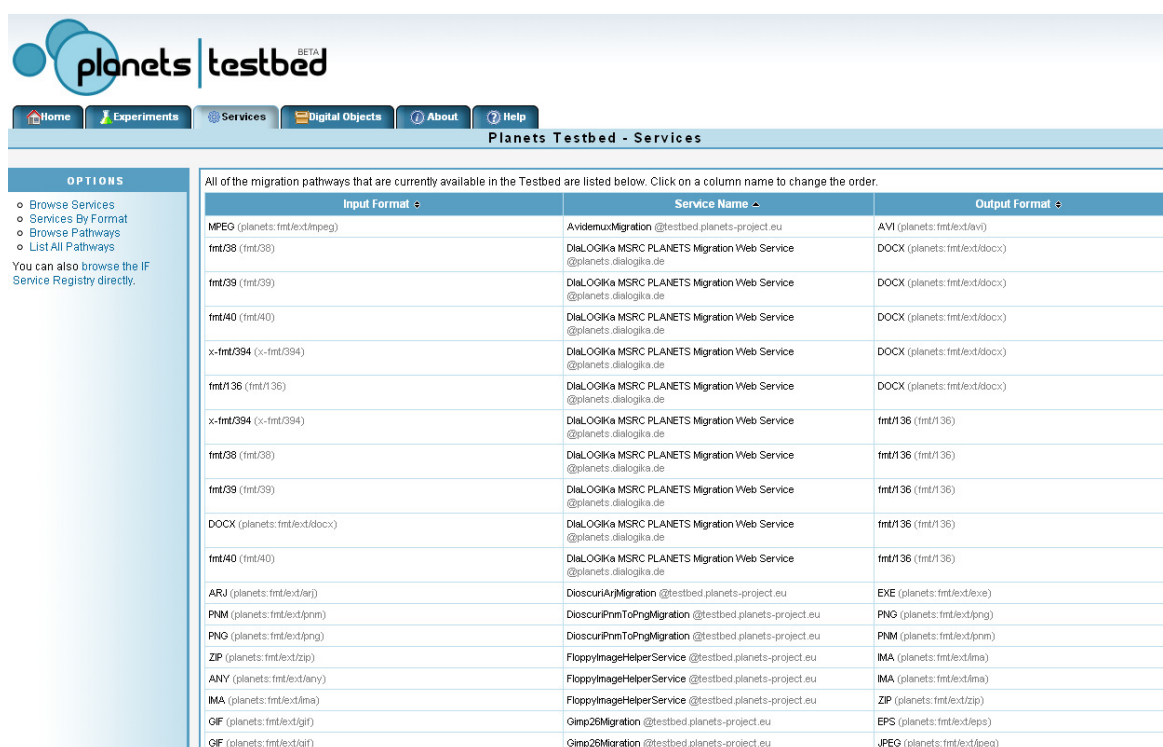
The screenshot shows the Planets Testbed Services page. The header includes the Planets Testbed logo and navigation links for Home, Experiments, Services, Digital Objects, About, and Help. The main content area is titled "Planets Testbed - Services" and contains a table of services. On the left, there are "OPTIONS" and "SERVICE TYPES" sections. The table lists various formats, their extensions, and the services that accept them as input or output.

| Format | Extensions | As Input | As Output |
|--|------------|--|---|
| 7-bit ANSI Text | [ans] | JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | |
| 7-bit ASCII Text | [asc] | JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | |
| 8-bit ANSI Text | [ans] | JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | |
| 8-bit ASCII Text | [asc] | JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | |
| Acrobat PDF 1.0 - Portable Document Format 1.0 | [pdf] | PdfBoxMigration (Migrate) New Zealand Metadata Extractor Service (Characterise) JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | |
| Acrobat PDF 1.1 - Portable Document Format 1.1 | [pdf] | PdfBoxMigration (Migrate) New Zealand Metadata Extractor Service (Characterise) JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | |
| Acrobat PDF 1.2 - Portable Document Format 1.2 | [pdf] | PdfBoxMigration (Migrate) New Zealand Metadata Extractor Service (Characterise) JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | ff (Migrate) |
| Acrobat PDF 1.3 - Portable Document Format 1.3 | [pdf] | PdfBoxMigration (Migrate) New Zealand Metadata Extractor Service (Characterise) JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | ff (Migrate) |
| Acrobat PDF 1.4 - Portable Document Format 1.4 | [pdf] | PdfBoxMigration (Migrate) New Zealand Metadata Extractor Service (Characterise) JHOVE Validation Service (Validate) JHOVE Identification Service (Identify) | ff (Migrate) XenaOOMigration (Migrate) |
| Acrobat PDF 1.5 - Portable Document Format 1.5 | [pdf] | PdfBoxMigration (Migrate) New Zealand Metadata Extractor Service | |

Screenshot 39: Services by Format

10.4 List all pathways

In addition to the above browse options you can also browse the complete list of available migration pathways by clicking on the 'List All Pathways' button on the browse services page. This lists every single combination of input format, migration service and output format that is possible use as the basis for a migration experiment for the services currently available within the Testbed. The list is presented in a page comparable to the following screenshot:



The screenshot shows the 'Planets Testbed - Services' page. On the left, there is an 'OPTIONS' sidebar with links for 'Browse Services', 'Services By Format', 'Browse Pathways', and 'List All Pathways'. The main content area displays a table of migration pathways. The table has three columns: 'Input Format', 'Service Name', and 'Output Format'. The table lists various input formats (e.g., MPEG, ffmt/38, ffmt/39, ffmt/40, x-ffmt/394, ffmt/136, x-ffmt/394, ffmt/38, ffmt/39, DOCC, ffmt/40, ARJ, PNM, PNG, ZIP, ANY, IMA, GIF) and their corresponding services (e.g., AvidecoMigration, Dial_OGika MSRC PLANETS Migration Web Service, DioscuriArjMigration, DioscuriPnmToPngMigration, DioscuriPnmToPngMigration, FloppyImageHelperService, FloppyImageHelperService, FloppyImageHelperService, Gimp28Migration, Gimp28Migration) and output formats (e.g., AVI, DOCC, DOCC, DOCC, DOCC, ffmt/136, ffmt/136, ffmt/136, ffmt/136, EYE, PNG, PNM, IMA, IMA, ZIP, EPS, JPEG).

| Input Format | Service Name | Output Format |
|-----------------------------|---|-----------------------------|
| MPEG (planets:fmt/xtl/mpeg) | AvidecoMigration @testbed.planets-project.eu | AVI (planets:fmt/xtl/avi) |
| ffmt/38 (fmt/38) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | DOCC (planets:fmt/xtl/docx) |
| ffmt/39 (fmt/39) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | DOCC (planets:fmt/xtl/docx) |
| ffmt/40 (fmt/40) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | DOCC (planets:fmt/xtl/docx) |
| x-ffmt/394 (x-ffmt/394) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | DOCC (planets:fmt/xtl/docx) |
| ffmt/136 (fmt/136) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | DOCC (planets:fmt/xtl/docx) |
| x-ffmt/394 (x-ffmt/394) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | ffmt/136 (fmt/136) |
| ffmt/38 (fmt/38) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | ffmt/136 (fmt/136) |
| ffmt/39 (fmt/39) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | ffmt/136 (fmt/136) |
| DOCC (planets:fmt/xtl/docx) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | ffmt/136 (fmt/136) |
| ffmt/40 (fmt/40) | Dial_OGika MSRC PLANETS Migration Web Service @planets.dialogika.de | ffmt/136 (fmt/136) |
| ARJ (planets:fmt/xtl/arj) | DioscuriArjMigration @testbed.planets-project.eu | EYE (planets:fmt/xtl/eye) |
| PNM (planets:fmt/xtl/pnm) | DioscuriPnmToPngMigration @testbed.planets-project.eu | PNG (planets:fmt/xtl/png) |
| PNG (planets:fmt/xtl/png) | DioscuriPnmToPngMigration @testbed.planets-project.eu | PNM (planets:fmt/xtl/pnm) |
| ZIP (planets:fmt/xtl/zip) | FloppyImageHelperService @testbed.planets-project.eu | IMA (planets:fmt/xtl/ima) |
| ANY (planets:fmt/xtl/any) | FloppyImageHelperService @testbed.planets-project.eu | IMA (planets:fmt/xtl/ima) |
| IMA (planets:fmt/xtl/ima) | FloppyImageHelperService @testbed.planets-project.eu | ZIP (planets:fmt/xtl/zip) |
| GIF (planets:fmt/xtl/gif) | Gimp28Migration @testbed.planets-project.eu | EPS (planets:fmt/xtl/eps) |
| GIF (planets:fmt/xtl/gif) | Gimp28Migration @testbed.planets-project.eu | JPEG (planets:fmt/xtl/jpeg) |

Screenshot 40: List all pathways

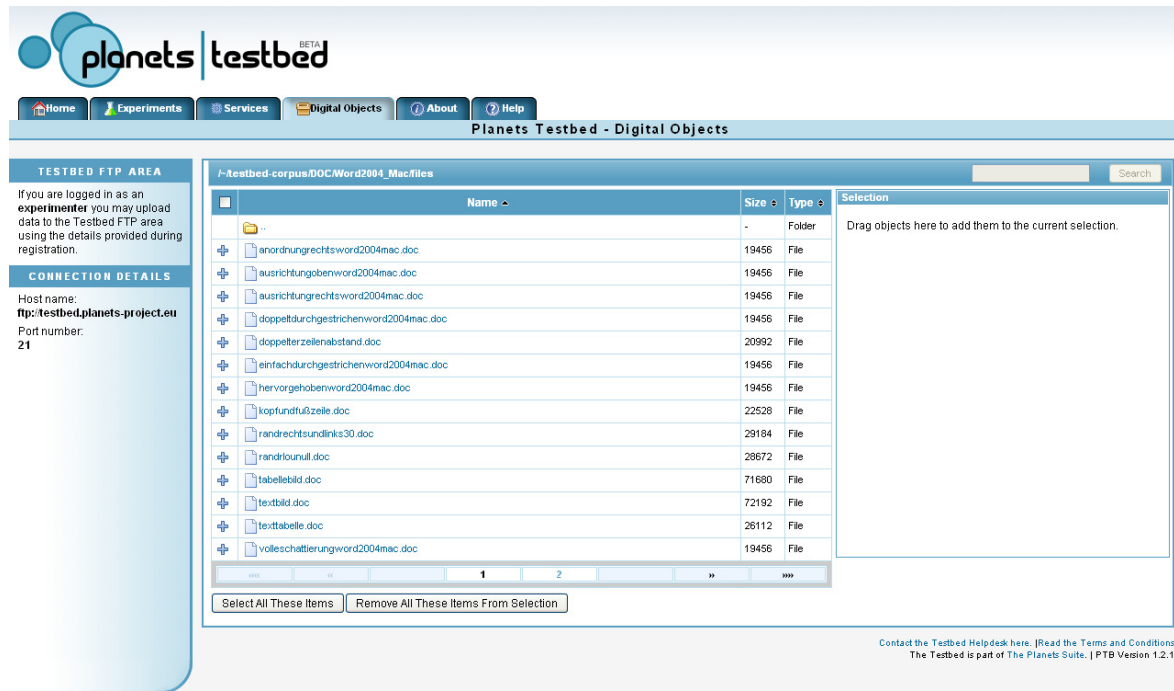
11 Digital Objects Browser

By clicking on the 'Digital Objects' tab you can view all of the data that is contained in the Testbed. This page provides a single interface for browsing a variety of data sources, including:

- Data contained in your own Testbed upload area (located in the **testbed-ftp** directory)
- Data that have been uploaded by all other experimenters (also located in the **testbed-ftp** directory)
- The Planets corpora of test files (located in the **testbed-corpora** directory)
- Input and output data for experiments (located in the **experiment-files** directory)
- Other data sources that have been registered with the Testbed

You can navigate through the files and folders of the Testbed data registry by clicking on folder names. To return to a higher level in the directory structure you can click on the '..' folder at the top of the directory listing. Alternatively you can click on a section of the directory address bar that is displayed towards the top of the main page to jump to a specific point in the directory hierarchy.

Note that if a directory contains a lot of files these may be split over multiple pages which you can access using the browse options at the bottom of the digital object browser. See the following screenshot for an example of these options:



Screenshot 41: Digital Objects Browser

11.1 The Testbed Corpora

Part of the work undertaken by the Testbed has been to gather a number of corpora of annotated digital objects that can be used for test purposes. These files are free for all experimenters to use within the Testbed, they cover a broad range of file types and they include a variety of edge-case files as well as more standard examples of file formats.

The corpora can be browsed through the **testbed-corpora** section of the digital objects browser and this contains a selection of folders labelled with a particular file type, e.g. 'DOC'. Within such a folder there may be any number of folders representing particular variations of the file type (e.g. Word 2004 Mac).

Within these folders you will generally find two sub-folders, one labelled '**docs**', the other labelled '**files**'. If you navigate to the 'files' folder you will see a list of the files contained in this section of the corpora. If you navigate to the 'docs' folder you will see a list of files with identical filenames to the corpora files, but with the file extension '**.xcdl**'. This file contains properties of the file that have already been documented using the XML based Extensible Characterisation Definition Language.

Within each corpora folder, alongside the 'docs' and 'files' directories, you will generally see a file named '**source.txt**'. This file contains information about the sources of the files contained in the corpus and any restrictions that may be imposed on re-use outside of the Testbed. You should read this file before you use files from a corpus.

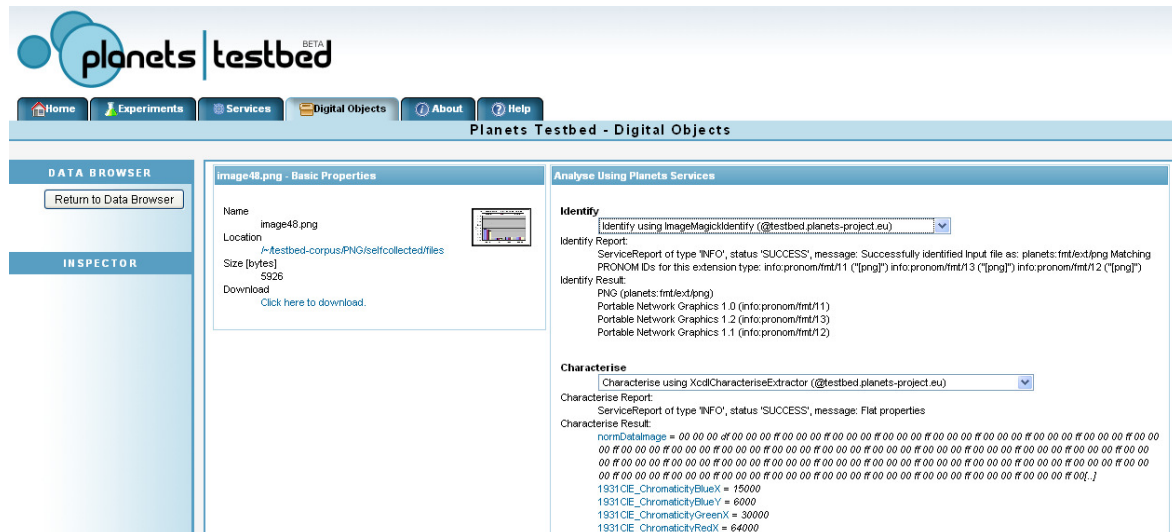
If there are any files you think should be represented in the Testbed Corpora please contact the helpdesk (helpdesktb@planets-project.eu) and share your suggestions.

11.2 Viewing Files in the Digital Object Browser

If you click on the filename of a file in the digital object browser a page will load that provides you with some file-specific options, as demonstrated in the screenshot below. This page presents

some basic properties about the selected file, including its name, location and size, together with a thumbnail image if applicable and the option of downloading the file.

Through this page it is also possible to run a number of services on the file in question. For example you may choose to run an identification or characterisation service on the file, as demonstrated in the following screenshot.



Screenshot 42: The File Inspector

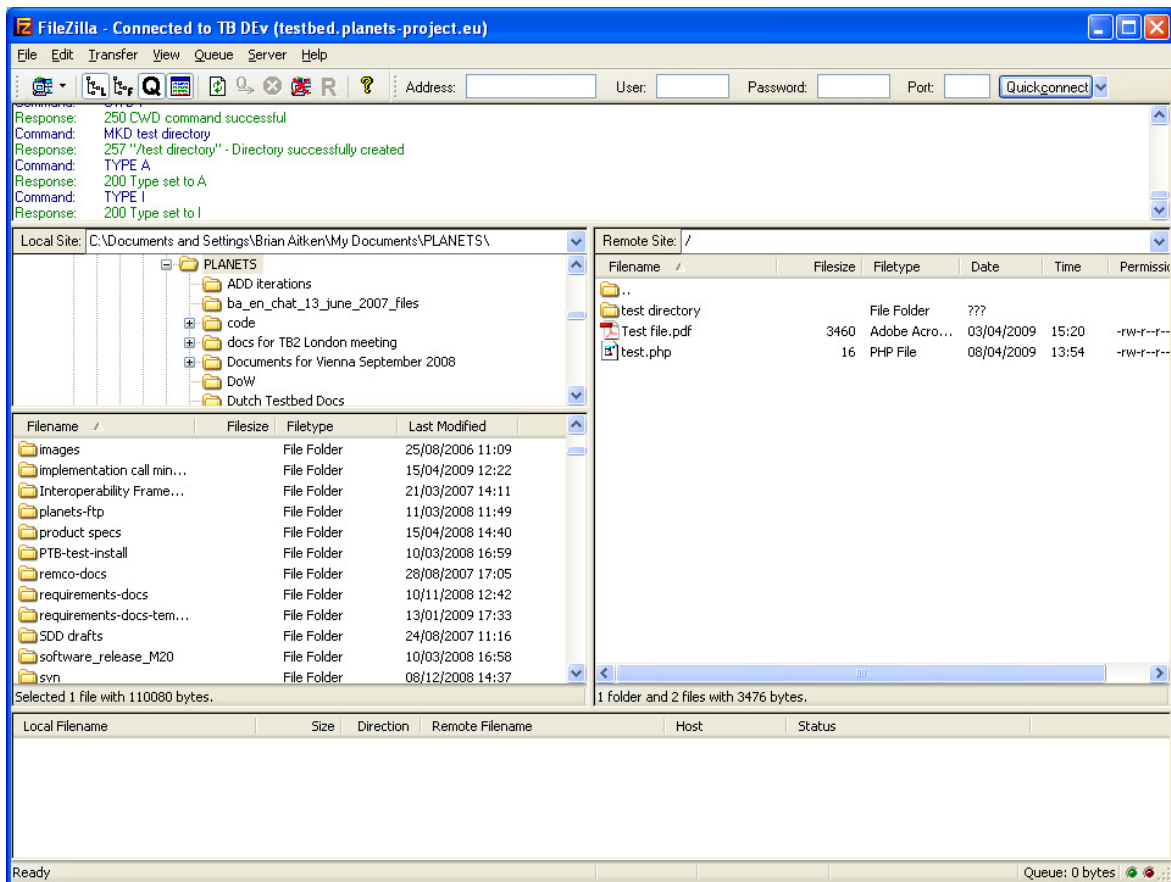
11.3 Uploading files to the Testbed using FTP

As a Testbed experimenter you may upload any number of files for experimentation. Files can be uploaded to the Testbed server using an FTP client such as Filezilla (<http://filezilla-project.org/>). When you receive your Testbed registration details you will also be given a username and a password for FTP file upload. If you have any questions regarding file upload please contact the Testbed Helpdesk at helpdesk@planets-project.eu.

You can connect to the Testbed FTP area using the following details:

- **Host Name:** <ftp://testbed.planets-project.eu>
- **Port Number:** 21

Once connected using your FTP client you should be able view your file upload area as the following screenshot demonstrates:



Screenshot 43: Using an FTP client to upload data to the Testbed

You may create subdirectories within your Testbed file upload area and upload any number of files. Once uploaded, all files and directories are automatically viewable from the Digital Objects tab within the Testbed. It should be noted that the files you upload will be viewable to all other Testbed users and you should ensure that there are no copyright or licensing restrictions on any of the files you upload.

12 Editing User Details

If you wish to update any of your user details, click on your username, which is displayed towards the right of the Planets menu bar, which runs across the top of every Testbed page. This will load a page similar to the one below:

planets testbed | services brian [logout]

Editing User brian's Profile

Or click [here](#) to return to View Users page.

User Profile

User Details

Username *

First Name *

Last Name *

Email *

Phone Number

Website

Password Details

Password *

Confirm *

Hint

Address Details

First Line

City

Province

Postal Code

Country

Roles

user
testbed.reader
testbed.experimenter

Screenshot 44: Edit user details

Once you have made the required changes click on the 'testbed' link towards the left of the Planets menu bar at the top of the page to return to the main Testbed interface.

Note: If you change your password this will not update the password that is used when uploading files via FTP. If you wish to change your FTP password please contact the Testbed Helpdesk at helpdesktb@planets-project.eu.

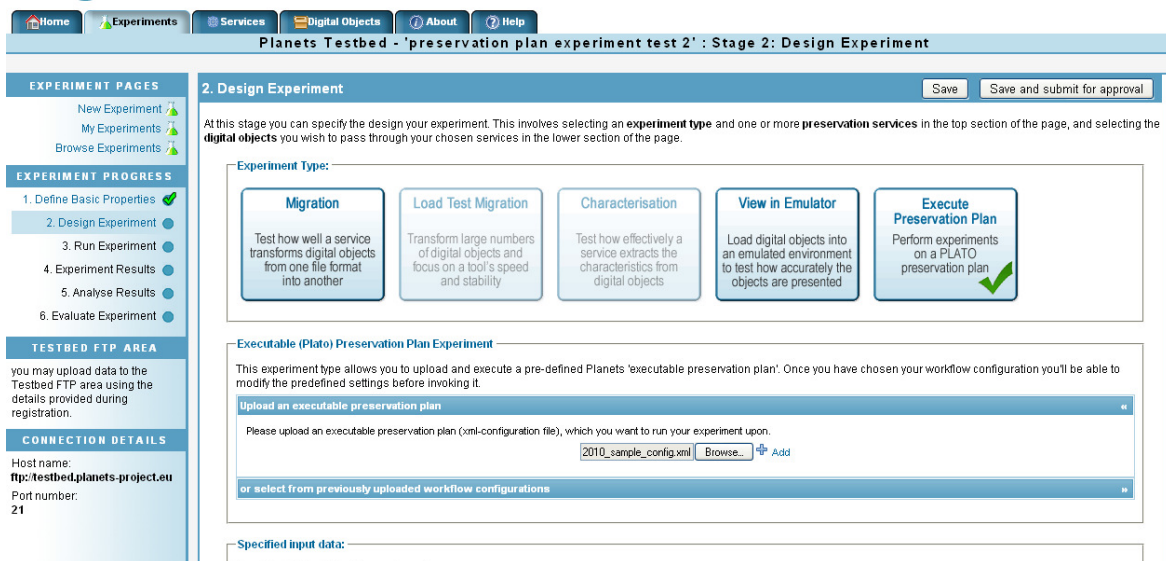
13 Executable Preservation Plan Experiments

At Stage 2 of the experiment process you have the option of selecting to execute a preservation plan. This experiment type allows you to develop more complicated experiment workflows, either by manually creating an experiment configuration XML file or by generating such a file through the Plato tool.

Planets has created a variety of workflows that may be used as part of a preservation plan. Within Plato you can access these as part of the preservation planning experiments for your organisation. An executable preservation plan may then be generated by Plato based on the workflow that was chosen. You can choose to export this plan as an XML file and import it into the Testbed in order to test the workflow, the selected services and any specified service parameters.

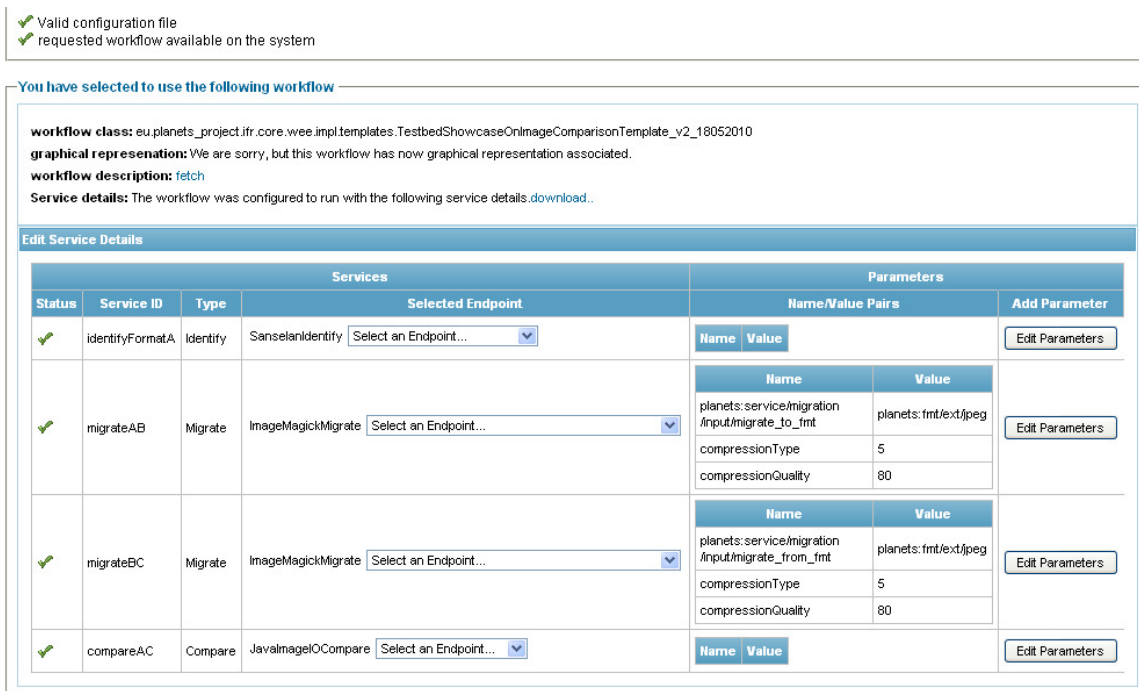
Once you have a valid executable preservation plan XML file you may begin an executable preservation plan experiment within the Testbed. Simply follow the first stage of the experiment process, as discussed in 7.1 above, and continue to Stage 2.

At Stage 2, click on the **Execute Preservation Plan** button in the experiment type selector to load the Stage 2 information that is specific to this experiment type. Initially you will have to upload your XML file to the Testbed server through a simple 'browse for files' box, as shown below.



Screenshot 45: Upload an executable preservation plan XML file

Once you have attached your file click on the **Add** link next to the 'browse' button and your XML file will be uploaded to the Testbed. If the file is a valid executable preservation plan that matches a Planets workflow that is available in the system then the Testbed will extract from the XML file each of the specified stages in the workflow, the services that have been selected for each stage and any parameters that have been specified for each service, as the following screenshot demonstrates.



Screenshot 46: The executable preservation plan workflow within the Testbed

The example workflow shown above represents a 'round trip' workflow, which converts your chosen image file input into a JPEG with a certain level of compression and a specified image quality setting. It then converts the generated intermediary JPEG files back to the original file format, thus enabling you to analyse any artefacts or loss of information that may have been introduced through the use of the lossy JPEG format at the selected settings. Finally, an automated comparison service is executed on the input and output files to automatically compare the images.

The Testbed loads the services and service parameters for each stage in the workflow from the uploaded XML file. If you would like to try this yourself, download a sample XML file here:

http://www.planets-project.eu/docs/testbed-documentation/TestbedShowcaseOnImageComparisonTemplate_v2_18052010_sample_config.xml

Although it is hoped that eventually users will be able to edit and update selected services and parameters after an XML file has been uploaded to the Testbed, this feature is not currently operational. If you wish to choose a different service for a stage in the workflow (e.g. using an alternative **Identify** service for input files instead of 'SanselanIdentify' as shown in the above screenshot, or using different parameters or parameter values for a **Migrate** service) then you should make such changes directly to the XML file before you upload it. A list of service endpoints and parameters can be found through the service browser, as discussed in Section 10.3 above.

Note that you may upload an edited XML file at any point until you proceed to Stage 3 of the experiment process so if your edited file doesn't give the desired results you can try again.

Once you have tailored the workflow details to match your requirements you may then add the data you wish to pass through the workflow, using the same methods that were discussed in Section 7.2.4 above. With our example workflow, any image files accepted by the 'ImageMagickMigrate' service can be attached to the experiment. You can find a list of the accepted file formats for this, or any other, service through the browse services pages as discussed in Section 10.1

For this sample experiment a selection of GIF files have been chosen. Once you have selected some appropriate digital objects you may proceed to Stage 3, where your experiment will be executed in the same manner as a migration experiment. Following on from execution you may view the experiment results in Stage 4. The information contained in this page is similar to that found for migration experiments, with details about the service execution times and information about the success or failure of the experiment workflow.

You may also open up a report about the execution of each workflow for every individual input file. This report contains service properties that have been measured at every stage in the executed workflow, from any initial identification through the chain of migration services to any properties relating to the final comparison, as the following screenshot demonstrates.

| Stage | Measurement | Value |
|---------------------|------------------------------|--|
| [1] identification | identification | [uri: planets:fmt/ext/gif] |
| [1] identification | service execution start time | 1274267259157 |
| [1] identification | service execution end time | 1274267259204 |
| [2] migration | service execution start time | 1274267259209 |
| [2] migration | service execution end time | 1274267260520 |
| [3] migration.final | service execution start time | 1274267260613 |
| [3] migration.final | service execution end time | 1274267262492 |
| [4] compare | compare | [name: PSNR value: 45.98609940871792 unit: dB description:Peak Signal-To-Noise Ratio. Is 'Infinity' if the images are identical, and much lower if the images are similar. Typical values for the PSNR in lossy image and video compression are between 30 and 50 dB, where higher is better. Acceptable values for wireless transmission quality loss are considered to be about 20 dB to 25 dB.] |
| [4] compare | service execution start time | 1274267262569 |
| [4] compare | service execution end time | 1274267263125 |

Screenshot 47: Service measurements as part of the execution report

Also contained in the execution report is a summary of each step that was completed in the workflow and access to a detailed XML based log of the complete workflow execution.

Stage 5 of the experiment process differs considerably from the Stage 5 offered for Migration experiments. For each input file the execution log is displayed in a human-readable format for further analysis. You can also access the digital objects used in the experiment, including the original input file, the final output file that was generated and also any intermediary files that were generated during workflow execution. For the example workflow this means an input GIF and an output GIF will be available, as will the intermediary JPEG file. In addition it is possible to open the 'Compare Digital Objects' page for a particular pairing, enabling further comparison services to be executed and manually measured properties to be recorded. The options found on this page are identical to those offered for Migration experiments, as discussed in Section 7.5.1 above.

The following screenshot shows Stage 5 for one input file that has been passed through the workflow, including the execution log, links to input, output and intermediary files, and links to the 'Compare' pages.

| Digital Object | Results |
|----------------|---|
| surveyor.gif | <p>Run 1: surveyor.gif.jpeg.gif (126304 bytes)[-->Compare with input object.]</p> <p>execution log data</p> <pre>[wresult.actionEndTime[0]= 1274267265946] [wresult.actionEndTime[1]= 1274267263195] [wresult.actionEndTime[2]= 1274267264398] [wresult.actionEndTime[3]= 1274267265946] [wresult.actionEndTime[4]= 1274267265943] [wresult.actionIdentifier[0]= general workflow action] [wresult.actionIdentifier[1]= identification] [wresult.actionIdentifier[2]= migration] [wresult.actionIdentifier[3]= migration.final] [wresult.actionIdentifier[4]= compare] [wresult.actionStartTime[0]= 1274267263128] [wresult.actionStartTime[1]= 1274267263134] [wresult.actionStartTime[2]= 1274267263199] [wresult.actionStartTime[3]= 1274267264481] [wresult.actionStartTime[4]= 1274267265712] [wresult.extractedInformation[1]= [[uri: planets:fmt/text/gif]]] [wresult.extractedInformation[4]= [[name: PSNR value: 38.93398180709113 unit: dB description:Peak Signal-To-Noise Ratio. Is 'Infinity' if the images are identical, and much lower if the images are similar. Typical values for the PSNR in lossy image and video compression are between 30 and 50 dB, where higher is better. Acceptable values for wireless transmission quality loss are considered to be about 20 dB to 25 dB.]]] [wresult.log[0]= [working on workflow template: eu.planets_project.ifr.core.wee.impl.templates.TestbedShowcaseOnImageComparisonTemplate_v2_18052010, starting identification A, completed identification A, starting migration A-B, completed migration A-B, starting migration B-C, completed migration B-C, starting comparison A-C, completed comparison A-C, successfully completed workflow for digitalObject with permanent uri:planets:/testbed.planets-project.eu:80/dr/testbed-corpus/GIF/selfcollected/transparent_notanimated/Images_coloured/files/surveyor.gif]] [wresult.log[1]= [identifying properties of object: planets:/testbed.planets-project.eu:80/dr/testbed-corpus/GIF/selfcollected/transparent_notanimated/Images_coloured/files/surveyor.gif, Identification completed, using format: planets:fmt/text/gif]] [wresult.log[2]= [set migrate to: planets:fmt/text/jpeg, set migrate from: planets:fmt/text/gif, storing digital object with permanent URI: planets:/testbed.planets-project.eu:80/dr/experiment-files/executions/8826f82a-408d-4b17-b8e6-d45c0513077c/surveyor.gif.jpeg, Successfully added OutputDigitalObjectRef, migration completed]] [wresult.log[3]= [set migrate to: planets:fmt/text/gif, set migrate from: planets:fmt/text/jpeg, storing digital object with permanent URI: planets:/testbed.planets-project.eu:80/dr/experiment-files/executions/8826f82a-408d-4b17-b8e6-d45c0513077c/surveyor.gif.jpeg, Successfully added OutputDigitalObjectRef, migration completed]] [wresult.log[4]= [Comparing properties of object A: planets:/testbed.planets-project.eu:80/dr/testbed-corpus/GIF/selfcollected/transparent_notanimated/Images_coloured/files/surveyor.gif with object B: planets:/testbed.planets-project.eu:80/dr/experiment-files/executions/8826f82a-408d-4b17-b8e6-d45c0513077c/surveyor.gif.jpeg, comparison completed]] [wresult.parameters[2]= [compressionType = 5] [compressionQuality = 80] [planets:service/migration/input/migrate_to_fmt = planets:fmt/text/jpeg]] [wresult.parameters[3]= [compressionType = 5] [planets:service/migration/input/migrate_from_fmt = planets:fmt/text/jpeg] [compressionQuality = 80]] [wresult.serviceDescription[2]= ImageMagickMigrate : eu.planets_project.services.migrate.Migrate : A wrapper for ImageMagick file format conversions. Using ImageMagick 6.3.7 06/04/09 Q16 and JMagick. This service accepts input and target formats of this shape: 'planets:fmt/text[extension]' e.g. 'planets:fmt/text/tiff' or 'planets:fmt/text/tif'] [wresult.serviceDescription[3]= ImageMagickMigrate : eu.planets_project.services.migrate.Migrate : A wrapper for ImageMagick file format conversions. Using ImageMagick 6.3.7 06/04/09 Q16 and JMagick. This service accepts input and target formats of this shape: 'planets:fmt/text[extension]' e.g. 'planets:fmt/text/tiff' or 'planets:fmt/text/tif'] [wresult.serviceDescription[4]= JavaimageIOCompare : eu.planets_project.services.compare.Compare : A Raster DigitalObject Comparison Service based on the Java SE built-in ImageIO library.] [wresult.serviceEndpoint[1]= http://testbed.planets-project.eu:80/pserv-pa-sanselan/SanselanIdentify?wsdl] [wresult.serviceEndpoint[2]= http://testbed.planets-project.eu:80/pserv-pa-imagemagick/ImageMagickMigrate?wsdl] [wresult.serviceEndpoint[3]= http://testbed.planets-project.eu:80/pserv-pa-imagemagick/ImageMagickMigrate?wsdl] [wresult.serviceEndpoint[4]= http://testbed.planets-project.eu:80/pserv-pa-java-se/JavaimageIOCompare?wsdl] [wresult.serviceReport[1]= ServiceReport of type 'INFO', status 'SUCCESS', message: OK] [wresult.serviceReport[2]= ServiceReport of type 'INFO', status 'SUCCESS', message: OK! Migration successful.] [wresult.serviceReport[3]= ServiceReport of type 'INFO', status 'SUCCESS', message: OK! Migration successful.] [wresult.serviceReport[4]= ServiceReport of type 'INFO', status 'SUCCESS', message: Comparison succeeded.] intermediate migration result 0: surveyor.gif.jpeg[-->Compare with input object.]</pre> |

Screenshot 48: Stage 5 of the experiment process for Executable Preservation Plan experiments

Following on from Stage 5 the overall experiment evaluation options in Stage 6 for preservation plan experiments are identical to those offered for other experiment types.

13.1 Planets Workflows and Configuration XML files

Planets offers a variety of predefined workflows that can be used to generate executable preservation plans within Plato. These can in turn be tested within the Testbed. An example workflow that enables the identification of input files, the migration of input files to JPEG, the migration of these intermediary JPEG files back to the original format and finally the automated comparison of these files was demonstrated in the previous section. It is also possible to define your own workflows, although this does require a little Java expertise. The Planets external deliverable IF-D11: Consolidated Release and Documentation, which will be available through the Planets website, gives further information on creating a new workflow.

Once a new workflow has been created its corresponding Java file must be uploaded to the Planets Central Instance by the Administrator before it can be used for experimentation. The XML configuration file generated by Plato or manually created references this workflow file and must contain all of the service types and workflow stages specified in it.

The workflow file for the Executable Preservation Plan experiment discussed in this section can be accessed here for reference:

www.planets-project.eu/docs/testbed-documentation/TestbedShowcaseOnImageComparisonTemplate_v2_18052010.java

The XML configuration file used in this demonstration can be downloaded here:

http://www.planets-project.eu/docs/testbed-documentation/TestbedShowcaseOnImageComparisonTemplate_v2_18052010_sample_config.xml

Note that if you wish to perform an executable preservation plan using the same workflow as demonstrated in this section but with different services and parameters you may manually edit the above XML file and upload this during Stage 2 of your own experiment.

14 Appendix A: Version 1.2 Release Notes

Updates in Testbed version 1.2 [April 2010]

Written by Brian Aitken, HATII, 18/05/10

Stage 3:

- Progress bar now reinstated
- Each execution given a unique identified, displayed on screen, for subsequent tracking of issues
- Improved links to Stage 4 and 5

Stage 4:

- Graph of Execution Time now displays to nearest millisecond rather than second
- Graph of Execution Time columns now fixed to order in Execution Results table
- 'Execution' and 'success' columns in Execution Results table now display correct values
- Service Property measurements for all experiment executions can now be downloaded as a CSV file

Stage 4 Experiment Report:

- Service Property measurements are now included
- Greater access to report logs now offered

Stage 5:

- 'Download CSV' option contains all property measurements made through the 'compare' pages (see below)
- Output files in Stage 5 now have the proper file extensions

Stage 5 Compare page:

- Page redesigned:
 - o Top section now gives general information (thumbnails, sizes, filenames, download)
 - o Then a table containing all properties and measurements that have been made
 - o Then a list of 'Compare' services that can be run on the pairing
 - o Selecting a 'compare' service populates the table
 - o Beneath 'Compare' services is a new 'compare manually' section.
 - o TB3 ontology is available for selection here
 - o Selecting a property then allows users to manually measure the values for input and output files
 - o Once specified these then appear in the table
 - o Is also possible to add a new property for the user and other users to make use of.

- o Is also possible to evaluate property measurements
- o semi-automatic property measurement is possible - exactly the same input / output values evaluated to green, different evaluated to red.
- o Is possible to override automatic evaluation with other values in a drop-down list
- o Can also remove property measurements that have been made by a specific agent
- o Option available for entering information about the environment used to manually measure properties

Stage 6:

- Service rating (1-5) now possible
- Overall experiment rating (1-5) now possible

Service inspector:

- For migration services there is now a graphical matrix showing which migration 'from' and 'to' paths are possible
- There are now links to experiments that have used the service
- Some aggregated data now displayed on this page

Back end:

- Property measurements in Stage 5 are now persisted in the database
- Integrate the TB with the shared data registry

XCL Comparator:

- New service version created that can directly compare image files (runs extractor first within the service)

'Save as'

- Bug fixed so that ownership passes to user who is clicking the button

Navigation and front end

- Experiment second level navigation improved
- Terms and conditions added to every page
- Added more information to 'About' Page