Software Engineering Project (2IP40)

Project Group 1

System Test Plan

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Abstract

This document describes the System Test Plan (STP) for the SPINGRID system and was made according to the software engineering standard provided by the European Space Agency [ESA]. The projects system test for the product is described here. This project is one of seven assignments for the course 2IP40 at Eindhoven University of Technology.

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Chapter 1

Introduction

1.1 Purpose

This document describes the plan for testing the developed software system against the software requirements as defined in the Software Requirements Document [SRD]. The purpose of these system tests is to make sure that the software system developed during the SPINGRID project complies with the definition of the software requirements. The planning of these tests will be done in the SR-phase, they will be designed in the AD-phase and finally must be executed in the ST-phase of the project.

1.2 Overview

In the second chapter the items to be tested are mentioned. A specification for each test case is given in the third chapter. The fourth chapter specifies the procedures for these test cases. In the fifth chapter the reports for all test cases are presented.

1.3 List of definitions and abbreviations

1.3.1 Definitions

Agent	Application that is used by a resource provider to retrieve and execute jobs.
Application	A non-interactive data processing application consisting of executables, scripts and/or auxiliary data files that reads one or more input data files and writes one ore more output files.
Application Provider	An application provider can offer a set of applications to the SPINGRID system. They can restrict access for projects and for resource providers to their applications.
Client	Application that is used by all the users except the resource provider who uses the agent application.
Computational Grid	A hardware and software infrastructure that enables coordinated resource sharing within dynamic organizations consisting of individuals, institutions and resources.
Customer	Dutch Space B.V.
Data Provider	A data provider can offer a set of datafiles to the SPINGRID system. They can restrict access for projects and for resource providers to their datafiles.
Dispatcher	A dispatcher acts like a server and manages the distribution of jobs over the computational grid.
Job	Specification of application, configuration data, input and/or output data files and scheduler specific data (priority, preferred resource, etc).
Job Provider	Job providers are users that offer a job to a project. They have to be a member of that particular project.
Project	A collection of jobs with specified access rights to which users (project members) can be assigned.
Project Administrator	The project administrators administrate projects and can assign and remove job providers, configure a project and restrict access for resource providers.
Resource Provider	Resource providers are users that offer time on their computers to the SPINGRID system. They can restrict access to their computer for application providers and projects.
Role	The actions and activities assigned to a person.
SPINGRID	A computational grid using SPINGRID software.
SPINGRID Software	Software developed by Dutch Space and TU/e to build computational grids for distributed data processing.
SPINGRID System	The full name of the entire system.
System Administrator	The system administrator oversees the entire SPINGRID system and has the right to configure the system, to create and remove projects and assign and remove project administrators.

1.3.2 Abbreviations

ESA	European Space Agency

1.4 Documents

30 ### 1.4.1 Reference Documents

[ESA]	*ESA Software Engineering Standards (ESA PSS-05-0 Issue 2)*, ESA Board for Software Standardization and Control (BSSC), 1991
[STD]	*Software Transfer Document*, SPINGRID team, TU/e, Version 0.1.0, May 2006
[SVVP]	*Software Verification and Validation Plan*, SPINGRID team, TU/e, Version 0.1.2, March 2006

1.4.2 Applicable Documents

[ADD]	*Architectural Design Document*, SPINGRID team, TU/e, version 1.0.0., April 2006
[ATP]	*Acceptance Test Plan*, SPINGRID team, TU/e, version 0.1.0., June 2006
[DDD]	*Detailed Design Document*, SPINGRID team, TU/e, version 0.1.0, June 2006
[SRD]	*Software Requirements Document*, SPINGRID team, TU/e, version 1.0.1, March 2006
[URD]	*User Requirements Document*, SPINGRID team, TU/e, version 1.0.0, February 2006

Chapter 2

Test plan

2.1 Test items

The software to be tested is the SPINGRID system. Information on what the system must do can be found in the Software Requirements Document [SRD]. Information on how the developed software system works is listed in the Architectural Design Document [ADD] and the Detailed Design Document [DDD].

2.2 Features to be tested

The SPINGRID system will adhere to the requirements, which are documented in [URD, chapter 4].

2.3 Test deliverables

The following items must be delivered before testing begins:

- The Software Verification and Validation Plan [SVVP].
- The Software Requirements Document [SRD].
- The User Requirements Document [URD].
- The Software Transfer Document [STD].
- This System Test Plan.
- System input data.
- Software to be tested.

The following items must be delivered when the testing is complete:

- System test report.
- System test output data.
- Problem reports (if necessary).

2.4 Testing tasks

The following tasks are necessary for preparing and performing the system tests:

- Designing the system tests.
- Ensuring that all environmental needs are satisfied for the system tests.
- Completing the integration tests. Performing the system tests.
- Writing a test report and, if necessary, problem reports.

2.5 Environmental needs

The needed environment is described in the [SRD, chapter 2.4].

2.6 Test case pass/fail criteria

For every test case in [ATP, chapter 3] the following must hold:

- The environmental needs must be met.
- The input specifications must be met.

If no environmental needs or input specifications are given, no requirements have to be met for the test case to be properly executed.

Chapter 3

Test case specifications

See [ATP, chapter 3].

Chapter 4

Test procedures

See [ATP, chapter 4].

Chapter 5

Test report

See [ATP, chapter 5].