Project Acronym: **OPTIMIS**

Project Title: **Optimized Infrastructure Services**

Project Number: **257115**

Instrument: **Integrated Project**

Thematic Priority: **ICT-2009.1.2 – Internet of Services, Software and Virtualisation**

Elasticity Engine Tool Installation Guide

Activity 4: *Basic Service Operation*

WP 4.2: *Cloud Runtime Optimization*

Due Date:		M34
Submission Date:		31/03/2013
Start Date of Project:		01/06/2010
Duration of Project:		36 months
Organisation Responsible for the Deliverable:		Umeå University
Version:		1.0
Status		Final
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Project co-funded by the European Commission within the Seventh Framework Programme		
Dissemination Level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission)	
RE	Restricted to a group specified by the consortium (including the Commission)	
CO	Confidential, only for members of the consortium (including the Commission)	

Version History

Version	Date	Comments, Changes, Status	Authors, contributors, reviewers
0.1	2012-04-05	Created document	Ahmed Ali-Eldin (UMU)
0.2	2013-03-16	Year 3 version created	Ahmed Ali-Eldin (UMU)
0.3	2013-05-30	Improvements to document	George Kousiouris (NTUA)
1	2013-06-06	Final Version	Malena Donato (ATOS)

Table of Contents

Index of Tables

1 Introduction

This document includes the installation guide for the Elasticity Engine component.

The Elasticity Engine is responsible for the enactment of elasticity. It receives information from the Monitoring System about updates of the terms (the runtime state) that in the service manifest are associated with elasticity rules. For each updated state datum, the engine controls whether to trigger a rule. Examples of elasticity rules of an SP include, for instance, allocating more storage if the number of users of a service exceeds 500. On the contrary, rules at the IP level can determine, for instance, that an additional application service VM must be started if more than 5% of user requests are lost during the last 5 minute period. Upon triggering of an elasticity rule, the engine emits an action (e.g., to start or shutdown a VM) to the VM and/or Data Management components.

1.1 Glossary of Acronyms

Table 1- Acronyms table

Acronym	Definition
CO	Cloud Optimizer
D	Deliverable
IP	Infrastructure Provider
JDK	Java Development Kit
MI	Monitoring Interface
SLA	Service Level Agreement
SP	Service Provider

2 Elasticity Engine Installation Guide

2.1 Release information

Table 2: Release information

Component Name	Release Number	Release Date
Elasticity Engine Server	1.0-SNAPSHOT	2013-04-10
Elasticity REST Interface	1.0-SNAPSHOT	2013-04-10
Elasticity Engine	2.0-SNAPSHOT	2013-04-10

The three components together form the Elasticity Engine.

2.2 Minimal System Requirements

1-Enough memory to start a web-server e.g. Tomcat, Jetty, etc.

2.3 Platforms Supported

*Tested on *-nix systems. There are no dependencies on the OS so it should also be able to run on Windows OS's. The component supports any Java-compliant platform.*

2.4 Software Pre-requisites and Dependencies

Table 3: EE Dependencies

Product	Version	Licence
XStream XML Parser	1.3.1	
Monitoring REST Client	0.0.1-SNAPSHOT	Internal Optimis Component
Monitoring Common Resources	0.0.1-SNAPSHOT	Internal Optimis Component
Cloud Optimizer REST Client	1.0-SNAPSHOT	Internal Optimis Component
JUnit	4.8.2	Common Public License - v 1.0
Log4j	1.2.14	The Apache software license version 2.0
Commons Lang	2.4	The Apache software license

		version 2.0
Commons Configuration	1.6	The Apache software license version 2.0
CO REST Interface	1.0-SNAPSHOT	Internal OPTIMIS
Javaluator	1.1.0	GNU-LGPL

The following dependencies are REST Interfaces that need~~s~~ to be implemented.

1-CO REST interface

2-Monitoring REST Interface

For installation of the Internal OPTIMIS Components, please refer to their specific installation guides on our website.

2.5 Installation Instructions

If using a Jetty server:

1- It is advised to use maven. Install maven

2-Download the ElasticityEngineServer project

3-in the main directory of the downloaded project type: mvn jetty:run

If using a Tomcat container:

1-Download the WAR file for the ElasticityEngineServer project

2-Place the war in tomcat's webapps directory

2.6 Getting started

2.6.1 Using the Software

The Elasticity Engine Server starts when the container server starts. It is stopped when the server is stopped.

2.6.2 Testing the Software

N/A

2.6.3 Configuration

N/A

2.7 FAQ

N/A

3 References

[1]. Self-managed Cloud Runtime Detailed Design, Deliverable ID4.2.3 of OPTIMIS project.