



A5.D5.2 – Prototype implementation of Trust Mechanisms

R. Harjani, A. Maña, J. Ruiz

Document Number	A5.D5.2
Document Title	Prototype implementation of Trust Mechanisms
Version	1.0
Status	Final
Work Package	WP 5.5
Deliverable Type	Report
Contractual Date of Delivery	31 December 2008
Actual Date of Delivery	09 February 2009
Responsible Unit	UMA
Contributors	
Keyword List	
Dissemination level	PU

Change History

Version	Date	Status	Author (Unit)	Description
0.1	27/01/2009	Working	Rajesh Harjani	All sections completed.
0.2	27/01/2009	Working	Rajesh Harjani, Jose Ruiz	All sections revision.
1.0	30/01/2009	Final	Rajesh Harjani	Section 4 added. Section 5 updated. Figures added. Executive summary. Document formatting.

Executive Summary

This report presents the prototype that implements the trust mechanisms described in the A5.D5.1 deliverable.

The prototype is composed of two applications: the Transparency Agent (TA) and the Metamonitor (MM).

This document describes all the menus and options of the prototype, as well as the steps to follow to install the prototype and run both, the TA and the MM.

Table of Contents

1. Introduction	5
2. Transparency Agent GUI options description.....	6
2.1. “Monitoring rules” menu:	6
2.2. “Local Analyser” menu:.....	7
2.3. “Analysis” menu:.....	7
3. MetaMonitor GUI options description.....	9
3.1. “Local Analysers” menu:	9
3.2. “Global Analyser” menu:	9
3.3. “Analysis” menu:.....	10
4. Installation	12
4.1. Software requirements	12
5. Running the prototype.....	13
5.1. To execute the Transparency Agent prototype do:.....	13
5.2. To execute the MetaMonitor prototype do:.....	13

1. Introduction

This document explains the prototype that implements the trust mechanisms described in the A5.D5.1 deliverable.

This prototype is composed of two applications: the Transparency Agent (TA) and the Metamonitor (MM).

The Transparency Agent reads the violations log from the SRF. It can perform an analysis on this data applying certain rules (LA rules), and it can report the results of this analysis to the Metamonitor, and to the Transparency Agent Administrator (through the TA GUI). In this prototype, the communication among the TA, the SRF and the MM is done by means of database tables.

The Metamonitor receives the analysis results done by several TAs, and performs a global analysis on them applying several rules (MM rules).

2. Transparency Agent GUI options description

In this section we explain the functionality of the Transparency Agent. The application has a menu bar where we can find the following options:

2.1. “Monitoring rules” menu:

In Figure 1 the options of the Monitoring rules can be seen.

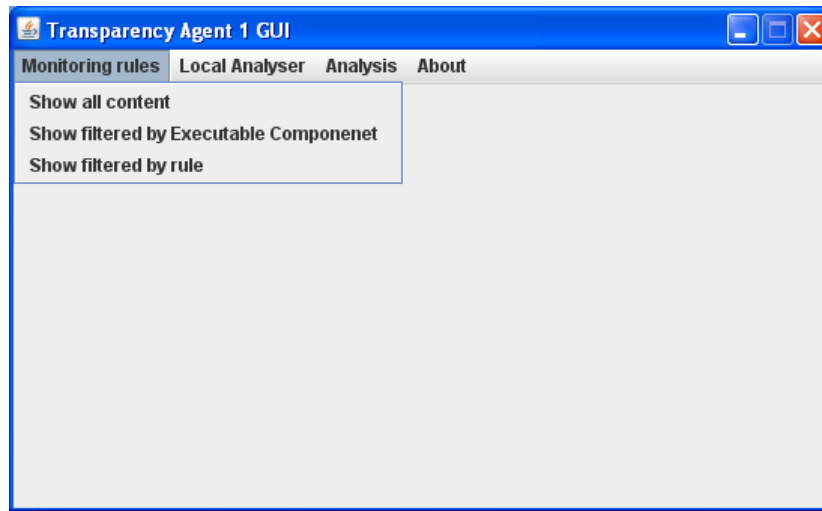


Figure 1 – Monitoring rules menu

1. “Show all content”: Shows all the violations occurred in the system.
2. “Show filtered by Executable Component”: With this option the user can input the id number of the Executable Component (EC), so only the violations of this EC are shown. In this prototype we have information of two ECs, so we can input values 1 or 2 in this window (See Figure 2).

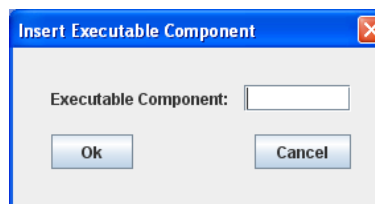


Figure 2 – Executable Component selection

3. “Show filtered by rule”: With this option the user can input the id number of the rule, so only the violations of this rule are shown. In this prototype we have three rules, so we can input values 1, 2 or 3 in this window (See Figure 3).



Figure 3 – Rule selection

2.2. “Local Analyser” menu:

This menu is shown in Figure 4.

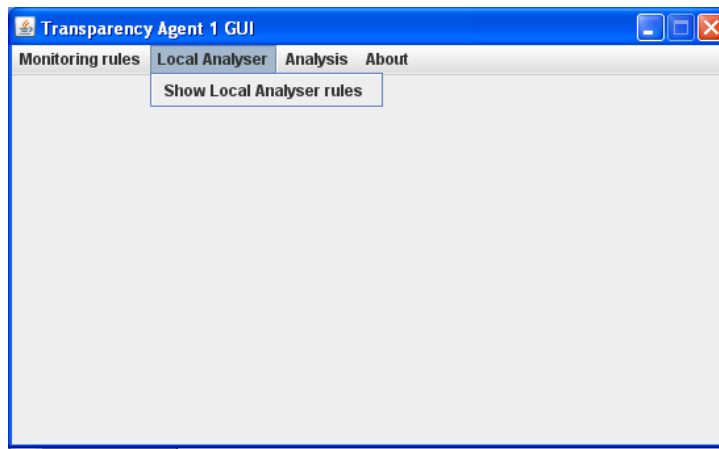


Figure 4 – Local Analyser menu

1. “Show Local Analyser rules”: This option shows all the LA rules in the Transparency Agent at the moment.

2.3. “Analysis” menu:

The options of this menu can be seen in Figure 5.

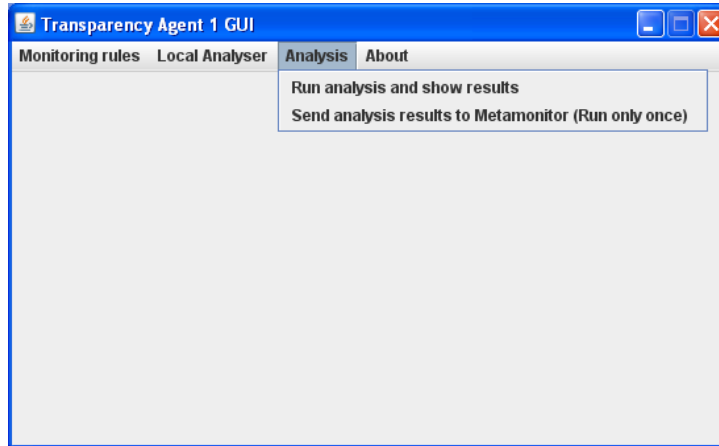


Figure 5 – Analysis menu (in Transparency Agent GUI)

1. “Run analysis and show results”: After selecting this option, a new window appears, where the selection of the LA rule to apply is offered to the user. After the selection of one of them is made, the analysis can be performed. In this prototype we have the possibility to choose among four rules (See Figure 6).

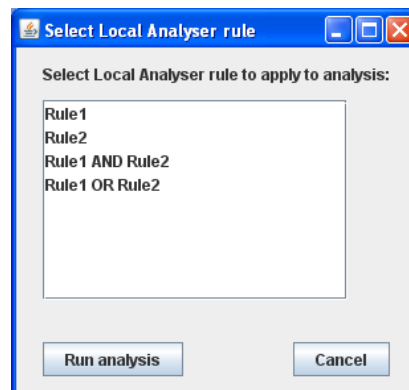


Figure 6 – Local Analyser rule selection

2. “Send analysis results to the Metamonitor (Run only once)”: This option sends the analysis results to the Metamonitor, and it should only be executed once in this prototype.

3. MetaMonitor GUI options description

In this section we explain the different menu options we can find in the Metamonitor prototype.

3.1. “Local Analysers” menu:

This menu is shown in Figure 7.

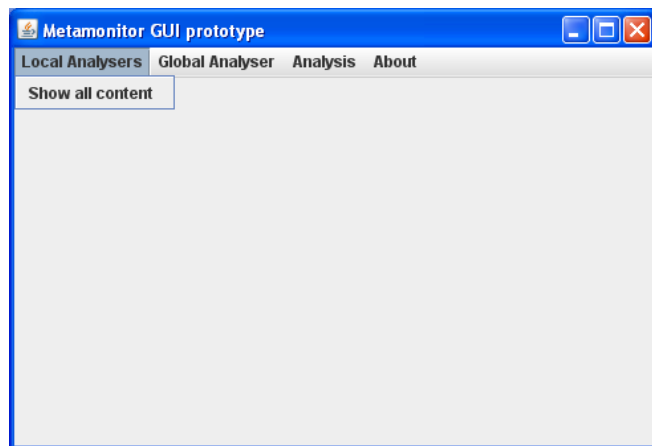


Figure 7 – Local Analysers menu

1. “Show all content”: It shows the results of the analysis of the Transparency Agents connected to the MetaMonitor.

3.2. “Global Analyser” menu:

The image of this menu is shown below in Figure 8.



Figure 8 – Global Analyser menu

1. “Show Global Analyser rules”: This option shows all the MetaMonitor rules in the MetaMonitor at the moment.

3.3. “Analysis” menu:

The option of this menu can be seen in Figure 9.

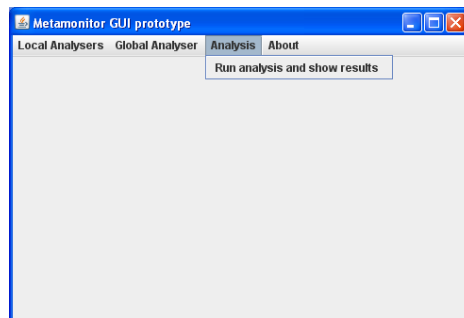


Figure 9 – Analysis menu (in Metamonitor GUI)

1. “Run analysis and show results”: After selecting this option, a new window appears, where the selection of the Global Analyser rule to apply is offered to the user. After the selection of one of them is made, the analysis can be performed. In this prototype we have the possibility to choose among two rules (See Figure 10). The first rule is a condition that express that the amount of rule violations produced from Executable Component 1 (EC 1) is higher than the twenty percent of the total amount of violations received from all the TAs.

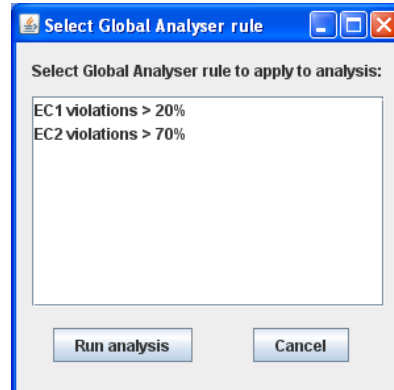


Figure 10 - Global Analyser rule selection

4. Installation

4.1. Software requirements

In order to run the prototype the following software is needed:

1. MySQL 5.1
2. JDK 6
3. NetBeans IDE

5. Running the prototype

After downloading the .zip file and extracting its content follow these steps:

5.1. To execute the Transparency Agent prototype do:

1. Execute the file *DBTrustPrototype.sql*. This creates all the database infrastructure needed for the execution of the prototype.
2. Open the project *TransparencyAgentPrototype* in NetBeans IDE.¹
3. Execute the *Main.java* file to start the interaction with the Transparency Agent.

5.2. To execute the MetaMonitor prototype do:

1. Execute the file *DBTrustPrototype.sql*. This creates all the database tables needed for the execution of the prototype.
2. Open the projects *TransparencyAgentPrototype*, *TransparencyAgentPrototype2* and *MetamonitorPrototype* in NetBeans IDE.¹
3. Run *Main.java* file in each project:
4. In each TA GUI select the option “Send analysis results to Metamonitor” from the “Analysis” menu.
5. Use the MM GUI to interact with the MetaMonitor.

¹ If references problems appear, check that the following .jar files are included in the project libraries:

- “mysql-conector-java-5.0.7-bin.jar” can be found in the “lib” folder inside each project’s folder
- “derbyclient.jar” can be found in “C:\Program Files\Sun\JavaDB\lib”