Trustworthy and Resilient Operations in a Network Environment

Deliverable D18

Report on dissemination and exploitation activity, Year 2

Information and Communication Technologies Institute

Carnegie Mellon | PORTUGAL

AN INTERNATIONAL PARTNERSHIP

Executed by: **CISUC**

Direction/Department: **DEI/FCT/UC**

Date: January 22, 2013

Version Number	Owner	Change Control	Date
0.1	FCTUC	Document creation	25-10-2012
0.2	FCTUC	First complete version	29-12-2012
1	FCTUC	Final version	22-1-2013

Additional information:

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Beneficiaries contributing on the deliverable:	FCUL, FCTUC
WP contributing to the deliverable:	WP4
Estimation of pm spent on the deliverable:	-
Nature of the deliverable:	Report
Total number of pages:	12

Contents

List of Figures

Executive Summary

The purpose of this report is to summarize the dissemination efforts of the TRONE project. The project partners used a number of different means to disseminate their work: a publicly available wiki page, `http://trone.di.fc.ul.pt/`, research papers, presentations, one poster, one workshop on the topic of the project and the deliverables of work. In this document, we give details about all these dissemination means. In particular, we show that dissemination is running exactly as planned in the description of work, including the numbers of published research papers.

1 Introduction

In the second year of the TRONE project, we progressed in all the tasks that were initially foreseen for this period in the description of work: we evaluated a failure diagnosis scheme (Deliverables 4 and 5 of task 2.1); we created specifications for network recovery mechanisms and evaluated them (Deliverables 7 and 8 of task 2.2); we wrote the first specification of the communication protocols and middleware (Deliverable 11 of task 3.1); and we specified and evaluated plug-in components for trustworthy network management (Deliverables 14 and 15 of task 3.2).

Regarding the dissemination activity, which we summarize in this particular deliverable, D18, in the second year of TRONE we kept using several means for dissemination, like scientific papers, presentations, one poster, leaflets, and the TRONE web site. Whenever meaningful, we assess the productivity of the dissemination activity, compared to the plans of the description of work. Another major dissemination effort of this year was the organization of the "Secure and Dependable Middleware for Cloud Monitoring and Management" workshop (SDMCMM), co-located with the ACM/IFIP/USENIX 13th International Conference on Middleware.

This report is organized as follows: Section 2 gives a brief overlook of the web site; Section 3 reviews the publications; Section 4 enumerates the presentations we did in the second year of TRONE; in Section 5 we present the deliverables we wrote so far; Section 6 describes our effort in the organization of the SDMCMM workshop; Section 7 presents our exploitation plans for TRONE; Section 8 assesses the scientific work of the TRONE project; Section 9 concludes this report.

2 Web Site

The most visible means of dissemination of TRONE is the publicly available wiki page: http://trone.di.fc.ul.pt/. Being a wiki, this site allows us to keep two levels of access to data: one accessible by the general public, and a second one, which is private and protected by a password, which partners use to share documents among them. For example, we actively used our web site to produce the poster and the deliverables of the project. Figure 1, depicts the welcome page, with general information about the TRONE project. One can access the private and public areas through a common "navigation" menu on the left side of the page.

It is important to mention here that we made all the public documentation available under the URL `http://trone.di.fc.ul.pt/index.php?title=Publications`: papers, presentations, deliverables and other documents. Hence, any person can have a very easy access to
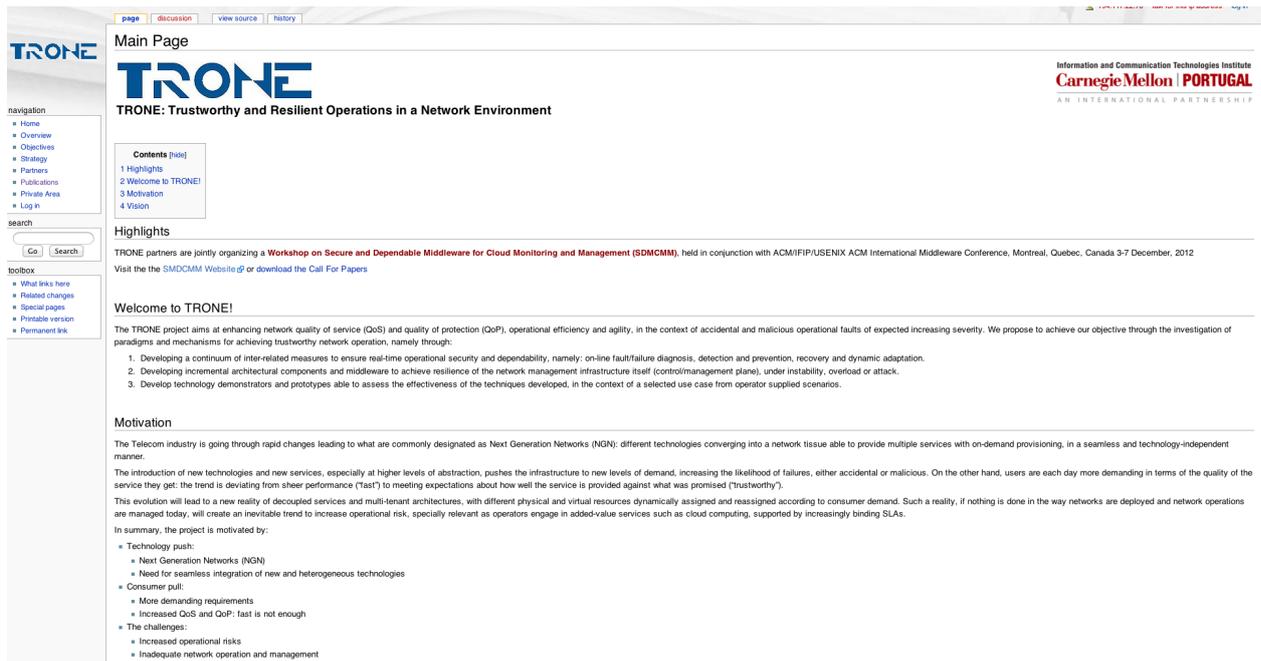
Figure 1: Home page

the public details of the work we developed so far.

3 Publications

During the second year of this project we published five papers in International Conferences and Workshops, thus increasing the number of four from the previous year. We also published a paper in a National Conference. We point out the fact that all these papers were presented in their conferences by one of their authors. We enumerate these publications here:

- Transparent System Call Based Performance Debugging for Cloud Computing. Nikhil Khadke, Michael P. Kasick, Soila P. Kavulya, Jiaqi Tan, and Priya Narasimhan. USENIX Workshop on Managing Systems Automatically and Dynamically - MAD 2012. Hollywood, CA, September 2012.

- Light-weight Black-box Failure Detection for Distributed Systems. Jiaqi Tan, Soila Kavulya, Rajeev Gandhi and Priya Narasimhan. Workshop on Management of Big Data Systems - MBDS 2012. San Jose, CA, September 2012.

- Binary code obfuscation through C++ template metaprogramming. Samuel Neves and Filipe Araujo. 4 Simpsio de Informtica - INForum 2012. Lisboa, Portugal. September 2012.

- TRONE: Trustworthy and Resilient Operations in a Network Environment. Antnio Casimiro, Paulo Verssimo, Diego Kreutz, Filipe Araujo, Raul Barbosa, Samuel Neves, Bruno Sousa, Marlia Curado, Carlos Silva, Rajeev Gandhi, and Priya Narasimhan, The Second International Workshop on Dependability of Clouds, Data Centers and Virtual Machine Technology (DCDV 2012). Proceedings of the 42nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks Workshops (DCDV 2012).

- A Trustworthy and Resilient Event Broker for Monitoring Cloud Infrastructures. Diego Kreutz, Antnio Casimiro, Marcelo Pasin, in Proceedings of the 212th IFIP International Conference on Distributed Applications and Interoperable Systems, Stockholm, Sweden, June 2012.

- Timeout-based Adaptive Consensus: Improving Performance through Adaptation. Mnica Dixit, Henrique Moniz, Antnio Casimiro, in Proceedings of the 27th ACM Symposium on Applied Computing, Dependable and Adaptive Distributed Systems Track (SAC'12), Riva del Garda (Trento), Italy, March 2012.

We also presented one poster:

- Trustworthy and Resilient Monitoring System for Cloud Infrastructures. Smruti Padhy, Diego Kreutz, Antonio Casimiro, Marcelo Pasin, in Proceedings of the ACM/IFIP/USENIX 12th International Middleware Conference 2011, Posters, 12-16 December, Lisbon, Portugal. publisher

We published more papers on Conferences than promised in the proposal, although we did not publish in journals, unlike what we foresaw. Overall, the number of papers we published in the second year of work in the project is in line with the numbers we referred to in the proposal.

4   Presentation at Events

During the second year of the project, we made the following presentations at public events:

- A FIT Event Broker for trustworthy infrastructure monitoring and management. Presentation at the 61st IFIP WG10.4 Meeting, Martinique, France, January, 2012

- Cloud Computing Security. Presentation at the IT GRC Meeting 2011, Lisbon, October 14-15, 2011

- TRONE: Trustworthy and Resilient Operations in a Network Environment. Presentation at the Third Annual Carnegie Mellon Portugal Conference: Strong Engagement between Universities, Companies and End Users, Lisbon, October 3, 2011

5   Deliverables

In TRONE we produced the following deliverables so far, which is inline with what we promised to do in the description of work of the project:

- D4: First evaluation of the failure diagnosis scheme, with concrete results for target faults.

- D5: Increased scope of faults to target for diagnosis, with increased instrumentation.

- D7: First specification of the recovery mechanisms.

- D8: Experimental evaluation of the recovery mechanisms.

- D11: First specification of the communication protocols and middleware.

- D14: First specification of the enhanced components.

- D15: Experimental evaluation of the enhanced components.

- D18: Report on dissemination and exploitation activity. (this document)

- D21: Second management report.

We have all the available deliverables online on the project's web page: `http://trone.di.fc.ul.pt/index.php?title=Publications`.

6   The SDMCMM 2012 Workshop

Much of our dissemination efforts in this second year of the project went to the organization of the "Secure and Dependable Middleware for Cloud Monitoring and Management Workshop 2012 (SDMCMM)" held in conjunction with ACM/IFIP/USENIX ACM International Middleware Conference, to take place in Montreal, Quebec, Canada, from 3 to 7 of December, 2012. The effort to organize this workshop was mainly a joint work of the three co-chairs of the Workshop: Antnio Casimiro, Filipe Araujo and Rajeev Gandhi, respectively from the Universities of Lisboa, Coimbra and Carneggie-Mellon.

The organization took place in several steps:

Figure 2: The SDMCMM web site

- Select an appropriate Program Committee.

- Submit a workshop proposal to the Conference Organizers.

- Create a Call For Papers.

- Create a Web Site.

- Select papers via peer review, with the help of the PC members.

- Organize the accepted papers for the proceedings and create a Workshop program.

To display information of the workshop we used a web site, with the URL `http://sdmcmm.dei.uc.pt`. The web site contains most information related to the workshop, like the call for paper, the PC members, etc.. We show it in Figure 2.

We used the EasyChair Conference System (`http://www.easychair.org`) to ensure all the communication between co-chairs, program committee and authors. For a first edition of the workshop we can deem the results achieved as good: we received 9 papers from 31 authors, 23 peer reviews and accepted 6 papers from 23 authors.

We must also acknowledge the work of other researchers unrelated to the TRONE project, namely Pedro Peixoto, who maintained the web page, the Middleware conference organization, the researchers responsible for the Middleware workshops, authors of submitted papers, the program committee of SDMCMM, and other reviewers.

7   Exploitation Plans

During this year, the work we have produced was mainly used for research and educational purposes, to create new research opportunities, and to improve the materials in our academic courses. In particular, we have published most results we achieved so far in International Conferences and Workshops.

8   Assessment of the Dissemination Work

Besides the web site, the poster and leaflets, in the following table, we quantitatively summarize the dissemination efforts we did so far, by comparing the numbers we promised in the description of work versus the real numbers that we were able to achieve in the first two years of the project. We used the official numbers, separated by civil year on the left side of the table and the years of the project on the right side of the table. One can see from the Total numbers that exist on both sides that we are inline with the foreseen numbers. We slightly underperformed on the National and Journal publications, but we are publishing more than promised on the International meetings.

Table 1: Papers and Deliverables by Year

	Promised Publications					Delivered Publications			
	2010	2011	2012	2013	Total	Y1	Y2	Y3	Total
Journals		1	1	1	3	1	0		1
National Conferences	1	1	1	0	3	0	1		1
International Conferences	2	3	3	1	9	4	5		9
Deliverables					22	5	9		14

9 Conclusions

We think that the 11 papers published so far (5 in the first year and 6 in the second) and the quite active web site are two of the most successful evidence of the TRONE dissemination and exploitation efforts. However, we believe that the greatest efforts we did this year to disseminate the TRONE work were in the Secure and Dependable Middleware for Cloud Monitoring and Management Workshop (SDMCMM), co-located with Middleware 2012, which we organized in a common effort of the Universities of Lisboa, Coimbra and Carneggie-Mellon.