mattia.monga@unimi.it on 04/18/2005 01:09:45 PM

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To: submissions@nspw.org
cc: balzarot@elet.polimi.it, sicari@elet.polimi.it
Subject: paper submission

Dear Sirs,
please consider the attached PDF paper for inclusion in New Security Paradigms.

title: Assessing risk of distributed systems with vulnerable components
authors: Davide Balzarotti, Mattia Monga, Sabrina Sicari

Our paper discusses how information about the architecture and the vulnerabilities affecting a distributed system can be used to quantitatively assess the risk to which the system is exposed. Our approach to risk evaluation can be used to assess how much one should believe in system trustworthiness and to compare different solutions, providing a tool for deciding if the additional cost of a more secure component is worth to be afforded. We think our approach is innovative since:

- it is based on architectural information and an assessment of known vulnerabilities of (black box) components.

- our risk assessment is quantitative in nature and it can be used to compare different design choices

- our model takes into account the dependencies among vulnerabilities: how one can be used to exploit another

- the danger introduced by a vulnerability has to be guessed according available knowledge and expertise. However, we provide guidelines to coherent guessing and only the relative order of different guesses is important for drawing sensible solutions

- we made no assumption on the black boxes considered in the

assessment. Thus, our approach has the potential to be applied to several different level of abstraction: Web Services, COTS, libraries, classes, ...

In case of acceptance one of the authors will join the workshop to discuss our work.

Thank you in advance. Best regards,

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