Poster – Applying Trust and Delegation to a Collaborative Environment

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DESCRIPTION

A new research project has started at Sun Microsystems Labs focused on applying human ideas of security to computer systems. By drawing on familiar notions like trust, valuation, and context, we are working on new approaches that different classes of users will be able to work with more effectively.

In modern computer systems people frequently interact with security issues they don't understand. To help manage this, we need usable models. We hypothesize that models based on security notions familiar to humans will enable users to work with and manage the system more effectively.

The poster includes a graphic presentation of two research areas. One illustrates a delegation model and the second shows the impact of trust that evolves on a system. Both are based on a collaborative environment where an online agent manages your preferences and represents your identity. Meetings, communication and access decisions are all coordinated in this environment.

Effective Collaboration - In our early research we have found that flexible delegation supports many sharing models in a clear, auditable manner. Delegation is a key part of the function of a meeting. Therefore, as a familiar concept to humans, it is a solid basis for a security model in the context of a meeting. Here are a few examples:
- The meeting owner's assistant can invite people but can not join.
- A current member of the meeting may invite others during the meeting
- Members may allow access only to specific resources.

Evolving Relationships - Our early user studies show relationships change over time, resulting in a need for access rules to change. As relationships emerge within specific contexts, trust grows or reduces and can be used to define how much detail to share. That level of trust may be extended to other parties, who can introduce a particular user to new users.

Our project plans to develop a system that can inform and advise users and determine how to help people make better risk assessments. Determining human requirements will lead to understanding how a system can make it easier to adapt dynamically as relationships change. Our project goal is to improve the overall state of security and privacy. By combining user-centered design principles with security infrastructure, security will be more effective and familiar to the people who use it.