Automated Trust Negotiation

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Trust Management in Open Systems

Alice’s company makes its information/service available to outsiders only under certain conditions.

How can I specify and enforce my restrictions on resource access and usage?

How do we locate resource access policies and attempt to satisfy them while still preserving our privacy?
Trust Negotiation Example

Step 1: Alice requests a service from Bob

Step 2: Bob discloses his policy for the service

Step 3: Alice discloses her policy for her VISA card

Step 4: Bob discloses his BBB credential

Step 5: Alice discloses her VISA card credential

Step 6: Bob grants access to the service
Research Goal and Strategy

- **Goal:** *Ubiquitous* trust negotiation facilities

- **Strategy for reaching goal**
  - **Theory:** Develop flexible negotiation strategies that *always* succeed if success is possible
  - **Systems:** Develop modular, scalable, reusable implementations of trust negotiation
My Part of This Project

- A scalable means of access control for widely distributed resources, supporting:
  - bilateral trust establishment
  - run-time access control policy discovery
  - client and resource privacy
  - legacy and trust-aware resources

- Testbed: Alliance Grid
Legacy Usage Scenario

Alice

1

2

purchase.stocks.com

cts.stocks.com
Trust Aware Usage Scenario

1. Alice
2. gridftp.bigstorage.com
3. bigstorage.com domain
4. cts.bigstorage.com
5. bigstorage.com domain
Additional Information

- On the web: http://dais.cs.uiuc.edu/trustbuilder/

- Poster session today
  - TrustBuilder, PeerTrust, Credential Translation Service

- Lab Demos
  - 2102 Siebel Center