CERIAS

The Center for Education and Research in Information Assurance and Security

Privacy Preserving Access Control in Service Oriented Architecture

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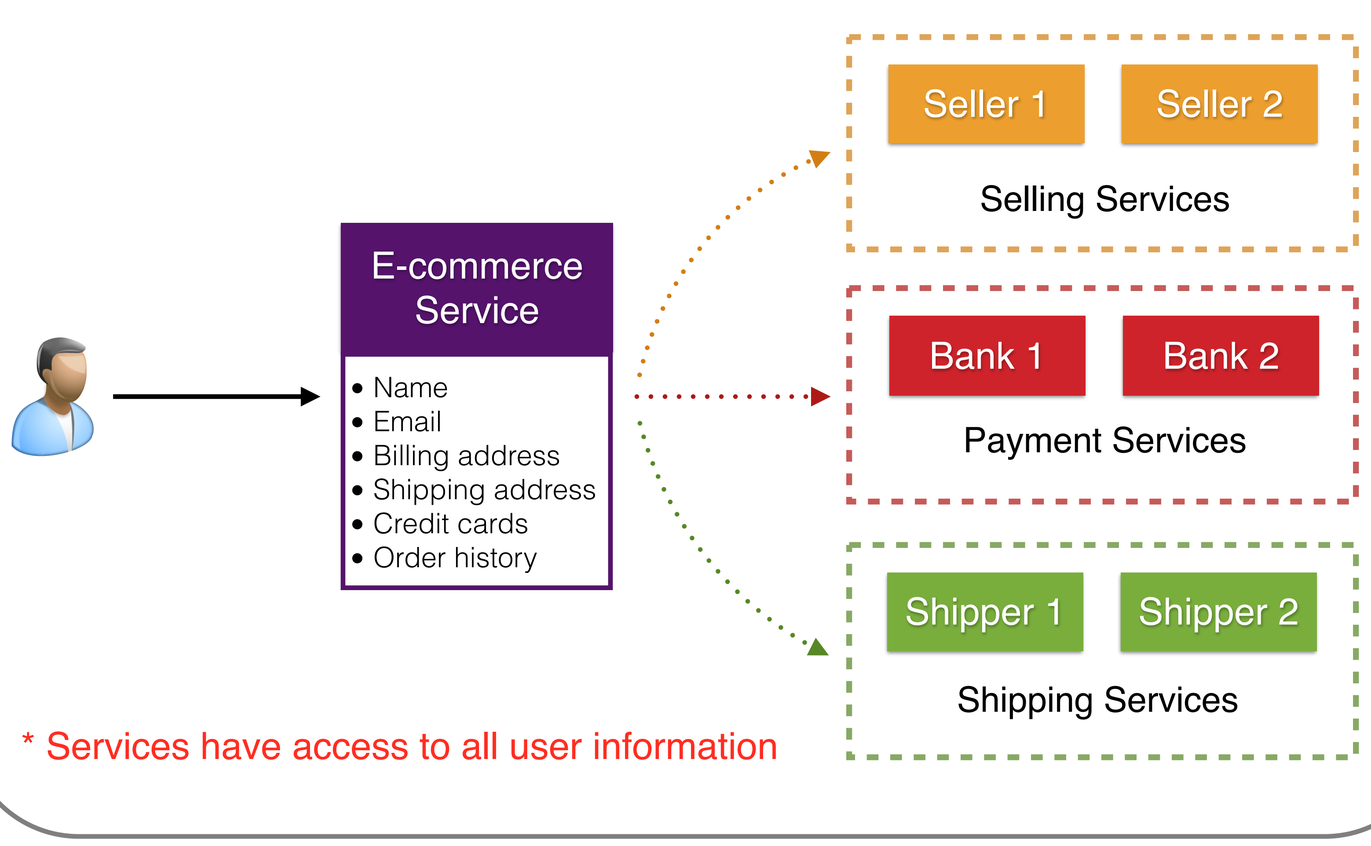
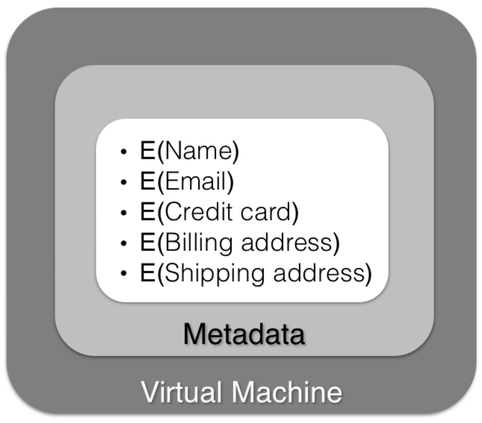
Motivation



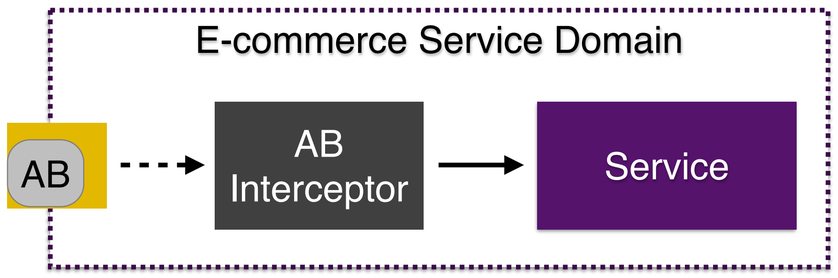
Current Problems

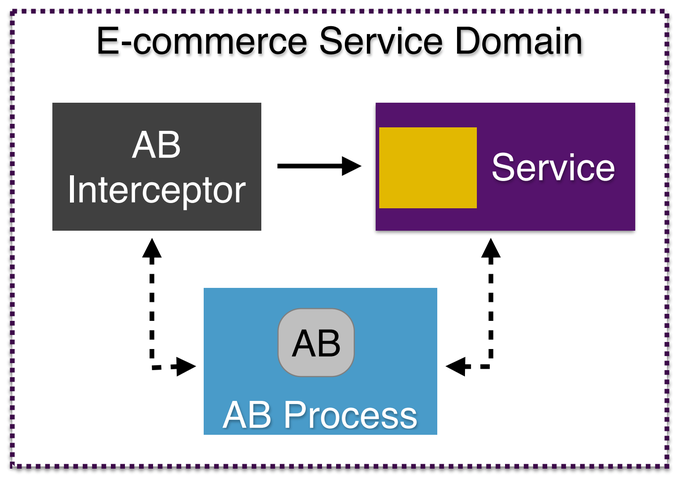
- Lack of visibility
- Loss of control
- Lack of policy communication mechanisms
- Lack of policy enforcement mechanisms
- Information leakage due to attacks
- Information aggregation
- User profiling
- Lack of trust
- Insider abuse
- Inability to handle information disclosure events such as subpoenas

System Components

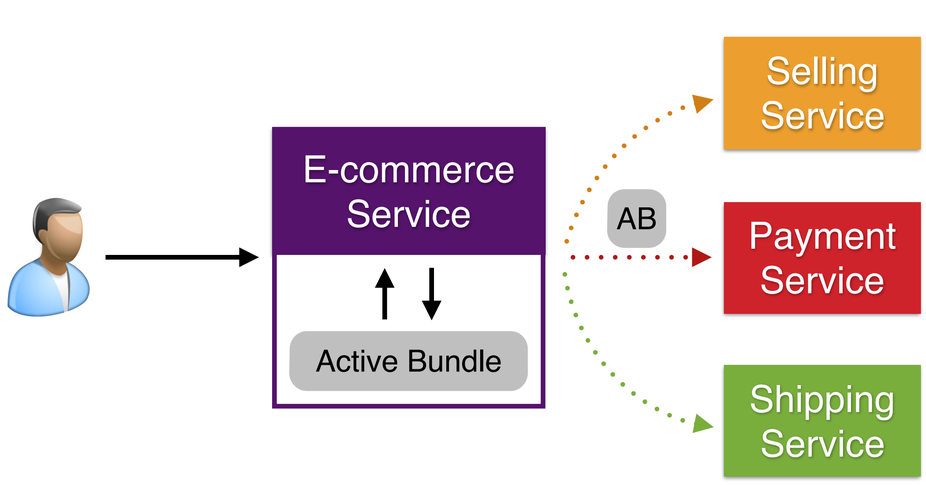


Active Bundle (AB)





System Interactions



Features

- Data-centric approach
- Self-monitoring ability
- Policy based access control
- Ability to control interactions
- Selective data dissemination
- Context aware dissemination
- Minimal disclosure
- Interaction visibility
- Ability to operate in unknown (untrusted) environment
- Independent of trusted entities

Implementation

- Apache Thrift based AB implementation
- Node.js based SOA architecture
- RESTful services
- XACML based policies

https://code.google.com/p/absoa

Future Work

- AB protection against malicious receivers
- Performance evaluation

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