Scalability of Security in Distributed Object Systems: Challenges

Bret Hartman

BlackWatch Technology, Inc.

2-212 CST/CASE Center, Syracuse University

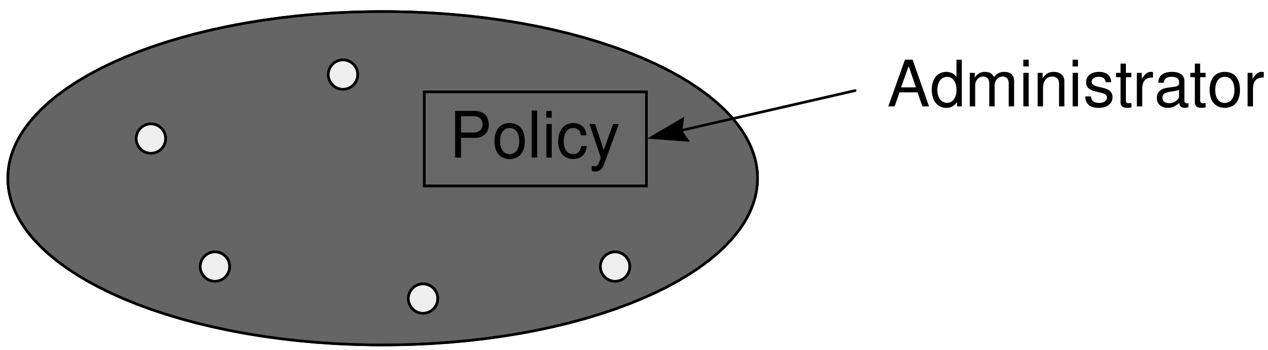
Syracuse, NY 13244

(315) 443-3171

hartman@blackwatch.com

Background

- Object Security Domain
  - Set of objects that are managed together
  - Powerful mechanism for scalable policies
  - Can address: authentication, access control, message protection, audit,...



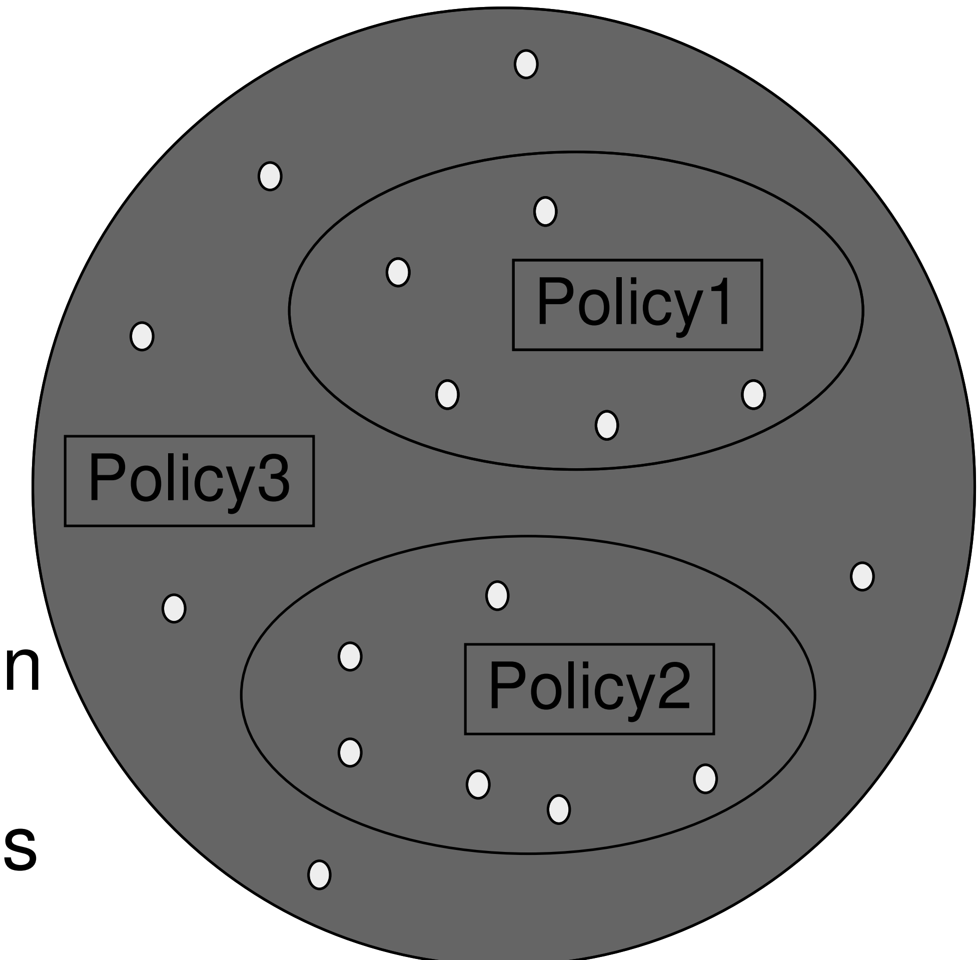
Challenges

- Composability
  - How do we compose policies?
- Scalability
  - Can we keep track of many domains?
- Interoperability
  - Are different domain implementations compatible?

Composability

How do we compose policies?

- Domains unlikely to be managed by a single authority
- Many options for combining policies in overlapping and hierarchical domains



Scalability

Can we keep track of many domains?

- Complex domain relationships are difficult to administer
- Changing domain policies cause race conditions
- Difficult to establish trust in mutually suspicious systems

Interoperability

Are different domain implementations compatible?

- Many possible options to address composability and scalability
- Different solutions are unlikely to interoperate
  - Diminishes benefit of domains