Part 3 - WS-XACML: Authorization and Privacy Policies for Web Services

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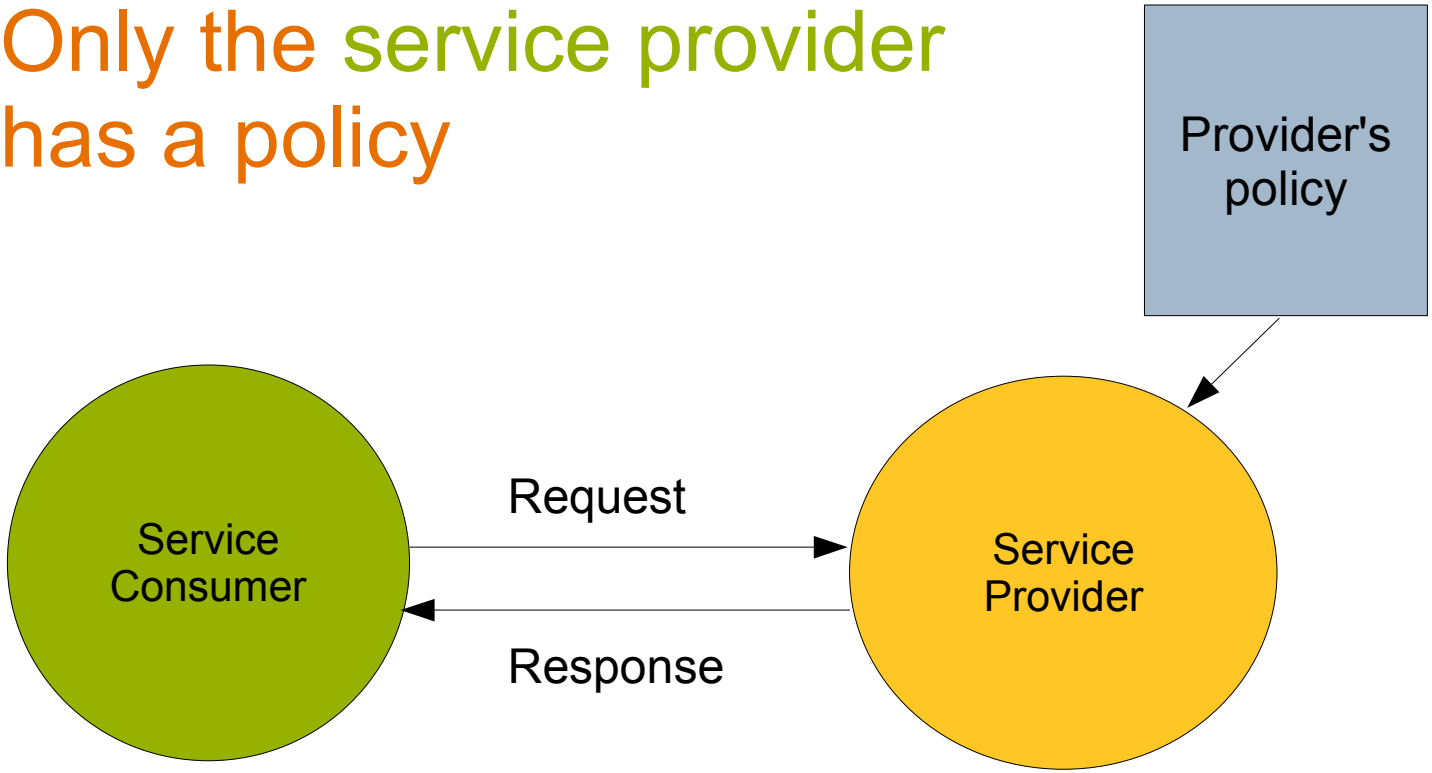
Outline

- Web Services policies are different!
- XACML policies for Web Services
  - WS-XACML policy assertions in general
  - XACMLAuthzAssertion
  - XACMLPrivacyAssertion

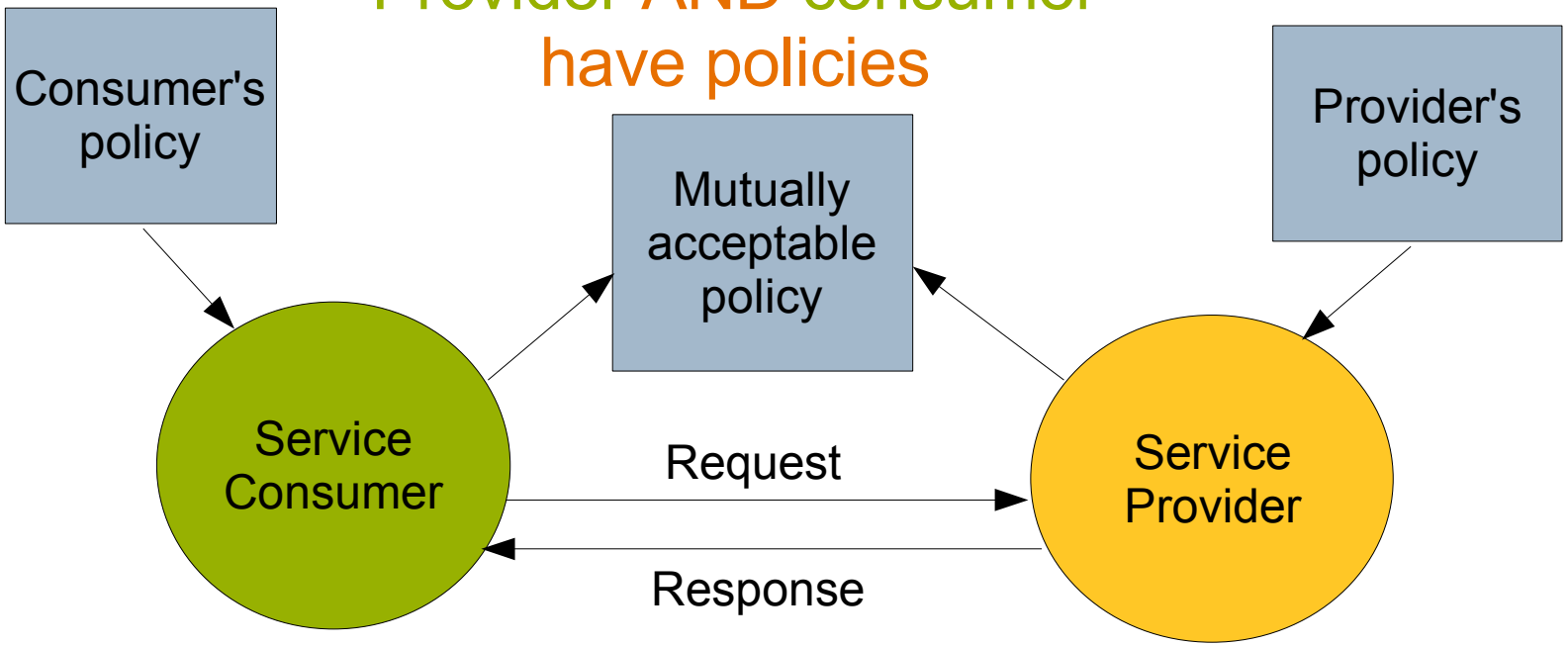
Typical XACML policy usage

Only the service provider has a policy



Typical Web Services policy usage

Provider AND consumer have policies

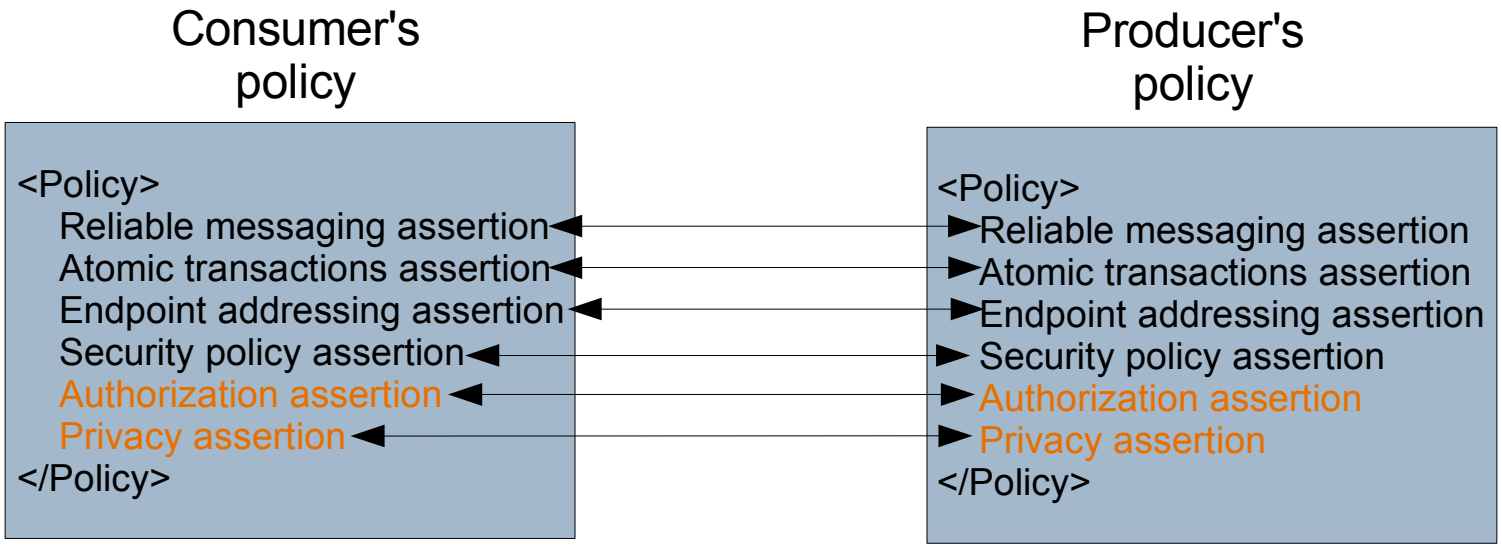


They agree on a mutually acceptable policy before interacting

Web Services Policy (WS-Policy)

<Policy>
Reliable messaging assertion
Atomic transactions assertion
Endpoint addressing assertion
Security policy assertion
Authorization assertion
Privacy assertion
</Policy>

Web Services Policy (WS-Policy)



Mutually Acceptable Policy if all assertions match

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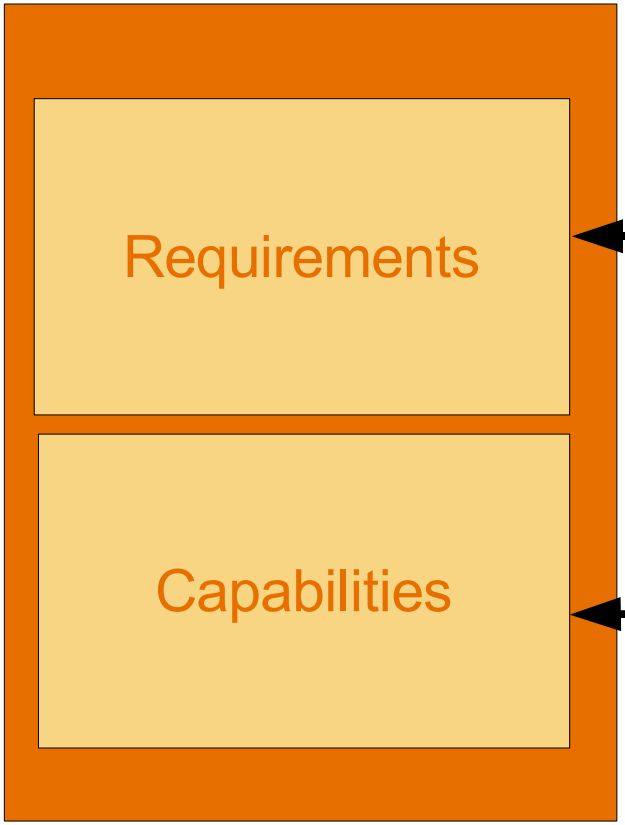
WS-XACML assertion format



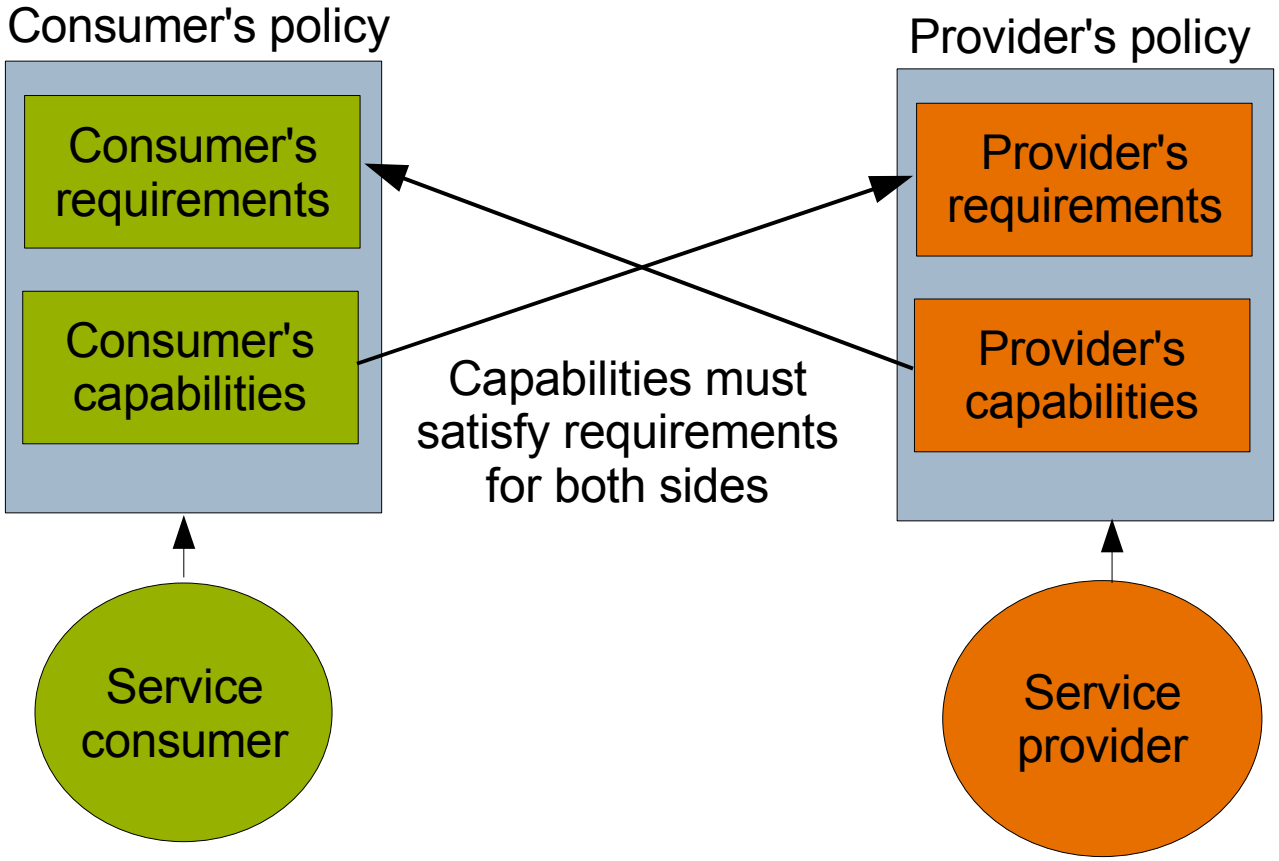
What this service requires of the other party

What this service can do for the other party if its Requirements are satisfied

WS-XACML assertion formats

- Requirements
  - XACML Policy or PolicySet
  - List of XACML “predicates”
- Capabilities
  - XACML Request
  - List of XACML “predicates”
  - XML document
    - Example: W3C P3P policy statement

WS-XACML assertion matching



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XACMLAuthzAssertion

- Authorization requirements
  You must have the role of "Manager",
  You must be an OASIS member,
  Your attributes must be signed by "TrustyCerts"
- Capabilities for providing authorization information
  I can provide attributes signed by "Example Corp." or "TrustyCerts"

XACMLPrivacyAssertion

- Privacy and confidentiality requirements
  You must not release my personal information to any 3rd party,
  You may keep my information ≤ 30 days
- Capabilities for providing or protecting private information
  I can provide my name, and address,
  I will not release your price list to any 3rd party

Frequently Asked Questions

- How is XACMLAuthzAssertion different from WS-SecurityPolicy?
  - *WS-SecurityPolicy: protocol-level security requirements - authentication tokens, encryption, digital signature*
  - *XACMLAuthzAssertion: authorization requirements for accessing the Web Services interface and its associated resources*

Frequently Asked Questions

- Isn't publication of a service's authorization policy an invitation to security attacks?
  - *A service can publish just a subset of its authorization policy*
  - *Many Web Services WANT clients to know their authorization requirements*
    - *Clients can obtain necessary Attributes*
    - *Incompatible clients can go elsewhere*

Frequently Asked Questions

- How is XACMLPrivacyAssertion different from W3C's P3P?
  - *P3P: allows a service to publish its user-level privacy policy in a standard format*
  - *XACMLPrivacyAssertion: fits into WS-Policy; can use P3P inside; supports policy agreement, privacy/confidentiality requirements for PII, specific resources or parts of XML documents, data retention limits*

For more information

- OASIS XACML TC Web Page
  www.oasis-open.org/committees/tc_home.php?wg_abbrev=xacml
- XACML 2.0 Standard
  www.oasis-open.org/committees/tc_home.php?wg_abbrev=xacml#XACML20
- *XACML 3.0 Core*, *XACML 3.0 Administrative Policy*, and *XACML Web Services Profile (WS-XACML)* Working Drafts
  www.oasis-open.org/committees/tc_home.php?wg_abbrev=xacml#CURRENT