The Role of Identity Enabled Web Services in Cloud Computing

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Ping Identity™

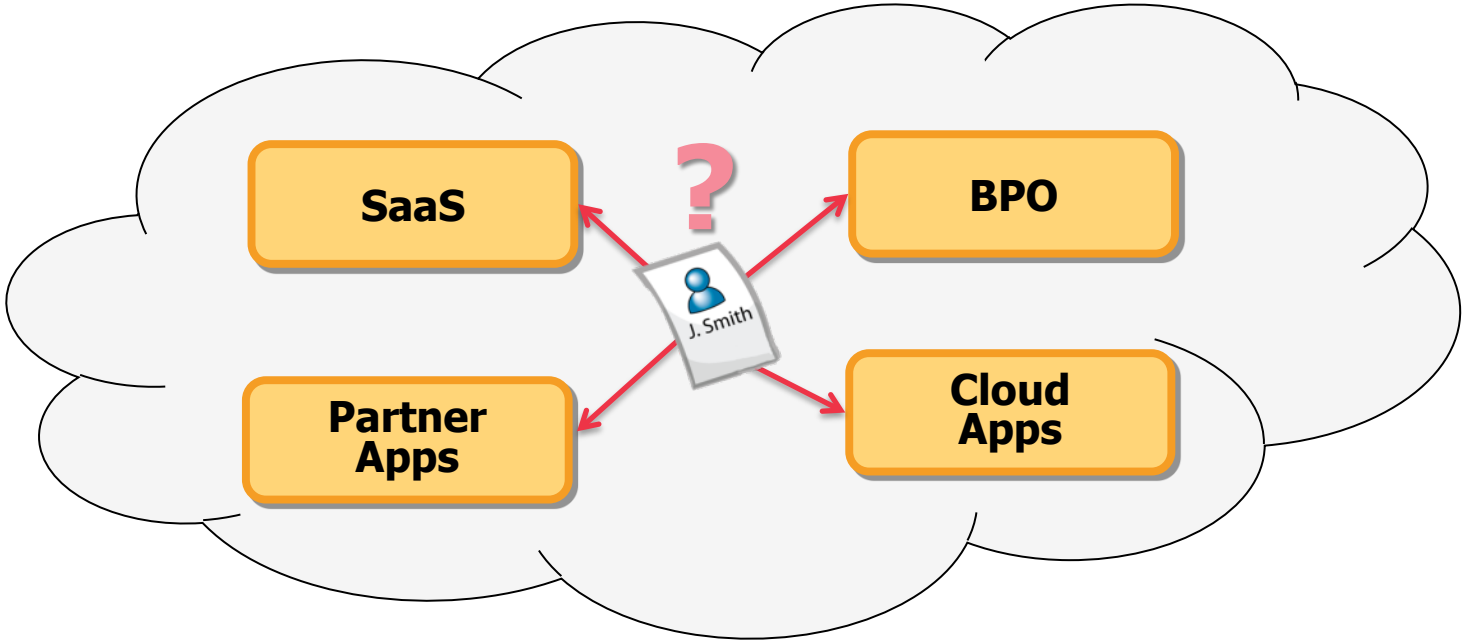
Agenda

- Web Services and the Cloud
- Identity Enabled Web Services
- Some Use Cases and Case Studies
- Questions

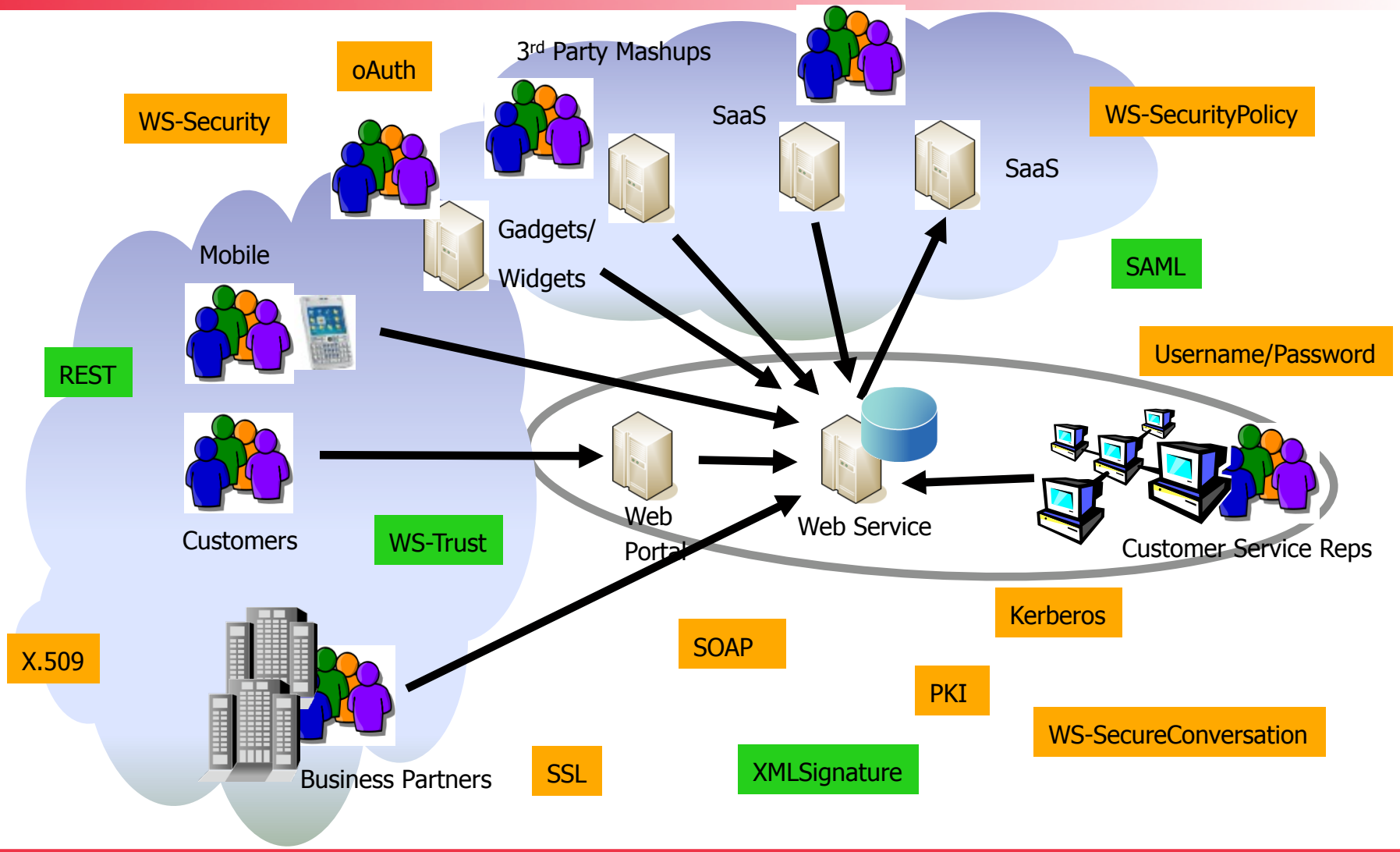
Web Services and The Cloud

Applications Rely on Identity to Meet Fundamental Business Requirements

- As Distributed Computing Evolves, Users are Pushed Further and Further Away from Applications
- How Do You Securely Control Access in an Increasingly Distributed World While Supporting Emerging Technologies like Web Services?



Web Services Security Soup



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Web Services and the Cloud

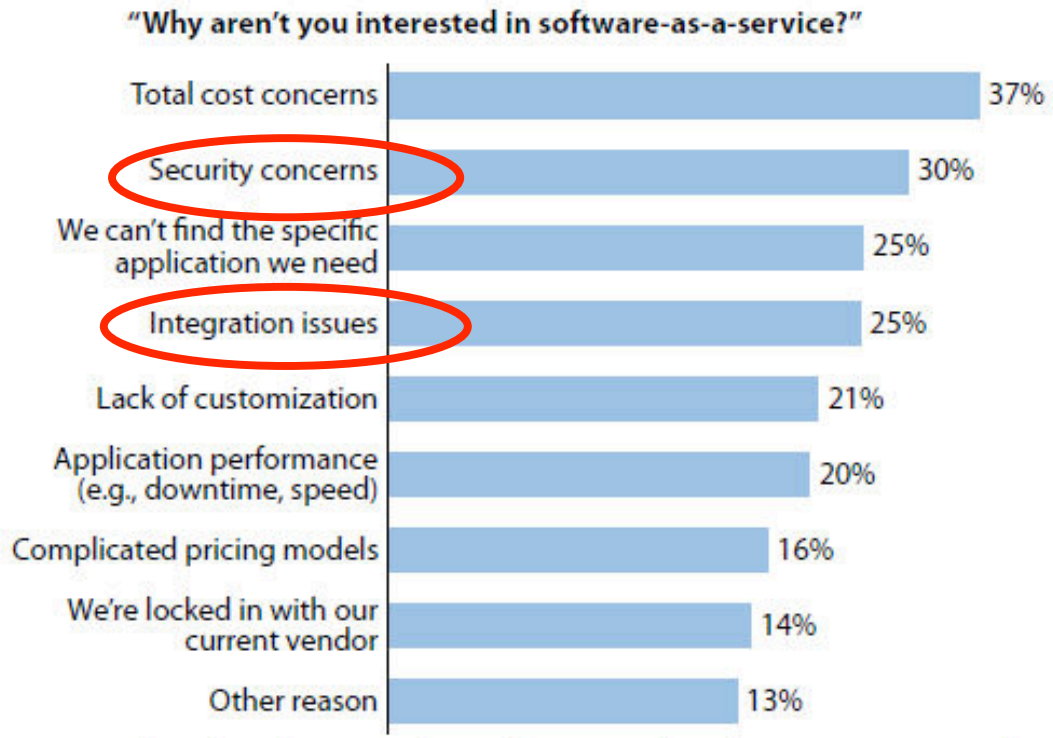
- Cloud Computing & SaaS are changing the requirements for addressing how to secure web services

- Cloud applications & SaaS will need to securely access on-premise data
  - Google Enterprise Developer Platform
  - SaaS Integration

- On premise applications will need to access SaaS API's
  - Salesforce.com API's are heavily used - 2 Billion API calls a month

Security & Integration

Figure 3 Buyers' Concerns With Adopting SaaS



Base: 352 US packaged application software decision-makers that are not interested in SaaS

Source: Enterprise And SMB Software Survey, North America And Europe, Q4 2008

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Source: Forrester Research, Inc.

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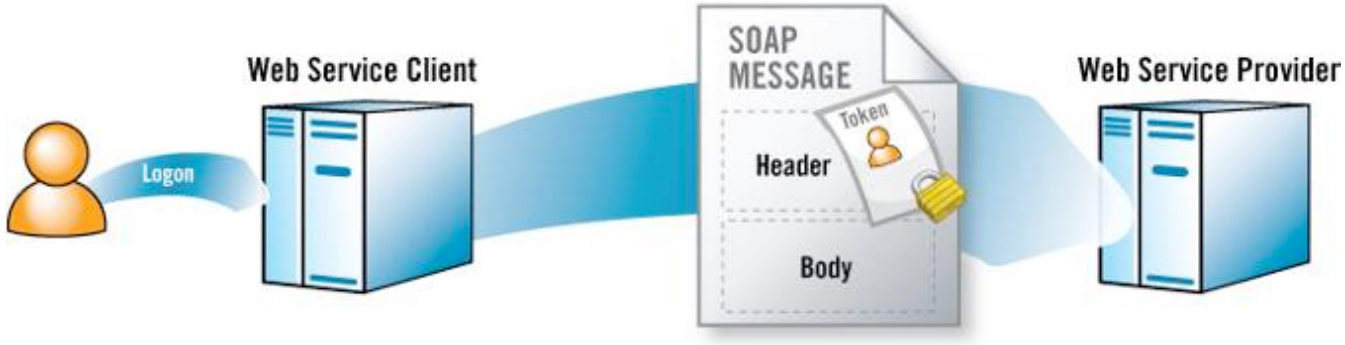
Identity Enabled Web Services

Securing Web Services Today

- Web Services Principles
  - Standards-based, Loosely Coupled, Scalable Applications
- Most Current Security Approaches Violate Web Service Principles
  - Customized, Tightly Coupled, Not Scalable, No Delegation
  - e.g. Mutually Authenticated TLS, User Identity in SOAP Body
    - Each Web Services app must know in advance where identity information is located in SOAP body; TLS session is point-to-point

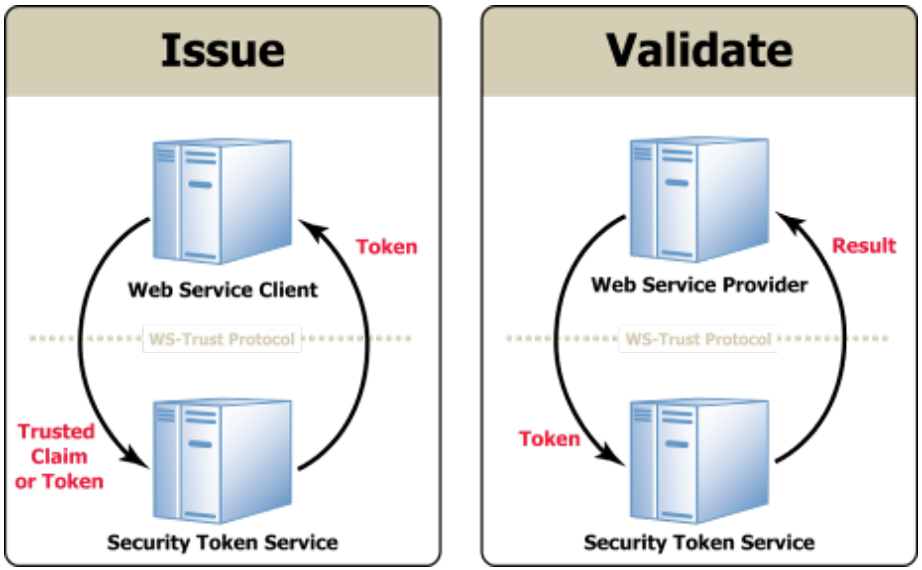
WS-Security Enables a New Standards-based Trust Model

- Encrypted, Signed, Standard WS-Security SOAP Message
- WS-Security SOAP Header Includes Standard WS-Trust Security Token with Identity Information



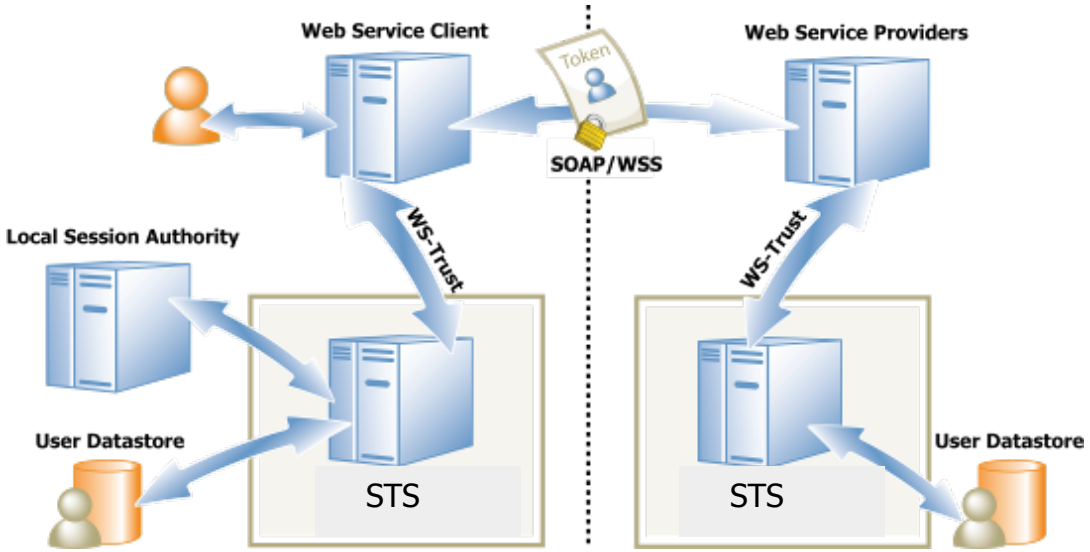
Key Question: How To Create Security Tokens?

WS-Trust Basics



- WS-Trust is an OASIS standard and an extension of WS-Security
- WS-Trust enables security token exchange
- A WS-Trust STS Issues and Validates Security Tokens
  - Kerberos, UserName/Password, X.509, SAML, ….

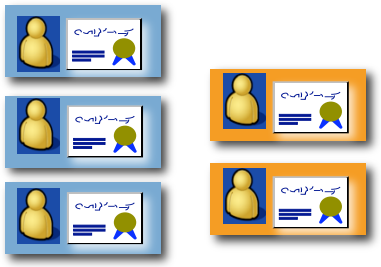
Identity Enabled Web Services



- WS-Security SAML Token Profile
- Enables Delegation
- STS Implements Federated Identity Concepts
  - Attribute Contracts
  - Session Integration
  - Attribute Retrieval
  - Subject, Attribute and Role Mapping

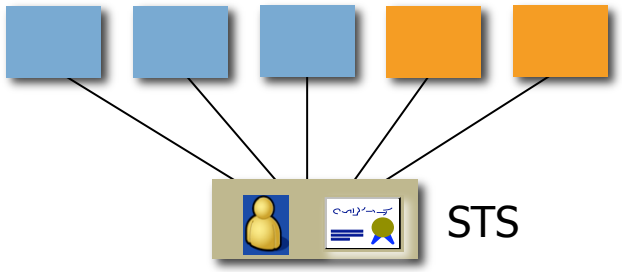
Centralized Security Token Processing

Without STS



Every Web Service Client and Provider
Processes Security Tokens

With STS



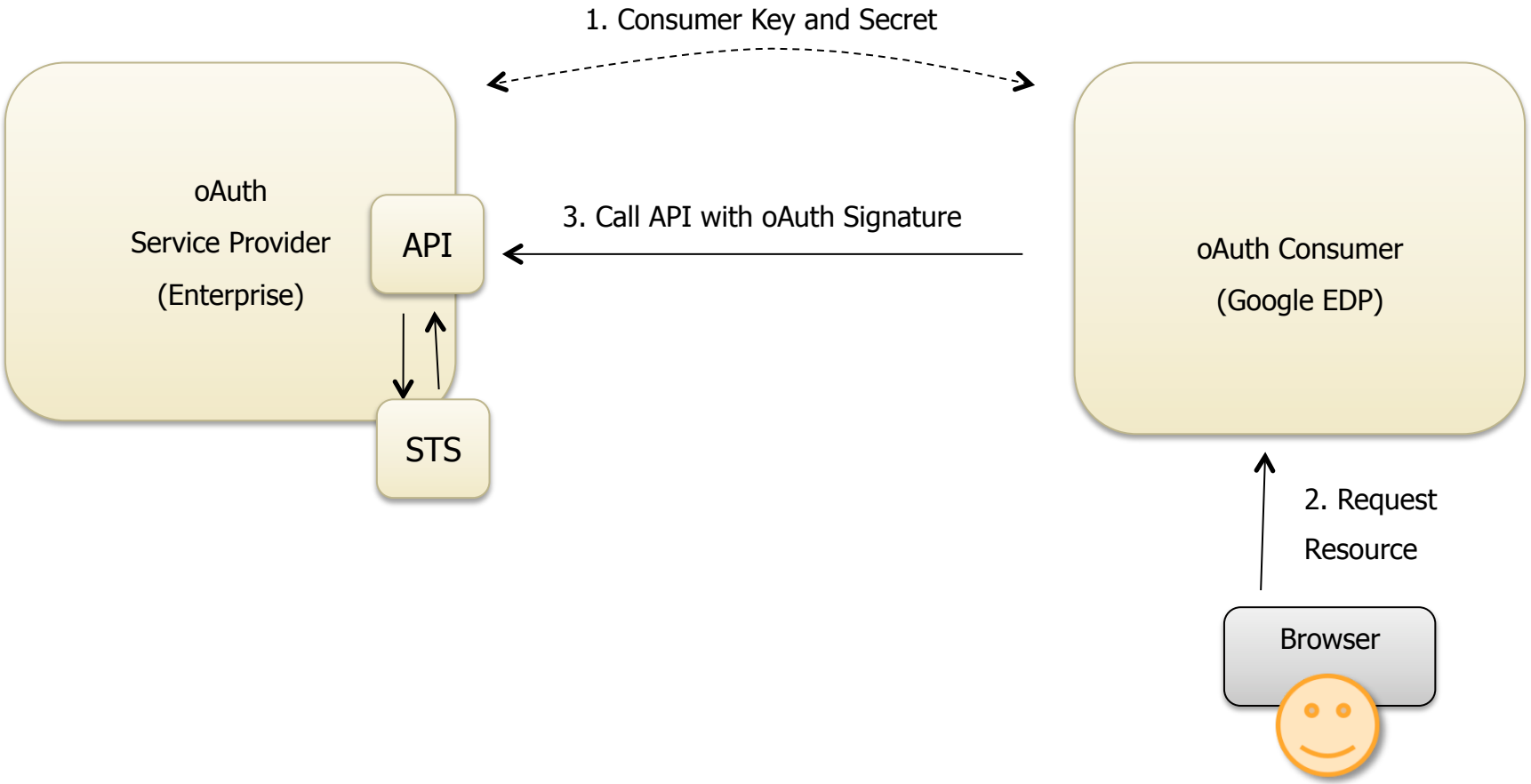
STS Handles
All Security Token Processing

- Gets Identity-Related Security and Crypto Code Out of Applications
- Centralized Administration, Auditing
- Requestor and Recipient Based Policy and Behavior
- Enables Web Services SSO with both Web Clients and Rich Clients
- Supports Client-Side, Provider-Side or Both

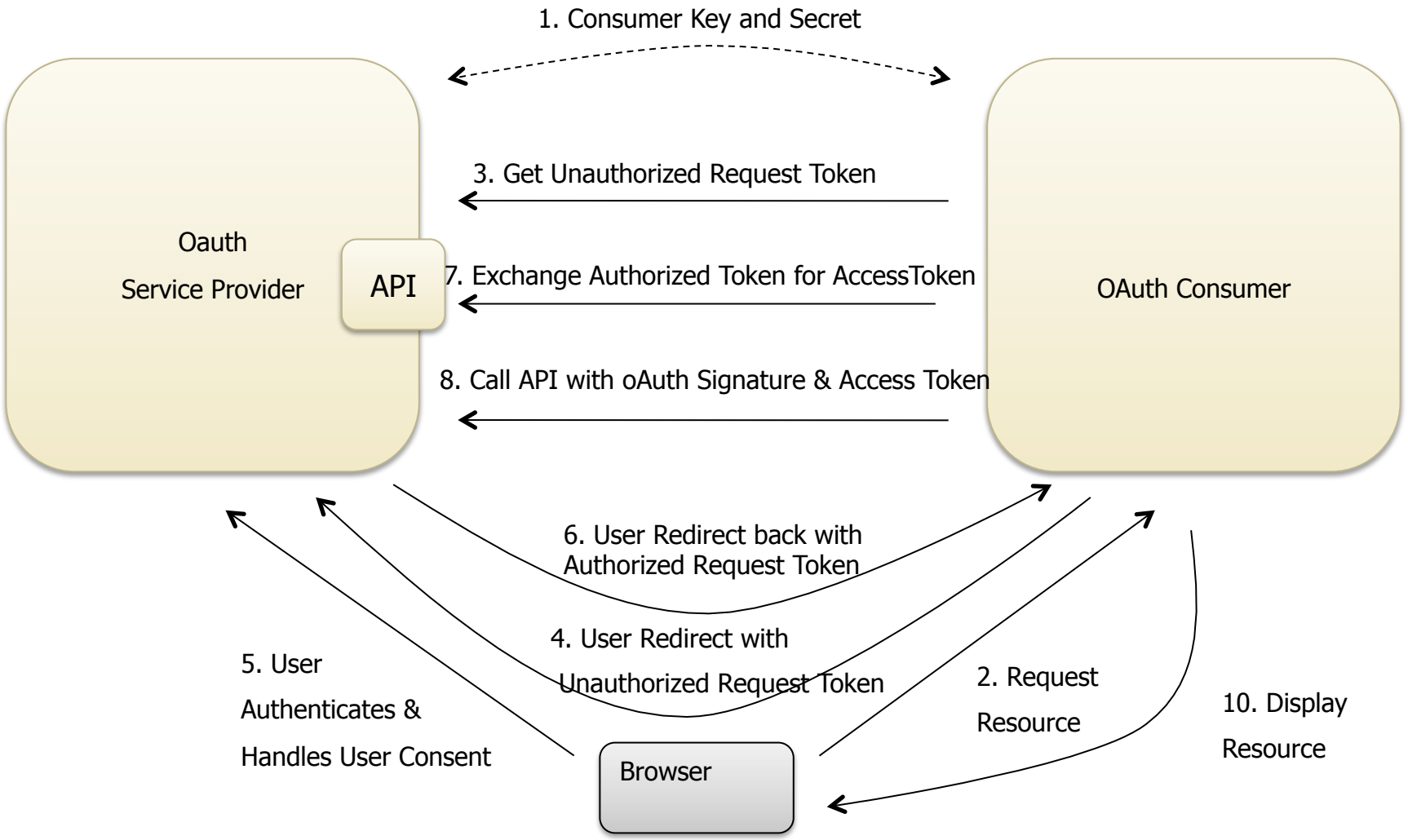
What about oAuth?

- Open standard to secure REST based web service API's between SaaS/Web 2.0 applications
- Driven by SaaS/Web 2.0 community
- oAuth handles delegated web service authentication
  - Secure API authentication
  - Secure access to web service data API's
  - Generally with explicit user consent

'Two Legged' oAuth



'Three Legged' oAuth

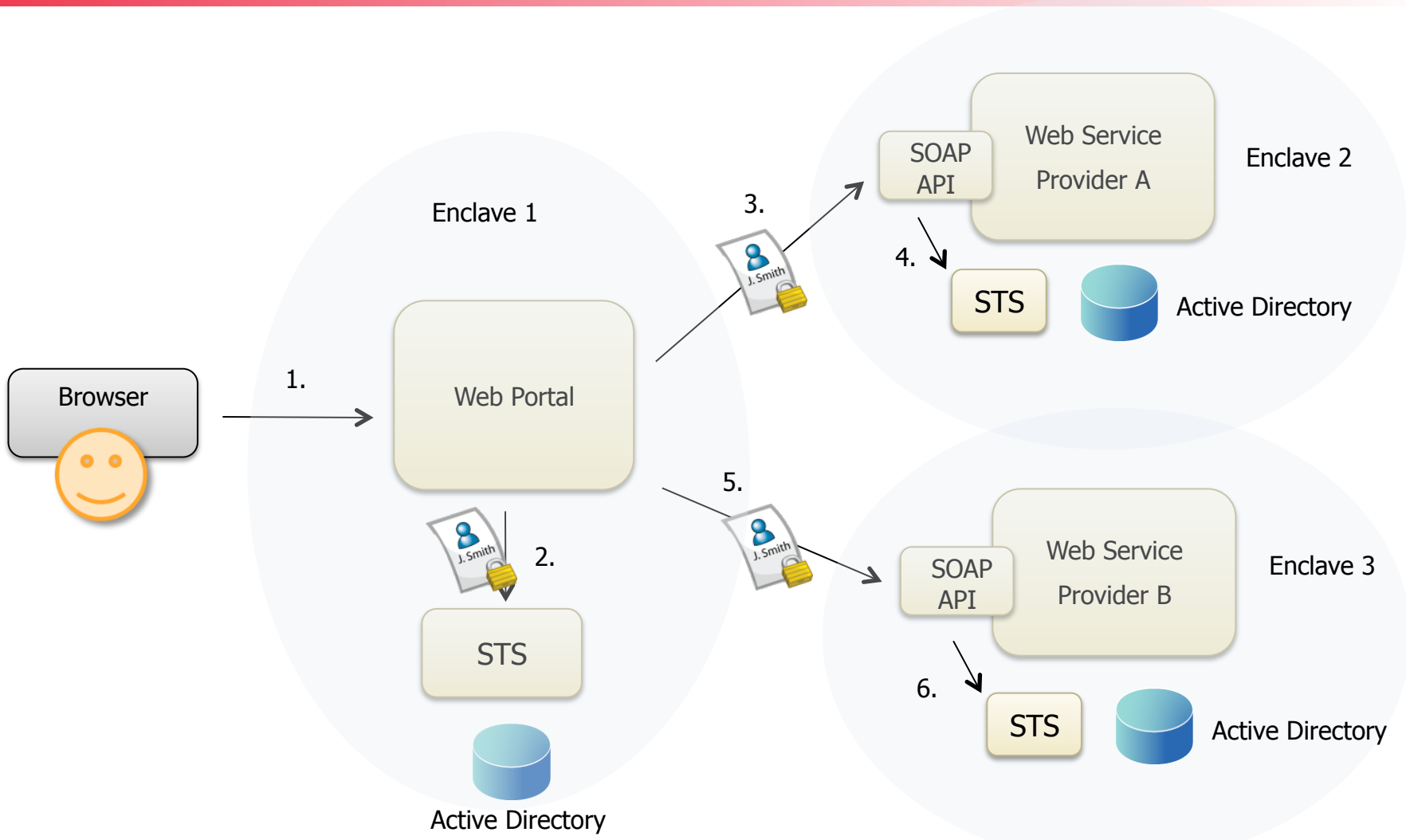


Use Cases & Case Studies

Web Services Use Cases

- Portal Initiated Web Services
  - Browser based app requires user specific data from internal or external web services
- Security for Web Service Providers and SaaS API's
  - Web service providers require authenticated user to authorize access to user specific data
- Rich Desktop Clients
  - Desktop client applications SSO to web service providers inside or outside of security domain

Federal Government



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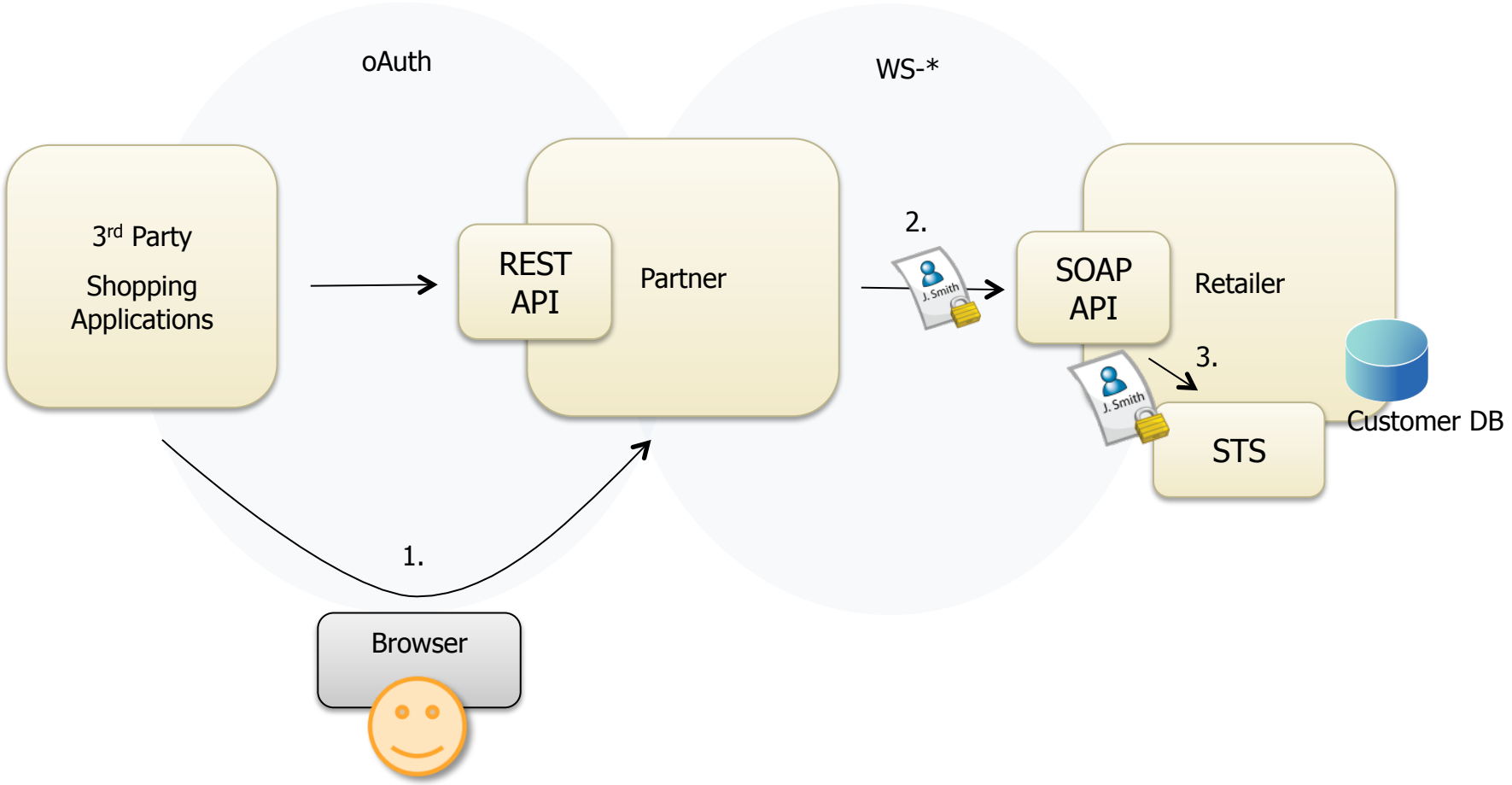
Large Electronics Retailer



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Recommendations

- Leverage SSL for Confidentiality
- Use SAML Tokens to Identity Enable SOAP Web Services
- Leverage a WS-Trust STS to Centralize SAML Token & Federation Processing
- Consider oAuth to secure your REST API's
- … and check out the new PingFederate 6.0 up the back

Questions