Web Services Security Challenges

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Speaker's Qualifications

Raghavan "Rags" N. Srinivas is a Technology Evangelist at Sun Microsystems

Rags represents Sun at the W3C and WS-I and writes a standards column

Rags is an adjunct faculty at Brandeis University

Overall Presentation Goal

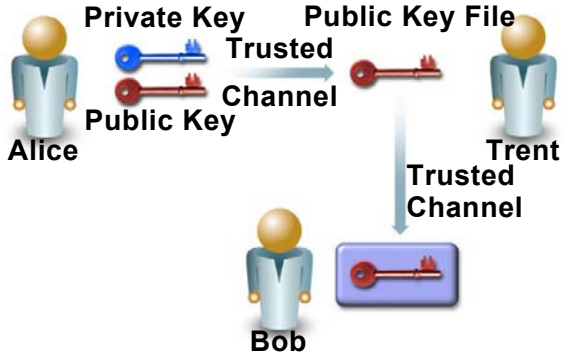
Recognize the challenges of Web Services Security

Agenda

What is Web Services Security?
Current Initiatives
Web Services Security
Challenges
Back to Basics
Futures

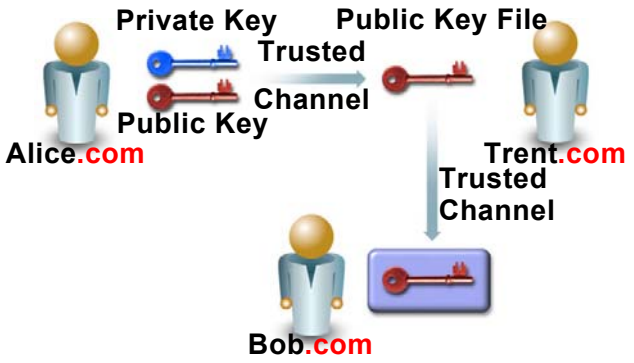
Public-Key Trust Issues

- Trustee

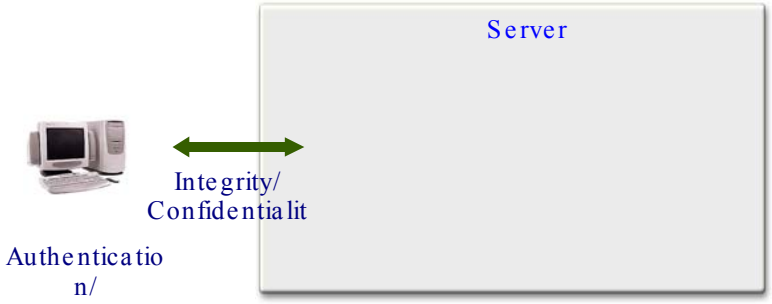


Web Services Trust Issues

- Trusted Network

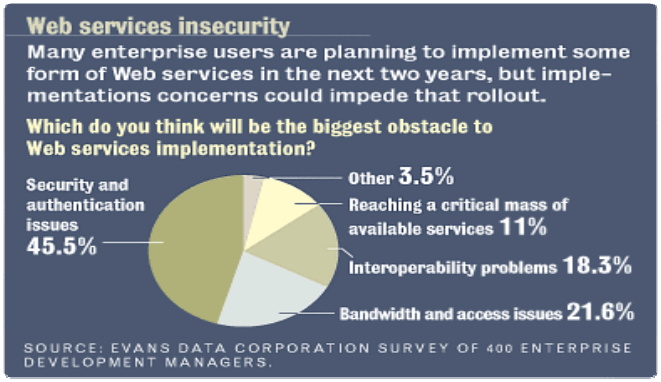


Network Security Concepts



A Complete WS Security End to end Architecture

Web Services Security is important …



WS-Security and what's new

(from the WS-Security specs.)

By itself, WS-Security does not ensure security nor does it provide a complete security solution. WS-Security is a building block that is used in conjunction with other Web service and application-specific protocols to accommodate a wide variety of security models and encryption technologies. Implementing WS-Security does not mean that an application cannot be attacked or that the security cannot be compromised.

XML/ Web Services Security Initiatives

XML Security Efforts

XML Digital Signatures

XML Encryption

XKMS: XML Key Management Services

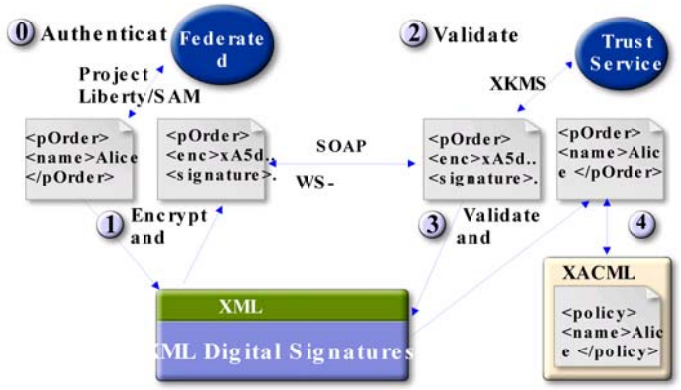
SAML: Security Assertion Markup Language

XACML: eXtensible Access Control Markup Language

WS-Security: SOAP Messaging Sec. Exts.

…

Architectural View



What is Liberty?

A multi-industry business alliance

Defines on-the-wire protocol specifications for federated identity layered on top of SAML

Liberty is not an identity network or authentication authority itself

Rather, it defines specifications that can be used to create identity networks

Liberty 1.0

Builds on top of SAML

- Identity Federation
  - i.e. “Account linking”
- Enhanced SSO
  - Authentication context
- Federation management
- Session management
- Identity network support

Spec released in July '02

Liberty 2.0

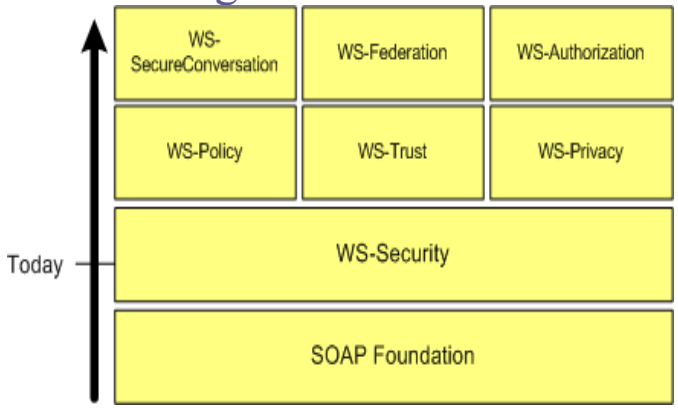
Framework for identity-based Web services

“ Person Profile” service will be defined

Spec due Q1'03

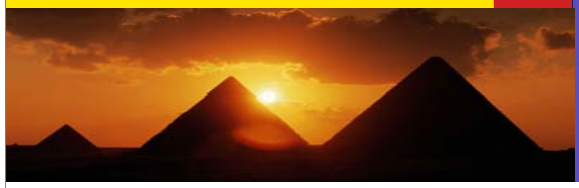
Web Services Security Challenges

Web Services Security Challenges



Web Services Security Challenges

- Standards (too many, too few?)
- Use cases
- Disruptive technologies
- Legacy applications
- Legal issues



Back to Basics – a developer perspective

Security Considerations

- Simple and easy to use
- Protect against *reasonable* attacks
- End-to-end security
- Defense in depth—layers of defense
- Must be integral with system design
  - cannot be designed as an afterthought
  - cannot be designed in isolation

Security Considerations (cont'd)

- Use Higher Level of abstractions
- SSL is not a silver bullet
- Crypto/security algorithms mature slowly and don't interoperate well
- Language/platform matters
- Old world needs to be connected to the new world

Summary

Summary

- Many initiatives; most are still evolving
- Developer APIs are just catching up
- Security investments are still very sound
- Using newer initiatives will be a gradual progression

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