Takes 2 to Tango: Java™ Web Services and .NET Interoperability

Harold Carr, Lead Architect
Arun Gupta, Evangelist

Sun Microsystems, Inc.
wsit.dev.java.net

TS-4865

Goal of Talk

Project Tango (a.k.a. WSIT) enables Java™ technology Web Services interoperability with .NET 3.0.

Learn and see features:
Security, Reliability, Transactions.

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Agenda

Intro to Project Tango interoperable features

Project Tango programming model

Demo: Ease-of-use with NetBeans™ software

Brokered trust scenario visualization

Demo: Excel to Sun Storage using Project Tango

How to obtain Project Tango

Summary and questions

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Project Tango Features
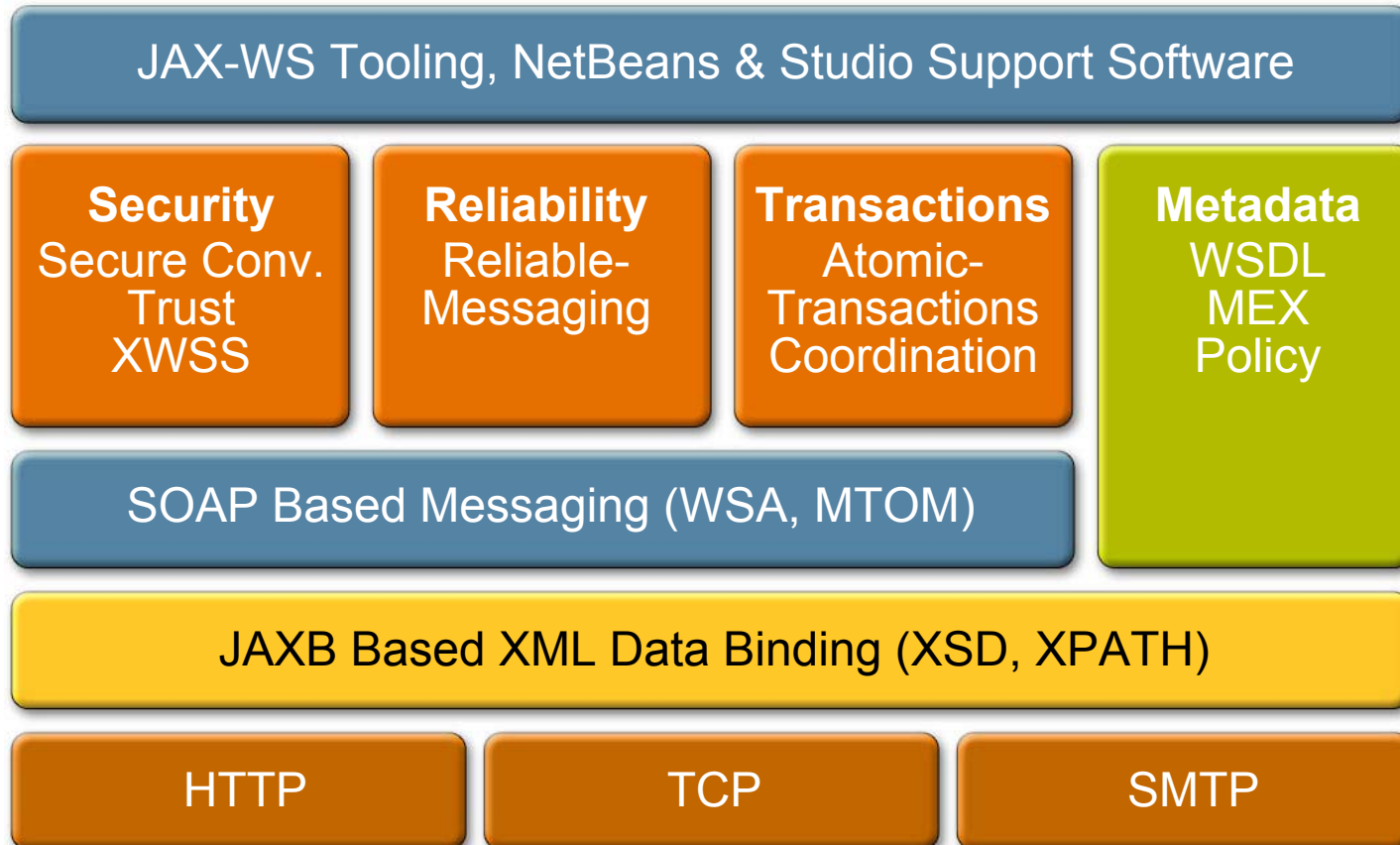## a.k.a., WSIT (Web Services Interoperability Technology)

Enables interoperability with Microsoft .NET 3.0

- Bootstrapping communication
- End-to-end reliability
- Atomic transactions
- End-to-end security
- Trust
- Optimized security
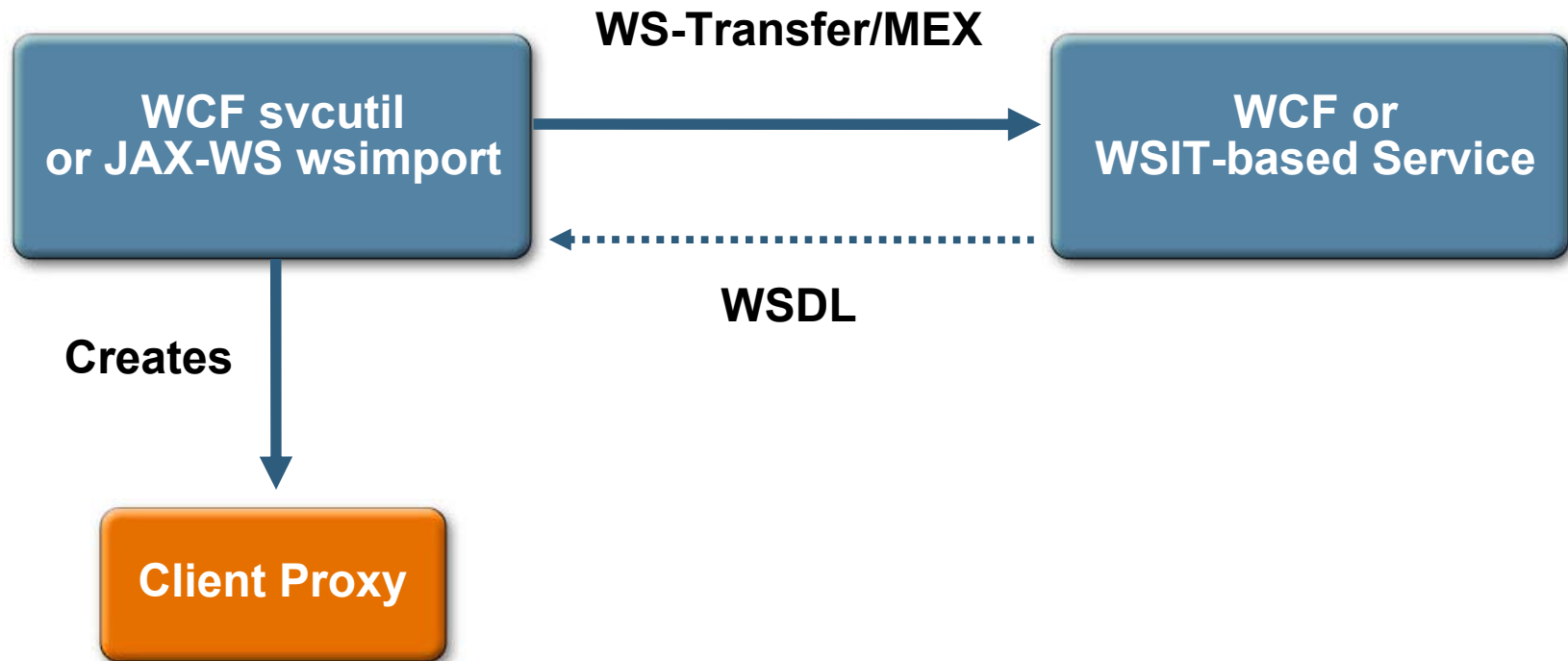
Sun's Web Services Stack

Including Project Tango

JAX-WS Tooling, NetBeans & Studio Support Software

Security Secure Conv. Trust XWSS	**Reliability** Reliable- Messaging	**Transactions** Atomic- Transactions Coordination	**Metadata** WSDL MEX Policy

SOAP Based Messaging (WSA, MTOM)	

JAXB Based XML Data Binding (XSD, XPATH)

HTTP	TCP	SMTP

JAXB = Java Architecture for XML Binding | JAX-WS = Java APIs for XML Web Services

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Bootstrapping Communication

WS-MetadataExchange

WS-Transfer/MEX

**WCF svcutil
or JAX-WS wsimport** → **WCF or
WSIT-based Service**

WSDL

Creates

Client Proxy

End-to-End Reliability
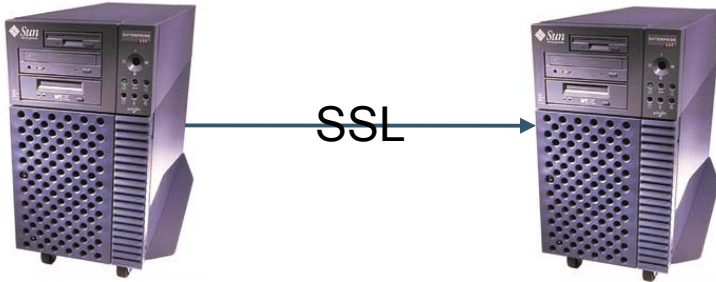
WS-ReliableMessaging

- Before RM
    - Reliable protocols based on TCP/IP
    - Point-to-point

- Brings reliability to SOAP (protocol) layer

- Transparent to application

- Recover from lost/misordered messages

- Works on non-TCP/IP transports

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Transactions

WS-AtomicTransactions/Coordination

- All operations in TX boundary either succeed or are all rolled back

- New to web services

- Same as in Enterprise JavaBeans™ (EJB™) architecture/Java RMI-IIOP Technology

Java RMI-IIOP Technology = Java Remote Method Invocation over Internet Inter-ORB Protocol Technology

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Security

Before WS-Security

- SSL/HTTPS
- Security at transport layer
- All or nothing granularity
- Point-to-point

WS-Security

- Security at SOAP (protocol) layer
- Fine granularity possible
  - Only sign/encrypt credit card # (e.g., XML subtree)
- Works on non-TCP/IP transports
- Integrity, Confidentiality, Auth
- W3C XML Signature/Encryption

Trust

WS-Trust

- Establish and broker trust relationships

- Issue, Renew, Validate security tokens used by WS-Security

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Optimized Security

WS-SecureConversation

- For multiple message exchanges

- Establish a Secure SESSION

- Use initial key to create/use derived keys for subsequent messages

    - (Instead of obtaining a new key for each message)

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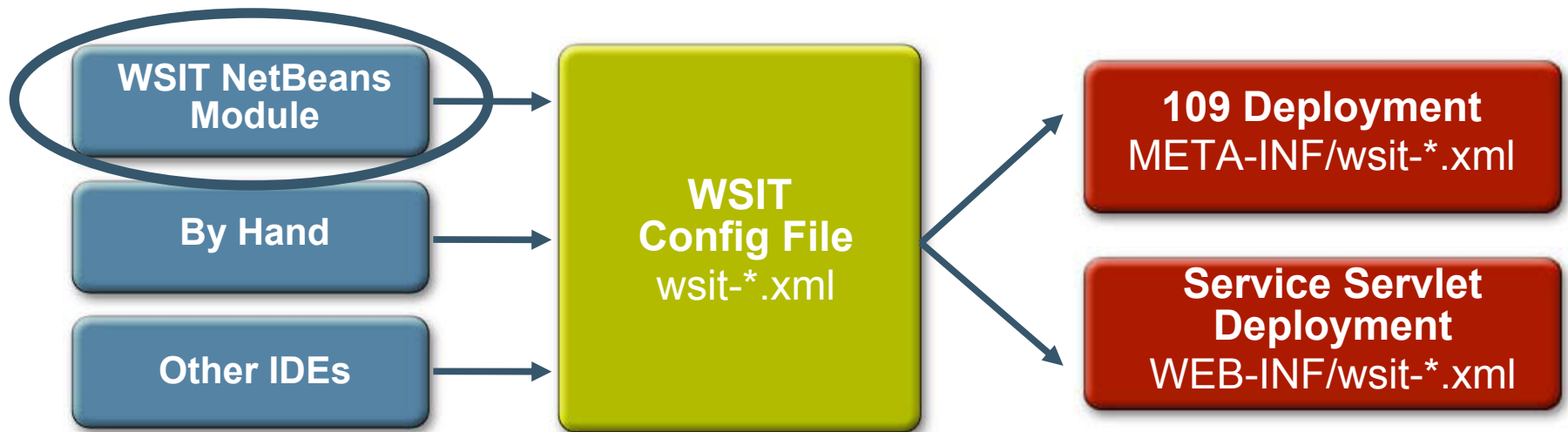
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Project Tango Programming Model

- **No runtime APIs** for Project Tango

- Use **JAX-WS** and **EJB** APIs

- Developer/deployer supplies **config file** to enable/control Project Tango components

- Config file written by hand or produced by Project Tango NetBeans software module

WSIT Server-Side Programming Model

WSIT NetBeans Module

By Hand

Other IDEs

WSIT Config File
wsit-*.xml

109 Deployment
META-INF/wsit-*.xml

Service Servlet Deployment
WEB-INF/wsit-*.xml

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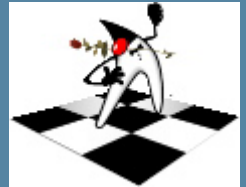
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Project Tango Ease-of-Use With NetBeans Software

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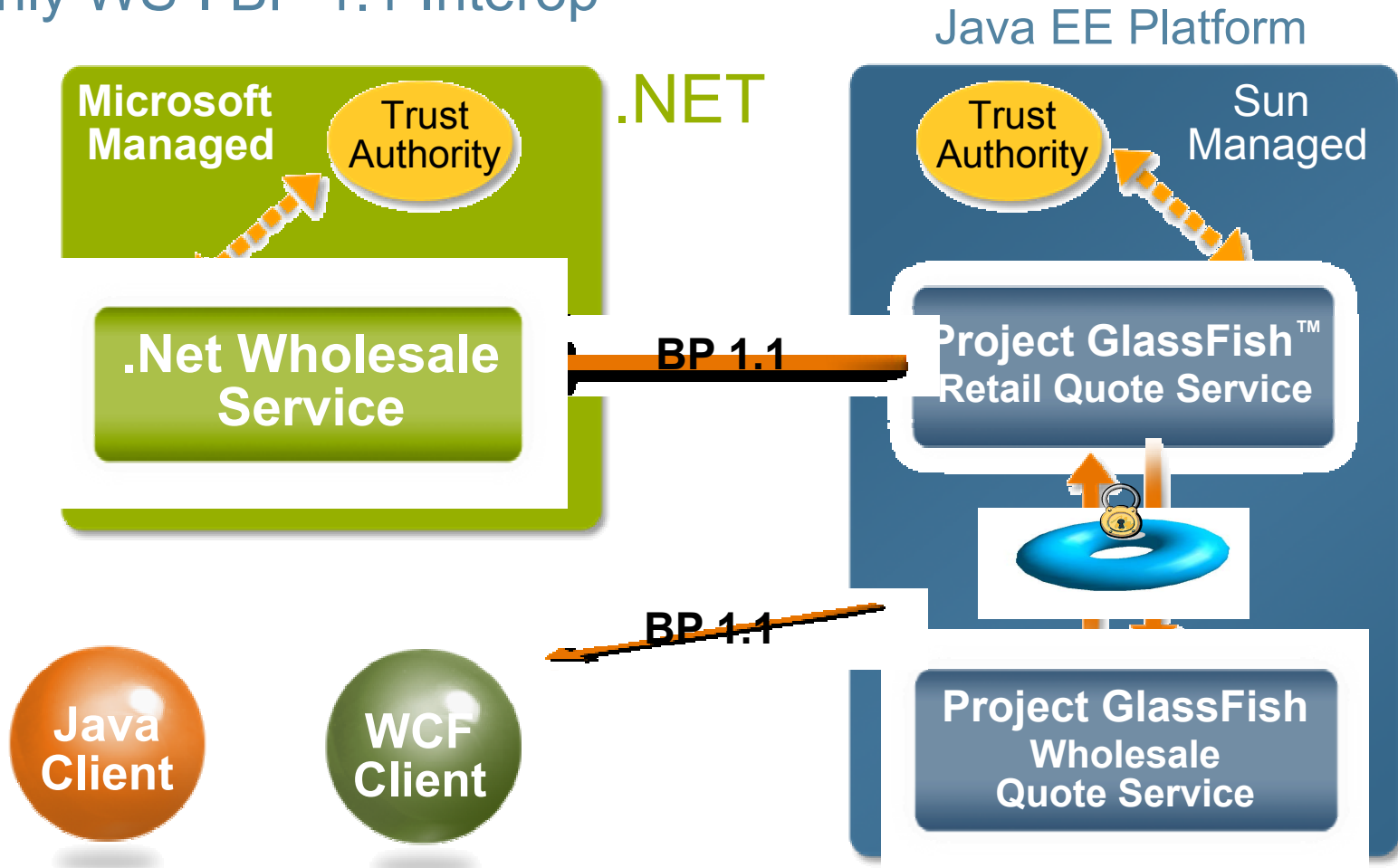
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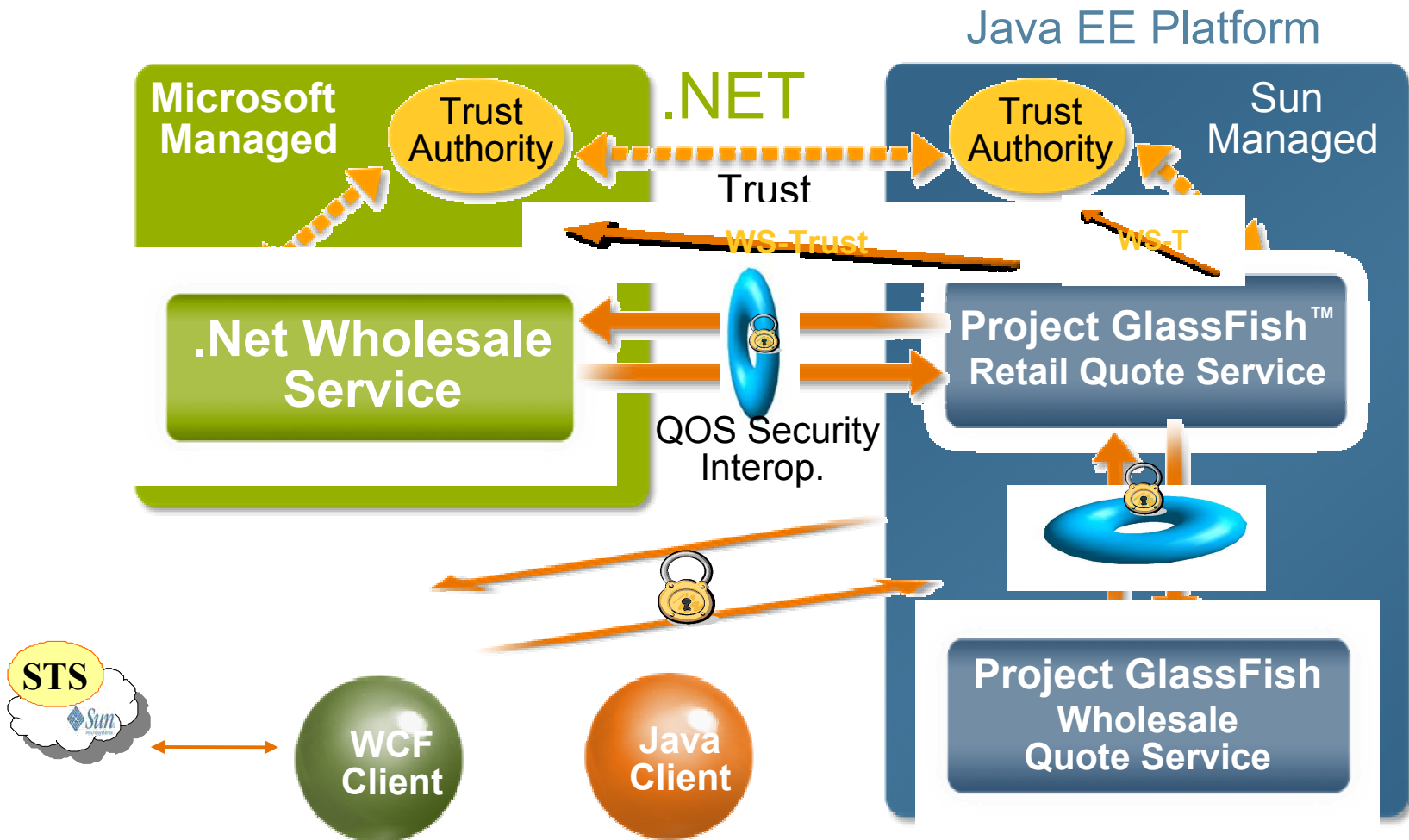How to obtain Project Tango

Summary and questions

Before Project Tango

Only WS-I BP 1.1 Interop

Java EE Platform

.NET

Microsoft Managed

Trust Authority

Sun Managed

Trust Authority

.Net Wholesale Service

BP 1.1

Project GlassFish™ Retail Quote Service

Java Client

WCF Client

BP 1.1

Project GlassFish Wholesale Quote Service

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With Project Tango

Java EE Platform

Microsoft Managed — Trust Authority — .NET — Trust Authority — Sun Managed

Trust — WS-Trust — WS-T

.Net Wholesale Service — QOS Security Interop. — Project GlassFish™ Retail Quote Service

STS — WCF Client — Java Client — Project GlassFish Wholesale Quote Service

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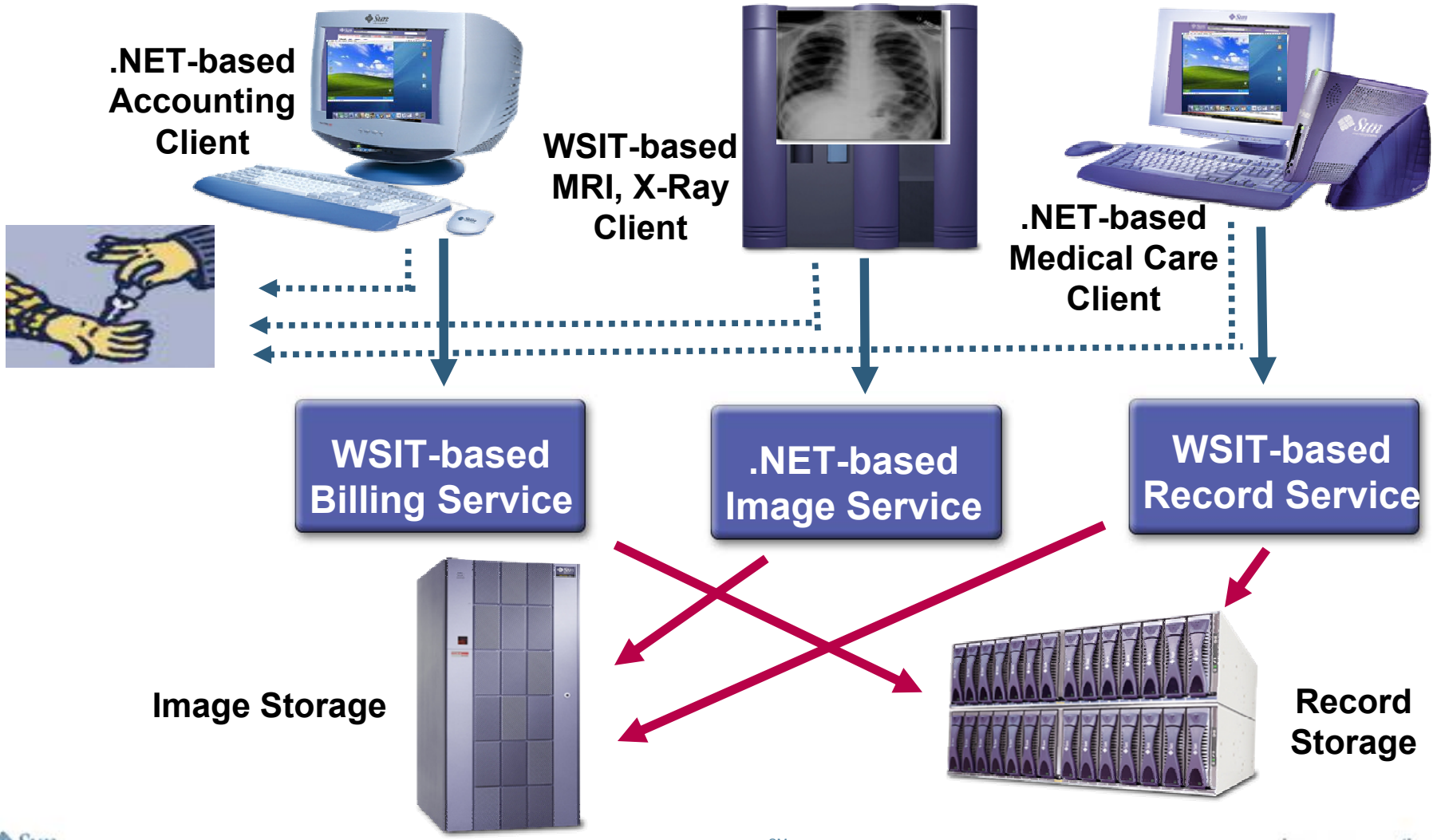
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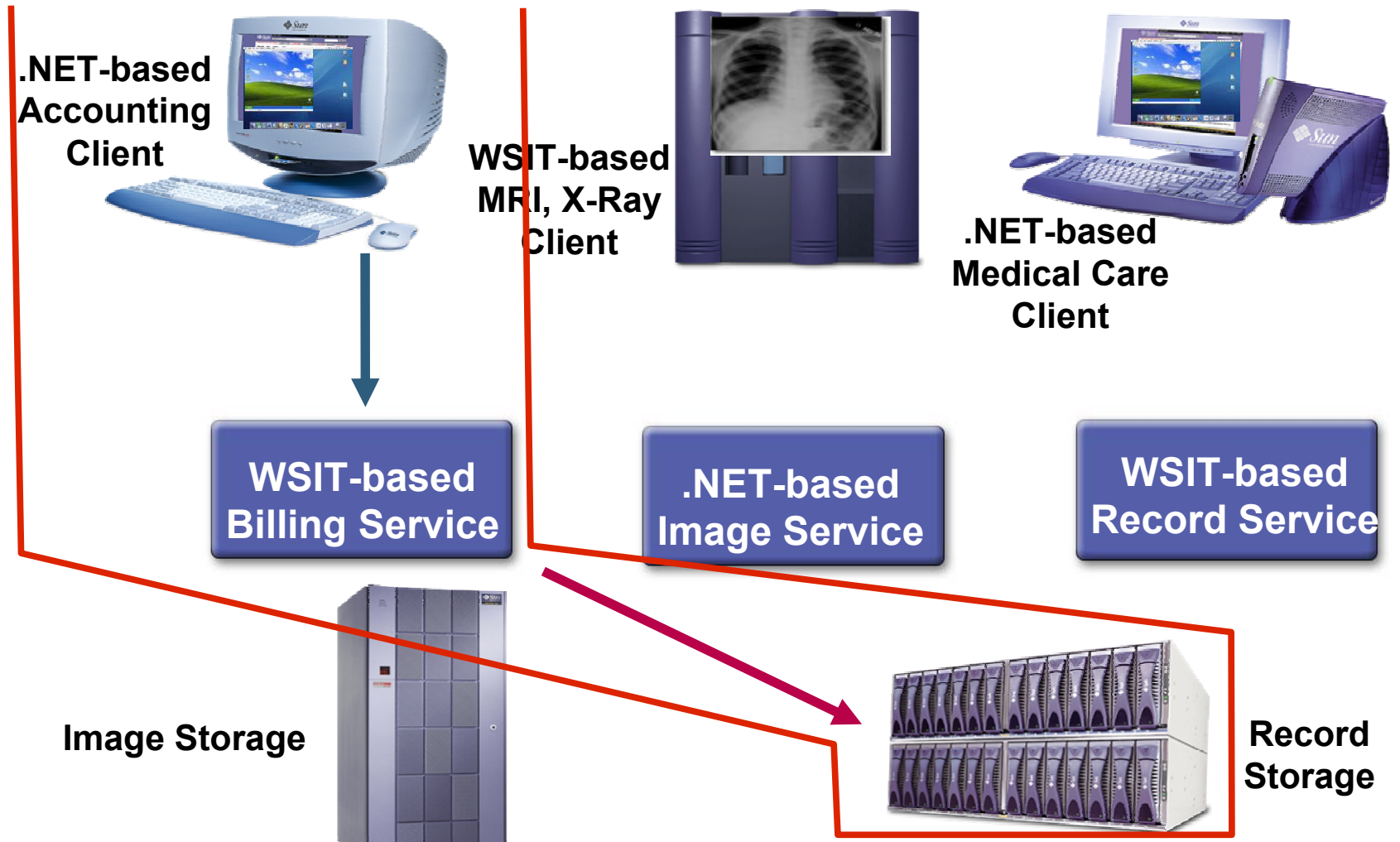
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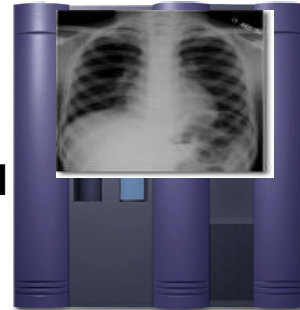Summary and questions

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Demo Scenario: Health Care System

.NET-based Accounting Client

WSIT-based MRI, X-Ray Client

.NET-based Medical Care Client

WSIT-based Billing Service

.NET-based Image Service

WSIT-based Record Service

Image Storage

Record Storage

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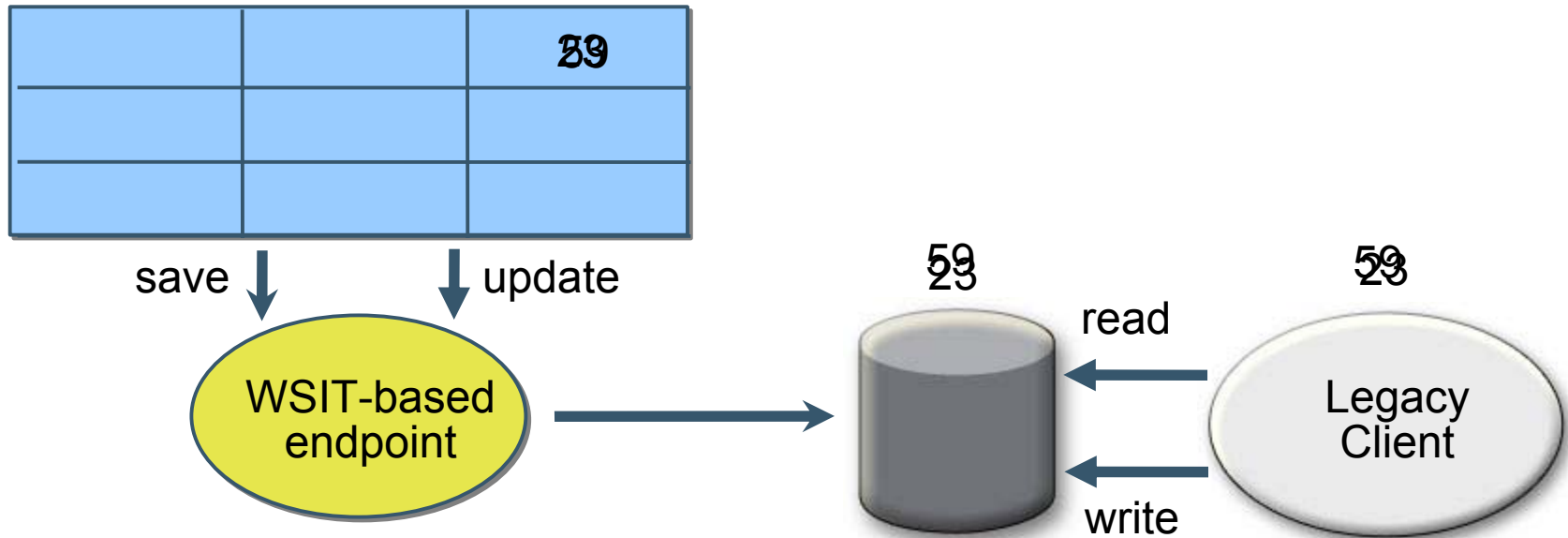
Visualization

- A patient record in Excel 2007 on Vista; Spreadsheet has Save/Update buttons

- A WSIT-enabled Web service endpoint that communicates with back-end system

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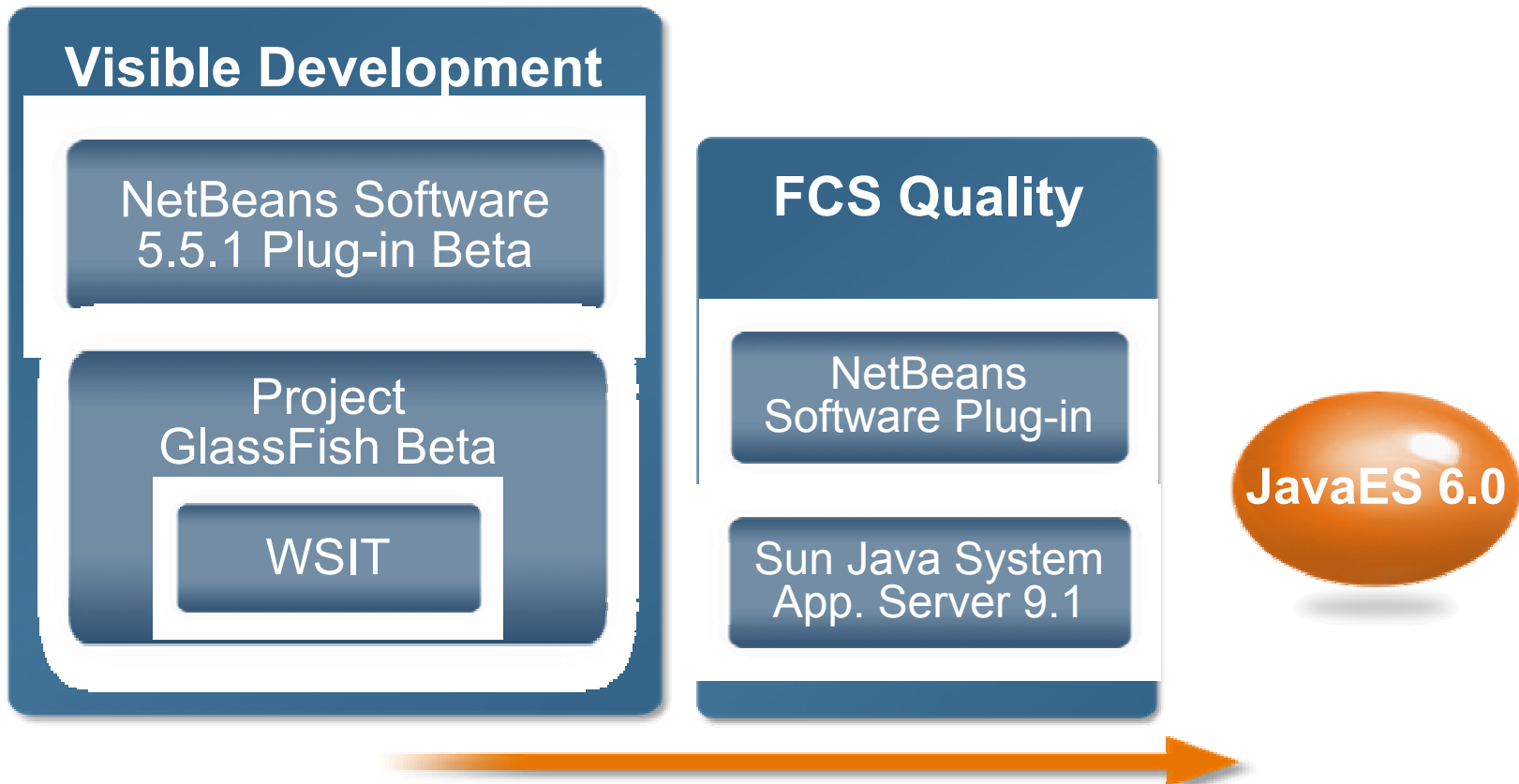
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How to Obtain WSIT

Built into Sun's Project GlassFish Open Source
Java EE Platform Application Server

Visible Development

NetBeans Software
5.5.1 Plug-in Beta

Project
GlassFish Beta

WSIT

FCS Quality

NetBeans
Software Plug-in

Sun Java System
App. Server 9.1

JavaES 6.0

GlassFish Community
The clear choice for the web

GlassFish V2 Beta—Available Now!
Production-ready Java EE Platform 5 Application Server

- Clustering, High Availability, Load Balancing for large scale deployments
- Faster—improved performance for demanding applications
- Web Services Interoperability Tech (WSIT)
- Scripting support includes Ajax
- Java Business Integration (JBI) integration
- Tools Integration—NetBeans IDE and Eclipse

- **Java EE Platform 5—** simplifies the development of highly scalable SOA and Web 2.0 applications

- Free and open community with participation by Oracle, BEA, JBoss, TmaxSoft and Geronimo

- **Always free** to download, deploy and distribute

  glassfish.java.net

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Get WSIT NOW!

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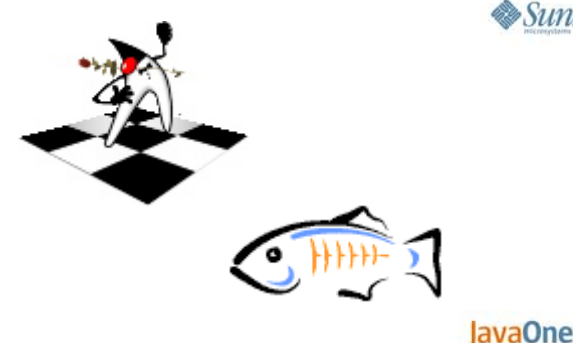
Project Tango Summary
a.k.a., WSIT (Web Services Interoperability Technology)

- Proven interoperability with .NET 3.0

- Technologies transparent to applications
  - No new APIs (use JAX-WS API)
  - Excellent support in NetBeans software

- Integrated with Sun's Project GlassFish Application Server

- Live development @ wsit.dev.java.net
  - Please come join us!

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Q&A

jax-ws.dev.java.net
wsit.dev.java.net
glassfish.dev.java.net

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