

# A glance at Apache Tuscany

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# Apache Tuscany

- Implements an SOA programming model and runtime based on the Open SOA specs, SCA, SDO and DAS
- Helps socialize and facilitate the adoption of the SCA, SDO and DAS programming models
- Helps gain early experience from implementing the specifications and helps refine the specifications
- Broadens the application of SOA to a variety of languages, bindings and component types



# Open SOA - <http://www.osoa.org>

## The OSOA Collaboration



Latest news:

March 21<sup>st</sup> 2007

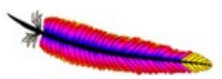
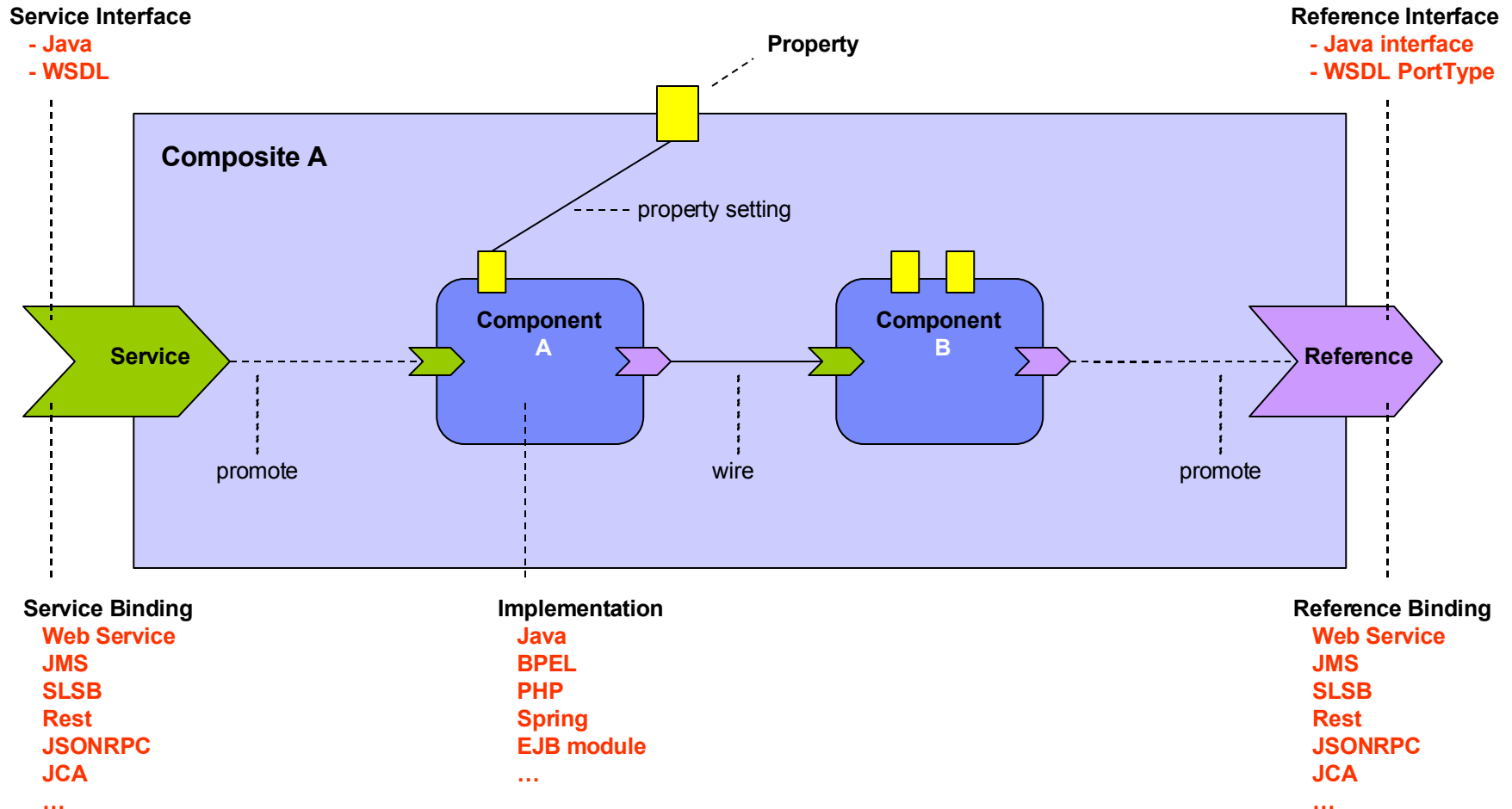
SCA 1.0 specifications published

Submitted to OASIS

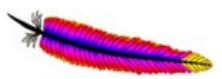
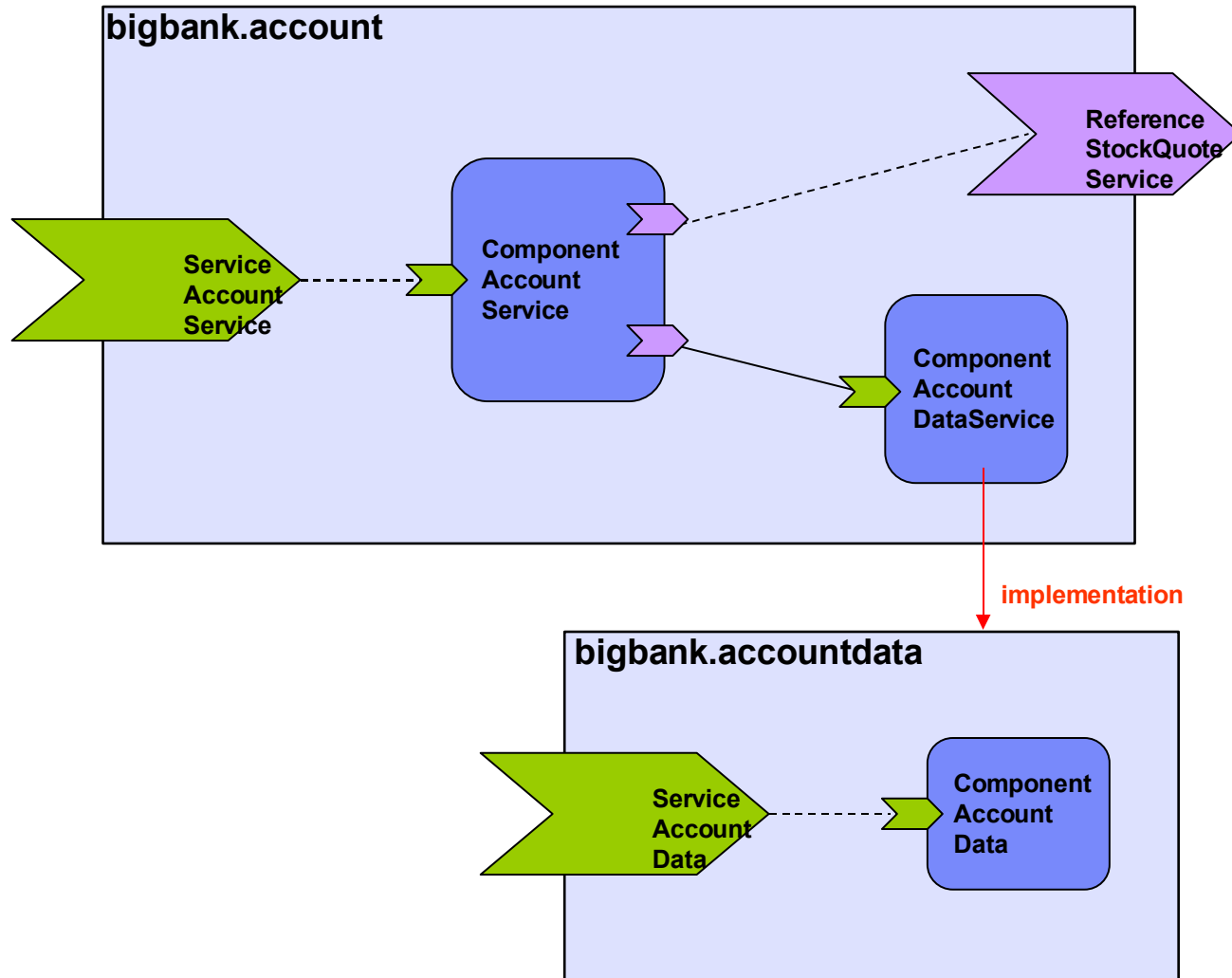
## Supporters of the OSOA Collaboration



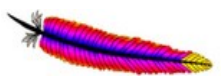
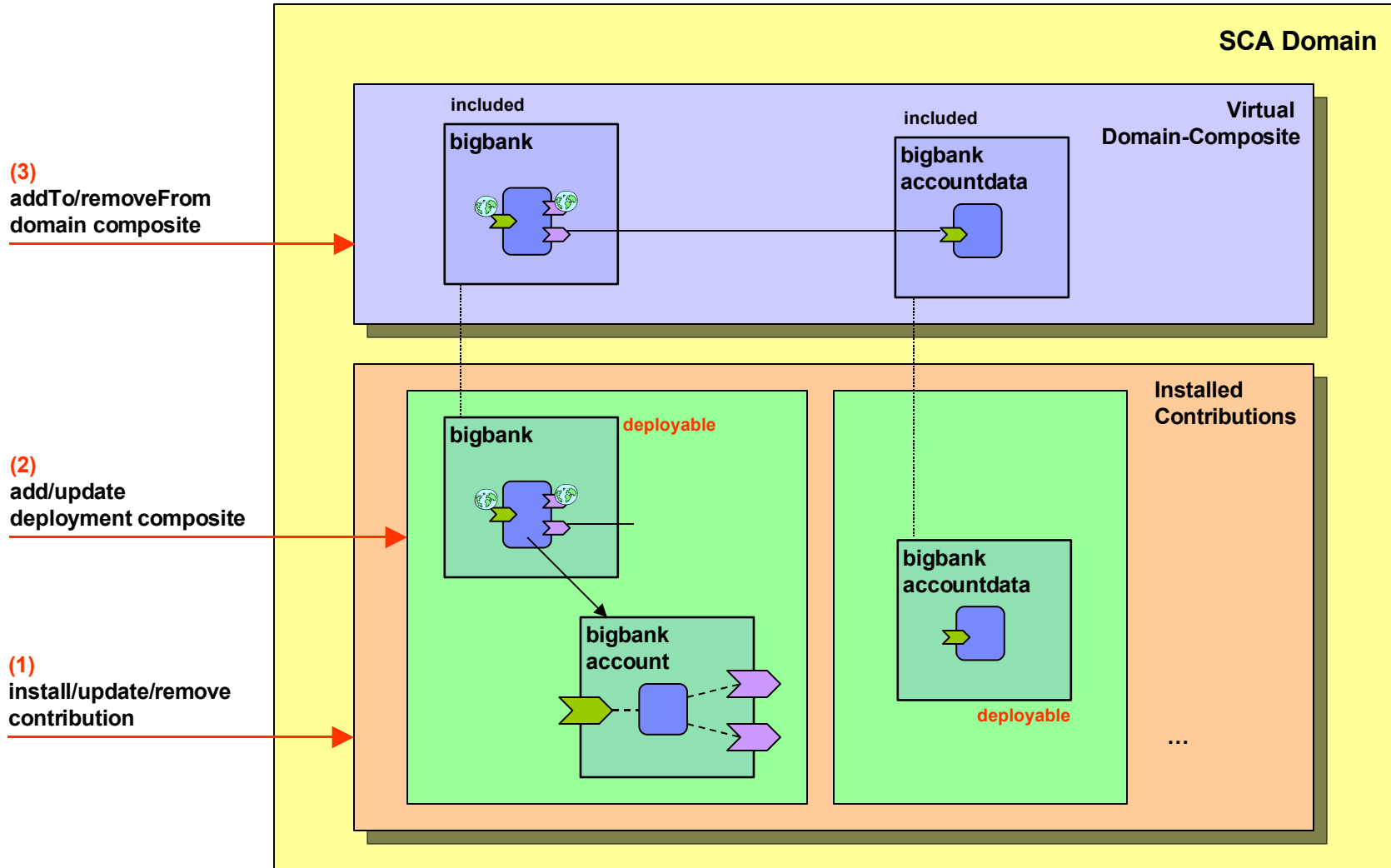
# Service Component Architecture



# SCA – Assembling Components



# SCA – Deploying Composites



# SCA - Languages, Bindings, Hosts

- Java
- PHP, Ruby, Python, Javascript, Groovy
- C++
  
- Web Services
- REST
- JSON-RPC
- JMS
  
- Tomcat, Jetty, Spring, OSGI





# SCA - What's New

- Modularized architecture to make Tuscany easier to embed, extend, or use  
... work in progress
- Simpler and reproducible build including an integration test suite
- Updated web site and documentation  
... work in progress
- Community discussion on what's next:

<http://www.mail-archive.com/tuscany-dev@ws.apache.org/msg16810.html>



# SCA - Sample composite

bigbank.account.composite

```
<composite name="bigbank" xmlns="http://www.oesa.org/xmlns/sca/1.0"
  targetNamespace="http://bigbank.com" ... >

  <service name="AccountService" promote="AccountService">
    <binding.ws requires="soap"/>
  </service>

  <reference name="stockquoteService" promote="AccountService/stockQuoteService">
    <binding.ws wsdlElement="http://www.stockquote.com/#
      wsdl.endpoint(StockQuoteService/StockQuoteServiceSOAP)"/>"/>
  </reference>

  <component name="AccountService">
    <implementation.java class="bigbank.account.AccountServiceImpl"/>
    <reference name="accountDataService" target="AccountDataService"/>
    <property name="currency">EURO</property>
  </component>

  <component name="AccountDataService">
    <implementation.java class="bigbank.accountdata.AccountDataServiceImpl"/>
  </component>

</composite>
```



# SCA - Sample Java Component

AccountServiceImpl.java

```
import org.osoa.sca.annotations.*  
import bigbank.accountdata.*
```

```
@Service(AccountService.class)  
public class AccountServiceImpl implements AccountService {
```

```
    @Reference
```

```
    public AccountDataService accountDataService;
```

```
    public AccountReport getAccountReport(String s) {
```

```
        AccountReport report = new AccountReport();
```

```
        CheckingAccount ca = accountDataService.getCheckingAccount(s);
```

```
        report.addAccount(ca);
```

```
        return report;
```

```
    }
```

```
}
```

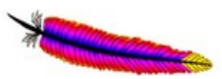


# SCA - Sample PHP Component

AccountServiceImpl.php

```
/**
 * @service
 * @binding.ws
 * @namespace acc http://www.bigbank.com/AccountService AccountService.xsd
 */
class AccountService {

    /**
     * Returns an account report (a set of account summaries) for a given customer.
     * @param string $customerID
     * @return acc:AccountReport
     */
    function getAccountReport($customerID) {
        ...
    }
}
```

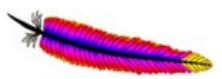
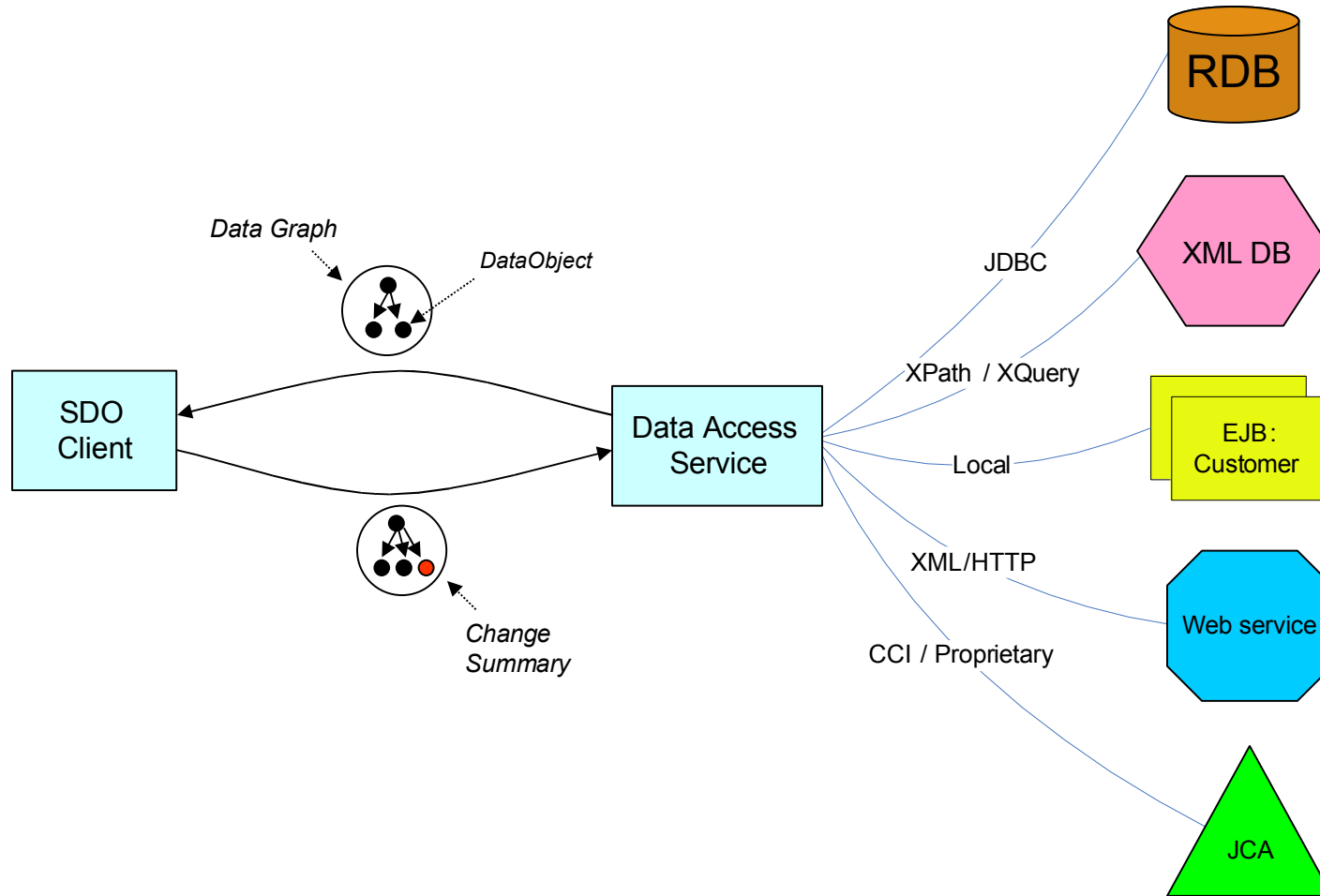


# SDO - Service Data Objects

- Multi-language data model for exchanging data between services
- Underlying data representation does not show through to the application
- Supports disconnected operation, optimistic concurrency, change tracking
- Access to underlying data store is performed by a Data Access Service
- Tuscany/SCA also supports other data bindings (JAXB, Axiom, XMLBeans, etc.)



# SDO and Data Access Service



# SDO - Sample

```
<complexType name="Person">  
  <attribute name="name" type="string"/>  
  <attribute name="postalCode" type="int"/>  
</complexType>
```

```
public interface Person {  
  String getName();  
  void setName(String name);  
  int getPostalCode();  
  void setPostalCode(int code);  
}
```

```
Person p = (Person) dataFactory.create(Person);  
p.setName("John");  
p.setPostalCode(94010);  
System.out.println(p.getName());
```



# News & Events

- Multiple releases of SCA, SDO and DAS
- Latest news at:

<http://cwiki.apache.org/TUSCANY/news-and-events.html>





# Getting Involved

- Home page: <http://incubator.apache.org/tuscany>
- Specifications: <http://www.osoa.org>
- Code: <http://svn.apache.org/repos/asf/incubator/tuscany>
- Dev mailing list: [tuscany-dev@ws.apache.org](mailto:tuscany-dev@ws.apache.org)
- User mailing list: [tuscany-user@ws.apache.org](mailto:tuscany-user@ws.apache.org)
- JIRA issues: <http://issues.apache.org/jira/browse/TUSCANY>
- PHP project: [http://pecl.php.net/package/SCA\\_SDO](http://pecl.php.net/package/SCA_SDO)
- Mailing list subscriptions:  
<http://people.apache.org/~coar/mlists.html#ws.apache.org>

