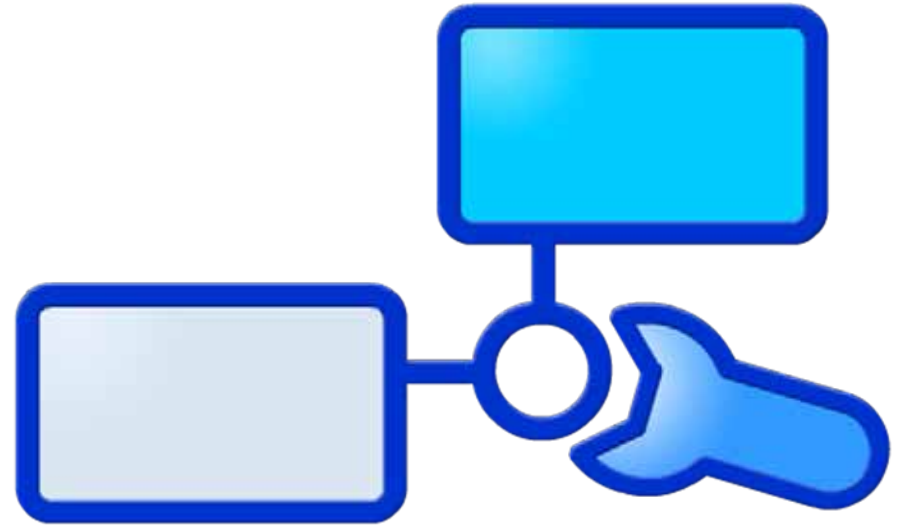


# **INSTANTSVC**

## **THE PHP WEB SERVICES BUILDER**

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**OPEN YOUR SERVICES TO THE PUBLIC!**



# ABOUT THE PROJECT

- Base project developed by 6 HPI students since october 2005
  - G. Gabrysiak, Ch. Hartmann, M. Perscheid, M. Sprengel
  - Today here: Stefan Marr and Falko Menge
- Project presented at the FrOSCon 2006
- Open steps: contribute base to eZ Components
- Additional work
  - Access Control in Service Oriented Architectures
  - Implementation of Task-Role Base Access Control based on ServiceMix/Java and InstantSVC



# AGENDA

- Motivation
- Short Introduction to InstantSVC
  - Architecture, Features
  - Tools
- Live Demo: Adding a Web Service



# QUICK SURVEY

1. Who of you is developing web applications?
2. Who uses PHP?
3. What kind of applications?
  - Content Management
  - eCommerce
  - Collaboration Tools
  - "Enterprise Applications"
  - Other?



# SERVICES?

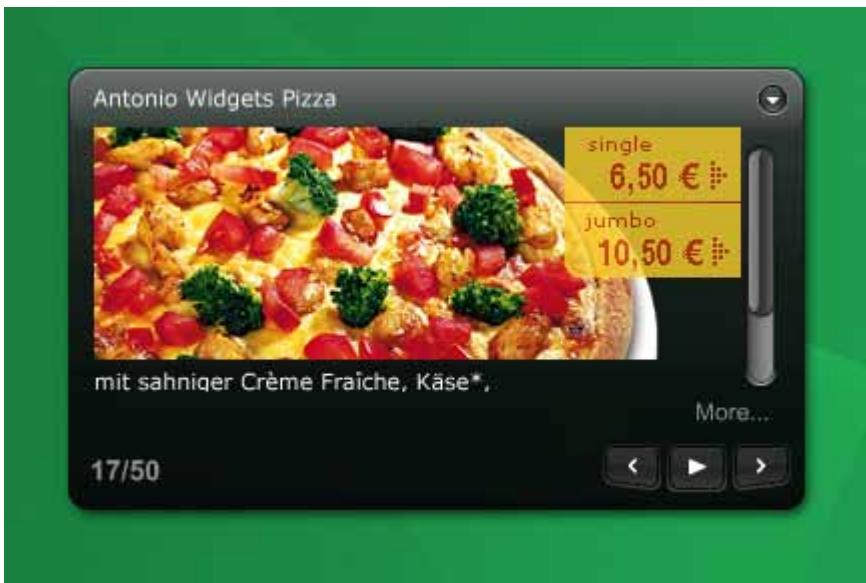
- Blog with Web 2.0 stuff
  - Feeds, Publishing API, User Contribution, Single-Sign On,...
- Shops
  - Catalog of Goods, Buying API, Availability Checks
  - Intention: Close the Media Gap
- Enterprise Applications
  - Finance, Warehouse Management, Human Resources,...
- Services provided by specialists
  - Used to build applications upon



# SERVICES: FOR WHOM?

## Enterprise People

- Portals and Mesh-Ups
  - Personalization



## Innovators

- It is cool
- Everybody wanne have it
- Is it Flickr, del.icio.us, Digg, Google Maps, Ebay?
- Likely, it's not!
- You did not imagine what's possible with your services
- They do!



# WISH LIST OF A SERVICE DEVELOPER

- Easily enhance existing applications
  - Low-Cost/Effort: because benefit might not be instantly visible
- Support for latest technologies and all possible flavors
  - SOAP and REST as non-exclusive options
- Security
  - Well, try it without guy ;)
- Nice and nifty tools
  - They have to be sexy, and easy to use



# WHAT DOES PHP PROVIDE?

- SOAP
  - The very basics, Client and Server
  - No tools, no PHP2WSDL generation
- REST
  - Well, PHP is REST at its heart
  - But people don't know it, so they need tools
- No Security
  - Access Control is an application issue





# INSTANTSVC: BASIC FEATURES

- PHP is an dynamic language
  - Extended Reflection API with information about types
  - Annotations for PHP
- Service description for service consumers
  - WSDL Generator conforming to WS-I Basic Profile
- Services as add-on to existing applications
  - Document/Literal adapter generator
- Security
  - Implementation of WS-Security and Username Token Profile



# INSTANTSVC: CONVENIENCE FEATURES

- For SOAP Services
  - Handler chain mechanism for SOAP processing
  
- For REST Services
  - Custom mapping of functionality to REST resources
  - Custom serialization handling
  
- Administration tool for convenient creation und management of SOAP and REST services




# ADMINISTRATION FRONT-END

- Administration front-end
  - Automated creation of web services from existing applications
  - Annotations identify classes to be used
  - Administration via web browser
    - Classes and methods selected by user
    - Generates SOAP and REST server scripts
    - Generates WSDL file and adapter classes
    - SOAP server with WS-Security



# ADMINISTRATION FRONT-END



## INSTANT SVC

### THE PHP WEB SERVICES BUILDER

Wizard   Klassen registrieren   Klassen konfigurieren   Web Service erstellen   Einstellungen

### Konfiguration

Für folgende Klassen und Methoden soll ein SOAP-Server erstellt werden.

- ♦ AnsweringMachine
  - ◊ numberOfCalls
  - ◊ callList

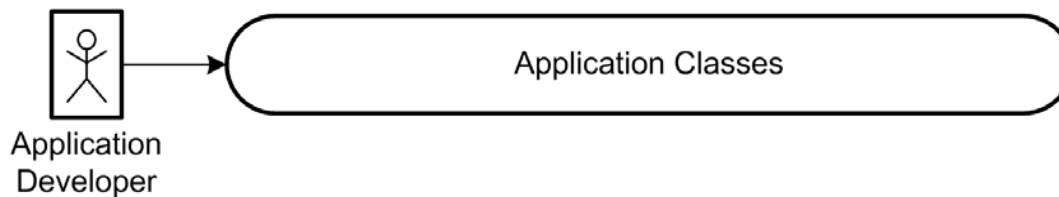
#### Service Konfiguration

|                           |   |
|---------------------------|---|
| WSDL Style:               | <input type="text" value="wrapped"/>                                    |
| Service Name:             | <input type="text" value="AnsweringMachine"/>                           |
| Service URI:              | <input type="text" value="http://localhost/soap.php/AnsweringMachine"/> |
| Namespace:                | <input type="text" value="http://localhost/soap.php/AnsweringMachine"/> |
| Authentifikation mit UTP: | <input type="checkbox"/>  |

Zielpfad:

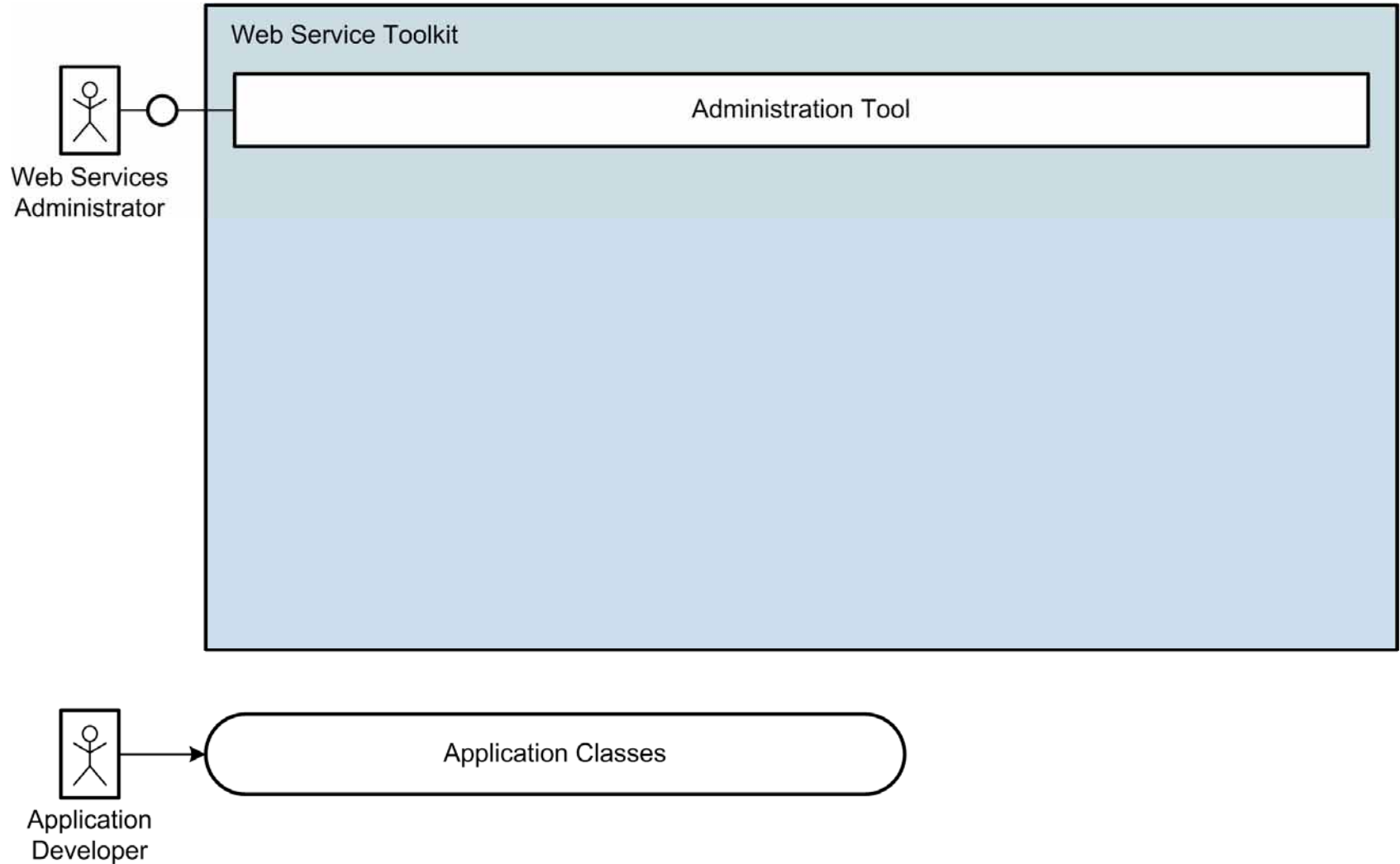


# INTERACTION OVERVIEW



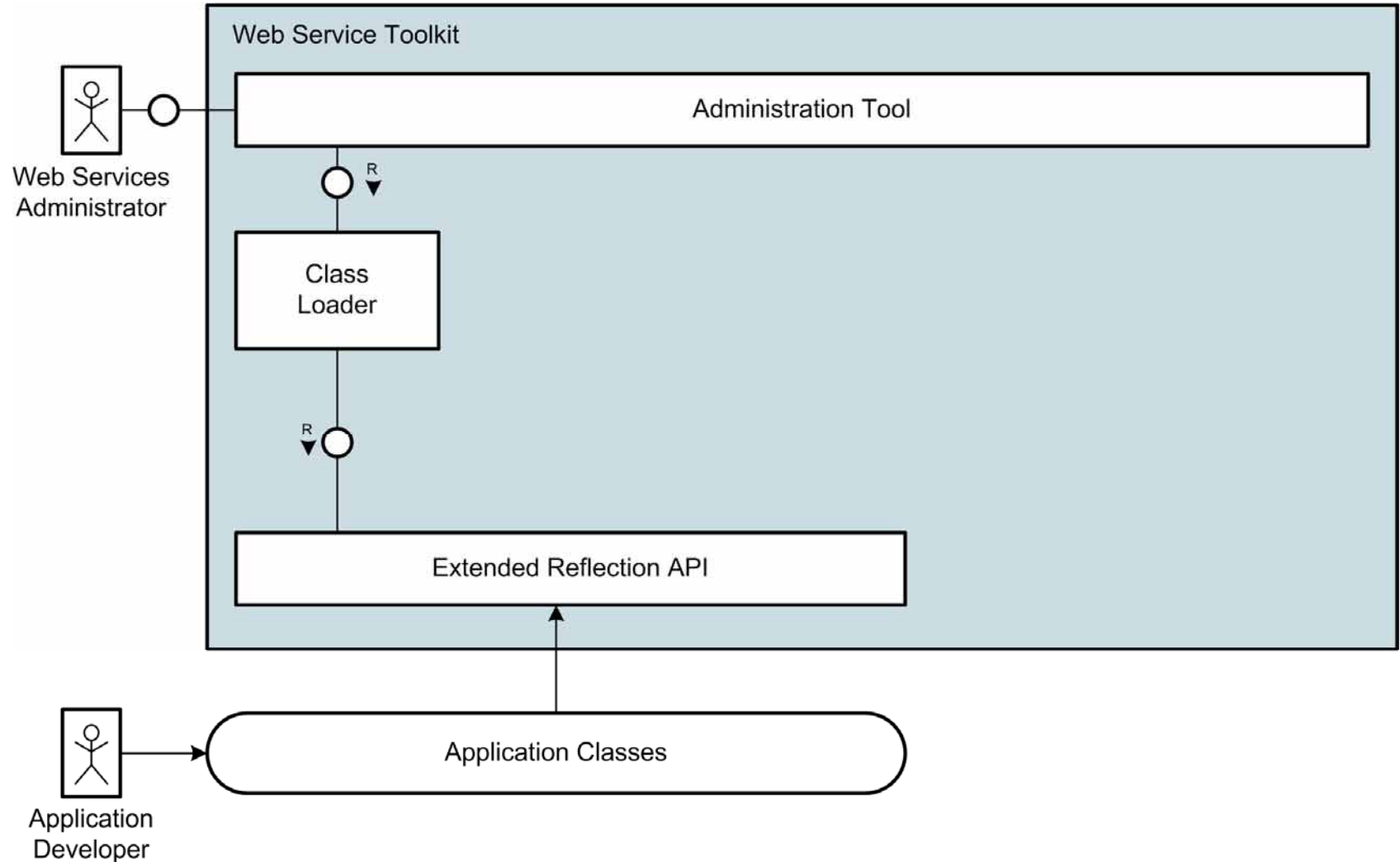


# INTERACTION OVERVIEW



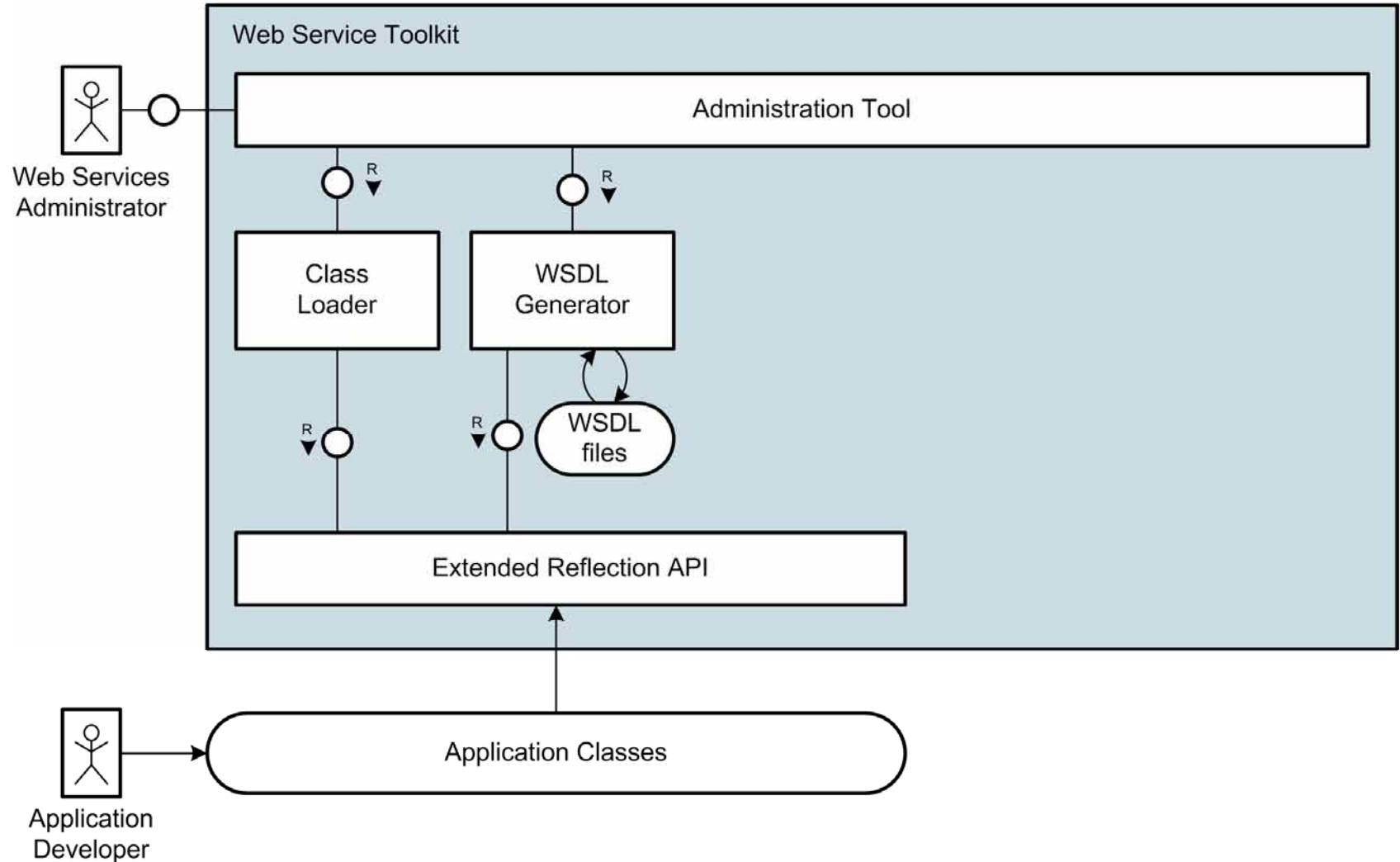


# INTERACTION OVERVIEW





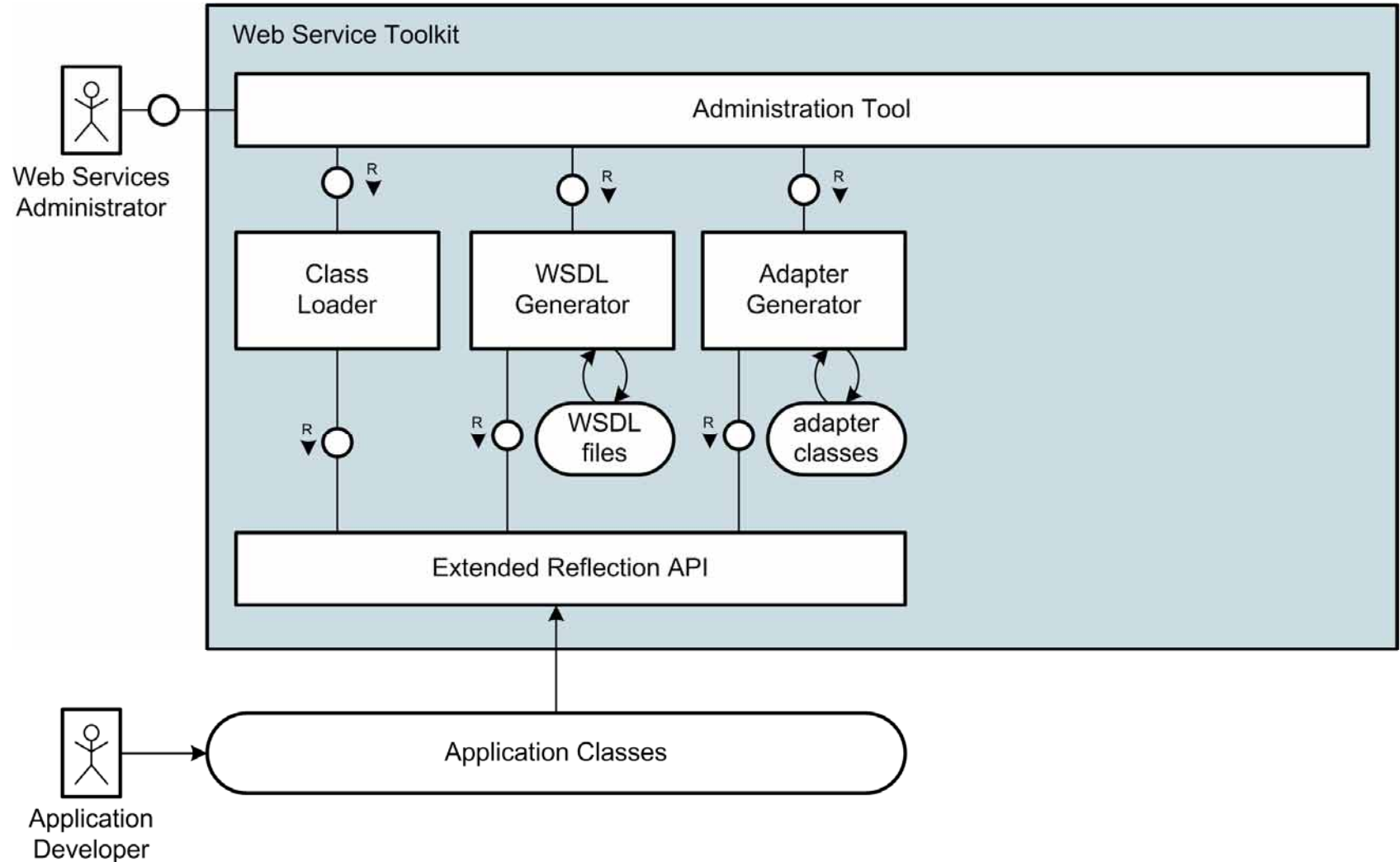
# INTERACTION OVERVIEW





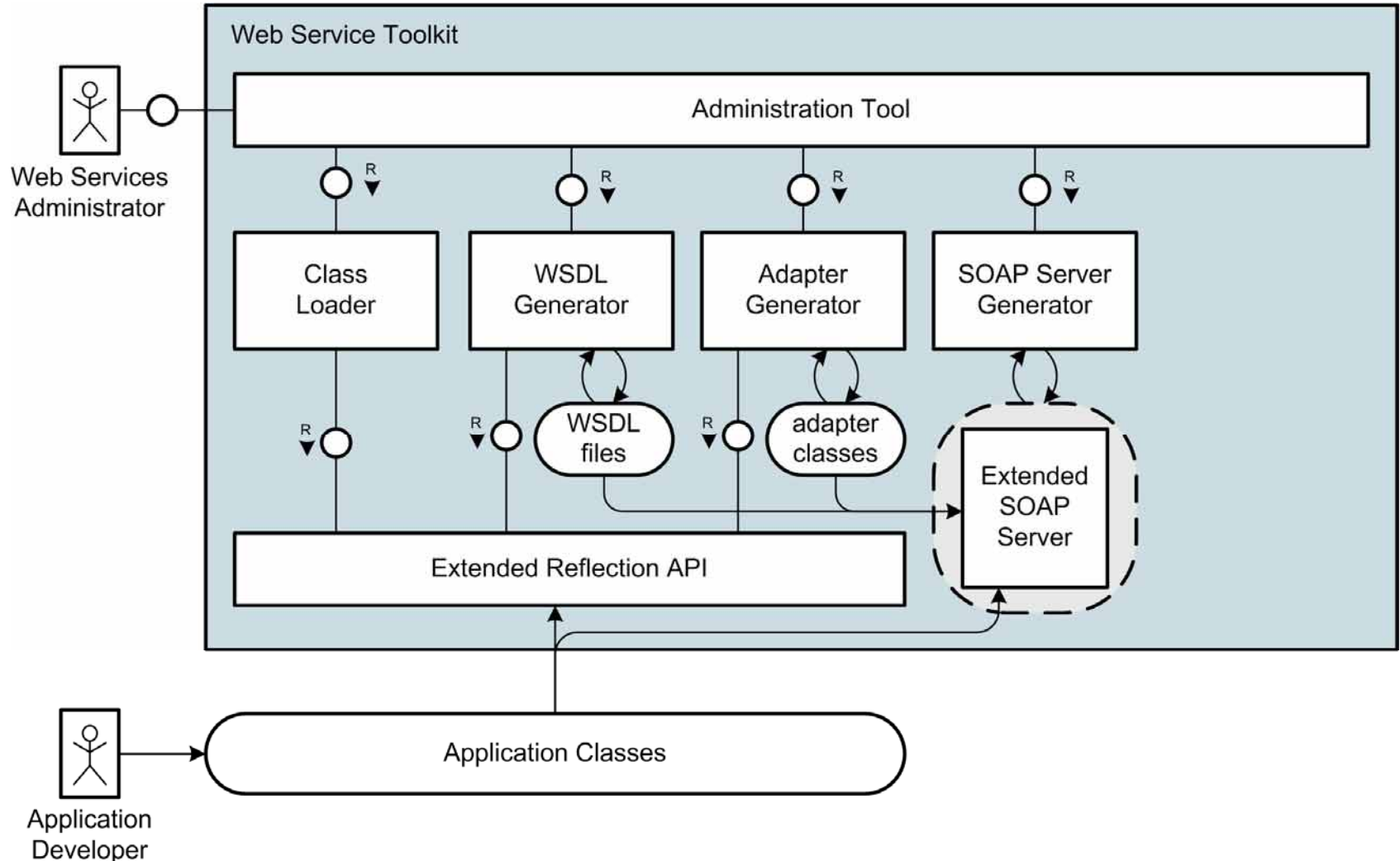


# INTERACTION OVERVIEW



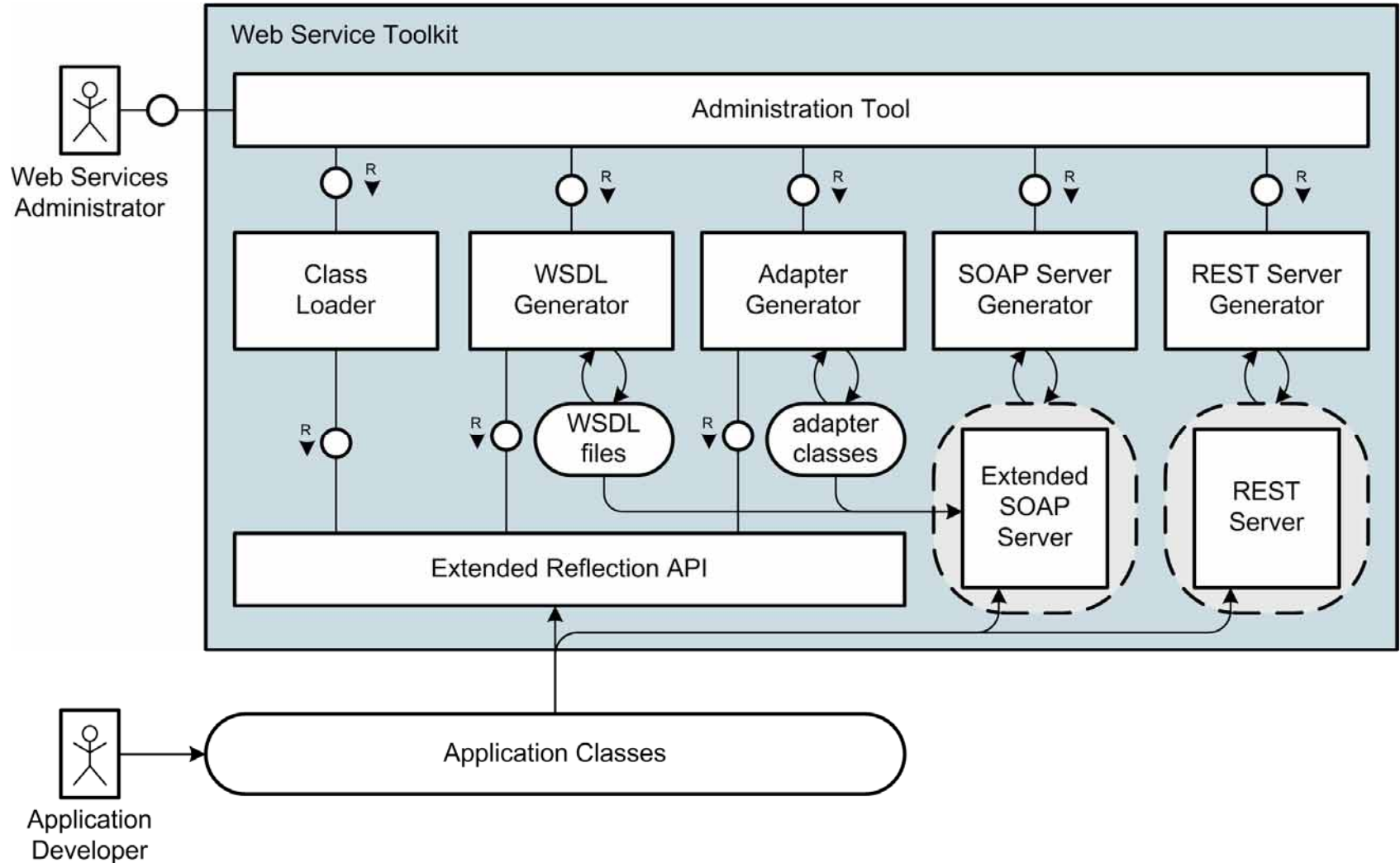


# INTERACTION OVERVIEW



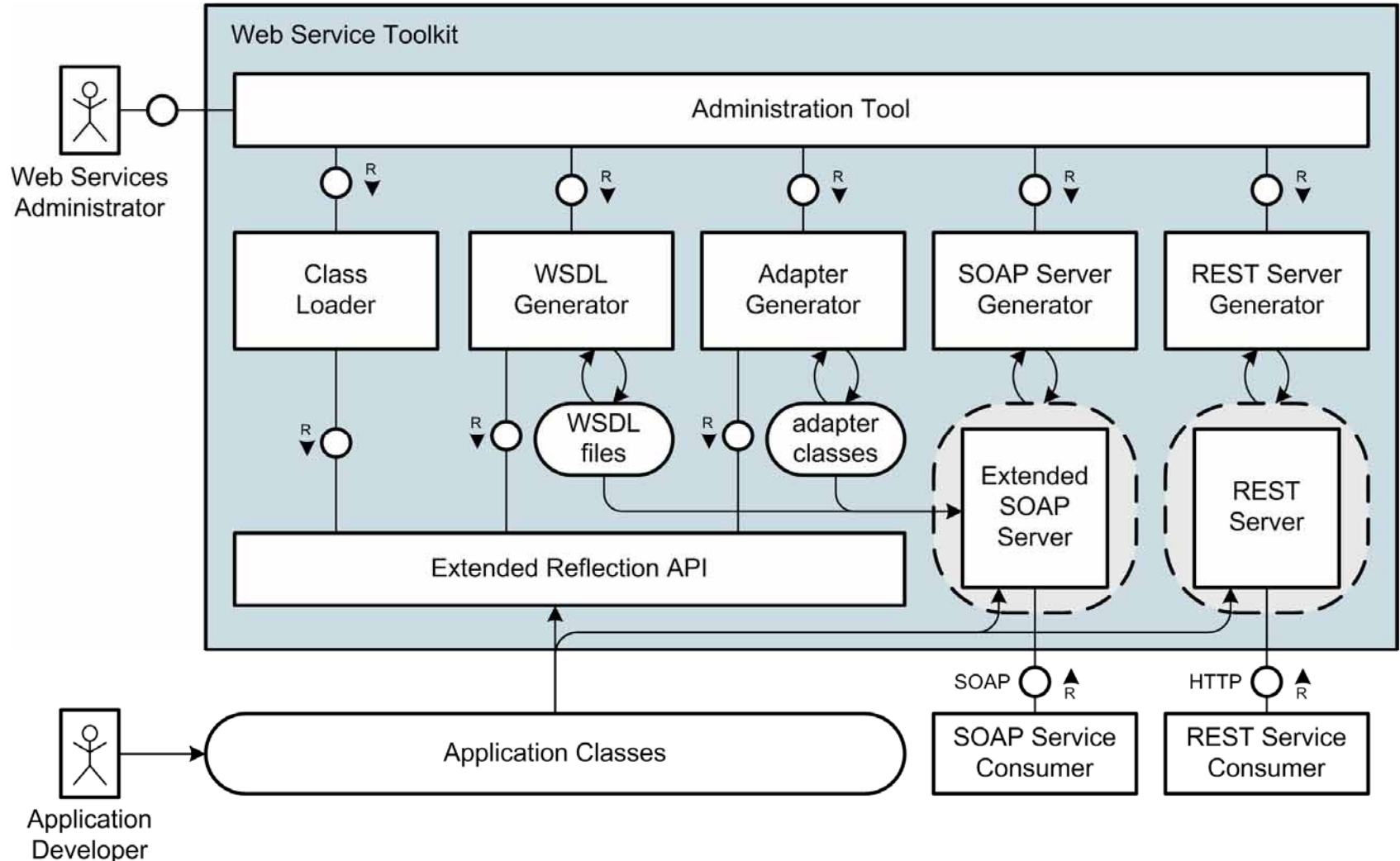


# INTERACTION OVERVIEW






# INTERACTION OVERVIEW





# LIVE DEMO

**INSTANTSVC**  
**THE PHP WEB SERVICES BUILDER**

Wizard   Klassen registrieren   Klassen konfigurieren   Web Service erstellen   Einstellungen

### Konfiguration

Für folgende Klassen und Methoden soll ein SOAP-Server erstellt werden.

- ◆ AnsweringMachine
  - ◊ numberOfCalls
  - ◊ callList

#### Service Konfiguration

WSDL Style:

Service Name:

Service URI:

Namespace:

Authentifikation mit UTP: ☐

Zielpfad:

## AnsweringMachineCall

callId : int  
timeOfCall : int  
calledNumber : string  
callerId : string  
callerName : string  
messageExists : bool

## AnsweringMachine

numberOfCalls() : int  
callList() : AnsweringMachineCall[]



# EXAMPLE APPLICATION

- Application: Answering Machine
  - Number of Calls
  - List of Calls
- Example Web Service
  - using SOAP Protocol

## AnsweringMachineCall

callId : int  
timeOfCall : int  
calledNumber : string  
callerId : string  
callerName : string  
messageExists : bool

## AnsweringMachine

numberOfCalls() : int  
callList() : AnsweringMachineCall[]



# GENERATION STEPS

## ■ Creating Web Services without Tool Support:

- Create XML Schema for Data Types
- Write WSDL Description
- Own Wrapping for Document/Literal
- Include Documentation
- Build SOAP Server Script
- No WS-Security Support

## ■ InstantSVC automates all Steps

### **AnsweringMachineCall**

callId : int  
timeOfCall : int  
calledNumber : string  
callerId : string  
callerName : string  
messageExists : bool

### **AnsweringMachine**

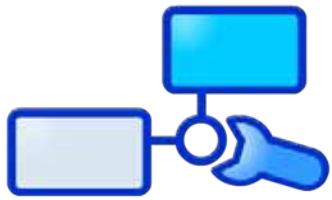
numberOfCalls() : int  
callList() : AnsweringMachineCall[]



# SUMMARY

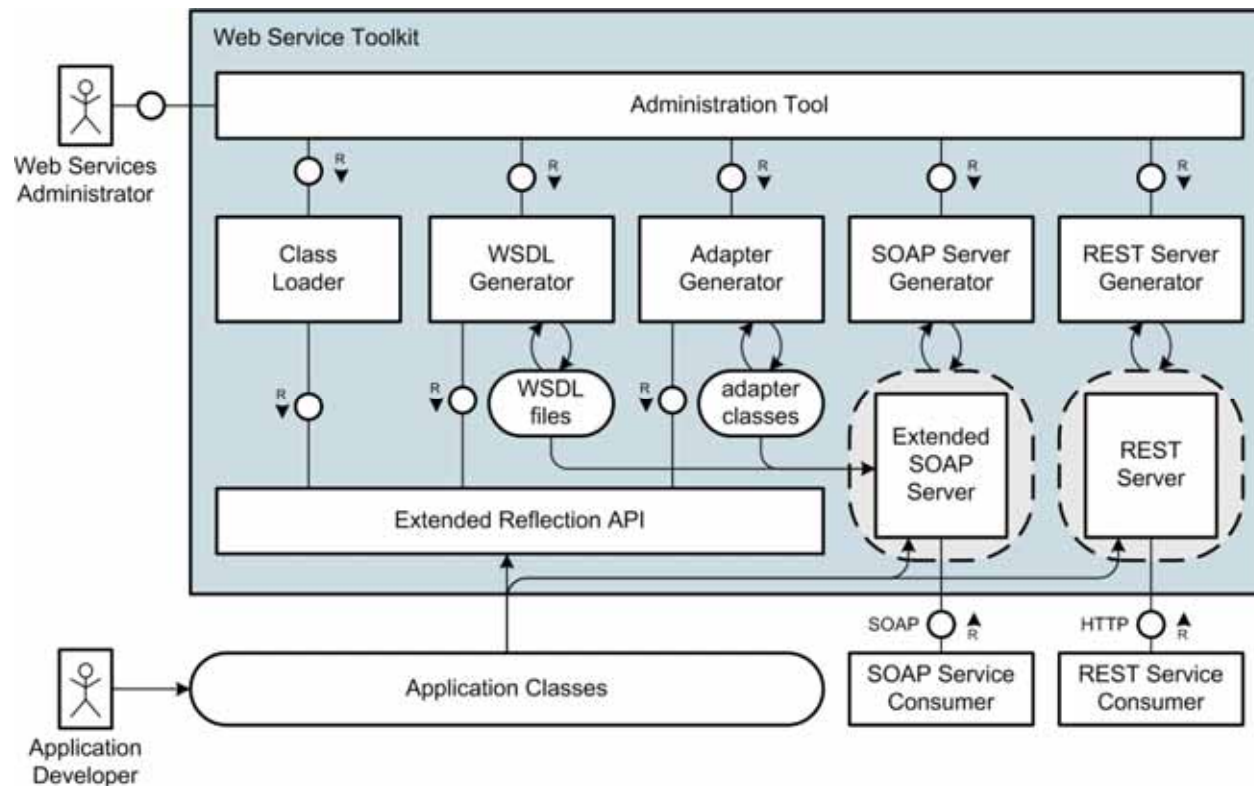
- For SOAP Services
  - Handler chain mechanism for SOAP processing
  
- For REST Services
  - Custom mapping of functionality to REST resources
  - Custom serialization handling
  
- Open Your Services to the Public!
  - →Escape from the Silos ;)





# INSTANTSVC

## THE PHP WEB SERVICES BUILDER



Further Information and Download at:

<http://instantsvc.sourceforge.net>



# SUGGESTED READING

## White Papers

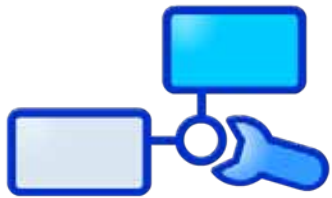
- [1] *Einführung in XML Web Services*, October 2005
- [2] *Web Services Facade for PHP5 – Konzeption*, January 2006
- [3] *Web Service Toolkit für PHP5*, March 2006  
download at <http://instantsvc.sf.net/>

## Further Sources

- [4] *RESTful Web Services*, January 2006  
<http://www.stefan-marr.de/artikel/restful-web-services.html>
- [5] *SOAP Version 1.2 specification*, W3C Recommendation, June 2003. <http://www.w3.org/TR/soap/>
- [6] *Web Services Description Language (WSDL) 1.1*, W3C Note, March 2001. <http://www.w3.org/TR/wsdl/>
- [7] *Username Token Profile 1.0*, OASIS, January 2004  
<http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-profile-1.0.pdf>



# BACKUP Slides



# INSTANTSVC

## THE PHP WEB SERVICES BUILDER

