



IBM Software

IBM Forms 4.0

Utilizing Web Services in your Form

An IBM Proof of Technology



Agenda

- Introduction to the Value of web services
- Explore how IBM Forms and web services can benefit each other
- Learn how to utilize web services in an IBM Form
- Overview of the Lab

Objectives

- Understand the value of web services
- Learn how web services and IBM Forms compliment each other
- Review the options available to a designer working with web services
- Prepare for the Lab





Intelligent Forms built for a Smarter Planet

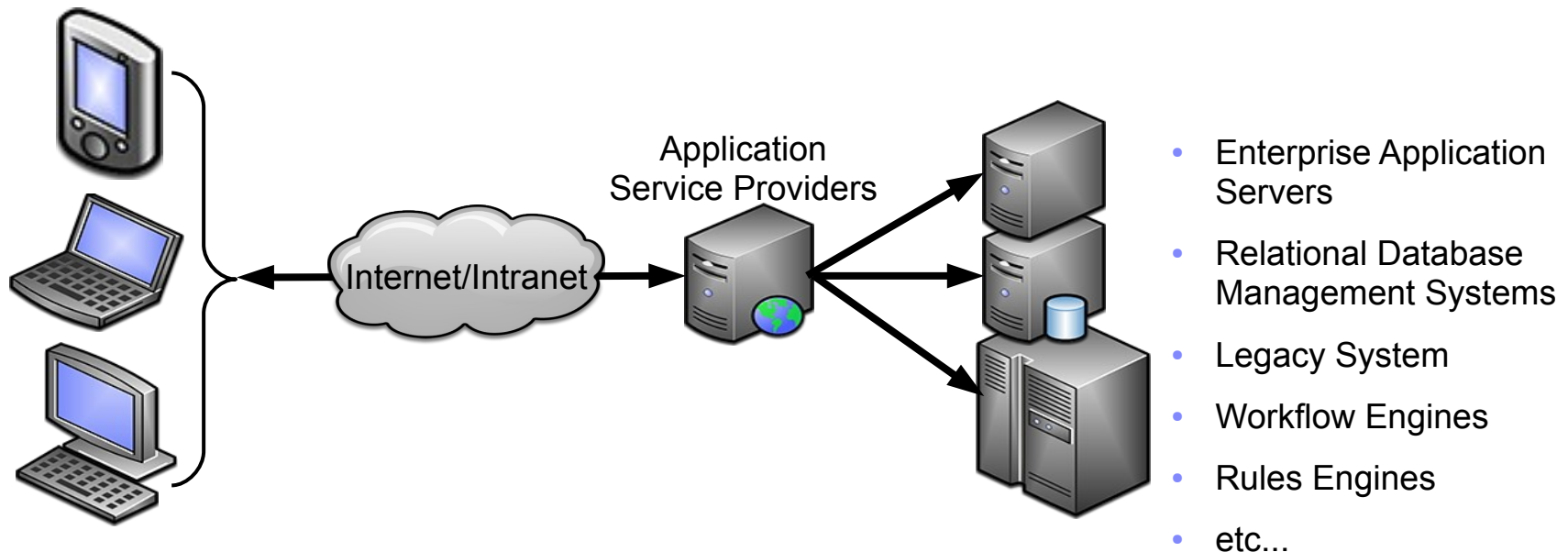
- Data is being captured today as never before.
- It reveals everything from large and systemic patterns of global markets, workflows, national infrastructures and natural systems to the location, temperature, security and condition of every item in a global supply chain.
- Through social media, billions of customers, citizens, students and patients tell us what they think, what they like and want, what they're witnessing, in real time. They want to do business in the same way with you.

Forms act as “intelligent message objects” which enforce own business rules and data integrity



Smarter Solutions with IBM Forms and Web Services

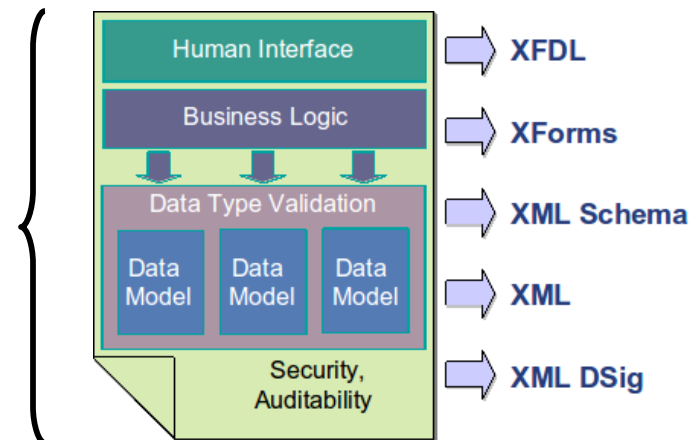
- Web services were designed to drive the Internet as a transactional tool rather than simply a visual tool.
- They promote interoperability across platforms, applications, and programming languages through the use of standards refinement and integration.
- They can be used within the IBM Forms Designer to provide network interaction between servers and client computers.
 - ▶ For example, adding a specific web service call to a form results in the form retrieving information based on user input or a triggered event in the Form.



Benefits of Web Services with IBM Forms

- Web services are software components that can be used within the IBM Forms Designer to provide network interaction between servers and client computers.
- The standardized nature of the pieces that implement a Web service solve many problems related to inter-system communication and can be leveraged by IBM Forms.
 - ▶ For example:
 - The HTTP standard is allowing more systems to communicate with one another
 - SOAP (built on XML) standardizes the messaging capability on different systems
 - UDDI standardizes the publishing and finding of Web services
 - WSDL standardizes the description of Web services so providers and requesters are speaking the same language

Anatomy of a IBM Form

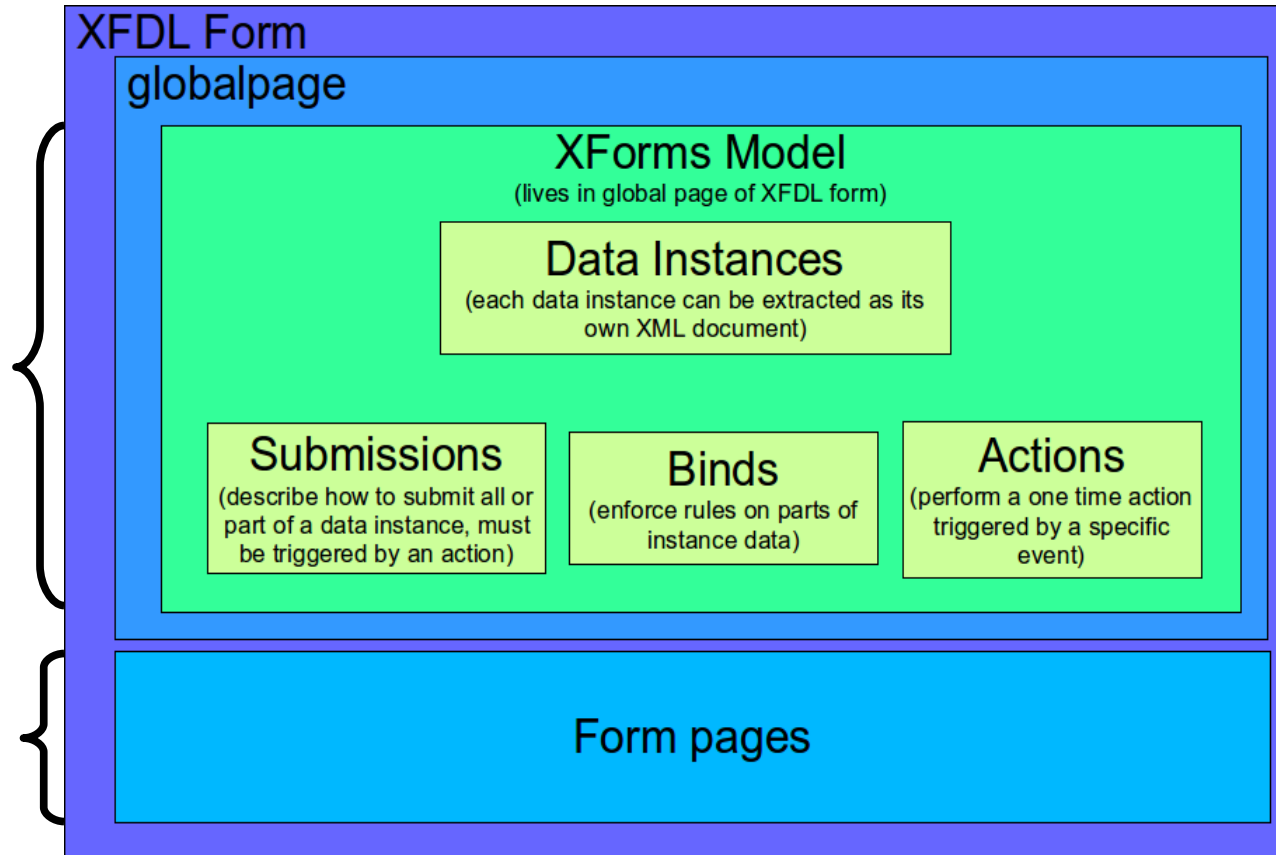


Web Services and XForms

When Web Services are imported into an IBM Form it is embedded and it's uses are described with in the model itself.

- The SOAP Actions become submissions.
- The Schemas define the data instances.
- Binds and Actions control how the result is displayed and what happens next.

The data elements in the instance are then mapped to items in the Form pages using XPath.

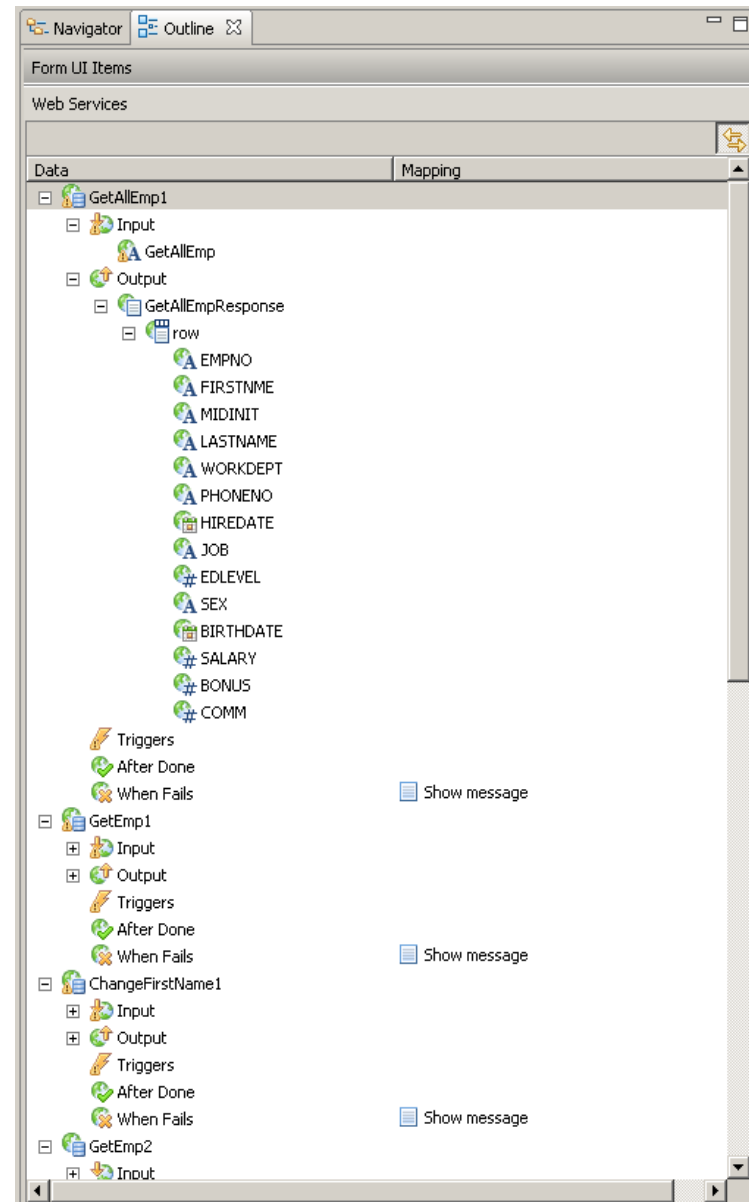


All of this happens through a user friendly wizard minimizing effort.



Adding Web Services to a Form

- Add web services to a form with the Web Service icon on the Palette.
 - ▶ **Web services:** Improves how web services are added to a form, as well as making the addition and mapping of Web Services easier.
 - When you add a web service to a form, you can choose to have the IBM Forms Designer create form User Interface (UI) items for each web service data item.
 - A connection to the web service is added to the form
 - It appears in the Web Services drawer listed in the Outline view.
 - As well, the Designer adds web service input and output instances, and a submission instance; these are displayed in the XForms view.



Modify Default Failure Message

- After you add a web service to a form, you can edit the default message that the IBM Forms Designer displays if the web service call fails.
 - ▶ By default, when a web service call fails the Designer displays the following message:
 - The web service is not working, contact your System Administrator.
- Often a designer will want to customize this message.



Display Data Retrieved from the Service in a Form

- Once the web service submission results are posted back to the Form, Designers will want to display that data, or use it to influence the Form design by mapping web service data items to form UI items
 - ▶ You can map web service data items to form UI items use a number of methods
 - Click and dragging web service data items onto the form canvas
 - Click and dragging web service data items to existing form UI items
 - Allowing the Designer to automatically create Form UI items with mapping for each web service data element
- Typically, the last option is used if you wanted to create form UI items for all web service data items.
- However, there will be occasions where you as the Designer will want to manage the resulting data.
 - ▶ Some of those might be:
 - To build a list of available options in a list
 - To place data in the Form for calculations which does not need to be displayed.
 - To send an update request who's result set is a binary value, which may influence the form layout or navigation but does not need to be displayed.



Tell the Form when to call a web service

- Once a web service is added to a form, you must set a trigger to call the web service.
- If you did not choose to have the IBM Forms Designer create form User Interface (UI) items and map the web service data items to the form UI items, you will must add a trigger action to the Form.
 - ▶ You could have the user trigger this event by clicking on an action button (like search), or making a selection from a drop down list (like select State).
 - ▶ You could have the Form calculate when/if this event will be triggered. For instance, if value is greater than X, then call web service
 - ▶ You could trigger the event based on standard Form functions such as on Form load to prepopulate the Form
- We will explore two of these in the associated Lab.



Associate Actions with web service calls

- After you add a web service to a form, you can optionally add an action that will fire when the web service is called successfully or fails.
- You can also add a custom message when the web service call fails.
 - ▶ Some common actions are:
 - **Go to a page** – Specify a form page to display
 - **Focus on item** – Specify an item in which the cursor will have focus
 - **Replace form with response** – Replaces the form with the response form the web service
 - **Display message** – Displays a customized message
 - **Validate input** – Validates a web service output value
 - Trigger a custom action



Lab Overview

- In the associated Lab we will cover the majority of subject matter included in this presentation.
- The Lab is expected to take 45 minutes to complete
- Outline of the Lab:
 - ▶ The web services and a test client have been deployed on the server
 - ▶ We will be using the DB2 Sample database
 - ▶ Use the web service item in the Standard library of the Palette to bring in three web services
 - The first will allow you to return a single employee record
 - We will auto-generate the UI elements as well as data instances.
 - We will later modify this UI elements to improve usability.
 - The second will allow you to change the first name of a single employee
 - We will auto-generate the UI elements as well as data instances.
 - We will later modify this UI elements to improve usability.
 - The third will return all the employee records from the Sample database.
 - We will use one of those fields to pre-populate the list of available employees.
 - We will not auto-generate UI elements



Presentation Summary

- In this session, we have had a chance to:
 - ▶ Understand the value of web services
 - ▶ Learn how web services and IBM Forms compliment each other
 - ▶ Review the options available to a designer working with web services
 - ▶ Prepare for the Lab

Questions





Thank You

We appreciate your feedback.

Please fill out the survey form in order to improve this educational event.

