Talking The Language of Enterprise Mashups

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JACKBE™
the user is the killer app

About JackBe

- Founded 2002
- Chevy Chase, MD
- Empowering Business Users through Enterprise Mashups
- Applications deployed to over 4 million end-users across 50+ customers

JACKBE™

About the Speakers

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Chief Architect

Previously Principal Architect @ eBay.com & Sun Microsystems

Mashup

‘*A Mashup is a website or application that combines content from more than one source into an integrated experience.*’

Source: Wikipedia

But, this can apply to anything!!!

Enterprise Mashups

- User Driven and User Focused
- Visual and Non-Visual
- Client-side and Server-side (mostly)
- Enterprise Services plug and play
- Dynamic, ad-hoc, situational
- Secure and Governed
- Sharable, customizable
- Near zero cost create and consume

The Need for a Mashup Server

- Services are maturing
  - Services are Immutable
  - Services are ‘Instant Legacy’
  - Services are *not* user friendly
- We want to use Services
  - User-oriented mashup activities (or actions)
  - User-generated mini-apps
  - User-driven Integration / Tooling

The New ‘Front-tier’

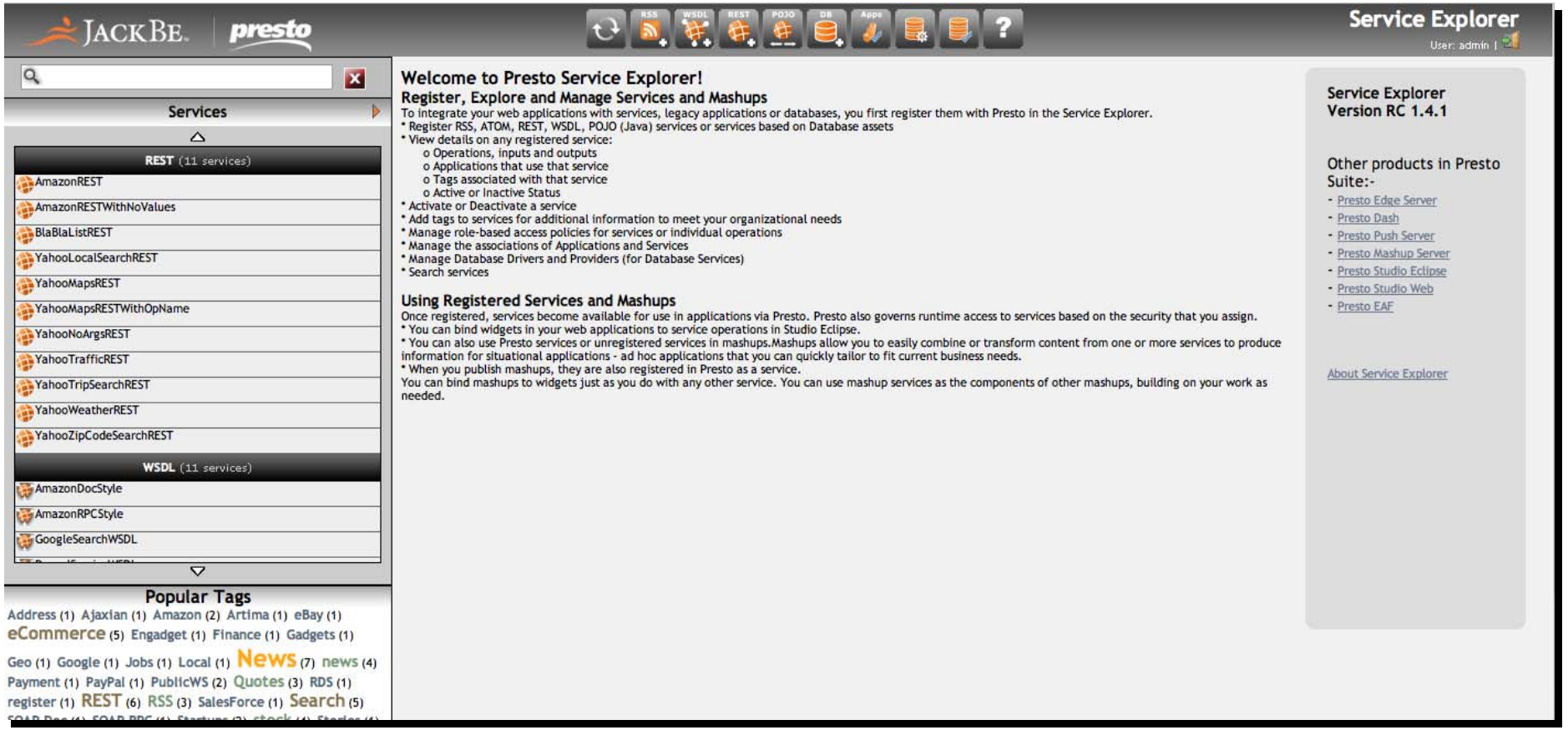
Introducing the Mashup Layer

Web 1.0

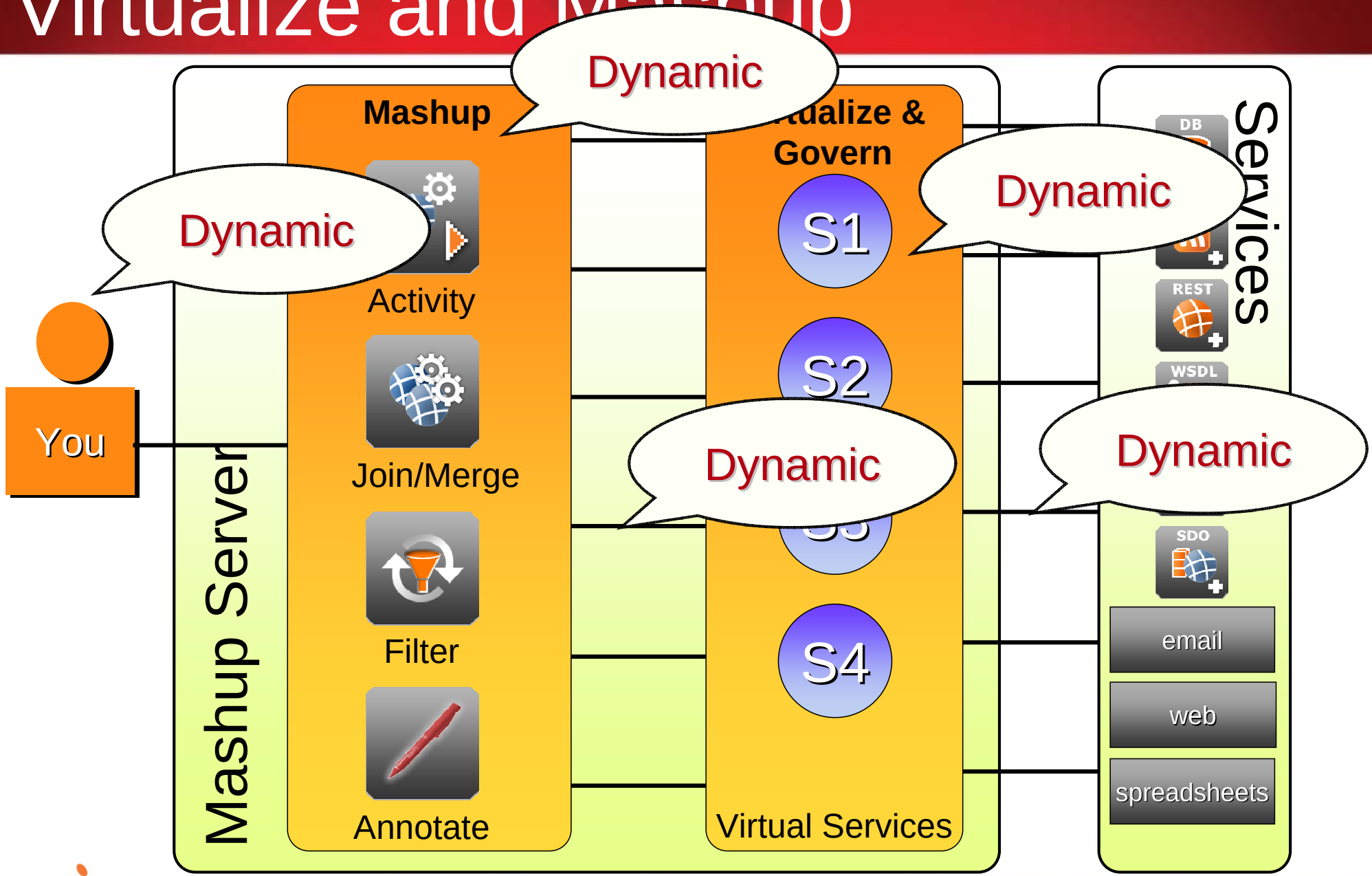
Web 2.0

Demo Time

Presto Service Explorer



Virtualize and Mashup



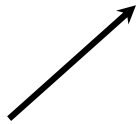
Mashup Patterns

- Invoke Services
- Filter
- Sort
- Join
- Merge data
- Data Construction & Transformation
- Annotation
- For-Each
- Web Clipping
- Scripting

- Mashup Server
- Mashup Language
- Mashup Composer
- Mashlets

Service Invocation

output = **Invoke** *service* , *operation*, *inputs*



xml

wsdl
rest
dao
rss/atom
pojo

[governed services]

Simple Service Invocation

```
<mashup  name="YahooHotJobsFilter">

    <invoke service="YahooHotJobsRSS" operation="getFeed"
                outputvariable="result"/>

</mashup>
```

secured, monitored, cached

normalized output/feed

mashup service

Service Invocation Complex type

```
<constructor outputvariable="lookup">
    <ns:ItemLookup>
      <ns:SubscriptionId>0525E2PQ81DD7ZTWTK82</ns:SubscriptionId>
      <ns:Validate>false</ns:Validate>
      <ns:Request>
          <ns:ItemId>{$itemId}</ns:ItemId>
          <ns:IdType>ASIN</ns:IdType>
          <ns:ResponseGroup>Large</ns:ResponseGroup>
      </ns:Request>
   </ns:ItemLookup>
</constructor>
```

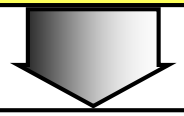
Literal

Dynamic value

```
<invoke service="AmazonDocStyle" operation="ItemLookup"
          inputvariables="lookup" outputvariable="reviews"/>
```

Filter

Result = **Invoke** 'YahooHotJobsRSS.getFeed'



Result = **Filter** Result /rss/channel/item[matches(description, 'ajax')]

Service Filter

```
<mashup  name="YahooHotJobsFilter">

  <input name="param" type="string" default="Ajax"/>
  <output name="filtered_result" type="document"/>

  <invoke service="YahooHotJobsRSS" operation="getFeed"
                  outputvariable="result"/>

  <filter input ="result" output ="filtered_result"
        filterexpr = "/rss/channel/item[matches(description, $param)]"/>

</mashup>
```

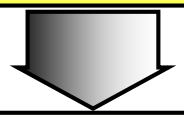
contract

governed service

xpath filter

Sort

```
Result  =  Invoke 'YahooHotJobsRSS.getFeed'
```



```
Result =  Filter Result  /rss/channel/item[matches(description, 'Ajax')]
```

```
Result =  Sort  Result  /rss/channel/item/title descending
```

Sort

```
<mashup  name="Jobs">
      <input name="param" type="string" default="Ajax"/>
      <output name="sorted_result" type="document"/>

      <invoke service="YahooHotJobsRSS" operation="getFeed"
                  outputvariable="result"/>

      <filter inputvariable="result"
          filterexpr = "/rss/channel/item[matches(description, $param)]"
          outputvariable="result"/>

      <sort   inputvariable="result"
            sortexpr="/rss/channel/item"
            sortkeys="title"
            sortdir="descending"
            outputvariable="sorted_result"/>
</mashup>
```

xml, json, pojo, rss/atom

Union

Feed1 = **Invoke** ‘http://planetjdk.org/feedfeed.atom-1.0’

Feed2 = **Invoke** ‘http://ajaxian.com/index.xml’

Feed3 = **Invoke** ‘http://feeds.feedburner.com/ProgrammableWeb’

Union Feed1, Feed2, Feed3

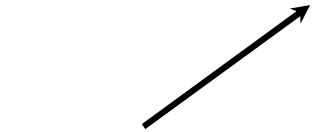
homogeneous structures

Union

```
<externalinvoke endpoint="http://planetjdk.org/feed.atom-1.0"
        feedtype="atom“  outputvariable="feed1"/>

<externalinvoke endpoint="http://ajaxian.com/index.xml"
        feedtype="atom“  outputvariable="feed2"/>

<externalinvoke endpoint=“http://feeds.feedburner.com/ProgrammableWeb”
        feedtype="atom" outputvariable="feed3"/>

<union    inputvariables="feed1, feed2, feed3“
          outputvariable="resultFeed"/>
```

Join

```
<join   outputvariable="result"

   joincondition="$portfolioA/Performance/Month =
                  $portfolioB/Performance/Month" />
```



xml
json
pojo
rss/atom

Join

```
<join  outputvariable=“consolidatedData”>

    joincondition=“$portfolioA/Performance/Month =
                                    $portfolioB/Performance/Month”>

     <select name="Performances">
            <Performance><Month>{$portfolioA/Month}</Month>
                        <Rate>{$portfolioA/Rate}</Rate>
                        <Rate>{$portfolioB/Rate}</Rate>
             </Performance>
     </select>

<join/>
```

custom select

Data Annotation

```
<SalesLead>
<Title>Director of Vendor Relations</Title>
<Rating>Hot</Rating>
<Street>321 Westcott Building</Street>
<City>Tallahassee</City>
....
</SalesLead>
```

service response

microformats

```
<SalesLead class="vcard">
<Title>Director of Vendor Relations</Title>
<Rating>Hot</Rating>
<Street>321 Westcott Building</Street>
<City>Tallahassee</City>
<geo:lat>30.4424</geo:lat>
<geo:long>84.303</geo:long>
....
</SalesLead>
```

annotated service response

geo-cordinates

Mashlets, maps, timeline,..

Annotate

.....

sales data ($locationstr)

```
<externalinvoke
        endpoint="http://local.yahooapis.com/MapsService/V1/geocode"
        appid="YahooDemo"
        output="xml"
        location="$locationstr"
        outputvariable="georesult"/>

<annotate variable="saleLead" expr="." >
   element geo:lat { $georesult//y:Latitude/string() },
   element geo:long { $georesult//y:Longitude/string() },
   attribute “class” { "vcard" }
</annotate>
```

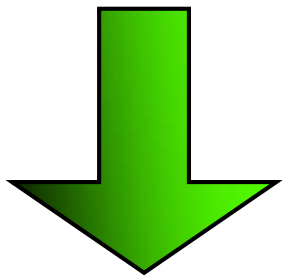
yahoo geo-coding service

annotate salesforce data

.....

Select

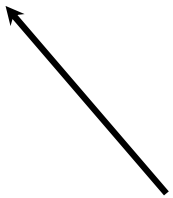
```
<item>
      <title>Star City</title>
      <link>http://liftoff.msfc.nasa.gov/news/</link>
      <description>How do Americans get ready to work with Russians
aboard the International Space Station? They take a crash course in
culture, language and protocol at Russia's Star City.</description>
      <pubDate>Tue, 03 Jun 2003 09:39:21 GMT</pubDate>
      <guid>http://liftoff.msfc.nasa.gov/2003/06/03.html#item573</guid>
    </item>
```



```
<item>
      <title>Star City</title>
      <link>http://liftoff.msfc.nasa.gov/news/</link>
</item>
```

Select

```
<select inputvariable="Data"  outputvariable="selectedData"
                                selectexpr="/rss/channel/item">
   <columns>
      <column>title</column>
      <column>description</column>
   </columns>
</select>
```



xml
json
pojo
rss/atom

Javascript

```
<externalinvoke endpoint="https://www.google.com/accounts/ClientLogin"
                method="post"
                accountType="GOOGLE"
                Email="xxxxxxxxx@gmail.com"
                Passwd= "yyyyyyyyyy"
                service="blogger"
                source="jackbe-jems"
                header="$reqheaders"
                outputvariable="result"/>

 <script type="text/javascript">
    <![CDATA[
    var r = new String(result)
    var ar = r.split("=");
    auth = ar[ar.length-1];
    auth = auth.slice(0, -1)
    ]]>
 </script>

  <assign variable="auth" ..../>
```

```
SID=xxx……zzzzzzz
LSID=yyyy….wwwww
Auth=<authentication token>
```

```
E4X - Rhino engine
script java objects
variable propagation
```

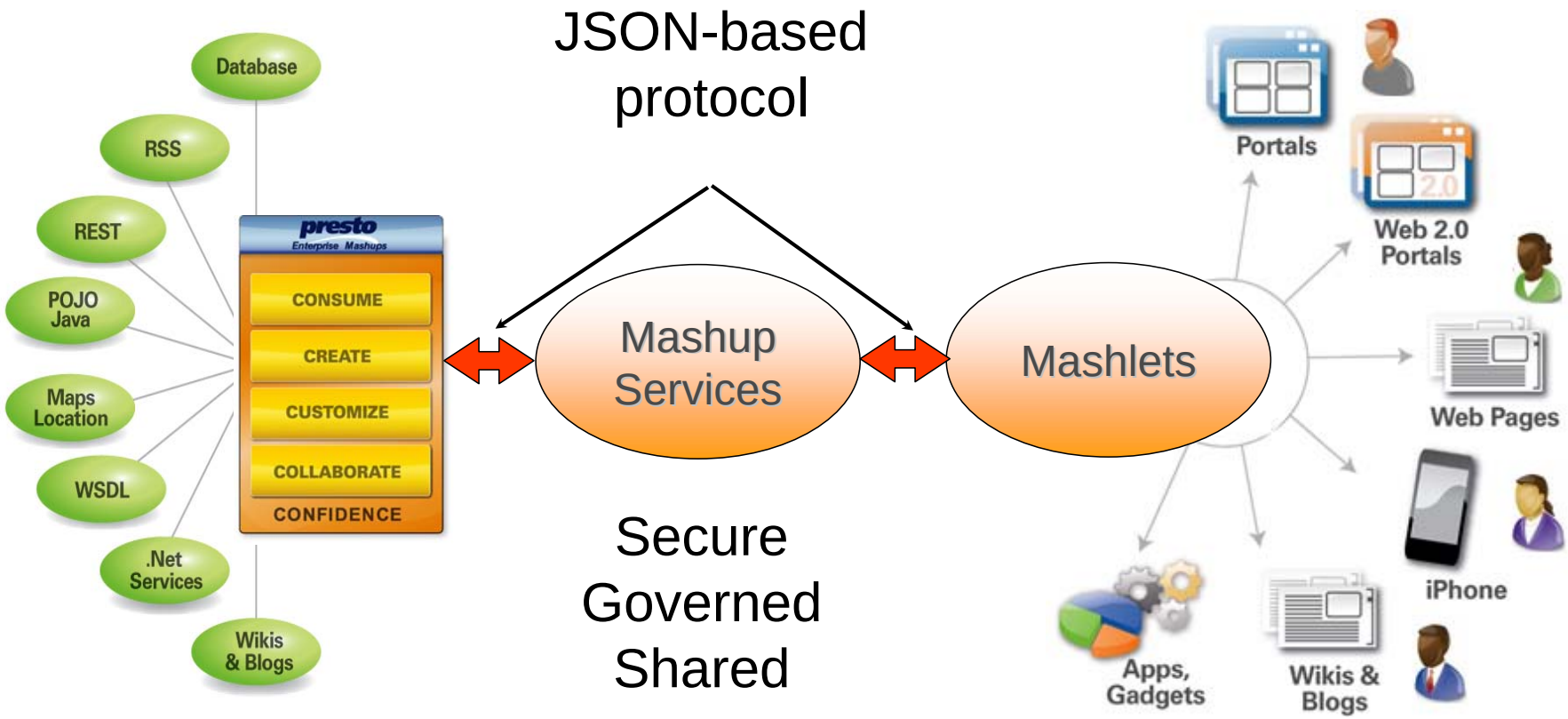
Web clipping

```
<externalinvoke outputvariable = "searchresult“
                endpoint="http://www.google.com/search?q=ruby"/>

<foreach variable="query" items="$searchresult//xhtml:a[@class='l']">
        <appendresult outputvariable="result">
            <itemlink>{$query/@href}</itemlink>
        </appendresult>
</foreach>

<queries>
  <itemlink href="http://www.ruby-lang.org/"/>
  <itemlink href="http://www.ruby-lang.org/en/20020101.html"/>
  <itemlink href="http://en.wikipedia.org/wiki/Ruby_programming_language"/>
  <itemlink href="http://en.wikipedia.org/wiki/Ruby"/>
  <itemlink href="http://www.rubyonrails.org/"/>
  <itemlink href="http://www.rubycentral.org/"/>
  <itemlink href="http://www.w3.org/TR/ruby/"/>
  <itemlink href="http://www.youtube.com/watch?v=JMDcOViViNY"/>
  <itemlink href="http://www.rubycentral.com/book/"/>
  <itemlink href="http://weblog.infoworld.com/tcdaily/archives/2007/07/tamino_xml_serv.html"/>
</queries>
```

Other features

- If-Else
- For Each
- Parallel
- OnError/OnTimeOut
- Assign
- Template
- Dynamic Paramaterization
- XQuery Scripting

From Services to Mashlets



To learn more…

Events, Videos, Whitepapers, Blogs, Articles, Contests and Trial Software at www.jackbe.com

October 24, 2007 3:00 pm - 4:00 pm Eastern DT	Talking the Enterprise Mashup Language
November 2007	
November 9, 2007 12:00 pm - 1:00 pm Eastern ST	Enterprise Mashup Bootcamp: What, Why and How?
November 28, 2007 3:00 pm - 4:00 pm Eastern ST	Mashing the Corporate Portal
December 2007	
December 12, 2007 12:00 pm - 1:00 pm Eastern ST	Mashups in Financial Services

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Talking The Language of Enterprise Mashups

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