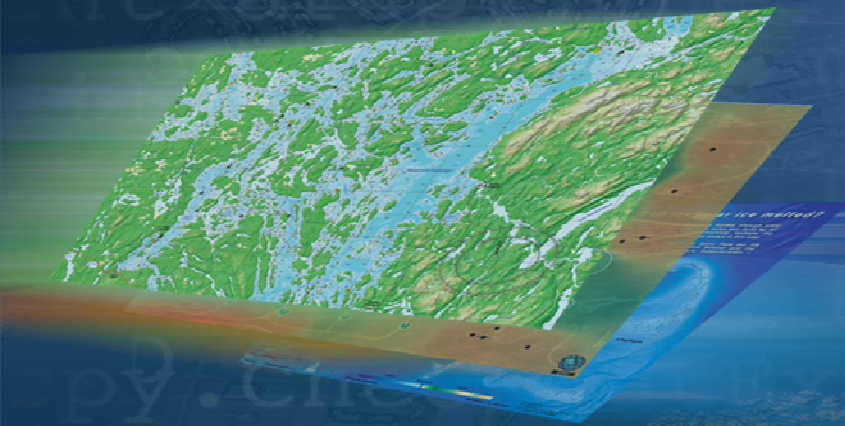


# ESRI Developer Summit

March 22–25, 2010  
Palm Springs, CA

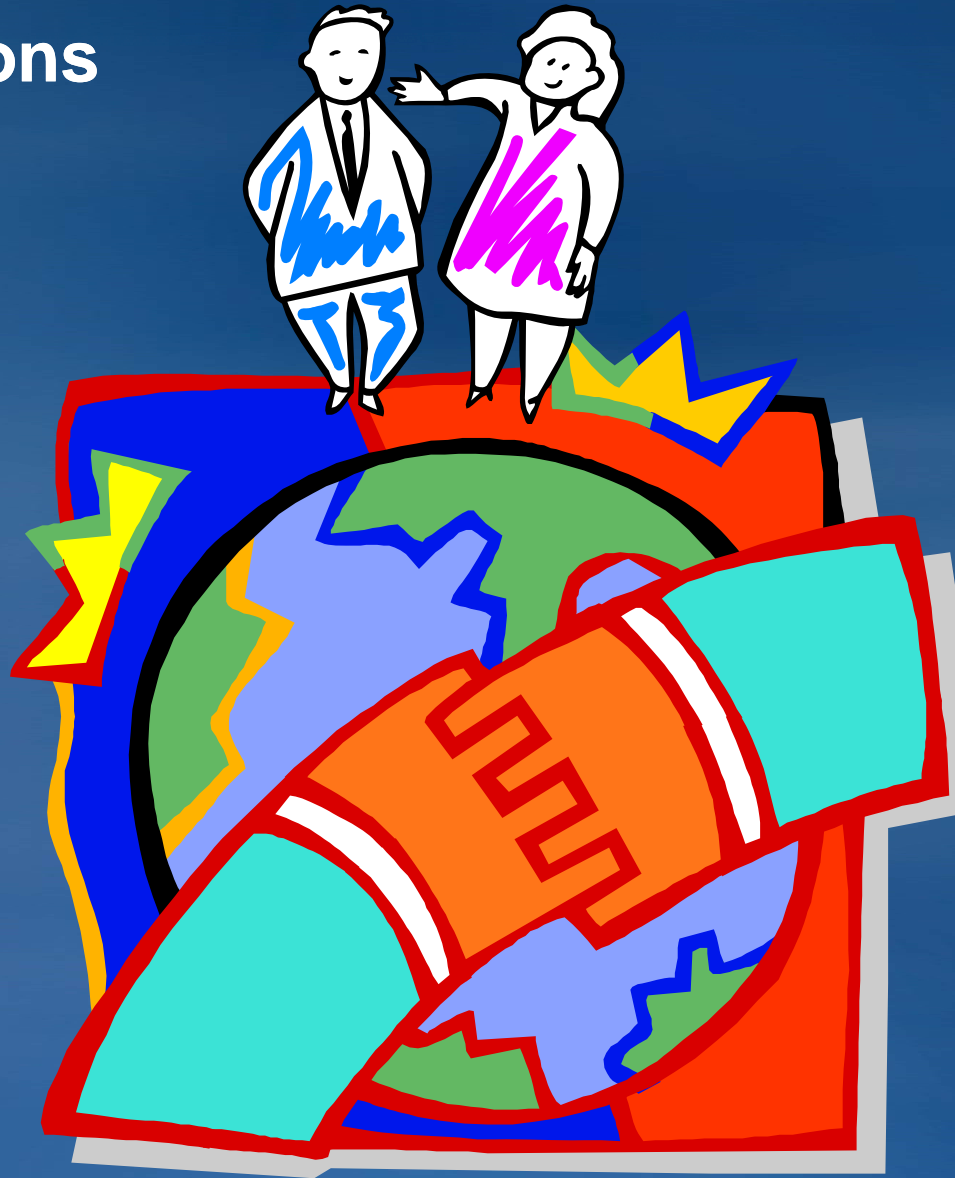
## Getting More Out of Your Java Web ADF Application

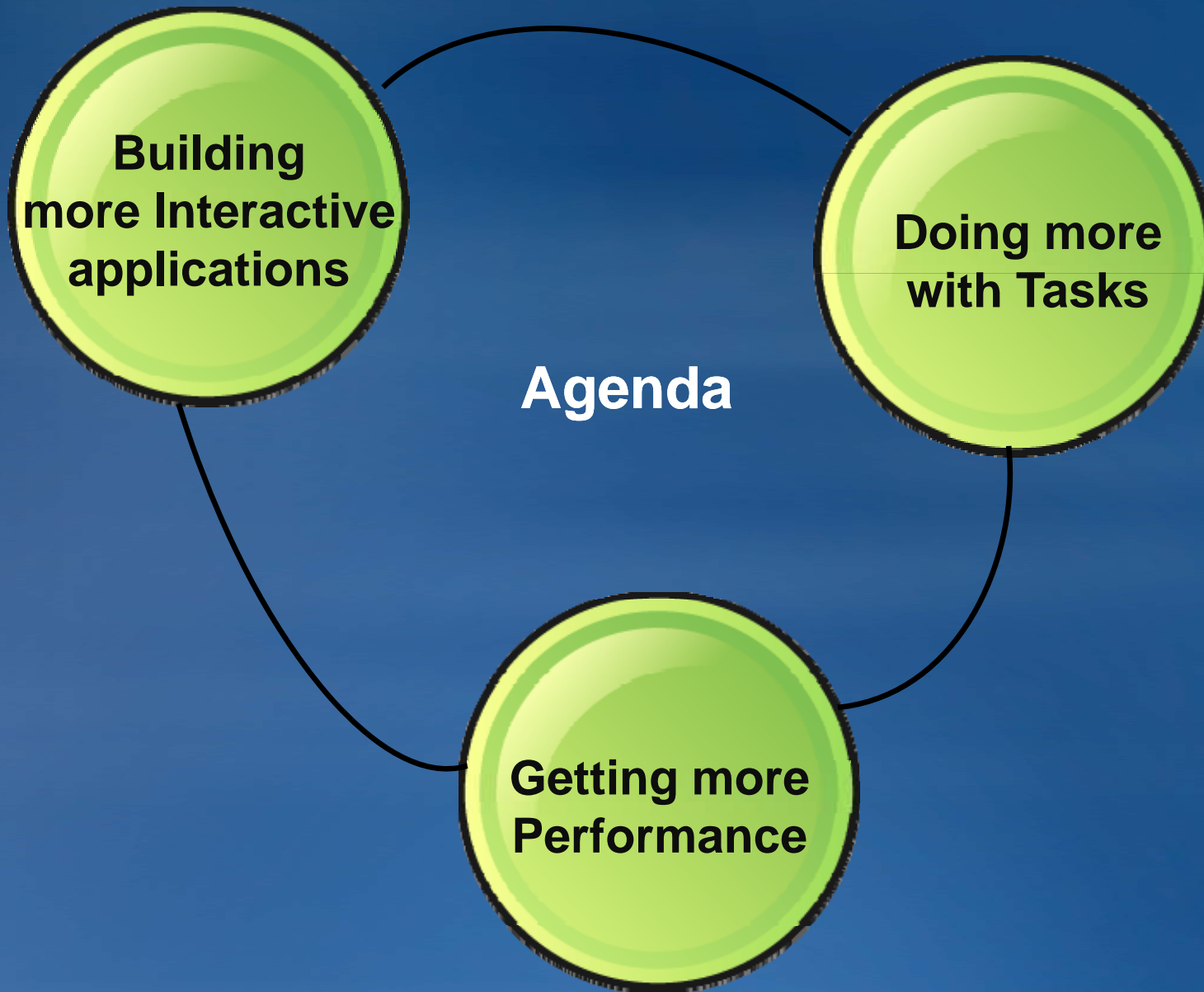
*Divesh Goyal*  
*Haifeng Li*



*Remember to fill out your session surveys*

# Introductions





**Building  
more Interactive  
applications**

**Doing more  
with Tasks**

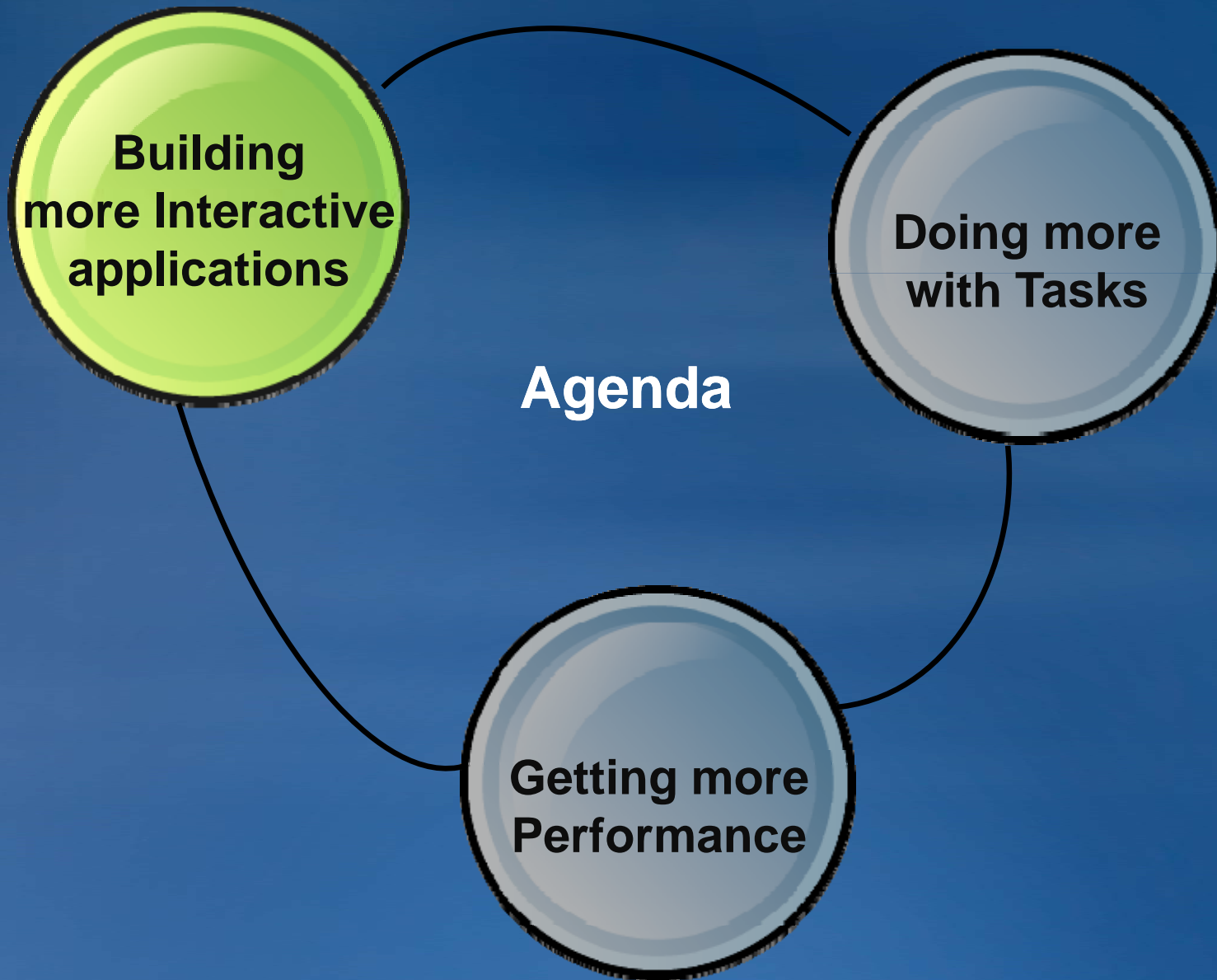
**Agenda**

**Getting more  
Performance**

# Java Web ADF @ 10

- Our best release  
.... EVER!
- Support for Java EE 5
  - JSF 1.2 Reference Implementation
- Jboss 5
- IBM WebSphere 7
- Tomcat 6
- Glassfish v2.1
- Oracle WebLogic 11g





# Demos



# **NEW!** JavaScript

- Based on **dojō**
- Plays well with others
- Better [API documentation](#)

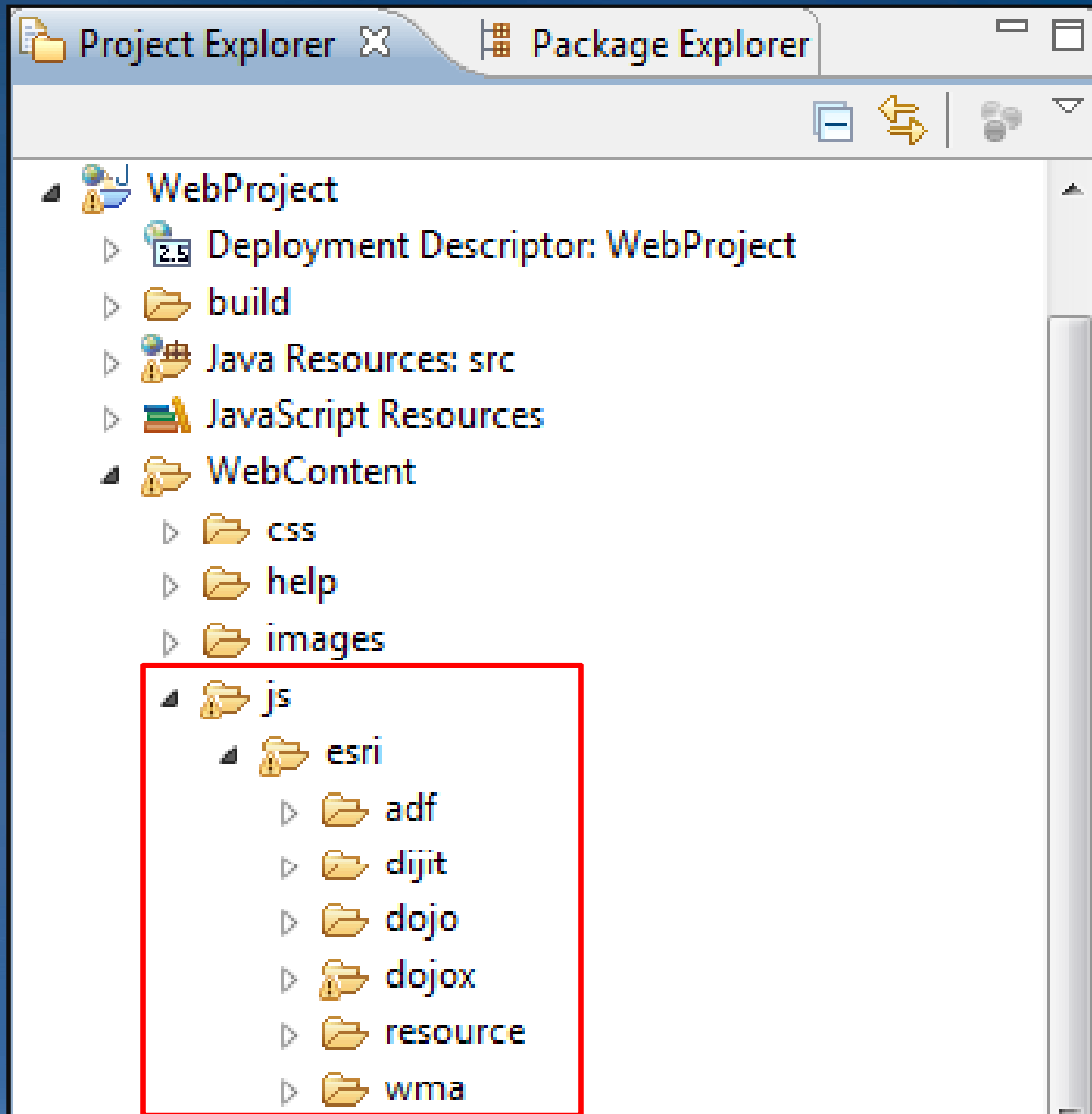




# JavaScript

- **Obfuscated, Minified, and \$%#\*!@**
  - For faster download
- **Namespaces : To prevent conflicts**
  - **adfdojo** : dojo API
    - `adfdojo.require()`
  - **adf** : ADF Controls & API
    - `adf.Point()`
  - **wma** : Web Mapping Application elements
    - `wma.initLayout()`





# A Typical JSP Page

```
<%@taglib uri="http://www.esri.com/adf/web"
          prefix="a"%>
...
<link rel="stylesheet" href="css/soria.all.css.min.css"
      type="text/css" />
<link rel="stylesheet" href="css/adf.css"
      type="text/css" />
...
<script type="text/javascript" language="javascript"
        src="js/esri/dojo/dojo.js" .../>
<script type="text/javascript">
    adfdojo.require("adf.adf");
    adfdojo.requireLocalization("resource", "adf");
</script>
```

# During Development

- If you want to debug into the ADF JavaScript

```
<script type="text/javascript" language="javascript"
      src="js/esri/dojo/dojo.js" .../>
```

```
<script type="text/javascript" language="javascript"
      src="js/esri/adf/adf.js.uncompressed.js" .../>
```

```
<script type="text/javascript">
  adfdojo.require("adf.adf");
  adfdojo.requireLocalization("resource", "adf");
</script>
```

# Backwards Compatible

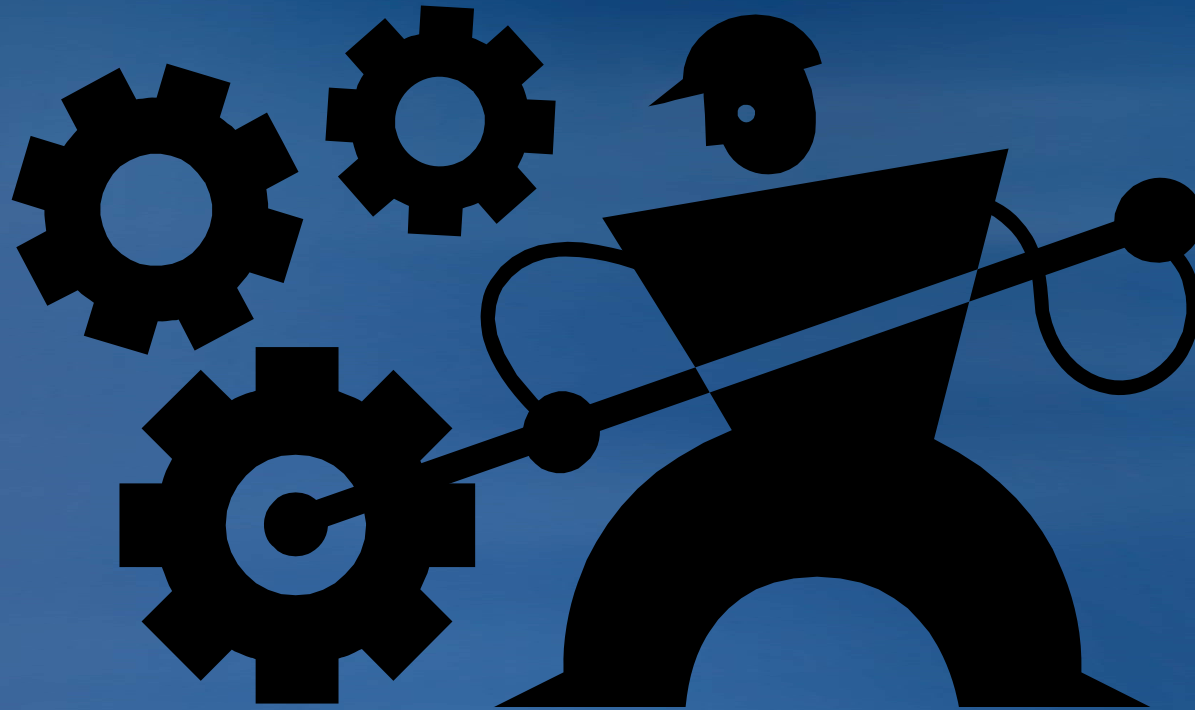
- If you want to use the old API

```
<script type="text/javascript" language="javascript"
        src="js/esri/dojo/dojo.js" .../>
<script type="text/javascript">
    adfdojo.require("adf.adf");
    adfdojo.requireLocalization("resource", "adf");
</script>
```

```
<script type="text/javascript" language="javascript"
        src="js/esri/adf/deprecated.js"/>
```

... but, new API has more Events, Methods, and Classes

# Demos : How do they work?



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# Validation in the Task Framework



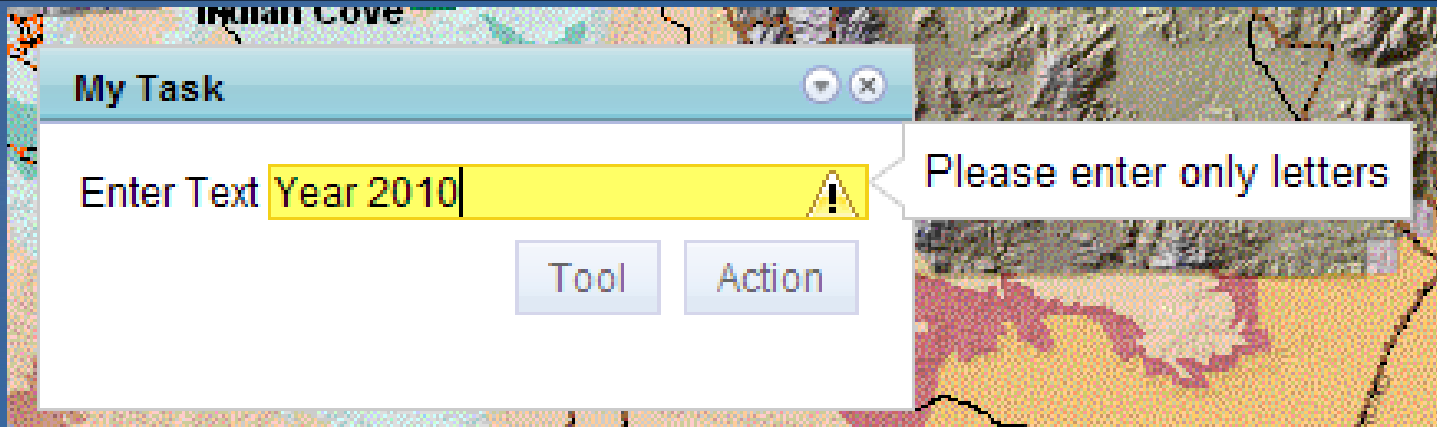
- **Validate user input**
  - Text, Numbers
  - Date & Time
- **Validator Java classes**
- **Enforced on the browser using JavaScript**
- **JavaScript controls to capture**
  - Date & Time

# Validate Parameters

```
//Task Parameter
TaskParamDescriptor paramDescriptor = ...;

StringValidator validator = new StringValidator();
validator.setRegExp( "[A-Za-z]*" );
validator.setInvalidMessage( "Please enter only letters." );

//Set Validator on Parameter
paramDescriptor.setValidator(validator);
```





# Choose what input to validate

- By default, Task Actions & Tools validate all Parameters
  - But you can override that

```
//Task Action
TaskActionDescriptor actionDescriptor = ...;

//specify a list of parameters to validate
List<TaskParamDescriptor> params = ...;
actionDescriptor.setParamsToValidate(params);

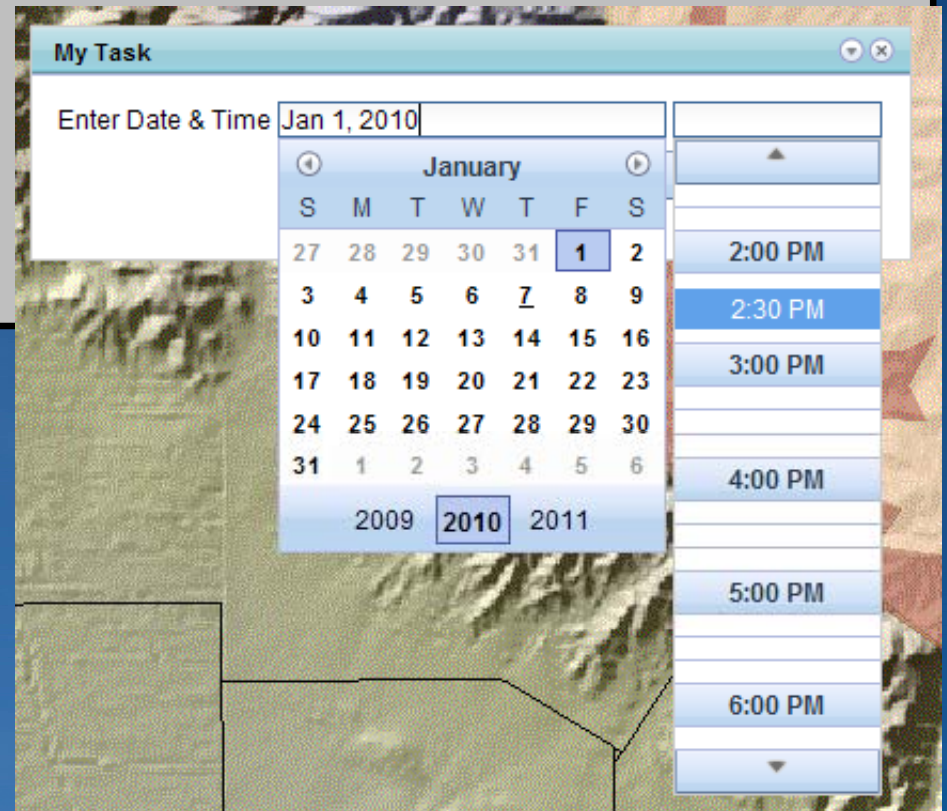
//... or skip validation entirely
actionDescriptor.setParamsToValidate(
    TaskActionDescriptor.VALIDATE_NONE_PARAMS);
```

# Capture Date & Time

```
//Task Parameter
TaskParamDescriptor paramDescriptor = ...;

DateValidator validator = new DateValidator();
//Format for displaying Date & Time
validator.setDateFormat((SimpleDateFormat)...);
validator.setTimeFormat((SimpleDateFormat)...);

//Set Validator on Parameter
paramDescriptor.setValidator(
    validator);
```



# Demo : Extending the Query Task to work with Dates

- Query Task issues SQL queries
- Different databases require dates in different formats
  - SQL Reference topic on <http://webhelp.esri.com>
- Users just want to pick a date



# Print Task Templates

- We get it ... Most of you don't like our template.
- Just roll-your-own. It's easy.



# Print TaskTemplates

```
<managed-bean>
  <managed-bean-class>
    com.esri.adf.web.tasks.PrintTask
  </managed-bean-class>
  ...
  <managed-property>
    <property-name>printTemplate</property-name>
    <value>print.jsp</value>
  </managed-property>
</managed-bean>
```

```
<div id="PRINTMAP-TITLE"></div>
...
<div id="PRINTMAP-IMAGE"></div>
...
<div id="PRINTMAP-LEGEND" ></div>
...
<div id="PRINTMAP-TABLE"></div>
```

# Demo : Print Task

- Templates & PDF documents

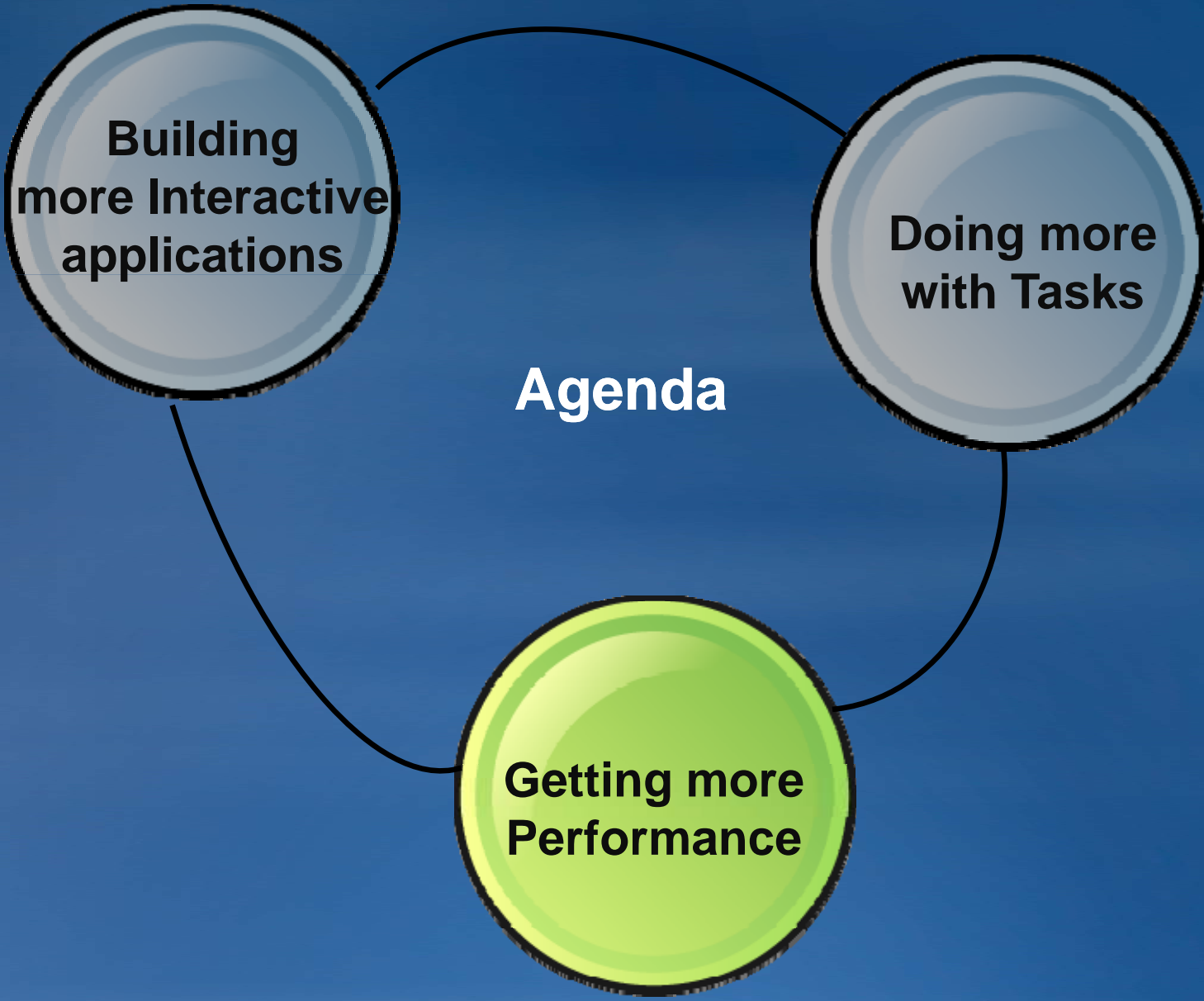


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# Performance

- Fewer trips to server
- GZIP content
- HTTP Cache
- Browser blending
- Optimized session startup
- Smaller session size





# Performance - What do I need to do?



... just watch out for warnings



# Change Log Level

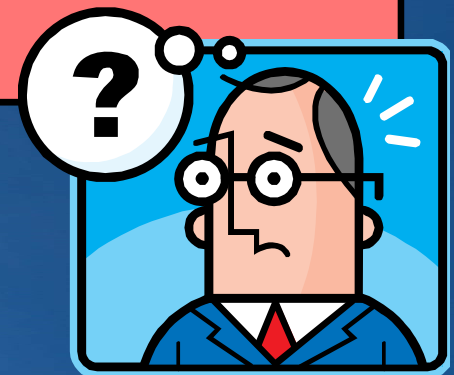
- web.xml settings
  - WARNING
  - Or lower (FINE, CONFIG, ALL, etc)

```
...  
<context-param>  
  <param-name>com.esri.adf.LOG_LEVEL</param-name>  
  <param-value>WARNING</param-value>  
</context-param>  
...
```

# Performance Warning #1 – session startup

**WARNING:** Error encountered while caching initial state of the application. This will prevent the application from optimizing session startup times.

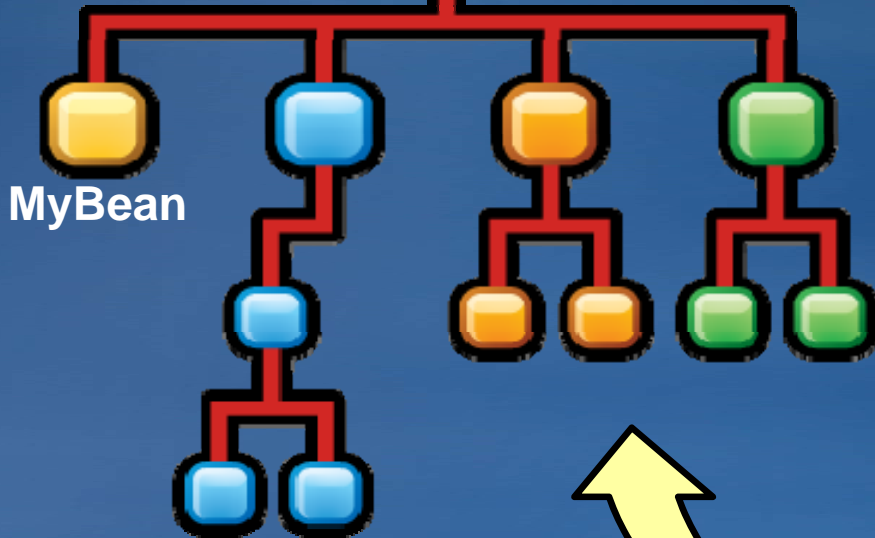
java.io.NotSerializableException:  
mypackage.MyBean



First Session



WebContext



MyBean

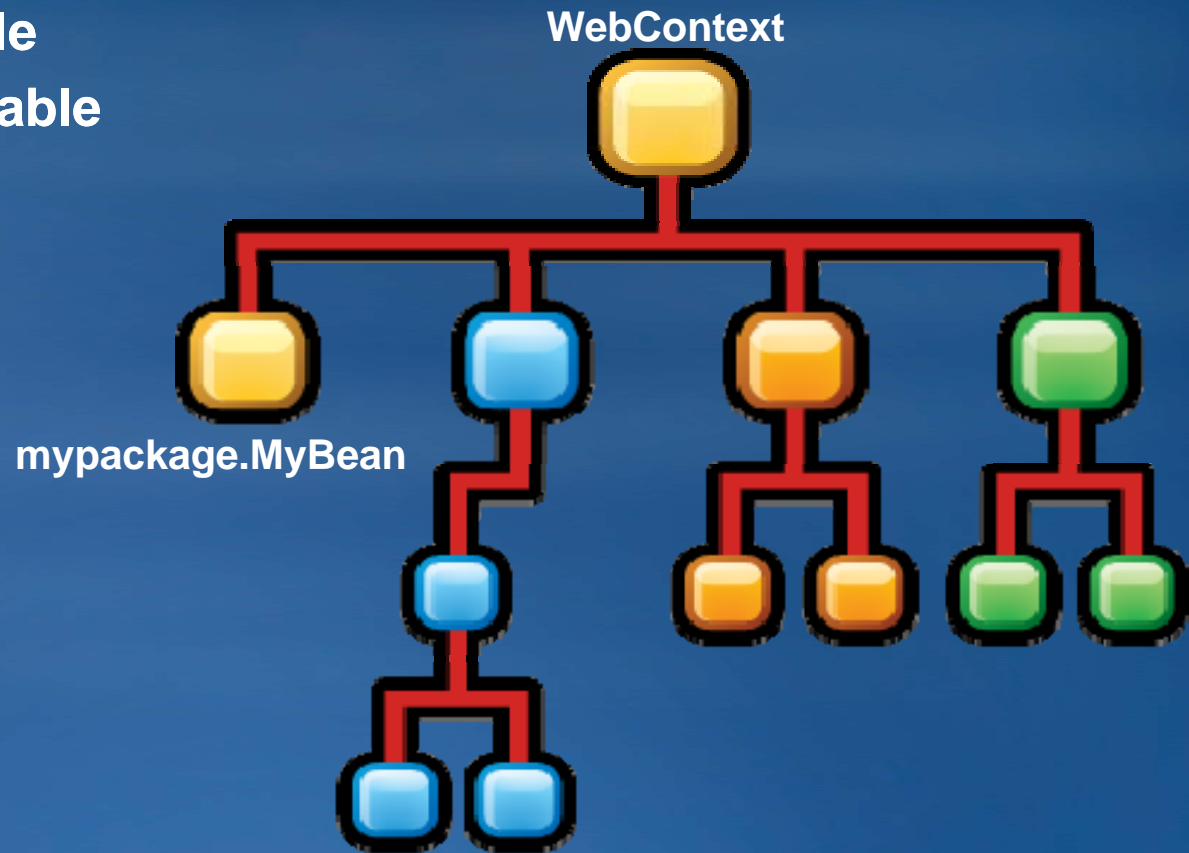
Binary Cache



Subsequent Sessions

# Performance Warning #1 : Solution

- **Make your classes serializable**
  - `java.io.Serializable`
  - `java.io.Externalizable`



# Performance Warning #1 : Impact

- **Condensed lifecycle**
  - `WebContextInitialize::init()` called only for first session
- **Same startup state for every user**
- **Service should not change**
  - Layers, extents, etc

- To reload the cache

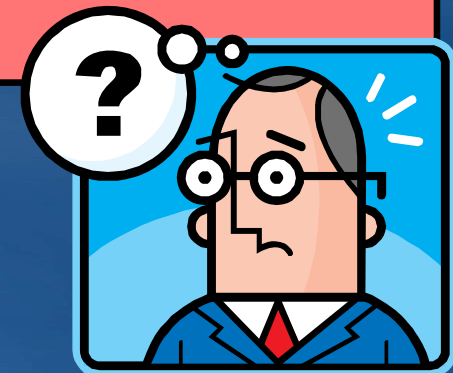
– <http://server/app/mapviewer.jsf?...&reload>

- To turn off optimized session startup

```
... web.xml
<init-param>
  <param-name>cacheInitialState</param-name>
  <param-value>>false</param-value>
</init-param>
```

## Performance Warning #2 – map display

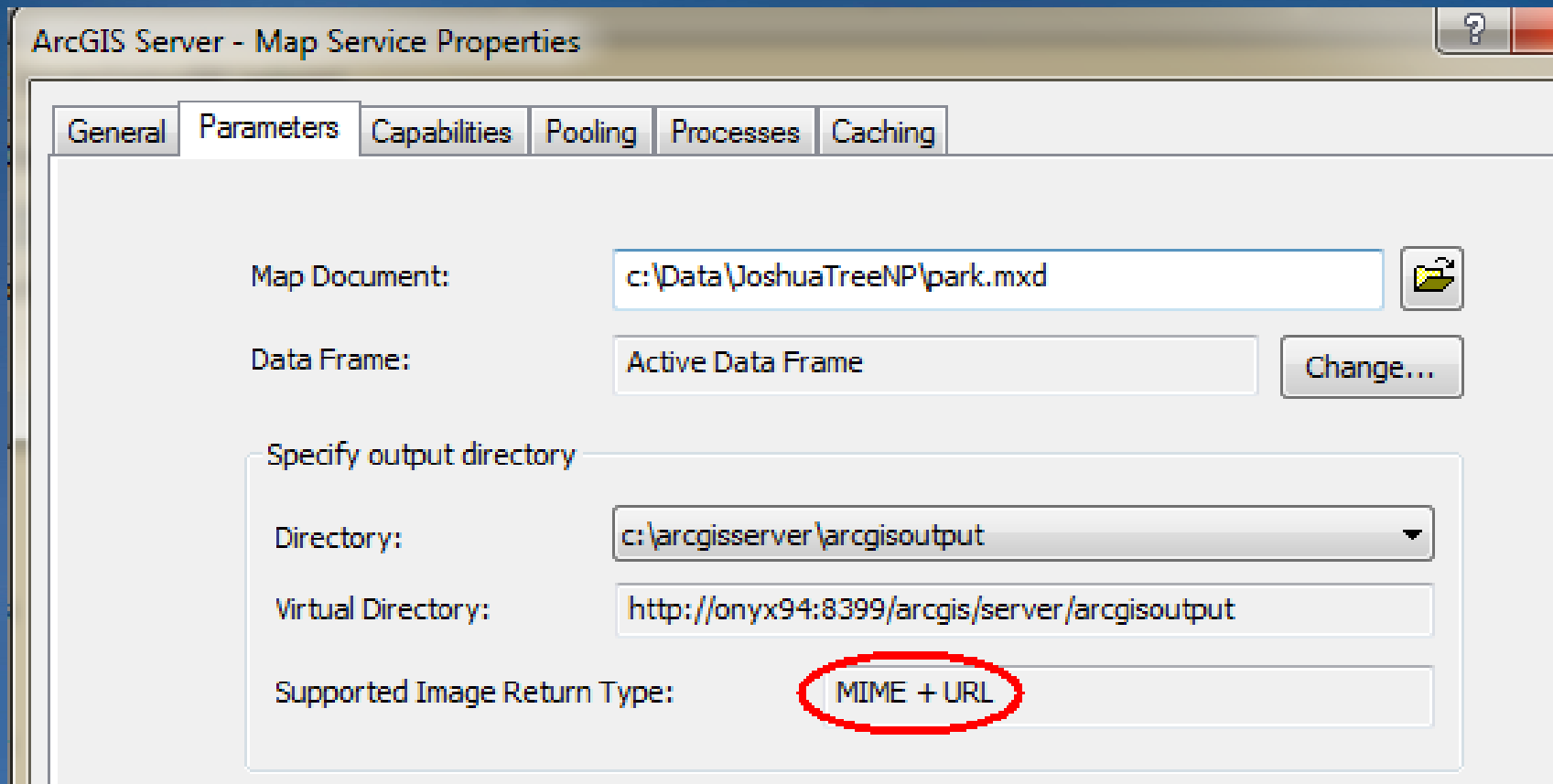
**WARNING:** The Service (`world_map`) is returning the map image as MIME data. To get better performance, please configure the service to return map images as URL instead.





# Performance Warning #2 : Solution

- Set Return Type = MIME + URL



# Performance Tip: SOAP Web Services Toolkit

- If you are not using secured services
  1. Add `arcgisws_runtime.properties` file to your project
  2. Copy default settings from `arcgis_ws_runtime.jar`
  3. Change HTTP transport to `URLConnectionChannelImpl`

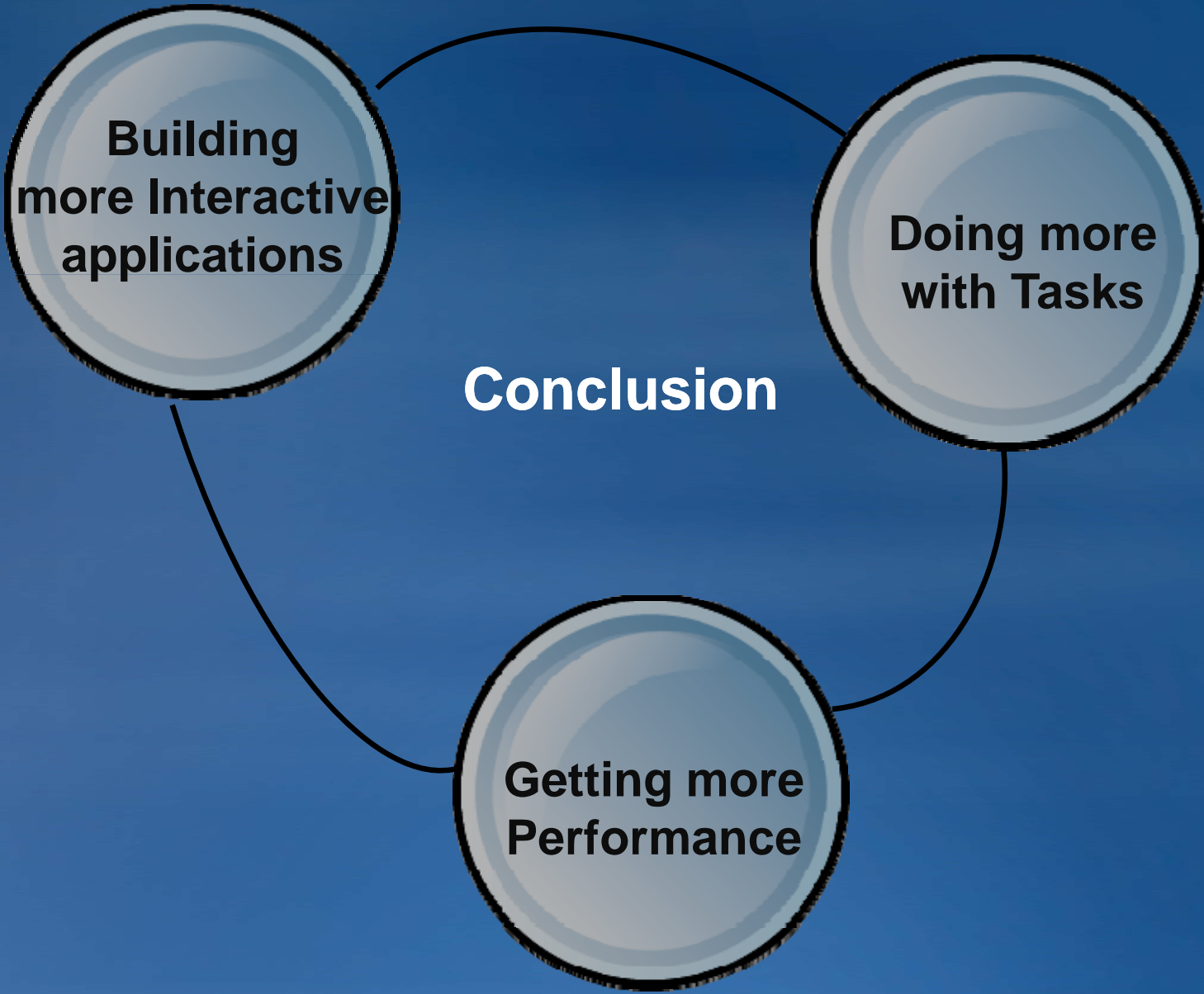
```
http_transport_class=com.esri.arcgisws.runtime.tr  
ansport.http.URLConnectionChannelImpl
```

**Building  
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**Conclusion**

**Getting more  
Performance**



Questions ?



*Please fill out your session survey*



Thank you for coming ...

... see you next year.