ADF JavaScript Partitioning

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Introduction:

Most of the performance issue at the client side for the ADF application is related to large number of client side scripting files getting download which increases the download time and relatively degrading the performance of the application. Breaking up the JavaScript into small chunks will result in modularity but will increase the round trip.

To resolve this ADF Faces Framework comes up with a concept of partitioning of the huge JavaScript at the client side based on the components used in the pages. That means only limited number of scripts required for the page is loaded at the client which will increase the performance drastically.

ADF Faces groups the components JavaScript files into two groups namely partitions and features. These two groups are defined separately in two configuration files i.e. adf-js-features.xml and adf-js-partitions.xml.

The default files are location at

C:\oracle\Middleware\oracle_common\modules\oracle.adf.view_11.1.1\ adf-richclient-impl-11.jar

If the application is loaded without using an explicit partitions then adf will use the configuration settings defined in the above specified files and does the partition.

By default, the partitioning is enabled for performance which can be disabled using the initial parameter in web.xml

```
<context-param>

   <param-name> oracle.adf.view.rich.libraryPartitioning.ENABLED</param-name>

   <param-value>false</param-value>

 </context-param>
```

Or

```
<context-param>

   <param-name> oracle.adfinternal.view.rich.libraryPartitioning.ENABLED

</param-name>

   <param-value>false</param-value>

 </context-param>
```

Or

```
<context-param>

   <param-name>oracle.adf.view.rich.libraryPartitioning.DISABLED</param-name>

   <param-value>true</param-value>
```

```
 </context-param>
```

Or

```
<context-param>

 <param-name>oracle.adfinternal.view.rich.libraryPartitioning.DISABLED</param-name>

  <param-value>true</param-value>

 </context-param>
```

Now we will see how to create these files

- Create **adf-js-partitions.xml** in public_html/WEB-INF folder of your application
- Create **adf-js-features.xml** in src/META-INF folder of your application
- The skeleton of these files looks like

adf-js-partitions.xml

```
<?xml version="1.0" encoding="utf-8"?>

<partitions xmlns="http://xmlns.oracle.com/adf/faces/partition">

 <partition>

  <partition-name>dnd</partition-name>

  <feature>AdfDropTarget</feature>

 </partition>

</partitions>
```

<partitions> - root tag to define partitions, all partitions are defined inside this

<partition> - define the partition, any number of partition is allowed

<partition-name> - name of the partion. For example the javascript will be loaded as dnd-11.1.1.4.js

<feature> - hook reference to the particular feature that defines to load the javascript for the component

adf-js-features.xml

```
<?xml version="1.0" encoding="utf-8"?>

<features xmlns="http://xmlns.oracle.com/adf/faces/feature">

<feature>

  <feature-name>AdfDropTarget</feature-name>

  <feature-class>oracle/adf/view/js/dnd/AdfBasicDropTarget.js</feature-class>

  <feature-dependency>AdfDragAndDrop</feature-dependency>
```

```
 </feature>

<feature>

  <feature-name>AdfDragAndDrop</feature-name>

  <feature-class>oracle/adfinternal/view/js/laf/dhtml/rich/AdfDhtmlDnDContext.js</feature-class>

 </feature>

 </features>
```

<features> - root tag for the features, all features are defined inside this

<feature> - define the feature, any number of feature is allowed

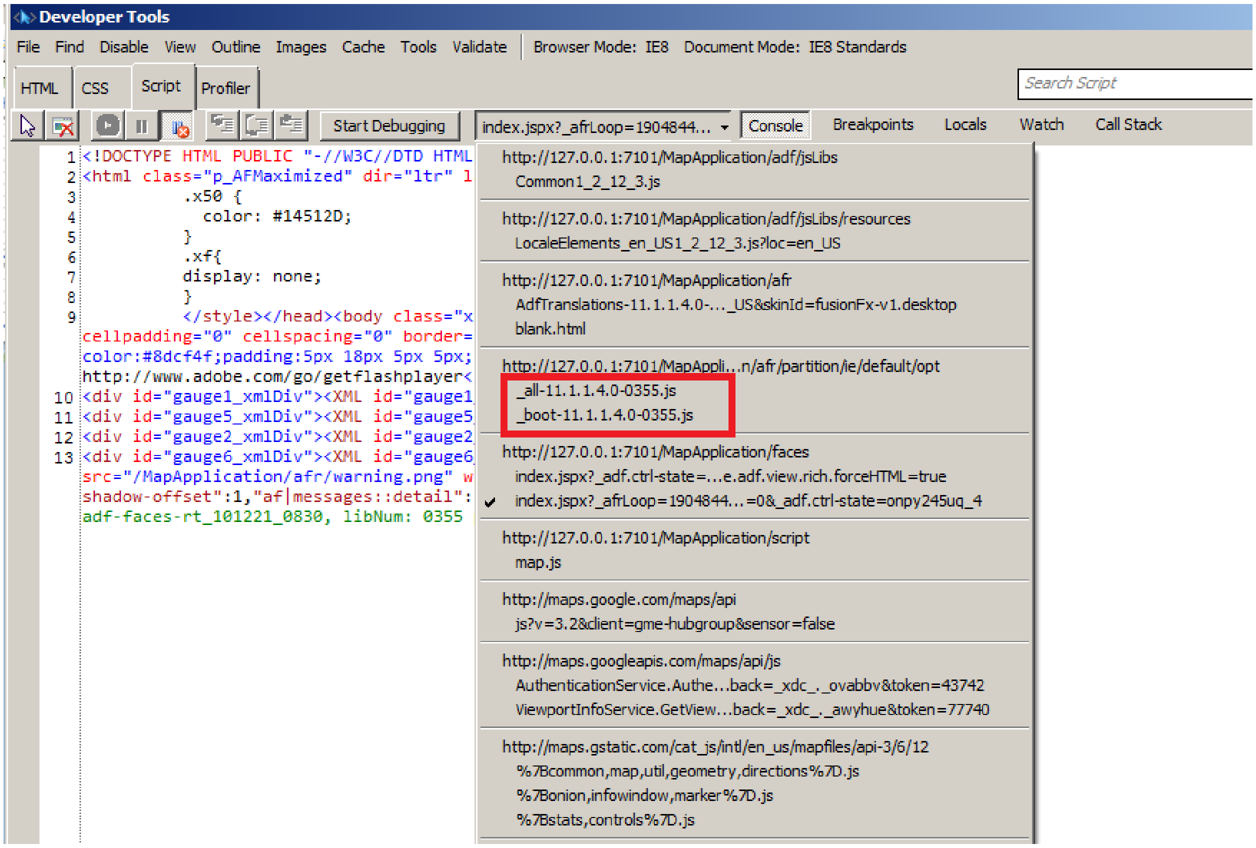
<feature-name> - name of the feature that has to be referenced from the partition file

<feature-class> - javascript class for the component

<feature-dependency> - name of the feature which is extended by the javascript class

<u>Sample:</u>

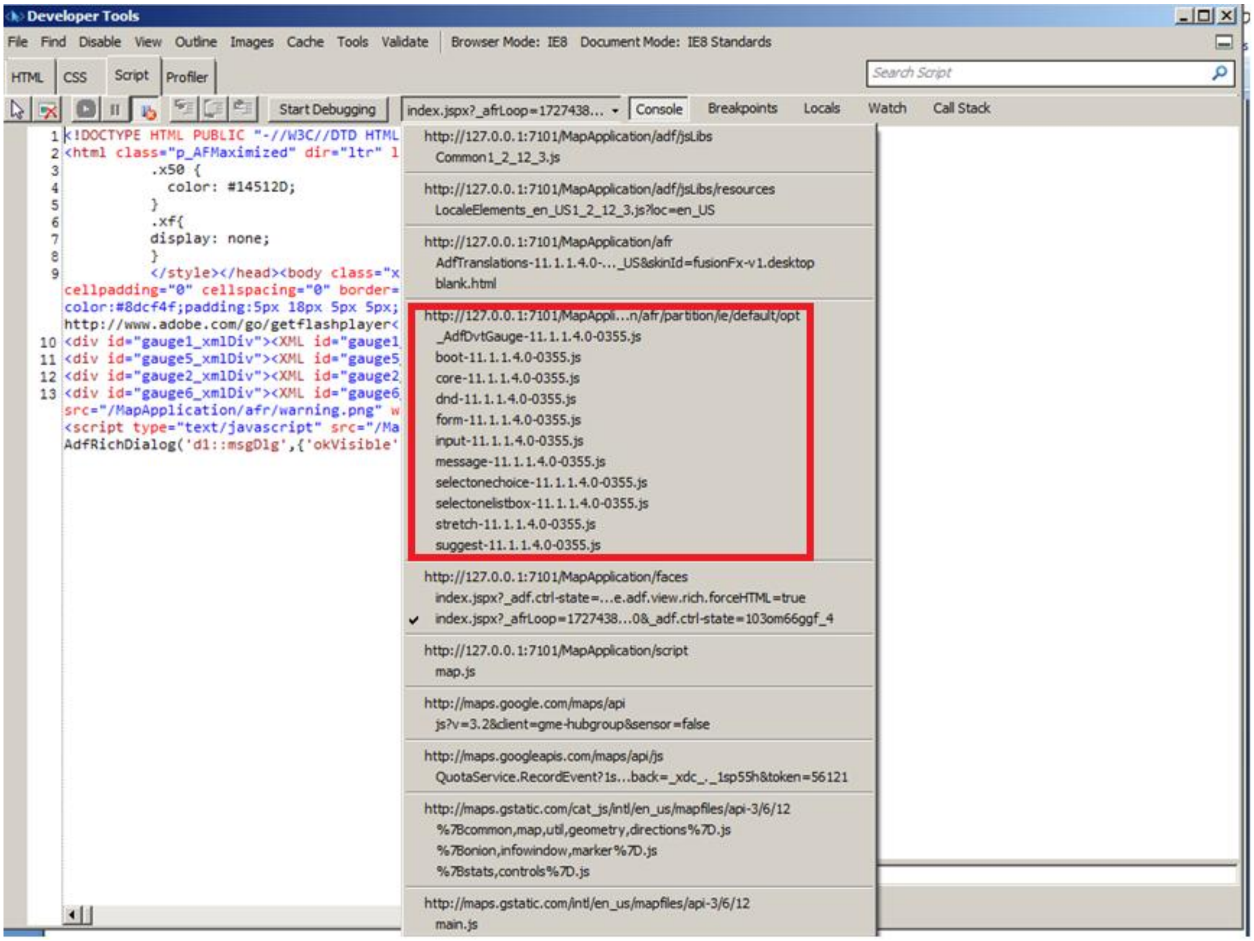
When you don't have these files in place then the loaded scripts are



```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML
<html class="p_AFMaximized" dir="ltr" l
          .x50 {
            color: #14512D;
          }
          .xf{
          display: none;
          }
          </style></head><body class="x
cellpadding="0" cellspacing="0" border=
color:#8dcf4f;padding:5px 18px 5px 5px;
http://www.adobe.com/go/getflashplayer<
<div id="gauge1_xmlDiv"><XML id="gauge1
<div id="gauge5_xmlDiv"><XML id="gauge5
<div id="gauge2_xmlDiv"><XML id="gauge2
<div id="gauge6_xmlDiv"><XML id="gauge6
src="/MapApplication/afr/warning.png" w
shadow-offset":1,"af|messages::detail":
adf-faces-rt_101221_0830, libNum: 0355
```

```
http://127.0.0.1:7101/MapApplication/adf/jsLibs
  Common1_2_12_3.js
http://127.0.0.1:7101/MapApplication/adf/jsLibs/resources
  LocaleElements_en_US1_2_12_3.js?loc=en_US
http://127.0.0.1:7101/MapApplication/afr
  AdfTranslations-11.1.1.4.0-..._US&skinId=fusionFx-v1.desktop
  blank.html
http://127.0.0.1:7101/MapAppli...n/afr/partition/ie/default/opt
  _all-11.1.1.4.0-0355.js
  _boot-11.1.1.4.0-0355.js
http://127.0.0.1:7101/MapApplication/faces
  index.jspx?_adf.ctrl-state=...e.adf.view.rich.forceHTML=true
✓ index.jspx?_afrLoop=1904844...=0&_adf.ctrl-state=onpy245uq_4
http://127.0.0.1:7101/MapApplication/script
  map.js
http://maps.google.com/maps/api
  js?v=3.2&client=gme-hubgroup&sensor=false
http://maps.googleapis.com/maps/api/js
  AuthenticationService.Authe...back=_xdc_._ovabbv&token=43742
  ViewportInfoService.GetView...back=_xdc_._awyhue&token=77740
http://maps.gstatic.com/cat_js/intl/en_us/mapfiles/api-3/6/12
  %7Bcommon,map,util,geometry,directions%7D.js
  %7Bonion,infowindow,marker%7D.js
  %7Bstats,controls%7D.js
```

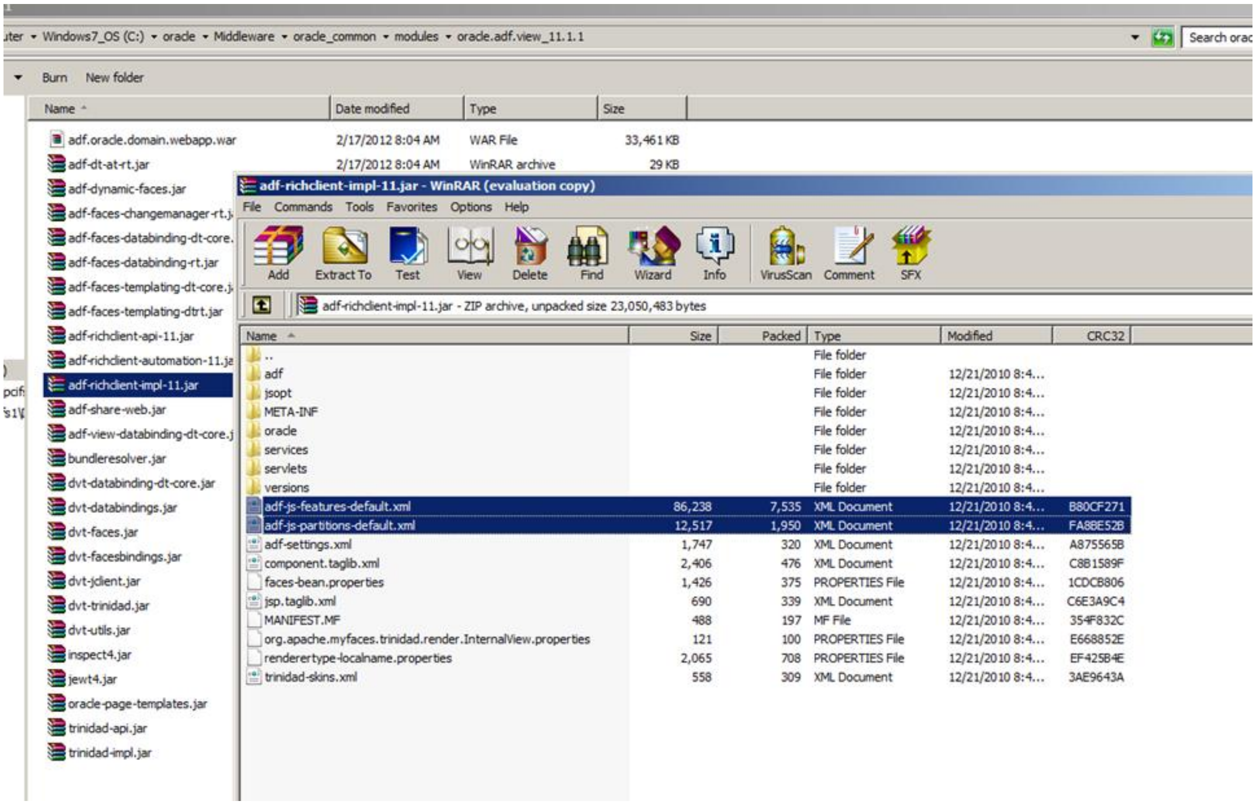
When you replicate the default content in your configuration files then the partition will be


Developer Tools
File Find Disable View Outline Images Cache Tools Validate
Browser Mode: IE8 Document Mode: IE8 Standards
HTML CSS Script Profiler
Search Script
Start Debugging
index.jspx?_afrLoop=1727438...
Console Breakpoints Locals Watch Call Stack

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML
<html class="p_AFMaximized" dir="ltr" l
          .x50 {
            color: #14512D;
          }
          .xf{
          display: none;
          }
          </style></head><body class="x
cellpadding="0" cellspacing="0" border=
color:#8dcf4f;padding:5px 18px 5px 5px;
http://www.adobe.com/go/getflashplayer<
<div id="gauge1_xmlDiv"><XML id="gauge1
<div id="gauge5_xmlDiv"><XML id="gauge5
<div id="gauge2_xmlDiv"><XML id="gauge2
<div id="gauge6_xmlDiv"><XML id="gauge6
src="/MapApplication/afr/warning.png" w
<script type="text/javascript" src="/Ma
AdfRichDialog('d1::msgDlg',{'okVisible'
```

```
http://127.0.0.1:7101/MapApplication/adf/jsLibs
  Common1_2_12_3.js
http://127.0.0.1:7101/MapApplication/adf/jsLibs/resources
  LocaleElements_en_US1_2_12_3.js?loc=en_US
http://127.0.0.1:7101/MapApplication/afr
  AdfTranslations-11.1.1.4.0-..._US&skinId=fusionFx-v1.desktop
  blank.html
http://127.0.0.1:7101/MapAppli...n/afr/partition/ie/default/opt
  _AdfDvtGauge-11.1.1.4.0-0355.js
  boot-11.1.1.4.0-0355.js
  core-11.1.1.4.0-0355.js
  dnd-11.1.1.4.0-0355.js
  form-11.1.1.4.0-0355.js
  input-11.1.1.4.0-0355.js
  message-11.1.1.4.0-0355.js
  selectonechoice-11.1.1.4.0-0355.js
  selectonelistbox-11.1.1.4.0-0355.js
  stretch-11.1.1.4.0-0355.js
  suggest-11.1.1.4.0-0355.js
http://127.0.0.1:7101/MapApplication/faces
  index.jspx?_adf.ctrl-state=...e.adf.view.rich.forceHTML=true
✓ index.jspx?_afrLoop=1727438...0&_adf.ctrl-state=103om66ggf_4
http://127.0.0.1:7101/MapApplication/script
  map.js
http://maps.google.com/maps/api
  js?v=3.2&client=gme-hubgroup&sensor=false
http://maps.googleapis.com/maps/api/js
  QuotaService.RecordEvent?1s...back=_xdc_._1sp55h&token=56121
http://maps.gstatic.com/cat_js/intl/en_us/mapfiles/api-3/6/12
  %7Bcommon,map,util,geometry,directions%7D.js
  %7Bonion,infowindow,marker%7D.js
  %7Bstats,controls%7D.js
http://maps.gstatic.com/intl/en_us/mapfiles/api-3/6/12
  main.js
```

Let's have the partitions which defines only two partition for <af:autosuggestbehavior> component. It's better to have *AdfBootStrap* and *AdfCore* as part of the partitions as these are the basic components and JavaScript to render some of the key components. You are free to research on these components to come up with your own core and booting features. You can get the base *AdfBootStrap* and *AdfCore* partitions and features configurations from

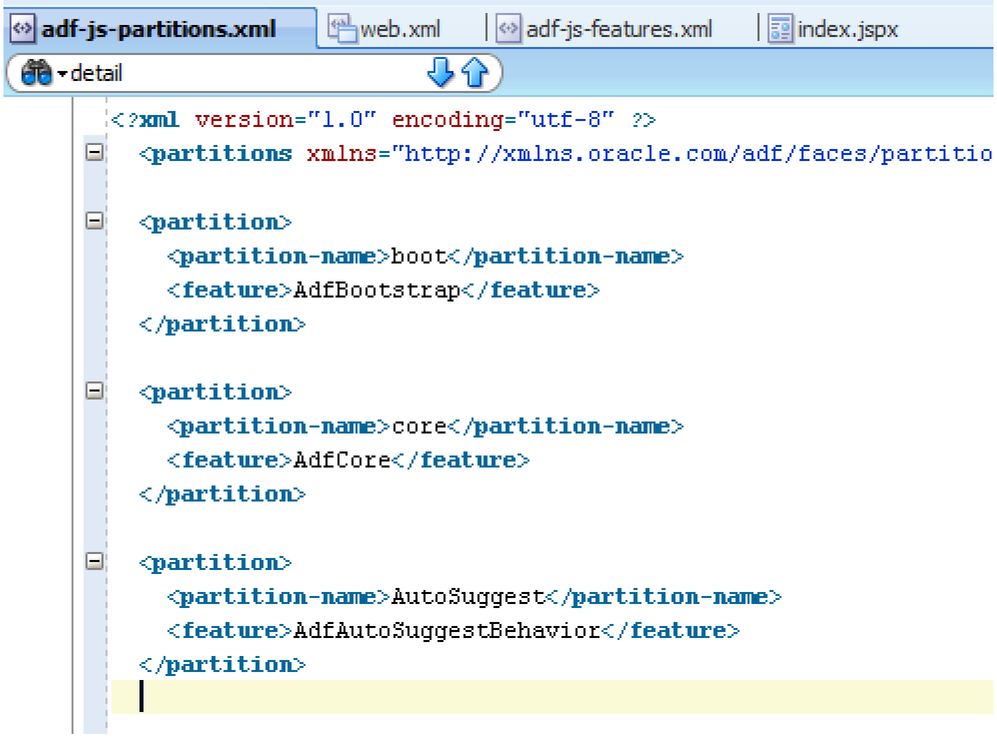

uter ▸ Windows7_OS (C:) ▸ oracle ▸ Middleware ▸ oracle_common ▸ modules ▸ oracle.adf.view_11.1.1
Search orac
Burn
New folder
adf-richclient-impl-11.jar - WinRAR (evaluation copy)
File
Commands
Tools
Favorites
Options
Help
Add
Extract To
Test
View
Delete
Find
Wizard
Info
VirusScan
Comment
SFX

Name	Date modified	Type	Size
adf.oracle.domain.webapp.war	2/17/2012 8:04 AM	WAR File	33,461 KB
adf-dt-at-rt.jar	2/17/2012 8:04 AM	WinRAR archive	29 KB
adf-dynamic-faces.jar			
adf-faces-changemanager-rt.j			
adf-faces-databinding-dt-core.			
adf-faces-databinding-rt.jar			
adf-faces-templating-dt-core.j			
adf-faces-templating-dtrt.jar			
adf-richclient-api-11.jar			
adf-richclient-automation-11.ja			
adf-richclient-impl-11.jar			
adf-share-web.jar			
adf-view-databinding-dt-core.j			
bundleresolver.jar			
dvt-databinding-dt-core.jar			
dvt-databindings.jar			
dvt-faces.jar			
dvt-facesbindings.jar			
dvt-jclient.jar			
dvt-trinidad.jar			
dvt-utils.jar			
inspect4.jar			
jewt4.jar			
oracle-page-templates.jar			
trinidad-api.jar			
trinidad-impl.jar			

adf-richclient-impl-11.jar - ZIP archive, unpacked size 23,050,483 bytes

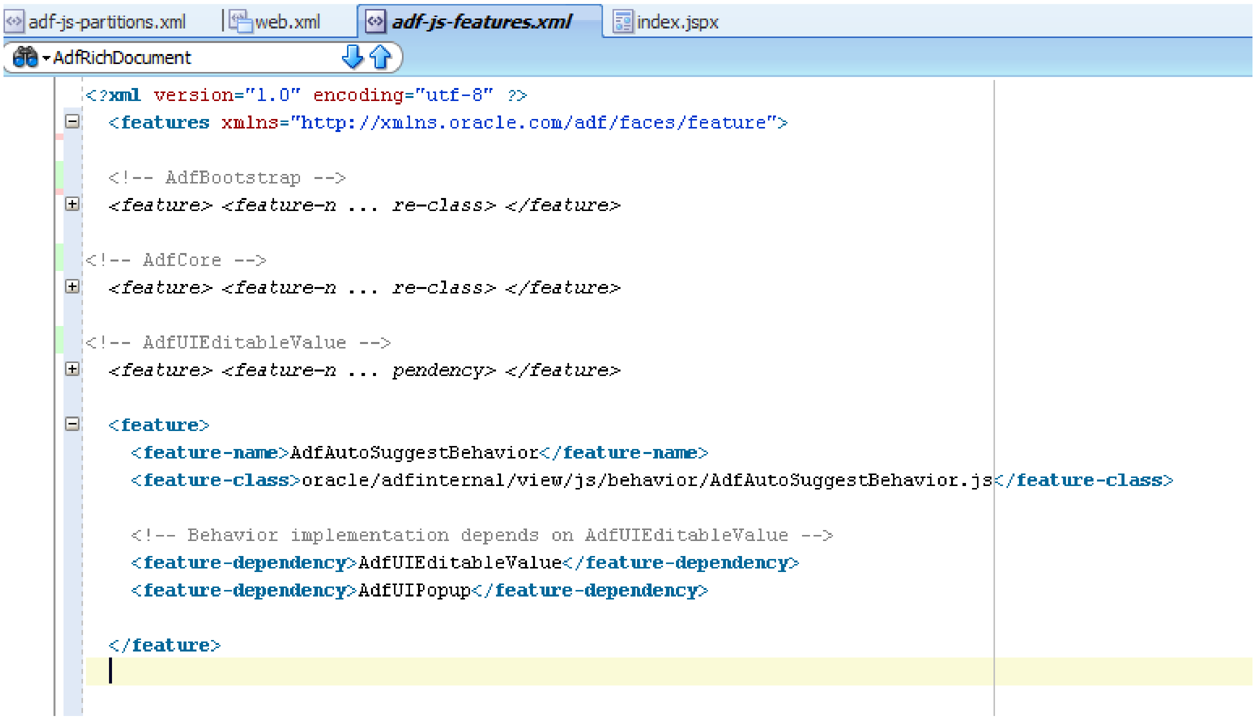
Name	Size	Packed	Type	Modified	CRC32
..			File folder		
adf			File folder	12/21/2010 8:4...	
jsopt			File folder	12/21/2010 8:4...	
META-INF			File folder	12/21/2010 8:4...	
oracle			File folder	12/21/2010 8:4...	
services			File folder	12/21/2010 8:4...	
servlets			File folder	12/21/2010 8:4...	
versions			File folder	12/21/2010 8:4...	
adf-js-features-default.xml	86,238	7,535	XML Document	12/21/2010 8:4...	B80CF271
adf-js-partitions-default.xml	12,517	1,950	XML Document	12/21/2010 8:4...	FA8BE52B
adf-settings.xml	1,747	320	XML Document	12/21/2010 8:4...	A875565B
component.taglib.xml	2,406	476	XML Document	12/21/2010 8:4...	C8B1589F
faces-bean.properties	1,426	375	PROPERTIES File	12/21/2010 8:4...	1CDCB806
jsp.taglib.xml	690	339	XML Document	12/21/2010 8:4...	C6E3A9C4
MANIFEST.MF	488	197	MF File	12/21/2010 8:4...	354F832C
org.apache.myfaces.trinidad.render.InternalView.properties	121	100	PROPERTIES File	12/21/2010 8:4...	E668852E
renderertype-localname.properties	2,065	708	PROPERTIES File	12/21/2010 8:4...	EF425B4E
trinidad-skins.xml	558	309	XML Document	12/21/2010 8:4...	3AE9643A

The partition file with the configuration and hook looks like



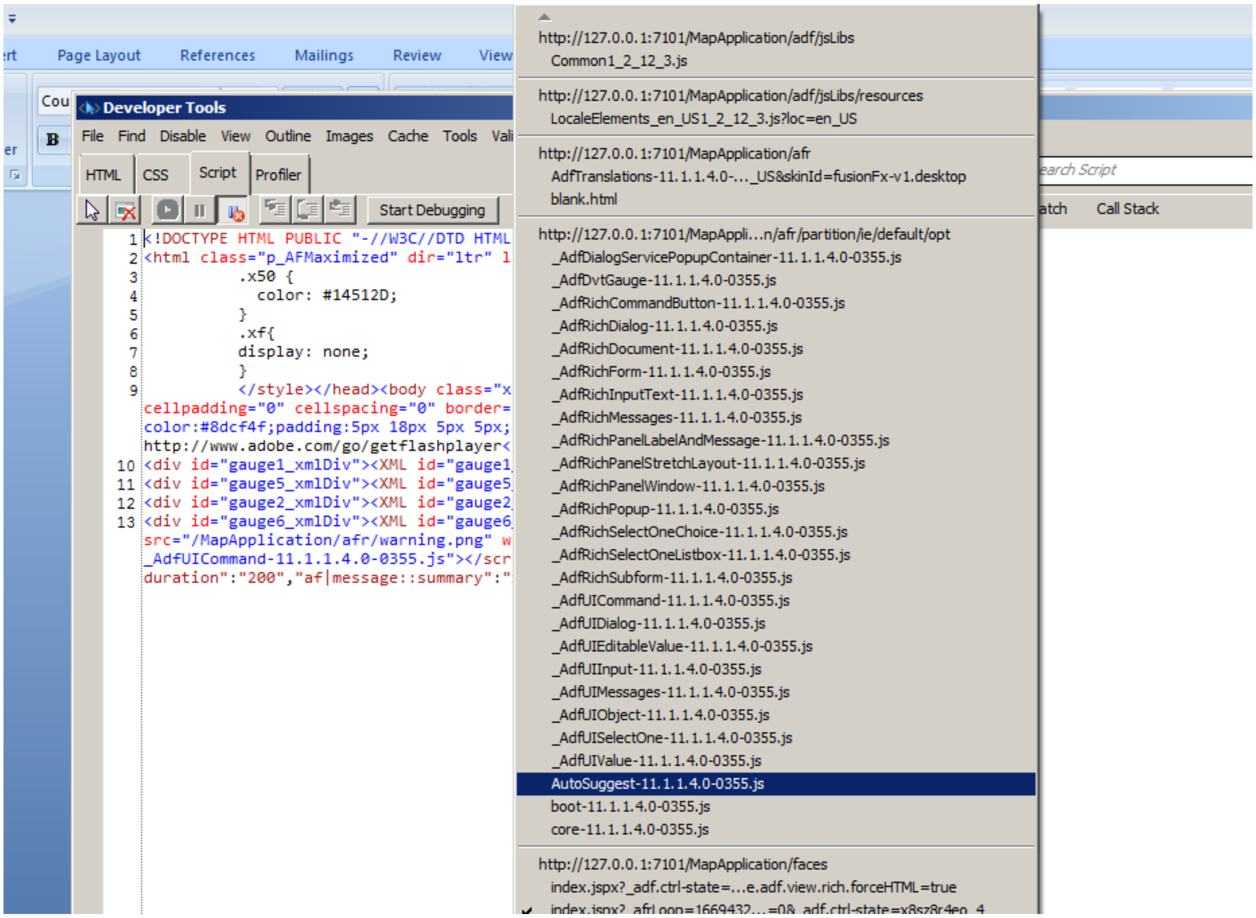
```
<?xml version="1.0" encoding="utf-8" ?>
  <partitions xmlns="http://xmlns.oracle.com/adf/faces/partitio

  <partition>
    <partition-name>boot</partition-name>
    <feature>AdfBootstrap</feature>
  </partition>

  <partition>
    <partition-name>core</partition-name>
    <feature>AdfCore</feature>
  </partition>

  <partition>
    <partition-name>AutoSuggest</partition-name>
    <feature>AdfAutoSuggestBehavior</feature>
  </partition>
```

And the corresponding features are defined as



```
<?xml version="1.0" encoding="utf-8" ?>
  <features xmlns="http://xmlns.oracle.com/adf/faces/feature">

  <!-- AdfBootstrap -->
  <feature> <feature-n ... re-class> </feature>

<!-- AdfCore -->
  <feature> <feature-n ... re-class> </feature>

<!-- AdfUIEditableValue -->
  <feature> <feature-n ... pendency> </feature>

  <feature>
    <feature-name>AdfAutoSuggestBehavior</feature-name>
    <feature-class>oracle/adfinternal/view/js/behavior/AdfAutoSuggestBehavior.js</feature-class>

    <!-- Behavior implementation depends on AdfUIEditableValue -->
    <feature-dependency>AdfUIEditableValue</feature-dependency>
    <feature-dependency>AdfUIPopup</feature-dependency>

  </feature>
```

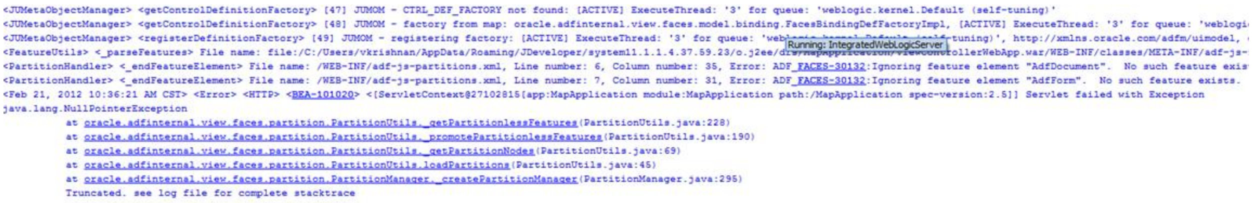
And when you run your page in internet explored 8 with Developer Tools on (F12) you can see in the script section that our partition is available as a separate script


rt
Page Layout
References
Mailings
Review
View
Cou
B
er
Developer Tools
File
Find
Disable
View
Outline
Images
Cache
Tools
Vali
HTML
CSS
Script
Profiler
Start Debugging
earch Script
atch
Call Stack
http://127.0.0.1:7101/MapApplication/adf/jsLibs
Common1_2_12_3.js
http://127.0.0.1:7101/MapApplication/adf/jsLibs/resources
LocaleElements_en_US1_2_12_3.js?loc=en_US
http://127.0.0.1:7101/MapApplication/afr
AdfTranslations-11.1.1.4.0-..._US&skinId=fusionFx-v1.desktop
blank.html
http://127.0.0.1:7101/MapAppli...n/afr/partition/ie/default/opt
_AdfDialogServicePopupContainer-11.1.1.4.0-0355.js
_AdfDvtGauge-11.1.1.4.0-0355.js
_AdfRichCommandButton-11.1.1.4.0-0355.js
_AdfRichDialog-11.1.1.4.0-0355.js
_AdfRichDocument-11.1.1.4.0-0355.js
_AdfRichForm-11.1.1.4.0-0355.js
_AdfRichInputText-11.1.1.4.0-0355.js
_AdfRichMessages-11.1.1.4.0-0355.js
_AdfRichPanelLabelAndMessage-11.1.1.4.0-0355.js
_AdfRichPanelStretchLayout-11.1.1.4.0-0355.js
_AdfRichPanelWindow-11.1.1.4.0-0355.js
_AdfRichPopup-11.1.1.4.0-0355.js
_AdfRichSelectOneChoice-11.1.1.4.0-0355.js
_AdfRichSelectOneListbox-11.1.1.4.0-0355.js
_AdfRichSubform-11.1.1.4.0-0355.js
_AdfUICommand-11.1.1.4.0-0355.js
_AdfUIDialog-11.1.1.4.0-0355.js
_AdfUIEditableValue-11.1.1.4.0-0355.js
_AdfUIInput-11.1.1.4.0-0355.js
_AdfUIMessages-11.1.1.4.0-0355.js
_AdfUIObject-11.1.1.4.0-0355.js
_AdfUISelectOne-11.1.1.4.0-0355.js
_AdfUIValue-11.1.1.4.0-0355.js
AutoSuggest-11.1.1.4.0-0355.js
boot-11.1.1.4.0-0355.js
core-11.1.1.4.0-0355.js
http://127.0.0.1:7101/MapApplication/faces
index.jspx?_adf.ctrl-state=...e.adf.view.rich.forceHTML=true
✓ index.jspx?_afrLoop=1669432...=0&_adf.ctrl-state=x8sz8r4eo_4

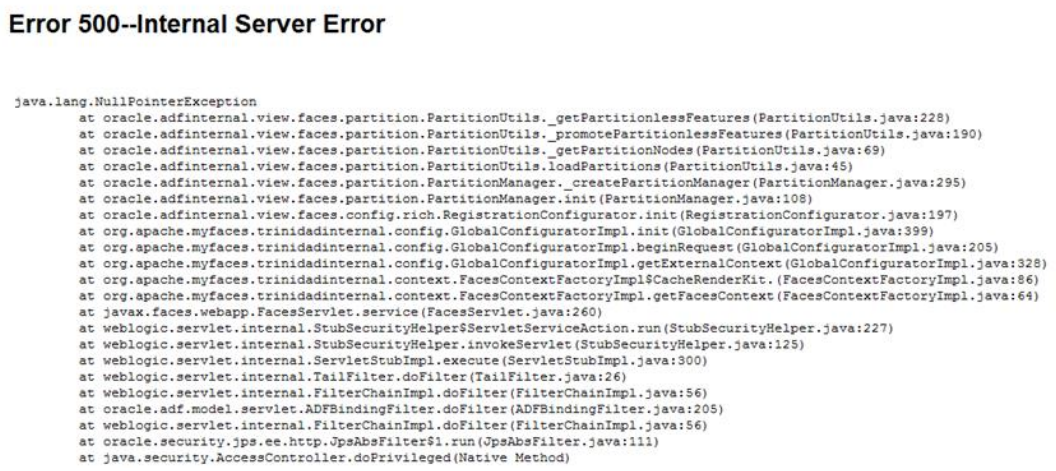
```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML
<html class="p_AFMaximized" dir="ltr" l
          .x50 {
            color: #14512D;
          }
          .xf{
          display: none;
          }
          </style></head><body class="x
cellpadding="0" cellspacing="0" border=
color:#8dcf4f;padding:5px 18px 5px 5px;
http://www.adobe.com/go/getflashplayer<
<div id="gauge1_xmlDiv"><XML id="gauge1
<div id="gauge5_xmlDiv"><XML id="gauge5
<div id="gauge2_xmlDiv"><XML id="gauge2
<div id="gauge6_xmlDiv"><XML id="gauge6
src="/MapApplication/afr/warning.png" w
_AdfUICommand-11.1.1.4.0-0355.js"></scr
duration":"200","af|message::summary":"
```

Troubleshooting:

If we refer to an invalid feature in the partition then we will get



```
<JUMetaObjectManager> <getControlDefinitionFactory> [47] JUMOM - CTRL_DEF_FACTORY not found: [ACTIVE] ExecuteThread: '3' for queue: 'weblogic.kernel.Default (self-tuning)'
<JUMetaObjectManager> <getControlDefinitionFactory> [48] JUMOM - factory from map: oracle.adfinternal.view.faces.model.binding.FacesBindingDefFactoryImpl, [ACTIVE] ExecuteThread: '3' for queue: 'weblogi
<JUMetaObjectManager> <registerDefinitionFactory> [49] JUMOM - registering factory: [ACTIVE] ExecuteThread: '3' for queue: 'weblogic.kernel.Default (self-tuning)', http://xmlns.oracle.com/adfm/uimodel, 
<FeatureUtils> <_parseFeatures> File name: file:/C:/Users/vkrishnan/AppData/Roaming/JDeveloper/system11.1.1.4.37.59.23/o.j2ee/drs/MapApplication/ViewControllerWebApp.war/WEB-INF/classes/META-INF/adf-js-
<PartitionHandler> <_endFeatureElement> File name: /WEB-INF/adf-js-partitions.xml, Line number: 6, Column number: 35, Error: ADF_FACES-30132:Ignoring feature element "AdfDocument".  No such feature exis
<PartitionHandler> <_endFeatureElement> File name: /WEB-INF/adf-js-partitions.xml, Line number: 7, Column number: 31, Error: ADF_FACES-30132:Ignoring feature element "AdfForm".  No such feature exists.
<Feb 21, 2012 10:36:21 AM CST> <Error> <HTTP> <BEA-101020> <[ServletContext@27102815[app:MapApplication module:MapApplication path:/MapApplication spec-version:2.5]] Servlet failed with Exception
java.lang.NullPointerException
          at oracle.adfinternal.view.faces.partition.PartitionUtils._getPartitionlessFeatures(PartitionUtils.java:228)
          at oracle.adfinternal.view.faces.partition.PartitionUtils._promotePartitionlessFeatures(PartitionUtils.java:190)
          at oracle.adfinternal.view.faces.partition.PartitionUtils._getPartitionNodes(PartitionUtils.java:69)
          at oracle.adfinternal.view.faces.partition.PartitionUtils.loadPartitions(PartitionUtils.java:45)
          at oracle.adfinternal.view.faces.partition.PartitionManager._createPartitionManager(PartitionManager.java:295)
          Truncated. see log file for complete stacktrace
```



Error 500--Internal Server Error

```
java.lang.NullPointerException
        at oracle.adfinternal.view.faces.partition.PartitionUtils._getPartitionlessFeatures(PartitionUtils.java:228)
        at oracle.adfinternal.view.faces.partition.PartitionUtils._promotePartitionlessFeatures(PartitionUtils.java:190)
        at oracle.adfinternal.view.faces.partition.PartitionUtils._getPartitionNodes(PartitionUtils.java:69)
        at oracle.adfinternal.view.faces.partition.PartitionUtils.loadPartitions(PartitionUtils.java:45)
        at oracle.adfinternal.view.faces.partition.PartitionManager._createPartitionManager(PartitionManager.java:295)
        at oracle.adfinternal.view.faces.partition.PartitionManager.init(PartitionManager.java:108)
        at oracle.adfinternal.view.faces.config.rich.RegistrationConfigurator.init(RegistrationConfigurator.java:197)
        at org.apache.myfaces.trinidadinternal.config.GlobalConfiguratorImpl.init(GlobalConfiguratorImpl.java:399)
        at org.apache.myfaces.trinidadinternal.config.GlobalConfiguratorImpl.beginRequest(GlobalConfiguratorImpl.java:205)
        at org.apache.myfaces.trinidadinternal.config.GlobalConfiguratorImpl.getExternalContext(GlobalConfiguratorImpl.java:328)
        at org.apache.myfaces.trinidadinternal.context.FacesContextFactoryImpl$CacheRenderKit.(FacesContextFactoryImpl.java:86)
        at org.apache.myfaces.trinidadinternal.context.FacesContextFactoryImpl.getFacesContext(FacesContextFactoryImpl.java:64)
        at javax.faces.webapp.FacesServlet.service(FacesServlet.java:260)
        at weblogic.servlet.internal.StubSecurityHelper$ServletServiceAction.run(StubSecurityHelper.java:227)
        at weblogic.servlet.internal.StubSecurityHelper.invokeServlet(StubSecurityHelper.java:125)
        at weblogic.servlet.internal.ServletStubImpl.execute(ServletStubImpl.java:300)
        at weblogic.servlet.internal.TailFilter.doFilter(TailFilter.java:26)
        at weblogic.servlet.internal.FilterChainImpl.doFilter(FilterChainImpl.java:56)
        at oracle.adf.model.servlet.ADFBindingFilter.doFilter(ADFBindingFilter.java:205)
        at weblogic.servlet.internal.FilterChainImpl.doFilter(FilterChainImpl.java:56)
        at oracle.security.jps.ee.http.JpsAbsFilter$1.run(JpsAbsFilter.java:111)
        at java.security.AccessController.doPrivileged(Native Method)
```

References:

http://docs.oracle.com/cd/E24382_01/web.1112/e16181/af_arch.htm#CHDDEAJH

http://docs.oracle.com/cd/E12839_01/apirefs.1111/e12046/oracle/adf/view/js/component/rich/input/package-summary.html

http://docs.oracle.com/cd/E25054_01/web.1111/b31973/ap_config.htm#BABCJIDJ

http://adfcodebits.blogspot.com/2012/01/bit-34-using-javascript-partitioning.html