Java Web Start

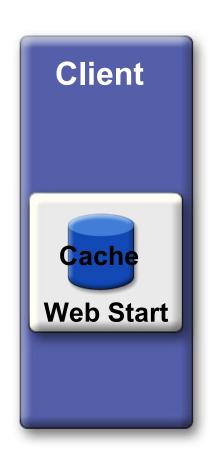
Sang Shin http://www.javapassion.com "Learn with Passion!"



Java Web Start - In a Nutshell

- Based on Java Network Launching Protocol (JNLP) and API
- Every JavaSE application can be launched via Java Web Start
- Main features
 - Centralized configuration via JNLP file descriptor
 - Supports differential downloads and updates
 - Express dependencies on libraries and JRE version
 - Can even use native libraries
 - Software is cached on the client
 - > Application partitioning, file access, printing, etc.

How Does It Work



Browser loads JNLP

Browser launches JWS

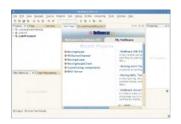
JWS check JARs in local
cache
JARs not installed.

Full download

New version available. Request diff download

JWS patches local version and creates new JARS

JWS launches app



Web Server



JAR

JNLP

Creates diff

diff

v 1.0 v

JNLP Applet Support

- Unifies deployment between Java Web Start and the Java Plug-In
 - Simply choose the top-level container (Frame / Applet)
 - Leverage all the benefits of JNLP
 - Incorporate JNLP extensions trivially in applets
 - JavaFX run-time libraries, JOGL, Java 3D, JAI
 - Use JNLP APIs from applets
 - PersistenceService, DownloadService, ...
 - Full support for JVM command-line arguments, JRE version selection, JRE auto-download
 - > Desktop integration
 - Cached and offline support
 - > Application partitioning

Deploy Applet: Using JNLP

Example: MyApplet.jnlp

```
<? xml version="1.0" encoding="UTF-8"?>
<jnlp href="my_applet.jnlp" codebase="http://...">
                  <information>
                                     <title > My Apple t < /title >
                                     <vendor>My Company, Inc.
                  </nformation>
                  <s hortcut>
                                     <desktop/>
                  </shortcut>
                  <resources>
                                     \leq 12 \text{ se vers ion} = 1.4 + 1
                                                        hre f="http://java.sun.com/products/autodl/j2se" >
                                     <jar href="my_applet.jar" main="true" >>
                      <e xtension name = "ext" href=".../ext.jnlp" >>
                  </re>
                  <applet-desc name="My Applet"
                                                        main-class = "com.mycompany.MyApplet">
                  <a href="mailto:</a> <a href="mailto:keeping.">keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping.keeping
</jnlp>
```

Using JNLP API in Applet

- Applets runs in a sandbox
 - > Eg. cannot read/write to file system
 - > Needs to be signed to break out
- Over come by using JNLP API
 - > Eg. User controls what file to allow Applet to read

```
FileOpenService fos = (FileOpenService)ServiceManager
.lookup("javax.jnlp.FileOpenService");
//Open dialog pops up
FileContent fc = fos.openFileDialog(null, null);
```

Application Partitioning

- Large applets/JavaWeb Start applications are frown on
- JNLP allows an application to be 'broken' along
 - > JAR files
 - > Extension
 - Native libraries
- Partition along functionalities
 - Load function on demand
- Partitions can be loaded
 - Explicitly under user control
 - > Implicitly when an object of the class in instantiated

JNLP Extension Example – 1

```
<jnlp spec="1.0" codebase="http://...">
 <resources>
   \leqj2 s e vers ion="1.5+"
              hre f="http://java.sun.com/products/autodl/j2se">
   <jar href="webpad.jar" version="1.0"/>
   <jar href="jlfgr.jar" version="1.0"/>
   <e x tension name = "Help System" href="javahelp.jnlp">
     <ext-download ext-part="javahelp"</pre>
                  download="lazy" part="help">
   </extension>
   <jar href="holidays.jar" version="1.0"</pre>
              download="lazy" part="help"/>
 </re>
 <a pplication-desc main-class = "WebPad" >>
</nl>
```

JNLP Extension Example – 2

```
DownloadService ds = (DownloadService)ServiceManager .lookup("javax.jnlp.DownloadService");

//Check if we have part if (ds.isPartCached("help")) return;

//Otherwise start the download ds.loadPart("help", ds.getDefaultProgressWindow());
```

Thank you!

Check JavaPassion.com Codecamps!
http://www.javapassion.com/codecamps
"Learn with Passion!"

