

Novell iManager IDM Plug-in Development

Dennis Foster
Software engineer
drfoster@novell.com

Jay Wootton
Software engineer
jwootton@novell.com



Novell.

N

Tasks

ExtendsTask:

- `execute()` method:
 - Called when the task is expected to return results to the browser.
- `shouldRun()` method:
 - Allows the running of the task to be rejected based on conditions that can be checked at runtime.

N

Property Book Pages

Extends DirPropertyBookPage:

- `commit()` (or `apply()`) method:
 - Commits data from cached data-source (NSObject.)
- `save()` method:
 - Caches the posted data to a temporary data source. Doesn't write it to eDirectory.
- `show()` method:
 - Reads data from cached data-source. Stuffs results in XML/properties to be rendered.

Note that since the data may be shared across multiple property book pages, you **MUST** re-read the data from the cached data-source with each `show()`.

N

Property Book Pages, cont.

shouldShow() method:

- Requires the RuntimePlugin interface be implemented.
- Allows the page to not be shown based on conditions that can be checked at runtime.

N

Demonstration Plug-in

```
\
  build.bat
  build.properties
  build.xml
  DemoConstants.java
  DemoDownloadFileInfo.java
  DemoDSPath.java
  DemoDSUtil.java
  DemoException.java
  DemoPanelInfo.java
  DemoRefreshOpener.java
  DemoResources.properties
  DemoRPC.java
  DemoStreamFactory.java
  DemoStrings.java
  DemoTask.java
  DemoTimeStamp.java
  DemoUserPage.java
  DemoUtil.java
  DemoXdsDN.java
  DemoXMLUtil.java
```

N

Demonstration Plug-in, cont.

```
com\...\

DevDocs\
    KillerString.txt
    ModalDialogs.txt
    RefreshOpener.txt

external\...\

help\...\

images\directory\

images\plugin\
    DemoCancel_en.gif
    DemoError.gif
    DemoHelp.gif
    DemoOk_en.gif
    DemoOS.gif
    DemoSpacer.gif
    DemoView_en.gif
    DemoWarning.gif

install\
    module.xml
```

N

Demonstration Plug-in, cont.

npm\...\

plugins\
 DemoRefreshOpener.xml
 DemoRPC.xml
 DemoUserPage.xml

templates\browser\
 DemoCommonContent_inc.jsp
 DemoCommonScripts_inc.jsp
 DemoCommonStyles_inc.jsp
 DemoDefinitions_inc.jsp
 DemoDumpall_inc.jsp
 DemoErrorDisplay_inc.jsp
 DemoHiddenVariables_inc.jsp
 DemoOS_inc.jsp
 DemoRefreshOpener.jsp
 DemoRPC.jsp
 DemoTask.jsp
 DemoTaskBanner.jsp
 DemoTaskDNQuery.jsp
 DemoTaskFrameSet.jsp
 DemoTaskNavigation.jsp
 DemoTaskPopup.jsp
 DemoTaskPopupBanner.jsp
 DemoUserPage.jsp

N

Demonstration Plug-in, cont.

```
templates\css\  
    DemoStyles.css  
  
templates\javascripts\  
    DemoClipboard.js  
    DemoCookies.js  
    DemoDHTML.js  
    DemoDialog.js  
    DemoDivObject.js  
    DemoMenu.js  
    DemoTask.js  
    DemoTaskBanner.js  
    DemoTaskDNQuery.js  
    DemoTaskFrameSet.js  
    DemoTaskNavigation.js  
    DemoTaskPopup.js  
    DemoUserPage.js  
    DemoUtil.js  
    DemoXMLUtil.js
```

N

Miscellaneous

Install XML (module.xml file)

Separate business logic from
JSP/browser interaction



Development Tips

N Tips: Learn

iManager:

- NDSNamespace APIs:
 - ObjectEntry
 - NSObject



N Tips: Learn, cont.

DOMs:

- XML
- W3C:
 - HTML
 - JavaScript



JSP

HTML

CSS

JavaScript

Miscellaneous

Google

N Tips: General

General:

- When possible, sniff browser in JSP, not JavaScript.
- Test with names that include funky characters including:
 - " , ' , & , @ , . , , , extended characters, ...
 - “Killer” String: Fu_.,'<">ÔÕÖÙÚÛ®Ýæç€,._Bar



N Tips: iManager

iManager:

- What executes where:
 - eDirectory Server
 - NDSNamespace
 - iManager (web server):
 - JSP's
 - Browser:
 - JavaScript

N Tips: iManager, cont.

Task Launching:

- Launch vs. Delegate

L10N/I18N:

- Base properties file.
- Translated (i.e., *_xx.properties) properties files.
- Tricks for localized images/strings/...
- Java vs. JSP.

toTag vs. toHTML vs. toScript vs. toDisplay vs. ...

Directory/Request/HTTP access abstraction:

- DemoPanelInfo

Tips: iManager, cont.

Tricks for localized images/strings/...

English goes in base .properties file:

```
# Define the two letter language code of the strings contained in this
# resource file. This is used for referring to language specific
# graphics, ...
Demo.Lang=en
```

Load localized resource like:

```
<IMG
name="DemoPB_Ok"
border="0"
src="<%= c.getModulesUrl() %>/Demo/images/DemoOk_<%= c.toTag( c.string( "Demo.Lang" )) %>.gif"
title="<%= c.toTag( c.string( "Demo.Common.Ok" )) %>"
alt="<%= c.toTag( c.string( "Demo.Common.Ok" )) %>" />
```

N

Tips: iManager, cont.

Java vs. JSP:

- Java Reference:

```
eMFrameUtils.getLocalizedString(  
    DemoConstants.DEMO_RESOURCES,  
    key,  
    taskContext );
```

- JSP Reference (as HTML):

```
<%= c.toHTML( c.string( "Demo.Task.Banner" ) ) %>
```

N

Tips: XML

XML:

- Use to exchange complex data between the plugin and browser.
- ALWAYS use the DOM (don't build XML using strings):
 - Use the XML DOM in both IE and Mozilla. Note that you use different APIs to access it (requires browser sniffing.)
 - Once you have the DOM, APIs are the same.



N

Tips: JSP

JSP:

- Don't be afraid to embed Java:
 - Pros:
 - Extremely powerful.
 - Can make use of code in your plug-in's jar.
 - Cons:
 - Complex syntax.
 - Books warn against it.
- Learn taglib's:
 - c, fmt, iman, x

N

Tips: HTML

HTML:

- TABLE vs. DIV
- Consider generating as dynamic content from JavaScript using W3C DOM.
- Forms:
 - Hidden INPUTs
 - pack()/unpack()
 - DNs
 - Encoding issues

N

Tips: CSS

CSS:

- Create and link in your own .css files.
 - Don't create a local hf_style.css file.
- Include iManager's hf_style.css file last (last wins.)

N

Tips: JavaScript

JavaScript:

- Use the debuggers:
 - Available for IE and Mozilla.
- Use .js files when possible:
 - Don't embed in .jsp files.
 - Makes debugging MUCH easier.
- Comment !!!
- Stick to W3C DOM:
 - Avoid IE/Netscape extensions
 - Consider using dynamic content built with W3C DOM

N

Tips: Miscellaneous

IDE: IntelliJ IDEA

RPC:

- Use this to update part of the page, ...

Modal Dialogs:

- See `DevDocs\ModalDialogs.txt`.

Refresh Opener:

- See `DevDocs\RefreshOpener.txt`

N Tips: Google

When in doubt:



The End

Novell®

General Disclaimer

This document is not to be construed as a promise by any participating company to develop, deliver, or market a product. Novell, Inc., makes no representations or warranties with respect to the contents of this document, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc., reserves the right to revise this document and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes. All Novell marks referenced in this presentation are trademarks or registered trademarks of Novell, Inc. in the United States and other countries. All third-party trademarks are the property of their respective owners.

No part of this work may be practiced, performed, copied, distributed, revised, modified, translated, abridged, condensed, expanded, collected, or adapted without the prior written consent of Novell, Inc. Any use or exploitation of this work without authorization could subject the perpetrator to criminal and civil liability.



Novell.