1283: My love-hate relationship with IBM Domino Plug-ins

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Date – January 31, 2016

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Things we love to hate:

- Mondays
- Selfies
- Rude people
- Finals
- Boston Red Sox
- The Star Wars prequel trilogy

And……

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Big Hair from the 80s

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Introduction to Plug-ins

- Terminology: Plug-ins, Features, Widgets
- Functionality: What can you do with Plug-ins?
- Developer Topics
  - Development Tools: Eclipse
  - Source Code: MANIFEST.MF, plugin.xml, Activator.java, feature.xml, internationalization
- Administration Topics
  - Deployment: Security (Policies), Widget Catalog, Site Database, Third Party

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Goals

- Introduce the concept of IBM Notes Plug-ins
- Demonstrate the Necessary Tools
- Create a Simple Plug-in
- Dissect the Files
- Explain How the Files Interact
- Resource List

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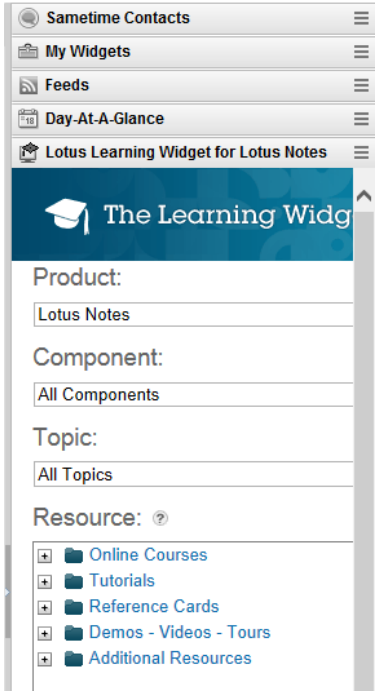
Terminology

What is a Plug-in?

- Manipulates the look and feel of Notes
- Add Toolbars, Menus and Actions



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Why a Plug-in?

- Use Java classes
- Call Native (DLL) files using JNI
- Reusability

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What is a Widget?

- XML file describing dynamic contributions/extensions to the Notes Client

```
<?xml version="1.0" encoding="UTF-8"?>
<site>
  <feature id="com.ibm.lotuslabs.notes.feature" patch="false"
url="features/com.ibm.lotuslabs.notes.feature_1.0.0.jar"
version="1.0.0">
    <category name="IBM Lotus Notes" />
  </feature>
  <feature id="com.ibm.lotuslabs.sidenote.feature" patch="false"
url="features/com.ibm.lotuslabs.sidenote.feature_1.0.0.jar"
version="1.0.0">
    <category name="IBM Lotus Notes" />
  </feature>
  <category-def label="IBM Lotus Notes" name="IBM Lotus Notes">
    <description>IBM Lotus Notes</description>
  </category-def>
</site>
```


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What is a Feature?

- Functionality that alters the look and feel of Notes
- Packages plug-ins for deployment
- Describes the plug-ins used
- Provides for versioning and licensing

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Example Plug-ins

- Lotus Learn
- IBM Connections
- openntf

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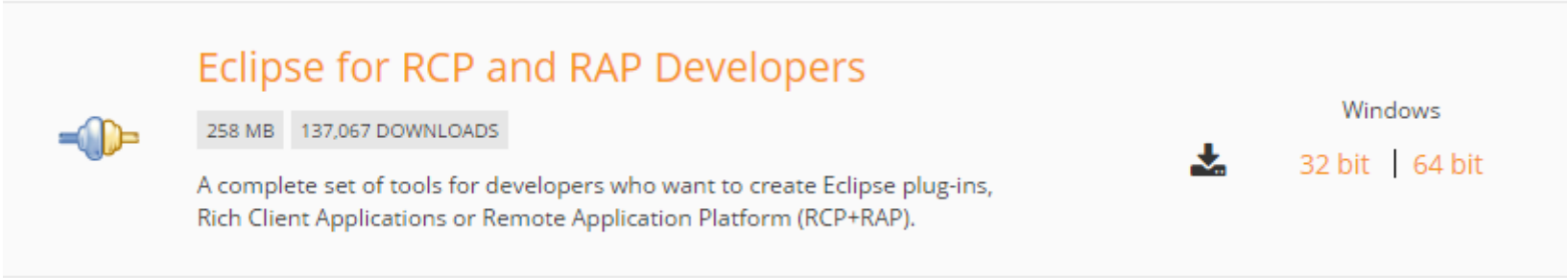
Development Tools

What do I need to begin?

- Eclipse
  - Platform for rapid development of integrated features based on a **plug-in** model
  - Eclipse for RCP/RAP Developers – Luna version
    - https://eclipse.org/downloads/



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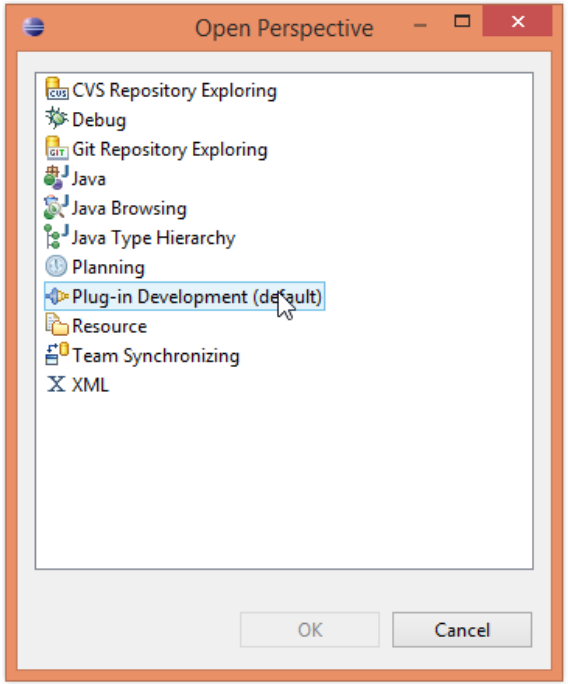
Perspectives

- Window – Open Perspective – Other – Plugin-in Development



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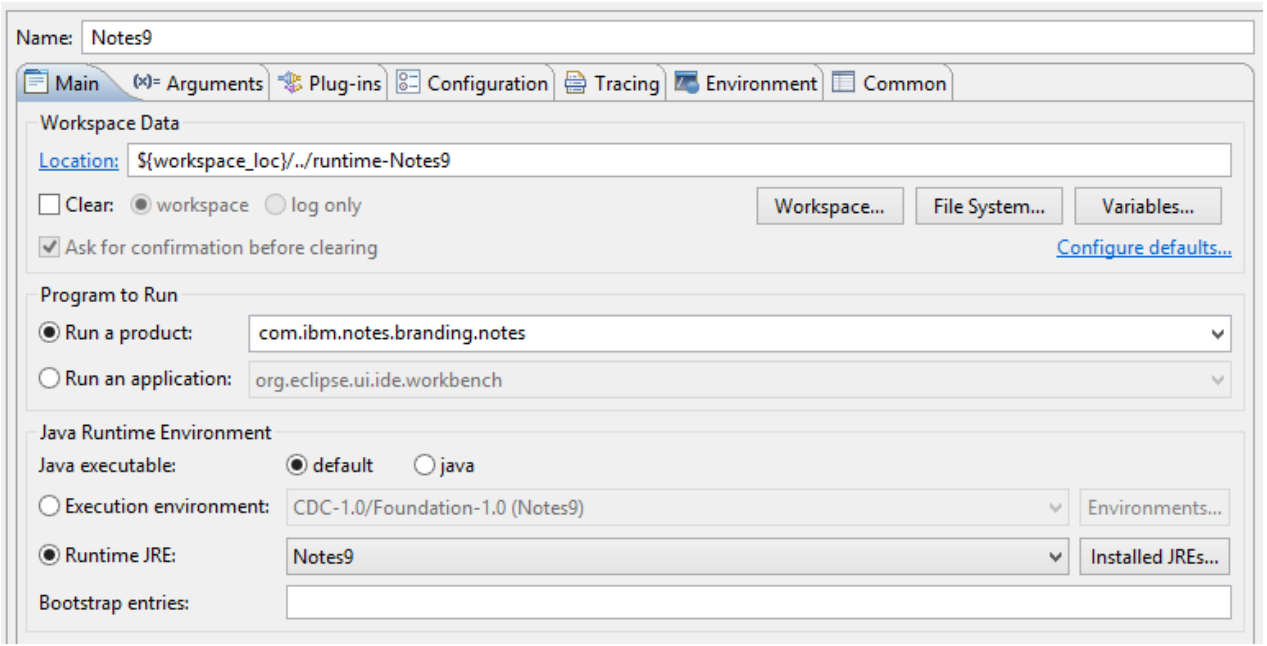
How to Run Notes from Eclipse

- Version of Notes that you are developing for must be installed
- Run – Run Configurations…



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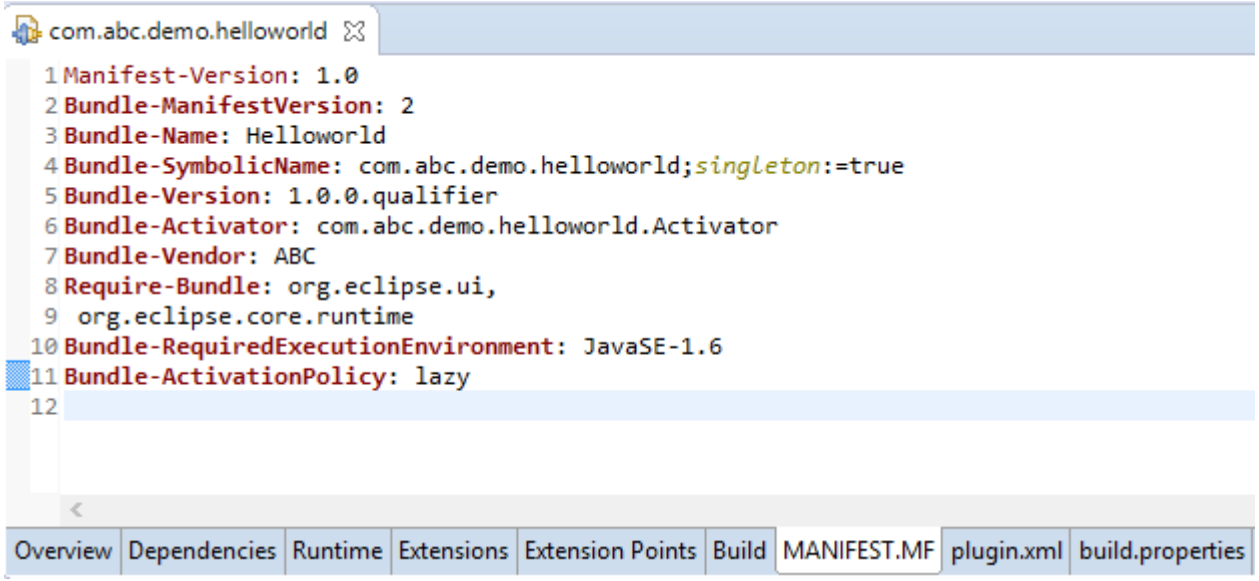
Source Code

MANIFEST.MF

- Contains Dependencies and Services of a plug-in



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Plugin.xml

- Contains Extension Points

com.abc.demo.helloworld

```
<?xml version="1.0" encoding="UTF-8"?>
<?eclipse version="3.4"?>
<plugin>

   <extension
         point="org.eclipse.ui.commands">
      <category
            name="Sample Category"
            id="com.abc.demo.helloworld.commands.category">
      </category>
      <command
            name="Sample Command"
            categoryId="com.abc.demo.helloworld.commands.category"
            id="com.abc.demo.helloworld.commands.sampleCommand">
      </command>
   </extension>
   <extension
         point="org.eclipse.ui.handlers">
      <handler
            commandId="com.abc.demo.helloworld.commands.sampleCommand"
            class="com.abc.demo.helloworld.handlers.SampleHandler">
      </handler>
   </extension>
```

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Activator.java

- Controls the lifecycle of the plug-in

```
public class Activator extends AbstractUIPlugin {

    // The plug-in ID
    public static final String PLUGIN_ID = "com.abc.demo.helloworld";

    // The shared instance
    private static Activator plugin;

     * The constructor
    public Activator() {

     * (non-Javadoc)
    public void start(BundleContext context) throws Exception {

     * (non-Javadoc)
    public void stop(BundleContext context) throws Exception {

     * Returns the shared instance
    public static Activator getDefault() {

     * Returns an image descriptor for the image file at the given
    public static ImageDescriptor getImageDescriptor(String path) {
        return imageDescriptorFromPlugin(PLUGIN_ID, path);
    }
}
```

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Feature.xml

- Describes a feature:
  - Plug-ins used
  - Other features used
  - Licensing information
- Products can be based on plug-ins or features

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Translating Plug-in Strings

- Source – Externalize Strings…
- Creates messages.properties file
- Adds messages.java file which contains a resource bundle accessor class to initialize and retrieve messages
- Create additional files messages_de.properties with translated strings
- Properties files must have ISO-8859-1 encoding

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Demo Application

- Live presentation of building and running demo application

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Deployment

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Plug-in Security

- Desktop Setting Policy – Basics – Provisioning – Allow user initiated updates – Enable to turn off menu items in Notes

Provisioning		How to apply this setting:	Inherit from parent policy:	Enforce in child policies:
Allow user initiated updates:	Disable	☐ Don't set value	☐ Inherit	☐ Enforce

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Plug-in Security (cont'd)

- Security Setting Policy – Signed Plug-ins

Policy settings

Security Settings : BCC Security

Basics | Password Management | Execution Control List | Keys and Certificates | Signed Plug-ins | Portal Server | ID Vault | Proxies | Comments | Administration

Signed Plug-in Basics		How to apply this setting:	Inherit from parent policy:	Enforce in child policies:
Installation of plug-ins that are expired or not yet valid:	Ask the user	☐ Don't set value	☐ Inherit	☐ Enforce
Installation of unsigned plug-ins:	Ask the user	☐ Don't set value	☐ Inherit	☐ Enforce
Installation of plug-ins signed by an unrecognized entity:	Ask the user	☐ Don't set value	☐ Inherit	☐ Enforce
Trust IBM plug-in signing certificate:	Always trust for install	☐ Don't set value	☐ Inherit	☐ Enforce
Ignore expiration for time stamping certificate:	Always install	☐ Don't set value	☐ Inherit	☐ Enforce

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Plug-in Security (cont'd)

- Desktop Setting Policy – Widgets

Desktop Settings : BCC Desktop

Basics | Smart Upgrade | Applications | Widgets | Dial-up Connections | Accounts | Name Servers | SSL | Applet Security | Proxies | Mail | Preferen

Widget Settings		How to apply this setting:	Inherit from parent policy:	Enforce in child policies:
Widget catalog server:		Don't set value	Inherit	Enforce
Widget catalog application name:	toolbox.nsf	Don't set value	Inherit	Enforce
Widget catalog categories to install:		Set value and prevent changes	Inherit	Enforce
Enable Live Text:	Enable	Set value and prevent changes	Inherit	Enforce
Show the My Widgets panel in the sidebar:	No	Don't set value	Inherit	Enforce
Restrict the creation of widgets to specific types:	Disable	Don't set value	Inherit	Enforce
Restrict provider IDs for installation/execution:	Disable	Don't set value	Inherit	Enforce
Restrict extension point IDs for installation/execution:	Disable	Don't set value	Inherit	Enforce
Create and manage an action:	Enable	Don't set value	Inherit	Enforce
Create and manage recognizers and content types:	Yes	Don't set value	Inherit	Enforce
Enable default recognizers:	Enable	Don't set value	Inherit	Enforce
Send widgets using e-mail:	Enable	Don't set value	Inherit	Enforce
Install widgets from e-mail or other:	Enable	Don't set value	Inherit	Enforce
Install widgets from catalog:	Enable	Don't set value	Inherit	Enforce
Publish to catalog so others can browse (subject to catalog ACLS):	Enable	Don't set value	Inherit	Enforce

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Deployment

- Site.xml – site map which explains where the feature is
- Widget catalog (nsf)
- Update site template (ntf)
- External update site (http)
- Third party tools (ClientGenie)

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Resource List

- Eclipse.org
- IBM Redbook
- Tutorials Specific to Notes
- Internationalizing your plug-in
- Using JNI(Java Native Interface) to call C++ code

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Thank you

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