# Implementing the XPage Extension Library

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Obligatory Introduction Slide

- Paul T. Calhoun
  Director of Worldwide Enablement
  GBS

- Have attained Notes/Domino 6, 7, and 8
  PCLI and PCLP certification

- Currently build Domino, Web, Java, XML, and XPage applications for customers using Domino

- Co-author of the IBM Redbook "XML Powered by Domino," and have developed several online XML, Java, and XPages programming courses

- Have written articles for both "THE VIEW" and "The Sphere" technical publications
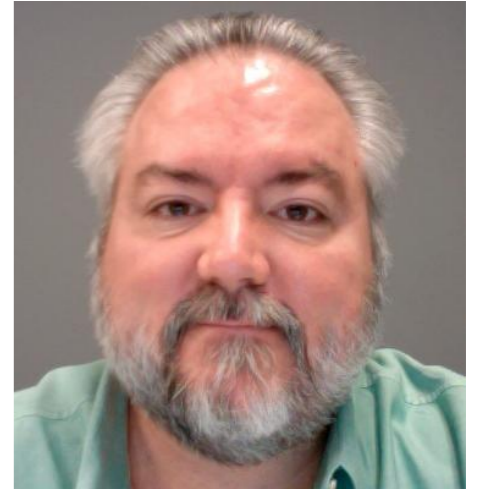
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What we are going to talk about

- **Installing the Extension Library**

- Configuring DDE to test Extension Library Pages

- Developing XPages with the Extension Library

- Deploying Extension Library Apps to the Domino Server

- Wrap up

Why use the Extension Library

- The benefits of the Extension Library include…

  - Easier access to "standard" Dojo controls

    - Validation Control

    - Number Spinner

    - Slider

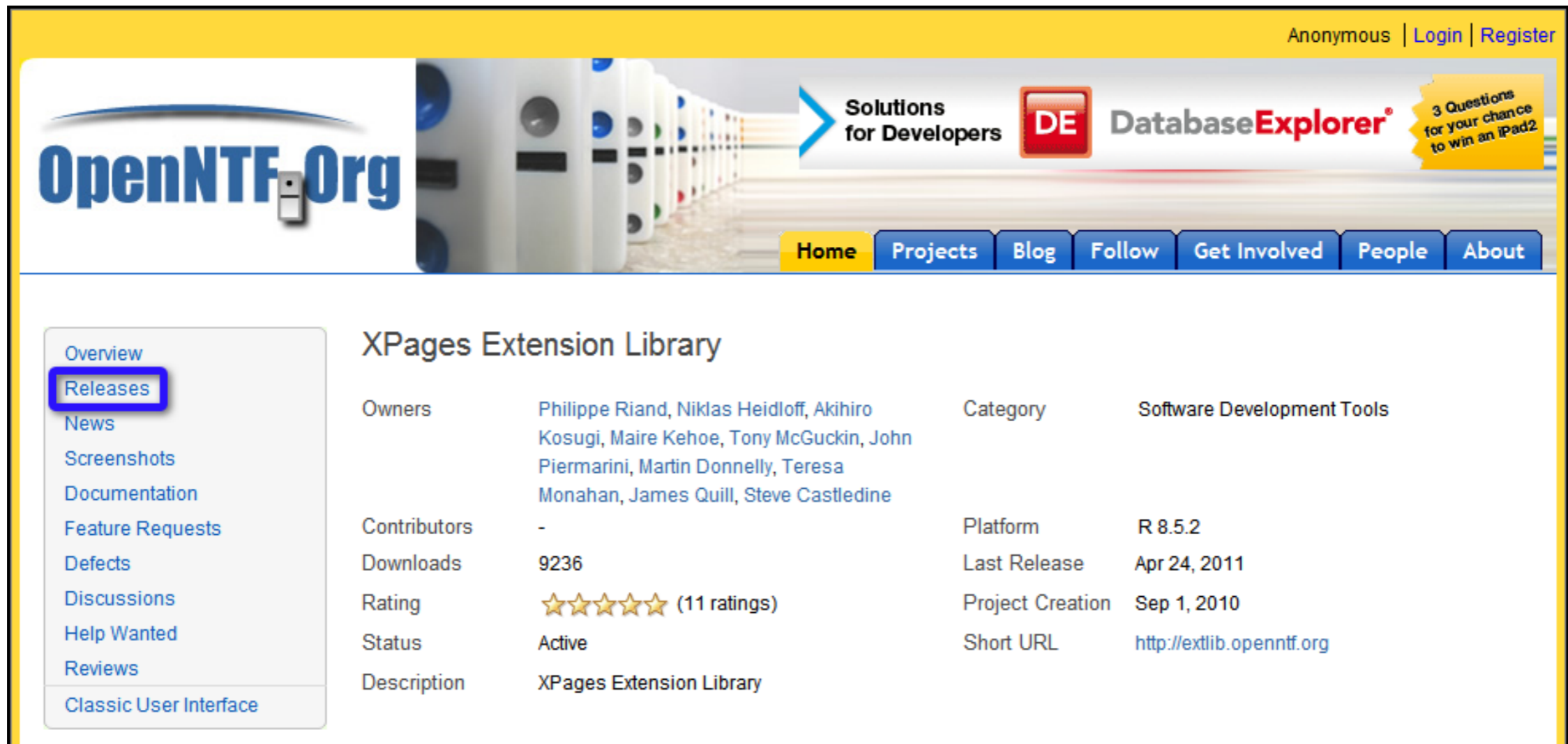   - Etc..

  - Easier implementation of OneUI v2 layout

Before you get started…

- Starting your XPage adventure with the Extension Library is neither a good idea OR a best practice

- Before implementing and adding Extension Library functionality to you applications, make sure that…

  - You are WELL grounded in CORE XPage development skills which includes

    - Notes and Domino data architecture

    - XPage development and execution

    - CSS and Themes

    - JavaScript – Both Client Side and Server Side

    - XML

    - HTML

Installing the Extension Library

- The Extension Library project is available from OpenNTF
  - www.openntf.org
- Current downloads are available from the

Releases

- Releases are updated frequently

  - This presentation uses the following release

- Check back often for updates

Installation files

- The download of the Extension Library is a zip archive file

- Extract the contents to an accessible folder

  - Files can be extracted to a common share point for access by multiple developers

- The Extension Library is deployed as an Eclipse Update Site

  - The update site is contained in the updateSite.zip file

  - This file DOES NOT need to be unzipped to perform the install

Name ▲	Size	Type	Date Modified	Attributes	
ExtLib-Notes85.zip	1 KB	WinZip File	8/20/2010 4:31 PM	A	
LICENSE	12 KB	File	1/20/2009 3:54 PM	A	
NOTICE	1 KB	File	9/14/2010 8:11 PM	A	
src.zip	2,282 KB	WinZip File	4/23/2011 12:41 PM	A	
updateSite.zip	1,924 KB	WinZip File	4/23/2011 12:41 PM	A	
XPages Extension Library - Slides.pdf	1,211 KB	Adobe Acrobat Doc...	9/14/2010 8:28 PM	A	
XPages Extension Library Documentation.pdf	1,174 KB	Adobe Acrobat Doc...	11/21/2010 9:58 PM	A	
XPages-Doc.zip	936 KB	WinZip File	2/28/2011 12:23 PM	A	
XPagesExt.nsf	3,072 KB	IBM Lotus Notes dat...	4/23/2011 12:27 PM	A	

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Installation files

- The download also contains

  - A sample application (nsf)

  - Documentation

  - An instance of the XPages-Doc API documentation

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Installing the Plug-in in DDE

- The Extension Library is an Eclipse plug-in that is installed into Domino Designer on Eclipse (DDE)

- Pre-requisites

  - The supported Version of DDE and Domino are 8.5.2

    - Both the DDE and target Domino Servers must be running version 8.5.2

    - Fixpak 1 and 2 are not required but generally a good idea

  - There are now versions of the Extension Library for 8.5.3

Installing the Plug-in in DDE

- Enable DDE to install Eclipse plug-ins

- In DDE choose File | Preferences

- In the Preferences dialog box choose "Domino Designer"

Installing the Plug-in in DDE

- In the General section check the "Enable Eclipse plug-in install" preference

  - This will enable the menu option in DDE to install Eclipse plug-ins

- Click OK to save the preferences
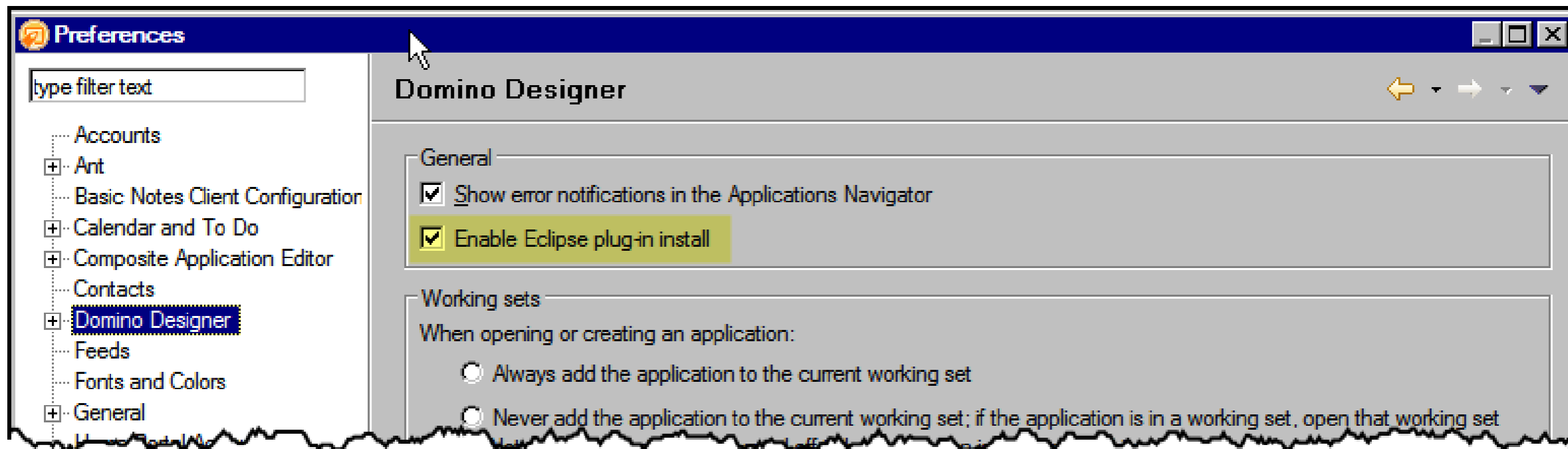
Installing the Plug-in in DDE

- From the File menu choose Application | Install
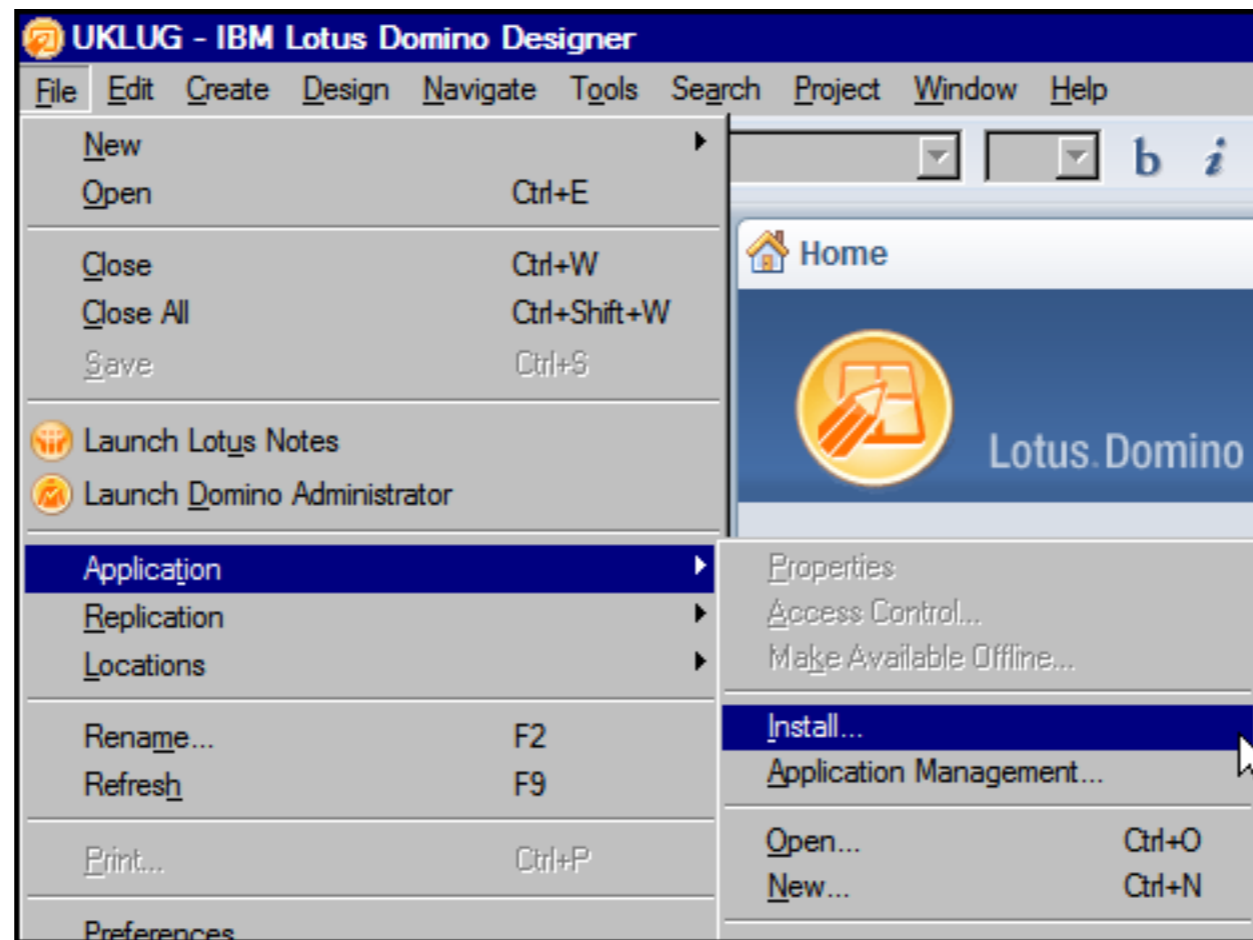
Installing the Plug-in in DDE

- In the Install/Update dialog box…

- Select "Search for new features to install"

- Click the Next button
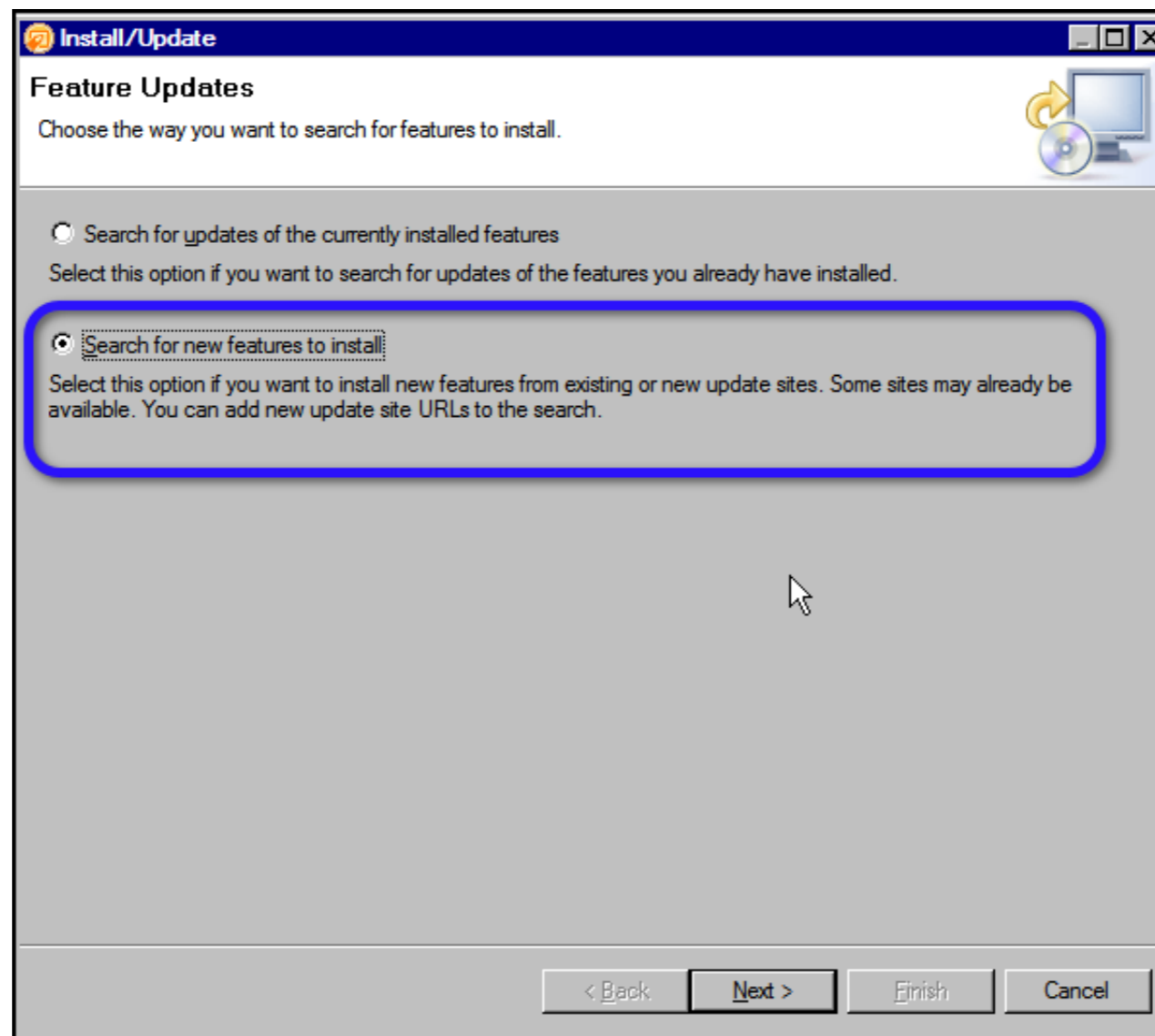
Installing the Plug-in in DDE

- In the Install dialog click on the "Add Zip/Jar location…" button
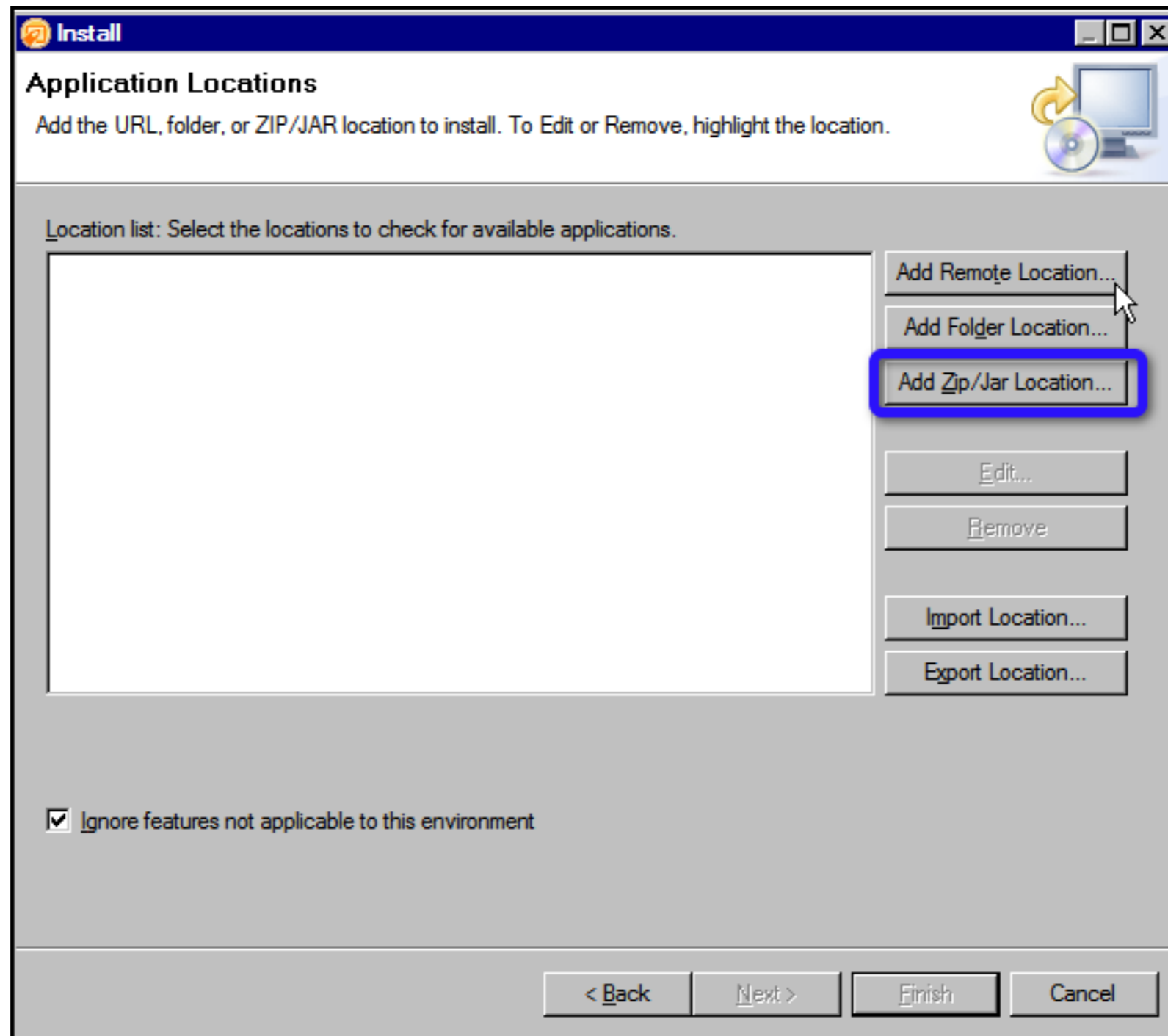
Installing the Plug-in in DDE

- In the Select Local Site Archive dialog…

- Navigate to the folder where the Extension Library files were extracted and choose the updateSite.zip file and click the Open b
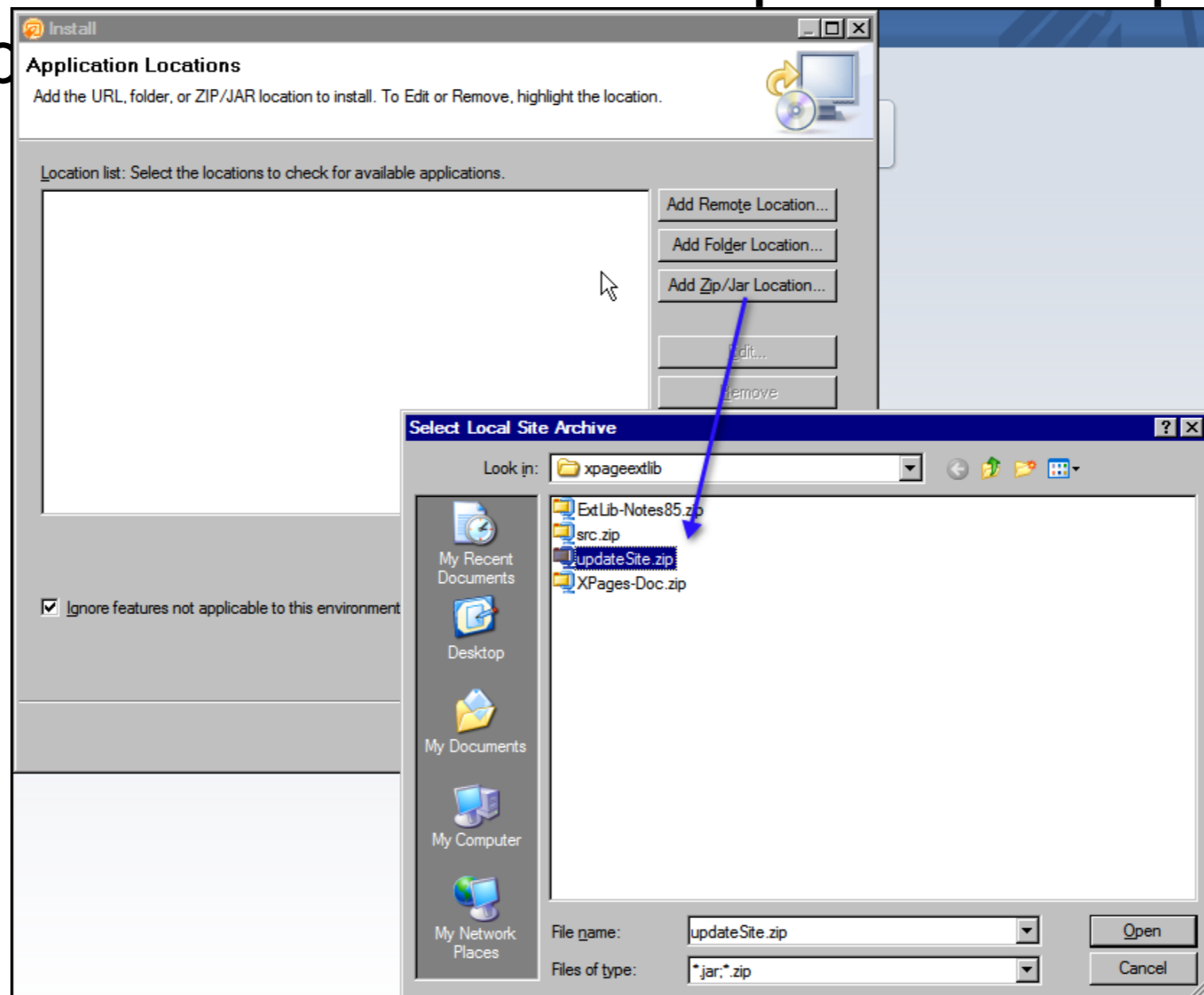
Installing the Plug-in in DDE

- In the Edit Local Site dialog box…

- Optionally edit the name of the plug-in being installed and click the OK button

Edit Local Site

Name: XPages Extension Library

URL: jar:file:C:/development/openntf/xpageextlib/updateSite.zip!/

OK   Cancel
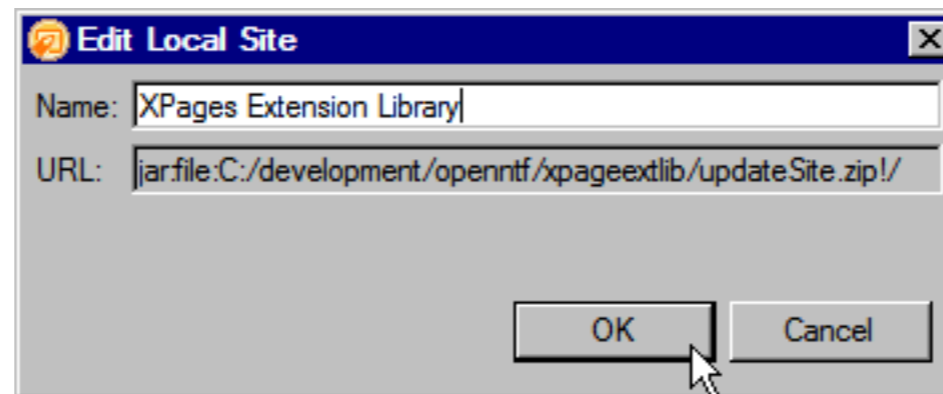
Installing the Plug-in in DDE

- This will add the Extension Library site to the list of update sites

- Click the "Finish" button to start the plug-in installation
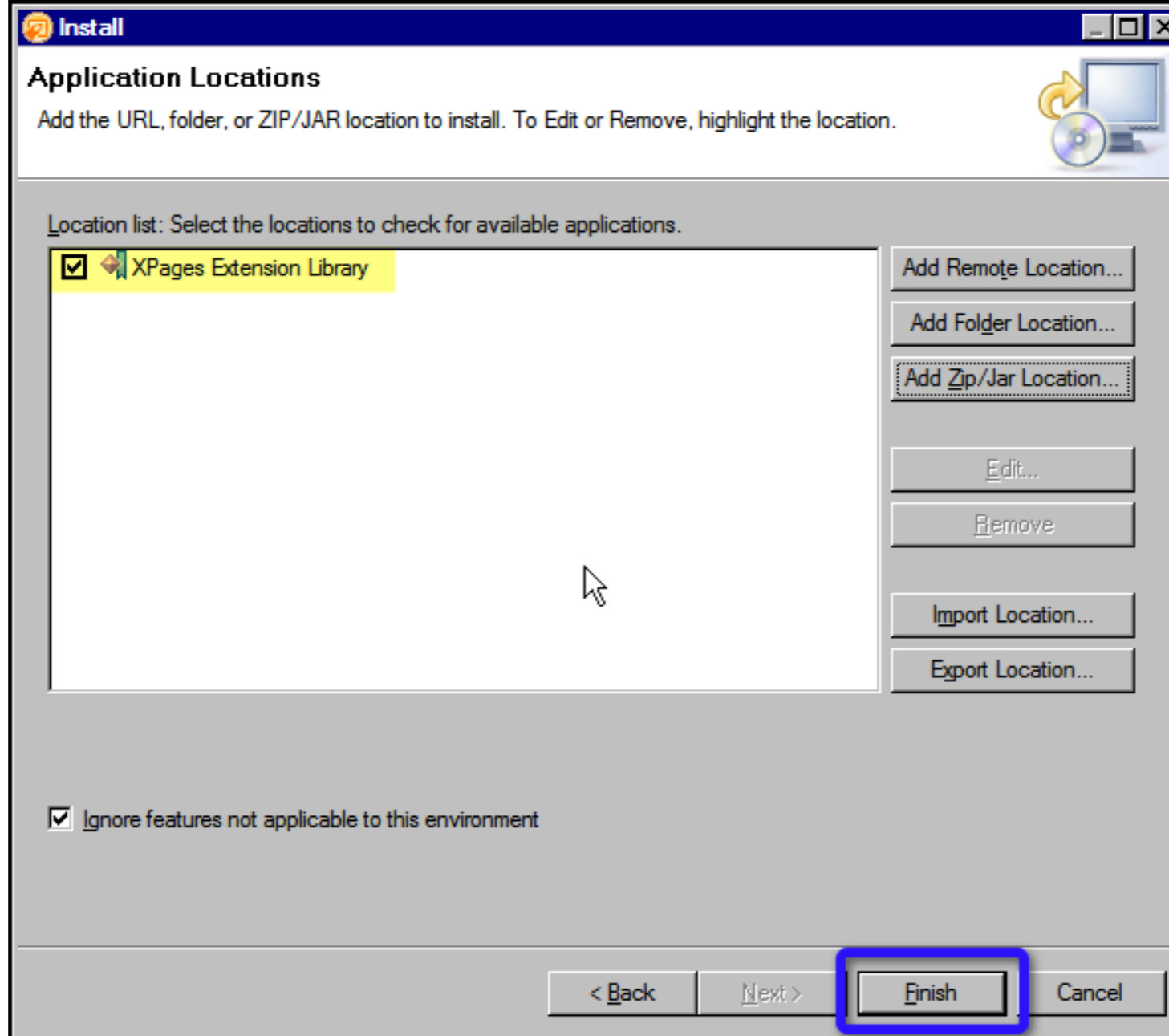
Installing the Plug-in in DDE

- In the Search Results dialog box…

- Optionally expand the hierarchy to display the features to be installed

- Check the Extension Library feature

- Click the Next button

Installing the Plug-in in DDE

- In the Feature License dialog box…
- Select the "I accept the terms in the license agreements" radio button
- Click the Next Button to continue
- In the Installation dialog box click on the Finish button
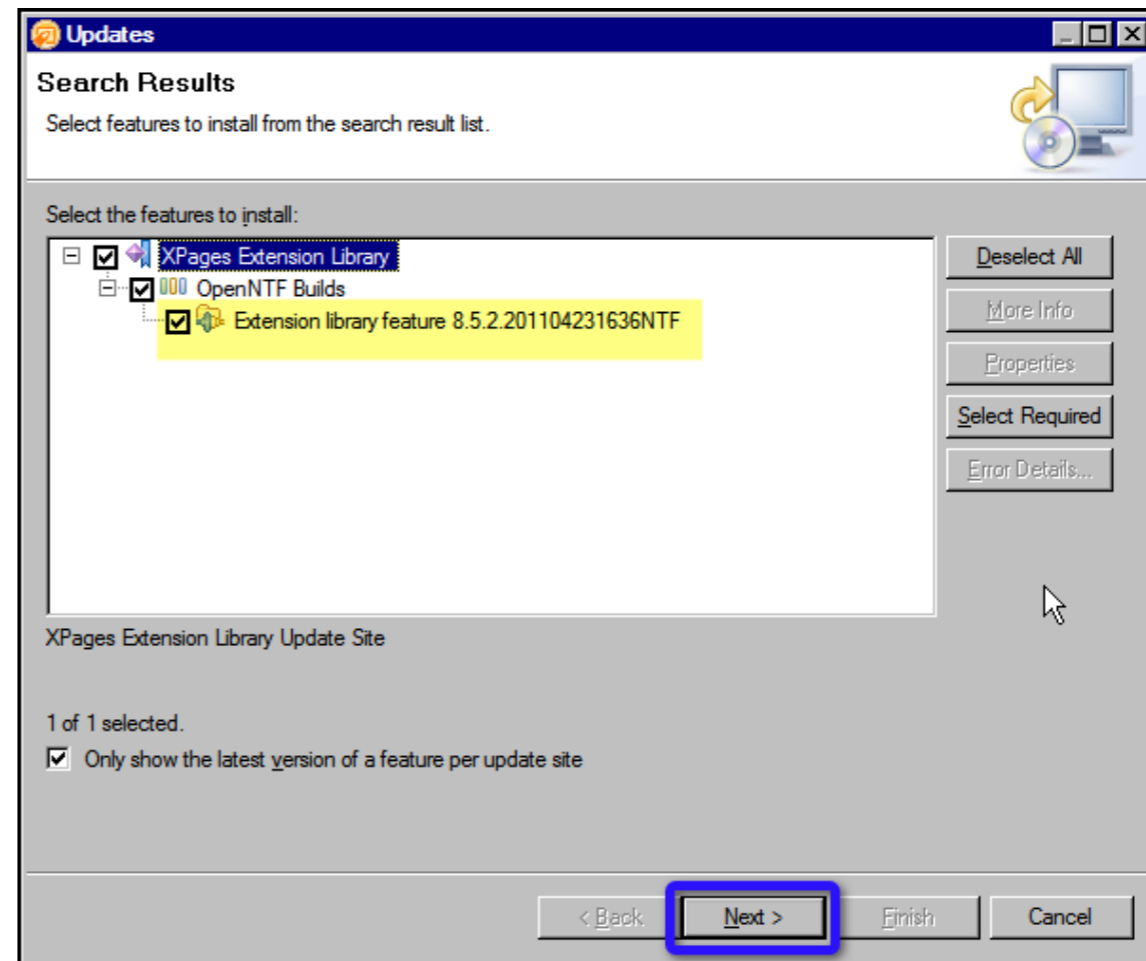
Installing the Plug-in in DDE

- A dialog box will open prompting to install the plug-in

- Select the "Install this plug-in" radio button

  - Careful here as the default is to NOT install the plug-in and inadvertently click the OK button will not install the plug-in
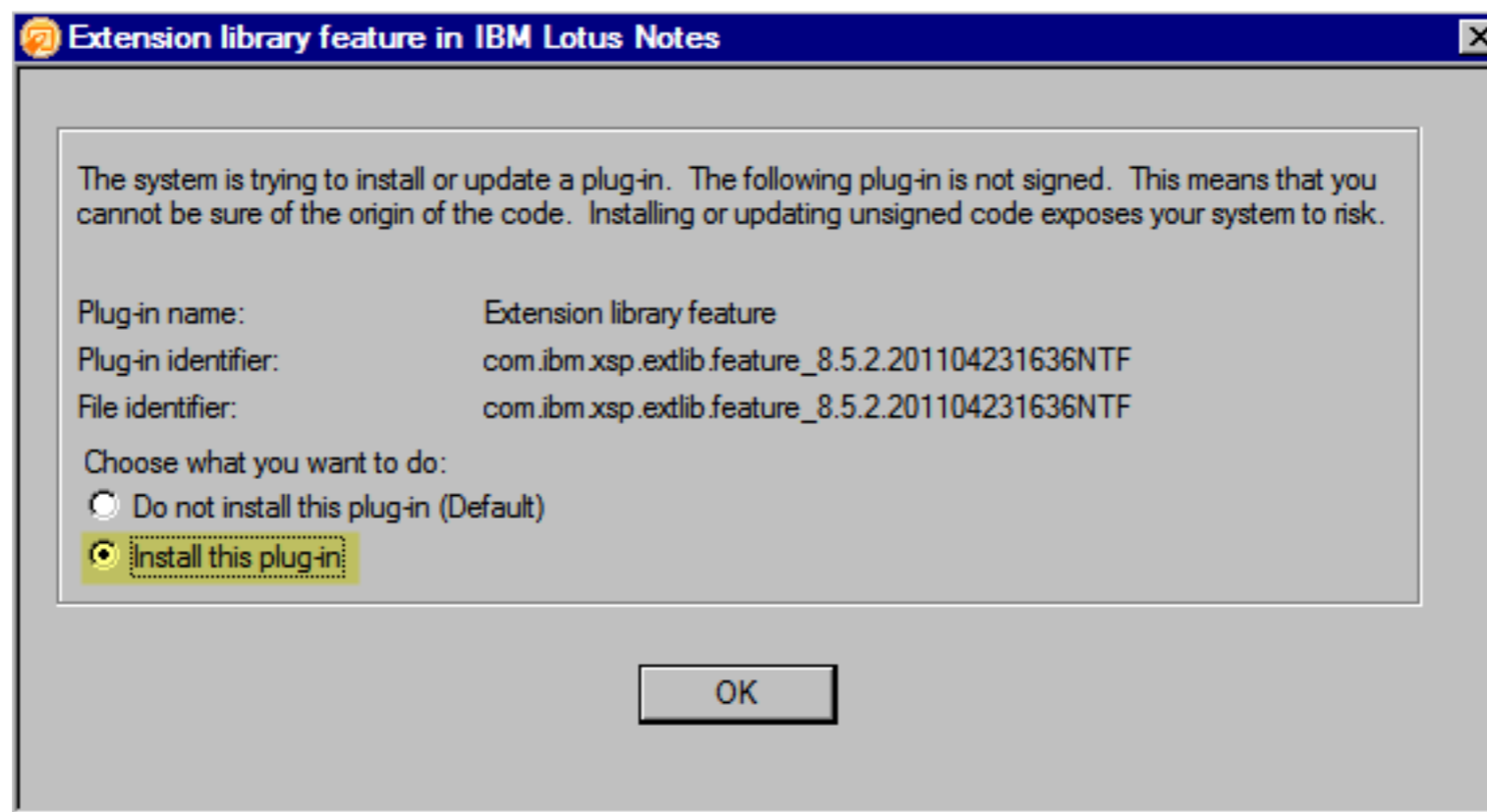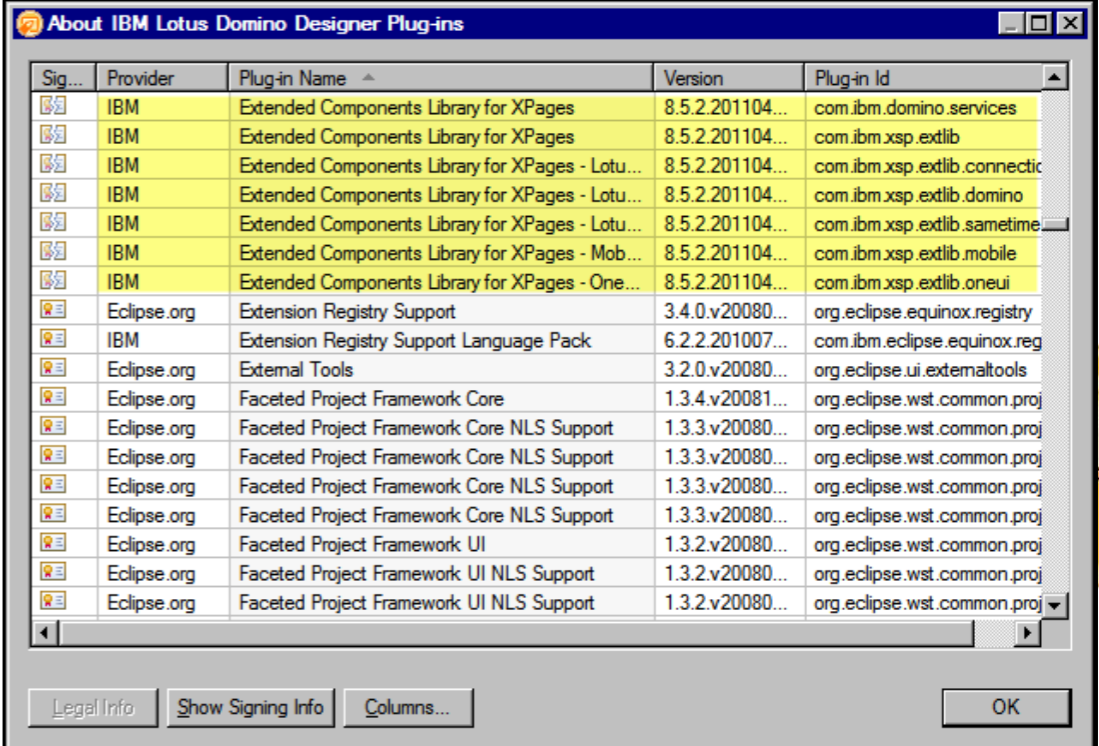
Installing the Plug-in in DDE

- After the plug-in is installed…

- A prompt will appear in the lower right hand corner prompting you to restart the Notes/Designer client

  - This prompt only appears for a couple of seconds and is easy to miss

  - The Extension Library plug-ins will not be available until DDE and the Notes Client (if it is running) are restarted

  - If you miss this prompt…

    - Restarting DDE and the Notes client manually will accomplish the same resul

IBM Lotus Domino Designer

You must restart the client for the following updates or installations to take effect:
Update Manager Requests 1.0.0

Restart Now

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Verifying the Installation

- Once the Notes Client and DDE have restarted the installation of the plug-in can be verified by …

- In DDE choose Help | About IBM Lotus Domino Designer

- In the dialog box that opens click on the Plug-in Details button at the bottom

- In the dialog box that opens sort the plug-ins by Plug-in Name by clicking on the column

- Scroll to the Extended… section

Verifying the Installation

- At the OS level in File Explorer navigate to the following folder structure

    - <DDE Install directory>\Data\workspace\applications\eclipse

- There are two folders here

    - Features - Contains the feature definitions for the plug-ins

    - Plugins - Contains the jars that comprise the plug-ins
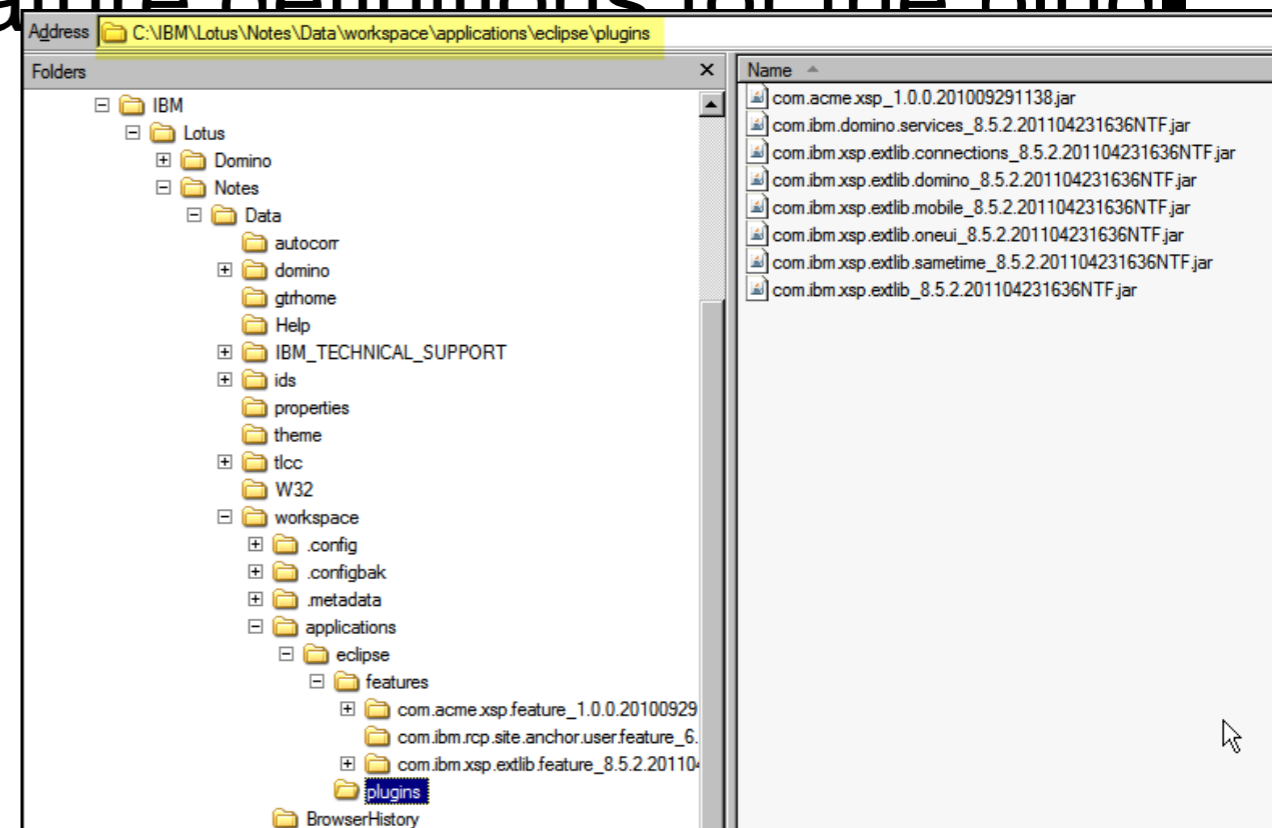
Updating the Extension Library

- New versions of the Extension Library are posted periodically

- To update the installed version of the Extension Library…

  - Download and extract the updated Extension Library components

  - In DDE, choose Application | Install

  - Choose Search for updates to the currently installed Features

  - The application installer will recognize a new version of the Extension library is available and will prompt you to complete the update

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What you can do post installation

- After installing the plug-in you can create and test applications that use the Extension Library

  - But ONLY from XPiNC (XPages in the Notes Client)

- Applications that use the Extension Library can not be previewed using DDE's local web preview until the plug-ins have been "deployed"

  - To deploy the plug-ins they must be either…

    - Manually copied from the plug-ins folder to the proper folder

    - The contents of the updateSite.zip file must be extracted to the proper folder

Deploying the Extension Library

- Copy the features and plugins folder from

  <installdir>\data\workspace\applications\eclipse\

- To

  <installdir>\data\domino\workspace\applications\eclipse\

- Or

  - Unzip the contents of the updateSite.zip file to the same location

- DDE and the Notes client will have to be restarted if they are running before the plug-ins are available for web preview
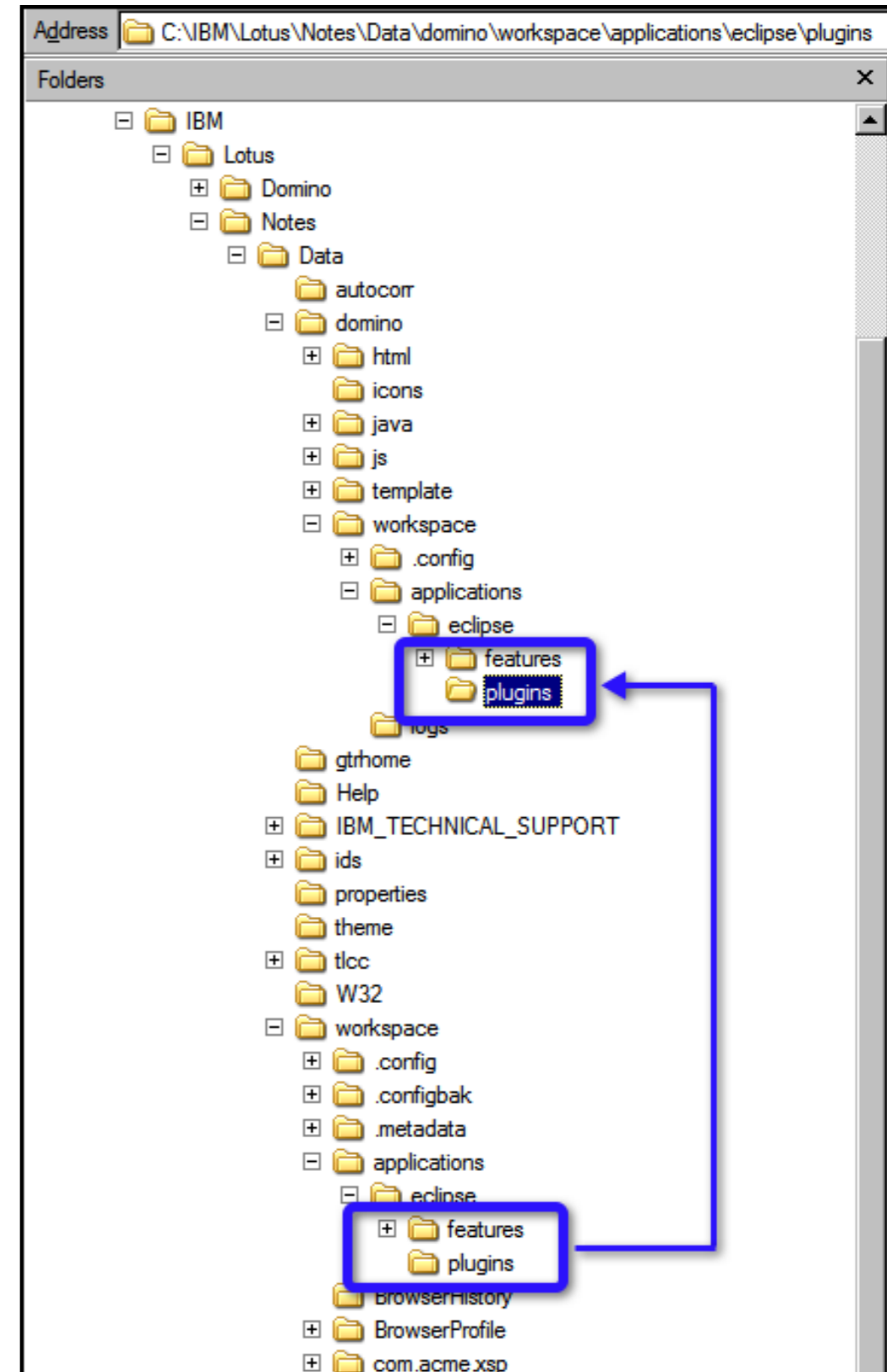
Deploying to the Domino Server

- The previous procedure is currently the same procedure used to deploy the Extension Library to the Domino Server

- Note that if the HTTP task is running it will have to be stopped in order to copy the jars

  - This is not required on the first deployment but IS required on any subsequent deployments as the HTTP task will have any referenced jar files locked

- Telling HTTP restart will NOT accomplish the re-loading of the jar files

  - The tell http quit and the load http server command lines must be used

Deploying to the Domino Server

- There is also a modified update site template available from OpenNTF that will deploy the extension library to the Domino Server without having to copy the jar files

  - This is the best option for deploying the extension library in production !!!!

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Testing the Extension Library

- The easiest way to test the Extension Library deployment both in DDE and on the Domino Server is to load sample XPages from the included sample file

- Copy the XPages Extension Library Demo (XPagesExt.nsf) to the local DDE data directory

  - Sign the application

  - Build the application (not really necessary but not a bad idea)

  - Edit the ACL to include you developer id

  - Create a new replica on the Domino test server

Signing the Application

- Add the Sample application to a working set in DDE

- Right click on the application and choose…

  - Application | Sign Design

- If under the project menu
  Build Automatically is enabled the
  Xpages and Custom Controls will als
  be compiled (built)

- If Build Automatically is NOT enables
  the right click the applications and
  choose Build from the context menu
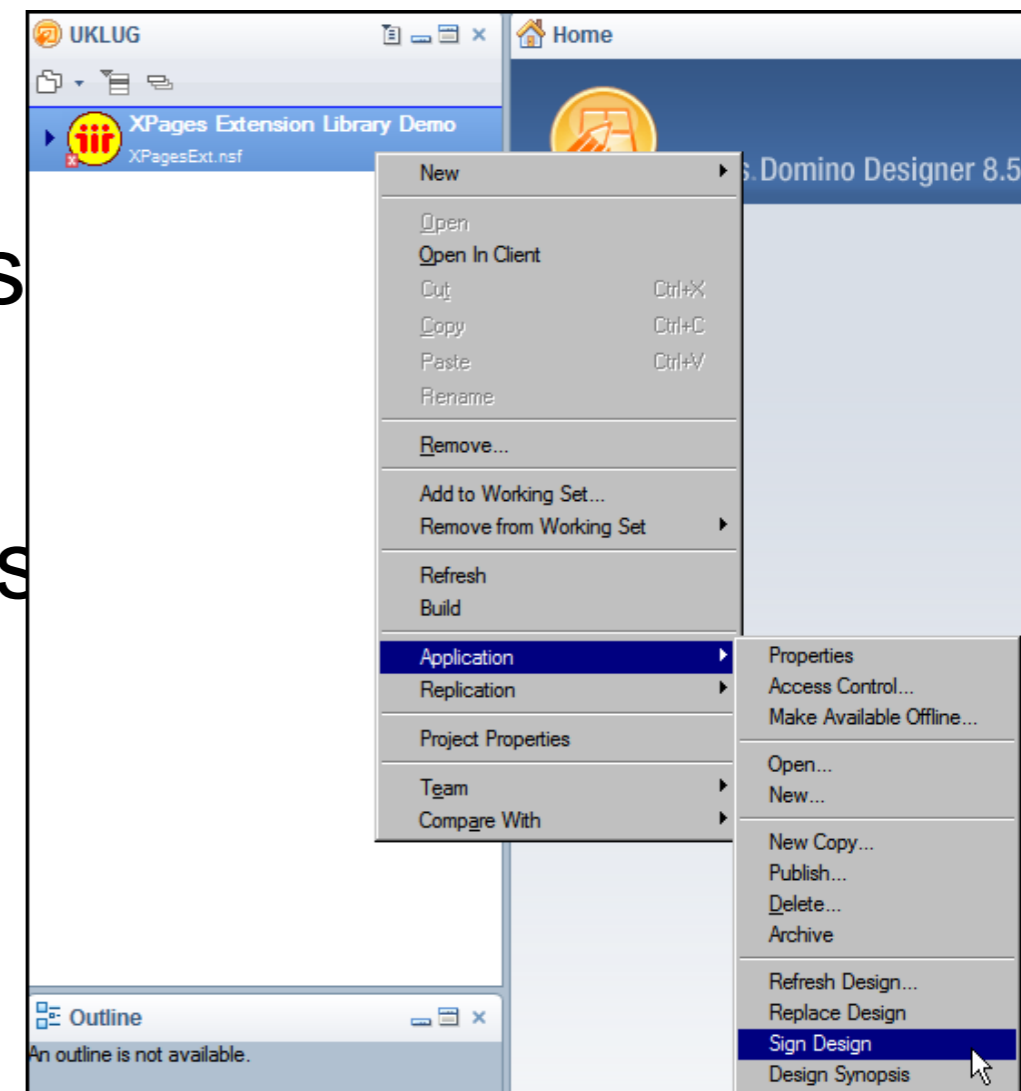
Testing the Extension Library

- Load the Admin_Home.xsp Xpage from DDE in XPiNC, or if you have deployed the plug-ins for DDE web preview, in the default browser

- If the Admin_Home.xsp Xpage load and displays the Extension Library is installed properly
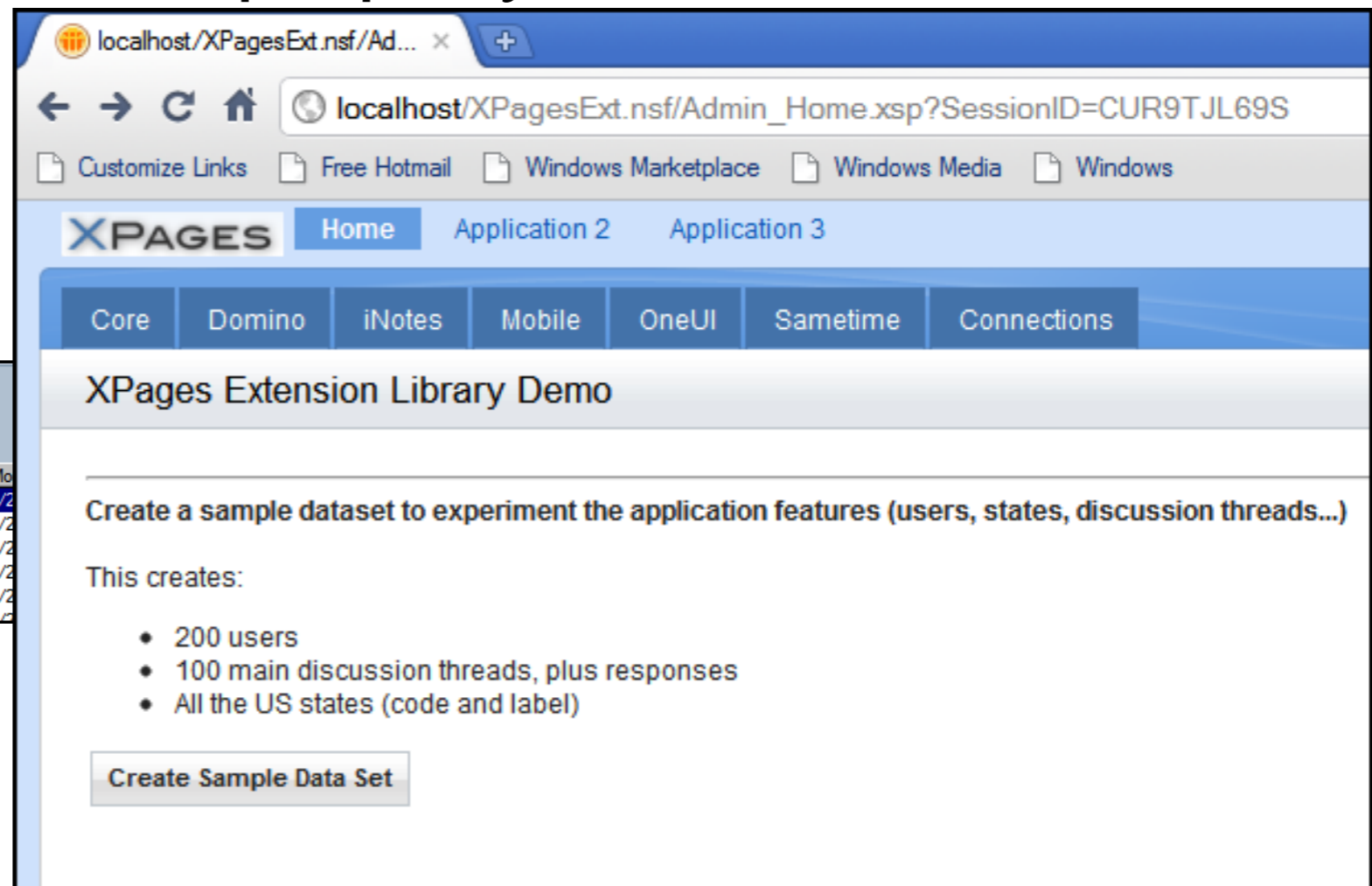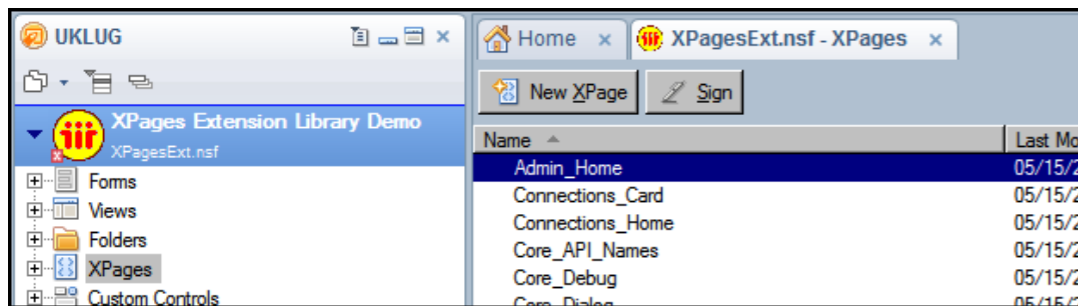
Creating the Sample data

- The Sample Application comes with the ability to build sample data for the application to work with

- Preview the Admin_Home.xsp XPage from DDE and click on the Create Sample Data button

- This will create the sample documents and display a message on the
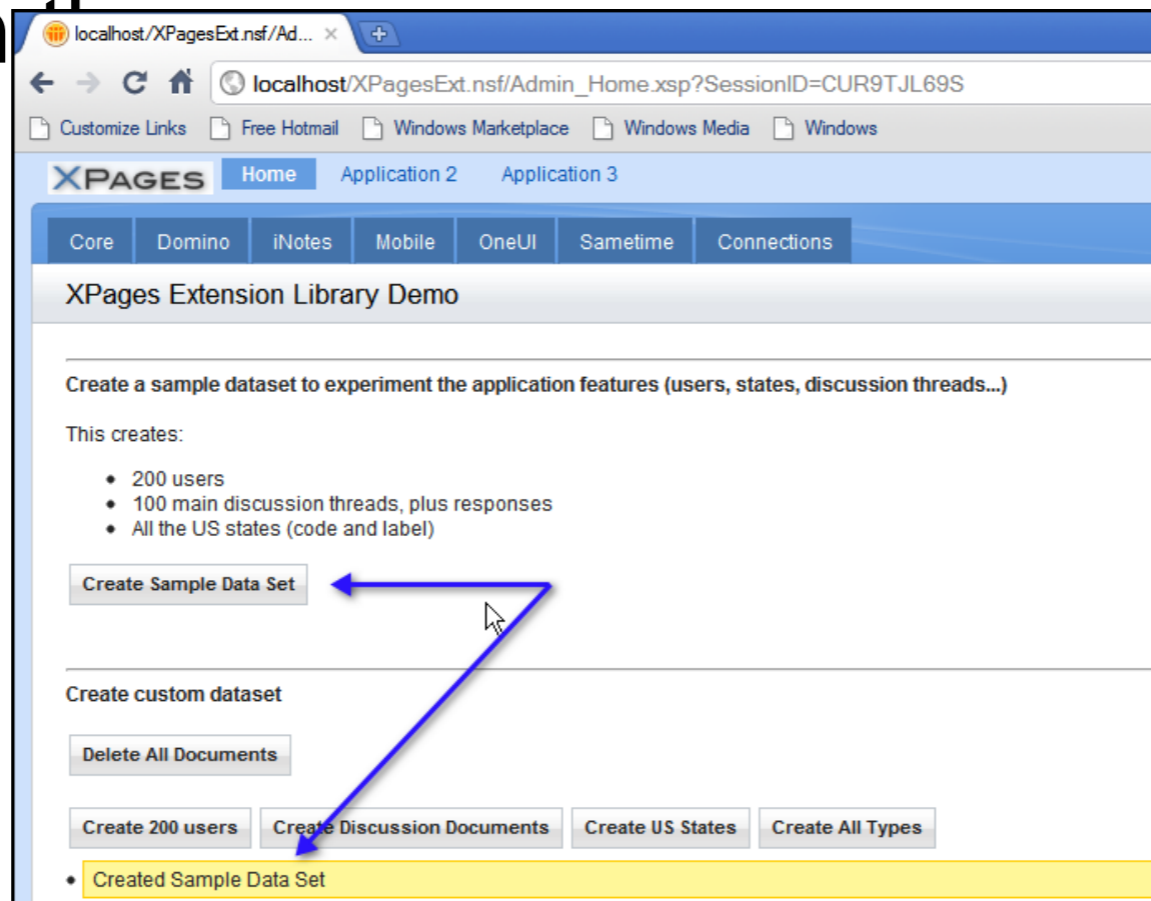
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Application Properties

- The Application Properties of new or existing applications that will use components from the Extension Library should be set to reference the Extension Library libraries

- In the application navigator in DDE choose Application Properties

- On the Advanced Tab in Application Properties check the libraries that will be used in the XPage Libraries section
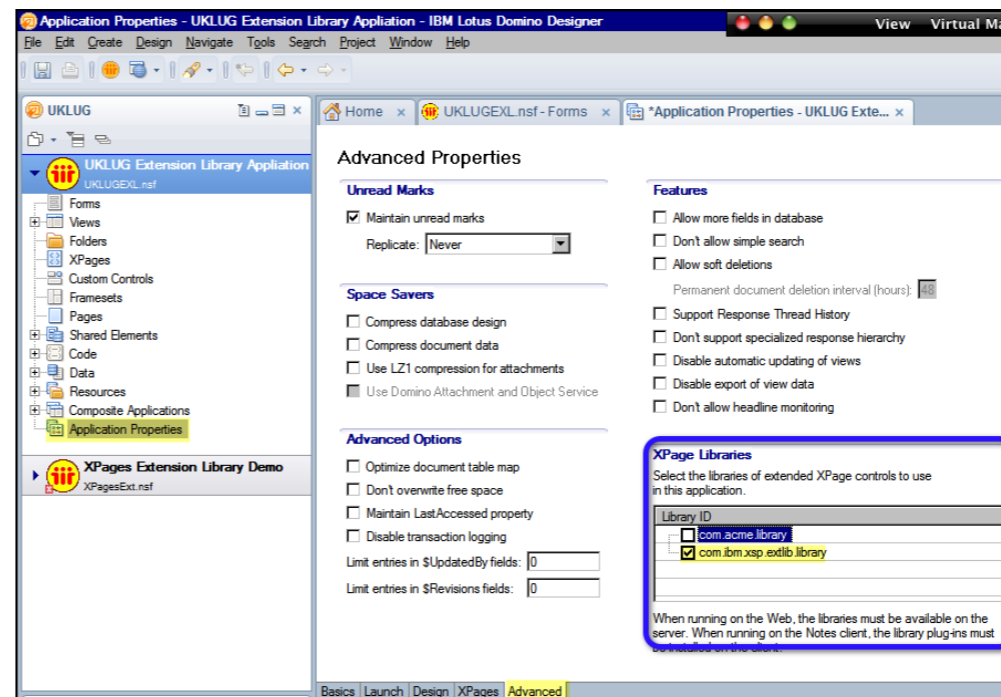
Extension Library Controls

- The Extension Library adds additional controls to the control palette available when creating/editing XPages

- Not all of the controls are listed in the control palette by default

- Enable the listing of controls in the control palette by choosing File | Preferences ... Domino Designer | Palette
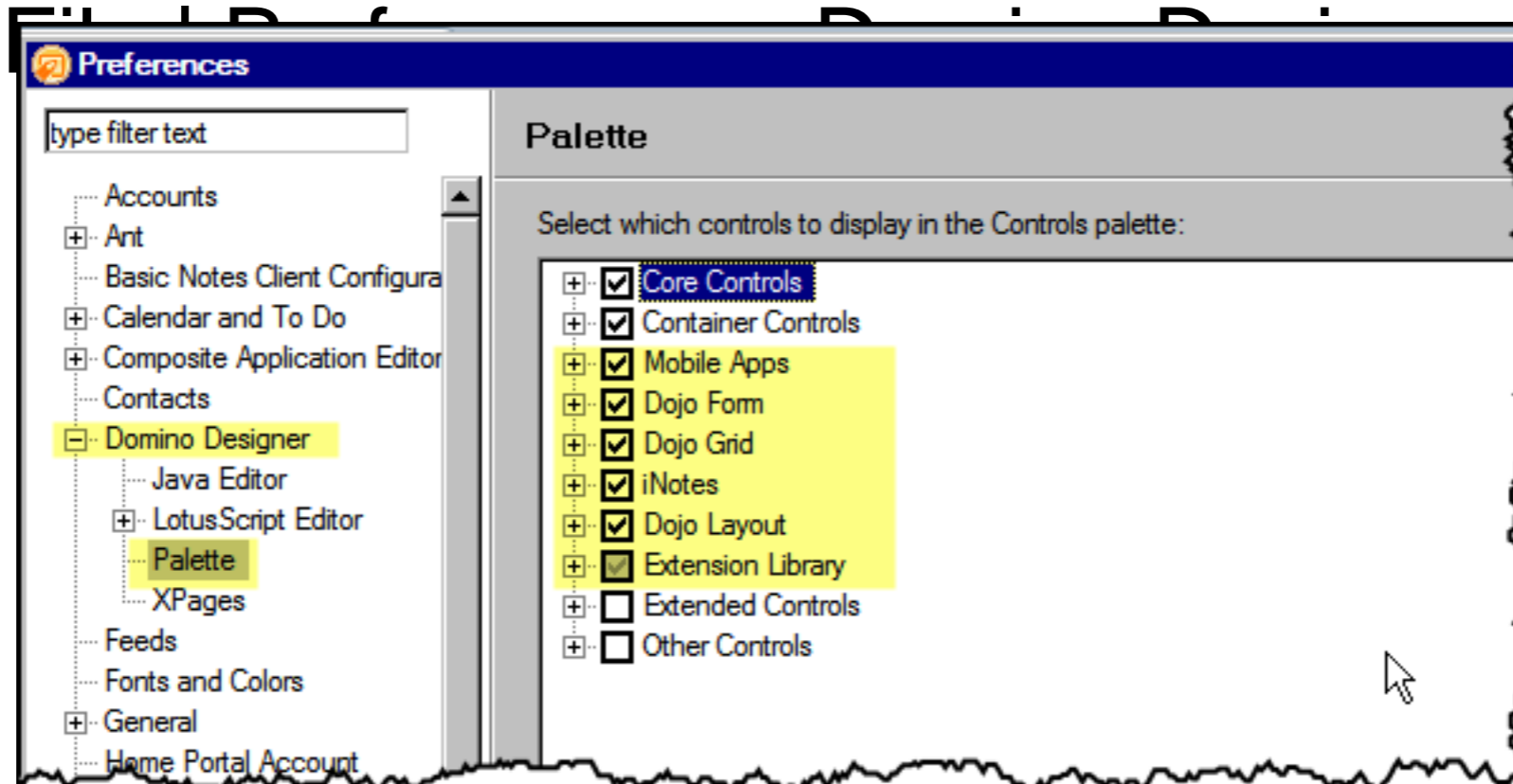
The Controls Palette

- When creating / editing an XPage the available Extension Library controls are now available on the controls palette
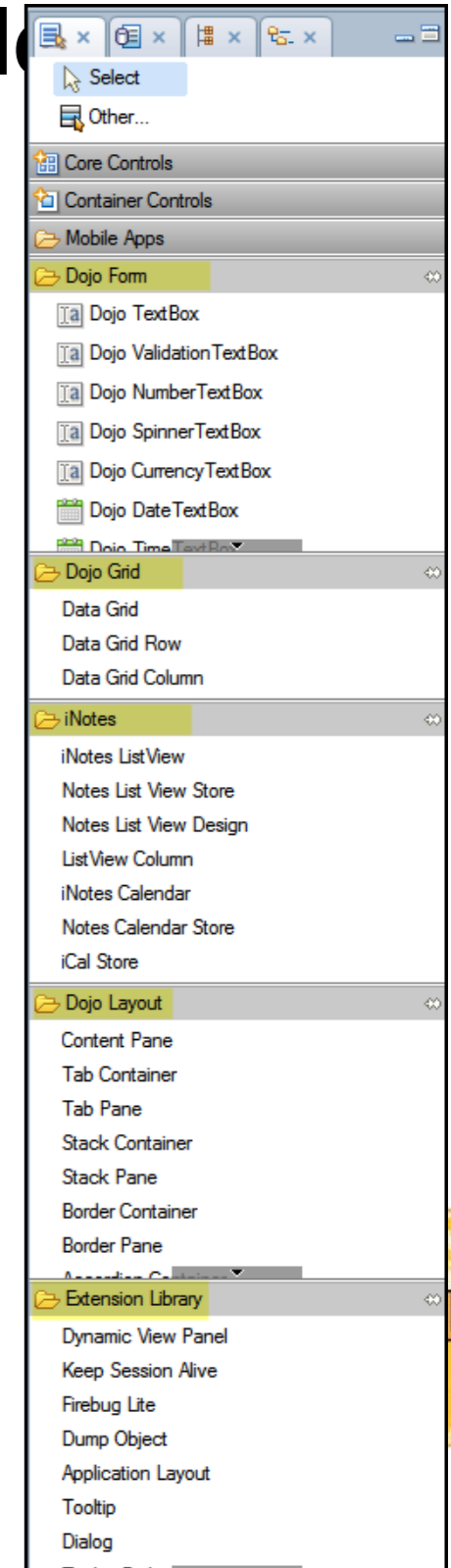
Extension Library API

- The XPages Extension Library API documentation is available by expanding the XPages-Doc.zip file that is included with the download from OpenNTF

- The API documentation includes the XPages default (core) controls as well as the XPages Extension library controls

- The API documentation is a series of html documents in the java doc format

- Use this documentation to learn about and discover the properties of a particular component
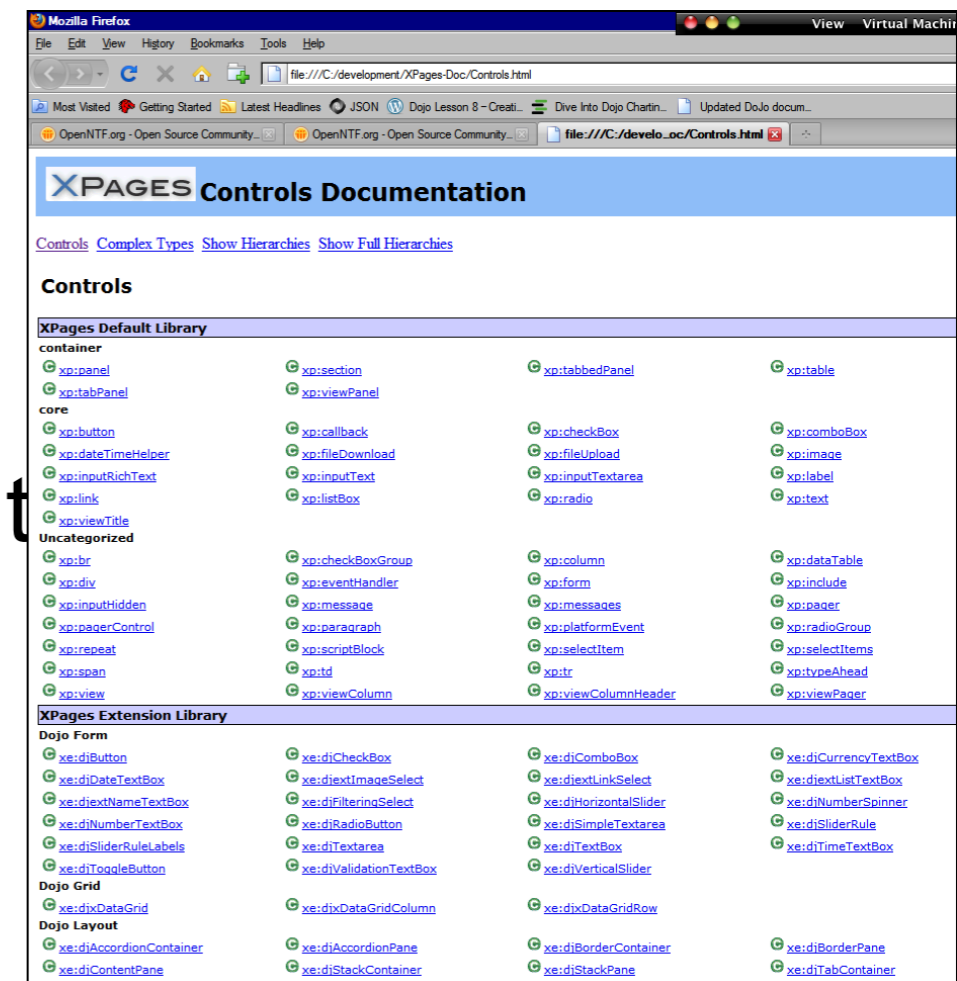
One UI version 2

- The Extension Library does not REQUIRE the use of the One UI Layout, but developers should at least investigate the benefits of using it

- See the Developerworks articles on the implementation of the OneUI layout controls

  - http://www-10.lotus.com/ldd/ddwiki.nsf/dx/Demo_XPages_Extension_Library-Application_Layout__Page_Navigator_Controls

Dojo Controls

- Many of the Extension Library controls are based upon the Dojo widgets

- Adding these controls to an XPage can be initially frustrating as there is no "help" or documentation on the widgets themselves in the Extension Library or Domino Help

- To learn the properties of the Dojo Documentation site

- Make sure you select the correct version for reference
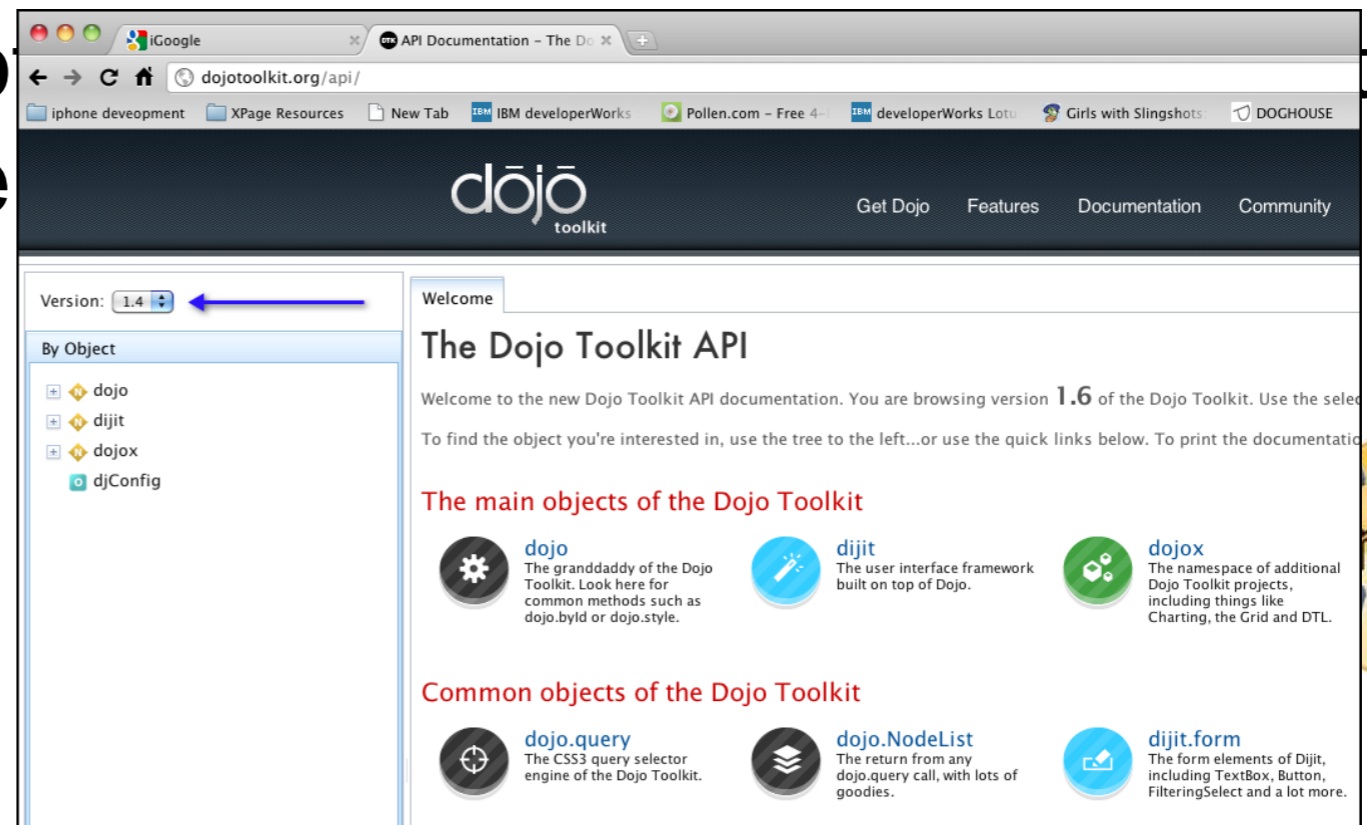
A Practical Example

- A Practical Example of an application using the Extension Library

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The Biggest Obstacle

- Unfortunately the biggest obstacle to deploying extension library applications to the Domino Server is NOT a technology issue, but a human one

- I HIGHLY recommend that you find out what the policy in you company is for deploying code to the servers

  - The Extension Library is comprised of a set of .jar files that must be deployed the Domino Server

- If the EA's * will not let you deploy the Extension Library jars to the server then developing code with the Extension Library is just an exercise in what could be

- There is a template on OpenNTF (New Update Site) that makes this process a little more palatable

* EA Admins (IE:Paul Mooney)

Domino Server Configuration

- Applications built on top of the extension library will only execute on a Domino Server where the Extension Library has been deployed

  - This may seem like a no brainer, but after testing "locally" this step is OFTEN looked over

- The Domino Server security has to be configured for executing XPages

  - Again, this may seem like a no brainer, but if this hadn't been the resolution over a dozen times to the "My Extension Library Applications don't work" problem, I wouldn't be sharing it with you

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- Deploying Extension Library Apps to the Domino Server

- **Wrap Up**

References

- OpenNTF – www.openntf.org

- Developerworks – www.ibm.com/developerworks

- Dojo – dojotoolkit.org/api

- ANNOUNCEMENT: New Book in the works on the Extension Library

  - Paul Withers, Jeremy Hodge, Paul Hannon

  - Declan Lynch, Tim Tripcony

  - Various Other XPage Experts contributing

XPage Design Resources

- XPage Wiki
  - www.lotus.com/ldd/ddwiki.nsf

- Domino 8.5 Discussion Forum
  - www.lotus.com/ldd/nd85forum.nsf?OpenDatabase

- IBM developerWorks – All Things IBM
  - www.ibm.com/developerworks
  - www.ibm.com/developerworks/lotus
  - www.ibm.com/developerworks/lotus/documentation/domino
  - www.ibm.com/developerworks/java
  - www.ibm.com/developerworks/xml

XPage Design Resources (cont.)

- Bleedyellow Forum

  - www.bleedyellow.com/communities/service/html/communityview?communityUuid=120fc506-ca30-426d-a149-ee6f21916ca7

- Extensibility API Documentation

  - www.lotus.com/ldd/ddwiki.nsf/dx/Master_Table_of_Contents_for_XPages_Extensibility_APIs_Developer_Guide

- Extensibility API JavaDocs

  - http://public.dhe.ibm.com/software/dw/lotus/Domino-Designer/JavaDocs/XPagesExtAPI/8.5.2/index.html

XPage Design Resources (cont.)

- OpenNTF – Open Source Applications, Utilities, Samples, etc.

  - Extensibility library

  - Mobile tools

  - Dozens more

    - www.openntf.org

- XPages Info

  - http://xpages.info/XPagesHome.nsf/Home.xsp

- XPages Blog

- http://xpagesblog.com

- OneUI Framework Layout Documentation

- www.lotus.com/ldd/doc/oneuidoc/docpublic/components/framework.htm?spriteson=false

XPage Design Resources (cont.)

- XPages Object Map

  - www.lotus.com/ldd/ddwiki.nsf/dx/XPages_Domino_Object_map_8.5.1

- XPage Knowledge Collection

  - www.ibm.com/support/docview.wss?rs=899&uid=swg27014929

- XPages Tips iPhone Application

  - On Xpagesblog.com now

Resources — Client Code

- W3Schools.com – Good for Things Web

  - www.w3schools.com

- Dojo Toolkit – JavaScript Client Library

  - http://dojotoolkit.org

- SitePen Blog – Great Dojo Tips and Tutorials

  - www.sitepen.com/blog

- jQuery – JavaScript Client Library

  - http://jquery.com

- Blueprint CSS – CSS Framework/Great for column positioning

  - http://blueprintcss.org

- Elastic CSS – CSS Framework

  - http://elasticss.com

Resources — Client Code (cont.)

- Douglas Crockford – JavaScript Guru
  - www.crockford.com
  - www.crockford.com/javascript
- JSON – JavaScript Object Notation/Official Site
  - www.json.org
  - www.json.org/js.html
- JS Lint – JavaScript Code Validator
  - www.jslint.com
- Mozilla Developers Guide
  - https://developer.mozilla.org/en/JavaScript/Guide

Resources — Client Code (cont.)

- Firebug is an extension/plug-in for the Firefox browser
  - The Firefox browser can be downloaded at the following URL:
    - www.mozilla.com/en-US/firefox/personal.html
  - Once the Firefox browser is installed, go to the following URL to add extensions and plug-ins:
    - https://addons.mozilla.org/en-US/firefox
- Head First Series Books
  - Head First HTML with CSS and XHTML
  - Head First JavaScript
  - Head First AJAX
    - http://headfirstlabs.com

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Resources — Server Code

- JSFTutorials.Net – Series of Java Server Faces Tutorials
  - http://jsftutorials.net
- ODF Toolkit
  - http://odftoolkit.org
- iText
  - http://itextpdf.com
- Bruno Lowagie, *iText in Action* (Manning Publications, 2010).
  - ISBN: 1935182617
- Apache FOP
  - http://projects.apache.org/projects/fop.html
- Apache POI
  - http://poi.apache.org

Resources — Server Code (cont.)

- IBM developerWorks Java Tutorial

    - www.ibm.com/developerworks/views/java/libraryview.jsp?search_by=tutorial,+perry&cmp=dw&cpb=dwjav&ct=dwnew&cr=dwnen&ccy=zz&csr=082610

- Head First Series Books

    - Kathy Sierra and Bert Bates, *Head First Java, Second Edition* (O'Reilly Media, 2005).

    - Bryan Basham, Kathy Sierra, and Bert Bates, *Head First Servlets and JSP, Second Edition* (O'Reilly Media, 2008).

    - Brett McLaughlin, Gary Pollice, and David West, *Head First Object-Oriented Analysis and Design* (O'Reilly Media, 2006).

        - http://headfirstlabs.com

Other Resources

- W3C – Standards Body for Web Technologies

  - www.w3c.org

- BuiltWith Trends – Site that trends Web site development tool use

  - http://trends.builtwith.com

- TIOBE – Programming Language Trends

  - www.tiobe.com/index.php/content/paperinfo/tpci/index.html

- HTML 5 Rocks – HTML 5 Example Site

  - www.html5rocks.com

- Online CSS constructor

  - www.constructyourcss.com

- Elguji - UPDATE

  - ideajam.net

  - iqjam.net

Other Resources (cont.)

- Widget Gallery
  - www.ibm.com/software/ucd/widgetgallery/widget_home.html
- Taskspeed – Performance Of CSJS Frameworks
  - http://dante.dojotoolkit.org/taskspeed/
- Planet Lotus – Blog Aggregator (This is the only one you really need)
  - www.planetlotus.org
- XPages 101 – Matt White Training Videos
  - XPages101.net
- Notes in 9 – David Leedy XPage Screen Casts
  - http://notesin9.com
  - http://xpages.tv

Other Resources (cont.)

- Tip of the Iceburg – Tim Tripcony
  - www.timtripcony.com
- Paul Withers
  - http://hermes.intec.co.uk/intec/blog.nsf
- Mark Hughes
  - http://dominoextnd.blogspot.com/
- Kuler – Color Scheme Site
  - http://kuler.adobe.com/#themes/rating?time=30
- Color Scheme Generator
  - www.perbang.dk/color+scheme
- Single Landing Page for all IBM Documentation
  - www.ibm.com/developerworks/lotus/documentation

Other Resources (cont.)

- TLCC – The Learning Continuum Company

  - Domino Designer 8.5.1

    - Free TLCC course on using DDE

      - www.tlcc.com/admin/courses.nsf/lookupcoursecode/DD85INTR?opendocument&viewname=R85Cur

  - Notes Client Based Training

    - Java (Intro and Advanced)

    - XML, Web Services

    - XPages (Intro and Advanced)

    - JavaScript with XPages

      - www.tlcc.com

Questions and Answers

Paul T. Calhoun
Director or Worldwide Enablement
paul.calhoun@gbs.com

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