

Scripting OpenOffice.org in your language of choice

by
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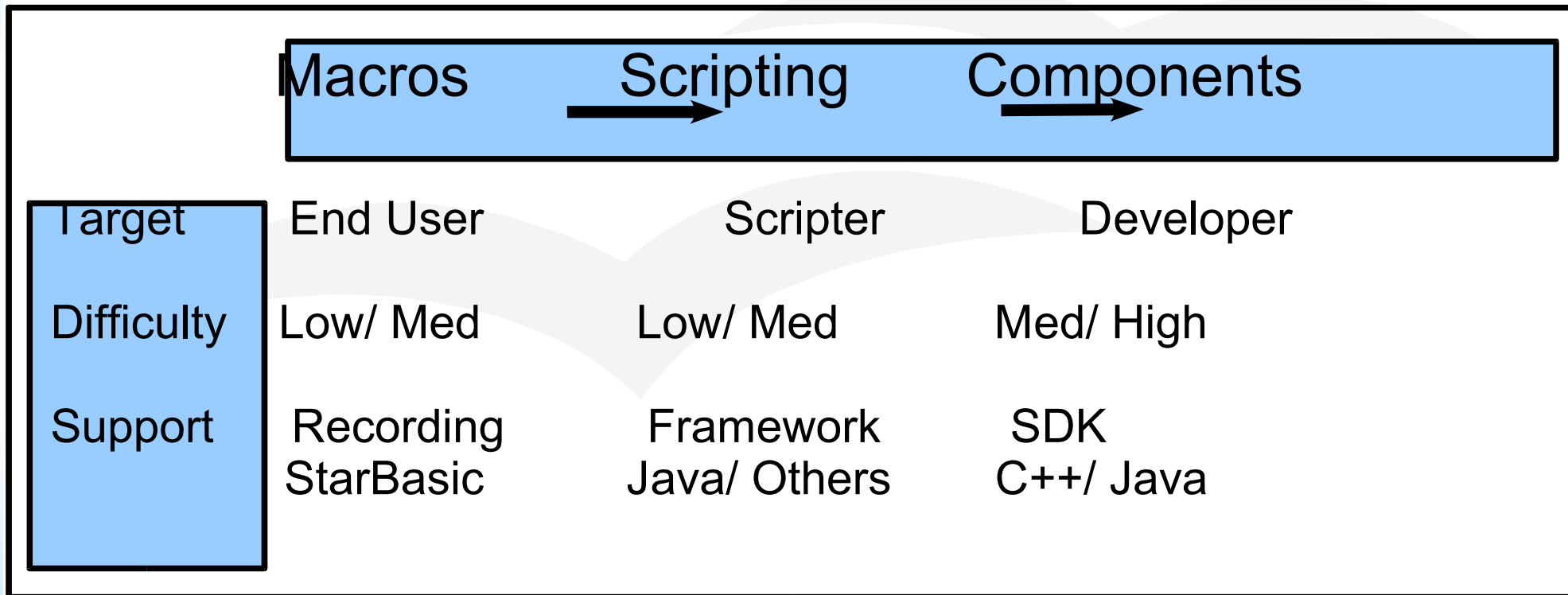
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- Introduction
 - Goals
- Assigning
- Invocation
 - Demo – Find and Highlight
- Architecture Overview
- IDE Integration
 - Demo – Save copy as HTML
- Building your own Runtime
 - Demo – Bug Report
- What's next
- Questions

- John Rice
 - Staff Engineer Sun Microsystems
- Project owner
 - OpenOffice.org – Language Independent Office Scripting Framework
- Background
 - Hitachi, Lotus, ICL and Sun focusing on document and information management systems

Extending OpenOffice.org

- Lots of Choice
 - Macros, scripting, components
 - Choose tool appropriate to task





Goals of Scripting Framework

- Simple to add new Languages
 - Framework provides Java and BeanShell
- Assign scripts
 - Easy to assign any script to a menu, key or event
- Invocation
 - Easy to invoke and secure
- IDE support
 - Integrated support for NetBeans IDE
- Deployment
 - Deployment to applications and documents

Assigning Scripts

- Assign Dialogs

- Menu
- Key
- Events

- Functionality

- Select Location
 - User, Share or Document

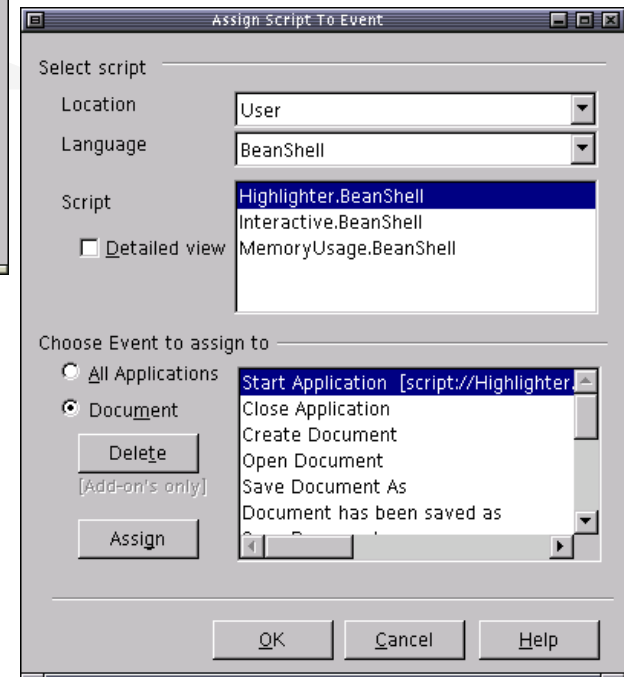
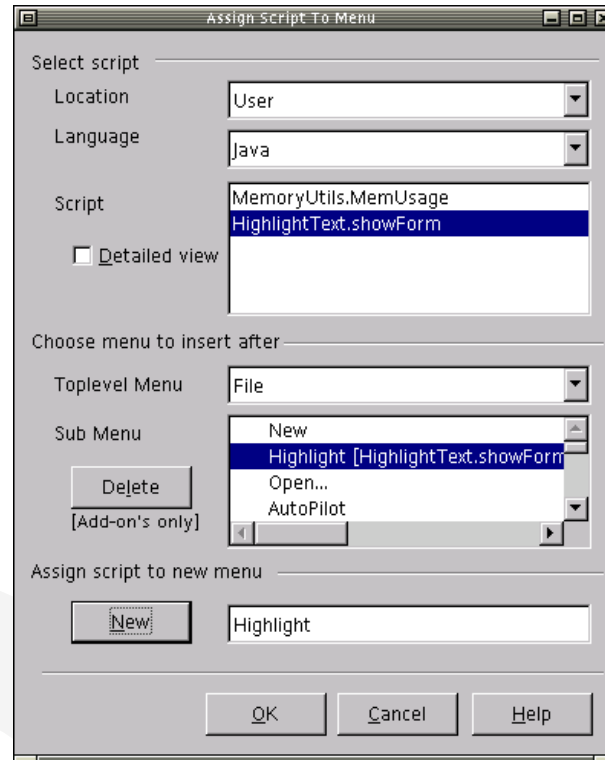
- Select Language
 - Any installed Runtime

- Select Script

- Logical name
Details – Function name

- Assign

- New Menu
- Assign Key combination
- Assign Events – document or application



• Steps

• Invoke

- From Assign Dialog Bindings
 - `script://highlight.showForm?language=BeanShell&function=highlight.bsh&location=user`
- From Script
XDispatch, XfunctionProvider, XFunction

• ScriptRuntimeManager

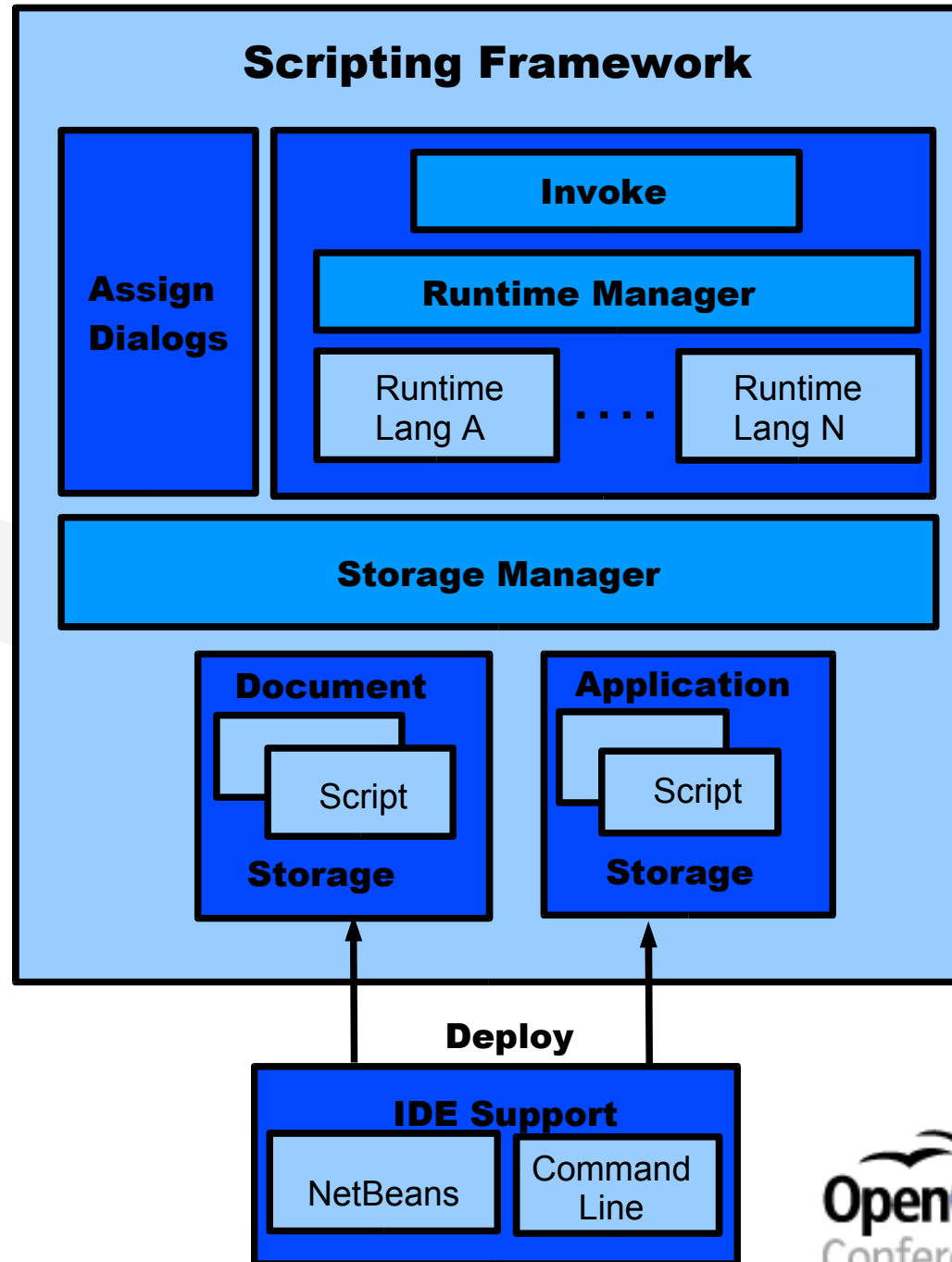
- Check Permissions
- Resolve script to Storage
- Load Script Details – name, lang, properties
- Load Script Runtime

• Script Runtime

- Pass Invocation Context
 - Current document, script details and location
- Setup execution environment for script
- Load Script from doc or file system
- Invoke script

**Assign to Highlight Script
and Invoke**

- Assign
 - Storage
- Invoke
 - Provider
 - Runtime Mng
 - Security
 - Storage
 - Runtime Lang
- IDE Support
 - Office Module
 - Create
 - Deploy



- Script

- Script File + Resources

- Java compiled class file,
Beanshell text file

- Script description

- Parcel descriptor.xml

- NetBeans 3.4

- Create Script Parcel

- Sample script for Java or BeanShell

- Deploy

- Select Methods to deploy as scripts
 - Auto-creation of parcel-descriptor.xml
 - Deploy to document or application

- Command Line

- Supports

- Auto-creation of Parcel descriptor for any language script file
 - Deployment to document or application

```
<parcel language="Java">
  <script language="Java">
    <functionname value="memoryUtils.memoryUsage"/>
    <logicalname value="MemoryUtils.MemUsage"/>
    <languagedepprops>
      <prop name="classpath" value="/opt/foo.jar:/usr/java/src.jar"/>
    </languagedepprops>
  </script>
</parcel>
```

IDE Demo

Script Creation and Deployment

Building your own Runtime

- What do you need?
 - UNO language Bridge
 - JavaUNO, PyUno
 - Implement Runtime Component
 - UNO Component, Singleton
 - XScriptInvocation
 - Runtime Responsibilities
 - Implement Invoke()
 - Setup
 - Setup execution environment for Script
 - Get language properties – e.g. Classpath
 - Load Script
 - From document or file system
 - Can use UCB – XSimpleFileAccess
 - Execute Script
 - Pass in script context
 - Current Document, Service Factory, Desktop
 - IDE
 - Command line support

Java

BeanShell

JavaScript

Python

StarBasic++

???

Demo BeanShell Runtime

- **OpenOffice.org Integration**
 - **StarBasic and the Scripting Framework**
 - Dialogs - Tools/ Configure and Macro dialogs – Assign Dialogs
 - Support assigning scripts to events in Dialogs and Forms
 - **Common Packaging Format**
 - UNO Components, Star Basic Libraries, Script Archives
- **Additional Language Runtimes**
 - JavaScript, Python
- **Security**
 - **Authentication**
 - Digital Signature – signing in IDE, verifying in OpenOffice.org
 - **Authorisation**
 - Security context – UNO API and Scripting lang API restricted
- **IDE Integration**
 - NetBeans 4.0

- OpenOffice.org <http://www.openoffice.org>
- Subproject <http://framework.openoffice.org>
- Scripting Framework
<http://framework.openoffice.org/scripting>
- Contact
 - jmrice@openoffice.org

Questions?