Extending Documentum D2: “beyond out of the box...”

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BETTER TOGETHER

We take content seriously.

Content apps for the digital era.

Leave no application data behind.
Extensions are powerful …

“My guitar is not a thing. It is an EXTENSION of myself. It is who I am.”

HINT?
Agenda – 45’

• Extension versus customization

• Different extensions for different needs:
  – D2 method
  – D2 Service plugin
  – D2 widget

• D2 method – When and how to use it?

• D2 plugin – When and how to use it?

• D2 Widget: Use case 1,2 and 3

• Summary of the value proposition

• Conclusion
The key differences

Unlike previous User interface and our competitors, Documentum D2 allows you to add new capabilities without touching the heart of the product providing

- Faster time to value
- Agility against business changes
- Easy maintenance and upgrade
After weeks of hard work we made it ....

My customized business
Solution 1.0
(without D2)

Business changes
Impact of Business changes without D2

Assessing the changes...

- “The head of the business department will not understand why:
  - It costs so much
  - It takes so much time
  - We might have to wait for next release.”

And this can happen again anytime...
You should not have to pray to get what you need…

Please add the features we need in version 5.0
My business solution 2.0: with D2

Assessing the changes...

Component 1  Component 2  Component 3
Component 4  Component 5  Component 6
Component 7  Component 8  Component ...
Component ... Component n-1 Component n
Component n + 1
Component n + 2

Configuration
UPDATED
Key take away

Documentum D2 provides simple mechanism to adapt to your business requirements preventing you to redesign your entire application.

Customizations are well isolated, from the standard code which is why we are talking about **D2 EXTENSIONS.**
Different Extensions for different needs:

Depending of your business requirements, you might consider one or a combination of the most common extension capabilities below:

- D2 Methods
- D2 Plugin
- D2 Widgets
Not covered today, but exists also

- UI plugin, D2 plugin action, D2 config extension, etc.

- If needed, please refer white paper:

EMC® Documentum® D2
D2 4.X Plugins and Extensions
D2 method: When and how to use it?

- **Definition**: A D2 method consists of a specific piece of java code (which implements the interface: com.emc.d2.api.methods.ID2Method) executed by the Java method server/app server.

- **Execution**: It is triggered by end user either:
  - Directly: From a D2 custom menu (app server)
  - Or Indirectly: As part of an action within a lifecycle
D2 method: Method triggering – via custom menu

Action:
- Calling service’s method: "Method", "executeMethod" on selection: "SINGLE", Type: "" doing Action: "$value($Action)"
- message: `class_name=com.emc.d2.api.method;Ref_CreateGlobalGroups`

- Parameters:
  - Service: "Method"
  - Method: "executeMethod"
  - Selection: "SINGLE"
  - Type: 

D2 toolbox:
- Content:
  - Group structure for Ref Application
**D2 method: Method triggering – from LFC definition**

<table>
<thead>
<tr>
<th>Lifecycle state</th>
<th>Start state</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW</td>
<td></td>
</tr>
<tr>
<td>APPLIED</td>
<td></td>
</tr>
</tbody>
</table>

**Lifecycle options**
- Execute actions on start: ✓
- Alternate attribute for state (default is a_status): [ ]

**Lifecycle preview**
- NEW

**Entry condition**
- [ ]

**Action Type**
- Apply method
- Set property

**Action Parameters**
- Method: D2ApplyTracingsheet
- Set Property: a_status with value: APPLIED

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D2 method : When to use it ?

• Once executed, a D2 method does not provide «live» feedback on the user interface.

• The D2 method is not suitable if you require custom processing with a lot of end user interaction. (Use D2 widget instead)

• Nevertheless it remains a powerful extension mechanism which is well segregated from the rest of the platform and can do anything you can code with any java library available on the market.

• Widely used in the Documentum D2 Life science solution. CDF (Controlled Document Foundation layer…. ) which provides consistent business logic across the different life sciences applications.
D2 method: Technical sequence to be followed

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Creation / Compilation</td>
<td>Documentum Composer or any other IDE</td>
</tr>
<tr>
<td>2</td>
<td>Publishing</td>
<td>Copy jar file into JMS lib directory</td>
</tr>
<tr>
<td>3</td>
<td>Declaration</td>
<td>Documentum Administrator</td>
</tr>
<tr>
<td>4</td>
<td>Usage</td>
<td>D2 Config</td>
</tr>
</tbody>
</table>
D2 method: Method declaration in DA

com.emc.d2.api.methods.D2Method -class_name com.emc.d2.api.methods.Ref_CreateGlobalGroups
D2 Service plugin: When and how to use it?

- **Definition**: D2 Service Plugins are used to override D2

- **Service plugin** can be executed:
  - Prior standard behavior (Pre processing)
  - Post standard behavior (Post processing)
  - Replacing standard behavior (Standard processing overridden).

- **When to use it**: When you want to change the standard backend business logic.

- **Example**: Creation of a D2 custom export that exports not only the selected documents, but also their associated renditions.
Service plugin : Entry point

• In order to create a service plugin, it is necessary to create a class have the same name as the service you wish to extend but with the suffix ‘Plugin’, to extend the original service and to implement ‘ID2fsPlugin’ interface.

```java
public class <xxx>ServicePlugin extends <xxx>Service implements ID2fsPlugin
{
    public String getFullName()
    {
        return « Demo Plugin v1.0 build 001 »;
    }

    public String getProductName()
    {
        return « Demo Plugin »;
    }
}
```
Service plugin : Pre Processing

```java
@override
public List<String> getDownloadUrls(Context context, String id, List<Attribute> parameters) throws Exception {
    // Pre-processing
    D2fsContext d2fsContext = (D2fsContext) context;
    d2fsContext.setParameterParser(parameters);
    if (id != null)
        d2fsContext.getParameterParser().setParameter(D2fsContext.PARAM_ID, id);

    ParameterParser parameterParser = d2fsContext.getParameterParser();

    String formatName = parametersParser.getStringParameter(Download.PARAM_FORMAT);
    if (formatName.equals("pdf"))
        // xxxxxxxxxxx

    // Call standard service
    super.getDownloadUrls(context, id, parameters);
}
```
Service plugin : Post Processing

```java
@Override
public List<String> getDownloadUrls(Context context, String id,
                                      List<Attribute> parameters) throws Exception {

    // Call standard service
    super.getDownloadUrls(context, id, parameters);

    // Post-processing
    ParameterParser parameterParser = ((D2fsContext) context).getParameterParser();
    String formatName = parameterParser.getStringParameter(Download.PARAM_FORMAT);
    if (formatName.equals("pdf")) {
        // xxxxxxxxxx
    }
}
```
Service plugin : Overriding Processing

```java
@Override
public List<String> getDownloadUrls(Context context, String id,
        List<Attribute> parameters) throws Exception
{
    // Replace service
    D2fsContext d2fsContext = (D2fsContext) context;
    d2fsContext.setParameterParser(parameters);
    if (id != null)
        d2fsContext.getParameterParser().setParameter(D2fsContext.PARAM_ID, id);

    ParameterParser parameterParser = d2fsContext.getParameterParser();

    String formatName = parametersParser.getStringParameter(Download.PARAM_FORMAT);
    if (formatName.equals("pdf")
    {
        // xxxxxxxxxxx
    }"
D2 External widget: When and how to use it?

**Definition**: UI component that exposes a specific view to content and provides a set of capabilities / functions

- Widgets communicate with each other via Open Ajax Hub messages.
  - Publish events and listen to events
  - Actions cause D2 or widgets to perform a specified operation.

- A D2 external widget is a web application that is hosted in an iframe within the D2 Client application

**When to use it**:  
- Whenever you want to expose external information side-by-side with internal information (samples: map, data from LOB app related to a document, …).  
- Introduce new capabilities to work with content (samples: reporting, controlled print, viewing and annotation, …)
D2 widget: OAH communication overview

Repository browser widget

Event posted: Folder selection

D2 Hub

Event detected: Widget content update

Detailed document list widget

Event detected: Document selection

Document version list widget

Event posted: Document selection

Event detected: Widget content update

Post and listen to messages

My external Widget
D2 widget: Use case 1: Relationship manager

- **Business requirements**: Following import of multiple assets, an archivist must create multiple relationships between the files in an efficient way to obtain results such as:
Relationship manager in action (video)
D2 widget: Use case 2 – Custom upload

- **Business requirements:**

Instead of using standard D2 import, which involved population of metadata, end user would like to simply import multiple files from their desktop and let Documentum D2 applying the D2 policies defined in the matrix.
File Upload widget in action (video)
D2 widget: Use case 3 – The “hotzones”

- **Business requirements**: Instead of browsing cabinets and folders, business users would like to access content in a visual way. A flowchart of a process is displayed and by clicking at one step of the process, the associated content is automatically retrieved.

- The idea is to allow a user to import pictures where they will be able to define clickable zones. By clicking on the zone they can either load another picture or fire a predefined query. The concept is usable in multiple business areas as shown in the coming video.
Hotzone widget in action (video)
CONCLUSION: remember that …

EXTENSIONS are powerful …

• Multiples ways to extend D2 (plugin, methods, widgets)

• Extensions are well isolated from the rest of the product (different from customization)

• Extensions are well embedded in your user interface.

• Your creativity is your only limit!

Go visit the D2 booth and watch by yourselves.
JOIN THE CONVERSATION!
#MMTM16

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Garden Level
Foyer

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BEYOND SILOS

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