



adaptTo()

EUROPE'S LEADING AEM DEVELOPER CONFERENCE

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AEM CF Extras

Bryan Williams, Bounteous



BRYAN WILLIAMS

Lead Architect at Bounteous



<https://www.linkedin.com/in/bryrwilliams>



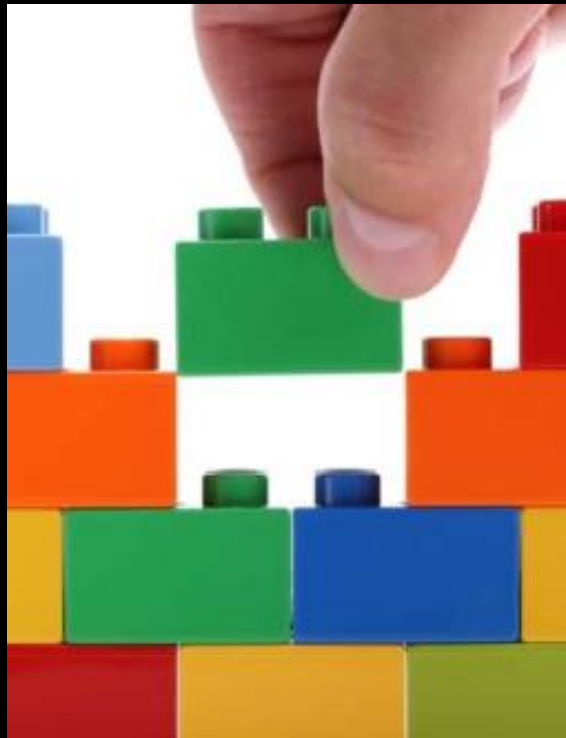
[@brywilliams](https://twitter.com/brywilliams)

THE PROBLEM

How do we store
structured data that
represents “things” inside
AEM?

- EXTERNAL DATABASE
 - Need to configure JDBC
 - AEM authors cannot update data without customization
- PAGE PROPERTIES
 - Developers and a deploy are needed to add new page properties
 - Not really meant for this








THE SOLUTION



- **STRUCTURED CONTENT FRAGMENTS**
 - Introduced in AEM 6.4
 - Model updates do not require developers
 - Separate from pages and components
 - Stored as DAM assets
 - Customizable
 - API accessible

As of AEM 6.5

- **Single line text** - short text
- **Multi line text** - descriptive text
- **Number** - numeric value
- **Boolean** - a checkbox
- **Date and Time** - date / time selection
- **Enumeration** - a dropdown
- **Tags** – select a tag
- **Content Reference** – choose an asset, page, etc.

Data Types	Properties
	Single line text
	Number
	Boolean
	Date and time
	Enumeration
	Tags
	Content Reference

AEM CF EXTRAS FIELDS (all implemented in HTL + Sling Models)

- **CFX ID** - Displays an auto generated UUID for a CF based on its path.
- **CFX Parent Field** - A virtual reference to an attribute in a content fragment located in a parent folder.
- **CFX Child Reference** - A reference to a set of child content fragments. An optional relative folder can be specified along with the desired model type to include.
- **CFX Content Fragment Reference** - Similar to the out of box Content Reference field except it can be restricted to a particular model type. This comes into play with the GraphQL API.

AEM CF EXTRAS FIELDS (Continued)

- **CFX Image Field** - Points to an image in the DAM and shows a thumbnail preview of the currently selected image.
- **CFX Date Time** - Similar to the out of the box Date and Time field except you can set it to handle just date, just time, or date and time.
- **CFX Tags** - Like the out of box Tags field except it allows the choice of single or multiple tag selection.
- **CFX Multi line text** - Like the out of box Multi line text field except it allows for adding multiple text areas
- **CFX Tab** - Allows for fields in a model to be broken up into separate tabs

TAB PLACEHOLDER

- It is necessary to override some out of box code for this
- Used placeholder fields as a way to mark where the tabs should be rendered
- Written in HTL
- Falls back to the out of box JSP if no tabs are present
- Out of box code is at
`/libs/dam/cfm/admin/components/authoring/elementeditor/elementeditor.jsp`
- CFX code is at
`/apps/dam/cfm/admin/components/authoring/elementeditor/elementeditor.html`

PIECES OF A MODEL

Form builder interface showing various field types and their configurations. Red arrows point to specific fields:

- Arrow 1 points to the **fieldPropResourceType** field.
- Arrow 2 points to the **fieldTitle** field.
- Arrow 3 points to the **fieldResourceType** field.
- Arrow 4 points to the **fieldLabel** field.
- Arrow 5 points to the **fieldType** field.
- Arrow 6 points to the **fieldValue** field.
- Arrow 7 points to the **fieldIcon** field.
- Arrow 8 points to the **fieldListOrder** field.

2: (fieldPropResourceType) is almost always the same

Properties panel for a field type. Red arrows point to specific properties:

- Arrow 1 points to the **Render As** dropdown.
- Arrow 2 points to the **Field Label** text.
- Arrow 3 points to the **Property Name *** text.
- Arrow 4 points to the **Description** text.
- Arrow 5 points to the **Required** checkbox.
- Arrow 6 points to the **Description** text area.

7: Order of types

Properties panel showing the order of types. Red arrows point to specific types:

- Arrow 1 points to **Single line text**.
- Arrow 2 points to **Multi line text**.
- Arrow 3 points to **Number**.
- Arrow 4 points to **Boolean**.
- Arrow 5 points to **Date and time**.
- Arrow 6 points to **Enumeration**.
- Arrow 7 points to **Tags**.
- Arrow 8 points to **Content Reference**.
- Arrow 9 points to **CFX ID**.
- Arrow 10 points to **CFX Parent Attribute**.
- Arrow 11 points to **CFX Child Reference**.
- Arrow 12 points to **CFX CF Reference**.
- Arrow 13 points to **CFX Image**.
- Arrow 14 points to **CFX Tab Placeholder**.
- Arrow 15 points to **CFX Datetime**.
- Arrow 16 points to **CFX Tags**.

Properties	Access Control	Replication	Console	Build Info
Name	Type	Value		
1 fieldIcon	String	text		
2 fieldPropResourceType	String	dam/cfm/models/editor/components/datatypes/field		
3 fieldProperties	String[]	mvfields, multieditorfield, maptopropertyfield, requiredfield		
4 fieldResourceType	String[]	dam/cfm/admin/components/authoring/contenteditor/multieditor, granite/ui/components/coral/foundation/form/multifield		
5 fieldTitle	String	Multi line text		
6 jcr:primaryType	Name	nt:unstructured		
7 listOrder	String	2		
8 renderType	String	text		
9 valueType	String[]	string, string[]		

ACCESSING CONTENT FRAGMENTS

CONTENT SERVICES *

- Utilize the Content Fragment and Content Fragment List components
- Can control exposed fields
- Needs a placeholder page

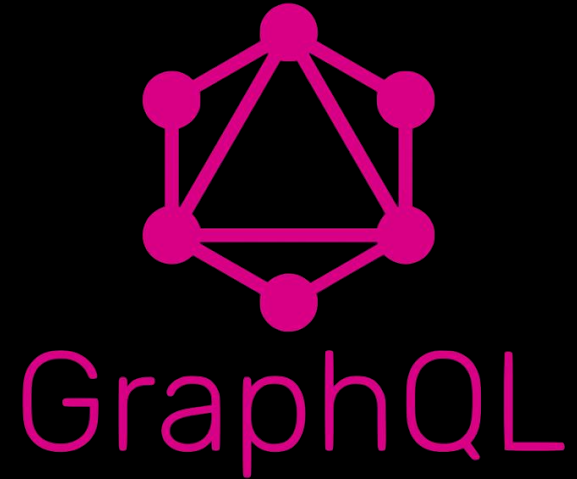
ASSETS API *

- Accesses Content Fragments directly without proxy pages or components
- Requires knowledge of the asset hierarchy
- Good for developer utilization and full CRUD functionality

* Both are REST based

AEM CF EXTRAS GRAPHQL API

- Automatically generated schema
- Access exactly what you need, nothing more, nothing less
- Built on GraphQL Java library
- Filter results
- Immediate reflection of model updates
- Auto generated ID fields based on CF path
- No DAM hierarchy knowledge required by caller



DEMO DATA

Content Fragment Models

Sport

Organization

Conference

Division

Team

Player

Content Fragments

Baseball		Basketball		Football	
MLB		NBA		NFL	
National	American	Eastern	Western	National	American
East	East	Atlantic	Northwest	East	East
Central	Central	Central	Pacific	North	North
West	West	Southeast	Southwest	South	South
				West	West
...		
...		

DEMO

GITHUB PROJECT

<https://github.com/Bounteous-Inc/aem-cf-extras>

DOCS

<https://docs.adobe.com/content/help/en/experience-manager-learn/sites/content-fragments/content-fragments-delivery-feature-video-use.html>

<https://www.graphql-java.com>