Open-Source Collaboration Tools for Alfresco

ENHANCING COLLABORATION EXPERIENCE WITH ALFRESCO

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Developer Evangelist

February 5, 2023

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AGENDA

- Alfresco as CSP
- Apps & Integration APIs
- Online Editing Collaboration Tools

  LibreOffice, Collabora Online, ONLYOFFICE
- Final Thoughts

ALFRESCO AS CSP

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> A *content services platform* (**CSP**) is a set of *services* and *microservices*, embodied as an integrated product suite and applications that share common **APIs** and **repositories**. A CSP exploits diverse **content types** and serves multiple constituencies and numerous use cases across an organization.

Formerly **ECM**

Gartner

2014

ALFRESCO > OPEN SOURCE

- Open-Source license **LGPL3**
  - You may copy, distribute and modify the software if modifications are described and licensed for free under LGPL. Derivatives can only be redistributed under *LGPL*, but applications that use the library don't have to be.
- Open-Source resources
  - Source code https://github.com/alfresco
  - Maven Repository https://nexus.alfresco.com/nexus
  - Forums & Blog Posts https://hub.alfresco.com
  - Official Documentation https://docs.alfresco.com
  - Community Support Alfresco Discord Channel (*via invitation*)
  -

ALFRESCO > OVERVIEW

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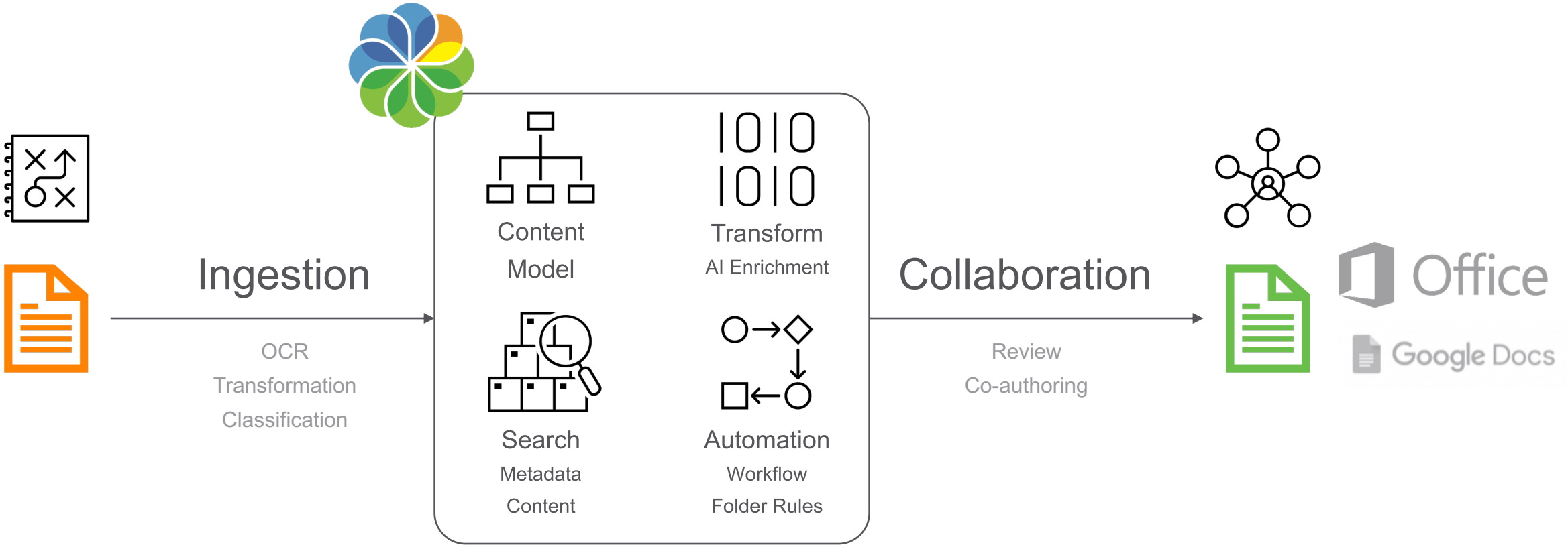
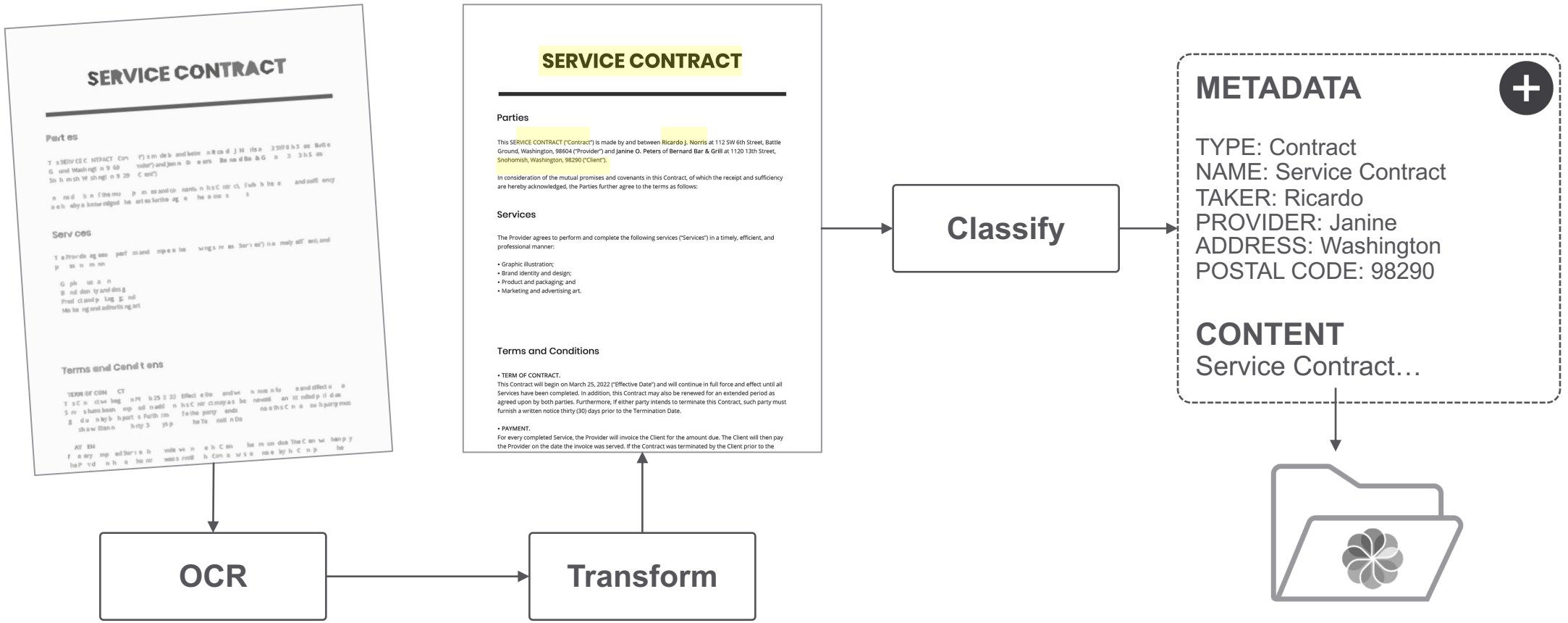


FOSDEM

ALFRESCO > INGESTION



ALFRESCO > CONTENT MODEL

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TYPE – List of String
Contract, Expense, Application

NAME – String

TAKER – String

PROVIDER – List of String
Janine, Stewart, Martha

ADDRESS – String
(\d{1,}) [a-zA-Z0-9\s]+(\.)?

POSTAL CODE – Number
\d{5}

CONTENT – Text

Definition

Type

Name

Taker

Provider

Address

Postal Code

UI Form

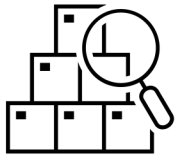
Versioning

Content

Metadata

FOSDEM

ALFRESCO > SEARCH



Permissions

Users

Groups

Free | term

FTS | TYPE:Contract

CMIS | SELECT * FROM cmis:document

Facets

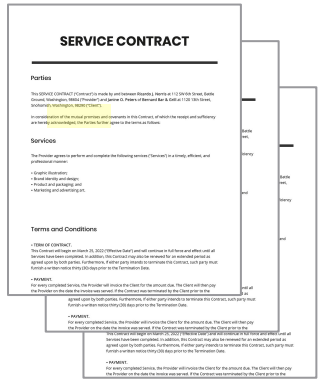
Type
[] Contract (2)
[] Expense (1)

Results

Document
Additional data

Document
Additional data

Document
Additional data



ALFRESCO > TRANSFORM

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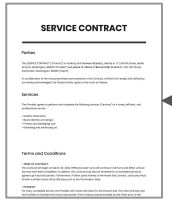


Renditions

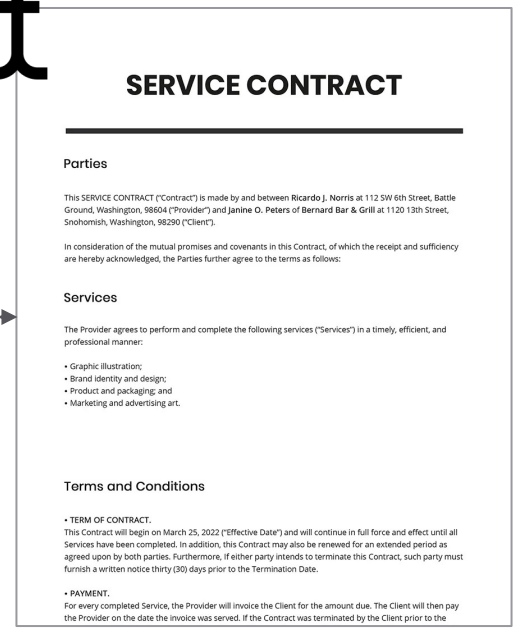
Thumbnail

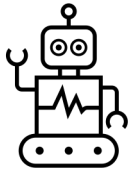
Page Extraction

NLP

Entity Recognition

Classification

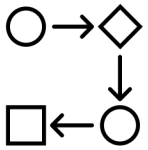


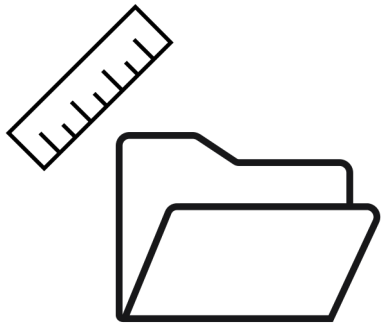


Transformations

Mimetype

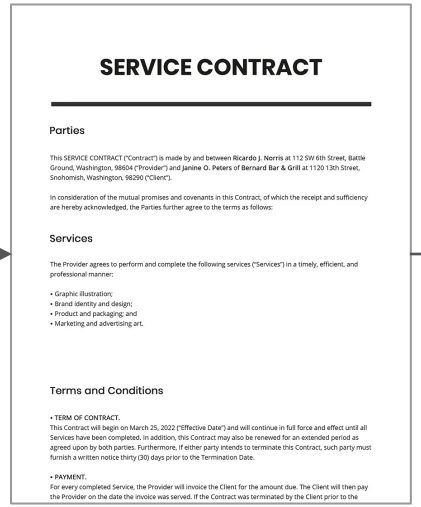
ALFRESCO > AUTOMATION





Folder Rule

For every document of TYPE “Contract”, start the approval workflow



SERVICE CONTRACT

Parties

This SERVICE CONTRACT ("Contract") is made by and between **Ricardo J. Norris** at 112 SW 6th Street, Battle Ground, Washington, 98604 ("Provider") and **Janine O. Peters** of **Bernard Bar & Grill** at 1120 13th Street, Snohomish, Washington, 98290 ("Client").

In consideration of the mutual promises and covenants in this Contract, of which the receipt and sufficiency are hereby acknowledged, the Parties further agree to the terms as follows:

Services

The Provider agrees to perform and complete the following services ("Services") in a timely, efficient, and professional manner:

- Graphic illustration;
- Brand identity and design;
- Product and packaging; and
- Marketing and advertising art.

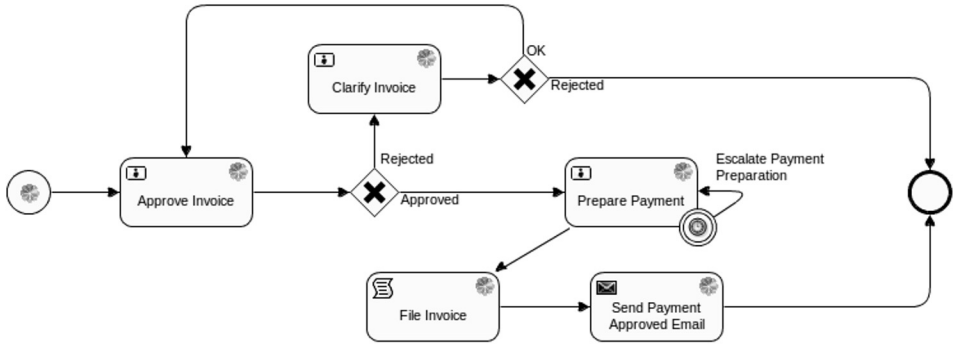
Terms and Conditions

- TERM OF CONTRACT.

This Contract will begin on March 25, 2022 ("Effective Date") and will continue in full force and effect until all Services have been completed. In addition, this Contract may also be renewed for an extended period as agreed upon by both parties. Furthermore, if either party intends to terminate this Contract, such party must furnish a written notice thirty (30) days prior to the Termination Date.

- PAYMENT.

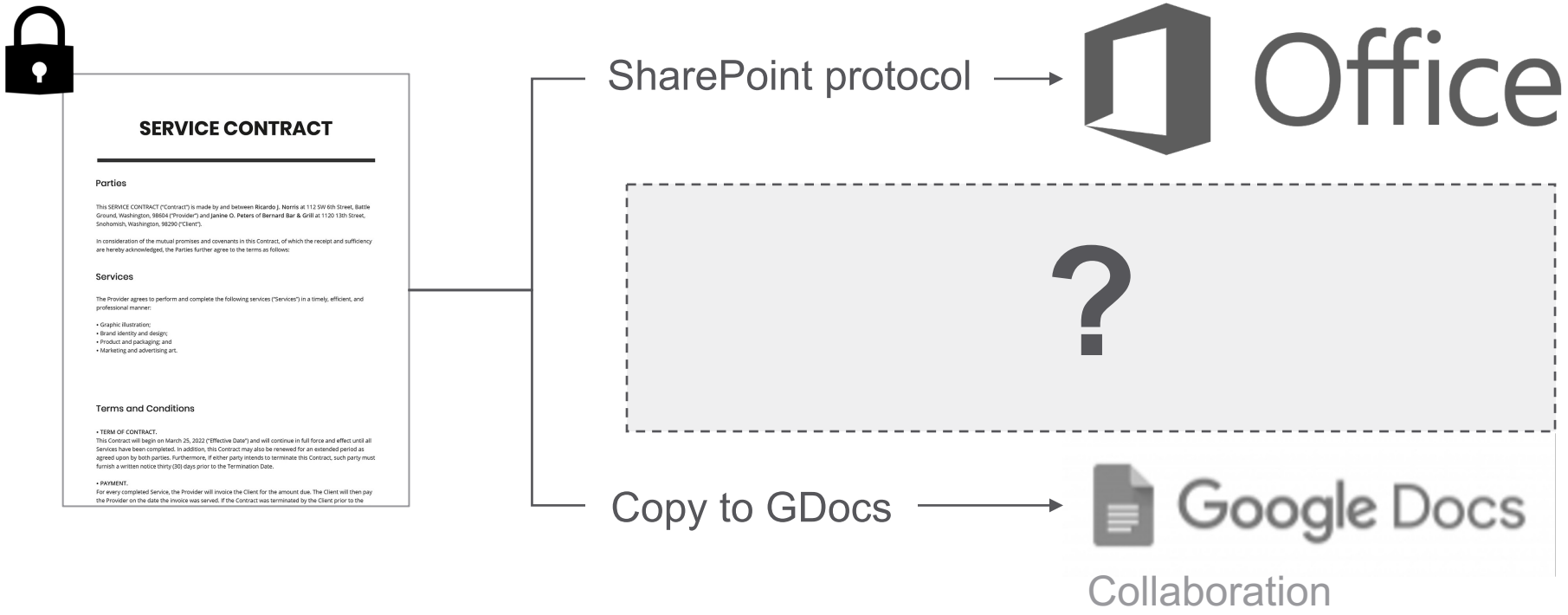
For every completed Service, the Provider will invoice the Client for the amount due. The Client will then pay the Provider on the date the invoice was served. If the Contract was terminated by the Client prior to the



Workflow BPMN 2.0

FOSDEM

ALFRESCO > COLLABORATION



APPS & INTEGRATION APIS

APPS

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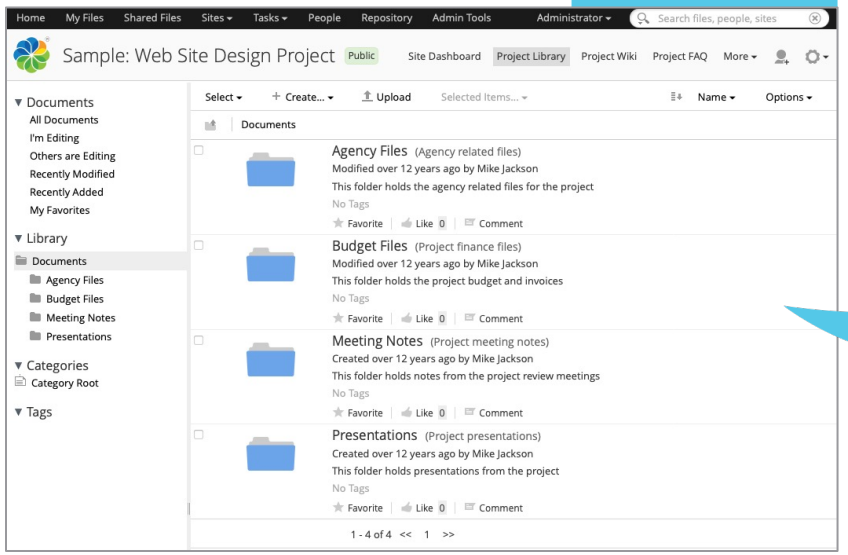
Alfresco Share Addon
Maven Java Project

Share



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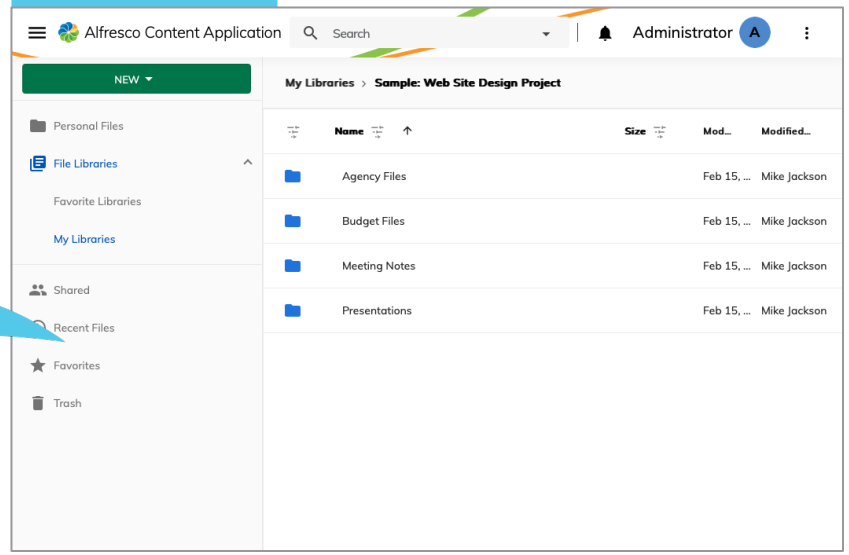
ADF

Alfresco UI Extension
Angular Component



<#FREEMARKER>

dojo toolkit

yui

ANGULAR

FOSDEM

APPS

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Alfresco **Share** Addon

- https://docs.alfresco.com/content-services/latest/develop/share-ext-points/
  - **Declarative** - XML configuration that requires no coding
  - **Programmatic** - Code that adds new functionality
  - **Override** - Code that overrides default behaviour of Share

Extension Point Name	Description	Category
Share Configuration ↓	A lot of customizations to the Share UI can be done via configuration, get familiar with what can be achieved with configuration before attempting any programming customizations.	Declarative
Form Controls ↓	When defining a form the form controls for each field controls how the field is displayed and handled.	Programmatic
Form Processors ↓	Form processors control the persistence of form data and the generation of the form template for a specific item such as a node, task, type, or action. Custom Form Processors can be implemented to support a new kind of item.	Programmatic
Form Processor Filters ↓	Form filters can be used to intercept a form processor's persist form data call and generate form template call. "Before" and "After" method hooks are available in the filter to control form data persistence and form template generation.	Programmatic
Form Field Validation Handlers ↓	A validation handler is a small JavaScript function that gets called by the forms runtime when a field value needs to be validated.	Programmatic
Evaluators ↓	Component visibility in the Share user interface can be controlled by Evaluators.	Declarative and Programmatic
Site Presets ↓	A site preset contains the initial configuration for a Share site, such as the site Dashboard layout.	Declarative
Share Themes ↓	The Share web application comes with a number of themes that can be used to set the look and feel of the application. It is also possible to create your own custom UI themes.	Declarative
Document Library ↓	The Document Library page has several extension points that can be used to customize its behavior, such as actions.	Declarative and Programmatic

APPS

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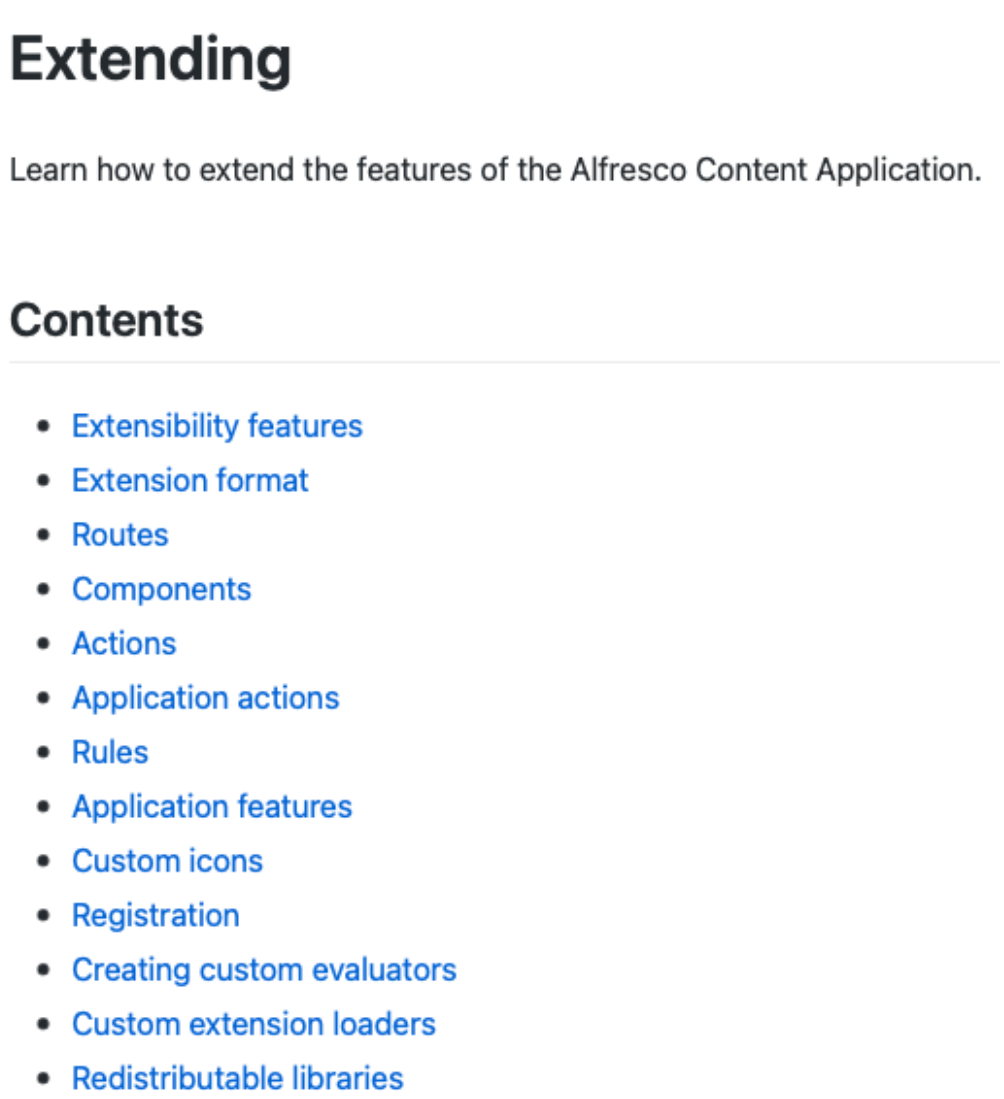
Alfresco **UI** Extension

- https://docs.alfresco.com/digital-workspace/latest/develop/extensions/
  - **Overwrite** or disable extension points
  - **Change** rules, actions or any visual element
  - **Register** new application routes
  - **Register** new rule evaluators, components, guards



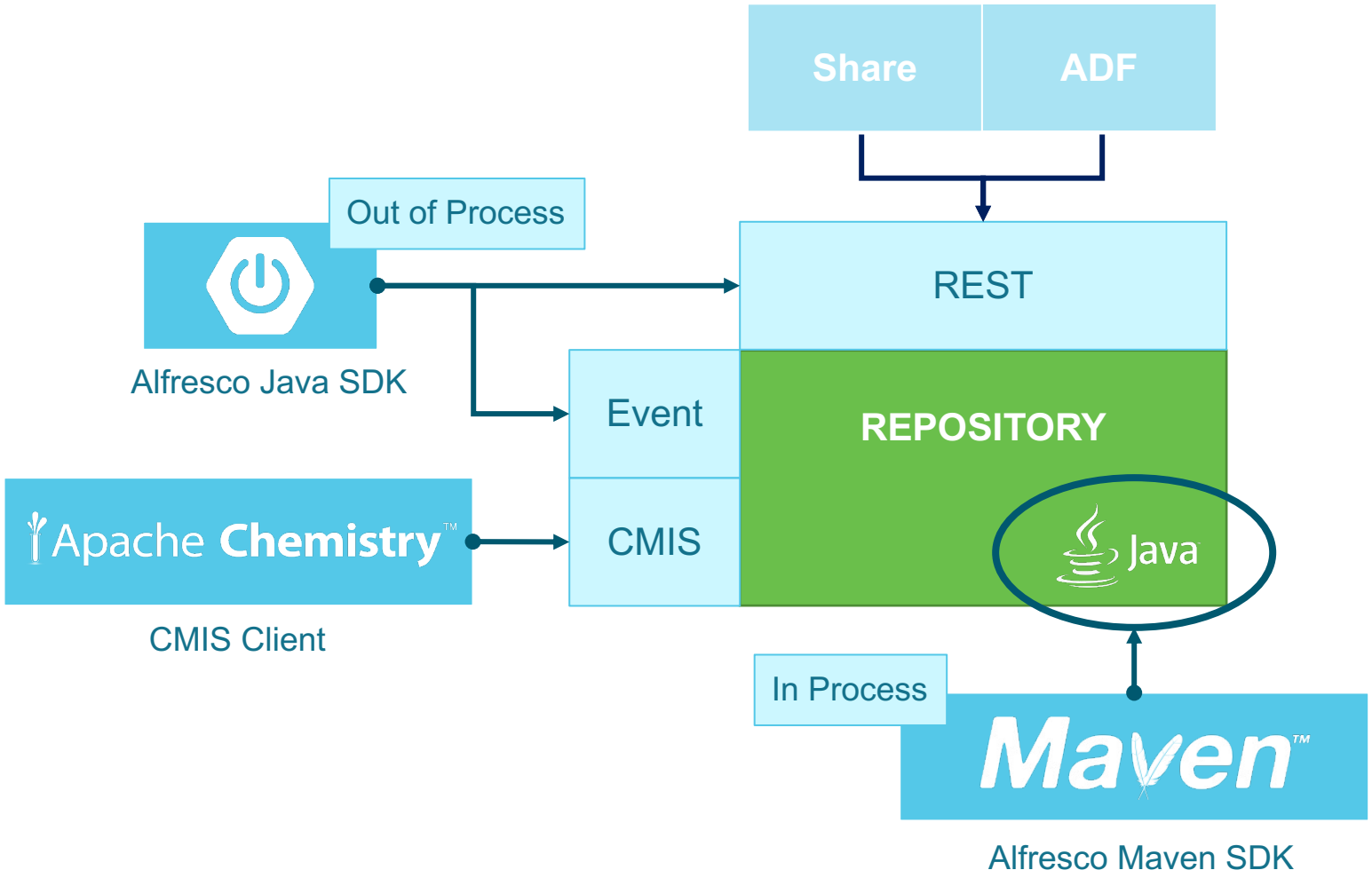
Extending

Learn how to extend the features of the Alfresco Content Application.

Contents

- Extensibility features
- Extension format
- Routes
- Components
- Actions
- Application actions
- Rules
- Application features
- Custom icons
- Registration
- Creating custom evaluators
- Custom extension loaders
- Redistributable libraries

INTEGRATION APIS



INTEGRATION APIS

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Out-Of-Process – Events & REST API

- https://docs.alfresco.com/content-services/latest/develop/oop-ext-points/
- *Cloud Events* specification
  - https://github.com/cloudevents/spec/blob/v1.0/spec.md
- *OpenAPI* specification
  - https://spec.openapis.org/oas/v3.1.0
  - https://api-explorer.alfresco.com/api-explorer/

INTEGRATION APIS

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In-Process - Maven

- https://docs.alfresco.com/content-services/latest/develop/repo-ext-points/
  - Content Models
  - Add REST API endpoints
  - Behaviours for policies
  - Transformations & Metadata extract
  - Scheduled Jobs

Content Model↓	Content modeling provides a foundation for structuring and working with content. It is used to create a domain specific model that can be used to classify content and refine the search capabilities.
Data Lists↓	Data lists are a useful feature available in sites. They can be used to keep records data. This is metadata that does not necessarily have any file content associated with it. It can be for example a to-do list or an event list.
Actions↓	Actions are Spring beans that act upon a content node. You develop actions using Java and register them with the repository through a Spring configuration file. Actions provide a place to locate reusable business logic.
Web scripts↓	Web scripts provide the ability to create custom REST APIs. A web script is implemented in XML, JavaScript, and FreeMarker. Java can also be used to implement a web script if the business logic requires it. If written in JavaScript and FreeMarker it is possible to write new extensions that do not require a server restart to take effect.
JavaScript root objects↓	The JavaScript root object collection provides a ready made set of objects you can access from your web scripts. These objects provide access to the repository content. It is also possible to extend the platform with new custom JavaScript root objects that can be used in for example Web Scripts controllers.
Behaviors / policies↓	Behaviors are logic that is tightly coupled to a repository event, such as adding content. Examples of out-of-the-box mechanisms that employ behaviors are versioning and auditing. Custom behaviors can be implemented to support features such as automatically adding a unique ID property to a content node when added to the repository, or automatically applying metadata attached to a folder to content stored in the folder.
Bootstrap content↓	Most content management solutions require some content to be available before the system is going live. This can be users, groups, files and folders, sites, and so on. This content can be imported into the repository using a bootstrapping procedure.
Permissions (Custom Roles)↓	Permissions and their groupings are defined in XML configuration files. The default files are found in the distribution configuration directory as permissionDefinitions.xml and sitePermissionDefinitions.xml. This configuration can be replaced or extended to create new roles.

INTEGRATION APIS

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CMIS - Standard

- https://docs.alfresco.com/content-services/latest/develop/reference/cmis-ref/
  - CMIS Standard specification
    - https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=cmis
  - REST API Bindings:
    - AtomPub (xml), Browser (JSON)
  - Services:
    - Navigation, Object, Multi-filing, Discovery, Change
    - Versioning, Relationship, Policy, Permissions

CMIS basics

CMIS is built around a number of concepts. This informat

- CMIS repository↓: At the root of the CMIS model an and its store of metadata, content, and indexes.
- CMIS query↓: A CMIS query is based upon SQL-92.
- CMIS services↓: CMIS provides services that you c
- CMIS object model↓: The CMIS object model is simi policy, document, and folder objects.
- CMIS bindings↓: Clients can communicate with a CI and in CMIS 1.1, the Browser bindings. CMIS reposito

ONLINE EDITING COLLABORATION TOOLS

LIBREOFFICE

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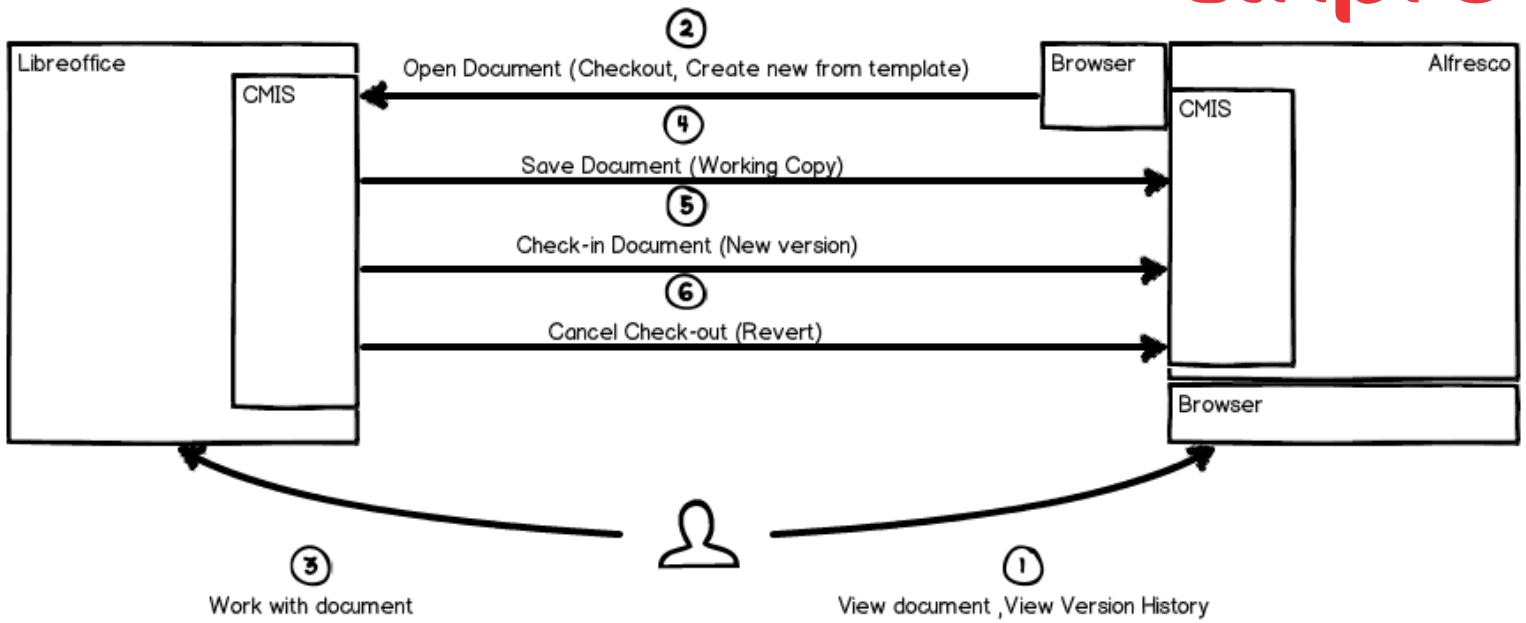
- Using WebDAV or CMIS protocol
  - Check out a document
  - Editing
  - Check in a document

Redpill Linpro



Not an easy process!

https://www.redpill-linpro.com/en/use-case-libre-office-alfresco-integration

COLLABORA ONLINE

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https://github.com/CollaboraOnline/alfresco-collabora-online

Collabora Online

MAGENTA
open source it

jeci

https://github.com/magenta-aps/alfresco-repo-libreoffice-online-module

https://github.com/jeremie-lesage/libreoffice-online-repo

arawa

https://github.com/arawa/libreoffice-online-repo

COLLABORA ONLINE

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https://github.com/CollaboraOnline/alfresco-collabora-online

- Provides Online Editing for Alfresco using Collabora Online
  - Many users can open the same document at the same time
- Uses WOPI (Web Application Open Platform Interface Protocol)
  - *Collabora Online* is opened as an **iFrame** in Alfresco
- Provides
  - Alfresco Share Addon
  - Alfresco UI Extension (for ACA)
  - Alfresco Repository Addon

COLLABORA ONLINE

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https://github.com/aborroy/alfresco-collaboration-tools/tree/main/collabora

Docker Compose

Use *public URLs* for Collabora and Alfresco

```
alfresco:
  environment:
    JAVA_OPTS: >-
      -Dcollabora.public.url=http://192.168.1.143:9980/
      -Dalfresco.public.url=http://192.168.1.143:8080/alfresco/
```

Use *Collabora Online Development Edition*

```
code:
    image: collabora/code
    environment:
      - password=admin
      - username=admin
      - extra_params=--o:ssl.enable=false
    ports:
      - 9980:9980
```

COLLABORA ONLINE

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https://github.com/aborroy/alfresco-collaboration-tools/tree/main/collabora

Alfresco Docker Images

- Deploy `collabora-platform-extension-0.6.0.jar` in Alfresco Repository
- Deploy `collabora-share-extension-0.6.0.jar` in Share App
- Additionally, `collabora-aca-extension` can be deployed to Alfresco Content App

DEMO TIME!

ONLYOFFICE

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Parashift

https://github.com/cetra3/onlyoffice-alfresco

ONLYOFFICE

https://github.com/ONLYOFFICE/onlyoffice-alfresco

ONLYOFFICE

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- https://github.com/ONLYOFFICE/onlyoffice-alfresco
- Provides Online Editing for Alfresco using ONLYOFFICE
  - Many users can open the same document at the same time
- Uses a custom protocol that updates Alfresco Document after *10 seconds* of inactivity in ONLYOFFICE
  - *ONLYOFFICE* is opened in a new browser Window/Tab
- Provides
  - Alfresco Share Addon
  - Alfresco Repository Addon

ONLYOFFICE

https://github.com/aborroy/alfresco-collaboration-tools/tree/main/onlyoffice

Docker Compose

Use *OnlyOffice Document Server* with JWT option enabled

```
onlyoffice-documentserver:
  image: onlyoffice/documentserver
  environment:
    - DB_TYPE=postgres
    - DB_HOST=onlyoffice-postgresql
    - DB_PORT=5432
    - DB_NAME=onlyoffice
    - DB_USER=onlyoffice
    - AMQP_URI=amqp://guest:guest@onlyoffice-rabbitmq
    - JWT_ENABLED=true
    - JWT_SECRET=odLFzazK81bNSu5MI90W
onlyoffice-rabbitmq:
  image: rabbitmq
onlyoffice-postgresql:
  image: postgres:9.5
  environment:
    - POSTGRES_DB=onlyoffice
    - POSTGRES_USER=onlyoffice
    - POSTGRES_HOST_AUTH_METHOD=trust
```

ONLYOFFICE

https://github.com/aborroy/alfresco-collaboration-tools/tree/main/onlyoffice

Alfresco Docker Images

- Deploy `onlyoffice-integration-repo.jar` in Alfresco Repository
  - Include ONLYOFFICE settings in `alfresco-global.properties`

```
onlyoffice.url=http://192.168.1.143/
onlyoffice.jwtsecret=odLFzazK81bNSu5MI90W
```

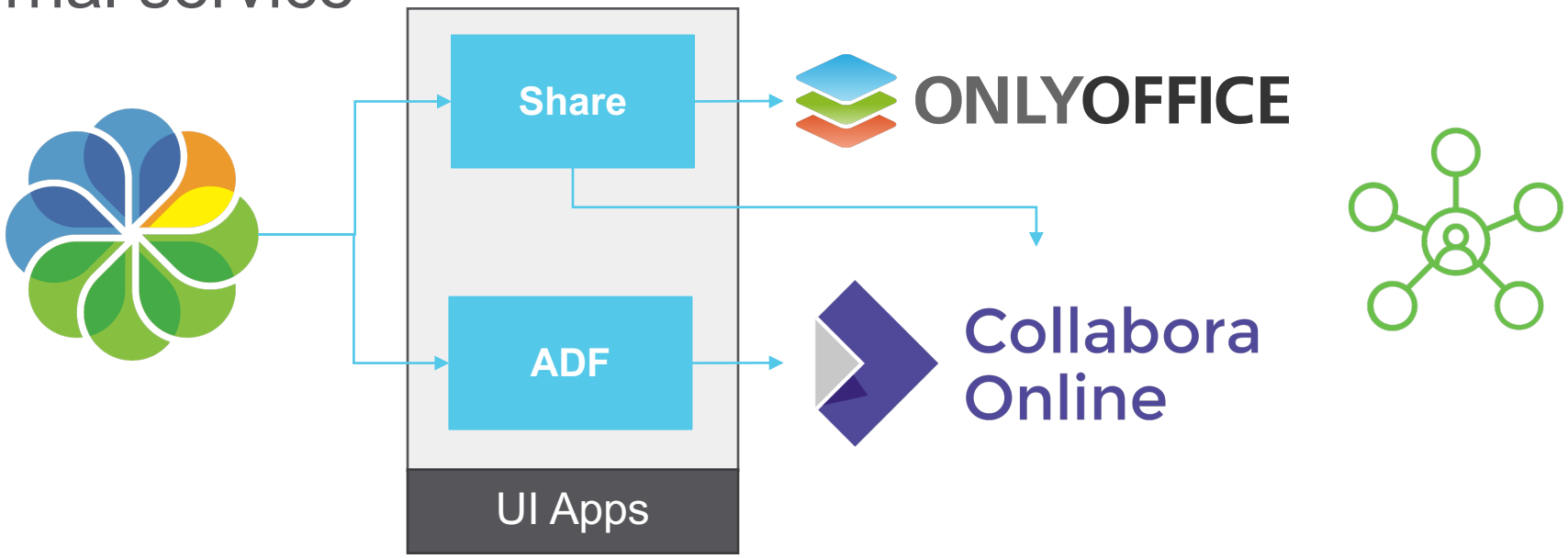
- Deploy `onlyoffice-integration-share.jar` in Share App
- No extension is available for Alfresco Content App

DEMO TIME!

FINAL THOUGHTS

FINAL THOUGHTS

- Alfresco Community provides **Content Service Platform** features for Ingestion, Content Classification, Searching, Automation & Transformation
- However, **collaborative editing** must be included by using an external service



FINAL THOUGHTS

- Thanks to every contributor that made this real!

> “Are you planning to integrate your service with **Alfresco**?

We’re here to help!

Angel.FernandoBorroy@hyland.com