

January 2023 Webinar Customizing Jahia UI using React Components

Speakers

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Agenda

Intro

Overview & Examples

Concepts

Live Coding of a content editor selector type



Jahia 8 UI

- Most of Jahia 8 UI is using React 16 instead of GWT
- Make it possible to extend the UI in a lot of ways
- Make it possible to modify the provided UI
- Make it all possible from modules / modular
- Use latest front-end technologies:





Examples



Adding a new panel in jContent



- Navigation entry is a React component
- The main display is a full React app using jahia-moonstone design system
- The app is built automatically when the module is installed
- Using yarn webpack react apollo
- Nice code sample for our datatable component usage

See on Github

See on the store



Adding a new panel in jExperience



- Navigation entry is a React component
- The main display is an iFrame calling Elastic Kibana dashboard



Adding a tab in Content Editor

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Ê									*	Last 1 day	/		Show dates	ට <u>Refresh</u>
	;	scop	e.keywo	ord: digi	tall × ta	rget.prop	erties.pageInfo.pa	agePath.keywc	ord: /sites/d	igitall/home $ imes$	+ Add filter			
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• The main display is an iframe calling an Elastic Kibana dashboard

Adding an action in Content Editor

English V Zedit Advanced options	I	
CONTENT		^
NEWS ENTRY		Movies
News Title Required This is your news title It will be displayed as the Movies Can Determine Your Success	De Copy "News Title" to other languages The value of this field will be copied to all other languages, overwriting the current values.	E Accordin Copy to other languages rct
	Add all Remove all 5 languages selected	
	Q. Filter languages	
System name Required Shared by all lan ^{ity}	 Q. Filter languages ✓ Deutsch ✓ Italiano 	
System name Required Shared by all lan ^{ity} 32 characters maximum. Used to build the URL for p movies-can-determine-your-succes	Q. Filter languages Q. Deutsch Q. italiano Q. français Q. español Q. Nederlands	
System name Required Shared by all lan ^{ity} 32 characters maximum. Used to build the URL for p movies-can-determine-your-succes	 Q. Filter languages Q. Deutsch Q. italiano Q. français Q. español Q. Nederlands 	

Adding a new input type in Content Editor

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↑	English 🗸 📝 Edit 🌼 Advanced				
Ê	CONTENT				
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- The input field and the picker are • rendered by a React app
- The picker browses the DAM using the • DAM's rest api capabilities
- EDP is used to register in real time the • selected image

See on Github

See on store

To know more, have a look at a dedicated video in the last section of our partner portal



Building and packaging



Module building & packaging



Java Javascript johio

frontend-maven-plugin

- Acts as a bridge between Maven builds and Yarn/NPM builds
- Will automatically install the configured NodeJS/NPM/Yarn versions
- Will run npm or yarn install to download dependencies & build project

<plugin>

```
<proupId>com.github.eirslett</proupId>
<artifactId>frontend-maven-plugir</artifactId>
<version>1.6</version>
<executions>
    <execution>
        <id>npm install node and yarr</id>
        <phase>generate-resources</phase>
        <qoals>
            <goal>install-node-and-yarrk/goal>
        </goals>
        <configuration>
            <nodeVersion>16.15.0</nodeVersion>
            <yarnVersion>1.22.10</yarnVersion>
        </configuration>
    </execution>
    <execution>
        <id>yarn install</id>
        <phase>generate-resources</phase>
        <goals>
            <goal>yarn</goal>
        </goals>
    </execution>
    <execution>
        <id>yarn post-install</id>
        <phase>generate-resources</phase>
        <goals>
```

Yarn

- (Javascript) Package manager similar to NPM
- Optimized for speed & build reliability
- NPM has evolved to include some of Yarn improvements

Features	سريت	B
Generating Lock Files	Automatically generated as package-lock.json	Automatically generated as yarn.lock
Using Workspaces	Supported	Supported
Remote Scripts	Supported, using the npx command	Supported, using the yarn dlx command
Plug'n'Play	Not supported	Uses a single .pnp.cjs file instead of the node_modules folder
Zero Installs	Not supported	Uses the .pnp.cjs file to quickly reinstall packages from the offline cache
License Check	Not supported	Checks each package license while downloading



WebPack



jahia

Webpack configuration

// const requires module.exports = (env, argv) => { let config = { entry: // Javascript app entry points for dependency analysis output: // Javascript app output bundle locations include: [path.join(dirname, 'src')], plugins: new ModuleFederationPlugin({ library: { type: "assign", name: "appShell.remotes.dashboard" }, remotes: { shared

Module federation, makes it possible to build "modules" with Webpack that will avoid repackaging code and build reusable libraries instead

Learn more about module federation



Focus on the Component Registry



Javascript UI Component registry

- Javascript Dynamic registry of UI components
- Inspired by OSGi services registry used in the Java modules
- Jahia navigation uses component registry to know what to display
- jContent uses registry to know which actions to display for the current user
- Content Editor uses registry to know how to render fields
- Other components use registry components to be extendable/modifiable
- Accessible through a Javascript import statement or globally using window.jahia.uiExtender.registry

class Registry {

addOrReplace(type, key); add(type, key); get(type, key); remove(type, key); find(filters); let registry = new Registry(); export {registry};

Main component registry types

- Common types are:
 - action: use to add an UI action in content editor
 - selectorType : add a selector type in content editor
 - adminRoute : add a route in the administration
 - route : add a route in for a custom panel
 - primary-nav-item : add an entry in the primary level navigation
 - \circ $\,$ callback : adds a function to be called when the app shell initializes
- Modules may add their own types for their own needs



Component registry examples

• Dashboard navigation entry

<pre>import {registry} from '@jahia/ui-extender';</pre>	
<pre>registry.add('primary-nav-item', 'dashboardGroupItem', targets: ['nav-root-tasks:1'], render: () => <dashboardgroup></dashboardgroup></pre>	

• jContent navigation entry

import {registry} from '@jahia/ui-extender';
registry.add('primary-nav-item', 'jcontentGroupItem', {
 targets: ['nav-root-top:2'],
 requiredPermission: 'jContentAccess',
 render: () => <CmmNavItem/>
});



New at Jahia.com

Registry targets



- Allows registration of components in multiple targets
 - Allows sorting components within targets

...registry.find({type: 'action', target: 'headerPrimaryActions'}).map(action => action.key),

let contentActions =registry.find({type: 'action', target: 'contentActions'});



Navigation iFrame URLs

- Use in Jahia for:
 - Site settings
 - Server settings
 - jExperience UI

```
registry.addOrReplace('jExperienceMenuEntry', 'siteDashboard', {
   targets: ['siteMetrics:1'],
   id: 'siteDashboard',
   labelKey: 'jexperience:jexperience.siteMetrics.siteDashboard.title,'
   isSelectable: true,
   iFrameUrl: window.contextJsParameters.contextPath +
   '/cms/editframe/default/$lang/sites/$site-key.marketing-10-dashboard.html',
    treeItemProps: {
        'data-sel-role': 'siteDashboard'
   });
```



Component registry debugging

> jahia.uiExtender.registry.find({type: "selectorType"})

- < v (17) [{--}, {-
 - ▶ 0: {multiple: false, type: 'selectorType', key: 'KibanaTargetField', cmp: f}
 - ▶ 1: {supportMultiple: true, type: 'selectorType', key: 'AutomatedTags', cmp: f}
 - > 2: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.category.displayValue', properties: Array(2), supportMultiple: true, cmp: f, ...}
 - 3: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.tag.displayValue', properties: Array(2), supportMultiple: true, cmp: f, ...}
 - 4: {dataType: Array(3), labelKey: 'content-editor:label.contentEditor.selectorTypes.text.displayValue', properties: Array(2), supportMultiple: false, cmp: f, ...}
 - 5: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.textArea.displayValue', properties: Array(2), supportMultiple: false, cmp: f, ...}
 - 6: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.richText.displayValue', properties: Array(2), supportMultiple: false, cmp: f, ...}
 - 7: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.color.displayValue', properties: Array(2), supportMultiple: false, cmp: f, ...}
 - 8: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.dateTimePicker.displayValue', properties: Array(2), supportMultiple: false, cmp: f, ...}
 - 9: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.datePicker.displayValue', properties: Array(2), supportMultiple: false, cmp: f, ...}
 - 10: {dataType: Array(1), containerStyle: 'uvmWULEguySIgQHSuBDaUg==', labelKey: 'content-editor:label.contentEditor.selectorTypes.checkbox.displayValue', properties: Array(2), cmp
 - 11: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.picker.displayValue', properties: Array(2), type: 'selectorType', resolver: f, ...}
 - 12: {dataType: Array(1), supportMultiple: true, labelKey: 'content-editor:label.contentEditor.selectorTypes.dropdown.displayValue', properties: Array(2), cmp: f, ...}
 - ▶ 13: {dataType: Array(1), supportMultiple: false, type: 'selectorType', key: 'SystemName', cmp: f}
 - ▶ 14: {dataType: Array(1), labelKey: 'content-editor:label.contentEditor.selectorTypes.multipleLeftRightSelector.displayValue', properties: Array(2), supportMultiple: true, cmp: f,
 - ▶ 15: {supportMultiple: false, type: 'selectorType', key: 'contentTypeProperties', cmp: f}
 - ▶ 16: {supportMultiple: false, type: 'selectorType', key: 'CodeMirror', cmp: f}
 - length: 17
 - [[Prototype]]: Array(0)

Loading & routing



Javascript UI Registration

or how modules declare new Javascript scripts to be used in UI



Javascript UI Loading

or how Jahia knows which Javascript files to load on a page



Javascript UI routing



https://v5.reactrouter.com/web/guides/guick-start

Leveraging Jahia features



Leverage UI features

Custom components can leverage

- Authentication
- Permissions
- (Minor) Transparent upgrades of Jahia UI
- Component registry
- Existing Jahia components
- Maven packaging
- Internationalization
- Content Editor form overrides

```
import {registry} from
'@jahia/ui-extender';
registry.add('primary-nav-item',
'jcontentGroupItem', {
   targets: ['nav-root-top:2'],
   requiredPermission: 'jContentAccess',
   render: () => <CmmNavItem/>
});
```



Moonstone: Jahia UI Design system

Storybook	Canvas Do	ocs @ @ Q	B # D		
Q Find components 7			Header		
* C O M P O N E N T S					
- D Accordion					
Default				Content	
Default Opened					
Controlled		s			
Reversed	Pri	ecc			
- Badge	ma	nd			
Breadcrumh	2	ary			
Button	lavi	Na			
ButtonGroup	igat	vig			
	ion	atic			
> Chip		ā			
B Collapsible					
Dropdown					
> Header					
B IconTextIcon					
B input					
B ListGentor					
D Loader					
	Actions Ac	ccessibility Contro	ls		
> B Paper					
PrimaryNav					
B PrimaryNavItem					
B PrimaryNavItemsGroup					
RadioGroup					
ResizableBox					
B Separator					
Tab					
B Table					
> TreeView					
TLAVOUTE ^					

https://jahia.github.io/moonstone/

- Still under active development
- APIs may still evolve, but mostly stable
- Not covered by Jahia Support

Internationalization

Component JSX

import React from 'react'; import {useTranslation} from 'react-i18next'; import {PrimaryNavItem} from '@jahia/moonstone'; import Constants from './Dashboard.constants'; export const DashboardGroup = () => { const {t} = useTranslation('jahia-dashboard'); ...

src/main/resources/javascript/locales/en.json





Content Editor Form overrides



jahia

Examples

- Remove fields from content editor UI
- Re-order fields in content editor
- Replace content editor field selector types

"name": "jnt:page", "priority": 1.1, "fields": ["name": "j:templateName", "target": { "rank": -1 }]



Development tips & tricks



Frameworks & versions

- Check which library are registered and where they are coming from
 - In browser Javascript console inspect jahia.webpackShareScopes.default
- Check which version is actually loaded using
 - In browser Javascript console, execute:
 Object.entries(jahia.webpackShareScopes.default['@jahia/moonstone']).find(f => f[1].loaded)

vwebpackShareScopes: Object
vdefault:
 @apollo/client: {3.5.10: {...}}
 @apollo/react-common: {3.1.4: {...}}
 @apollo/react-components: {3.1.5: {...}}
 @apollo/react-hooks: {3.1.5: {...}}
 @jahia/data-helper: {1.0.4: {...}, 1.0.3: {...}, 1.0.6: {...}, 1.0.7:
 @jahia/design-system-kit: {1.1.11: {...}}
 @jahia/icons: {1.1.1: {...}, 1.1.2: {...}}
 @jahia/moonstone: {1.5.3: {...}, 1.6.2: {...}, 2.4.20: {...}, 2.3.1: {
 @jahia/react-material: {3.0.3: {...}, 3.0.5: {...}}

JS Developer tools

- Chrome Dev Tools
- React Developer Tools
- Redux Tools
- webpack development build (default) vs production
- Jahia Deploy Free coding & webpack watch
- Apollo GraphQL Chrome Tools



"scripts": {

```
"test": "env-cmd --no-override jest",
"testcli": "jest",
"build": "yarn lint:fix && yarn webpack",
"build:nolint": "yarn webpack",
"dev": "yarn webpack --watch",
"watch": "yarn webpack --watch",
"webpack": "node --max_old_space_size=2048 ./node_modules/webpack/bin/webpack.js",
"build:analyze": "yarn build --analyze",
"build:production": "yarn build --mode=production",
```

Steps to build a UI extension

- 1. Create/copy/clone a Maven project
- 2. Configure Webpack using webpack.config.js
- 3. Configure package.json
- 4. Add init.js file to register your components
- 5. Implement your components
- 6. Register them in the component registry
- 7. If your components are using in the content editor forms, provide JSON override files



Live coding



Context

Marketing team wants to use Jahia to create and deliver a Quiz



Context

Content definition

[game4nt:qna] > jnt:content, ...

- game4:question (string) mandatory internationalized
- game4:help (string) internationalized
- game4:answers (string) mandatory multiple internationalized

- ...

uestic	on & Answers	
Que	stion Required	
W	hat would be the incentives for buying an EV?	
Help		
М	ultiple choices allowed	
Ans	wers Required	
H	{"isAnswer":true,"label":"Installation of the charging station for free","cdpValue":"free charging station"}	×
:	{"isAnswer":true,"label":"Nothing","cdpValue":"nothing"}	×

Default selector type for a multivalues string property



Context

Content definition

Answers = ['{ "isAnswer":true, "label":"Nothing", "cdpValue":"nothing" }']

[game4nt:qna] > jnt:content, ...

- game4:question (string) mandatory internationalized
- game4:help (string) internationalized
- game4:answers (string) mandatory multiple internationalized
- ...



Default selector type for a multivalues string property



What we want to achieve

Add a new selector type in the Content Editor form to properly display and contribute a property value stored as a stringify json object.

Question & Anourors

		Ques	uo	a Answers				
)uesti	on & Answers	Qu	Jes	stion Required				
Que	estion Required	Ŋ	What would be the incentives for buying an EV?					
W	What would be the incentives for buying an EV?			Help				
Lab	_	1	Mu	ultiple choices allowed				
нер		An	ารง	wers Required				
1.1				Expected Answer	free charging station			
Ans	wers Required	:		Installation of the charging station for free				
H	{"isAnswer":true,"label":"Installation of the charging station for free","cdpValue":"free							
:	{"isAnswer":true,"label":"Nothing","cdpValue":"nothing"}			Expected Answer	nothing			
		::		Nothing				

Default selector type for a multivalues string property

Custom selector type to manage the QnA stringify json object

Adding new type of input in the CEditor form

Do you create personalized mi	crosites for Sales to share with target	accounts?
Help		
Answers Required		
Answers Required	false	
Answers Required Expected Answer No	false	
Answers Required Expected Answer No	false	

- The input field is render by a react app
- Content stored in the Answers property is a set of json String which can be used as it is by the quiz react app

See on Github

See on the store



What we want to achieve

UI Component HTML architecture

Expected Answer	free charging station
Installation of the charging station	n for free

<Grid container>

<Grid item sm={6}> <Toggle /> </Grid> <Grid item sm={6}> <Input /> </Grid> <Grid item> <Input /> </Grid> </Grid> import {Grid} from '@material-ui/core'
import {Input, Toggle} from '@jahia/design-system-kit'



How to proceed

Live coding steps to create and register a React component for Content Editor

- Create your react component in a Jahia module : **QnAJsonCmp.jsx**
- Create a file to register your component in the jahia UI : init.js
- Create and configure a file to build the component using the ModuleFederationPlugin : webpack.config.js (already configured in this demo)
- Informs Jahia about your new remote entry : package.json
- Configure the **pom.xml** to build and deploy your app (already configured in this demo)
- Create a json file to override the default input text used to render the string property : game4nt_qna.json

Time to code

🔳 Project 👻	⊕ <u>≅</u> <u>*</u> ⇔ -	률 index.j	is 🗵 🝰 index.js 🛛	😹 QnAJsonCmp.jsx 🛛	🖞 definitions.cnd ×	률 webpack.shared.js	× 👩 packa 🗸
に .gitignore							Indexing
V.stvlelintrc.ison			const QnAJso	nCmp = ({field, id,	value, onChange	, classes}) => {	
> Coverage			const max	Length = field.sel	ectorOptions.fin	d(option => option	
> 🖿 doc			// Note (lo a convert here,	because I need a	unique format for	the app!
🛃 game-4-jcustomer-components-quiz.iml			const co	ntrolledValue = <mark>for</mark>	<pre>matValue(value);</pre>		
🝰 jest.config.js			// Contro	<pre>olledValue.id=id;</pre>			
> 🖿 node							
> Inode_modules library root			const ha	ndleChangelahel = e	=> {		
🗑 package.json			cont	- [edc] alug label	- C		
pom.xmt EADME md			conch	orcedvalue.tabet =	(controlled/olue	···	
				ange(JSUN.Stringity	(controttedvatue	<u>));</u>	
			⊨ };				1
🕆 🖿 javascript							
🛃 index.js			const hai	ndleChangeCdpValue	= e => {		
🛃 init.js			conti	rolledValue.cdpValu	e = e?.target?.v	alue;	
🗠 🖿 QnAJson			onCha	ange(<i>JSON</i> .stringify	(controlledValue));	
🝰 index.js			∲ } ;				
🛃 QnAJsonCmp.jsx		70					



Adding new type of input in the CEditor form

How to proceed

• Create your react app in a Jahia module



• Create an init.js file to register your app in the jahia UI



• Create and configure a webpack.config.js file to build the app using the ModuleFederationPlugin

• In your package.json file informs Jahia about your new remote entry

ahia": { "rem<u>otes":</u>

jahia": "javascript/apps/remoteEntry.js"

• Configure the pom.xml to build and deploy your app at run time



Adding new type of input in the CEditor form

How to proceed

• Create a content type in .cnd file with a string property

[game4nt:qna]
 game4:answers (string) mandatory multiple internationalized

• Create a json file to override the default input text used to render a string



See more about json override

/src/main/resources/META-INF/jahia-content-editor-forms/fieldsets/game4nt_qna.json

Keep Learning

Documentation

Extending Jahia UI on the Academy:

https://academy.jahia.com/documentation/developer/jahia/8/extending-and-custom izing-jahia-ui/extending-jahia-ui

Downloads Jahia 8 - Documentation -	Community ▼ Customer Center ▼ Training & KB ▼ Search					
Extending and customizing Jahia UI Extending Jahia UI 	Developer ▼ / Jahia ▼ / 8 ▼ / Extending and customizing Jahia UI ▼ / Extending Jahia UI ▼					
Settings pages Extending jContent UI Customizing jContent	Extending Jahia UI					
 Customizing Content Editor forms Customizing Content Editor pickers 	Published a year ago					
Extending Content Editor UI Creating custom selector types for Content Editor · Configuring and customizing CKEditor	To declare a new module, you have two options: > A simple module with very little to no JavaScript (for example, a legacy site settings)					
Using Content Editor from a custom UI	More complex modules with React and using Jahia moonstone design system					

Our documentation needs your feedback

- Product Managers and R&D team want to improve Jahia Academy!
- If you don't find the information you're looking for, share feedback via hotjar or open a ticket to our support team

Were you able to find the information you were looking for?	Sorry about that, what can we improve about this page?
◯ Yes	Please type here
◯ No	i
≁hotjar Next	c ≁ hotjar Next

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Next Webinar February 28th, 2023

Content Editor 4: New Pickers and much more

- Discover the new version of Content Editor, the form to edit any content in our CMS. This webinar will cover every changes, from UX and functional to the deep technicalities such as:
 - Calling Content Editor from custom applications
 - Configuring custom pickers
 - json overrides

Q & A



Thank you!

