

IBM Watson Health

IBM Cúram Social Program Management (SPM)
V8.0.1

Caseworker and Developer Productivity
Improvements



Agenda

- Caseworker Experience
 - Background
 - Solution Details
- Developer Experience
 - Background
 - Solution Details
- Technical Foundation

Improving the Caseworker Experience

Background

Caseworkers manage evidence across different types of cases and at the Person level.

Corrections and changes that have been made to the evidence over time must also be reviewed.

Managing evidence is a time-consuming process.

The screenshot shows the 'Income Support - 279' case page for Kevin Jones. The interface includes a dashboard with various metrics and a table of active evidence.

Dashboard Metrics:

- Open: 2 Items To Verify, 1 Evidence In Edit, 0 Undisposed Applications, 0 Recommendations
- Referrals: 0
- ELIGIBILITY WORKER

Active Evidence Table:

Type	Participant	Description	Period	Updates	Latest Activity
Unearned Income	Kevin Jones	Attendant Care Payments valued at \$175.00 Monthly	6/1/2021 -	2	ELIGIBILITY WORKER on 11/17/2021 20:25

Change Summary Table:

Change Summary	Period	Source	Status	Updated By
11/17/2021 - Case Audit	6/1/2021 -		Active	ELIGIBILITY WORKER on 11/17/2021 20:25
11/17/2021 - Initial	1/1/2021 - 5/31/2021		Active	ELIGIBILITY WORKER on 11/17/2021 20:24

Details:

- Updated On: 11/17/2021 20:24
- Effective Date of Change: [Blank]
- Approval Requested: No
- Updated By: ELIGIBILITY WORKER [View History]
- Approval Status: [View History]

Unearned Income Details:

- Participant: Kevin Jones (31)

Scenario



David Nader

Caseworker, Income Support
Work Queue Based
HHS Government Agency

*“I’m excited to help people, but
I’m overwhelmed by all of the
evidence I need to manage.”*

Needs

Process client change of circumstances across different types of cases.

Efficient way to create and edit evidence information, including selecting values in drop-down fields.

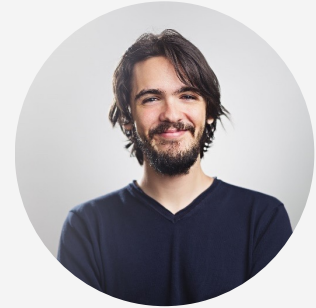
More streamlined way to view and understand the history of changes made to evidence.

Solution – Evidence Change History and Drop-Downs

V8.0.1 introduces enhancements that make it quicker to manage and review evidence.

David can now perform the following tasks:

- Consistently view existing evidence regardless of where in the application he views the evidence.
- Reliably see which users performed each update action on evidence.
- See drop-downs filtered, rather than highlighted, when typing text, and tab/select without an additional click.



David Nader

Scenario



David Nader

Caseworker
Income Support
Work Queue Based
HHS Government
Agency



Maria Hernandez

Citizen
Client in receipt of
Income Support

From the call queue, David gets connected with Maria.

Maria noticed that her new Food Assistance benefit payment is lower than she was expecting and wants to understand why.

This leads David to search for her case and view Maria's evidence.

Evidence Change History

Income support



Change history of evidence consistently labeled across the application.

David can quickly find what he needs as he is preparing and finding information in the system.

Active Evidence						
Type	Participant	Description	Period	Updates	Latest Activity	
Earned Income	Maria Hernandez	Receives \$300.00 Monthly Voluntary Quit Income from Nuclear Power Plant	9/1/2021 -	1	Sarah Levy on 9/8/2021 22:01	
Change Summary		Period	Source	Status	Updated By	
9/8/2021 - Initial	9/1/2021 -		Active	Sarah Levy on 9/8/2021 22:01		
Details		Corrections				
Change Summary		Period	Updated By			
9/8/2021 - Initial	01/09/2021 -	Sarah Levy on 9/8/2021 22:01				

Insurance affordability

Active Evidence						
Type	Participant	Description	Period	Updates	Latest Activity	
Disability	Maria Hernandez	Has a disability of type Blind from 01/08/2021	8/1/2021 - 9/3/2021	1	David Nader on 8/6/2021 10:10	
Change Summary		Period	Source	Status	Updated By	
8/4/2021 - EvidenceChangeReason:	8/1/2021 - 9/3/2021		Active	David Nader on 8/6/2021 10:10		
Details		Corrections				
Change Summary		Period	Updated By			
8/4/2021 - Initial	01/08/2021 -	David Nader on 8/6/2021 10:10				
8/4/2021 - EvidenceChangeReason:	01/08/2021 - 03/09/2021	David Nader on 8/6/2021 10:10				

Drop-Down Usability



When typing into drop-downs, the options are now filtered down to those that contain what is typed.

David can now press TAB to select an option and move to the next element in one keystroke.

Edit Earned Income Evidence

Change Reason

Case Review x v

Effective Date of Change

M/d/yyyy

Earned Income Details

Type *

- Wages x ^
- Sick Pay not incl in Wages
- Vacation Pay not incl in Wages
- Wages and Salaries
- Wages under Older Americans Act of 1965
- Wages under the Domestic Volunteer Ser...
- Workforce Investment (WIA) Wages

Frequency *

Monthly x v

End Date

M/d/yyyy

Income Reductions

Cancel Save

Evidence Change History



When evidence is corrected, information about all users involved in making updates to the evidence is displayed.

Active Evidence

Type	Participant	Description	Period	Updates	Latest Activity
> Paid Employment	Maria Hernandez	Is employed by Nuclear Power Plant, Part-Time, as a Clerk	10/14/2021 -	1	Sarah Levy on 10/14/2021 02:24
∨ Earned Income	Maria Hernandez	Receives \$200.00 Monthly Wages and Salaries from Nuclear Power Plant	9/1/2021 -	1	David Nader on 10/14/2021 02:28

Change Summary	Period	Source	Status	Updated By
∨ 10/14/2021 - Case Audit	9/1/2021 -		Active	David Nader on 10/14/2021 02:28

Details Corrections

Change Summary	Period	Updated By
> 10/14/2021 - Initial	01/09/2021 -	Sarah Levy on 10/14/2021 02:24
> 10/14/2021 - Case Audit	01/09/2021 -	David Nader on 10/14/2021 02:28

Therefore, other caseworkers will have the information about why something changed and with whom to speak to get an understanding of what has happened recently.

Improving Caseworker Productivity



The caseworker gets consistent, reliable evidence information they can act upon.

Upgrade Impact

No configurations required.

No upgrade impact or upgrade helper required, except for an optional upgrade to change the tab label for Person-level evidence.

Documentation

Evidence Change History

- See the *How are changes to evidence recorded?* section in the Evidence guide.
- See work item 273340 in the Release Notes.

Drop-down Usability

- See work items 274396, 274273, and 274183 in the Release Notes.

Improving the Developer Experience

Background

Developers need a convenient way to create content that pulls together a lot of information to help caseworkers understand a person's case or needs.

The screenshot displays a web application interface for case management. At the top, there is a navigation menu with options: Home, Overview (selected), Evidence, Participants, Assessments, Services, Referrals, Outcome Plans, Contact, Events, Tasks, Issues and Proceedings, and Administration. Below the navigation, the page title is "Overview".

The main content area is titled "Entitlements" and features a table with the following columns: Programs, Members, and Expected next payments. The table contains one row for "Employment Benefit - 258" with the member name "Maria Hernandez" and an expected next payment of "\$135.00 (due 9/13/2021)".

Below the table, there are several sections of information:

- Start date:** 8/26/2021
- Delivery schedule:** Maria Hernandez, Income Assistance, Weekly by Check in Advance on a Monday
- Case status:** Active
- Entitlement:** \$135.00 (8/30/2021 - 2/23/2022)
- Updated:** (8/30/2021)
- Case owner:** CASE WORKER

On the right side of the interface, there is a summary of payments:

- Expected next payments:** \$135.00 (due 9/13/2021)
- Expected next payments:** \$135.00 (due 9/13/2021)
- Previous payments:** \$135.00 (due 9/6/2021)

There are also links for "View determination history" and "View payments".

Developers also need to create UI automated tests that are robust and easy to maintain.

Scenario



Fiona Butler

IBM Technical Consultant
Working with customers and
Service Integrators

“It’s very time-consuming to produce consolidated views of content that have a lot of information.

Also, creating the unit tests can be challenging because it is difficult to identify the element on the page I am testing.”

Needs

Fiona needs to build features using the latest technologies that aggregate complex data and display it to users clearly and concisely.

Fiona needs to create UI automated tests that are maintainable and robust.

Solution – Enhanced Tooling for Building and Testing UIs

SPM version 8.0.1 introduces a new open-source development environment, the UI Add-ons Development Environment, and an improved data-testid, which is available for all Carbon components.



Fiona Butler

Fiona can now perform the following actions:

- Create content that leverages the latest front-end tools, such as React, GraphQL and Carbon.
- Create robust and maintainable UI front-end tests.

Create Content that Provides a Rich User Experience



I can create new content like the Entitlement Card in the Case Overview.

It's easier to consolidate and present complex information on a page.

Now caseworkers don't have to scroll or leave the page to get an understanding of their clients' needs.

The screenshot shows a software interface for case management. At the top is a navigation menu with items: Home, Overview (selected), Evidence, Participants, Assessments, Services, Referrals, Outcome Plans, Contact, Events, Tasks, Issues and Proceedings, and Administration. Below the menu is the 'Overview' section. On the right side of this section, it says 'Expected next payments \$135.00 (due 9/13/2021)'. The main content area is a table with columns: Programs, Members, and Expected next payments. The first row shows 'Employment Benefit - 258' under Programs, 'Maria Hernandez' under Members, and '\$135.00 (due 9/13/2021)' under Expected next payments. Below this row, there are details for 'Start date' (8/26/2021), 'Case status' (Active), and 'Case owner' (CASE WORKER). On the right side of the table, there are two dropdown menus: 'Expected next payments \$135.00 (due 9/13/2021)' and 'Previous payments \$135.00 (due 9/6/2021)'. At the bottom right, there is a link 'View payments ->'. The interface is clean and organized, with clear labels and actionable links.

Facilitate Easier UI Automated Testing



Writing automated UI tests is faster. I can easily access specific UI components when creating my tests.

The screenshot shows a 'Register Person' form with two steps: 'Registered Person Check' and 'Registration'. The current step is 'Step 2: Registration'. The form contains several input fields: Reference Number, Title, First Name (with 'Tom' entered), Middle Name, Last Name (with 'Thomlinson' entered and highlighted by a green box), Suffix, Initials, Birth Last Name, Mother's Birth Last Name, Gender (with 'Male' selected), Date of Birth, Date of Death, and Registration Date. There are 'Cancel', 'Back', and 'Save' buttons at the bottom.

```
input[data-testid="textinput_Last Name"]
```

Solution

Technical Foundation



Enabling Developers to Better Support the Needs of Caseworkers

By leveraging the latest developer front-end technologies, developers can build content with a richer user experience when displaying complex sets of information to caseworkers.



Key Technologies Being Exposed in V8.0.1



Carbon is IBM's open-source design system for products.

Pre-built components built on years of IBM design research and experience.



React is an open-source JavaScript Library that enables developers to build human-centered interfaces.

Create a user-centered experience leveraging the latest front-end tools.



GraphQL is an open-source data query language.

Query and aggregate complex views of information efficiently.



Apollo client is an open-source library that enables developers to manage data with GraphQL.

Infrastructure to retrieve, cache, and modify data.

Presenting Complex Information via Carbon

A new open-source repo is available called *UI Add-ons Development Environment* containing the following artifacts:

- npm package file with links to...
 - Carbon
 - React
 - GraphQL
 - Apollo Client
- Code samples

UIM integration is via a Java renderer.

- Any internal portal supporting UIM can leverage the UI Add-ons Development Environment to develop content.

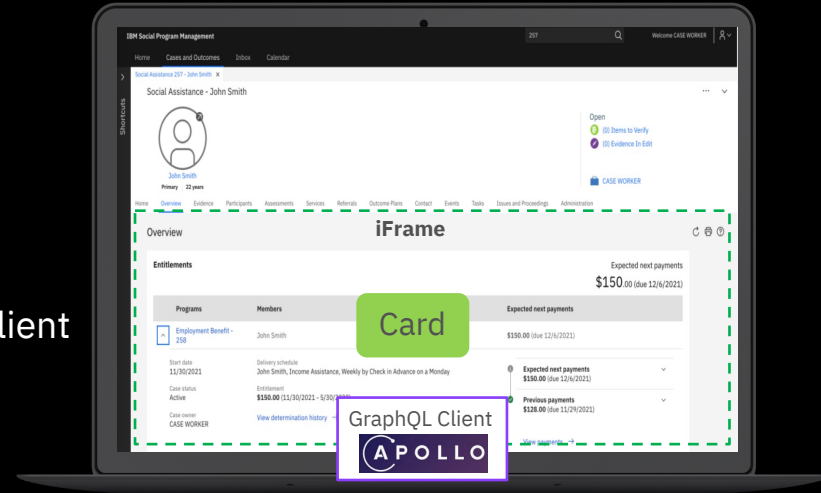


<https://github.com/IBM/spm-ui-addon-devenv>

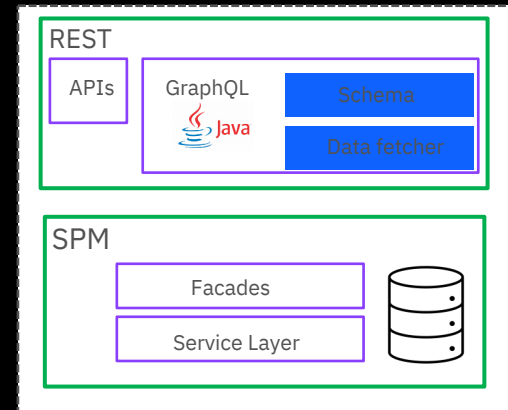
Surfacing Complex Information by Using GraphQL

- GraphQL is used to fetch data from the server.
- GraphQL is implemented by Apollo (client) and the GraphQL Java library (server).
- In GraphQL, queries request data based on schemas, which is provided by data fetchers.
- A configuration file links the data types to the data fetcher classes.

Client

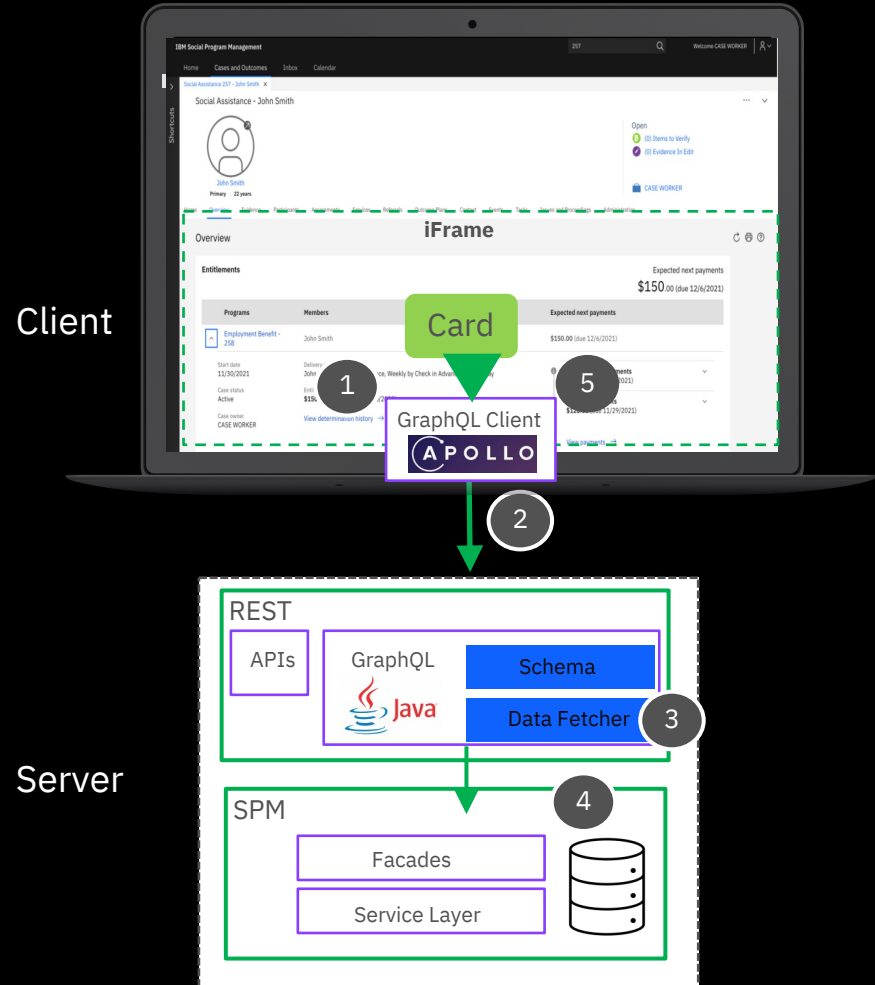


Server



How GraphQL Works

1. The card makes a request to the GraphQL client.
2. The GraphQL client library makes an HTTP request to the GraphQL backend server to get the data.
3. The GraphQL data-fetchers make direct calls to the Façade layer by using the existing Text Helper infrastructure.
4. The facades return the data.
5. The results of the query are returned to the client and displayed in the card.



Improving Developer Productivity



Enable developers to develop rich user experience for customers with modern technology and quicker turnaround time.

Upgrade Impact

No upgrade impact.

This will be delivered as an Open-Source tool on Git.

Documentation

Documentation available about the “UI Add-ons Development Environment” is available on GitHub.

See the “GraphQL” section in the Developing Cúram Rest APIs guide.

See the “What’s New” entry.

Enhancing the data-testid Attribute

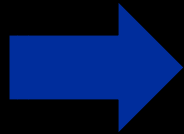
Improving the Test Automation Experience

The data-testid makes the creation and maintenance of user interface (UI) automated testing easier.

Enhanced with a new format that concatenates the label to the UIM component prefix, it is now easier to target specific UI components in a UI automation test framework.

Locale-Independent

```
input[data-testid="textinput_Last Name"]
```



Easier to Target UI
Components

```
button[data-testid="link_ActionControl.Label.Save"]
```

Improving Automated Testing

The following Carbon Components have been updated to use the data-testid attribute:

- Clusters
- Checkbox
- Text Input Field
- Text Area
- drop-down
- DatePicker
- DateTime
- Time Picker
- Search Popup
- Multi-select Checkbox
- Modal buttons (e.g., Next, Cancel, Back, Submit) with the inclusion of the Login and Logout buttons.

Improving Developer Productivity



The quality engineer will have a **consistent approach** to writing automated tests.

Upgrade Impact

In V8.0.1, all components converted to Carbon will use the correct test id attribute 'data-testid'.

It is recommended that you update your UI automated test framework to use the data-testid attribute.

Documentation

See the *UI test automation* section in the IBM Documentation.

See the *What's New* entry.



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