



EUROPE'S LEADING AEM DEVELOPER CONFERENCE  
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# AEM Commerce extensibility using Adobe I/O

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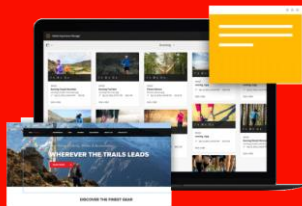
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# AEM Commerce Integration Framework & GraphQL

# AEM Commerce Integration Framework (CIF)



## Adobe Experience Manager

A powerhouse combo of Content and Digital Asset Management for exceptional commerce experience creation and delivery



## Adobe Commerce Integration Framework (CIF)

Connecting commerce engines with AEM to provide a seamless content and commerce authoring experience with live product context

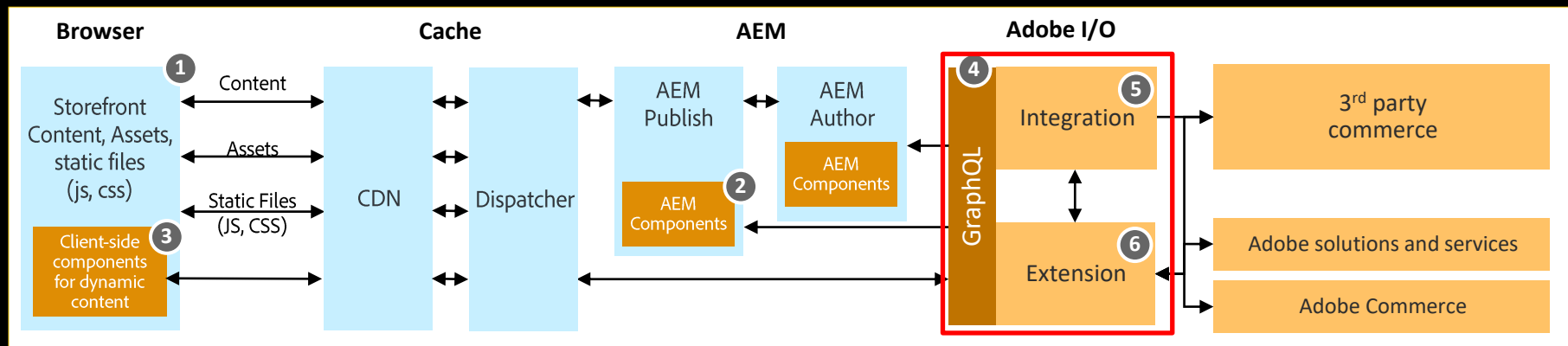


## Commerce Engines

Any headless platform or set of services that provides commerce functionality and data across multiple business models and verticals



# CIF Architecture



- 1 Browser requests page, assets and static files from Dispatcher / CDN
- 2 AEM Publish requests commerce data to render shopping experiences (e.g. product catalog)
- 3 Client-side components exchange data directly with services on Adobe I/O
- 4 GraphQL API endpoint on I/O Runtime. GraphQL resolver will invoke I/O Runtime actions
- 5 Integration actions transform request in 3rd party request, request data from 3rd party and transform response back in GraphQL object
- 6 Extensibility actions contain business logic, and may call other Adobe native or 3rd party services and systems

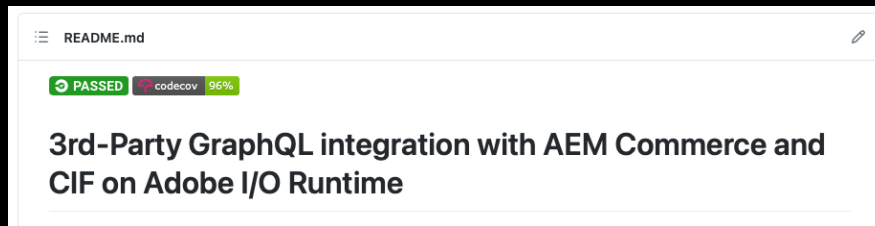
# AEM Commerce & CIF & GraphQL

- Consume commerce data and use commerce transactions via GraphQL
- Used by CIF Core Components and CIF Authoring Tools
- Standardized around the Adobe Commerce GraphQL schema
- Adobe Commerce (Magento)
  - Direct GraphQL communication between both solutions
  - Extensions possible on Magento or via Adobe I/O
- 3<sup>rd</sup> party commerce solutions
  - Use Adobe I/O for translation & API mapping



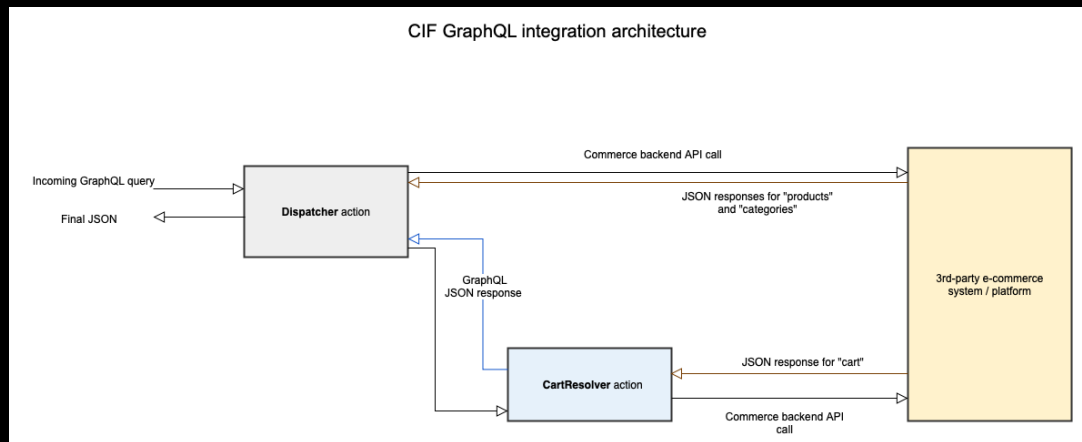
# CIF GraphQL Reference

- Starter & reference project
- Best practices and example
- Frequently updated and aligned to latest CIF schema
- JavaScript, running on Adobe Project Firefly
- Not a full GraphQL mock implementation for CIF Core Components
- <https://github.com/adobe/commerce-cif-graphql-integration-reference>



# CIF GraphQL – Architecture

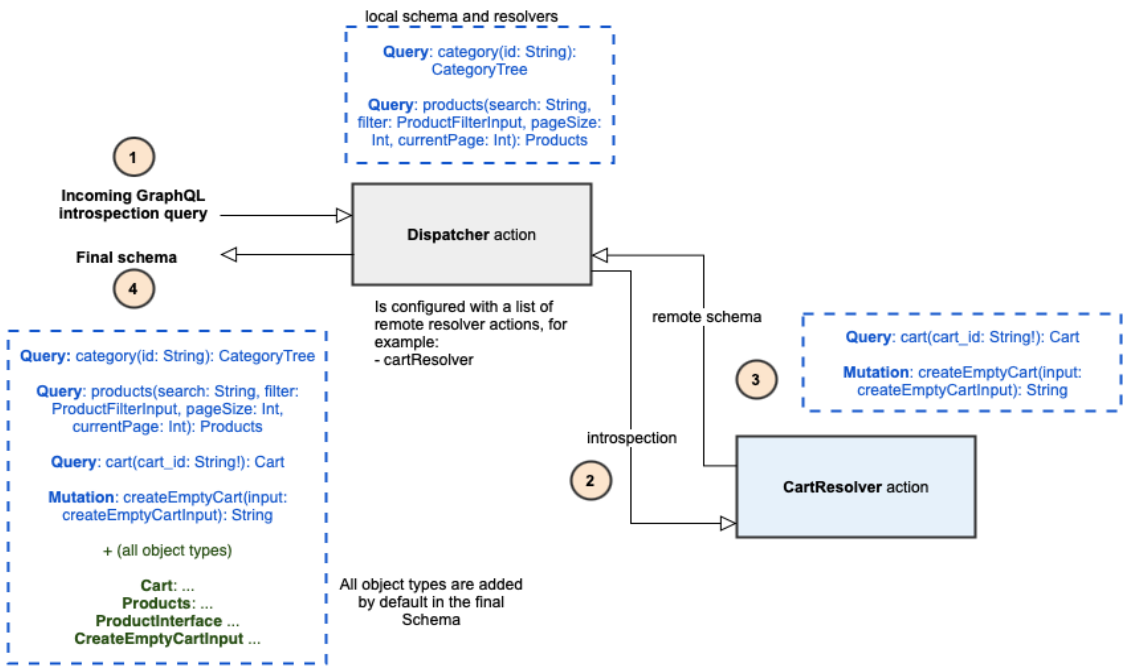
- Dispatcher action (!= AEM Dispatcher)
  - central action receiving incoming GraphQL requests
- 3 resolving options
  - Built into the dispatcher (local resolver)
  - Delegation to separate I/O action (remote resolver)
  - Remote resolver via external GraphQL endpoint (not used shown reference)





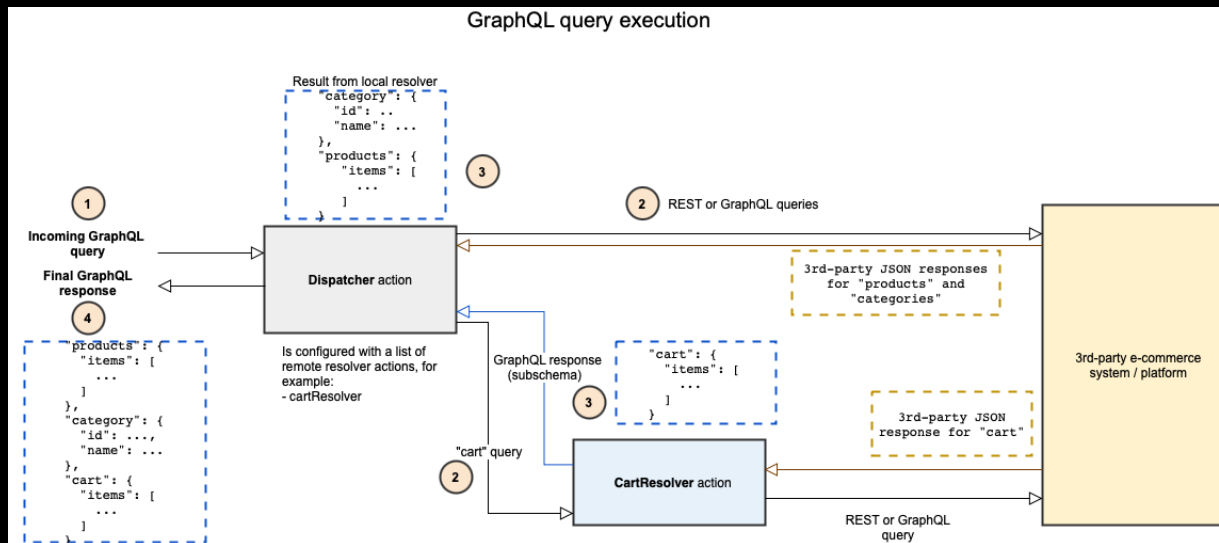
# CIF GraphQL – Architecture introspection

## GraphQL introspection: abstract architecture



- 1 • Incoming introspection query
- Dispatcher generates local schema and registers local resolvers
- For configured remote resolvers: forward introspection request
- 2 • Get introspection query
- 3 • Contribute their part of the schema back to the dispatcher
- 4 • Final GraphQL schema is built incrementally at runtime (and cached) by the dispatcher action

# CIF GraphQL – Architecture query execution



- 1 • Incoming GraphQL query
- 2 • Local resolvers call commerce backend  
• Resolving delegated to remote resolver actions  
• Remote resolver actions start processing
- 3 • Resolvers (local & remote) get backend data and transform it into GraphQL objects
- 4 • Final GraphQL result is built by the dispatcher action by combining all the resolver results  
• Final JSON send back to the client

# CIF GraphQL Reference – Usage

- 4 steps
  - Configure Adobe I/O Project
  - Get “aio” CLI tool
  - Clone project from Github
  - Run & deploy via aio cli
    - `aio app run` & `aio app deploy` are your friends
- ... and ready for some GraphQL fun
- Adobe Firefly project has everything setup already
  - Code Structure, Tests, GitHub Workflows

# CIF GraphQL Reference - Takeaway

- What is CIF and what is it for
- [CIF GraphQL Reference](#) for Adobe I/O Firefly
- How to get from CIF GraphQL Reference to Project
- References
  - [CIF & SAP Commerce](#)
  - multiple projects for home grown commerce services

# CIF + SAP Commerce (Hybris)

- SAP Commerce (Hybris) Integration for CIF
- CIF Core Components in AEM
- Demo – seamless integration between both worlds
- Code Walkthrough
- Experiences with Adobe I/O, CIF in general

# Two magic puzzle pieces

- <https://github.com/adobe/aem-core-cif-components>
- <https://github.com/diconium/commerce-cif-graphql-integration-hybris>

# Demo Time



# Demo 1: Product Search

- Video: [https://youtu.be/t-k\\_dKxVxGU](https://youtu.be/t-k_dKxVxGU)
- Code: <https://github1s.com/diconium/commerce-cif-graphql-integration-hybris/blob/master/cif/product/src/ProductLoader.js>  
[https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/ui.apps/src/main/content/jcr\\_root/apps/core/cif/components/commerce/searchresults/v2/searchresults/searchresults.html](https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/ui.apps/src/main/content/jcr_root/apps/core/cif/components/commerce/searchresults/v2/searchresults/searchresults.html)

## Demo 2: Registration and Login

- Video: <https://youtu.be/qwJ802Dt5ZM>
- Code: <https://github1s.com/diconium/commerce-cif-graphql-integration-hybris/blob/master/cif/customer/src/CreateCustomerLoader.js> <https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/react-components/src/components/SignIn/signIn.js>

## Demo 3: Add to Cart

- Video: <https://youtu.be/J9cvqyfWUjc>
- Code: <https://github1s.com/diconium/commerce-cif-graphql-integration-hybris/blob/master/cif/cart/src/AddProuctToCartLoader.js>  
<https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/react-components/src/components/Checkout/cart.js>

## Demo 4: Checkout

- Video: <https://youtu.be/QH5pJaxphR8>
- Code: <https://github1s.com/diconium/commerce-cif-graphql-integration-hybris/blob/master/cif/order/src/PlaceOrderLoader.js>  
<https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/react-components/src/components/Checkout/checkoutContext.js>

# Demo 5: Authoring Experience

- Video: <https://youtu.be/Vm8pvBP0JAw>
- Code: [https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/ui.apps/src/main/content/jcr\\_root/apps/core/cif/components/commerce/productcarousel/v1/productcarousel/productcarousel.html](https://github1s.com/adobe/aem-core-cif-components/blob/HEAD/ui.apps/src/main/content/jcr_root/apps/core/cif/components/commerce/productcarousel/v1/productcarousel/productcarousel.html)

# Experiences with the implementation process

- Standard NodeJS
- Easy to unit test
- Easy to have a proper CI/CD in place
- Nice documentation
- Amazing collaboration with Adobe team

# Q&A

- [AEM Content & Commerce](#)
- [CIF Core Components](#)
- [CIF GraphQL Reference Implementation](#)
- [diconium CIF GraphQL for SAP Commerce](#)
- [Adobe Project Firefly](#)



Thank You