DEVELOPERS LIVE

CIF Extensibility via GraphQL

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About the Speaker

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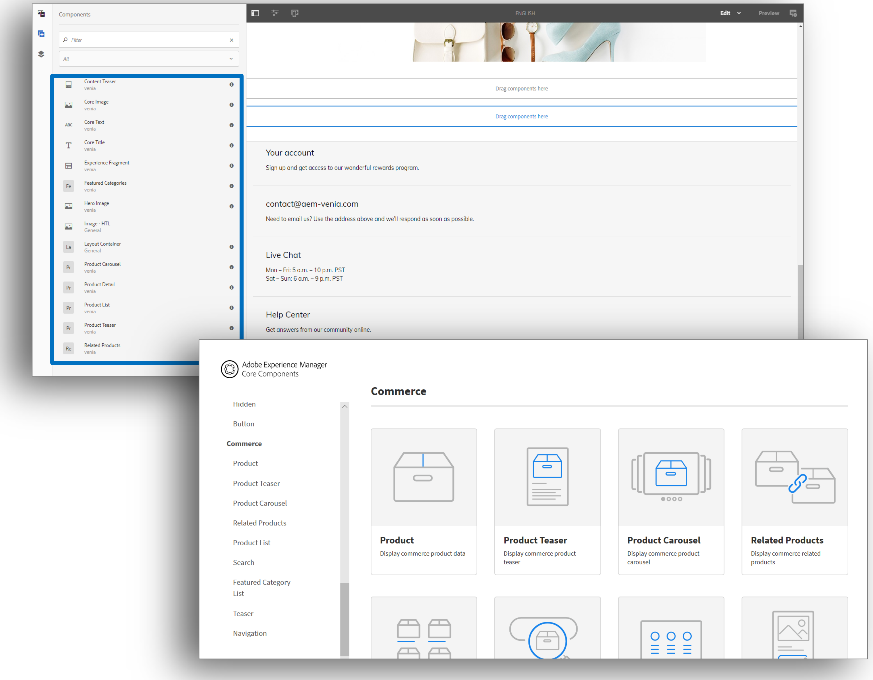
Commerce Core Components



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Live Chat

Mon – Fri: 5 a.m. – 10 p.m. PST
Sat – Sun: 6 a.m. – 9 p.m. PST

Help Center

Get answers from our community online.

Commerce

Product
Display commerce product data

Product Teaser
Display commerce product teaser

Product Carousel
Display commerce product carousel

Related Products
Display commerce related products

- Leverage CIF to integrate with Commerce and GraphQL
- Enrich website with commerce features:
  product & catalog browsing, cart & checkout, search
- Open-source:
  https://github.com/adobe/aem-core-cif-components

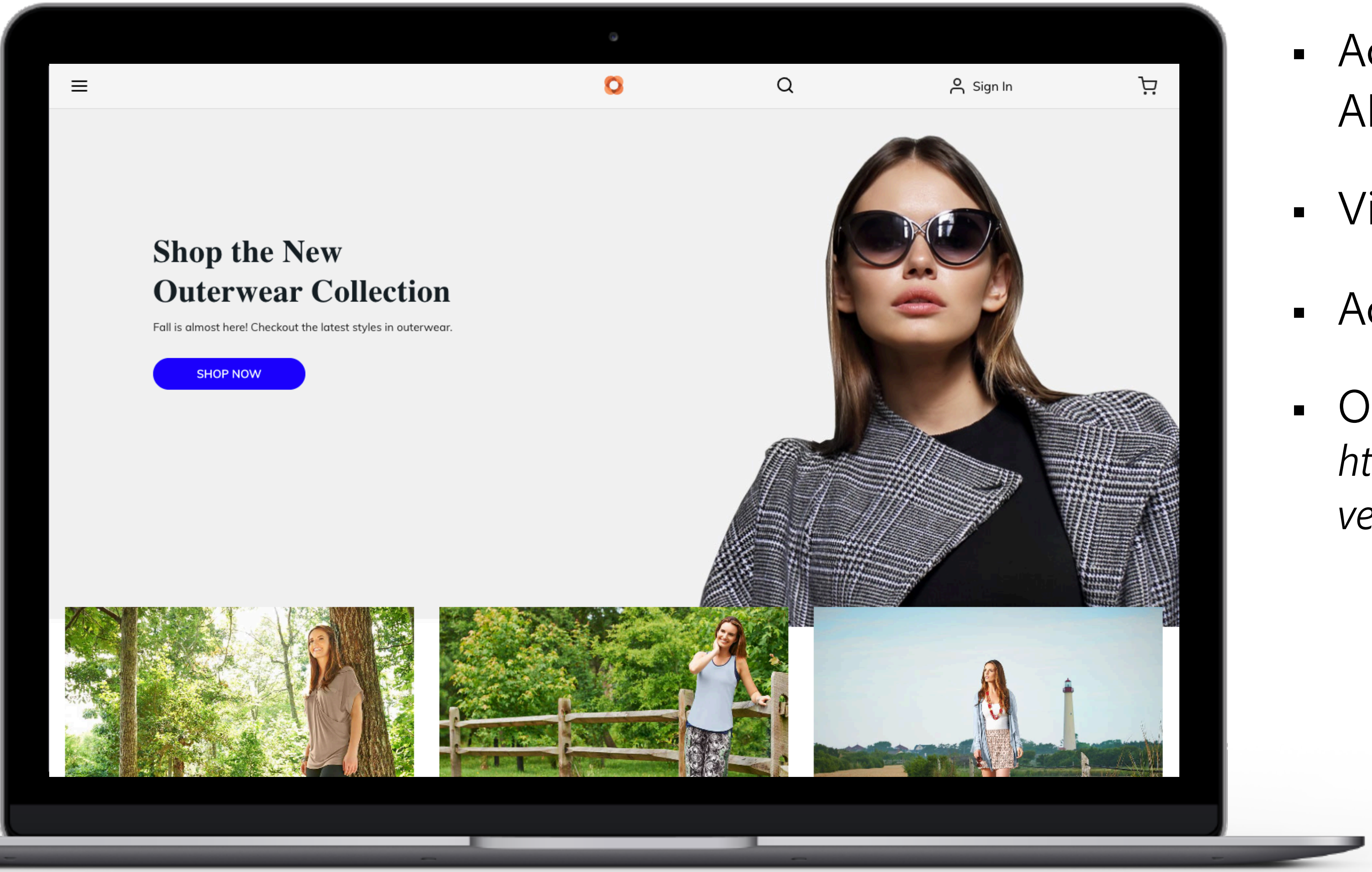
Themes & Internationalization

Customizable & Configurable

Trackable

Server & client-side

AEM Venia Reference Storefront



Shop the New Outerwear Collection

Fall is almost here! Checkout the latest styles in outerwear.

- Accelerate storefront development on AEM
- Visualize typical B2C experience
- Achieved with CIF Core Components
- Open-source: *https://github.com/adobe/aem-cif-guides-venia*

Customization Patterns

Use case 1:
Customize core components

Sling Model Delegation
with Retriever Pattern

Use case 2:
Write your own component

GraphQL Client
for issuing queries

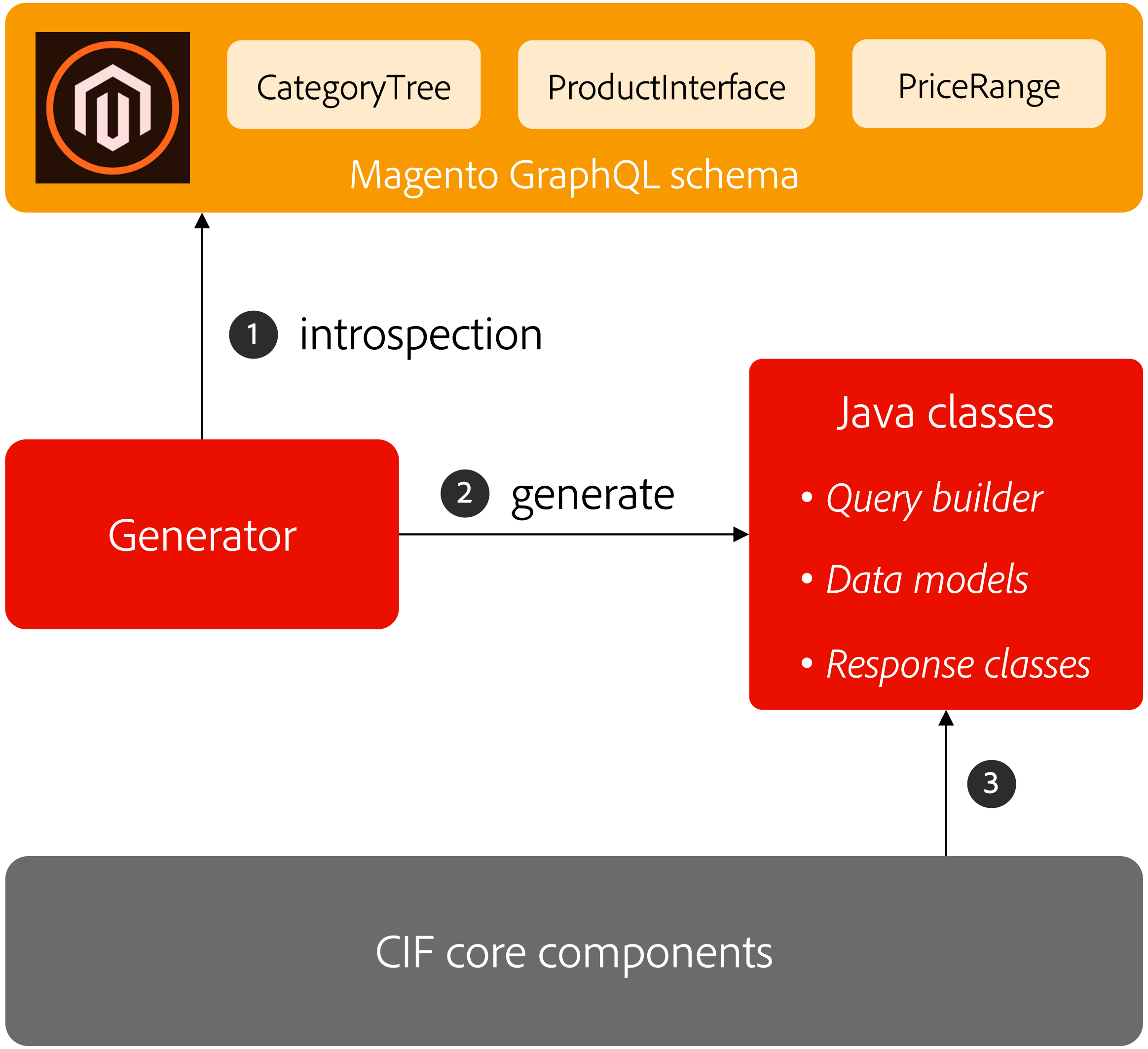
Use case 3:
Integrate with external services

GraphQL Integration Layer
to customize endpoint

Use Case 1

Sling Model Delegation

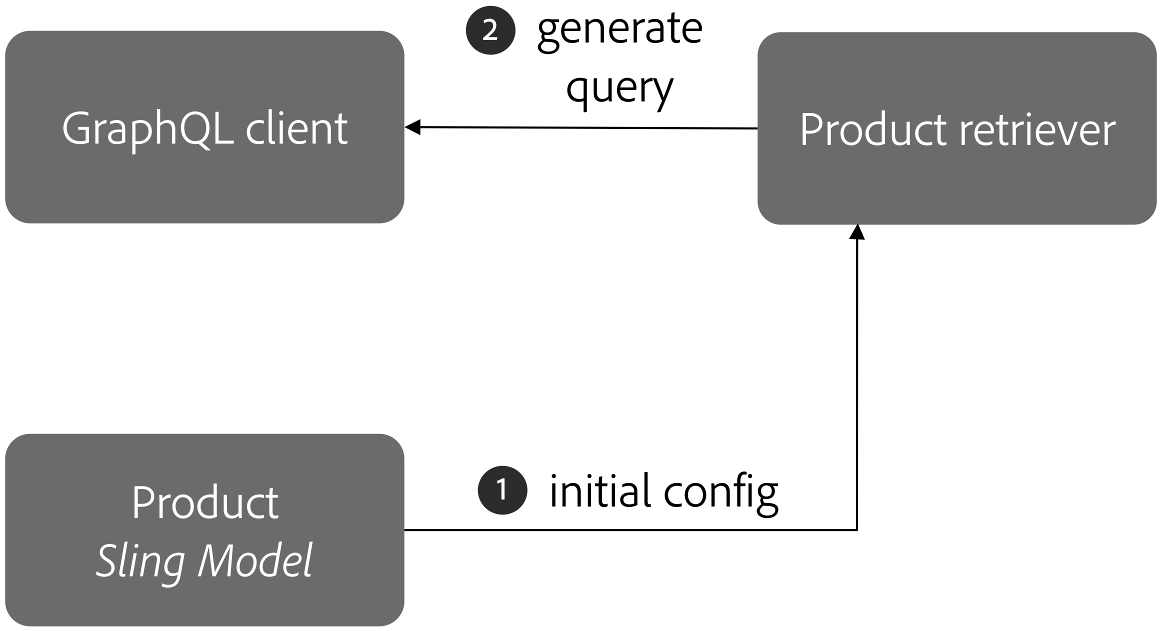
GraphQL Data Models



Example

```
(ProductInterfaceQuery q) -> q
    .name()
    .image(i -> i
        .url())
    .urlKey()
    .onConfigurableProduct(c -> c
        .variants(v -> v
            .product(s -> s
                .sku()
                .name())));
```

Retriever Pattern

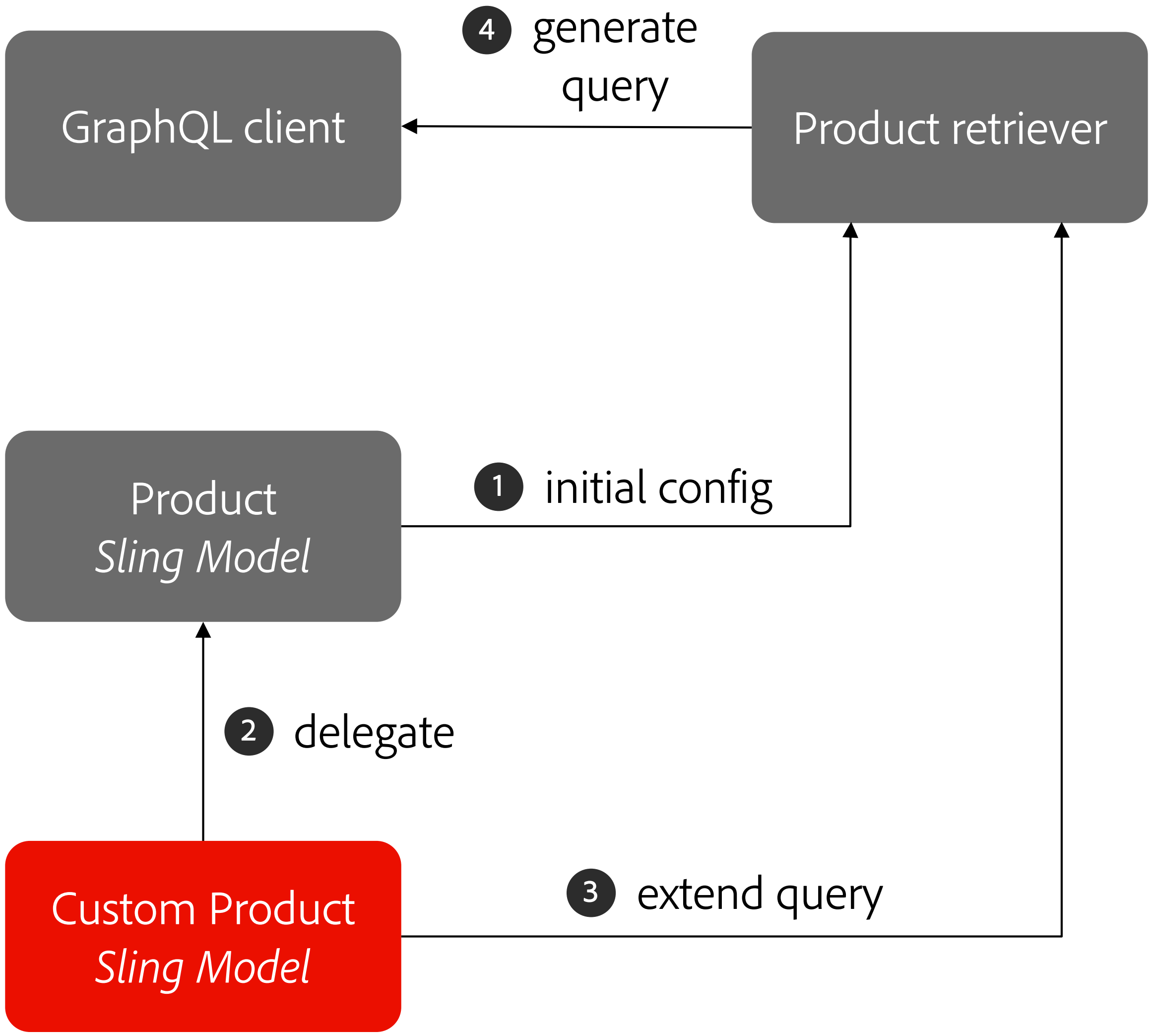


```
@PostConstruct
private void initModel() {
  ❶ retriever =
        new ProductRetriever(graphqlClient);

    retriever.setIdentifier(
        identifier.getLeft(),
        identifier.getRight());
}

public String getName() {
  ❷ return retriever
        .fetchProduct()
        .getName();
}
```

Retriever Pattern with Sling Model Delegation



```
  @Self
2 @Via(type = ResourceSuperType.class)
  private Product product;

  @PostConstruct
  public void initModel() {
    3 product
          .getProductRetriever()
          .extendProductQueryWith(p ->
              p.countryOfManufacture()
          );
  }

  public String getCountryOfManufacture() {
    4 return retriever
          .fetchProduct()
          .getCountryOfManufacture();
  }
```

Takeaway

Customize CIF Components

Example: Custom Product Attributes

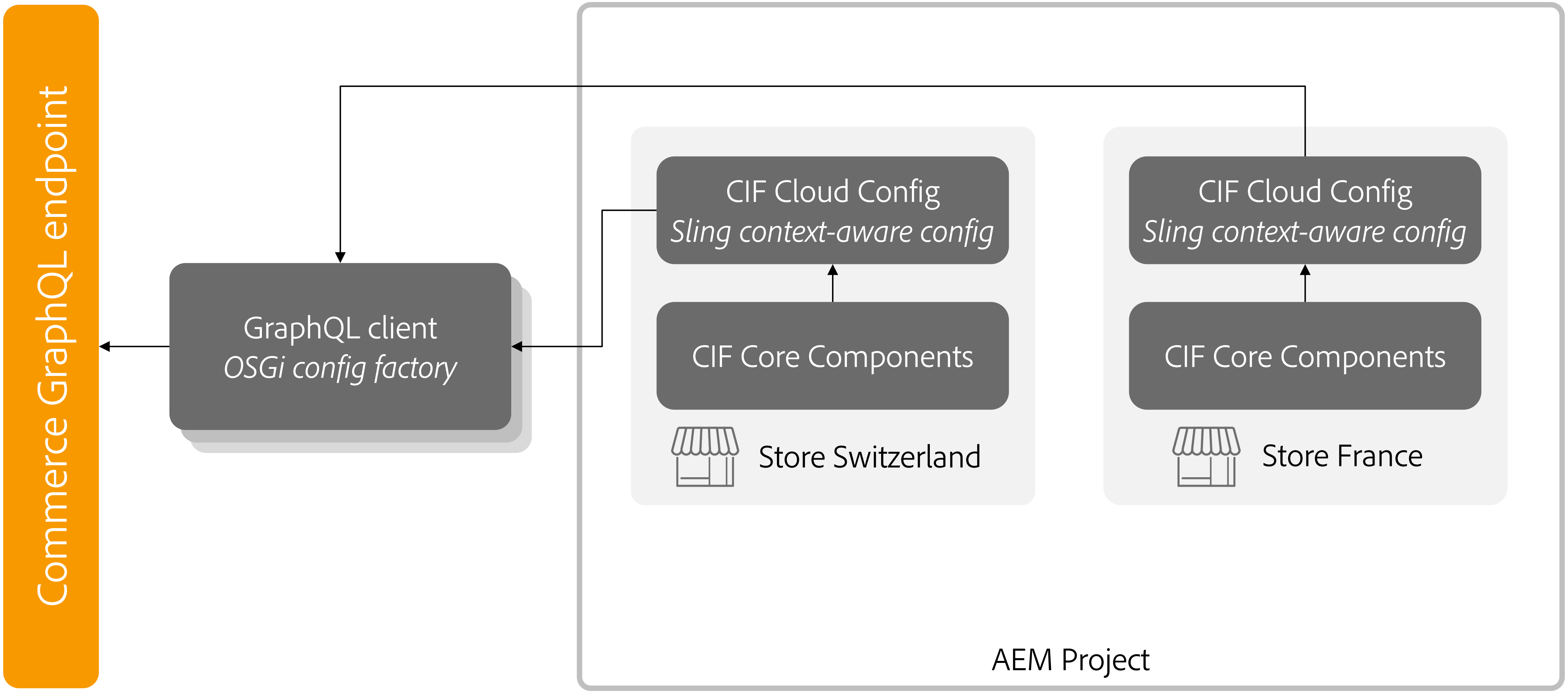
Sling Model Delegation With Retriever Pattern

- Your implementation stays compatible to future versions of CIF Core Components.
- Retrievers available for many data types (products, categories, etc.).
- Query builders support custom fields:
  - `.addCustomSimpleField("myfield")`
- More details on Adobe Experience League:
  - https://experienceleague.adobe.com/docs/experience-manager-cloud-service/commerce/customize/customize-cif-components.html

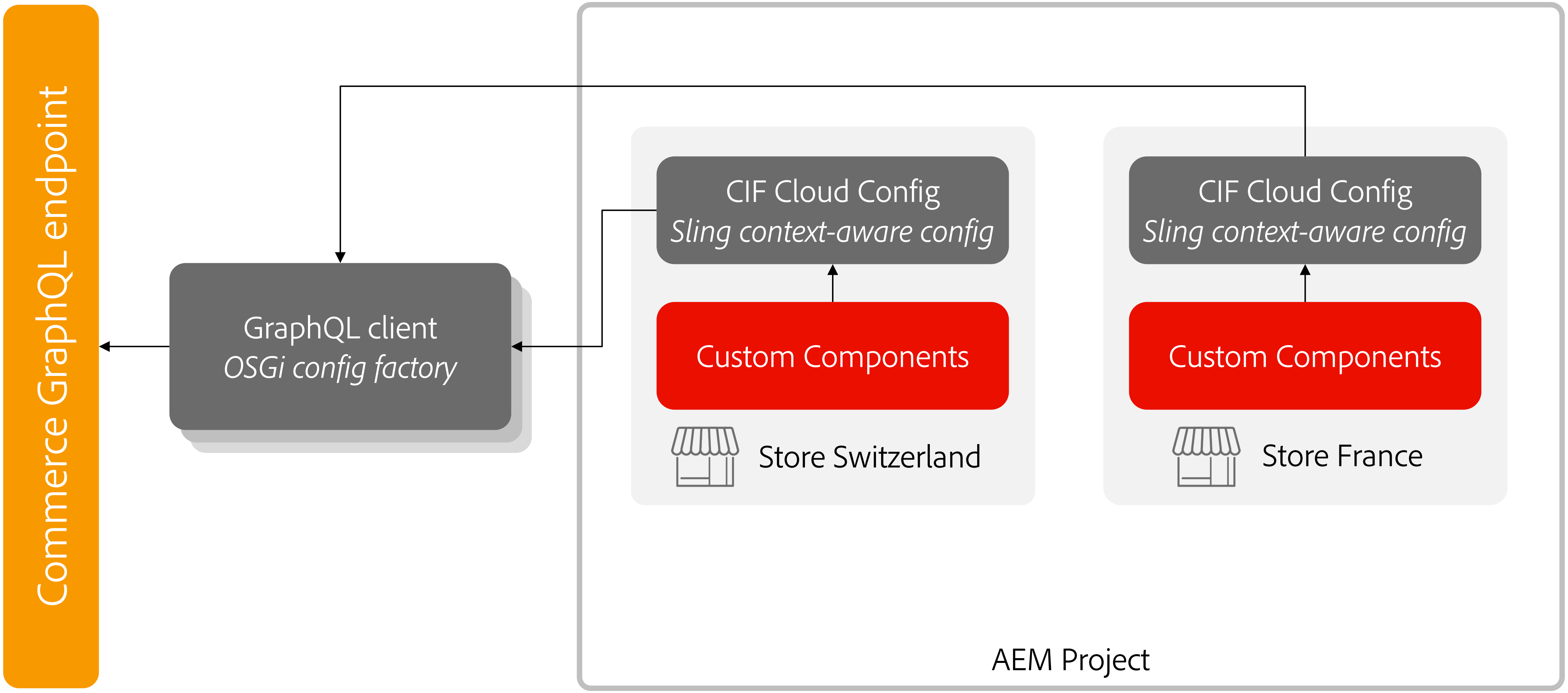
Use Case 2

GraphQL Client

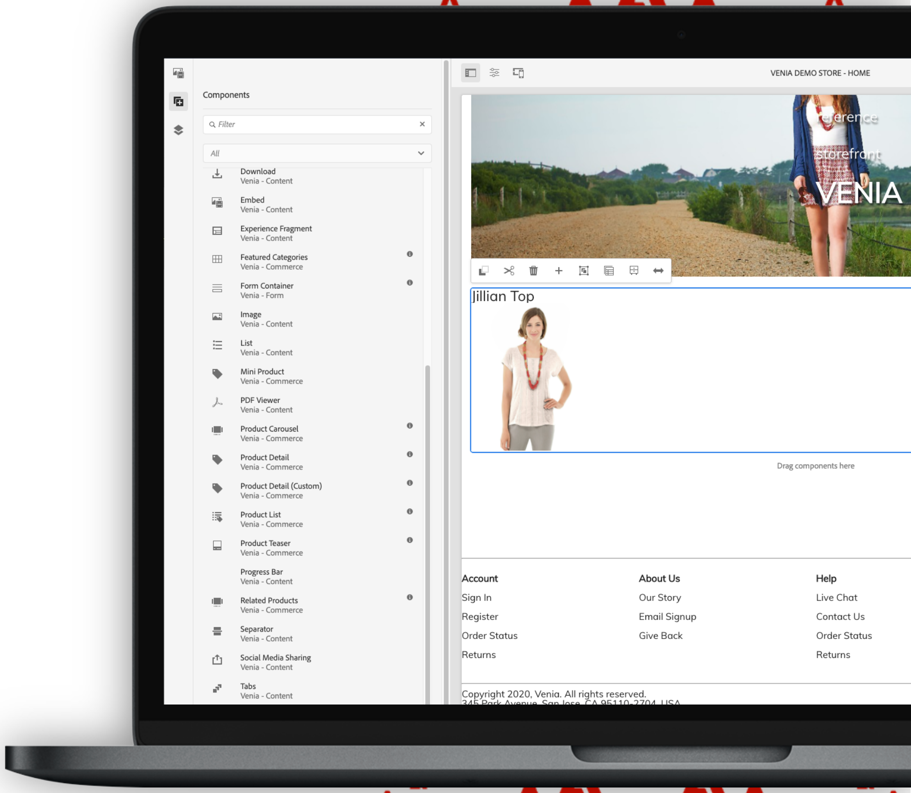
Integration with Commerce



Integration with Commerce



Demo



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Takeaway

Custom Commerce Components

Example: B2B Components

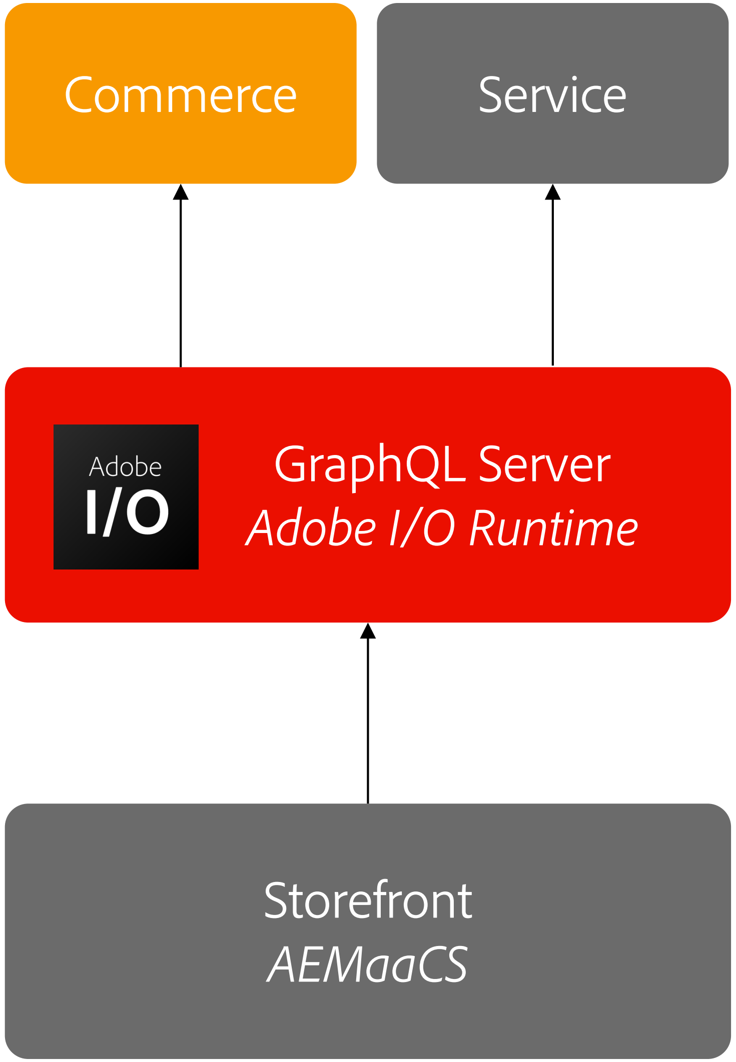
CIF GraphQL Client

- Building components with a different feature set than what the CIF core components provide
- MagentoGraphqlClient is a wrapper for GraphQL client and adds Magento specific features:
  - Store selection, Staged catalog data, Caching
- GraphQL client can be used for more generic use cases.
  - Convenient adapter factory: `resource.adaptTo(GraphqlClient.class);`
  - Open-source: https://github.com/adobe/commerce-cif-graphql-client

Use Case 3

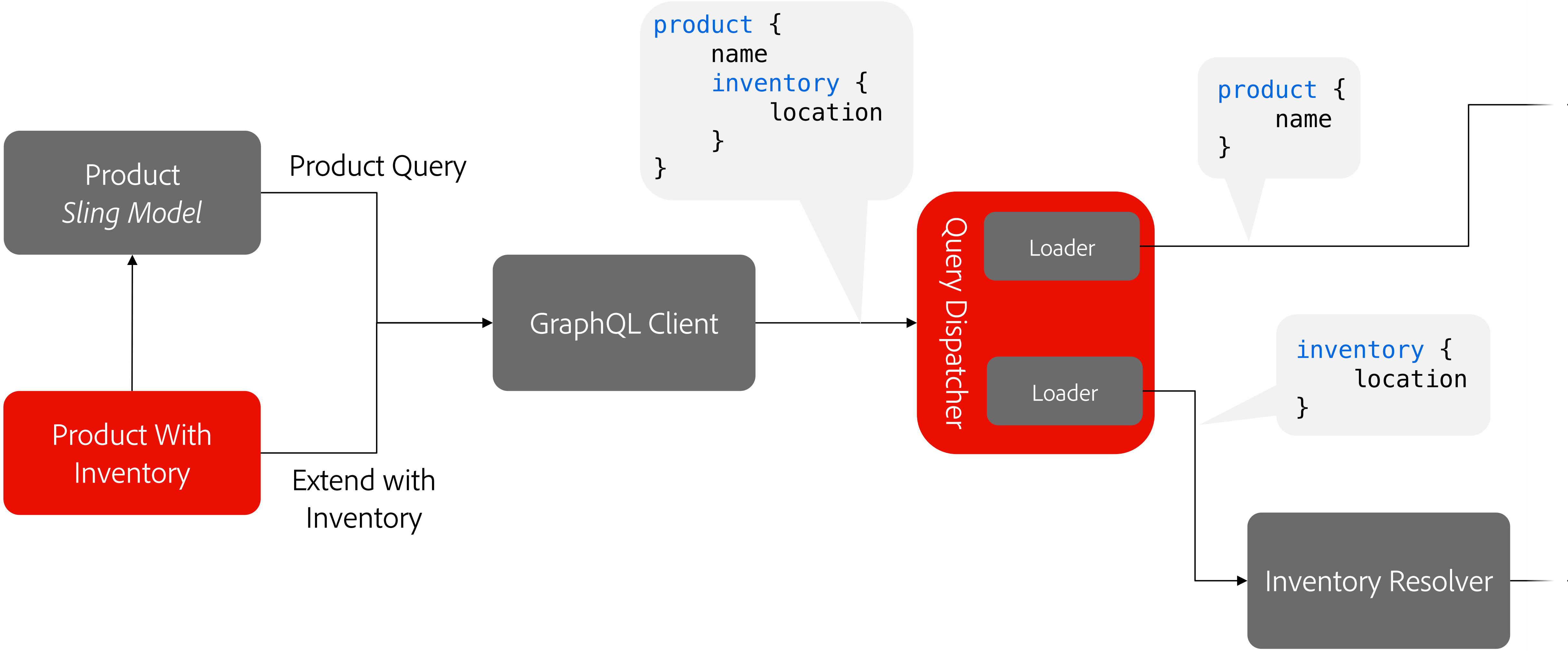
GraphQL Integration Layer

GraphQL Integration Layer



- Single GraphQL endpoint
- GraphQL server, runs on serverless infrastructure
- Customize GraphQL endpoint to
  - Federate data from multiple services
  - Support services without GraphQL APIs
  - Add custom logic
  - Translate APIs of 3rd party Commerce engines

Example



Product *Sling Model*

Product Query

Product With Inventory

Extend with Inventory

GraphQL Client

```
product {
    name
    inventory {
        location
    }
}
```

Query Dispatcher

Loader

Loader

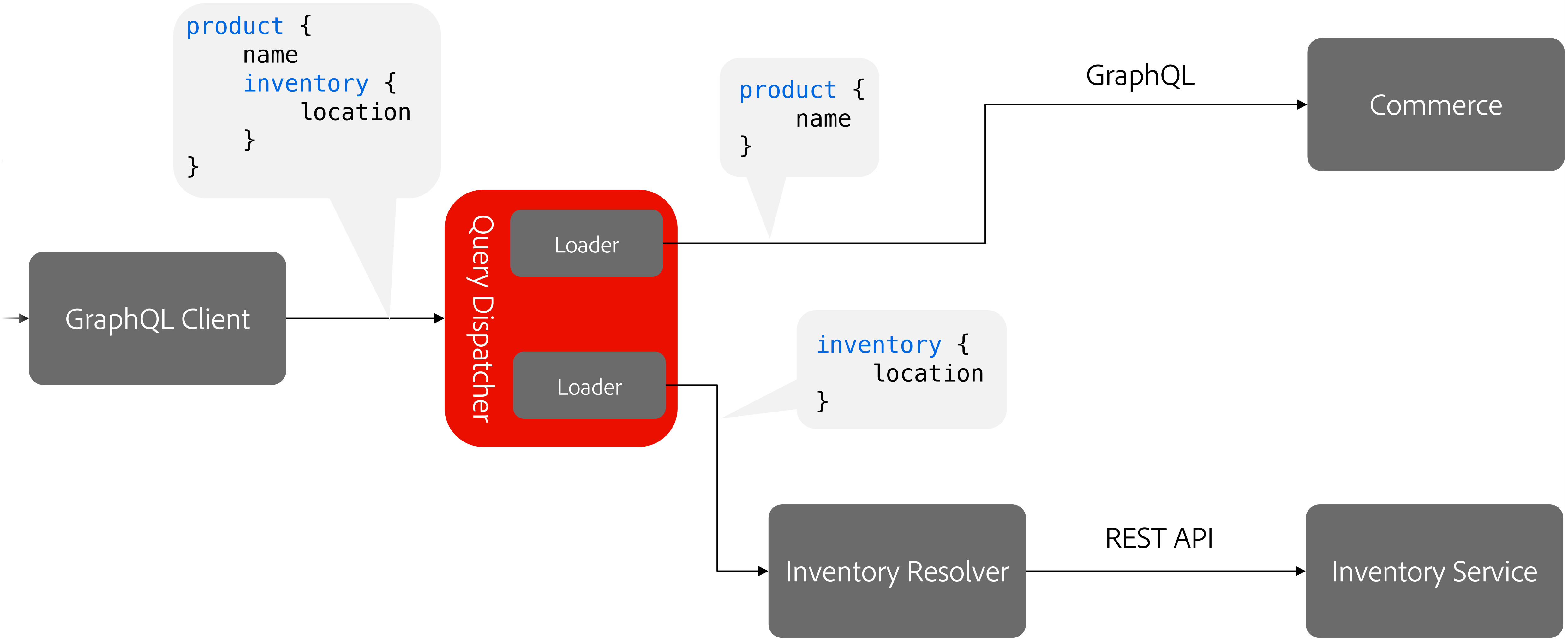
```
product {
    name
}
```

```
inventory {
    location
}
```

Inventory Resolver

Adobe

Example



```
product {
    name
    inventory {
        location
    }
}
```

```
product {
    name
}
```

```
inventory {
    location
}
```

Takeaway

Integrate External Services

Example: Store finder

GraphQL Integration Layer

- Extend, merge or customize your GraphQL schema.
- Serverless architecture for low performance impact
- Reference implementation available:
    - Open-source: https://github.com/adobe/commerce-cif-graphql-integration-reference
    - Blog post: https://medium.com/adobetech/serverless-graphql-on-adobe-i-o-runtime-e221d2a8e215
- Contributions by Adobe partners for 3rd party commerce engine support.

Q&A

Resources

Documentation

- AEM Core Components Library
  https://www.aemcomponents.dev/
- Customize CIF Core Components
  https://experienceleague.adobe.com/docs/experience-manager-cloud-service/commerce/customize/customize-cif-components.html

GitHub

- GitHub: CIF Core Components
  https://github.com/adobe/aem-core-cif-components
- GitHub: CIF GraphQL Client
  https://github.com/adobe/commerce-cif-graphql-client
- GitHub: GraphQL Java Generator
  https://github.com/adobe/graphql-java-generator
- GitHub: GraphQL Integration Layer Reference Implementation
  https://github.com/adobe/commerce-cif-graphql-integration-reference
- GitHub: Customization Patterns Examples
  https://github.com/adobe/aem-cif-guides-venia/compare/conference/extensibility

Discuss

- Serverless GraphQL on Adobe I/O Runtime Medium Article
  https://medium.com/adobetech/serverless-graphql-on-adobe-i-o-runtime-e221d2a8e215
- Experience League Community
  https://experienceleaguecommunities.adobe.com/t5/adobe-experience-manager/adobe-developers-live-2021-session-cif-extensibility-via-graphql/td-p/394476

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