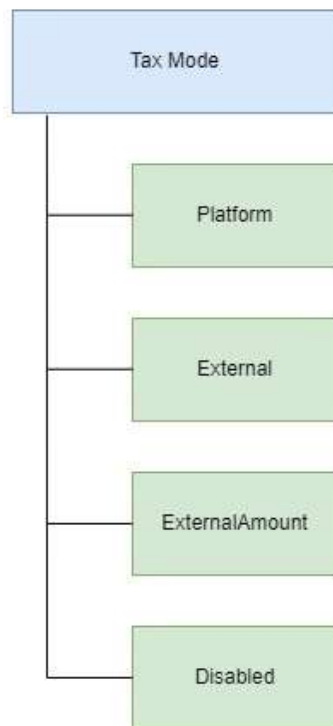


Commercetools: External Tax Intergration

AGENDA

- ❑ Commercetools platform tax management capabilities
- ❑ Integrate External Tax
 - Extensions (Synchronous)
 - Subscriptions (Asynchronous)
- ❑ Practice

Commercetools platform tax management capabilities: Tax Mode



☐ **Platform(default)**

Tax Rates are selected automatically from the TaxCategories based on the Cart shippingAddress. totalNet, totalGross, and taxPortions fields are calculated based on the taxRoundingMode.

☐ **External**

Tax Rates are set externally per ExternalTaxRateDraft. A Cart can be ordered only if all Line Items, Custom Line Items, and the Shipping Method have an external Tax Rate set.

totalNet, totalGross, and taxPortions fields are calculated based on the taxRoundingMode.

☐ **ExternalAmount**

Tax amounts, Tax Rates, and tax portions are set externally per ExternalTaxAmountDraft. A Cart can be ordered only if the Cart and all Line Items, Custom Line Items, and the Shipping Method have an external tax amount and rate set.

☐ **Disabled**

Commercetools platform tax management capabilities:

Tax configuration on Cart level

Create Cart ▾

POST `https://api.{region}.commercetools.com/{projectKey}/carts`

Creating a Cart fails with an [InvalidOperation](#) error if the [ShippingMethod](#) referenced in the CartDraft has a [predicate](#) that does not match the Cart.

OAuth 2.0 Scopes:
`manage_orders:{projectKey}`

Path parameters:

<code>region</code> * String	Region in which the Project is hosted.
<code>projectKey</code> * String	key of the Project .

Query parameters:

<code>expand</code> Expansion	The parameter can be passed multiple times.
---	---

Request Body:
[CartDraft](#) as `application/json`

Response:
201 [Cart](#) as `application/json`

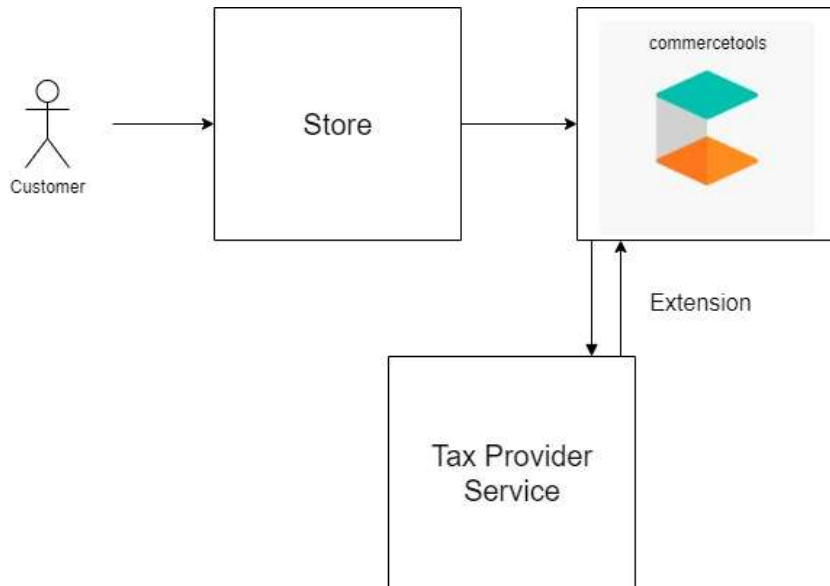
CartDraft

- ☐ **taxMode**
Indicates how taxes are set on the Cart.
- ☐ **externalTaxRateForShippingMethod**
External Tax Rate for the shippingMethod if the Cart has External TaxMode.
- ☐ **taxRoundingMode**
Determines how monetary values are rounded when calculating taxes for taxedPrice.
- ☐ **taxCalculationMode**
Determines how taxes are calculated when calculating taxes for taxedPrice.
- ☐ **lineItemTaxRate (LineItem level)**
External Tax Rate for the Line Item if the Cart has the External TaxMode.

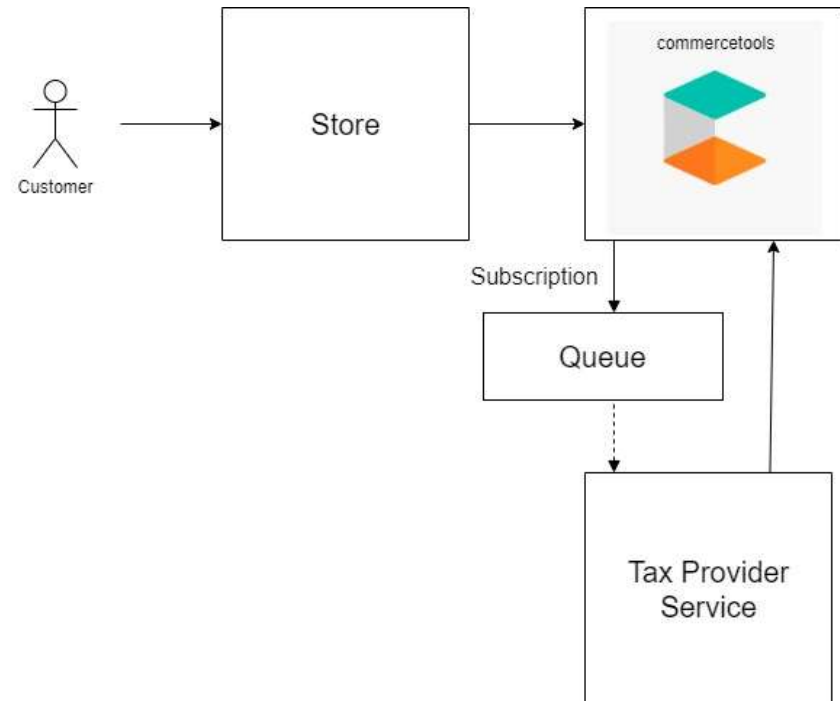
Commercetools platform tax management capabilities

External Tax Mode

Synchronous



Asynchronous



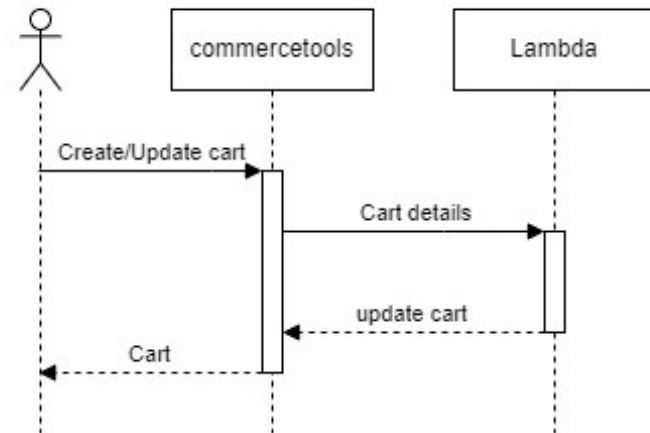
Extensions (Synchronous)

An API Extension gets called after the processing of a create or update request of an API call, but before the result is persisted. The API Extension can validate the object, or apply additional updates to it

i An API Extension affects the performance of the API it is extending. If it fails or takes a second longer to return a result, the whole API call fails or takes a second longer. Use [Subscriptions](#) instead of API Extensions when you can react to events asynchronously.

API Extensions are available for Carts, Orders, Payments, Customers, Quote Requests, Staged Quotes, Quotes, and Business Units.

A Project can have a maximum of **25** API Extensions.



Extensions (Synchronous)

Create Extension ▾

POST `https://api.{region}.commercetools.com/{projectKey}/extensions`

OAuth 2.0 Scopes:
`manage_extensions:{projectKey}`

Path parameters:

<code>region</code> *	String	Region in which the Project is hosted.
<code>projectKey</code> *	String	<code>key</code> of the Project .

Query parameters:

<code>expand</code>	Expansion	The parameter can be passed multiple times.
---------------------	---------------------------	---

Request Body:
[ExtensionDraft](#) as `application/json`

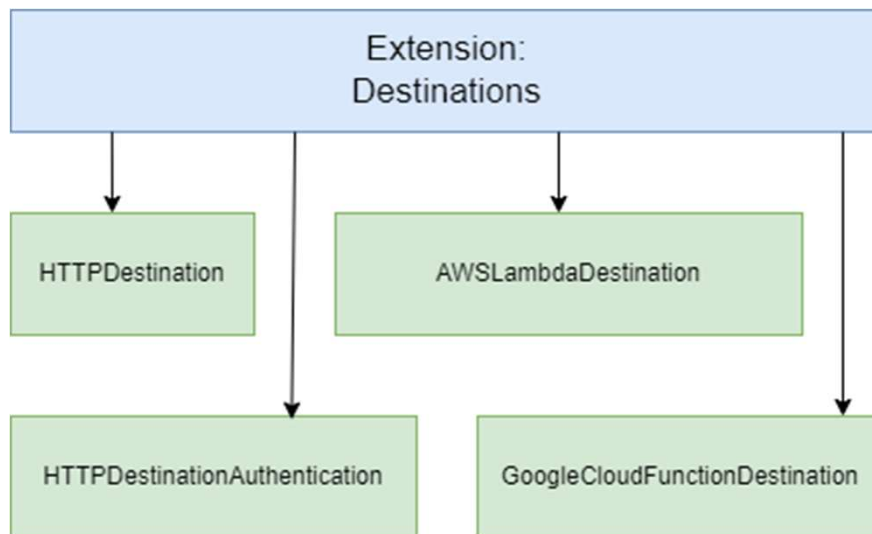
Response:
201 [Extension](#) as `application/json`

ExtensionDraft

- ❑ **key**
User-defined unique identifier for the Extension.
- ❑ **destination**
Defines where the Extension can be reached
- ❑ **triggers**
- ❑ **timeoutInMs**
Maximum time (in milliseconds) the Extension can respond within. If no timeout is provided, the default value is used for all types of Extensions. The maximum value is 10000 ms (10 seconds) for payment Extensions and 2000 ms (2 seconds) for all other Extensions.

<https://docs.commercetools.com/api/projects/api-extensions#create-extension>

Extensions (Synchronous) Destinations



❑ AWSLambdaDestination

- type(AWSLambda)
- arn
- accessKey
- accessSecret

Extensions (Synchronous)

Triggers

☐ **resourceId**

cart, order, payment, customer, quote-request, staged-quote, quote, and business-unit are supported.

☐ **actions**

Create and *Update* requests are supported.

☐ **condition**

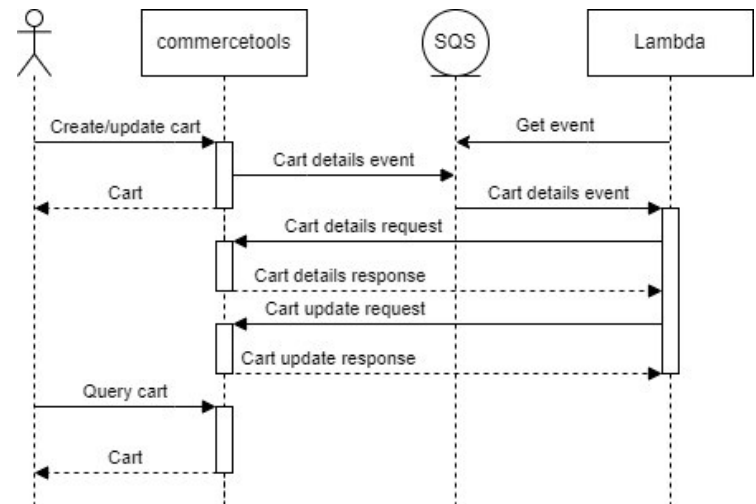
predicate that controls the conditions under which the API Extension is called. The Extension is not triggered when the specified condition is not fulfilled.

Subscriptions(Asynchronous)

As payload, a Subscription delivers one of the predefined Messages or a notification about a change to a resource.

A maximum of **50** Subscriptions can be created per Project.

When you create, update, or delete Subscriptions, it may take up to a minute for the changes to update.



Subscriptions(Asynchronous)

Create Subscription

POST `https://api.{region}.commercetools.com`
`/({projectKey})/subscriptions`

A test message is sent to ensure the correct configuration of the Destination. If the message cannot be delivered, the Subscription will not be created. The payload of the test message is a notification of type `ResourceCreated` for the `resourceTypeId` `subscription`.

OAuth 2.0 Scopes:
`manage_subscriptions:({projectKey})`

Path parameters:

<code>region</code> * String	<code>Region</code> in which the Project is hosted.
<code>projectKey</code> * String	<code>key</code> of the <code>Project</code> .

Query parameters:

<code>expand</code> <code>Expansion</code>	The parameter can be passed multiple times.
--	---

Request Body:
`SubscriptionDraft` as `application/json`

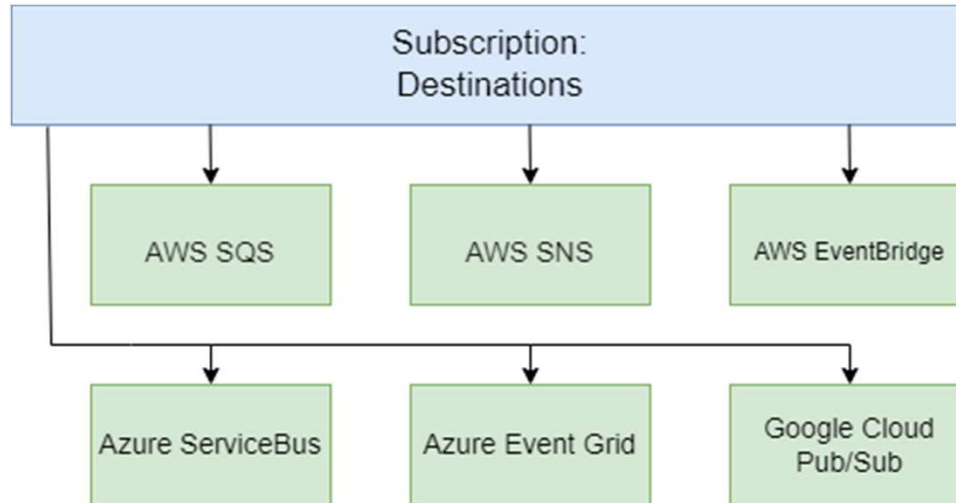
Response:
201 `Subscription` as `application/json`

SubscriptionDraft

- ❑ **key**
User-defined unique identifier for the Subscription.
- ❑ **changes**
Change notifications to be subscribed to. It contains `resourceTypeId`, for example `cart`
- ❑ **destination**
- ❑ **messages**
- ❑ **format**
predicate that controls the conditions under which the API Extension is called. The Extension is not triggered when the specified condition is not fulfilled.

<https://docs.commercetools.com/api/projects/subscriptions#create-subscription>

Subscriptions(Asynchronous): Destination



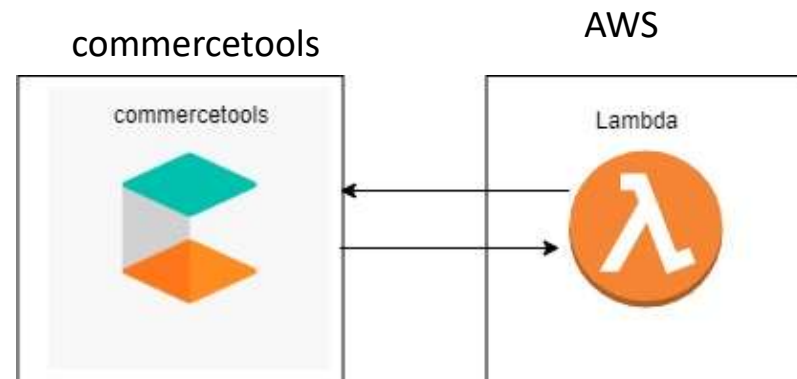
❑ AWS SQS

- Type (SQS)
- accessKey
- accessSecret
- queueUrl
- region
- authenticationMode

Practice: Extension

Extension creation activities

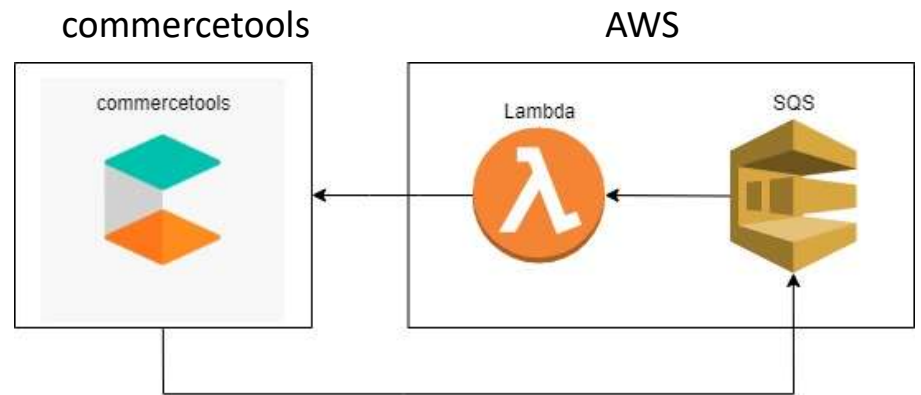
- Lambda creation
 - Lambda creation and implementation
 - AWS user creation
- Extension creation
- Verification



Practice: Subscription

Subscription creation activities

- Create API commercetools client
- Lambda implementation
- Lambda and sqs creation
- New policy for aws user creation
- Commercetools subscription creation
- Verification



Thank you!

Viachaslau Karotki,
Senior Software Engineer

viachaslau_karotki@epam.com

Georgia, Batumi