



Automate cashback campaigns with Cosmos DB & friends

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Triple

Gold sponsors



Silver sponsors



Before 2017

- HEINEKEN Nederland manages dozens of sites
- They host multiple campaigns in parallel

What they want

- Reusable campaigns, centrally managed
- Applicable in all sites (independent from CMS used)
- Out-of-the-box or fully customizable
- Enter product codes or pictures of receipts
- Raffle, direct win and locally collected



5000PRIJZEN



**MAAK ELKE DAG KANS OP
F1™ GRANDSTAND TICKETS
OF ÉÉN VAN DE ANDERE 5000 F1™ PRIJZEN**



1. MAAK EEN FOTO VAN HET HEINEKEN PRODUCT
2. UPLOAD OP WWW.5000PRIJZEN.NL
3. MAAK KANS OP F1™ PRIJZEN

DEZE ACTIE LOOPT VAN 1 APRIL T/M 30 JUNI 2019



Kies bestand...

.gif/.jpg/.png/.pdf, max. 10MB

VERSTUUR

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DEZE ACTIE LOOPT VAN 1 APRIL T/M 30 JUNI 2014



Vul je gegevens in

Naam

* Geboortedatum

DD

MM

YYYY

* E-mail

Telefoonnummer

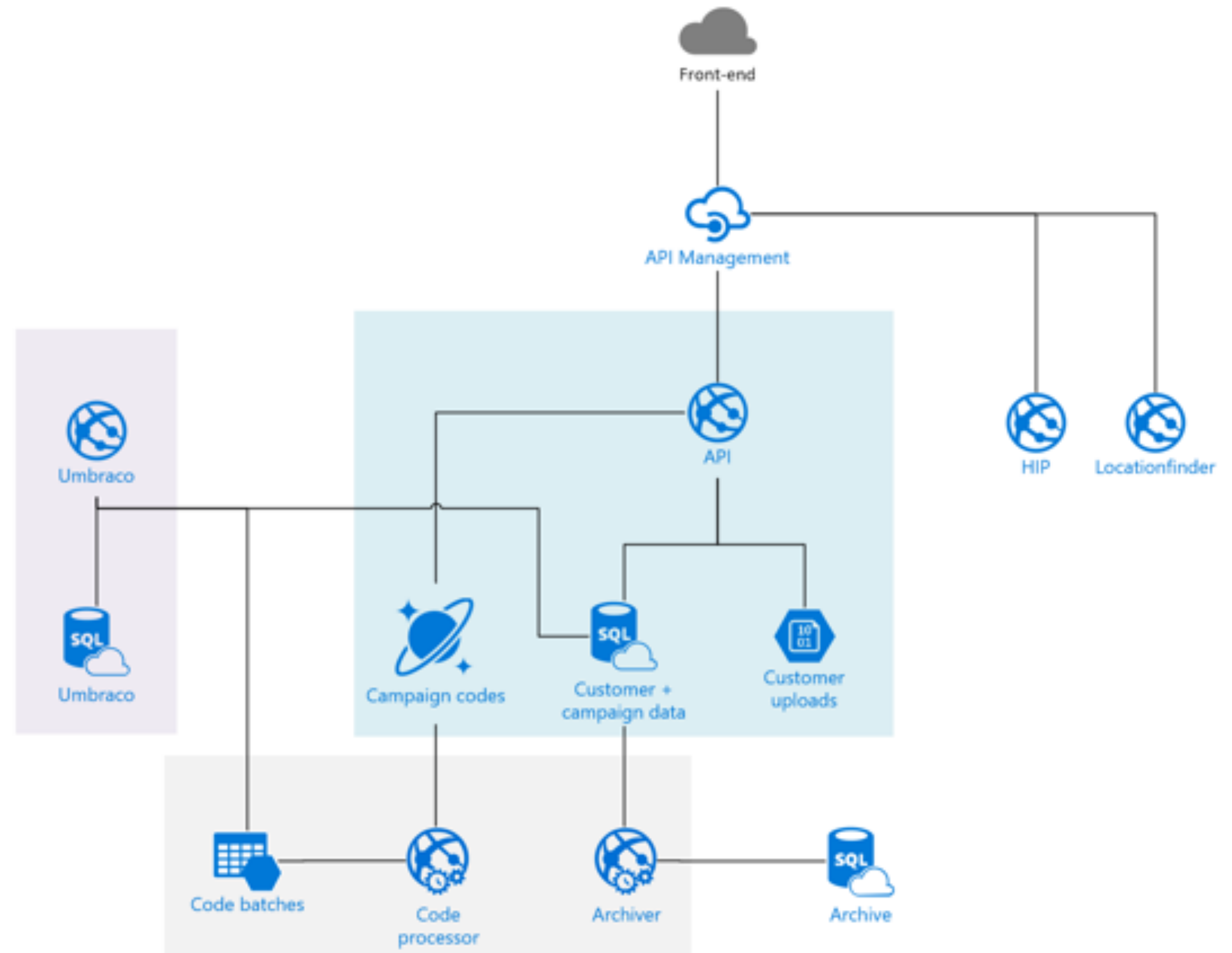
* Postcode

1234AB



Ja, ik ga akkoord met de [Actievoorwaarden](#)

Architecture



Code storage requirements

- Campaign isolation
- Fast
- PaaS / SaaS

Azure Cosmos DB

Dedicated resources per campaign

- One campaign = one collection
- Usage is isolated, no influence between campaigns
- Campaign data can be destroyed effectively
- Costs are contained per campaign

Azure Cosmos DB

Scaling for import

- Scaling x25 when loading millions of records
- Cosmos can be allowed to partition (shard) automatically when necessary
- We don't do multi-region

AZURE COSMOS DB VS. OTHER DB'S



VS. Relational databases

- One large database, or set up sharding yourself



VS. Table Storage

- No easy way to create dedicated resources per campaign without new deployment



VS. third-party solutions

- Pricing
- Needed custom development

VS. third-party database providers

- Pricing
- Needed custom development

Azure Cosmos DB - features

- Multi-API
- Global availability if so desired
- Everything is indexed

	 Java	 .NET	 Node.js	 Python	 Gremlin	 Go	 Kotlin
SQL API							
API for MongoDB							
Gremlin API							
Table API							
Cassandra API							

Regions

Region Configuration
HEI-NL1-REWARDSM-A-AZ-ACD-1



Azure Cosmos DB – pricing

The cost to read 1 kb item is 1 Request Unit (RU)

- 400 RUs minimum = 20 euro / month
- Up to 10.000 RUs on a fixed storage collection

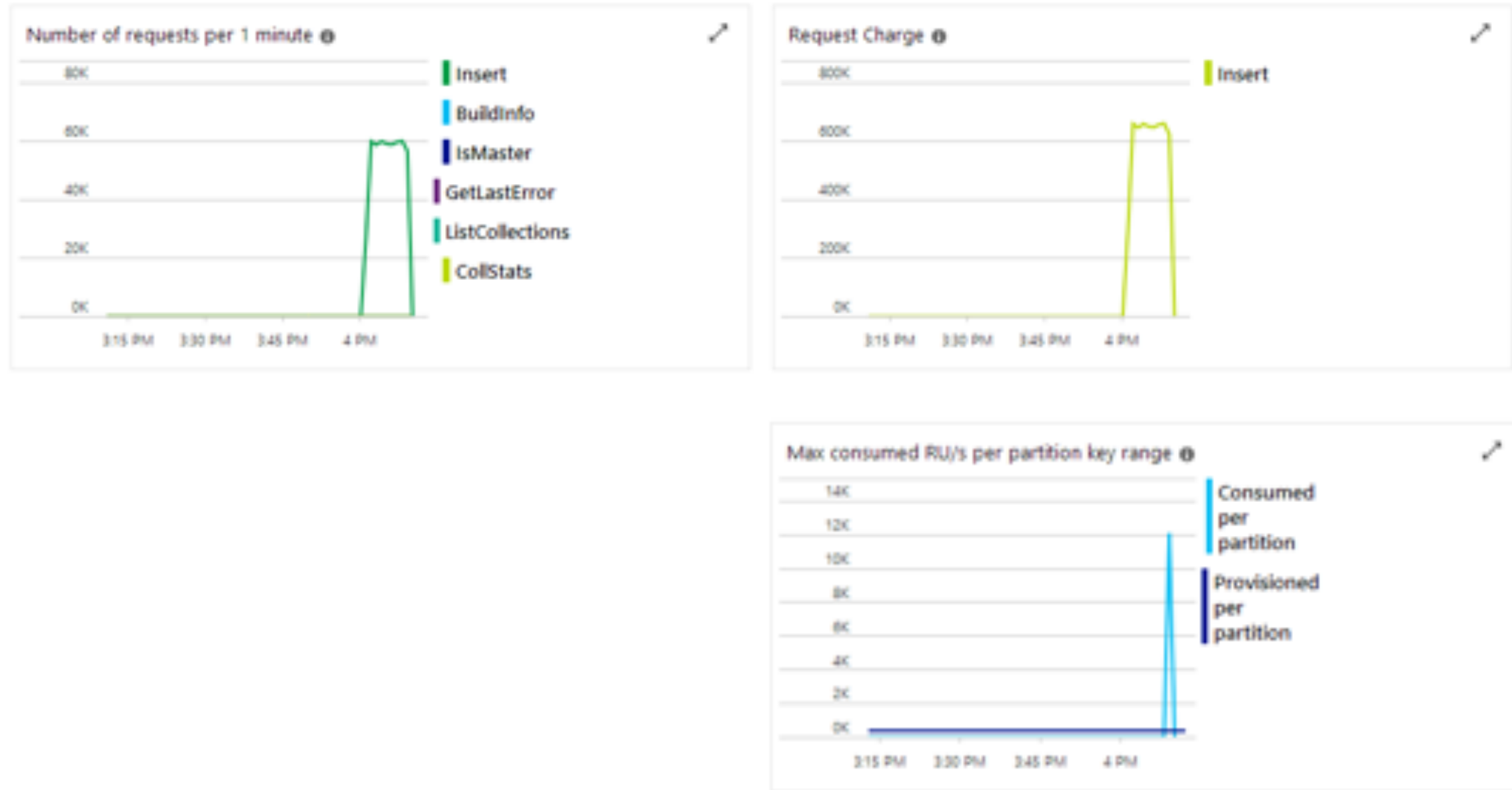
Since recently

- RUs per collection or RUs per database

Cosmos DB - Findings

- Tests on imports
 - 0.5 M codes from blob storage to database

Database type	
Azure SQL DB	53 seconds
Cosmos DB (400 RU, Mongo DB driver)	28 minutes
Cosmos DB (10000 RU, Mongo DB driver)	5 minutes
Cosmos DB (10000 RU, Mongo DB driver + partition support)	8 minutes



API Management

User portal

- Seperate access keys
- Throttling, logging per user account
- Documentation in the portal itself

The screenshot shows the Azure API Management API user portal for the 'RewardsMPA' API. The interface includes a top navigation bar with 'HOME', 'APIs', 'PRODUCTS', and 'ISSUES', and a user profile 'ADMINISTRATOR'. A search bar is located below the navigation. The left sidebar lists various API endpoints with their HTTP methods: GET (ApiTest), POST (Checks if an upload is approved by HIF), POST (Code - 1a. Check code), POST (Code - 1b. Pre-claim code(s)), POST (Code - 2. Confirm and claim code(s)), GET (Data - Get location finder), GET (Endpoint for campaign data), GET (Endpoint for location finder data), POST (Endpoint for updating verification results of images), GET (File - Get prize blob), GET (Page - 1. Get workflow for campaign), POST (Page - 2a. Save data of workflow page), and POST (Page - 2b. Save file of workflow page). The main content area displays details for the 'Code - 1a. Check code' endpoint, including a description, a 'Try it' button, the request URL 'https://fogicapi.heineken.nl/rewards/api/code/v1/check', request headers for 'Content-Type' and 'Ocp-Apim-Subscription-Key', and a request body section with a sample JSON object: { }.

Azure Api Management API

HOME APIs PRODUCTS ISSUES ADMINISTRATOR

Search

API definition

RewardsMPA

API change history

Code - 1a. Check code

Checks if a code is valid. Returns true when it is valid, returns false when it has been used already / invalid / unknown. NOTE: Only one code can be checked per request, even if the campaign requires more codes, so more requests are required.

Try it

Request

Request URL

https://fogicapi.heineken.nl/rewards/api/code/v1/check

Request headers

Header	Type	Description
Content-Type (optional)	string	Media type of the body sent to the API.
Ocp-Apim-Subscription-Key	string	Subscription key which provides access to this API. Found in your Profile .

Request body

Data for making the validation.

application/json text/json application/xml text/xml application/x-www-form-urlencoded

Sample Schema

```
{ }
```

Responses

200 OK

OK

API Management

Often set up as a shared service for many projects

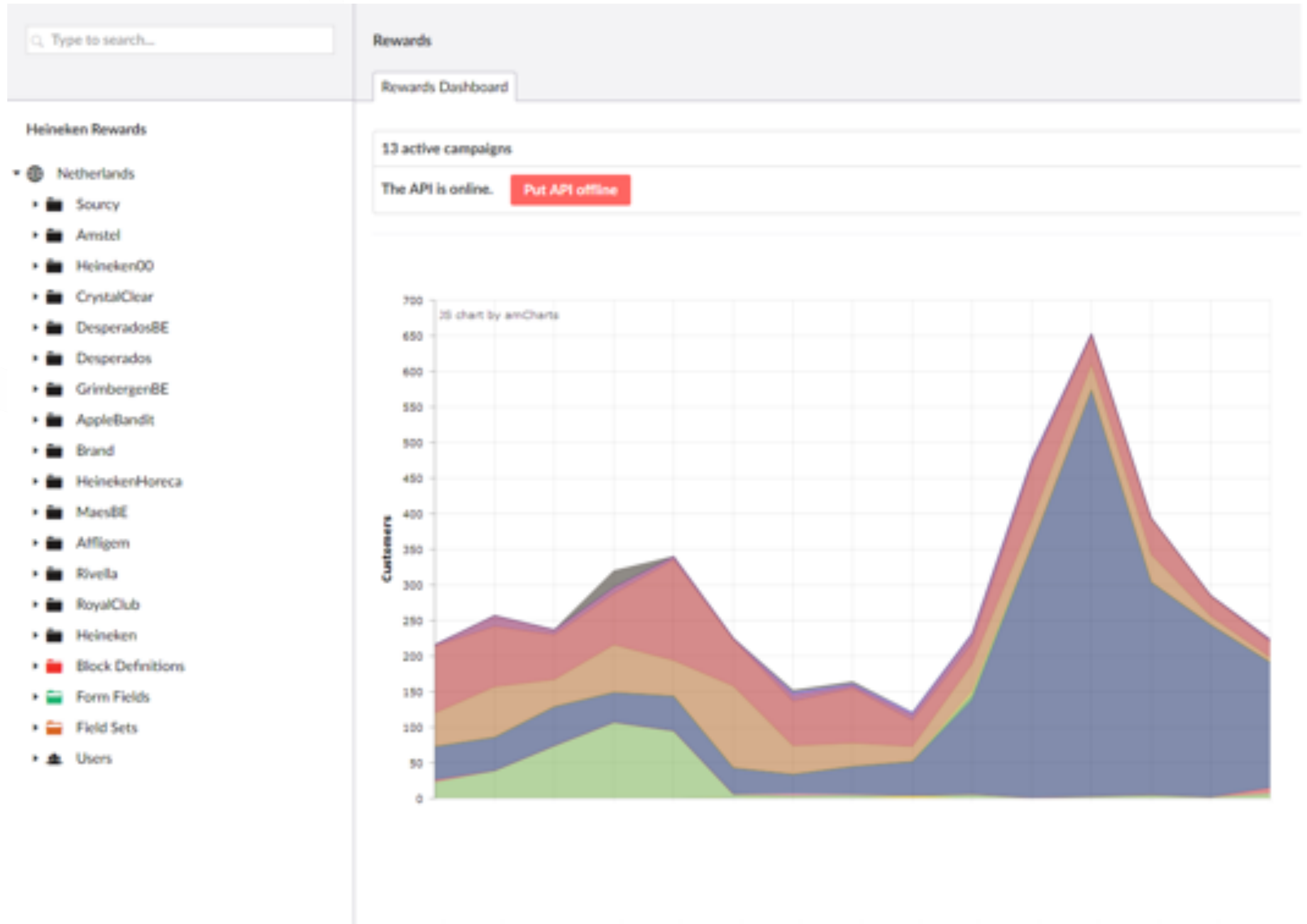
UMBRACO AS MODULAR CMS



Umbraco as modular CMS

- Customized UI and logic
- Using Umbraco for framework, authentication

Umbraco as modular CMS



Umbraco as modular CMS

Heineken Rewards

Netherlands

Sourcy

Amstel

Heineken00

CrystalClear

DesperadosBE

Desperados

GrimbergenBE

AppleBandit

Brand

HeinekenHoreca

MaesBE

Affligem

Rivella

RoyalClub

Royal Club cashback - Natural Soda (F)

Upload a file

Checkout

Title

Sub title

Text

Data entry form

Submit button text

Bedankt

Campaign not started

Campaign Finished

Prize Collections

SendGrid Emails

Checkout

Campaign Block Content

Campaign block Definition

Enter personal information

A campaign block definition can not be changed.

Center Field Sets

StandardCheckOutHIP

AcceptTermsAndConditions

Left Field Sets

Right Field Sets

Center Field Sets

Newsletter

Save Setting

Umbraco as modular CMS – findings

- ASP.NET Framework
- Angular 1.1.5



Ticking all the boxes

- No more manual checks thanks to AI!
- Easily integrated in all sites in minutes
- Power of the cloud: use resources when needed, delete when not
- GDPR compliant by design