



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

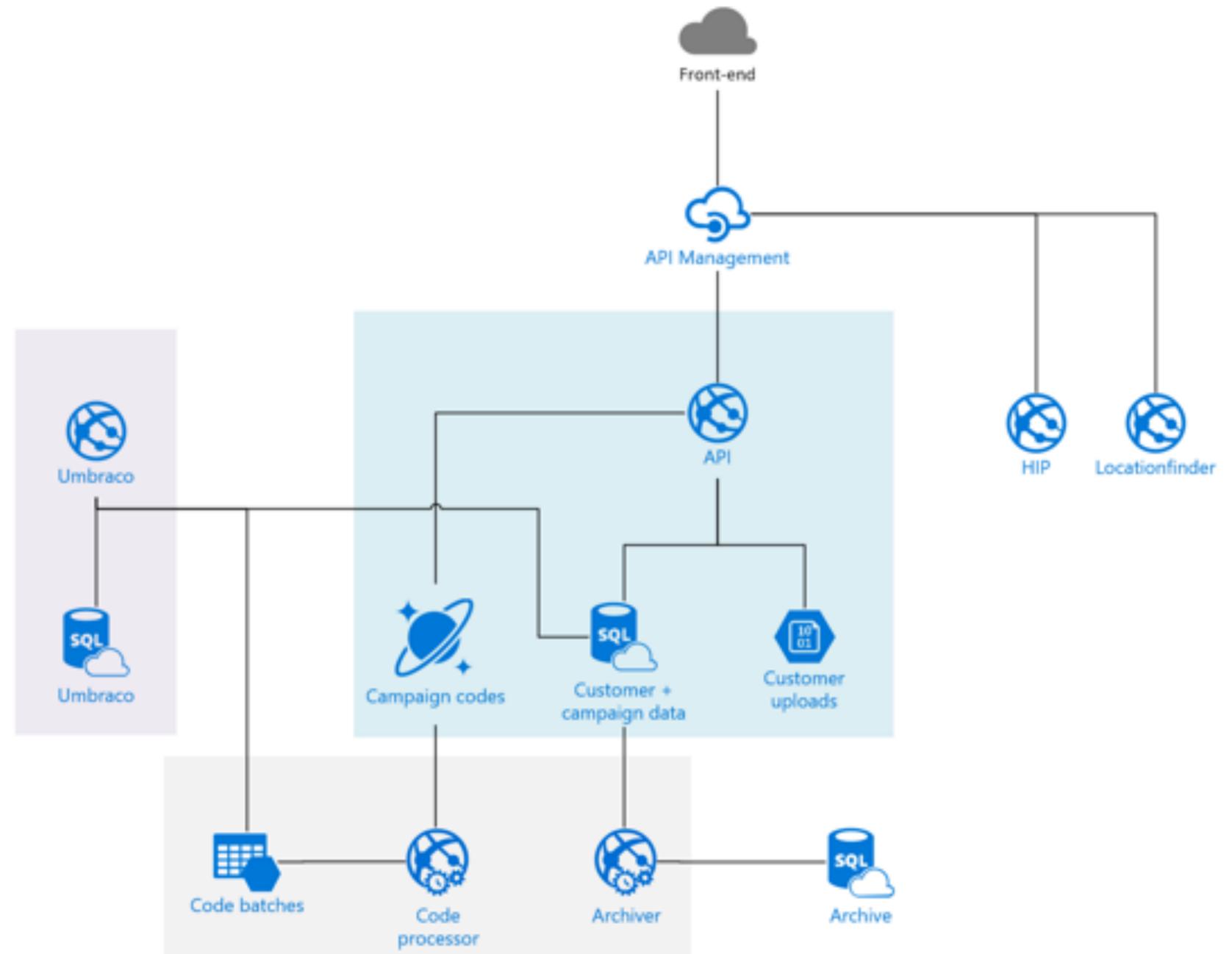
* Postcode

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	 Kamain
SQL API							
API for MongoDB							
Gremlin API							
Table API							
Cassandra API							

Regions



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

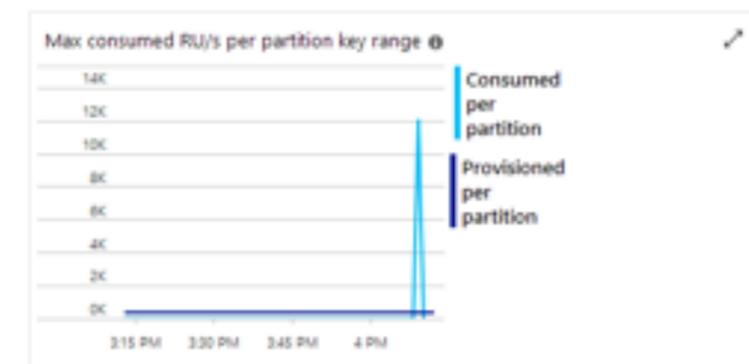
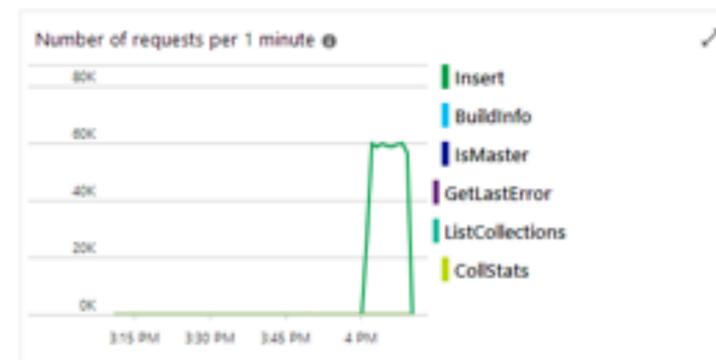
Since recently

- 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

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

The screenshot displays the Azure API Management user portal interface. At the top, the header reads 'Azure Api Management API' with navigation links for HOME, APIs, PRODUCTS, and ISSUES, and a user profile dropdown for ADMINISTRATOR. A search bar is located on the left side of the main content area. The main content area is titled 'RewardsMPA' and includes a link for 'API definition'. Below this, the selected endpoint is 'Code - 1a. Check code', which is described as '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.' A 'Try it' button is present. The 'Request' section shows the 'Request URL' as 'https://fogicapi.helminken.nl/rewards/api/codes/v1/check'. The 'Request headers' section lists 'Content-Type (optional)' as a string for media type and 'Ocp-Api-Subscription-Key' as a string for the subscription key. The 'Request body' section is titled 'Data for making the validation' and shows a selected 'application/json' format with a 'Sample' field containing an empty object '{}'. The 'Responses' section shows a '200 OK' status with an 'OK' response body.

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

Type to search...

Rewards

Rewards Dashboard

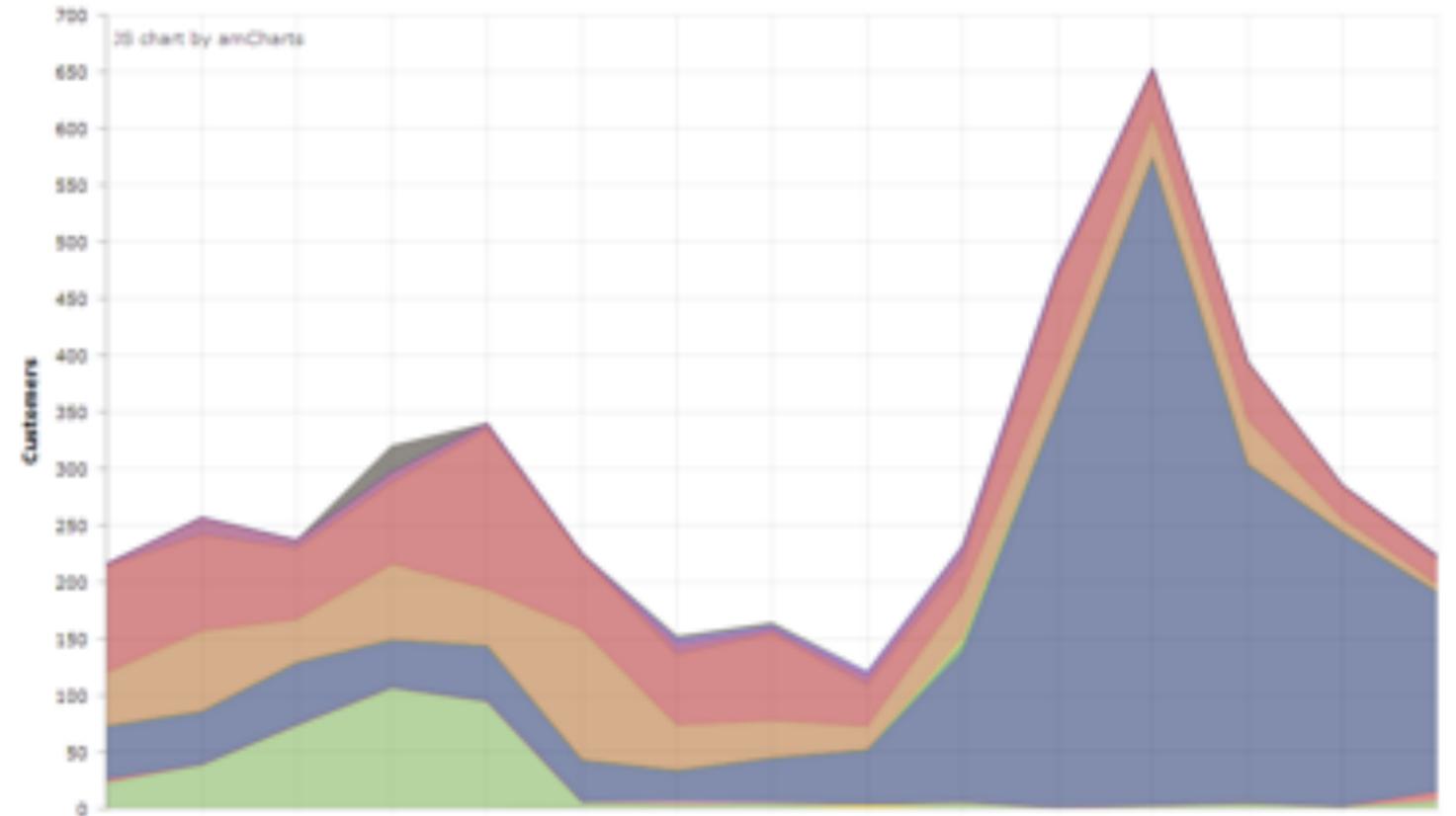
13 active campaigns

The API is online.

[Put API offline](#)

Heineken Rewards

- 🌐 Netherlands
 - 📁 Sourcy
 - 📁 Amstel
 - 📁 Heineken00
 - 📁 CrystalClear
 - 📁 DesperadosBE
 - 📁 Desperados
 - 📁 GrimbergenBE
 - 📁 AppleBandit
 - 📁 Brand
 - 📁 HeinekenHoreca
 - 📁 MaesBE
 - 📁 Affligem
 - 📁 Rivella
 - 📁 RoyalClub
 - 📁 Heineken
- 📁 Block Definitions
- 📁 Form Fields
- 📁 Field Sets
- 👤 Users



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