
BACK TO THE 90's!
HW&W
MIX
11

Yves Goeleven

Solution Architect & Azure MVP

This means I'm old & develop software

- Particular Software / NServiceBus
- Side projects
  - MessageHandler: Event stream processing & event sourcing framework
  - Dish: Static site generator
  - ClubManagement.io: Progressive Web Apps for managing sports clubs

- Azure MVP since 2010
- Co-founder & board member @ AZUG.be

- Board member @ Basket Lummen

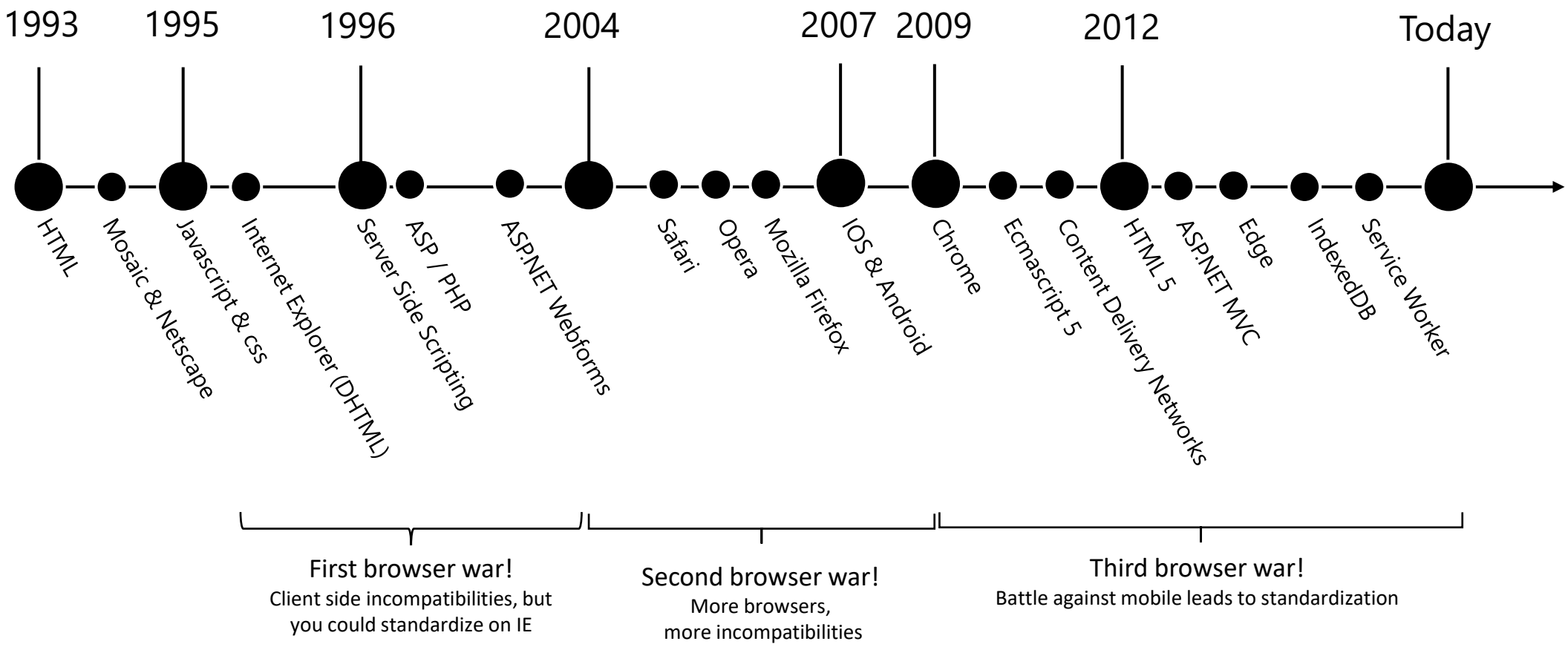
Welcome to Microsoft's World Wide Web Server!

Where do you want to go today?

If your browser doesn't support images, we have a text menu as well.

Web development

A brief history with major milestones



Revenge of the static website

Why?

3 reasons

- It’s cheap!
- It’s simple!

- Single codebase for any app (PWA)
  - Web, desktop & mobile apps!
  - Offline

The story of basketlummen.be

BASKET LUMMEN

Home

- Home
- Clubinfo
- Hot News
- Ploegen
- Fotoalbum
- Activiteiten
- Verjaardagen

Eetdag Basket Lummen

zondag 22 oktober

De Kalen Dries te Meldert
van 11 u. tot 14 u. en van 17 u. tot 20 u.

Klik hier om uw bestelling door te geven

Peanutstornooi

zaterdag 11 november

Klik hier om in te schrijven

KBBC ZOLDER

:: Wedstrijden 2° ronde jeugd ::

do 3 januari

De wedstrijden van de 2° ronde zijn ingepland en beschikbaar op onze website.
Opgelet! wedstrijden vangen aan in het weekend van 5 januari.

lees verder

nieuwsarchief

Schrijf in op onze mailinglijst

E-mailadres

Toevoegen

KBBC Zolder Official
Like Page 332 likes

:: Verjaardagen ::

Jarigen deze week:

donderdag 23 mei
Valerie Geluykens
Dames
34 jaar

zaterdag 25 mei
Casper Van de Pol
D-ploeg
19 jaar

maandag 27 mei
Sophie Luyck
25 jaar

dinsdag 28 mei
Jean-Pierre De Roo
51 jaar

Nieuws
Ontvangen berichten
Verzonden berichten
Bericht plaatsen
Admin
Wachtwoord wijzigen
Gebruikers
Wedstrijden
Overzicht
Hot News
Nieuws toevoegen
Nieuws wijzigen
Activiteiten
Programma
Opmerkingen
Eetdag
Peanuts
Mosselfeest
Stage
Barbeque
Ethias/Heizel
Wedstrijden
Uitslagen ingeven
Uitslag wijzigen
Kalender wijzigen
Ploeg toevoegen
Match toevoegen
Tafelverdeling
Verslag toevoegen
Varia
Onkosten
Sporthalbezetting
Ijstaarten
Topschutters
Gastenboek

Ontvangen berichten

Licenties en medische attesten

Dropbox

Beste,

Denken jullie er aan dat wij helpende handen nodig hebben op 10/11 voor het klaarzetten van de sporthal voor het peanutstornooi van 11/11.
We kunnen helaas pas om 23 uur in de sporthal.

Dominique.

geplaatst door Dominique Vanderheyden, 3/11/2017 16:01:01

The story of basketlummen.be

Cost Model

Simple Architecture

Offline App

https://portal.azure.com/#@yvesgoeleven.onmicrosoft.com/resource/subscriptions/0ce4f3ba-ba4c-4d14-a31d-9c415d76e242/costByResource

Microsoft Azure

Search resources, services, and docs

yves@goeleven.com
MESSAGEHANDLER.PRD

Coachcorner - Cost analysis

Subscription

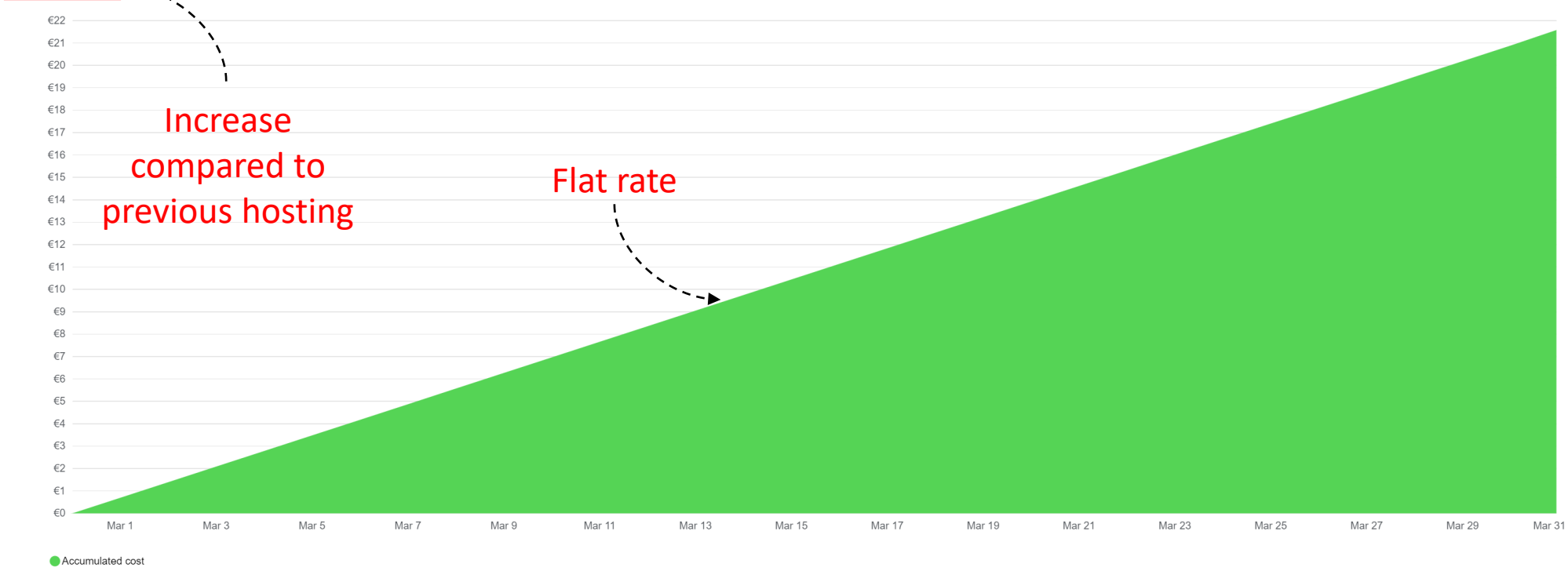
Share | Refresh | Export | Cost by resource

How satisfied are you with cost analysis?

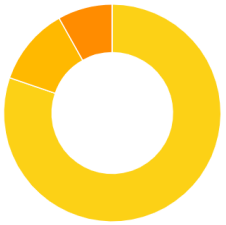
Scope : Coachcor... | Custom view | Mar 2019 | Granularity : Accumulated | Group by : None | Add filter

TOTAL
€21.58

BUDGET: NONE



Service name



virtual machines €17.32
virtual network €2.50
storage €1.76
bandwidth €0

Location

uk south €21.58

Resource group name

coachcorner €20.51
classic services €1.06

Niet beveiligd | www.basketlummen.be

Info Seniors Jeugd Lizards Wedstrijden Media

Dames A

Bekerfinalist Dames Nationaal

Meer weten

M16 A Lummen

Bekerfinalist M16

Meer weten

Dames C

Bekerfinalist Dames Provinciaal

Meer weten

M19 A BT

Bekerfinalist M19

Meer weten

M16 A BT

Bekerfinalist M16

Meer weten

M14 A Lummen

Bekerfinalist M14

Meer weten

Volgende wedstrijd

zaterdag

https://portal.azure.com/#@yvesgoeleven.onmicrosoft.com/resource/subscriptions/c2bbfbf4-49e5-49bc-bfab-356d7cac0ce6/costByResource

Microsoft Azure | Search resources, services, and docs | yves@goeleven.com MESSAGEHANDLER.PRD

Create a resource
Home
Dashboard
All services
FAVORITES
Resource groups
All resources
Subscriptions
Monitor
Cost Management + Billing
Recent
App Service plans
App Services
Virtual machines (classic)
Service Bus
Virtual machines
Storage accounts
SQL databases
Cloud services (classic)
Search services
IoT Hub
Azure Cosmos DB
Azure Active Directory
Security Center
Help + support
Advisor
Analysis Services

Dashboard > Cost Management + Billing - Overview > Goeleven.com - Cost analysis

Goeleven.com - Cost analysis
Subscription

Search (Ctrl+/)

Overview
Access control (IAM)
Diagnose and solve problems
Security
Events

Cost Management
Cost analysis
Budgets
Advisor recommendations

Billing
Invoices
External services
Payment methods
Partner information

Settings
Programmatic deployment
Resource groups
Resources
Usage + quotas
Policies
Management certificates
My permissions
Resource providers
Deployments
Properties
Resource locks

Support + troubleshooting
New support request

Share | Refresh | Export | Cost by resource

How satisfied are you with cost analysis?

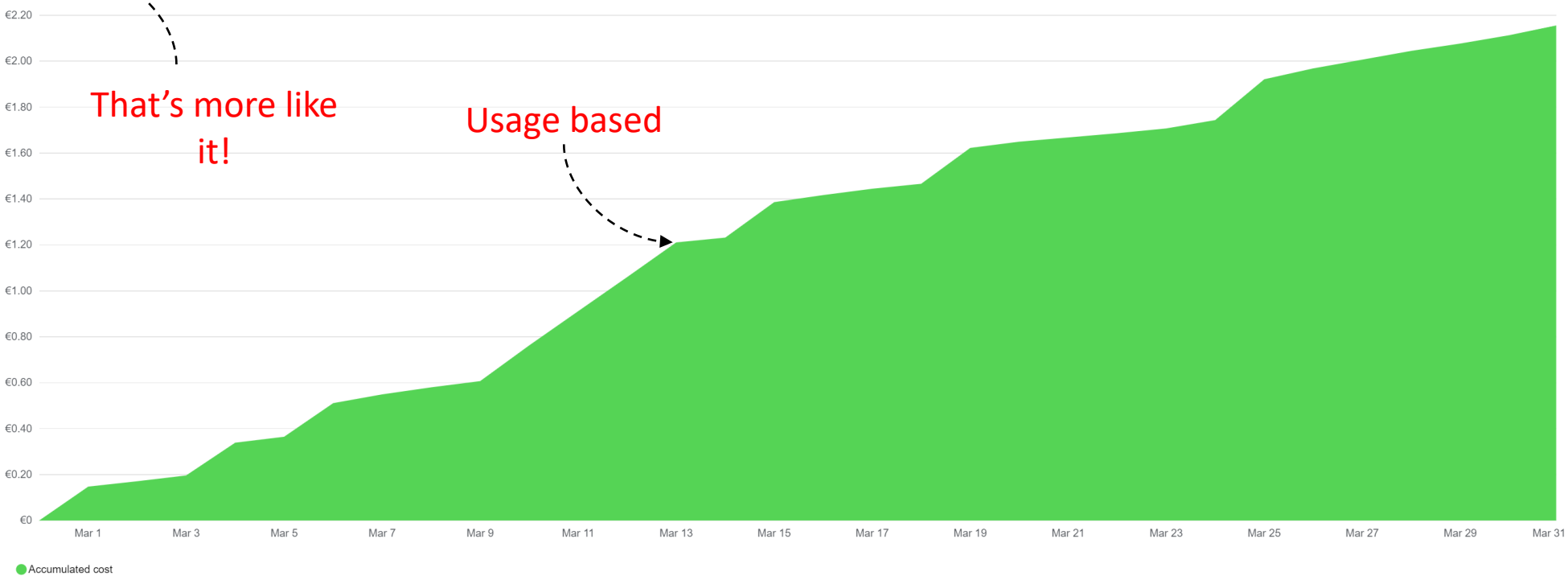
Scope : Goeleven.... | Custom view | Mar 2019 | Granularity : Accumulated | Group by : None | Resource group name : basketlummen | Add filter

TOTAL
€2.16

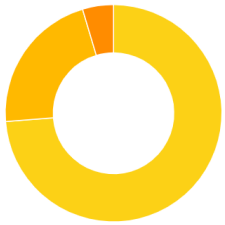
BUDGET: NONE

That's more like it!

Usage based

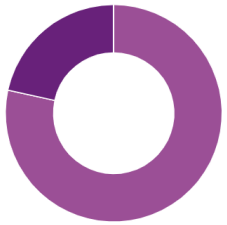


Service name



storage €1.59
content delivery net... €0.47
bandwidth €0.10

Location



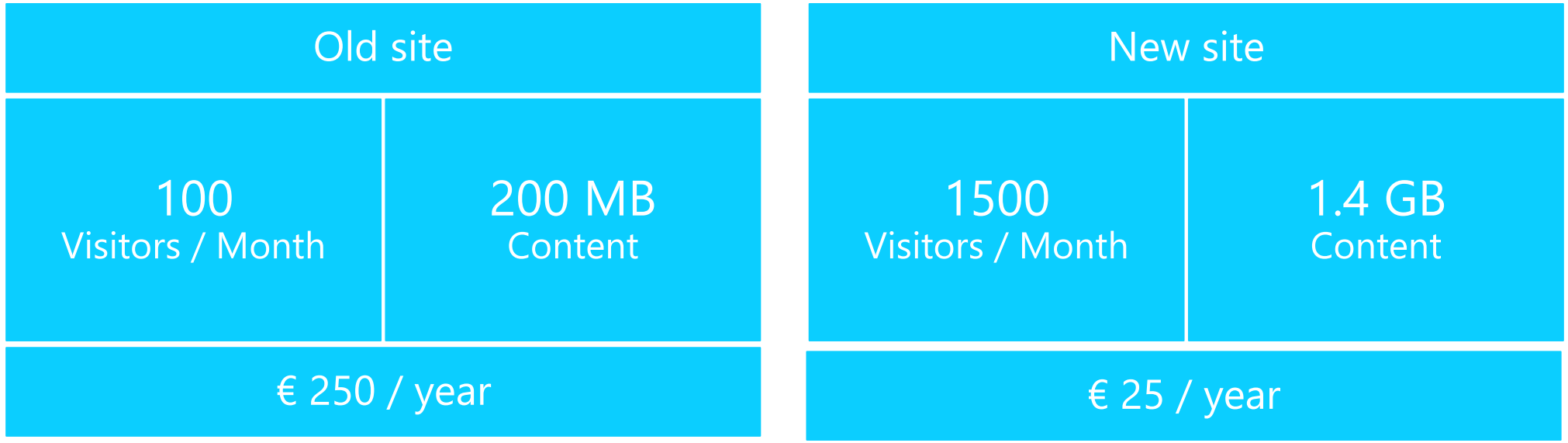
uk south €1.69
us south central €0.47
us west €0

Resource group name

basketlummen €2.16

More value for less money

New site is a lot bigger than the old one



The story of basketlummen.be

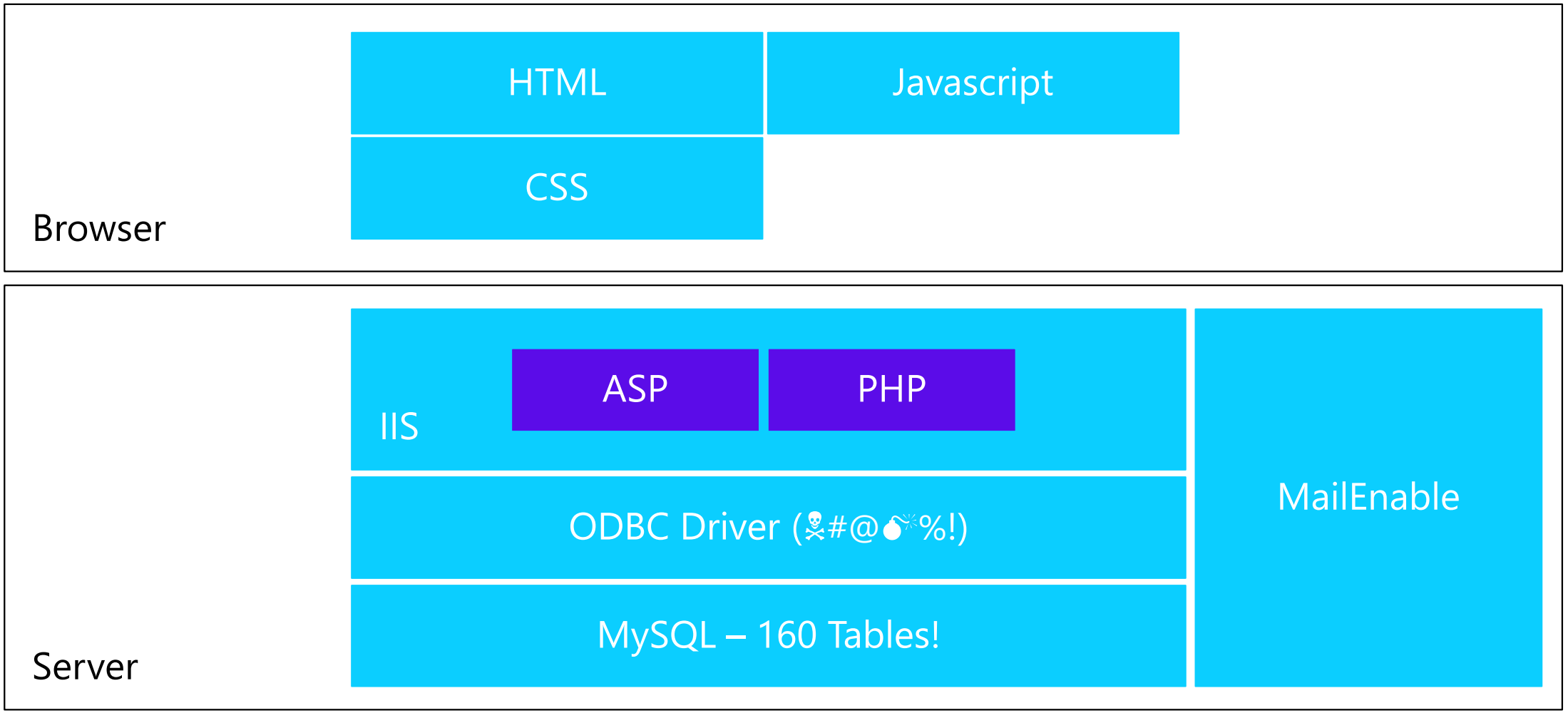
Cost Model

Simple Architecture

Offline App

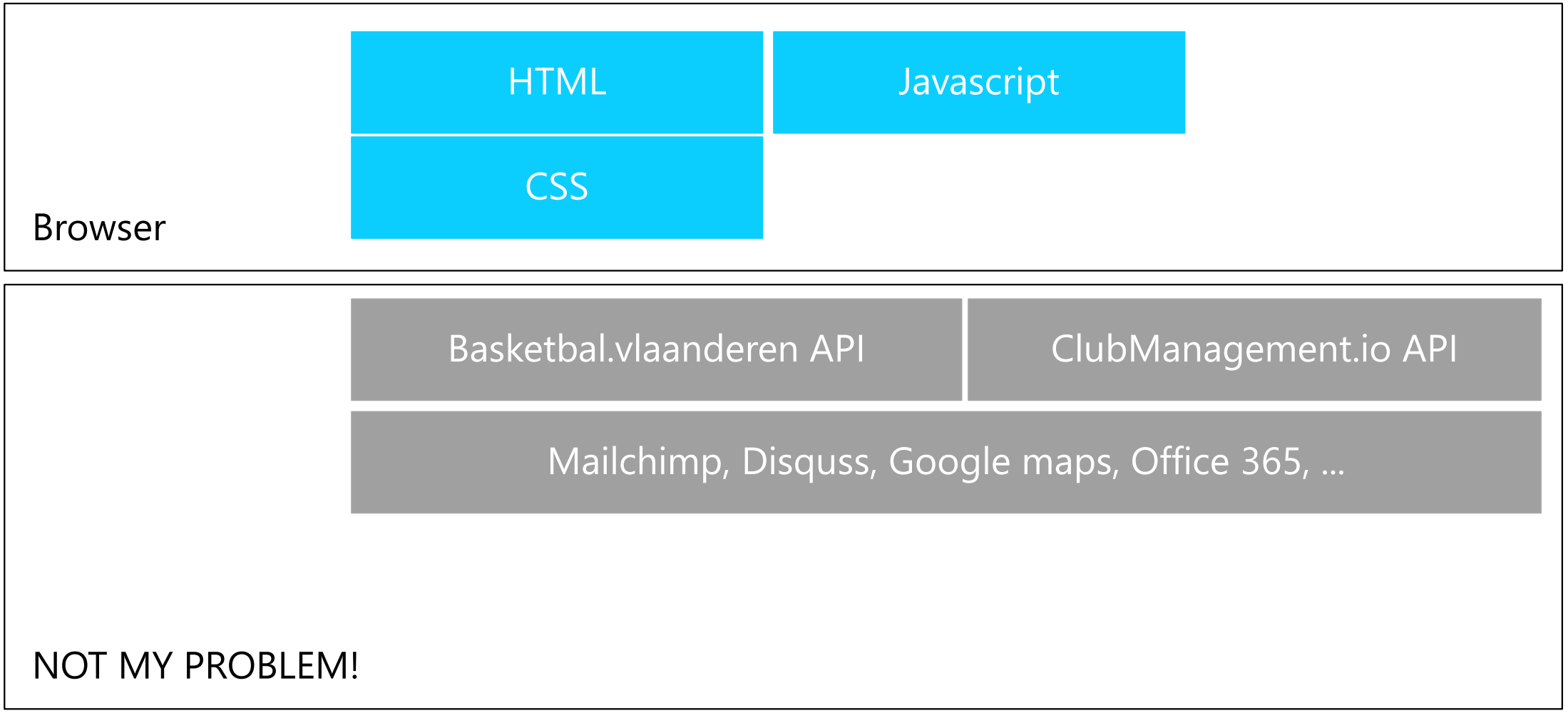
Old site

Architecture



New site

JAM Stack



The story of basketlummen.be

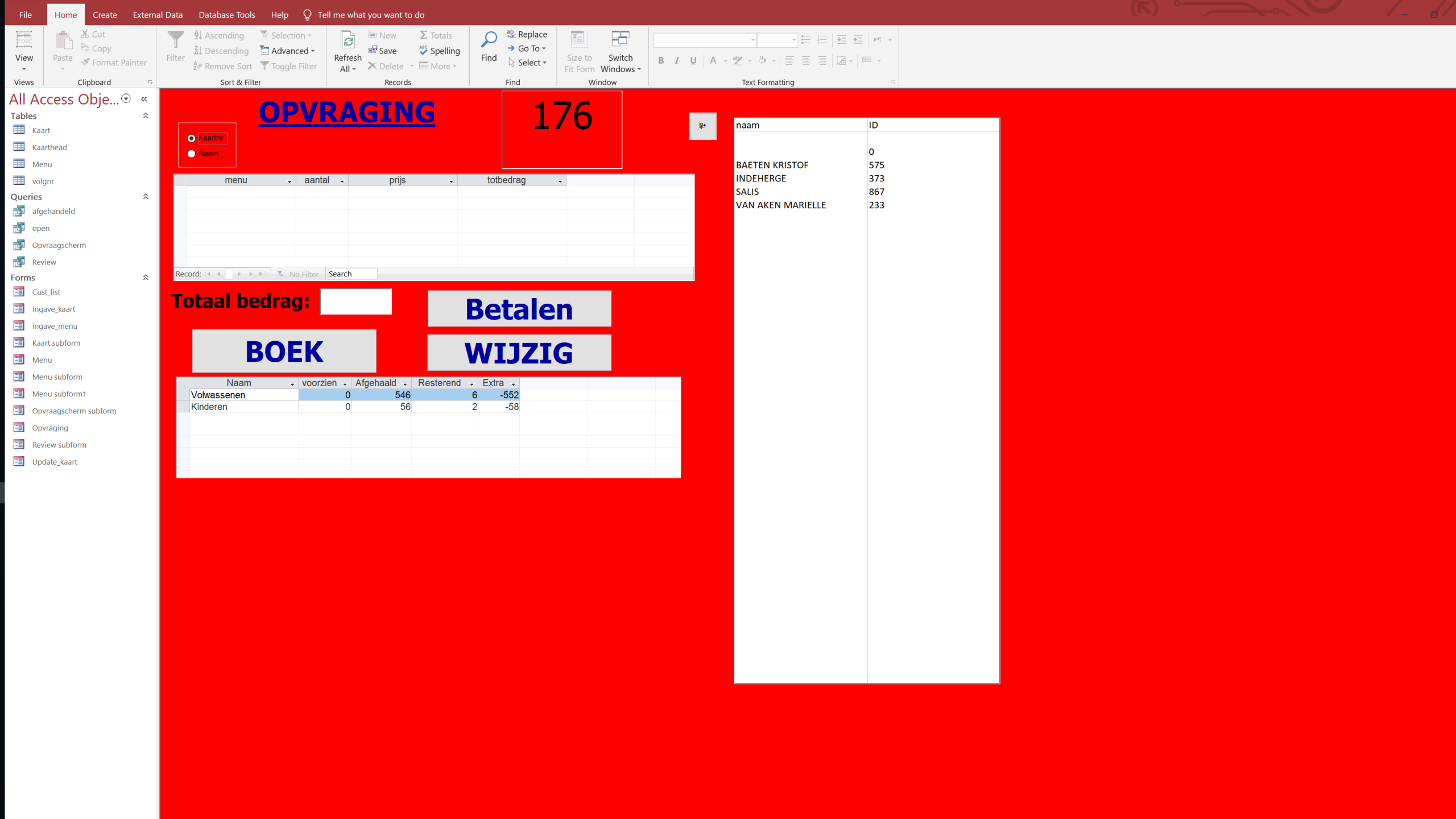
Cost Model

Simple Architecture

Offline App


14


Het is verboden te roken
in de zaal en ook op de
TOILETTEN!!


File
Home
Create
External Data
Database Tools
Help
Tell me what you want to do
View
Views
Paste
Cut
Copy
Format Painter
Clipboard
Filter
Ascending
Descending
Remove Sort
Selection
Advanced
Toggle Filter
Sort & Filter
Refresh All
New
Save
Delete
Totals
Spelling
More
Records
Find
Replace
Go To
Select
Find
Size to Fit Form
Switch Windows
Window
Text Formatting
All Access Obje...
Tables
Kaart
Kaarthead
Menu
volgnr
Queries
afgehandeld
open
Opvraagscherm
Review
Forms
Cust_list
Ingave_kaart
ingave_menu
Kaart subform
Menu
Menu subform
Menu subform1
Opvraagscherm subform
Opvraging
Review subform
Update_kaart
OPVRAGING
176
Kaartnr
Naam
menu
aantal
prijs
totbedrag
Record:
No Filter
Search
Totaal bedrag:
Betalen
BOEK
WIJZIG
Naam
voorzien
Afgehaald
Resterend
Extra
Volwassenen 0 546 6 -552
Kinderen 0 56 2 -58
naam
ID
0
BAETEN KRISTOF 575
INDEHERGE 373
SALIS 867
VAN AKEN MARIELLE 233

Bestellingen

Reeds geleverde bestellingen

19

Te leveren bestellingen

3

Te leveren producten

3 stukken	0
2 stukken	0

Te leveren opties

Varkensbrochette	2
Scampi	2
Chipolata	1
Spiering	0
Kipfilet	0

Te leveren

Bestelling toevoegen

Tester De Test
Besteld: 1x 3 stukken (Spiering, Chipolata, Scampi)
Geleverd:
Totaal: €18
Geplaatst: 17-4-2019 23:16:41

Leveren

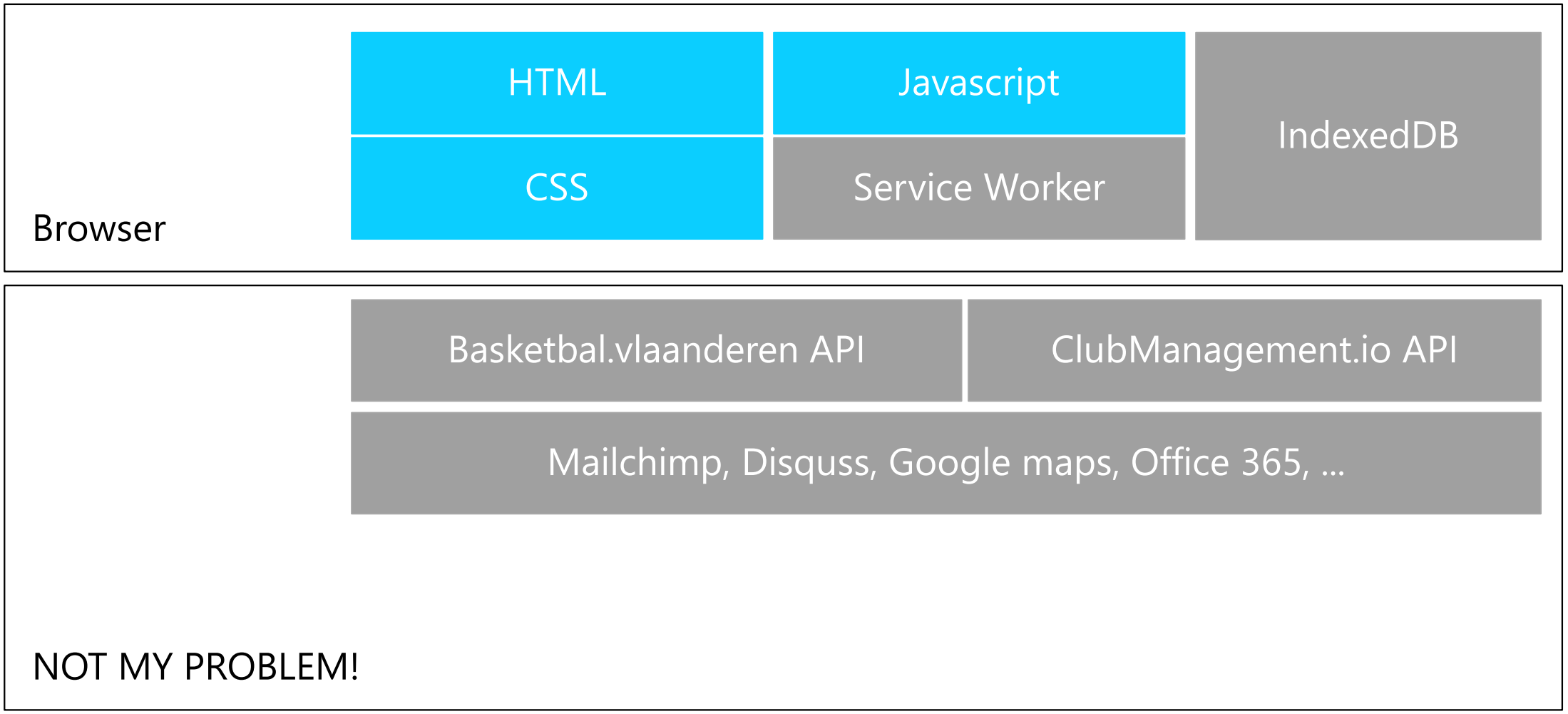
NVitral
Besteld: 1x 3 stukken (Spiering, Varkensbrochette, Scampi)
Geleverd:
Totaal: €18
Geplaatst: 17-4-2019 23:19:16

Leveren

Nog niet geleverd

New fundraising app

Progressive Web App



Setting up cheap hosting

Azure Storage

Azure CDN

DNS

Create a resource
Home
Dashboard
All services
FAVORITES
Resource groups
All resources
Subscriptions
Monitor
Cost Management + Billing
Recent
App Service plans
App Services
Virtual machines (classic)
Service Bus
Virtual machines
Storage accounts
SQL databases
Cloud services (classic)
Search services
IoT Hub
Azure Cosmos DB
Azure Active Directory
Security Center
Help + support
Advisor
Analysis Services

clubmgmtappstest - Static website

Storage account

Search (Ctrl+/)

Access control (IAM)
Tags
Diagnose and solve problems
Events
Storage Explorer (preview)

Settings
Access keys
Geo-replication
CORS
Configuration
Encryption
Shared access signature
Firewalls and virtual networks
Advanced Threat Protection
Static website
Properties
Locks
Export template

Blob service
Blobs
Custom domain
Soft delete
Azure CDN
Add Azure Search
Lifecycle Management

File service
Files

Table service
Tables

Queue service
Queues

Monitoring
Alerts

Save Discard

Configuring the blob service for static website hosting enables you to host static content in your storage account. Webpages may include static content and client-side scripts. Server-side scripting is not supported in Azure Storage. Learn more

Static website

Disabled | Enabled

An Azure Storage container has been created to host your static website.

$web

Primary endpoint

https://clubmgmtappstest.z33.web.core.windows.net/

Secondary endpoint

https://clubmgmtappstest-secondary.z33.web.core.windows.net/

Index document name

index.html

Error document path

404.html

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$web

Container

Search (Ctrl+/)

Overview
Access Control (IAM)

Settings

Access policy
Properties
Metadata
Editor (preview)

Upload | Refresh | Change access level | Delete | Acquire lease | Break lease | View snapshots | Create snapshot

Authentication method: Access key (Switch to Azure AD User Account)
Location: $web

Search blobs by prefix (case-sensitive)

Show deleted blobs

NAME	MODIFIED	ACCESS TIER	BLOB TYPE	SIZE	LEASE STATE
fundraising					-
fundraisingcheckin					-

clubmgmtappstest - Configuration

Storage account

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IoT Hub
Azure Cosmos DB
Azure Active Directory
Security Center
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Analysis Services

Search (Ctrl+/)

Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Events
Storage Explorer (preview)

Settings
Access keys
Geo-replication
CORS
Configuration
Encryption
Shared access signature
Firewalls and virtual networks
Advanced Threat Protection
Static website
Properties
Locks
Export template

Blob service
Blobs
Custom domain
Soft delete
Azure CDN
Add Azure Search
Lifecycle Management

File service
Files

Table service
Tables

Queue service
Queues

Save Discard

The cost of your storage account depends on the usage and the options you choose below.

Learn more

Account kind
StorageV2 (general purpose v2)

Performance
Standard | Premium

* Secure transfer required
Disabled | Enabled

Required for service worker

Access tier (default)
Cool | Hot

Replication
Read-access geo-redundant storage (RA-GRS)

Azure Active Directory authentication for Azure Files (Preview)
Disabled | Enabled

Data Lake Storage Gen2

Hierarchical namespace
Disabled | Enabled

Setting up cheap hosting

Azure Storage

Azure CDN

DNS

Why CDN?

2 reasons

- FREE SSL for custom domain names!
- Reduce storage transaction costs
  - Ensure cache control headers are set on blobs!

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Search services
IoT Hub
Azure Cosmos DB
Azure Active Directory
Security Center
Help + support
Advisor
Analysis Services

clubmgmtfund-checkin-test - Origin

Endpoint

Search (Ctrl+/)

Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems

Settings

Origin
Custom domains
Compression
Caching rules
Geo-filtering
Optimization
Locks
Export template

Monitoring

Diagnostics logs

Support + troubleshooting

New support request

Save Discard

* Origin type

Custom origin

* Origin hostname

clubmgmtappstest.z33.web.core.windows.net

Origin host header

clubmgmtappstest.z33.web.core.windows.net

Origin path

/fundraisingcheckin

Protocol	Origin port
HTTP	80
HTTPS	443

Setting up cheap hosting

Azure Storage

Azure CDN

DNS

https://ap.www.namecheap.com/Domains/DomainControlPanel/clubmanagement.io/advancedns

- Dashboard
- Expiring / Expired
- Domain List
- Product List
- Apps
- Profile

Actions | Filters | Search

CNAME Record	camps	clubmgmtcamps.azureedge.net.	30 min	
CNAME Record	events	clubmgmtevents.azureedge.net.	30 min	
CNAME Record	fundraising	clubmgmtfund.azureedge.net.	30 min	
CNAME Record	fundraising-checki...	clubmgmtfund-checkin-test.azureedge.net.	30 min	

ADD NEW RECORD

SHOW MORE

DNSSEC ? Status

MAIL SETTINGS ? Email Forwarding

Type	Host	Value	TTL
TXT Record	@	v=spf1 include:spf.efwd.registrar-servers.com ~all	Automatic

DYNAMIC DNS ? Status

PERSONAL DNS SERVER ? Register Nameserver ADD NAMESERVER

Find Nameservers Standard Nameservers SEARCH

Q&A

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Search services
IoT Hub
Azure Cosmos DB
Azure Active Directory
Security Center
Help + support
Advisor
Analysis Services

clubmgmtfund-checkin-test - Custom domains

Endpoint

Search (Ctrl+/)

Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems

Settings

Origin
Custom domains
Compression
Caching rules
Geo-filtering
Optimization
Locks
Export template

Monitoring

Diagnostics logs

Support + troubleshooting

New support request

Custom domain

Custom domains

HOSTNAME	CUSTOM HTTPS	DETAILS
fundraising-checkin-test.clubmanagement.io	Enabled	Certificate successfully deployed

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IoT Hub
Azure Cosmos DB
Azure Active Directory
Security Center
Help + support
Advisor
Analysis Services

fundraising-checkin-test.clubmanagement.io

Custom domain

Save Discard

About This Feature

Custom Domain HTTPS feature enables you to deliver content to your users securely over your own domain. This is done by encrypting the data between the CDN and your users' clients (typically web browsers) via TLS protocol (which is a successor of the SSL protocol) using a certificate. The workflow to enable HTTPS is simplified via one-click enablement and complete certificate management, all with no additional cost.

Learn more

Configure

Custom domain HTTPS

On Off

Status

1 Submitting request

Your HTTPS request has been submitted successfully.

2 Domain validation

Your domain ownership has been successfully validated.

3 Certificate provisioning

The certificate has been successfully deployed to CDN network.

4 Complete

HTTPS has been successfully enabled on your domain.

Managing the site content

Dynamic content

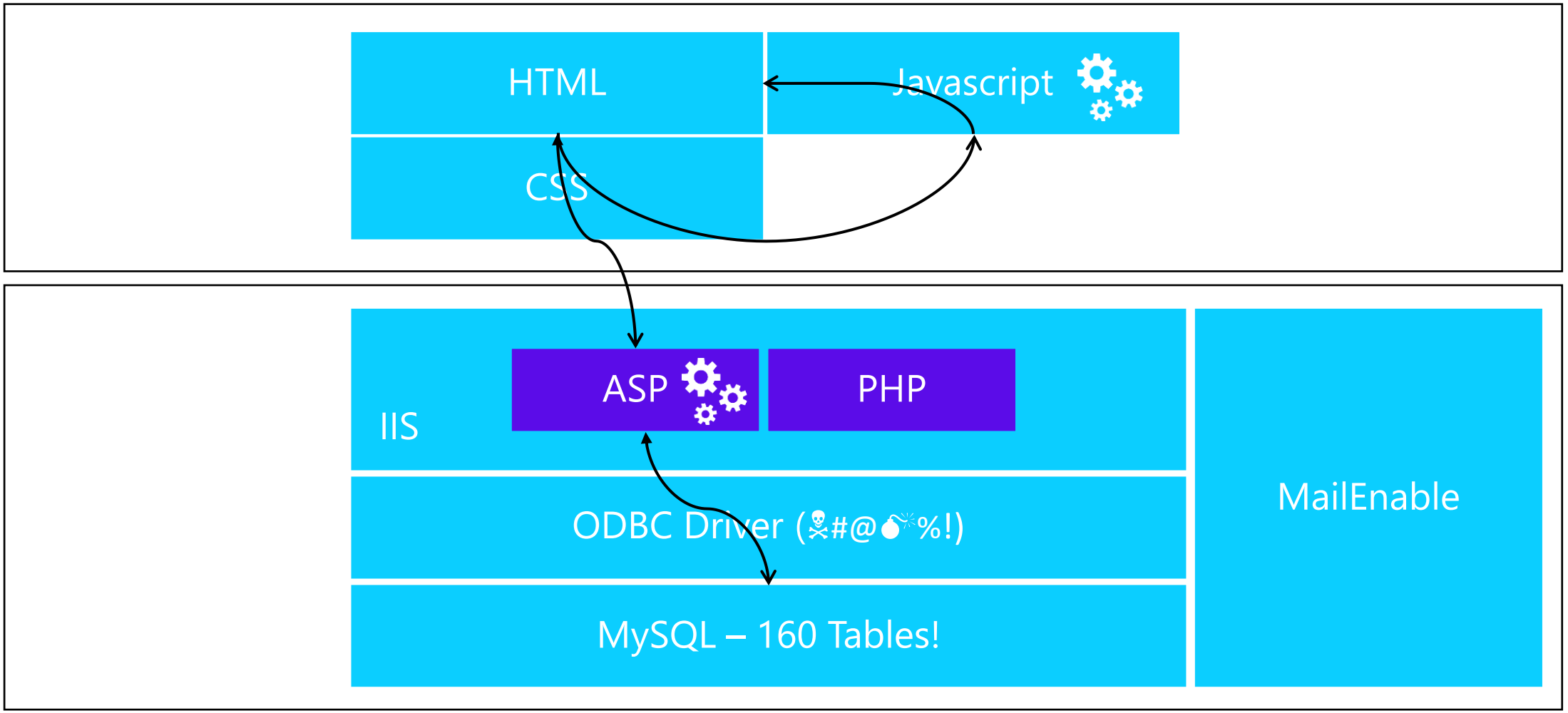
Static Site Generation

Local Experience

Publishing Process

Dynamic content

The traditional way: render on every request



Dynamic content

Not all content is equal

Change rate vs user expectations	Real Time	Delay	Stale
No changes	Manual publishing	Manual publishing	Manual publishing
Occasional	On every request	Automated publishing	Manual publishing
Frequent	On every request	Automated publishing	Manual publishing

In a static site context

- **On every request**: API call with client side rendering
- **Manual publishing**: Update the site and publish
- **Automated publishing**: Plug the publishing process into your business processes

Managing the site content

Dynamic content | **Static Site Generation** | Local Experience | Publishing Process

Static site generator

An essential tool in the publishing process

- Renders a website from content files

- Content files in appropriate format
  - Text: markdown
  - Config: Yaml
  - Templates: Handlebars

- A multistep build pipeline (chain of responsibility)
  - Read files
  - Preprocessing steps
  - Rendering
  - Postprocessing steps

- Most popular ones: Jekyll, Hexo, Hugo, …

Introducing DISH

Why I built my own static site generator

- A library
- Plug into my business logic
- .Net core
- Full control of the pipeline
  - E.g. publish to azure storage static websites

Managing the site content

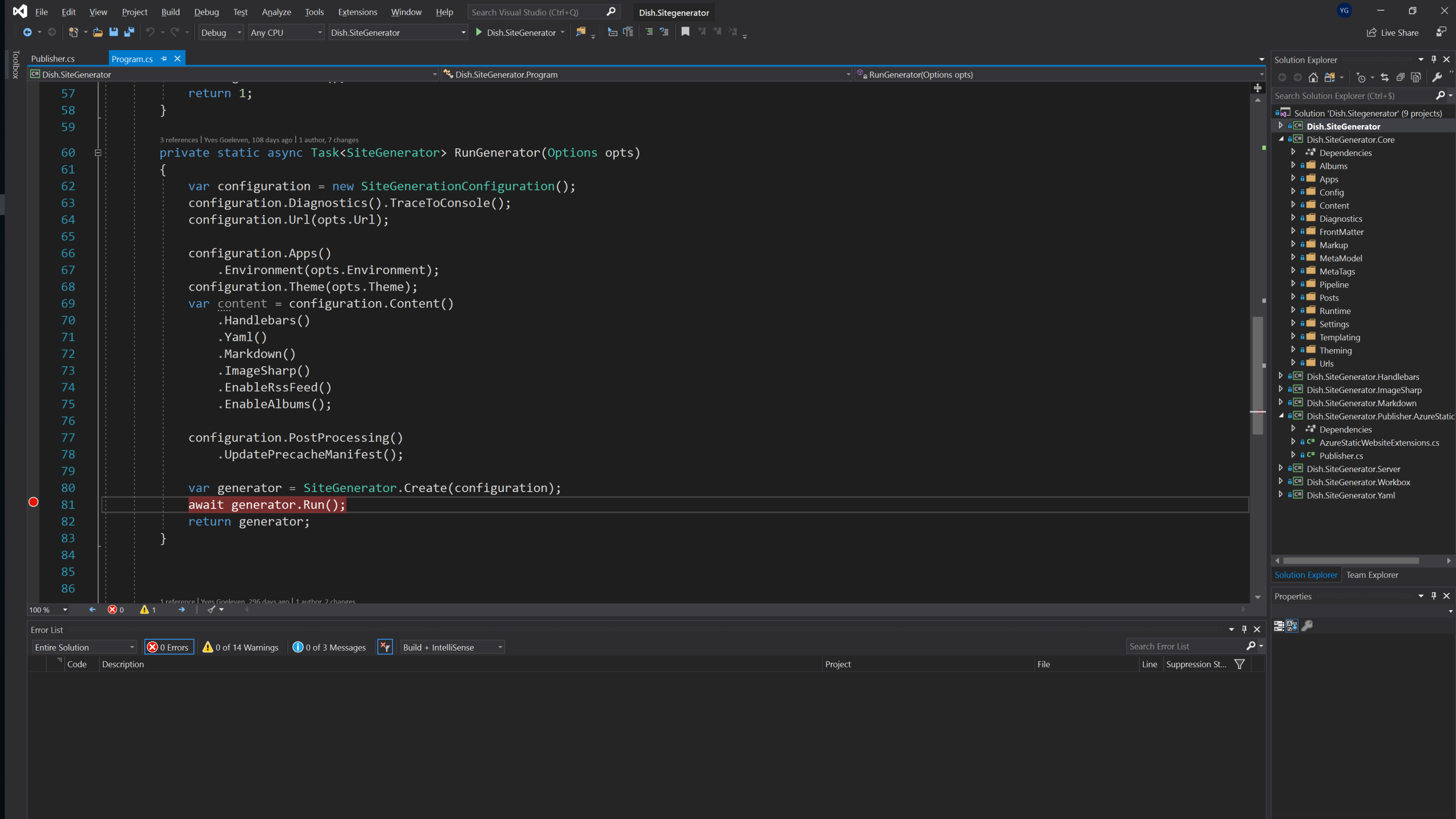
Dynamic content	Static Site Generation	Local Experience	Publishing Process

Local Experience

Requires a command line tool

- Write a console app using the library

- Main generation methods
  - **Run**: executes the pipeline
  - **Serve**: hosts the site locally in Kestrel
  - **Publish**: uploads the site to azure storage static websites


File Edit View Project Build Debug Test Analyze Tools Extensions Window Help
Search Visual Studio (Ctrl+Q)
Dish.Sitegenerator
Debug
Any CPU
Dish.SiteGenerator
Live Share
Publisher.cs
Program.cs
Dish.SiteGenerator
Dish.SiteGenerator.Program
RunGenerator(Options opts)
return 1;
}
3 references | Yves Goeleven, 108 days ago | 1 author, 7 changes
private static async Task<SiteGenerator> RunGenerator(Options opts)
{
var configuration = new SiteGenerationConfiguration();
configuration.Diagnostics().TraceToConsole();
configuration.Url(opts.Url);
configuration.Apps()
.Environment(opts.Environment);
configuration.Theme(opts.Theme);
var content = configuration.Content()
.Handlebars()
.Yaml()
.Markdown()
.ImageSharp()
.EnableRssFeed()
.EnableAlbums();
configuration.PostProcessing()
.UpdatePrecacheManifest();
var generator = SiteGenerator.Create(configuration);
await generator.Run();
return generator;
}
1 reference | Yves Goeleven, 296 days ago | 1 author, 2 changes
100 %
0
1
Solution Explorer
Search Solution Explorer (Ctrl+$)
Solution 'Dish.Sitegenerator' (9 projects)
Dish.SiteGenerator
Dish.SiteGenerator.Core
Dependencies
Albums
Apps
Config
Content
Diagnostics
FrontMatter
Markup
MetaModel
MetaTags
Pipeline
Posts
Runtime
Settings
Templating
Theming
Urls
Dish.SiteGenerator.Handlebars
Dish.SiteGenerator.ImageSharp
Dish.SiteGenerator.Markdown
Dish.SiteGenerator.Publisher.AzureStatic
Dependencies
AzureStaticWebsiteExtensions.cs
Publisher.cs
Dish.SiteGenerator.Server
Dish.SiteGenerator.Workbox
Dish.SiteGenerator.Yaml
Solution Explorer
Team Explorer
Properties
Error List
Entire Solution
0 Errors
0 of 14 Warnings
0 of 3 Messages
Build + IntelliSense
Search Error List
Code
Description
Project
File
Line
Suppression St...

Managing the site content

Dynamic content

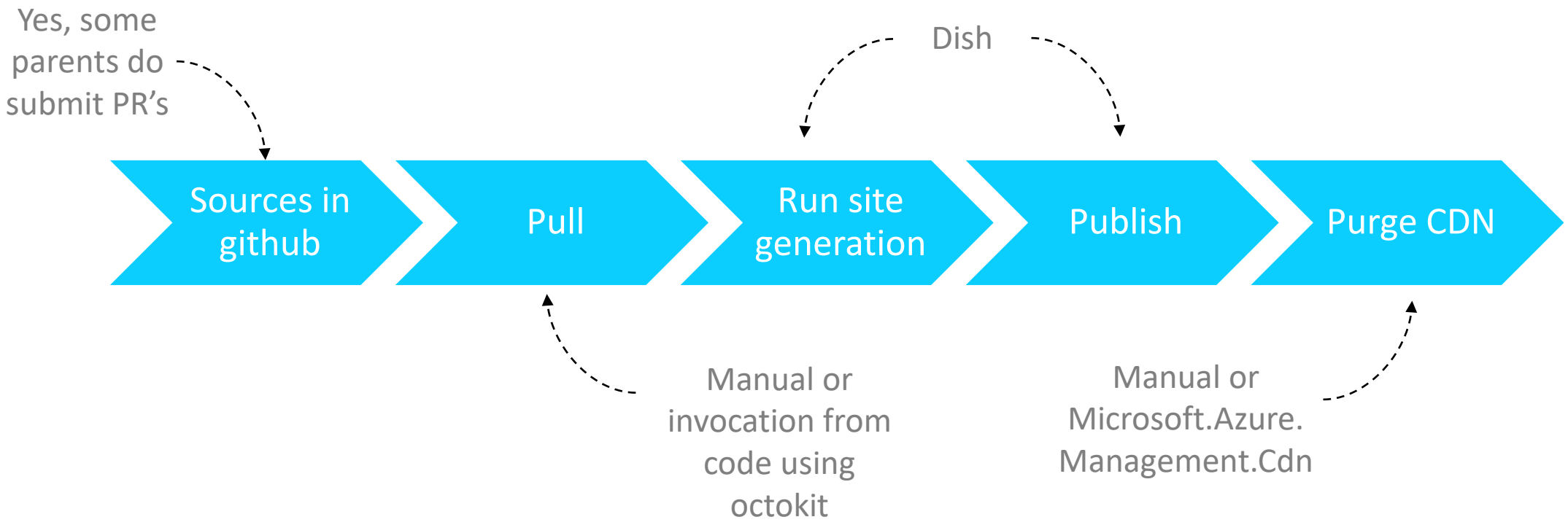
Static Site Generation

Local Experience

Publishing Process

Publishing process

End to end process



BasketLummen / Website

Watch 0 Star 0 Fork 6

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Project boards for your issues and pull requests

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Did you know GitHub has project management tools? Manage and automate your workflow with a project board.

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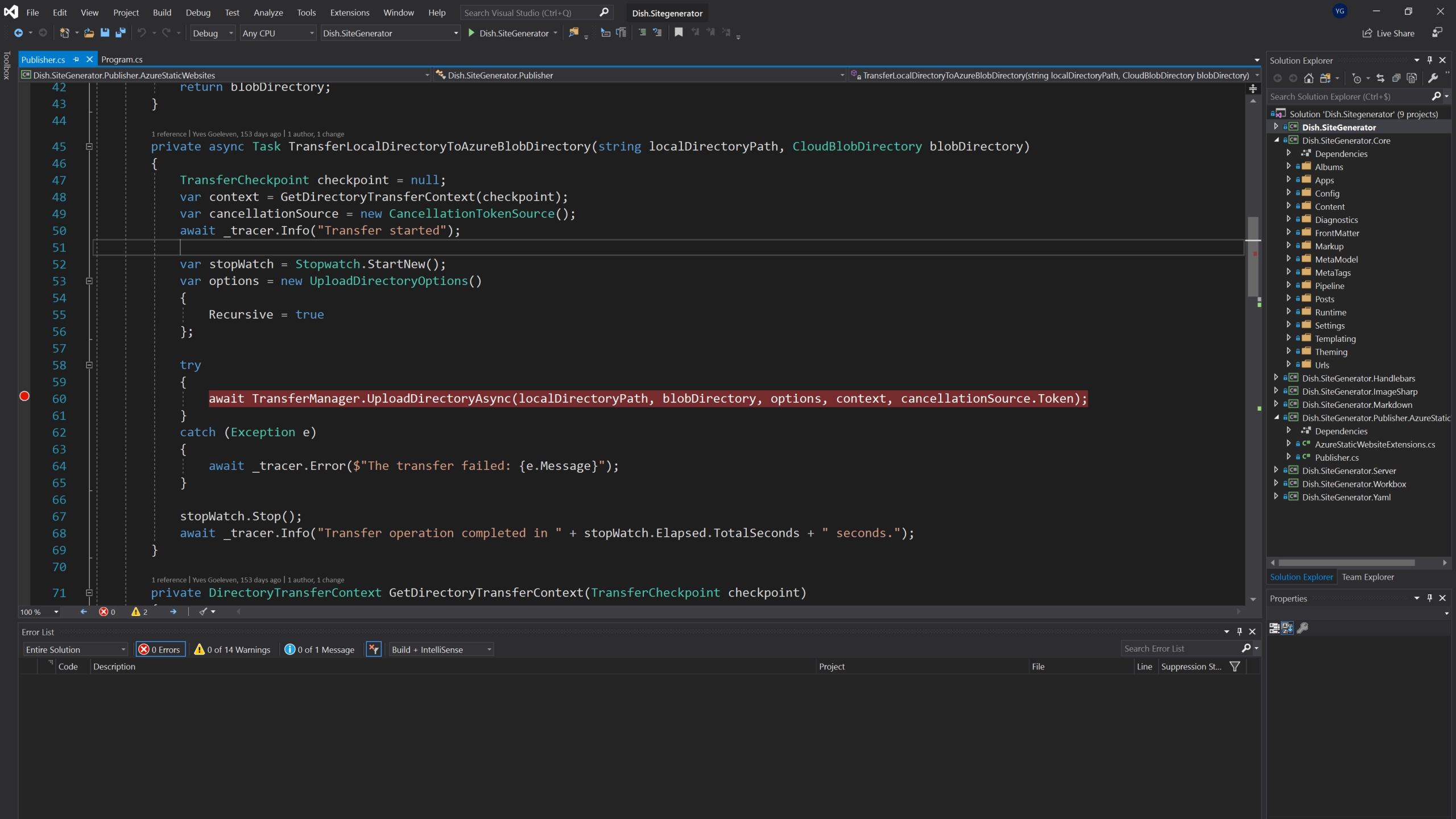
Filters is:pr is:closed author:DPEWillems Labels 22 Milestones 6 New pull request

Clear current search query, filters, and sorts

0 Open 22 Closed Author Labels Projects Milestones Reviews Assignee Sort

- **Add files via upload - foto kleuterfeest**
  #185 by DPEWillems was merged 28 days ago
- **Create 2019-05-25-kleuterfeest2019.markdown**
  #184 by DPEWillems was merged 28 days ago
- **Festivals2019**
  #182 by DPEWillems was merged on 25 Mar
- **Create 2019-03-10-sportploeg2018.markdown**
  #179 by DPEWillems was merged on 10 Mar
- **Create 2019-03-01-vijwilliger.markdown**
  #178 by DPEWillems was merged on 1 Mar
- **Create 2019-02-23-bus-ottignies.markdown** 2
  #177 by DPEWillems was merged on 16 Feb
- **Create 2019-02-13-shegotgame3.markdown**
  #175 by DPEWillems was merged on 11 Feb
- **Create 2019-01-14-hervorming** 7
  #170 by DPEWillems was merged on 4 Mar


File Edit View Project Build Debug Test Analyze Tools Extensions Window Help
Search Visual Studio (Ctrl+Q)
Dish.Sitegenerator
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Live Share
Publisher.cs
Program.cs
Dish.SiteGenerator.Publisher.AzureStaticWebsites
Dish.SiteGenerator.Publisher
TransferLocalDirectoryToAzureBlobDirectory(string localDirectoryPath, CloudBlobDirectory blobDirectory)
return blobDirectory;
}
1 reference | Yves Goeleven, 153 days ago | 1 author, 1 change
private async Task TransferLocalDirectoryToAzureBlobDirectory(string localDirectoryPath, CloudBlobDirectory blobDirectory)
{
TransferCheckpoint checkpoint = null;
var context = GetDirectoryTransferContext(checkpoint);
var cancellationSource = new CancellationTokenSource();
await _tracer.Info("Transfer started");
var stopWatch = Stopwatch.StartNew();
var options = new UploadDirectoryOptions()
{
Recursive = true
};
try
{
await TransferManager.UploadDirectoryAsync(localDirectoryPath, blobDirectory, options, context, cancellationSource.Token);
}
catch (Exception e)
{
await _tracer.Error($"The transfer failed: {e.Message}");
}
stopWatch.Stop();
await _tracer.Info("Transfer operation completed in " + stopWatch.Elapsed.TotalSeconds + " seconds.");
}
1 reference | Yves Goeleven, 153 days ago | 1 author, 1 change
private DirectoryTransferContext GetDirectoryTransferContext(TransferCheckpoint checkpoint)
100 %
0
2
Solution Explorer
Search Solution Explorer (Ctrl+$)
Solution 'Dish.Sitegenerator' (9 projects)
Dish.SiteGenerator
Dish.SiteGenerator.Core
Dependencies
Albums
Apps
Config
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Diagnostics
FrontMatter
Markup
MetaModel
MetaTags
Pipeline
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Dish.SiteGenerator.ImageSharp
Dish.SiteGenerator.Markdown
Dish.SiteGenerator.Publisher.AzureStatic
Dependencies
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Publisher.cs
Dish.SiteGenerator.Server
Dish.SiteGenerator.Workbox
Dish.SiteGenerator.Yaml
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Entire Solution
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0 of 14 Warnings
0 of 1 Message
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Building offline apps

Google workbox

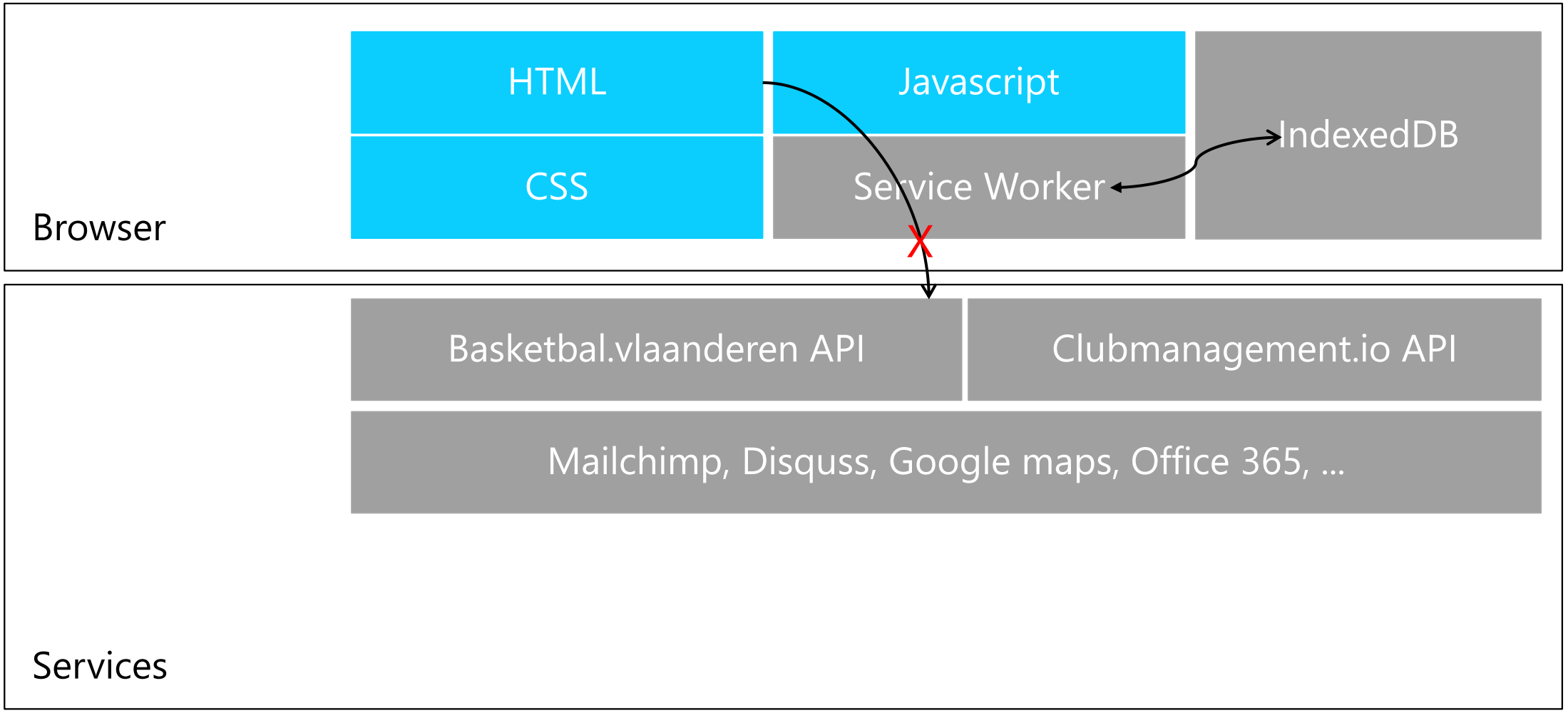
App Shell pattern

Command Queue Pattern

Install on desktop

How it works when offline

Service Worker intercepts and serves from IndexedDB



Service Worker

Background worker for a web pages

- Also runs when browser is closed!

- Available events
  - **Install**: Fired whenever the worker gets installed (happens only once)
  - **Activate**: Fired whenever a loaded page connects to the worker
  - **Fetch**: Fired every time a connected client performs a request
  - **Message**: Communication between frontend thread and background worker
  - **Sync**: Fired after device comes online
  - **Push**: Fired when device receives a push notification

- But you need to write code to handle all those events

```
self.addEventListener('install', function(event){
 // your code here
});
```

Google workbox

A set of common patterns for Service Worker

- A javascript library on top of indexed DB & cache storage responding to service worker events

- Available modules
  - **Precaching**: preload files on install
  - **Routing**: configure how to handle specific web requests
  - **Strategies:** caching strategies
  - **Expiration**: remove cached entries
  - **BackgroundSync**: resubmit commands after coming online
  - …

```
importScripts('https://storage.googleapis.com/workbox-cdn/releases/3.6.1/workbox-sw.js');
```

```
workbox.core.setCacheNameDetails({
        prefix: 'clubmgmt-fundraising-checkin-cache’,
        suffix: ‘1.0.0.0’
});
```

Building offline apps

Google workbox	**App Shell pattern**	Command Queue Pattern	Install on desktop

App Shell pattern

‘Installation’ of all files of the web app

- Service worker ‘Install’ event
  - All essential files for the app will be downloaded and cached
  - Route with a ‘Cache-first’ policy: Cache Falling Back to Network

```
workbox.precaching.precacheAndRoute(self.__precacheManifest || []);
```

- Files must be versioned
  - Revision hashes generated by Dish postprocessing step
  - Embed hashes, service worker file must change for changes to take effect

```
self.__precacheManifest = [
  { url:’/index.html', revision: '16a3cdb338289d….74564ccd3db2430bac’ },
  { url:'/css/bootstrap.min.css', revision: '5a3d8c05785485d3….8b5bd7b0f3168fff1bd9a' },
  { url:'/css/console.css', revision: '900797671c753ea9b421….f1db2874f32d6264996801' },
  ….
]
```

- Your app shell can run offline now, future pages served from cache

DevTools - fundraising-checkin-test.clubmanagement.io/deliveries

Elements | Console | Sources | Network | Performance | Memory | Security | Audits | Application

Application
- Manifest
- Service Workers
- Clear storage

Storage
- Local Storage
- Session Storage
- IndexedDB
  - clubmgmt-fundraising-cache-precache-1_0_0_0 - https://fundraising-checkin-test.c
    - precached-details-models
  - clubmgmt-fundraising-checkin - https://fundraising-checkin-test.clubmanagement
- Web SQL
- Cookies

Cache
- Cache Storage
  - clubmgmt-fundraising-cache-precache-1.0.0.0-temp - https://fundraising-checkin-
  - clubmgmt-fundraising-cache-precache-1.0.0.0 - https://fundraising-checkin-test.cl
  - clubmgmt-fundraising-cache-runtime-1.0.0.0 - https://fundraising-checkin-test.clul
- Application Cache

Frames
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Start from key

#	Key	Value
0	"/callback-silent/index.html"	{revision: "041b9201649682c61d4640c7d3280d6a43614697e39135136901209 54f65ec12", url: "https://fundraising-checkin-
1	"/callback/index.html"	{revision: "16a3cdb338289dfb505223f0957674f69c5c724306324d74564ccd3db2430bac", url: "https://fundraising-checkin-
2	"/css/bootstrap.min.css"	{revision: "5a3d8c05785485d36ee5c94d4681e5b1d9e4b94c5be8b5bd7b0f3168fff1bd9a", url: "https://fundraising-checkin-
3	"/css/console.css"	{revision: "900797671c753ea9b421518d2976d87d447cf43f6cf1db2874f32d6264996801", url: "https://fundraising-checkin-
4	"/css/layout.css"	{revision: "e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855", url: "https://fundraising-checkin-
5	"/css/muli.css"	{revision: "770bb3f5c1c77f43bb2a015d393b7b1f04e372253ffc43b6b3cc1bbf0fc2fe92", url: "https://fundraising-checkin-
6	"/css/site.css"	{revision: "8fc2dfc72902110e08a6a9614037839072d0f499283fbed48916c7e52df6adb6", url: "https://fundraising-checkin-
7	"/css/theme.css"	{revision: "a256c3ff6b0f84270c32422a1d8022ef904e5287bbdef112570529999546e6f0", url: "https://fundraising-checkin-
8	"/dashboard/index.html"	{revision: "e258b7cb386588a1fb25e3d53d22c565c320ae7ee50507e926279ba397dab6d7", url: "https://fundraising-checkin-
9	"/deliveries/index.html"	{revision: "5a34bcf51f1ef7e070b6f62f05e1c3dc482fecb157884987599465 19a450334b", url: "https://fundraising-checkin-
10	"/deliveries/order/index.html"	{revision: "8c0e7a5a97adeb18910bea76c791e58da203096fc6d8bd9541970f8cc2ec979d", url: "https://fundraising-checkin-
11	"/deliveries/orders/index.html"	{revision: "e9fd9aff9e9d050b7ca4fc1b6df814ba1315e8106dcb12c4fe22e393f225bdf9", url: "https://fundraising-checkin-
12	"/favicon.ico"	{revision: "7178dfc35f7dd45eab8b85821dcd6e0d49f814f041381ec8160b99f51fc1d77a", url: "https://fundraising-checkin-
13	"/fonts/7Auwp_0qiz-afT3GLRrX.woff2"	{revision: "aa79acbb81ee11433d0df9909b8160e929eb6f2ae5d711d8be90bbb4c9293634", url: "https://fundraising-checkin-
14	"/fonts/7Auwp_0qiz-afTLGLQ.woff2"	{revision: "1444bdd7e841dec57aa430b992f16ae006fea3d53226277f4a79d119e452ff35", url: "https://fundraising-checkin-
15	"/fonts/7Auwp_0qiz-afTzGLRrX.woff2"	{revision: "4d67d39028e0b4a11784fc90759033d6dc2b1e54d1c0b47f38a477164b974c17", url: "https://fundraising-checkin-
16	"/img/context/active/add.png"	{revision: "eb96732f0288645418f6ed0ae4a1dcd67a3ddd482398805a9049918fddd30590", url: "https://fundraising-checkin-
17	"/img/context/active/delete.png"	{revision: "3117bdbd081cda5f1ad6d188b711593b149e70dd9ff56601ec2d039bf1810cd6", url: "https://fundraising-checkin-
18	"/img/context/active/down.png"	{revision: "610b6609a6c8e791d9ea1b2bca1e74e684584c717d0582eddbd9b76e7187353d", url: "https://fundraising-checkin-
19	"/img/context/active/edit.png"	{revision: "16b71176c8169a2411b061f644c926ab88665e8639127dda44a9142e4ee448b7", url: "https://fundraising-checkin-
20	"/img/context/active/hide.png"	{revision: "ab17c8e5ad18c6b744c2c217b4b7d80f33b02957e61cc7700d4ede917fdfedc7", url: "https://fundraising-checkin-
21	"/img/context/active/show.png"	{revision: "d3fbe1c49ddde18188b1ab75332ea14c5b9ff6f8c47fc2d87344bad8cb85fdd9", url: "https://fundraising-checkin-
22	"/img/context/inactive/add.png"	{revision: "b9c361c6b16bedc5db48ddd95e38ad66a77f83d13d3ddc221341e44417bba5fa", url: "https://fundraising-checkin-
23	"/img/context/inactive/delete.png"	{revision: "e9fa98792946ac058fdcc3e370d42f1caf96d42d83ad3ac8259691043c8ef53b", url: "https://fundraising-checkin-
24	"/img/context/inactive/down.png"	{revision: "e67208d2b1b7c7002f17ad83e2031556fa533bbb682de2f57cfbfa380a4090a7", url: "https://fundraising-checkin-
25	"/img/context/inactive/edit.png"	{revision: "e4cd377515b47ba3ddcf90b3abde832b7c55b91bd846ca65e4fae7d265d51291", url: "https://fundraising-checkin-
26	"/img/context/inactive/hide.png"	{revision: "64fd03614ed70d0c20ea753c3d8a9818f4a268fc0c483abfbc14ef5ff18c890d", url: "https://fundraising-checkin-
27	"/img/context/inactive/show.png"	{revision: "2ca0aa3552fd676539334437b1587fde754dbacf2613397a5bab371dc0c4cfd3f", url: "https://fundraising-checkin-
28	"/img/curry.jpg"	{revision: "5300004c20de28475cee156d9207c895df7d14ee87a37fb04cdc29631d2547a8", url: "https://fundraising-checkin-
29	"/img/loader.gif"	{revision: "d1583e292feba72fb461e11b45113a4aa6d898434399396e1bd0d1a48830a912", url: "https://fundraising-checkin-
30	"/img/loading-primary.gif"	{revision: "65c5247001d1603bb404fc5aae44b86d6822db6ed9e7c44d4374b9fced7ac1a0", url: "https://fundraising-checkin-
31	"/img/logo.png"	{revision: "269f7c0b754a35b938d6ca9ea442b19d3fad88c29d4116222b89233cd448f6ce", url: "https://fundraising-checkin-
32	"/img/menu/active/dashboard.png"	{revision: "c18ac51269c77152fb908631914e342ddb130dd83d0a6a4e3a60ce62af2d66ce", url: "https://fundraising-checkin-
33	"/img/menu/active/deliveries.png"	{revision: "0739f5bc8e93835791e6f70543a96986b1f7e8ef030511f4c6c2853dc5b5a60e", url: "https://fundraising-checkin-
34	"/img/menu/inactive/dashboard.png"	{revision: "c2571599de5544c0a615eb62daa9e2783de07b1897cebdcafaa8d45743f3a402", url: "https://fundraising-checkin-
35	"/img/menu/inactive/deliveries.png"	{revision: "9f8e93c69ce1fe5562ff2decfefc0f85db4331e4d36cafc2a3cbab558acc3e1a", url: "https://fundraising-checkin-
36	"/img/orgs/generic.jpg"	{revision: "a76f2faf36c907b7f07540bed700e068a6db63bb292df328e53e157cdcabaff3", url: "https://fundraising-checkin-
37	"/img/orgs/generic.png"	{revision: "a052e957956c54bb3b596e6d03e7b1761e36b6c0387605ccf6768ef9ddf2500f", url: "https://fundraising-checkin-
38	"/index.html"	{revision: "d4db0647884dc619cc6a4c138852f3b6c9177519e8eaaee65b2002e05a9033f0", url: "https://fundraising-checkin-
39	"/js/ai.js"	{revision: "013819105effb1832cbcbcfcc6317b0045170a7f671bd953a21f0847fa1a2e6e", url: "https://fundraising-checkin-
40	"/js/auth.js"	{revision: "a437390aa5e154bb0cec6d51f31fc37e39620772ce54023a892185ca677f6ea7", url: "https://fundraising-checkin-
41	"/js/azure-storage.blob.js"	{revision: "db820e1adc18d8b0d93d04141949da10221f5541702ad7dabcb110f49bead25d", url: "https://fundraising-checkin-
42	"/js/bootstrap.min.js"	{revision: "36460e494e4c628443afded40b2743b5ede9a4a76fb4f7b9ef2345cc7e59fd64", url: "https://fundraising-checkin-
43	"/js/catalogs-repository.js"	{revision: "45359fd8c09f7d30483f516d943c4590852c424c09b1d4ad3b6276685b6df7b2", url: "https://fundraising-checkin-
44	"/js/config.js"	{revision: "ea1f246a2920302c8f35534485593ae0fb3caf2d1311d56cae433e63d8676ea4", url: "https://fundraising-checkin-
45	"/js/console.js"	{revision: "a23517ef0c1c1277858919570b458ad31223762a0ebebbf06cc3cb9a8316092d", url: "https://fundraising-checkin-
46	"/js/dashboard.js"	{revision: "f349a306491e4c43603c6def905b41383945a6cd416e5f514c2f876258feca32", url: "https://fundraising-checkin-
47	"/js/fuse.min.js"	{revision: "757bf16ca62e960ca6d52626ed0a7de2c2b51a45047ba7ace0d7aaf1090d539f", url: "https://fundraising-checkin-
48	"/js/getParameterByName.js"	{revision: "1fe6fb486b8f601bc339ab4d597ef307fc8f533cf5ee0a05850136 2ed5886abe", url: "https://fundraising-checkin-

Console | Remote devices | What's New | Search

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DevTools - fundraising-checkin-test.clubmanagement.io/

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- Manifest
- Service Workers
- Clear storage

Storage
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- Session Storage
- IndexedDB
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    - precached-details-models
  - clubmgmt-fundraising-checkin - https://fundraising-checkin-test.clubmanagement
- Web SQL
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Cache
- Cache Storage
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  - clubmgmt-fundraising-cache-precache-1.0.0.0 - https://fundraising-checkin-test.cl
  - clubmgmt-fundraising-cache-runtime-1.0.0.0 - https://fundraising-checkin-test.clul
- Application Cache

Frames
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Filter by Path

Path	Response-Type	Content-Type	Content-Length	Time Cached
/callback-silent/index.html	basic	text/html	3,184	25-4-2019 12:01:54
/callback/index.html	basic	text/html	3,186	25-4-2019 12:01:54
/css/bootstrap.min.css	basic	text/css	19,744	25-4-2019 12:01:54
/css/console.css	basic	text/css	11,774	25-4-2019 12:01:54
/css/layout.css	basic	text/css	0	25-4-2019 12:01:54
/css/muli.css	basic	text/css	356	25-4-2019 12:01:54
/css/site.css	basic	text/css	4,737	25-4-2019 12:01:54
/css/theme.css	basic	text/css	818	25-4-2019 12:01:54
/dashboard/index.html	basic	text/html	6,403	25-4-2019 12:01:54
/deliveries/index.html	basic	text/html	7,981	25-4-2019 12:01:55
/deliveries/order/index.html	basic	text/html	18,769	25-4-2019 12:01:54
/deliveries/orders/index.html	basic	text/html	13,756	25-4-2019 12:01:54
/favicon.ico	basic	application/octet-stream	1,150	25-4-2019 12:01:54
/fonts/7Auwp_0qiz-afT3GLRrX.woff2	basic	application/octet-stream	6,688	25-4-2019 12:01:54
/fonts/7Auwp_0qiz-afTLGLQ.woff2	basic	application/octet-stream	17,456	25-4-2019 12:01:54
/fonts/7Auwp_0qiz-afTzGLRrX.woff2	basic	application/octet-stream	16,728	25-4-2019 12:01:54
/img/context/active/add.png	basic	image/png	201	25-4-2019 12:01:54
/img/context/active/delete.png	basic	image/png	423	25-4-2019 12:01:55
/img/context/active/down.png	basic	image/png	356	25-4-2019 12:01:54
/img/context/active/edit.png	basic	image/png	513	25-4-2019 12:01:54
/img/context/active/hide.png	basic	image/png	594	25-4-2019 12:01:54
/img/context/active/show.png	basic	image/png	467	25-4-2019 12:01:54
/img/context/inactive/add.png	basic	image/png	197	25-4-2019 12:01:55
/img/context/inactive/delete.png	basic	image/png	379	25-4-2019 12:01:54
/img/context/inactive/down.png	basic	image/png	340	25-4-2019 12:01:54
/img/context/inactive/edit.png	basic	image/png	506	25-4-2019 12:01:54

Headers | Preview

```
/*!
 * Bootstrap v3.3.7 (http://getbootstrap.com)
 * Copyright 2011-2016 Twitter, Inc.
 * Licensed under MIT (https://github.com/twbs/bootstrap/blob/master/LICENSE)
 */
/*! normalize.css v3.0.3 | MIT License | github.com/necolas/normalize.css */
html {
    font-family: sans-serif;
    -webkit-text-size-adjust: 100%;
    -ms-text-size-adjust: 100%
}

body {
    margin: 0
}

article,aside,details,figcaption,figure,footer,header,hgroup,main,menu,nav,section,summary {
    display: block
}

audio,canvas,progress,video {
    display: inline-block;
    vertical-align: baseline
}

audio:not([controls]) {
    display: none;
    height: 0
}

[hidden],template {
```

{} Line 1, Column 1

Console | Remote devices | What's New | Search

Highlights from the Chrome 73 update

Building offline apps

Google workbox

App Shell pattern

Command Queue Pattern

Install on desktop

Command Queue pattern

‘Store and forward’ command requests when offline

- Store ‘POST’, ‘PUT’ & ‘DELETE’ requests on failure to send

```
const queue = new workbox.backgroundSync.Queue('bg-queue', {
        onSync: replayRequests,
        maxRetentionTime: 7 * 24 * 60 // Retry for max a week
    });
    const bgSync = {
    fetchDidFail: async ({ request }) => {
        await queue.pushRequest({ request });
    }
}
workbox.routing.registerRoute(
    /.+\/api\/.+/,
    new workbox.strategies.NetworkOnly({
        plugins: [bgSync]
    }),
    'POST'
);
```

DevTools - fundraising-checkin-test.clubmanagement.io/deliveries/orders/?s=5e9dc1d9-a17e-4f77-97ac-efcb1c54a72e

Elements | Console | Sources | Network | Performance | Memory | Security | Audits | Application

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Application
- Manifest
- Service Workers
- Clear storage

Storage
- Local Storage
- Session Storage
- IndexedDB
  - clubmgmt-fundraising-checkin
  - workbox-background-sync - h
    - requests
      - queueName
- Web SQL
- Cookies

Cache
- Cache Storage
- Application Cache

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Start from key | Data may be stale

#	Key (Key path: "id")	Value
0	73	{requestData: {…}, timestamp: 1556558232782, queueName: "ai-queue", id: 73}
1	74	{requestData: {…}, timestamp: 1556560247804, queueName: "ai-queue", id: 74}
2	75	{requestData: {…}, timestamp: 1556560249722, queueName: "ai-queue", id: 75}
3	76	{requestData: {…}, timestamp: 1556569210630, queueName: "ai-queue", id: 76}
4	77	{requestData: {…}, timestamp: 1556622969175, queueName: "ai-queue", id: 77}
5	78	{requestData: {…}, timestamp: 1556622970370, queueName: "ai-queue", id: 78}
6	79	{requestData: {…}, timestamp: 1556622971418, queueName: "ai-queue", id: 79}
7	80	{requestData: {…}, timestamp: 1556622972477, queueName: "ai-queue", id: 80}
8	81	{requestData: {…}, timestamp: 1556622973741, queueName: "ai-queue", id: 81}
9	82	{requestData: {…}, timestamp: 1556622974699, queueName: "ai-queue", id: 82}
10	83	{requestData: {…}, timestamp: 1556622976758, queueName: "ai-queue", id: 83}
11	84	{requestData: {…}, timestamp: 1556622977919, queueName: "ai-queue", id: 84}
12	85	{requestData: {…}, timestamp: 1556622979072, queueName: "ai-queue", id: 85}
13	86	{requestData: {…}, timestamp: 1556622980203, queueName: "ai-queue", id: 86}
14	87	{requestData: {…}, timestamp: 1556622981465, queueName: "ai-queue", id: 87}
15	88	{requestData: {…}, timestamp: 1556622982526, queueName: "ai-queue", id: 88}
16	89	{requestData: {…}, timestamp: 1556622996598, queueName: "bg-queue", id: 89} id: 89 queueName: "bg-queue" requestData: body: ArrayBuffer(207) {} cache: "default" credentials: "same-origin" headers: accept: "*/*" authority: "SzRmMUhuVGsxVHJySjJCRWU4RzZFVzZUUVlScFRJOHhRR3VQWnhKdUV1Z0JLS1R4Zy8zTkh1VG5sRml6b2svYnh6K05DSHJyUzFTN3RzUVllWk5nYyt… authorization: "Bearer eyJhbGciOiJSUzI1NiIsImtpZCI6Ijg1NjUzRjFFOTM3REJBN0IwMzFFOTlFQTVFRTkzOTdCNDIwRDM5NkEiLCJ0eXAiOiJKV1QiLCJ4… content-type: "application/json" origin: "https://fundraising-checkin-test.clubmanagement.io" user-agent: "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/73.0.3683.103 Safari/537.3… integrity: "" keepalive: false method: "POST" mode: "cors" redirect: "follow" referrer: "https://fundraising-checkin-test.clubmanagement.io/deliveries/orders/?s=5e9dc1d9-a17e-4f77-97ac-efcb1c54a72e" referrerPolicy: "no-referrer-when-downgrade" url: "https://clubmgmt-orders-service-test.azurewebsites.net/api/purchaseorders/5159e64f-4d2e-42c4-968d-6ff38338129b/5e9dc1d9-a1… timestamp: 1556622996598
17	90	{requestData: {…}, timestamp: 1556623004372, queueName: "bg-queue", id: 90}

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Devices

Settings

Settings

Discover USB devices

Need help? Read Chrome remote debugging documentation.

Port forwarding

Command Queue pattern

‘Replay’ when back online

```
async function replayRequests(o){
        if(unableToSend()) return;
        while (entry = await o.queue.shiftRequest()) {
        try {
            if(unableToSend()){ // prevents infinite loop if connectivity drops while replaying
                await o.queue.unshiftRequest(entry); return;
            }
            var req = entry.request.clone();
            // fix headers with latest tokens
            req.headers.set('Authorization', "Bearer " + self.__authContext.accessToken);
            req.headers.set('Authority', self.__authContext.authorityToken);
            await fetch(req);
        } catch (error) {
            await o.queue.unshiftRequest(entry);
        }}
}
```

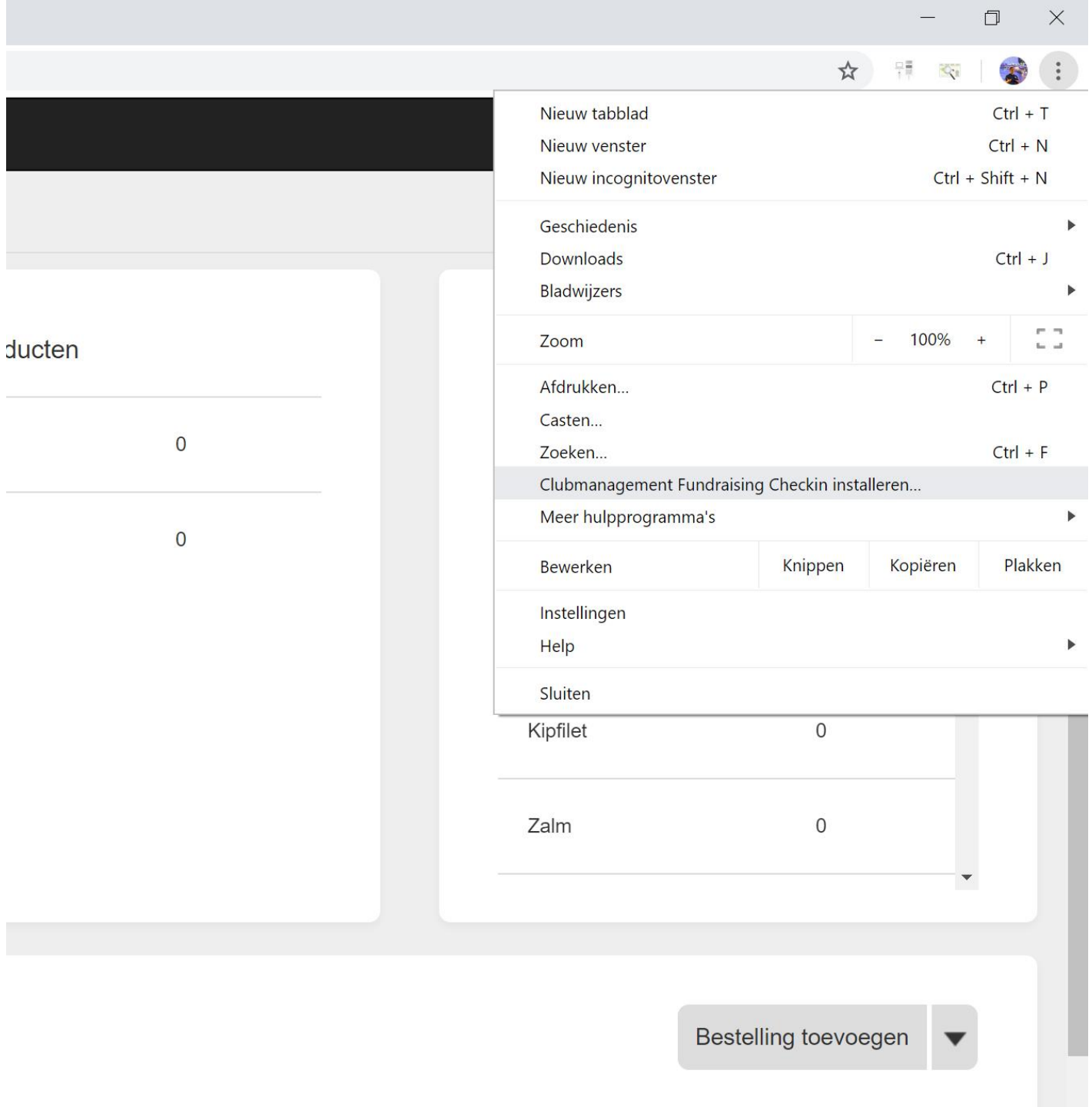
Building offline apps

Google workbox	App Shell pattern	Command Queue Pattern	Install on desktop

Install on desktop

Progressive Web App behaves like a mobile or desktop app

- Install experience
  - Desktop
  - Mobile
- Home screen / desktop icon
- Minimal requirements
  - Manifest.json file
  - HTTPS
  - Service Worker


Nieuw tabblad Ctrl + T
Nieuw venster Ctrl + N
Nieuw incognitovenster Ctrl + Shift + N
Geschiedenis
Downloads Ctrl + J
Bladwijzers
Zoom − 100% +
Afdrukken... Ctrl + P
Casten...
Zoeken... Ctrl + F
Clubmanagement Fundraising Checkin installeren...
Meer hulpprogramma's
Bewerken Knippen Kopiëren Plakken
Instellingen
Help
Sluiten
ducten
0
0
Kipfilet 0
Zalm 0
Bestelling toevoegen

Basket Lummen
Dashboard
Leveringen

Bestellingen

Reeds geleverde bestellingen

24

Te leveren bestellingen

0

Te leveren producten

2 stukken	0
3 stukken	0

Te leveren opties

Varkensbrochette	0
Chipolata	0
Scampi	0
Kipfilet	0
Zalm	0

Te leveren

Bestelling toevoegen

Web App Manifest

Manifest.json

```
{
	"short_name": "Clubmanagement Checkin",
	"name": "Clubmanagement Fundraising Checkin",
	"description": "An offline tool for handling check-ins at fundraising events",
	"lang": "nl-BE",
	"icons": [{ "src": "/img/logo_256.png", "type": "image/png", "sizes": "256x256"},
		{ "src": "/img/logo_192.png", "type": "image/png", "sizes": "192x192“},
		{ "src": "/img/logo_512.png", "type": "image/png", "sizes": "512x512"}],
	"start_url": "/dashboard/",
	"background_color": "#EEEEEE",
	"theme_color": "#00A5D5",
	"display": "standalone",
	"related_applications": [{
		"platform": "web",
		"url": "https://fundraising-checkin.clubmanagement.io"
		}]
}
```

Ready for revenge ?

of the static website

Conclusion

Static websites provide a great client development platform

- It's cheap!
- It's simple!

- Single codebase for any app (PWA)
  - Web, desktop & mobile apps!
  - Offline

Q&A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