Running a Static Web Site and APIs for the Cheap

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Hosting something in Azure?

- Virtual Machine
- Kubernetes (AKS)
- Docker / Containers (ACI)
- App Service Plans
- Cloud Services
- Anything else left out there?

What you really need for a SPA?

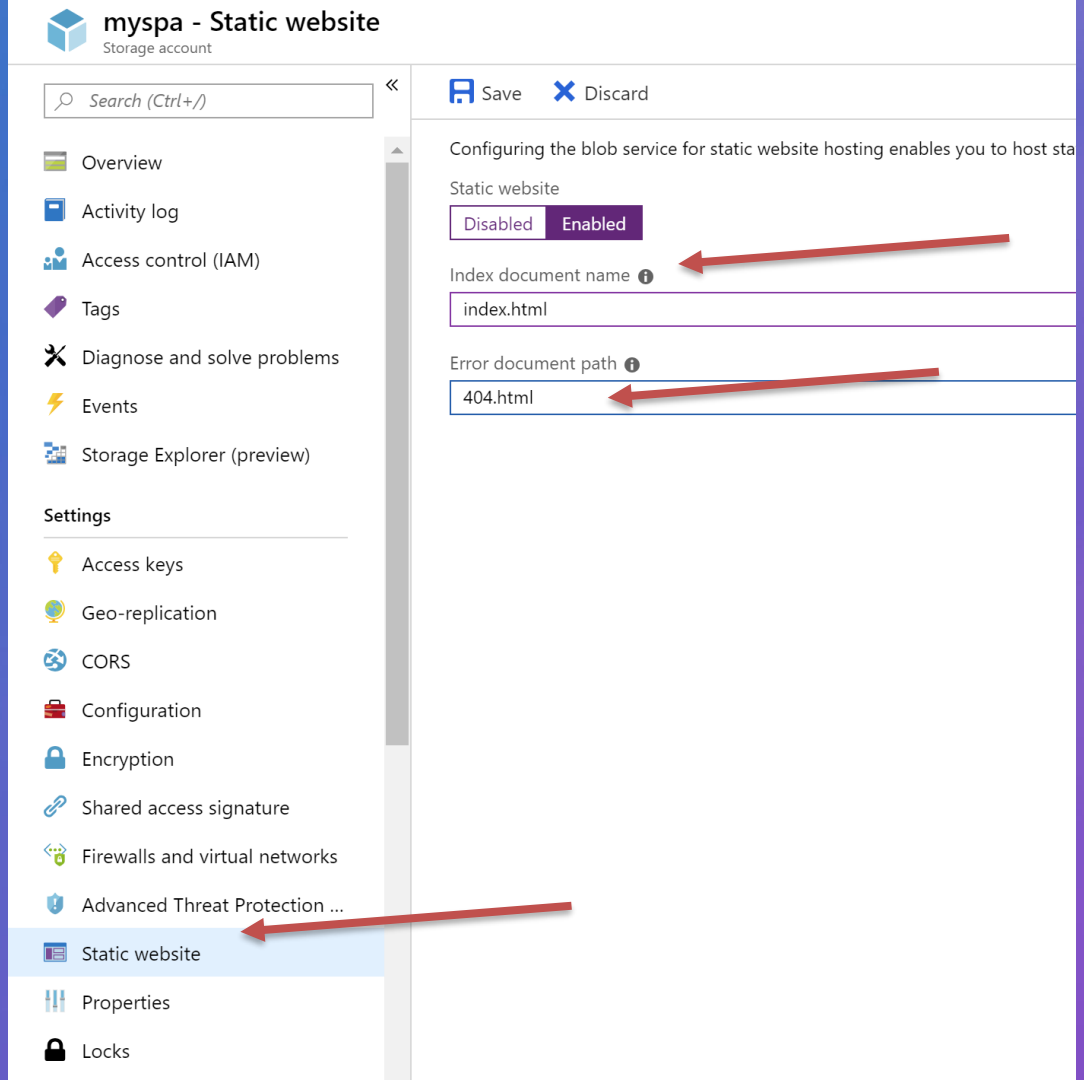
- Static file hosting
- Some APIs?

What you really need for a SPA?

- Static file hosting > **Azure Storage**
- Maybe some APIs? > **Serverless Sauce (Azure Functions)**
- Combination of the two > **Azure Static Web Apps** PREVIEW

DEMO

Let’s get some storage!


myspa - Static website
Storage account
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
Save
Discard
Configuring the blob service for static website hosting enables you to host sta
Static website
Disabled
Enabled
Index document name
index.html
Error document path
404.html

Save Discard

Configuring the blob service for static website hosting enables you to host static content in your s

Static website

Disabled Enabled

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

$web

Primary endpoint

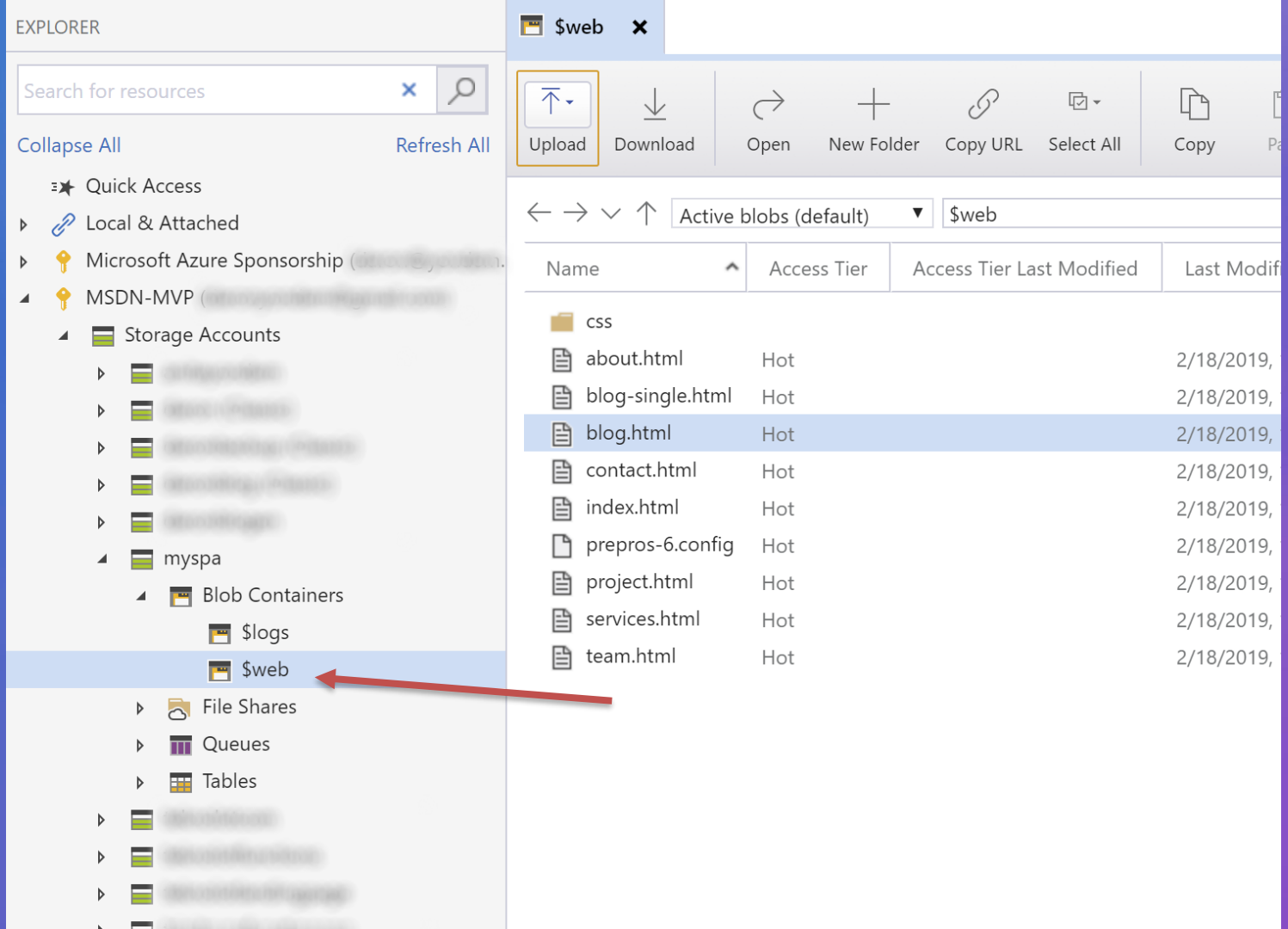
https://myspa.z6.web.core.windows.net/

Index document name

index.html

Error document path

404.html


EXPLORER
Search for resources
Collapse All
Refresh All
Quick Access
Local & Attached
Microsoft Azure Sponsorship
MSDN-MVP
Storage Accounts
myspa
Blob Containers
$logs
$web
File Shares
Queues
Tables
$web
Upload
Download
Open
New Folder
Copy URL
Select All
Copy
Active blobs (default)
$web
Name
Access Tier
Access Tier Last Modified
Last Modif
css
about.html Hot 2/18/2019,
blog-single.html Hot 2/18/2019,
blog.html Hot 2/18/2019,
contact.html Hot 2/18/2019,
index.html Hot 2/18/2019,
prepros-6.config Hot 2/18/2019,
project.html Hot 2/18/2019,
services.html Hot 2/18/2019,
team.html Hot 2/18/2019,

Mosaic - Free Bootstrap 4 Template

https://myspa.z6.web.core.windows.net

Mosaic

Home Ab

We Love Modern Designs

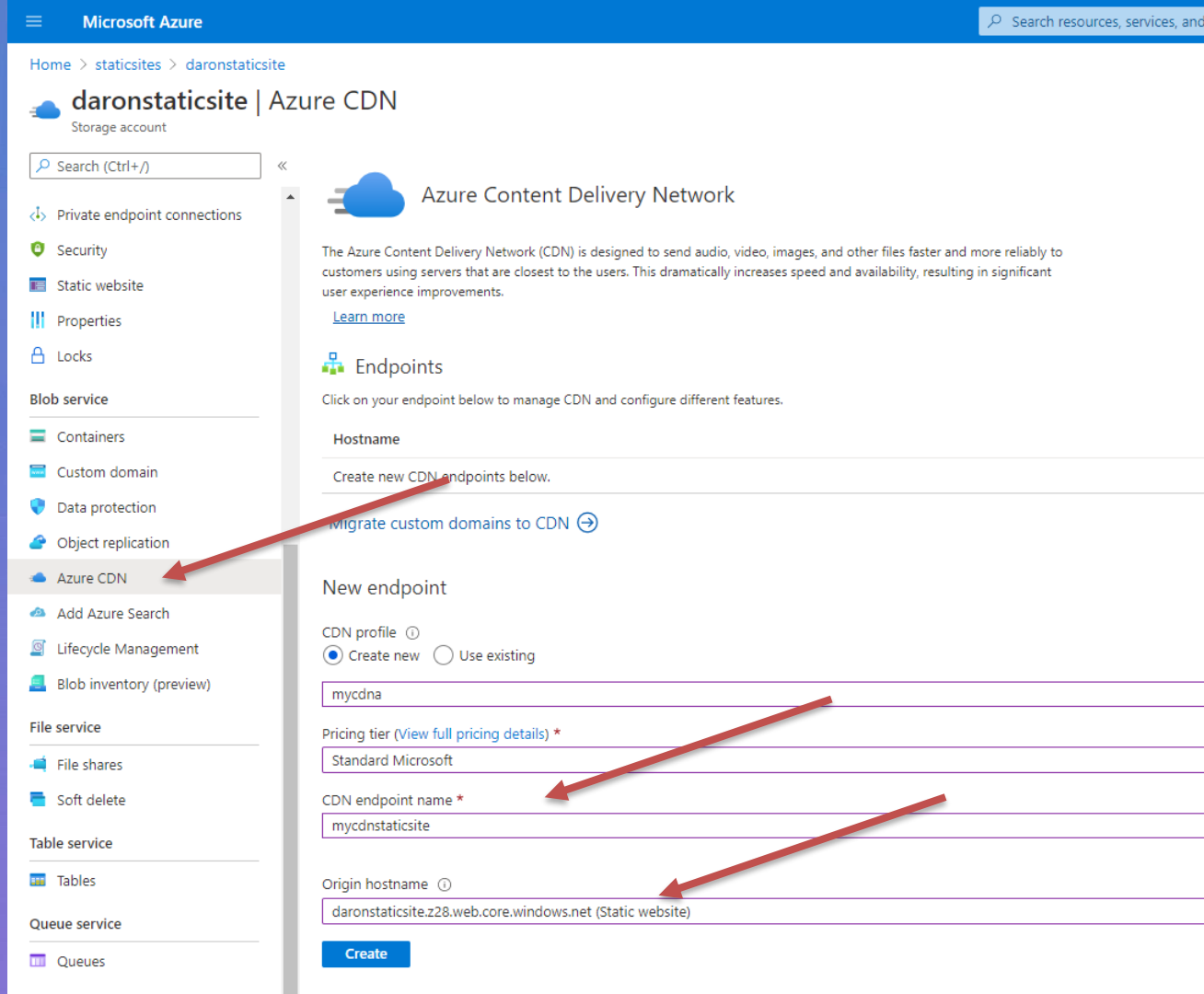
Storage Account Limits

Resource	Default	New Limit
Max capacity for standard General Purpose v2 storage accounts and standard Blob Storage accounts	2 PB	5PB (2.5xincrease)
Max TPS/IOPS for standard General Purpose v2 storage accounts and standard Blob Storage accounts	20K	50K (2.5x increase)
Max ingress for standard General Purpose v2 storage accounts and standard Blob Storage accounts	5-20 Gbps (varies by region/ redundancy type)	50Gbps (up to 10x increase)
Max egress for standard General Purpose v2 storage accounts and standard Blob Storage accounts	50 Gbps	50Gbps (up to 5x increase)

DEMO

What about getting some CDN Magic?

What about adding a CDN?

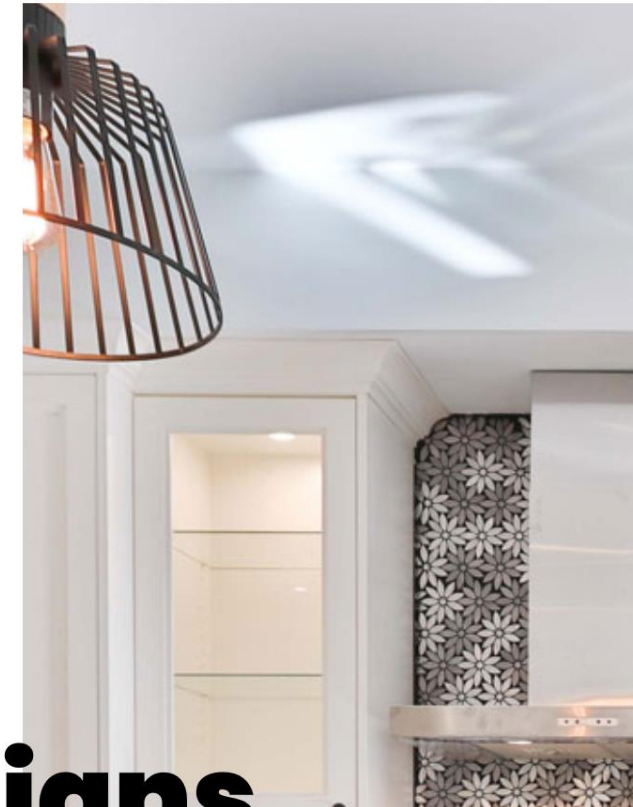


Mosaic - Free Bootstrap 4 Template

https://mycdnforspa.azureedge.net

Mosaic

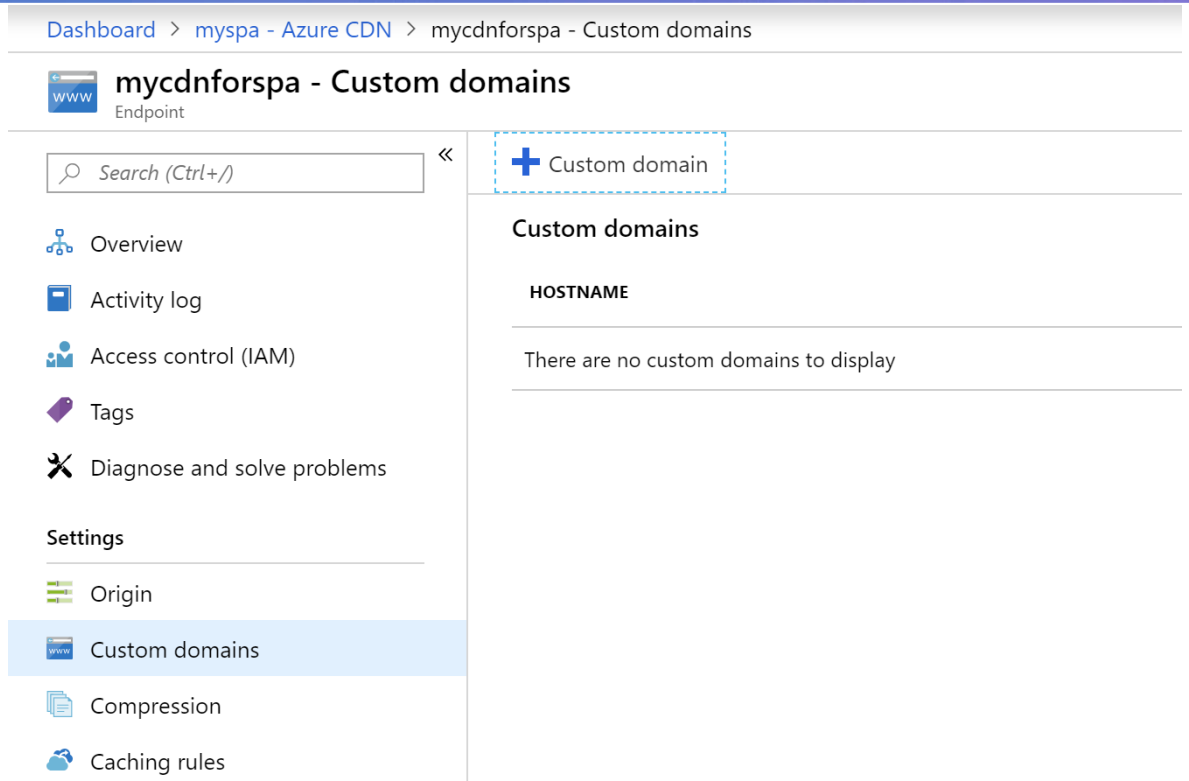
Ho



We Love

Modern Designs

Getting a custom domain



Create DNS Record

TYPE

CNAME

A CNAME or Canonical Name Record points a subdomain to a different domain name (eg. www.yourdomain.com points to www.anotherdomain.com). Note that a CNAME can't be used at the root of your domain (eg. yourdomain.com) Learn more.

HOSTNAME

spa.yondem.com

TARGET NAME

mycdnforspa.azureedge.net

TTL

Default (15 Minutes)

Add a custom domain

Create a DNS mapping from your custom hostname to the CDN endpoint hostname with your DNS provider. Then type the custom hostname here for verification. Learn more

Endpoint hostname

mycdnforspa.azureedge.net

* Custom hostname

spa.yondem.com

spa.yondem.com

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. Using our "CDN managed certificate" capability, you can enable this feature with just a few clicks and have Azure CDN completely take care of certificate management tasks such as its renewal. You can also bring your own certificate (stored in Azure Key vault) or even purchase a new certificate through Key vault and have Azure CDN use that certificate for securing the content delivery.

Learn more

Configure

Custom domain HTTPS

On Off

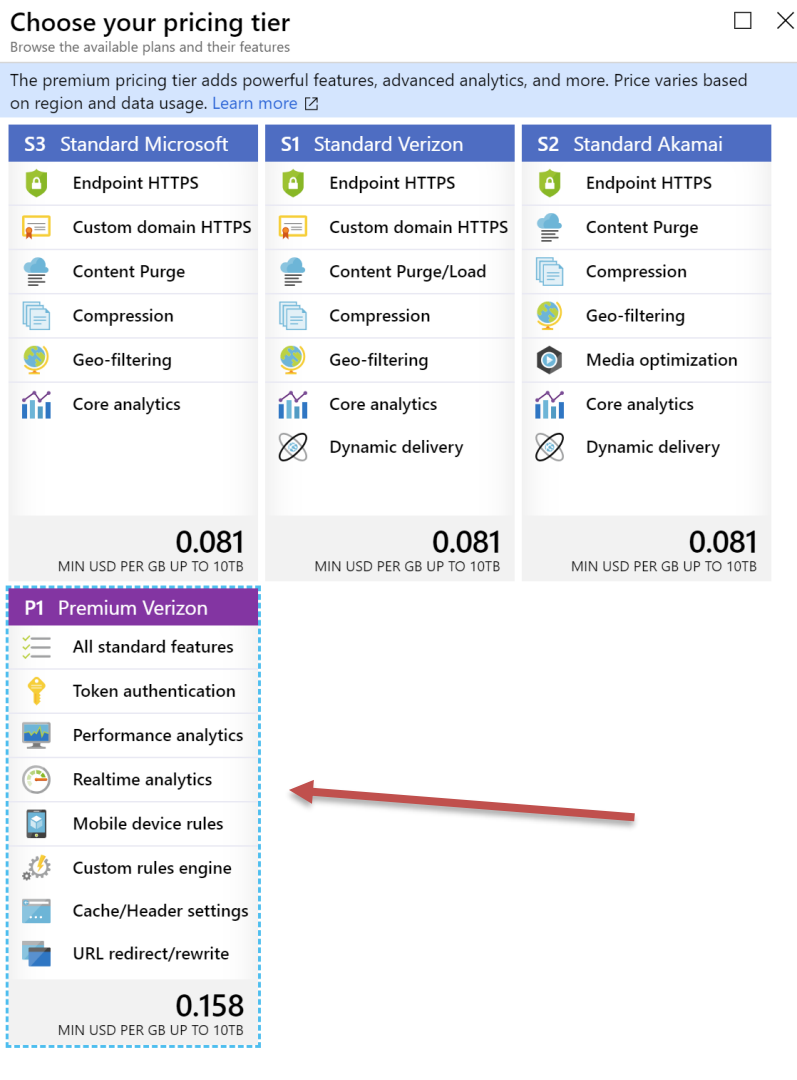
* Certificate management type

CDN managed Use my own certificate

After the domain name is validated, it can take up to 6-8 hours for the custom domain HTTPS feature to be activated.

Premium for more!

- HTTP to HTTPS redirection
- Analytics
- URL Rewrite
- And some more goodies



So far….

- Hosting for our static files
- CDN in front of it
- HTTPS Enabled

API for the Contact Form

- Will use SendGrid to send e-mail.
- Need an endpoint to pass contact form content.
- Need it to be protected against abuse.

DEMO

Setting up the Contact Form

Marketplace

sendgrid

Pricing: All

Operating System: All

Publisher: All

Results

NAME	PUBLISHER	CATEGORY
SendGrid Email Delivery	SendGrid	Web
Securely exchange files up to 1 GB	bluehands GmbH & Co.mmu...	Compute
WorkflowGen Sandbox	Advantys Solutions Ltd	Developer Tools

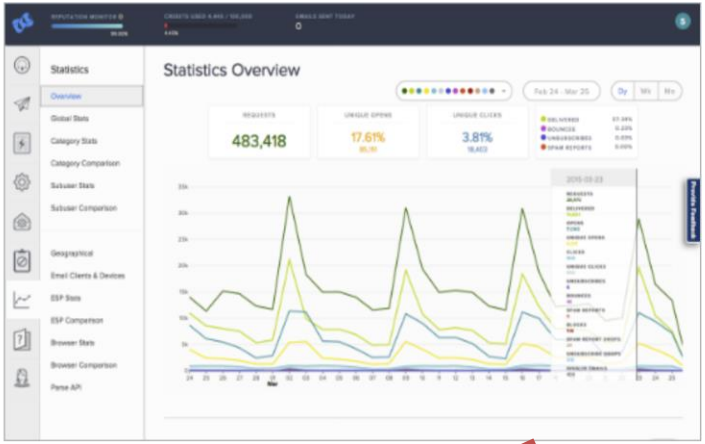
SendGrid Email Delivery

SendGrid

SendGrid is the world's largest cloud-based service for delivering email that matters. SendGrid's proven platform successfully delivers over 18B transactional and marketing related emails each month for Internet and mobile-based customers like Airbnb, Pandora, Hubspot, Spotify, Uber and FourSquare as well as more traditional enterprises like Walmart, Intuit and Costco.

Azure customers receive up to 25,000 emails per month for free with paid packages starting at only $9.95 per month. For customers requiring ability to send larger email volumes, SendGrid also offers Silver, Gold, Platinum and Premier packages, which include a dedicated IP as well as additional IP and user management features.

Save for later

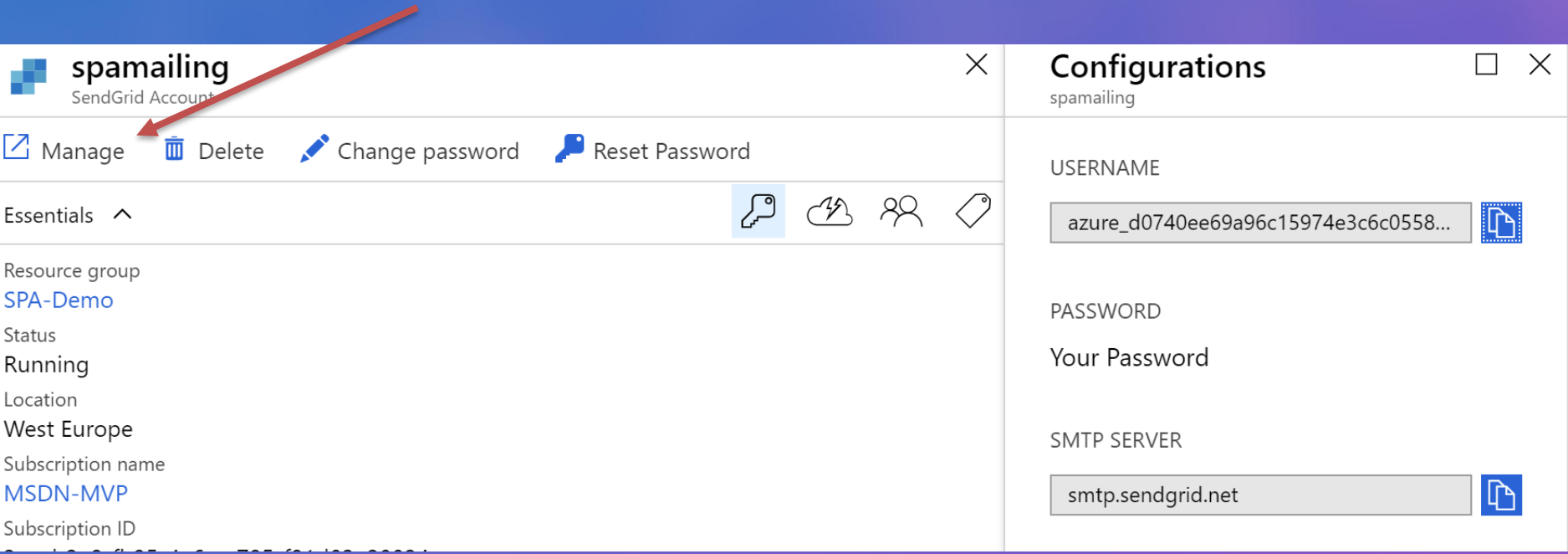


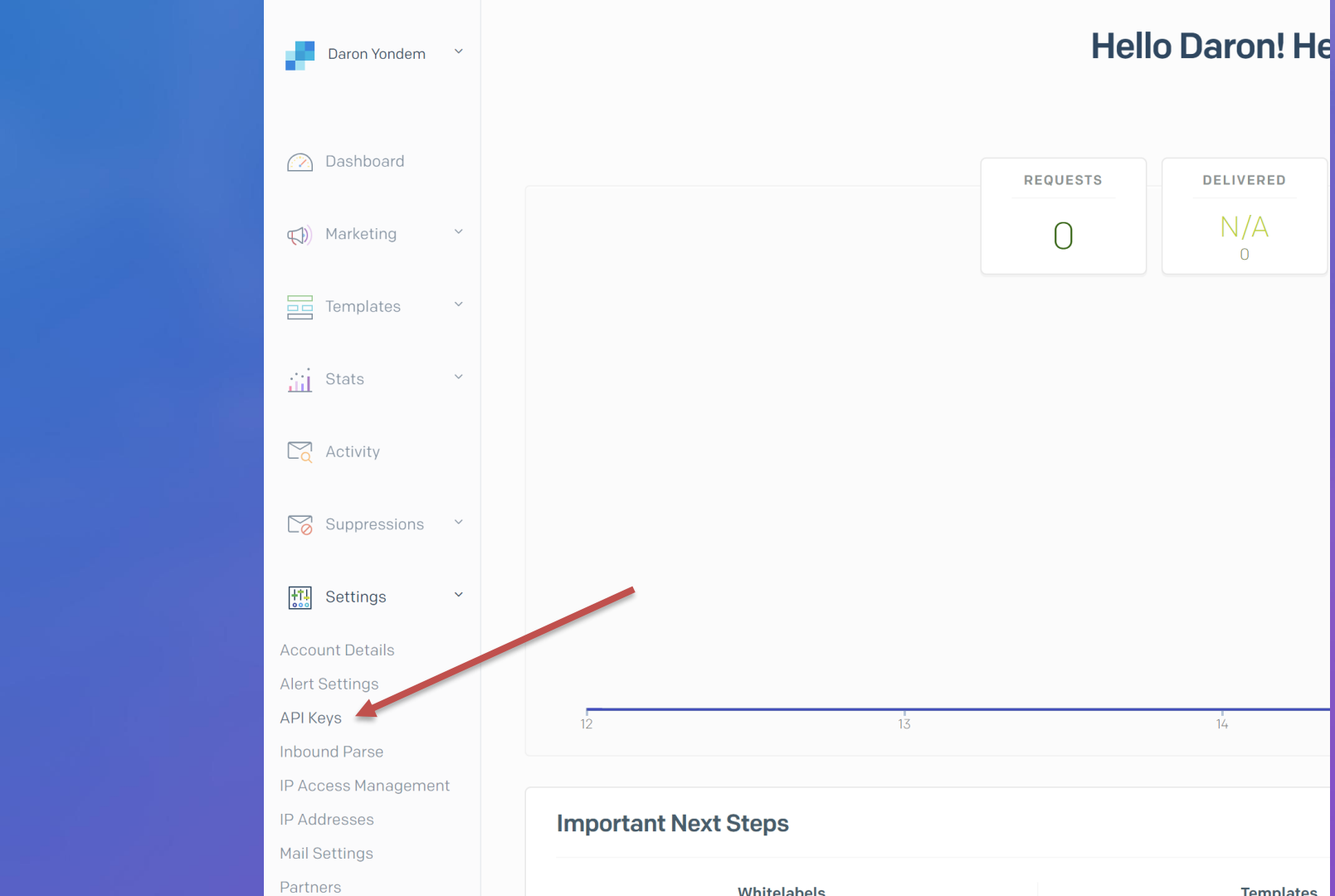
PUBLISHER SendGrid

Select a software plan

Free
25,000 emails per month.

Create


spamailing
SendGrid Account
Manage
Delete
Change password
Reset Password
Essentials
Resource group
SPA-Demo
Status
Running
Location
West Europe
Subscription name
MSDN-MVP
Subscription ID
Configurations
spamailing
USERNAME
azure_d0740ee69a96c15974e3c6c0558...
PASSWORD
Your Password
SMTP SERVER
smtp.sendgrid.net

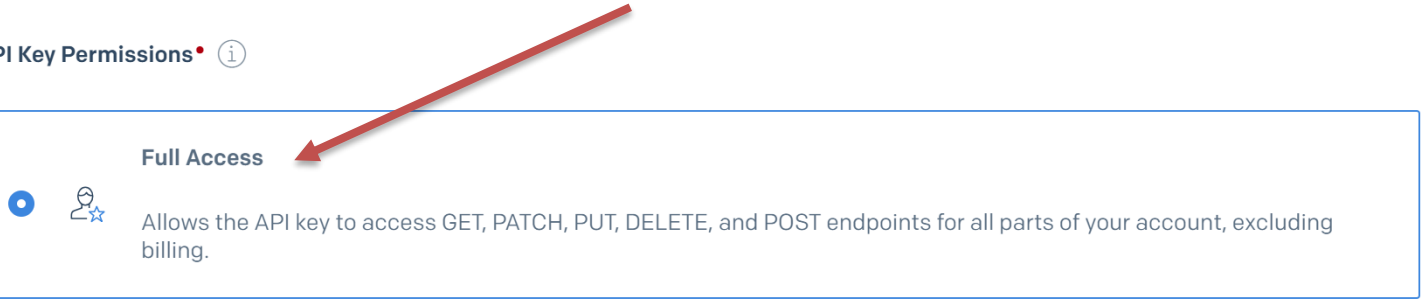

Daron Yondem
Hello Daron! He
Dashboard
Marketing
Templates
Stats
Activity
Suppressions
Settings
Account Details
Alert Settings
API Keys
Inbound Parse
IP Access Management
IP Addresses
Mail Settings
Partners
REQUESTS
0
DELIVERED
N/A
0
12
13
14
Important Next Steps

Create API Key

API Key Name •

SPAKey

API Key Permissions •



Full Access

Allows the API key to access GET, PATCH, PUT, DELETE, and POST endpoints for all parts of your account, excluding billing.

Restricted Access

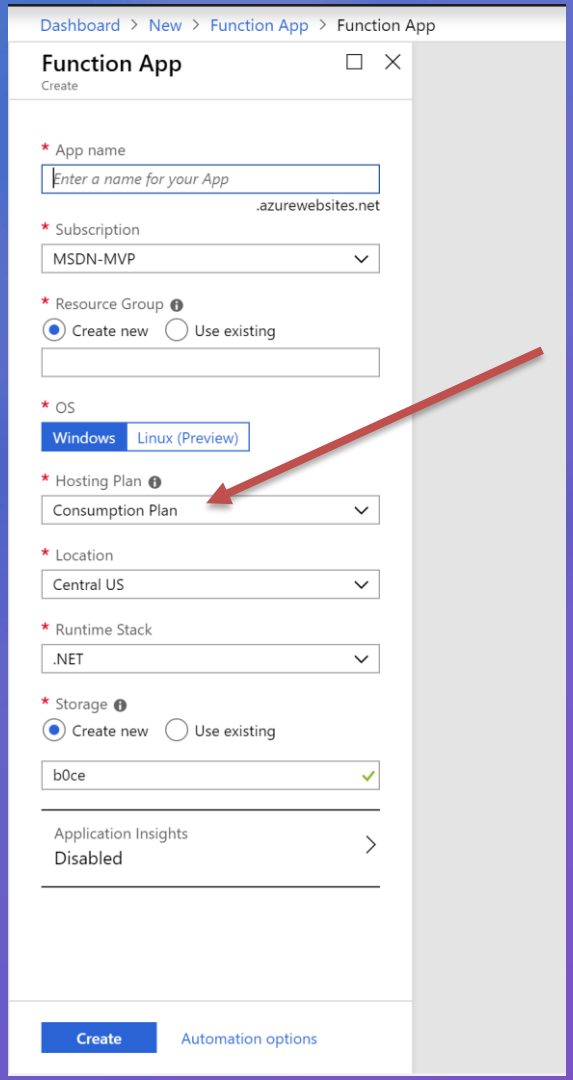
Customize levels of access for all parts of your account, excluding billing.

Billing Access

Allows the API key to access billing endpoints for the account. (This is especially useful for Enterprise or Partner customers looking for more advanced account management.)

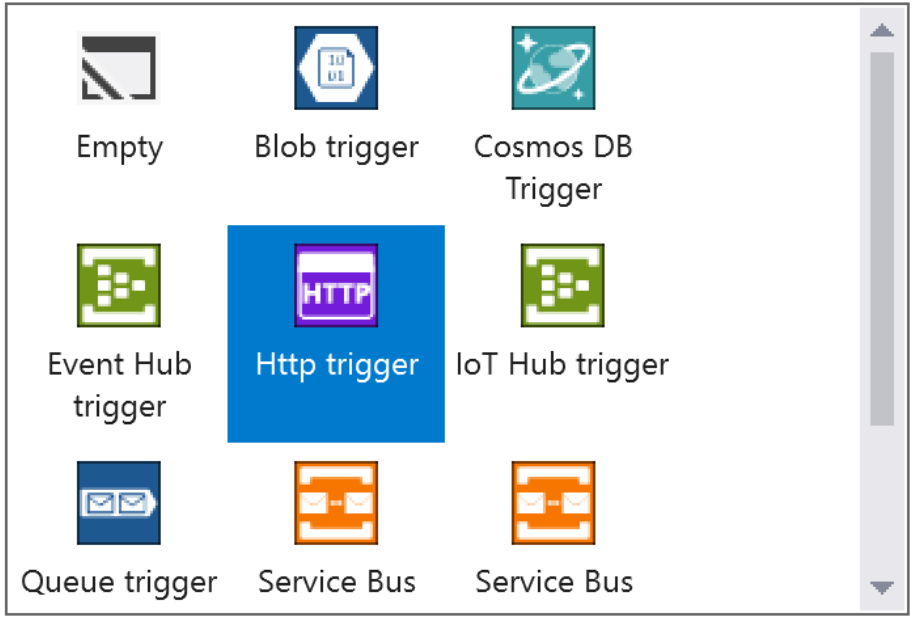
Cancel

Create & View


Dashboard > New > Function App > Function App
Function App
Create
* App name
Enter a name for your App
.azurewebsites.net
* Subscription
MSDN-MVP
* Resource Group
Create new
Use existing
* OS
Windows
Linux (Preview)
* Hosting Plan
Consumption Plan
* Location
Central US
* Runtime Stack
.NET
* Storage
Create new
Use existing
b0ce
Application Insights
Disabled
Create
Automation options

New Project - MailForm

Azure Functions v2 (.NET Core)



Creates an Azure function project with an Http trigger.
Additional triggers can be added during development

Storage Account (AzureWebJobsStorage)

Storage Emulator

⚠ Some capabilities may require an Azure storage account.

Access rights

Function

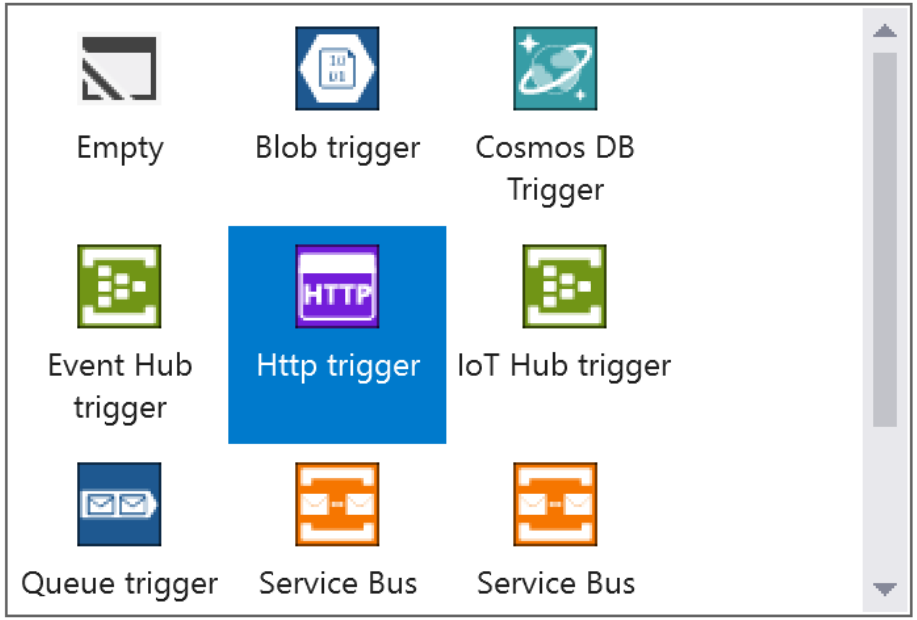
Get started with Azure Functions

OK

Cancel

New Project - MailForm

Azure Functions v2 (.NET Core)



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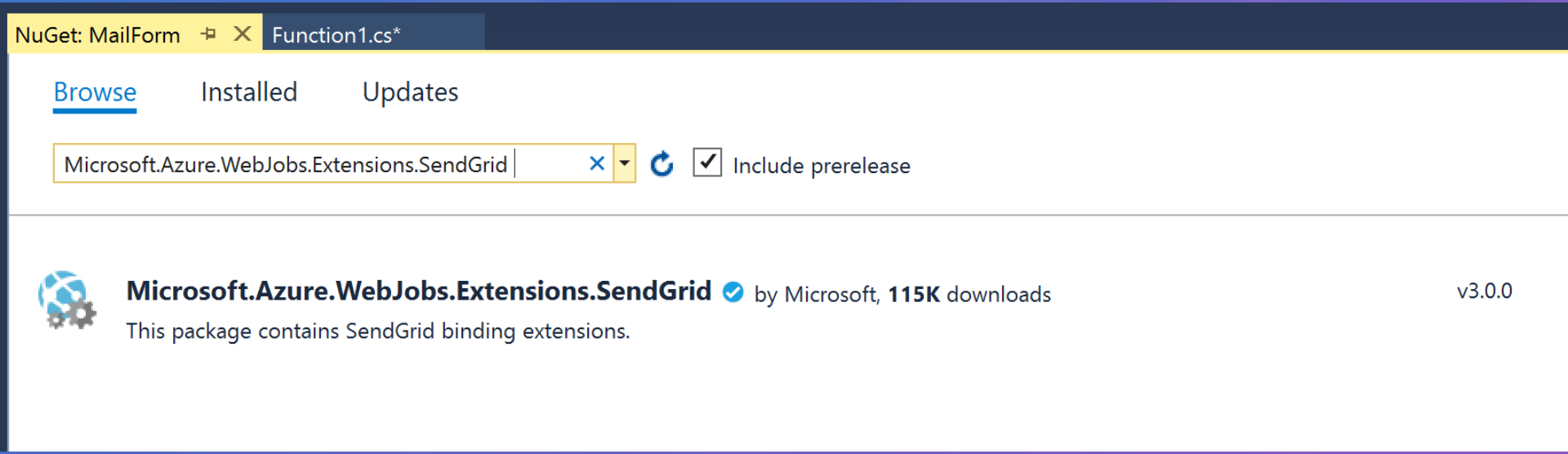
Function

Get started with Azure Functions

OK Cancel


NuGet: MailForm
Function1.cs*
Browse
Installed
Updates
Microsoft.Azure.WebJobs.Extensions.SendGrid
Include prerelease
Microsoft.Azure.WebJobs.Extensions.SendGrid
by Microsoft, 115K downloads
v3.0.0
This package contains SendGrid binding extensions.

A round of cost estimation

- 7.5MB Site Storage ≈ Free = 0.000006328125 cents
- 50KB/Page > 500.000 Page Views > 24GB Bandwidth = $0.48
- SendGrid 25.000 E-Mails / Month = Free
- 25.000 E-Mail Function Execution for 1s each = Free

Homework for you!

- What if someone abused our mailing endpoint?
- Use Azure API Management Consumption Plan for Request Throttling!

Resources

- **Storage Account Limits:** https://drn.fyi/2NbC7Um
- **Increasing Storage Account Limits:** https://drn.fyi/2NdO8Zp
- **Custom Domain Mapping for CDN:** https://drn.fyi/2GQ1D0c
  Advanced request throttling with Azure API Management: https://drn.fyi/2Xbphdr

Thanks

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Download slides here;
http://daron.me/decks