

An abstract graphic on the left side of the slide. It features a blue silhouette of a person climbing a rope. The rope is represented by several thick, curved lines in shades of blue and green. The person is positioned on the left, with their arms and legs extended as if climbing. The background is a light gray with a subtle grid pattern.

# Serverless, no more servers no more PowerShell?

Jaap Brasser @ Rubrik

[www.jaapbrasser.com](http://www.jaapbrasser.com)

 @jaap\_brasser

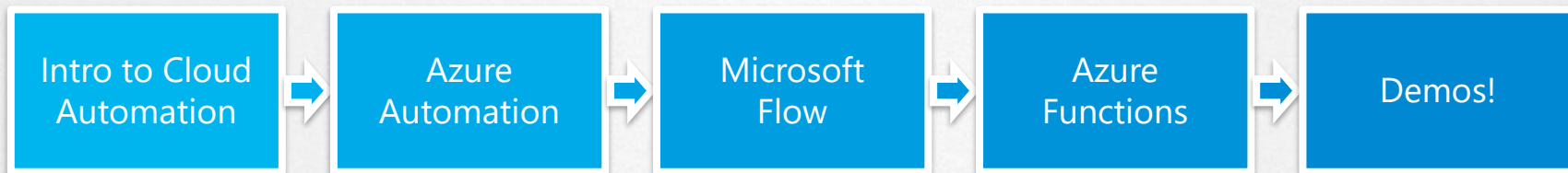








# Flow of the session





# Jaap Brasser

**Tweets** @ jaap\_brasser  
**Blogs** @ jaapbrasser.com  
**Works** Tech Marketeer @ Rubrik.com  
**Does** Blogger, Speaker, Tech Enthusiast  
**Likes** Cloud Automation, Scripting & Security





# Cloud Automation

---

## Azure Automation

# Azure Automation Capabilities

### Runbook Authoring in Azure:

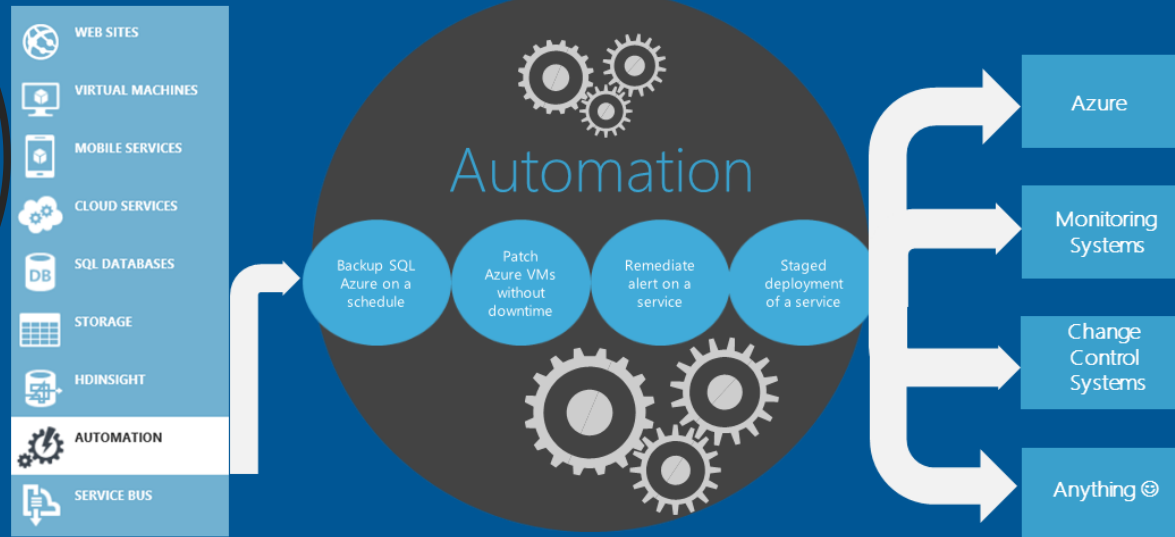
Create runbooks to automate all aspects of cloud operations, from deployment, monitoring, and optimizations

### Highly Available Engine:

Support requirements for scale and H/A. Built on PowerShell Workflow. Isolation for runbook jobs

### Integration into other systems:

Import PS modules and create additional modules and runbooks for Azure services or to connect into 3<sup>rd</sup> party systems





# Azure Automation Summary

---

Automate processes

---

Cross-platform configuration  
management

---

Download example runbooks and  
scripts

---

Event grid integration

---

Hybrid Runbook Worker

---

500 free minutes

What is  
Microsoft  
Flow



**Microsoft Flow**



# Connectors



Office 365 Outl...



OneDrive for B...



Office 365 Users



SharePoint



Twitter



Notifications



RSS



Outlook.com

## Recently added connectors



AtBot Admin



Marketing Cont...



Pitney Bowes T...



Excel Online (B...




Excel Online (O...




Azure SQL Data...

# Flow Templates




Save Office 365 email attachments to OneDrive for Business

By Microsoft  
Used 235650 times




Get a push notification when you receive an email from your...

By Microsoft  
Used 136809 times




Send myself a reminder in 10 minutes

By Microsoft  
Used 95634 times




Get today's weather forecast for my current location

By Microsoft  
Used 83902 times



Save Outlook.com email attachments to your OneDrive

By Microsoft Flow Community  
Used 64359 times



Get a push notification with updates from the Flow blog

By Microsoft  
Used 47714 times

# Work less, do more.

Create automated workflows with Microsoft Flow.

▶ See how it works

Find a template or connector to start with



## Featured template collections



11 templates to help your sales team



12 templates that keep you informed when on-the-go



12 templates that improve your productivity



11 templates that make software development easier



## Popular services

See all 218 >



SharePoint



Office 365  
Outlook



OneDrive



Twitter



Dropbox



Outlook.com



Dynamics 365



Yammer






Excel



Wunderlist








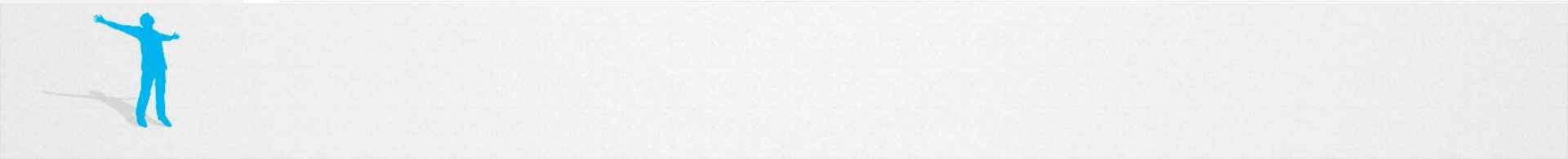


 New   Import



## Flows

My flows Team flows Business process flows

	Name	Modified	Type
	Save Outlook.com email attachments to your OneD...	3 wk ago	Automated
	Hey PowerShell!	1 mo ago	Instant
	Get today's weather forecast for my current locati...	2 mo ago	Instant
	Sheep on Mac	3 mo ago	Instant












Send myself a reminder in 10 minutes

By Microsoft  
Used 126626 times






Get today's weather forecast for my current location

By Microsoft  
Used 123456 times





PowerApps button

By Microsoft  
Used 90541 times







Start approval when a new item is added

By Microsoft  
Used 64388 times



Get a push notification with updates from the Flow blog

By Microsoft  
Used 62066 times



Save Office 365 email attachments to OneDrive for Business

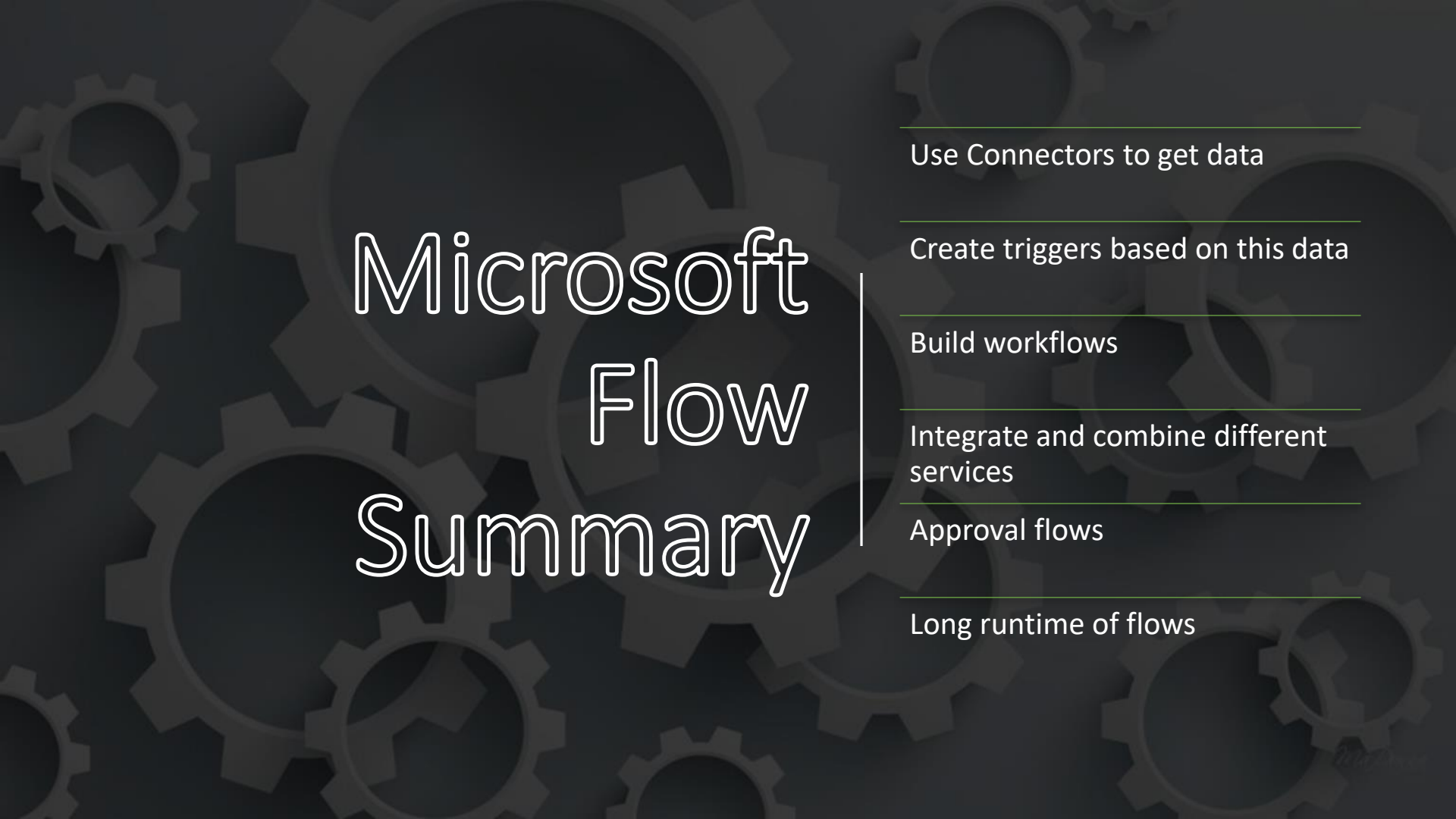
By Microsoft  
Used 57462 times

+ New ▾ ← Import

+ Create from blank

🧩 Create from template





# Microsoft Flow Summary

---

Use Connectors to get data

---

Create triggers based on this data

---

Build workflows

---

Integrate and combine different services

---

Approval flows

---

Long runtime of flows

# What are Azure Functions

Code

Events + data

Azure Functions





What is  
serverless?







# Azure Web Apps



# Advantages of Azure Functions

---

Pay for what you use

---

No Infrastructure to manage

---

No maintenance of servers

---

Can be placed in existing subscriptions

---

Simplify code writing



# What are we trying to solve?



Re-using existing skills



Re-using existing code / scripts



Faster deployment



Less maintenance





## Demo

Exploring Azure  
Functions







# Function App

Microsoft



Write any function in minutes – whether to run a simple job that cleans up a database or build a more complex architecture. Creating functions is easier than ever before, whatever your chosen OS, platform, or development method.



Save for later

PUBLISHER

Microsoft

USEFUL LINKS

[Documentation](#)

[Solution Overview](#)

[Pricing Details](#)

Create



## Function App

Create



\* App name

ExpertsLiveAT



.azurewebsites.net

\* Subscription

Visual Studio Enterprise with MSDN



\* Resource Group ⓘ



Create new



Use existing

ExpertsLiveAT



\* OS

Windows

Linux (Preview)

\* Hosting Plan ⓘ

Consumption Plan



\* Location

West Europe



\* Runtime Stack

.NET



\* Storage ⓘ



Create new



Use existing

Create

Automation options





Overview

Activity log

Access control (IAM)

Tags

Events

## Settings

Quickstart

Resource costs

Deployments

Policies

Properties

Locks



Add



Edit columns



Delete resource group



Refresh



Move



Assign tags



Delete

Subscription ([change](#))

Visual Studio Enterprise with MSDN

Subscription ID

ddbe3728-a068-46bc-9045-0683aca4b75c

Deployments

1 Succeeded

Tags ([change](#))[Click here to add tags](#)

All types



All locations



No grouping



4 items



Show hidden types



NAME

TYPE

LOCATION



ExpertsLiveAT

Application Insights

West Europe



ExpertsLiveAT

App Service

West Europe



expertsliveatacf1

Storage account

West Europe



WestEuropePlan

App Service plan

West Europe

# ExpertsLiveAT

Function Apps

Search

All subscriptions

Function Apps

ExpertsLiveAT



Functions



Proxies

Slots (preview)

MyFirstFunction43321

NottinghamPSUG

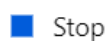
NottinghamPSUG2

PSConfAsia2018

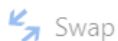
PSConfAsia2018Demo

Overview

Platform features



Stop



Swap



Restart



Get publish profile



Reset publish profile



Download app content



Delete

Status

Running

Subscription

Visual Studio Enterprise with MSDN

Resource group

ExpertsLiveAT

Subscription ID

ddb3728-a068-46bc-9045-0683aca4b75c

Location

West Europe

URL

<https://expertsliveat.azurewebsites.net>

App Service plan / pricing tier

WestEuropePlan (Consumption)

Configured features





## CHOOSE A DEVELOPMENT ENVIRONMENT



## CREATE A FUNCTION



### Visual Studio

Use Visual Studio to author, build, and run .NET functions



### VS Code

Use Visual Studio Code to author your functions



### Any editor + Core Tools

Write functions using your favorite editor and the Azure Functions Core Tools



### In-portal

Author functions quickly in the portal





### Daily Usage Quota (GB-Sec) ⓘ

[Set quota](#)

### Application settings

[Manage application settings](#)

### Runtime version

Runtime version: 2.0.12165.0 (~2)

[~1](#)[~2](#)

### Function app edit mode

Change the edit mode of your function app

[Read/Write](#)[Read Only](#)

### Host Keys (All functions)

NAME	VALUE	ACTIONS		
_master	<a href="#">Click to show</a>	<a href="#">📄 Copy</a>	<a href="#">🔄 Renew</a>	
default	<a href="#">Click to show</a>	<a href="#">📄 Copy</a>	<a href="#">🔄 Renew</a>	<a href="#">✕ Revoke</a>

[Add new host key](#)



Get started quickly with a premade function

### 1. Choose a scenario



Webhook + API



Timer



Data processing

For PowerShell, Python, and Batch, [create your own custom function.](#)

Create this function



## Choose a template below or [go to the quickstart](#)



Search by trigger, language, or descri...

Language:

All

Scenario:

All

Experimental Language Support:



Enabled



### HTTP trigger

A function that will be run whenever it receives an HTTP request, responding based on data in the body of the request.

Batch C# F# JavaScript PowerShell  
Python TypeScript

Bash

Batch

C#

F#

JavaScript

PHP

PowerShell

Python

TypeScript



### Timer trigger

A function that will be run on a specified schedule.

C# F# JavaScript PowerShell TypeScript



### Queue trigger

A function that will be run whenever a message is added to a specified Azure Storage queue.



### Service Bus Queue trigger

A function that will be run whenever a message is added to a specified Service Bus queue.

## Choose a template below or [go to the quickstart](#)



Search by trigger, language, or descript...

Language:

PowerShell



Scenario:

All



Experimental Language Su



Enabled



### HTTP trigger

A function that will be run whenever it receives an HTTP request, responding based on data in the body or query string

Batch C# F# JavaScript PowerShell  
Python TypeScript



### Timer trigger

A function that will be run on a specified schedule

C# F# JavaScript PowerShell TypeScript



### Queue trigger

A function that will be run whenever a message is added to a specified Azure Storage queue

Bash Batch C# F# JavaScript PHP  
PowerShell Python TypeScript



### Serverless Community Library (Preview)

Not finding what you're looking for? Check out the Azure Serverless Community Library!





run.ps1

Save

▶ Run

</> Get function URL

```
1 # POST method: $req
2 $requestBody = Get-Content $req -Raw | ConvertFrom-Json
3 $name = $requestBody.name
4
5 # GET method: each querystring parameter is its own variable
6 if ($req_query_name)
7 {
8     $name = $req_query_name
9 }
10
11 Out-File -Encoding Ascii -FilePath $res -inputObject "Hello $name"
12
```

View files [Test](#)

[+ Add](#) [↑ Upload](#)

⌵ HttpTriggerPowerS

⌵ function.json

⌵ run.ps1





function.json

Save

▶ Run

</> Get function URL

```
1  {
2    "bindings": [
3      {
4        "name": "req",
5        "type": "httpTrigger",
6        "direction": "in",
7        "authLevel": "function"
8      },
9      {
10       "name": "res",
11       "type": "http",
12       "direction": "out"
13     }
14   ],
15   "disabled": false
16 }
```



Choose a template below or [go to the quickstart](#)

 Search by trigger, language, or description

Language: PowerShell

Scenario: All



### HTTP trigger

A function that will be run whenever it receives an HTTP request, responding based on data in the body or query string

Batch C# F# JavaScript PowerShell  
Python TypeScript



### Queue trigger

A function that will be run whenever a message is added to a specified Azure Storage queue

Bash Batch C# F# JavaScript PHP  
PowerShell Python TypeScript



Timer trigger

## New Function

Language:

PowerShell

Name:

TimerTriggerPowerShell1

Timer trigger

Schedule ⓘ

Enter a cron expression of the format '{second} {minute} {hour} {day} {month} {day of week}' to specify the schedule.

0 \*/5 \* \* \* \*

This language is experimental and does not yet have full support. If you run into issues, please file a bug on our [GitHub repository](#).


Create

Cancel

# ExpertsLiveAT

Function Apps

 Search

All subscriptions 

 Function Apps


▼  ExpertsLiveAT

▼  Functions



▶  Demo2

▶  HttpTriggerPowerShell1

 New function

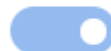
 Functions

 Search functions

NAME ▼

STATUS ▼

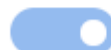
Demo2



Enabled



HttpTriggerPowerShell1



Enabled



# Demo Summary

- Triggers available
- Experimental flag
- How to create Azure Function
- Delete Azure Function
- Create PowerShell function
- Used cron notation





Experimental Language Support: ☒ Enabled

# PowerShell language support is still experimental



Demo  
Run function





# Demo Summary

- Create a function
- Use external input
- Call itself or a different function based on input





## CHOOSE A DEVELOPMENT ENVIRONMENT



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### In-portal

Author functions quickly in the portal





# Demo

Deploy from VSCode





# Demo Summary

- Show the vscode Azure Functions package
- Integration with sign in
- Create function from VSCode





# Alternative Deployment methods



RUN FROM  
PACKAGE



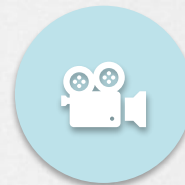
GITHUB CD



FTP UPLOAD



POWERSHELL  
/ CLI



VISUAL  
STUDIO



# Summary

---

Use existing PowerShell skills

---

Develop serverless code

---

Interact with other services

---

Free tier

---

[functions.azure.com](https://functions.azure.com)





# Questions



Twitter:

- @jaap\_brasser
- #ExpertsLive #Azure



GitHub

- [github.com/jaapbrasser/events](https://github.com/jaapbrasser/events)





# Ein Danke an unsere Sponsoren!



**Hewlett Packard**  
Enterprise

***SecureGUARD***

**e-shelter**



**INCRAM** MICRO



**iQSol**  
Security made in Austria.

**TIMEWARP**  
INFORMATION TECHNOLOGIES



 **au2mator**

 **code4ward.net**

 **royal**  
applications

 **NiCE**  
IT Management Solutions

**Powershell**  
Usergroup  
Austria  
