



**adaptTo()**

**EUROPE'S LEADING AEM DEVELOPER CONFERENCE**

**25<sup>th</sup> – 27<sup>th</sup> SEPTEMBER 2023**

**Get your AEM together with AEM Compose**

**Tomasz Sobczyk & Krystian Panek, Wunderman Thompson Technology**

# Agenda

About us

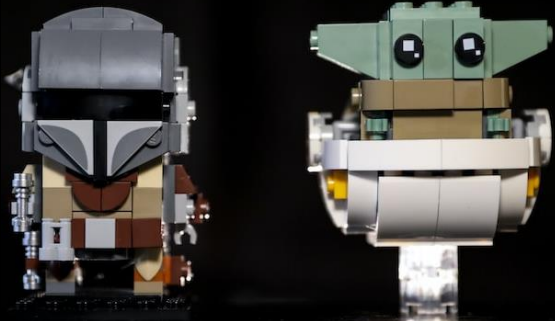
AEM Compose introduction

Live demo

AEM Compose deep dive

# The brain & the enthusiastic partner

- **The Brain:**  
**Krystian Panek**  
Principal Software Engineer
- **The Enthusiastic Partner:**  
**Tomasz Sobczyk**  
Technical Architect



# 3rd time is a charm, right?



- We've been here already (remember Gradle AEM Plugin?)
- It's our 3rd approach on adaptTo() to DevEx and AEM automation
- Used to be called Cognifide

# Why are we here?

# To recite a poem!

AEM Compose, a tool for AEM,  
A lifecycle manager, our gem,  
Our third iteration, bold and new,  
Built for DevEx, with you in view.

Over the years, we learned a lot,  
Gathered feedback, it meant a lot,  
And now we bring our best to you,  
Blazing fast, feature-rich, it's true!

With industry best practices in tow,  
A native CLI, YAML, let's go!  
Plug and play, simple to add,  
Manage your AEM, it's not so bad.

For local dev, we're here to aid,  
Reducing setup time, our crusade,  
Seamlessly added to new and old,  
A complement, not to replace, we're told.

In a demo, we'll show you how,  
Easy it is, no need to bow.  
Fully automated, say goodbye to guides,  
Fun and simple, our tool provides.

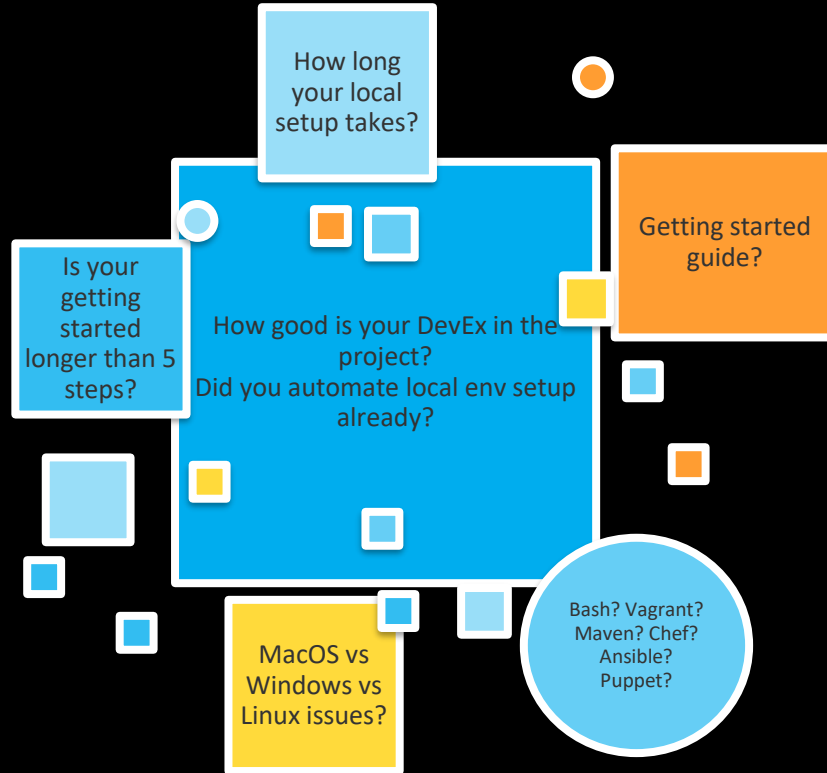
So try AEM Compose, you won't regret,  
A tool for AEM, we'll bet,  
Managing your instances with ease,  
With AEM Compose, your stress will cease.

*Tomasz Sobczyk, Krystian Panek, & ChatGPT*

# To ask uncomfortable questions...

„Setting up local  
AEM SDK is painful”

- Karl Pauls



Not happy with the answers?

Breathe

We've got your back!



# We present You...

(a.k.a. The Marketing Slides)

The image features a dark, black background. In the lower half, there are several bright, glowing orange and yellow light trails that curve from the bottom left towards the right. The trails are composed of multiple parallel lines, suggesting motion or speed. The text "Blazing fast..." is written in a white, sans-serif font, positioned in the upper middle section of the image, slightly above the light trails.

Blazing fast...

A single feather is shown against a light blue background. The feather has a central rachis and numerous fine, light-colored barbs extending from it. The tip of the feather is slightly curved and has a darker, brownish hue. The text "...light as a feather..." is written in a black, sans-serif font, following the curve of the feather's rachis.

...light as a feather...



...easy to use...

...and „The Rock” solid



Source:

<https://www.hdwallpapers.net/celebrities/dwayne-johnson-the-rock-wallpaper-641.htm>

# CLI tool

for managing Adobe Experience Manager instances

# Key Features

- Open Source & fully functional
  - Ideas & contributions very welcome
- Precompiled & immediately usable on any OS
  - No dependencies – Thank You GoLang!
- **AEM and JDK installation + Packages deployment + OSGI management + Repository manipulation + Admin password change + Backups + AEM SSL** by default and more...
- Intelligent AEM stability detection (during startup & deployment ,etc.)
- Idempotent – only delta will be applied (without you thinking about it)
- Supports both AEM 6.X (Classic) and AEMaaS SDK (Cloud)

# Use Cases

Local environment setup (CLI)

Semi-automated remote environment setup (CLI)

Fully automated remote environment setup

- when used with tools like Terraform, Ansible, Puppet, Chef, Gradle, or just bash scripts)



## Can be added to:

- ✓ new project
- ✓ old project
- ✓ project with existing automation
- ✓ project without any automation

Show time!

# AEM Compose deep dive

# Multi-platform & lightweight



- MacOS (x64, ARM)
- Linux (x386, x64, ARM)
- Windows (x64, ARM)
- <10MB in size (single file)

# Available commands

```
$ sh aemw --help
```

## Available Commands:

auth	Auth management
completion	Generate the autocompletion script for the specified shell
config	Manages AEMC configuration
content	Manages JCR content
crypto	Manages Crypto Support
file	File operation utilities
gts	Communicate with Global Trust Store
help	Help about any command
init	Initializes AEMC in the project
instance	Manages AEM instance(s)
osgi	Communicate with OSGi Framework
package	Communicate with Package Manager
replication	Manage replication (agents)
repository	Communicate with JCR Repository
ssl	Manages SSL/HTTPS Support
version	Print application details including version

check:

```
# Time to wait before first state checking (to avoid false-positives)
```

```
warmup: 1s
```

```
# Time to wait for next state checking
```

```
interval: 6s
```

```
# Number of successful check attempts that indicates end of checking
```

```
done_threshold: 5
```

```
# Max time to wait for the instance to be healthy after executing the start script or  
e.g deploying a package
```

```
await_started:
```

```
  timeout: 30m
```

```
# Max time to wait for the instance to be stopped after executing the stop script
```

```
await_stopped:
```

```
  timeout: 10m
```

```
...
```

# OSGi Bundle stability

```
INFO[2023-08-21 09:56:36] [local_author,local_publish] > awaiting started
INFO[2023-08-21 09:56:37] local_author > all bundles stable
INFO[2023-08-21 09:56:38] local_author > recent events stable
INFO[2023-08-21 09:56:38] local_author > installer idle
INFO[2023-08-21 09:56:38] local_author > login page ready
INFO[2023-08-21 09:56:38] local_publish > all bundles stable
INFO[2023-08-21 09:56:39] local_publish > recent events stable
INFO[2023-08-21 09:56:39] local_publish > installer idle
INFO[2023-08-21 09:56:39] local_publish > login page ready
INFO[2023-08-21 09:56:39] [local_author,local_publish] > checked (1/2)
```

# Task Runner 1/2

```
% sh taskw --dry

* check:           check health of AEM instances and dispatcher
* destroy:         destroy AEM instances and dispatcher
* init:            initialize project
* resetup:         destroy then setup again AEM instances and dispatcher
* restart:         restart AEM instances and dispatcher
* setup:           setup AEM instances and dispatcher
* start:           start AEM instances and dispatcher      (aliases: up)
* status:          check status of AEM instances and dispatcher
* stop:            stop AEM instances and dispatcher       (aliases: down)
* aem:author:check: check health of AEM author instance
* aem:build:       build AEM application using Maven
* aem:deploy:      deploy AEM application
* aem:destroy:     destroy AEM instances
* aem:provision:   provision AEM instances by installing packages and applying configs
```



# Task Runner 2/2

```
* aem:publish:check:      check health of AEM publish instance
* aem:setup:              start and provision AEM instances then build and deploy AEM app
* aem:start:              start AEM instances
* aem:status:             check status of AEM instances
* aem:stop:               stop AEM instances
* dispatcher:build:      build AEM dispatcher image
* dispatcher:check:      check health of AEM dispatcher
* dispatcher:destroy:    destroy AEM dispatcher
* dispatcher:hosts:      add AEM dispatcher domains to hosts file
* dispatcher:login:      login to AEM dispatcher shell
* dispatcher:resetup:    destroy then setup again AEM dispatcher
* dispatcher:restart:    restart AEM dispatcher
* dispatcher:setup:      setup AEM dispatcher
* dispatcher:start:      start AEM dispatcher using custom image
* dispatcher:status:     check status of AEM dispatcher
* dispatcher:stop:       stop AEM dispatcher
* dispatcher:test:       test AEM dispatcher image
```

# Why Go not Python?

Low footprint (single executable)

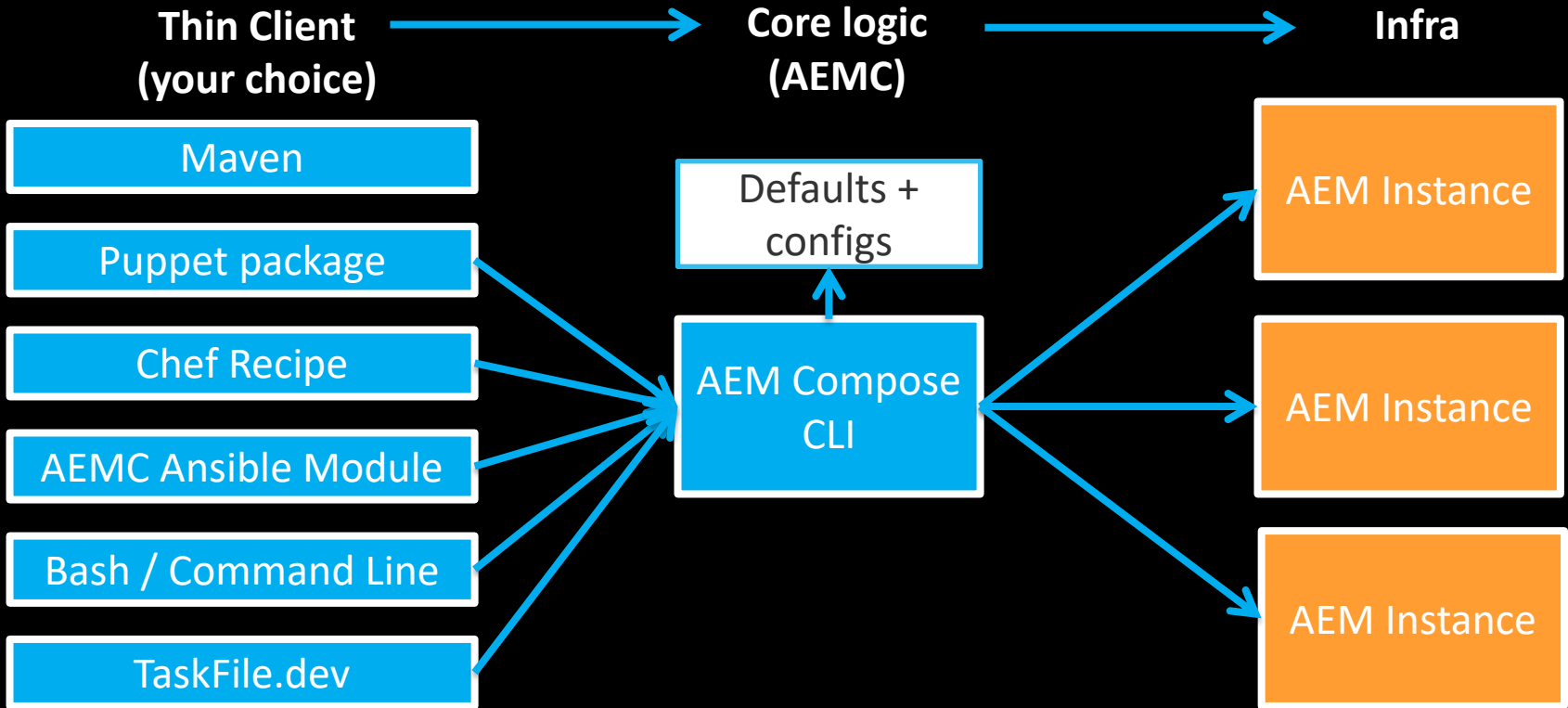
Multi-platform support off the shelf

Dependency Management

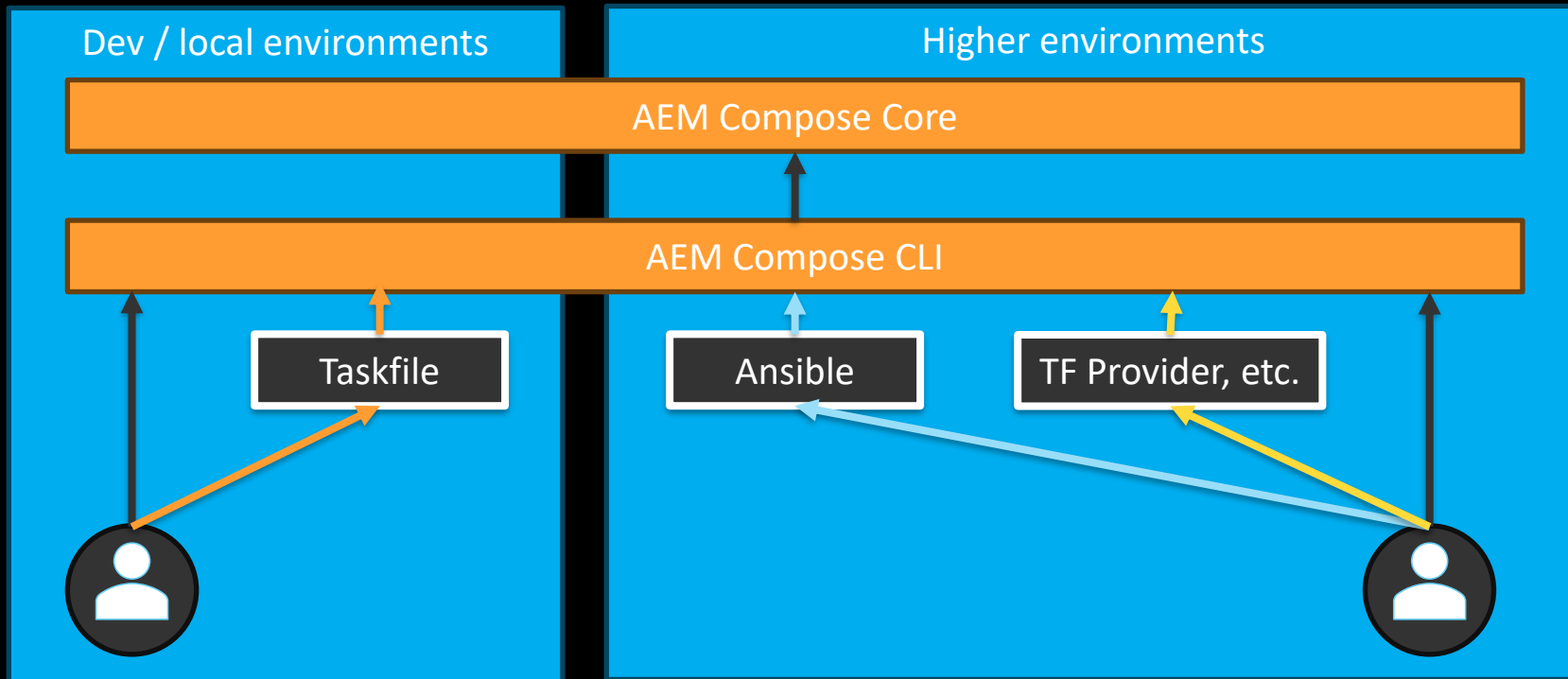
Strong typing

Performance

# How does AEMC fit your tooling?



# Local vs remote environments execution



# How can you start using AEMC today?

- ✓ Build automated local environment setup in no-time
- ✓ Deliver a production-grade AEM platform on-prem or within one of the Cloud vendors
- ✓ Build your own AEM Developer Platform
- ✓ AEM environments per pull request (ephemeral)
  - ✓ **Your wallet will stay intact (it's fun & cheap to run)**

# Ephemeral environments?

**Why are ephemeral environments  
like a microwave?**

***They make your code hot and ready in no time!***

# Environment (adaptto\_demo)

## Status

Server running create

[Open in AWS EC2](#)

Launched 2023-08-21 06:45:56

Created 2023-08-21 06:45:57

Active task create (started)

[Open in GitHub](#)

Around 3m 8s left

Suspend Delete Update

## Details

Blueprint aem-classic-6.5.16

[Open in GitHub](#)

Project rnd

Owner [krystian.panek](#)

Mode dev

## Access

Website [Open](#)

AEM Author [Open](#)

AEM Publish [Open](#)

IP Address 3.76.205.55

[Open in browser](#)

Instance details | EC2 Manager

eu-central-1.console.aws.amazon.com/ec2/v2/ho...

Services Frankfurt CogAwsAdmin @

EC2 > ... > i-05e6232bbf1ef2ba9

### Instance summary for i-05e6232bbf1ef2ba9 (gat\_adaptto\_demo\_aem\_single) Info

Updated less than a minute ago

Refresh Connect Instance state Actions

Instance ID	Public IPv4 address
<code>i-05e6232bbf1ef2ba9</code> (gat_adaptto_demo_aem_single)	<code>3.76.205.55</code>   <a href="#">open address</a>
Private IPv4 addresses	IPv6 address

AFE AWS AEM Env Setup, Deplo...

github.co...

wttech-private  
gat

<> Code Issues 49 Pull requests 1

< AFE AWS AEM Env Setup, Deploy & Test

### AFE AWS AEM Env Setup, Deploy & Test #596

[Summary](#)

Manually triggered 24 minutes ago

`afe-service-user-wttech` `fe1dcab`

# Interested? Want to know more?

- Check the blog post (spoiler alert, it's long!):  
<https://wttech.blog/blog/2023/get-your-aem-together-with-aem-compose/>
- GitHub Repos:  
<https://github.com/wttech/aemc>  
<https://github.com/wttech/aemc-ansible>  
<https://github.com/wttech/terraform-provider-aem> (Coming Soon!)



# Ansible + Packer

```
amazon-efs.ami: PLAY RECAP *****
amazon-efs.ami: aem_single : ok=28 changed=19 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
amazon-efs.ami:
amazon-efs.ami: Tuesday 21 March 2023 14:20:04 +0000 (0:00:13.769) 0:16:35.347 *****
amazon-efs.ami: =====
amazon-efs.ami: wttech.aem.instance : Restart system service ----- 483.30s
amazon-efs.ami: wttech.aem.instance : Deploy service pack ----- 410.96s
amazon-efs.ami: wttech.aem.instance : Install Java ----- 21.93s
amazon-efs.ami: wttech.aem.instance : Await instance(s) ----- 18.22s
amazon-efs.ami: wttech.aem.instance : Configure replication agent for flushing dispatcher cache -- 13.77s
amazon-efs.ami: wttech.aem.instance : Configure replication agent for publishing content -- 13.68s
amazon-efs.ami: wttech.aem.instance : Download library files ----- 7.61s
amazon-efs.ami: Gathering Facts ----- 7.42s
amazon-efs.ami: wttech.aem.instance : Create instance(s) ----- 5.50s
amazon-efs.ami: wttech.aem.instance : Enable CRX DE ----- 3.02s
amazon-efs.ami: wttech.aem.base : Download CLI archive ----- 2.03s
amazon-efs.ami: wttech.aem.instance : Create system user ----- 1.44s
amazon-efs.ami: wttech.aem.instance : Create system group ----- 1.31s
amazon-efs.ami: wttech.aem.instance : Find library files ----- 1.02s
amazon-efs.ami: wttech.aem.base : Unpack CLI archive ----- 0.84s
amazon-efs.ami: wttech.aem.instance : Enable system service ----- 0.57s
amazon-efs.ami: wttech.aem.instance : Create directories ----- 0.54s
amazon-efs.ami: wttech.aem.instance : Create system script ----- 0.36s
amazon-efs.ami: wttech.aem.instance : Disable SELinux ----- 0.30s
amazon-efs.ami: wttech.aem.instance : Create config file ----- 0.25s
==> amazon-efs.ami: Stopping the source instance...
amazon-efs.ami: Stopping instance
==> amazon-efs.ami: Waiting for the instance to stop...
```

# Terraform Provider (Coming soon!)

License [Apache-2.0](#)

## AEM Compose - Terraform Provider [↗](#)

Allows to manage and provision Adobe Experience Manager (AEM) instances declaratively.

Built on top of [AEM Compose](#).

### Example usage [↗](#)

```
resource "aws_instance" "aem_author" {
  ami = "ami-043e06a423cbdca17" // RHEL 8
  instance_type = "m5.xlarge"
  associate_public_ip_address = false
  // ...
}

resource "aem_instance" "author" {
  depends_on = [aws_instance.aem_author]

  compose {
    root_dir = "/mnt/aemc"
    version = "1.4.1"
    lib_dir = "lib" # files copied once over SCP before creating instance
    config_file = "aem.yml" # https://github.com/wttech/aemc/blob/0ca8bdeb17be0457ce4bea43621d8abe0f
    instance_id = "local_author"
  }
}
```

# Q&A



Thank You!

# Appendix

# What does the future hold?

- Terraform provider:

<https://github.com/wttech/aemc/issues/167>

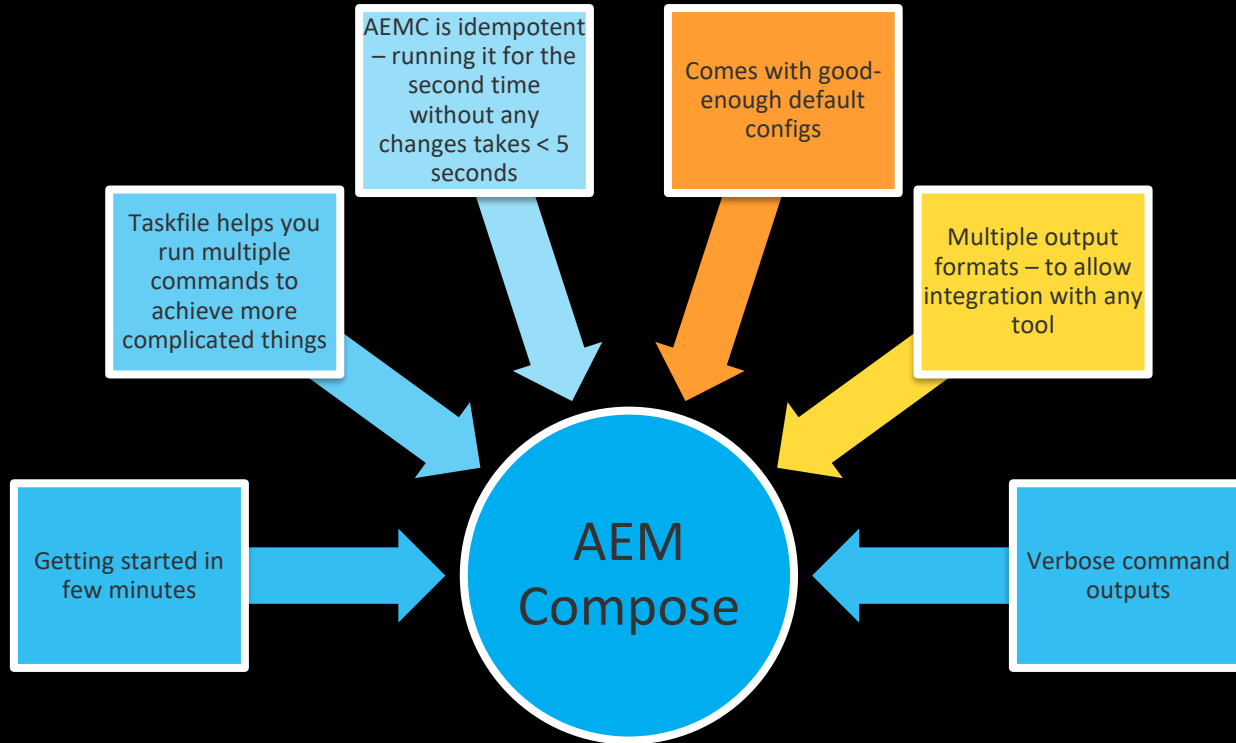
- Puppet module:

<https://github.com/wttech/aemc/issues/134>

- And many more:

<https://github.com/wttech/aemc/issues>

# What you saw on the demo?





# Key figures

121 releases to  
date

86 PRs closed

21 Issues in flight

9 contributors

Used both  
commercially and  
for internal tooling

# Ephemeral Cloud Environments is the way!

The ultimate goal should be to allow building AEM envs on demand, without any limits

That's how we use AEMC internally inside our own Developer Platform (AEM For Everyone)

# AEM for Everyone

Create your own cloud-based AEM environment within minutes in only a few clicks

Designed to help you in: Marketing (biz-devs), QA (bug reproduction), TL/Software engineers (PoC) – Sky is the limit. No technical knowledge required.

🔗 One more for me

## ☆ How it works?

Each AEM environment will be deployed to dedicated cloud infrastructure.

The process is completely automated and does not require any IT personal assistance.

## 🕒 How to use the environment?

Do whatever you need!

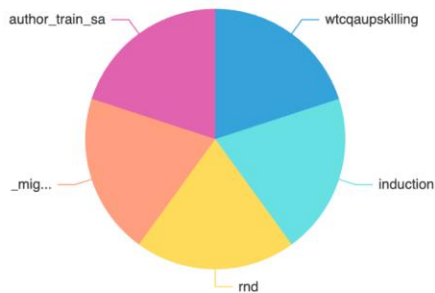
Remember that all running environments are suspended at the end of the day. You can resume them any time if required.

## 📺 Who pays?

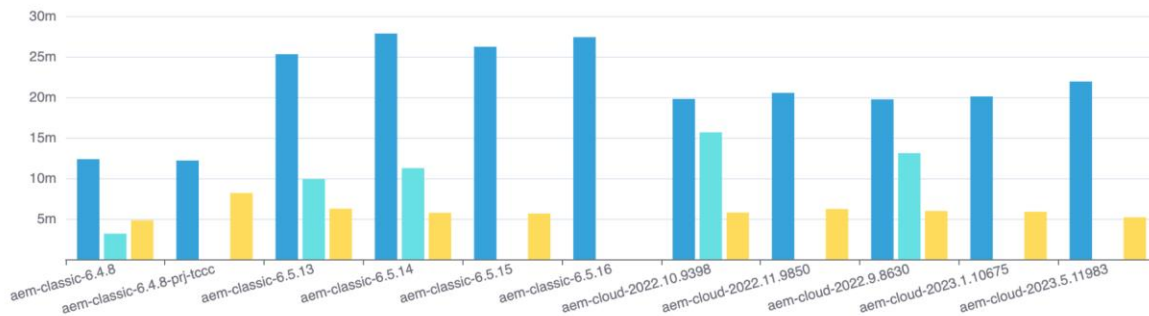
AEM is using CEP RnD department AWS account.

Ensure reading the payment instructions provided when creating a new environment.

## 📁 Environment projects



## 🕒 Blueprint task durations



# Create a new environment

Basics Security Advanced

## Blueprint

aem-classic-6.5.16

Defines how the target AEM environment will look like in detail. Impacts e.g AEM version (cloud/on-prem), Core Components version, and more.

## Project

rnd

Groups environments logically. Must be short and lowercase. Could have dashes. Usually a common prefix (or suffix) of all environment names. For example: 'geometrixx'.

## Name

adapto\_demo

Identifies a single environment. Must be unique, short, and lowercase. Could have underscores. For example: 'geometrixx\_int', 'gmx\_int', etc.

Cancel Create

**Confirmation**

Are you sure you want to create environment 'adapto\_demo'?

Cancel OK

The environment created is sponsored by CEP.

For commercial work ensure to map values of **Name** and **Project** to your OpenAir ID in this **spreadsheet**. By using AFE you agree to recharge cost of resources you use to that OpenAir code.

**AEM environment in detail**

The created environment is full-blown and will consist of:

- AEM Author** - a server holding all created AEM resources like pages, assets, etc.
- AEM Publish** - a server holding only published AEM resources.
- AEM Dispatcher** - a server that improves drastically performance when navigating between published AEM website pages.

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Services Frankfurt CogAwsAdmin @

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Updated less than a minute ago

🔄 Connect Instance state ▼ Actions ▼

Instance ID	Public IPv4 address
<a href="#">i-05e6232bbf1ef2ba9</a> (gat_adaptto_demo_aem_single)	<a href="#">3.76.205.55</a>   <a href="#">open address</a>
Private IPv4 addresses	IPv6 address

AFE AWS AEM Env Setup, Dep...

github.co...

wttech-private / gat

Code Issues 49 Pull requests 1

← AFE AWS AEM Env Setup, Deploy & Test

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[afe-service-user-wttech](#) → fe1dcab