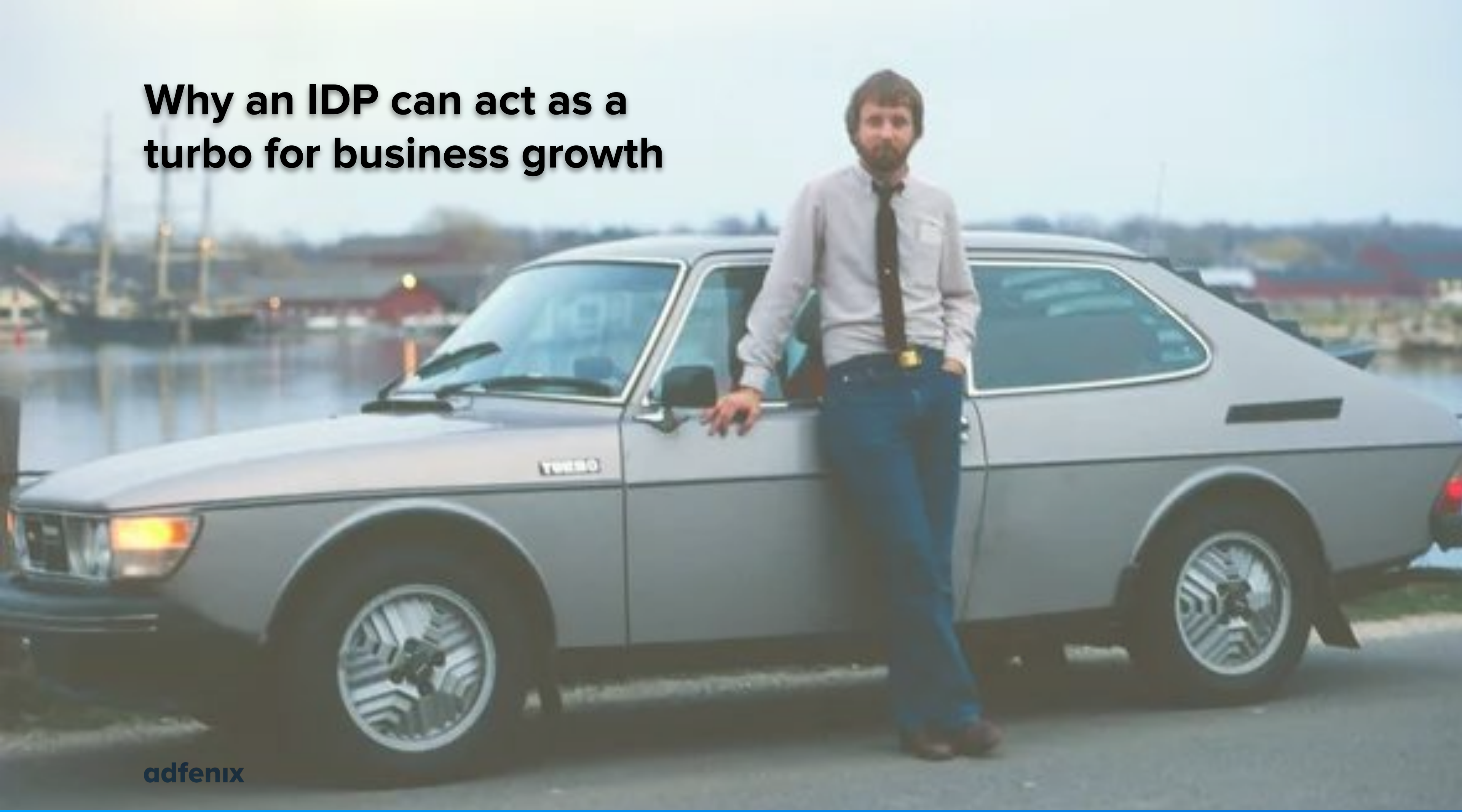
adfenix

10+ years experience of IDPs (Internal Developer Platform) to support fast growing companies

Ulf Månsson, infrastructure ninja at Adfenix, @ulfmansson

Real Estate. Real Relationships.

Why an IDP can act as a turbo for business growth



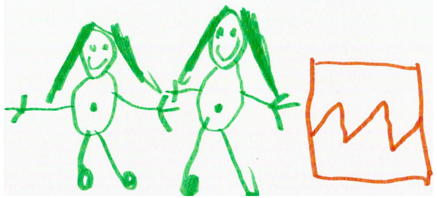
My job titles for the last 15 years

- Sys admin
- Infrastructure engineer
- Infrastructure architect
- Infrastructure developer
- SRE engineer
- Manager
- Devops engineer
- Plumber
- Devops architect
- Pipeline expert
- Devops specialist
- Infrastructure ninja
- Platform engineer?

My job titles has never been - YAML engineer

I needed some help with the presentation

My daughters

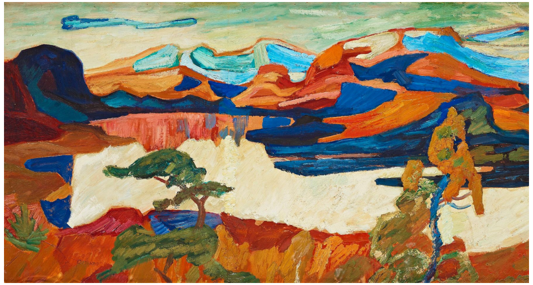


+

= busy with important stuff

Osslund

Title +



+

= crap

Paul Gauguin

Title +

+

= ok

What is an IDP

- *An Internal Developer Platform (IDP) is built by a platform team to build golden paths and enable developer self-service. An IDP consists of many different techs and tools, glued together in a way that lowers cognitive load on developers without abstracting away context and underlying technologies*

Why an IDP? I am lazy

Why an IDP -
from a business perspective

- Speed of feature development and deployed
- Cost
- Quality
- Easy to adopt infrastructure to new requirements

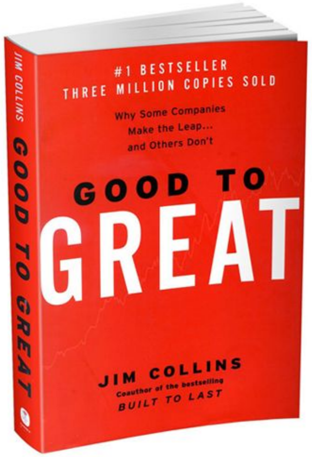
What make top performers - According to the study “DevOps Setups by Humanitec”

- Top performers run all loosely coupled architectures in 95.5% of their applications
- Public cloud is the dominant approach, especially with top performers
- For top performers, configuration as code is completely normal (95.5%)
- 92% of top performing teams manage their infrastructure with Infrastructure as Code solutions

What make top performers, cont

- 93% of top performers are adopting containers and most of them are already fully migrated
- Over 80% of top performers deploy at least several times per day
- The time it takes to implement, test, and deliver code. It takes minutes for over 50% of top performers and there are almost no high or top performers that take more than a week. Think about the compounding effect if you are 100 times faster in every single delivery.
- **Almost 100% of all teams in the top performance bucket report that their developers can self-serve what they need from their setup to run their apps and services.**

A book - Good to great


#1 BESTSELLER
THREE MILLION COPIES SOLD
Why Some Companies Make the Leap... and Others Don't
GOOD TO GREAT
JIM COLLINS
Coauthor of the bestselling BUILT TO LAST
JIM COLLINS GOOD TO GREAT

About companies that went from
good companies to great companies

Disciplined thinking to the dogged pursuit of a ***core mission.***

One of the successful CEOs Dave Packard also liked to drive his tractor - upon his death, his family created a eulogy pamphlet,with a photo of him sitting on a tractor in farming clothes.

adfenix

Never edit yaml files

- If you edit YAML-files then you haven’t automated and can’t standardize
- You are then manage pets
- Everything should be dynamic, like kubernetes setups, dbs etc

Definition if you have an IDP

- Never edit json or yaml
- Never disturbed by a developer
- Happy management
- Never get titles like Employee of the month
- Never disturbed by an alert

adfenix

Standardise - make it simple to do the right thing

This means:

- Make it hard to manually change things
- Make it hard to do the wrong thing

3 Stories

3 IDPs I have been part of creating

Company #1 - Recorded Future

- An Unicorn
- 2010 about 10 employees
- 2022 800+ employees
- 2022 1500 clients
- 70+ micro services
- 1000nds of AWS instances
- PB of data

The speed of delivery of new features - had major impact on Recorded Future growth

- Delivered new features in an insane speed to meet customer demands
- Major data growth all the time from GBs to PBs
- Always a SaaS

The IDP at Recorded Future made this possible

- Developers could focus on writing code that made a difference
- Just a few hours to get a new micro service up and put in production
- The code the developers wrote was focused on the features and not boiler code like DB error handling, interact with metric system etc
- It was not only the service that was put in production, automatically there was logging, metrics, dashboards, alerts etc created

If something got wrong in deployment or infrastructure not working, the infrastructure team took care of that. Developers only needed to take care of problems caused by code

How it started - DevOps

- Definition from 2010 (John Willis):
    - **C**ulture
    - **A**utomation
    - **M**onitoring
    - **S**haring

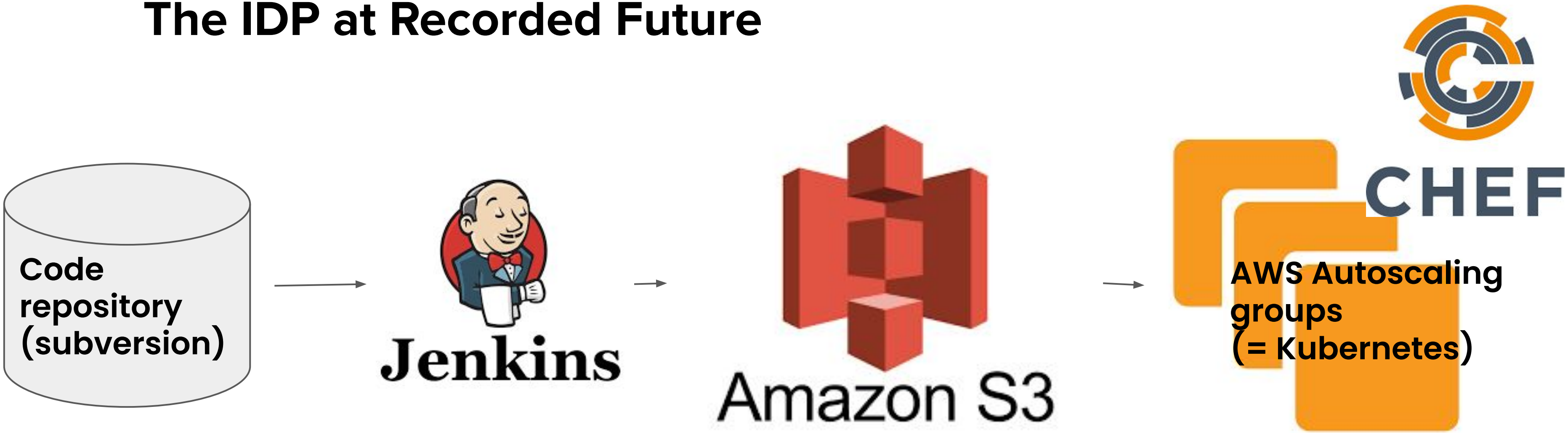
Automation

- Configuration Management - all infrastructure
- Continuous Integration
- Continuous Delivery

Requirements on developers

- No singleton processes
- Only deploy via deploy pipelines
- Need to build for Chaos monkey (Spot instances)
- Messaging to interact between services
- Use of wrappers for messaging, DB interaction etc
- Trunk-based development
- Feature toggle
- Mono-repo

The IDP at Recorded Future



Code repository (subversion)

AWS Autoscaling groups (= Kubernetes)

Grafana

Kibana (ELK)

Sensu - monitoring

One team to create and maintain the IDP

Sysadmin team a.k.a
Infrastructure team a.k.a
Devops team a.k.a
Devopssec team a.k.a
Platform team

+ A “backend” team

- Common code
- Common wrappers
- Common metrics
- Common logging

+ Very strong management support

- Management supported the approach
- Appointed leaders

The IDP is a platform not an UI

- The platform could include many tools
- Different UIs

Teams manage everything

Manual work

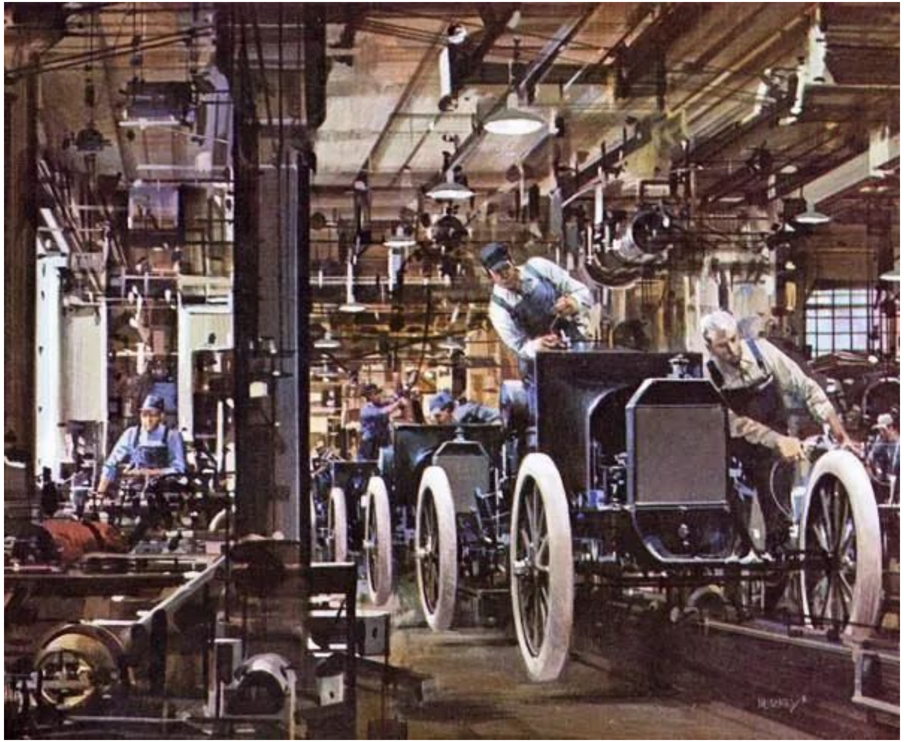
A lot of knowledge needed in the team

Expensive

Standardisation

IDP means standardisation -

need to do stuff in the same way

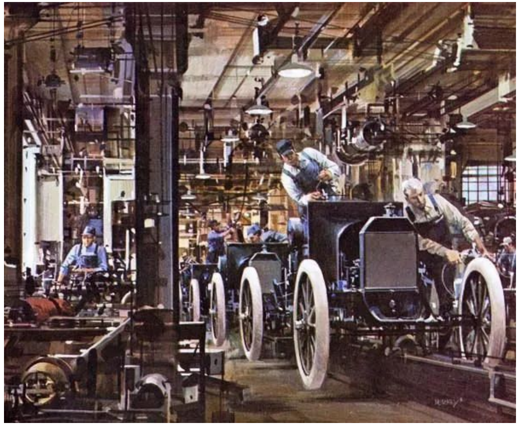


Competitive advantage

Goal for development team is to deliver features

With enough quality

or



What did we standardise

- Naming of processes - use the same name at all places
- Development languages
- Database engines
- Build process
- Deployment process
- Feature toggling
- Tools
- DNS
- Monitoring
- Alerting/Escalation/Paging
- Logging

Wrappers

- Standardised wrappers around
  - Database clients
  - Messaging clients
  - Logging clients
- Included logging, metrics and error handling

Company #2 - Failure - large company

- Tried to create an agile organization
- Tried to implement a startup culture

Why it failed - management

- Weak leadership
- Multi cloud platforms
- Every team could make their own decisions
- Infrastructure/platform team was seen as support team
- No strong mandates

Why it failed - technology

- Different technologies
- No standardisation
- Team could choose technologies
- No common code
- Different repos

Company #3, Adfenix

- Started with a monolith
- Running in a data center on hardware
- Installation per customer
- Expanded also by buying companies, need to be integrated

Built a micro service architecture

- Created a micro service architecture
- Rewrote the monolith into services
- Message based architecture
- Moved to cloud and AWS

Created an IDP, Internal Developer Platform

- 5 minutes to create a new micro service and deploy it in production
- Based on experience from Recorded Future and failures from the large company - and based on other employees experience as well
- Developers could focus on features not on Kubernetes and other shitty tools
- From one feature deploy per week to 3-4 deploys per day

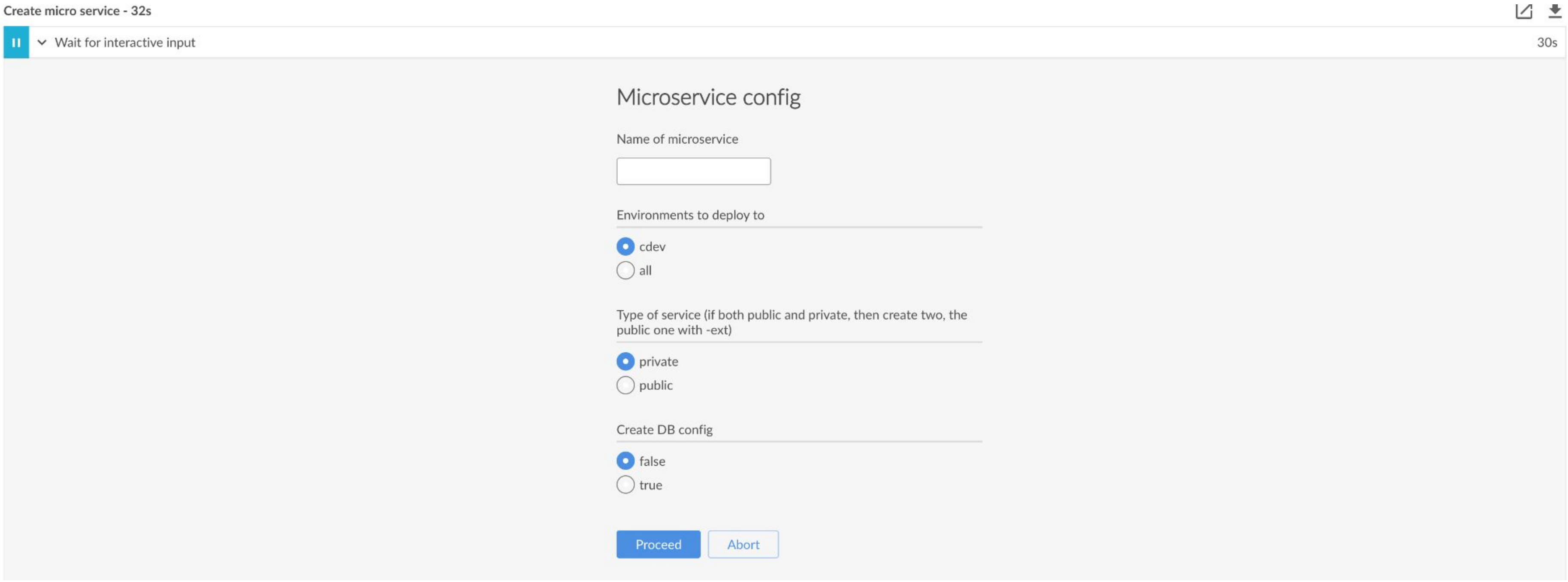
We are able to recreate a Kubernetes cluster with all services in 1 hour

At Etsy we have one hard and fast rule for new Engineers on their first day: deploy to production.

By John Goulah

13 Mar 2012

The UI to create a new micro service



Create micro service - 32s

Wait for interactive input 30s

Microservice config

Name of microservice

Environments to deploy to

● cdev
○ all

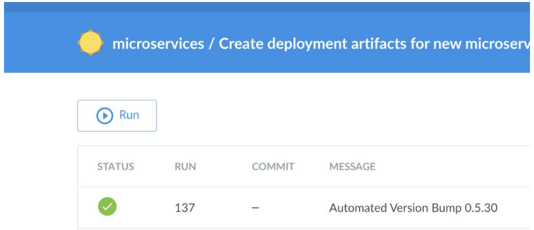
Type of service (if both public and private, then create two, the public one with -ext)

● private
○ public

Create DB config

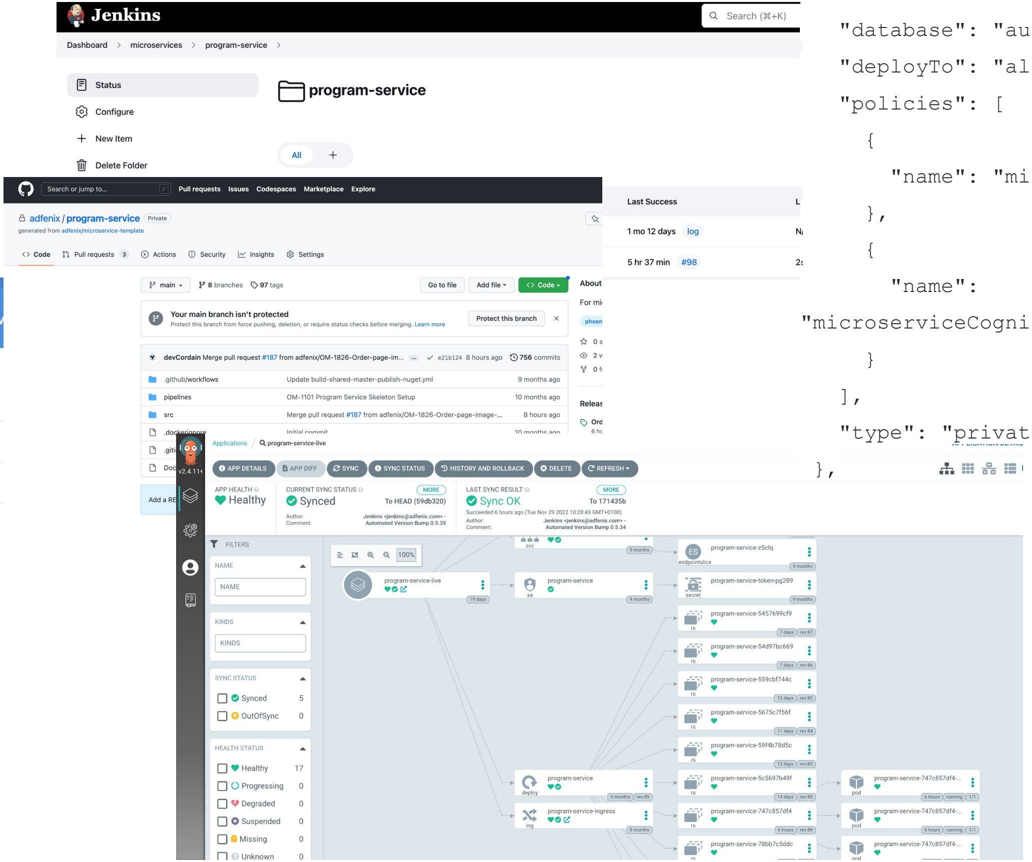
● false
○ true

Create a new microservice in 5 minutes



microservices / Create deployment artifacts for new microserv

STATUS	RUN	COMMIT	MESSAGE
✓	137	–	Automated Version Bump 0.5.30



program-service

Last Success	L
1 mo 12 days log	N
5 hr 37 min #98	2

adfenix / program-service Private

generated from adfenix/microservice-template

8 branches 97 tags

Your main branch isn't protected

Protect this branch from force pushing, deletion, or require status checks before merging. Learn more

devCordain Merge pull request #187 from adfenix/OM-1826-Order-page-im... ✓ e21b124 8 hours ago 756 commits

.github/workflows	Update build-shared-master-publish-nuget.yml	9 months ago
pipelines	OM-1101 Program Service Skeleton Setup	10 months ago
src	Merge pull request #187 from adfenix/OM-1826-Order-page-image-...	8 hours ago
.dockerignore	Initial commit	10 months ago

APP HEALTH
Healthy

CURRENT SYNC STATUS
Synced
To HEAD (59db320)
Author: Jenkins <jenkins@adfenix.com> -
Comment: Automated Version Bump 0.5.35

LAST SYNC RESULT
Sync OK
To 171435b
Succeeded 6 hours ago (Tue Nov 29 2022 10:28:43 GMT+0100)
Author: Jenkins <jenkins@adfenix.com> -
Comment: Automated Version Bump 0.5.34

NAME

KINDS

SYNC STATUS

□	Synced	5
□	OutOfSync	0

HEALTH STATUS

□	Healthy	17
□	Progressing	0
□	Degraded	0
□	Suspended	0
□	Missing	0
□	Unknown	0

```
{
  "microservice": "auth-service",
  "database": "authservicedb",
  "deployTo": "all",
  "policies": [
    {
      "name": "microserviceReadSecrets"
    },
    {
      "name":
"microserviceCognitoUserPoolSecrets"
    }
  ],
  "type": "private"
},
```

adfenix

More stuff created in 5 minutes

Amazon ECR

Amazon RDS

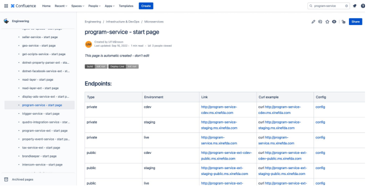
AWS IAM

```
{
  "microservice": "auth-service",
  "database": "authservicedb",
  "deployTo": "all",
  "policies": [
    {
      "name": "microserviceReadSecrets"
    },
    {
      "name":
"microserviceCognitoUserPoolSecrets"
    }
  ],
  "type": "private"
},
```

Grafana

Kibana (ELK)

Sensu - monitoring



- seller-service - start page
- geo-service - start page
- get-scripts-service - start page
- dotnet-property-parser-ext - sta...
- dotnet-facebook-service-ext - st...
- read-layer - start page
- read-layer-ext - start page
- display-ads-service-ext - start p...
- program-service - start page
- trigger-service - start page
- quedro-integration-service - star...
- program-service-ext - start page
- property-event-service - start pa...
- tax-service-ext - start page
- brandkeeper - start page
- intercom-service - start page

Engineering / Infrastructure & DevOps / Microservices

program-service - start page

Created by Ulf Månsson
Last updated: Sep 16, 2022 · 1 min read · 3 people viewed

This page is automatic created - don't edit

Endpoints:

Type	Environment	Link	Curl example	Config
private	cdev	http://program-service-cdev.ms.xinefda.com	curl http://program-service-cdev.ms.xinefda.com	config
private	staging	http://program-service-staging.ms.xinefda.com	curl http://program-service-staging.ms.xinefda.com	config
private	live	http://program-service.ms.xinefda.com	curl http://program-service.ms.xinefda.com	config
public	cdev	http://program-service-ext-cdev-public.ms.xinefda.com	curl http://program-service-ext-cdev-public.ms.xinefda.com	config
public	staging	http://program-service-ext-staging-public.ms.xinefda.com	curl http://program-service-ext-staging-public.ms.xinefda.com	config
public	live	http://program-service-ext-	curl http://program-service-ext-	config

Confluence documentation

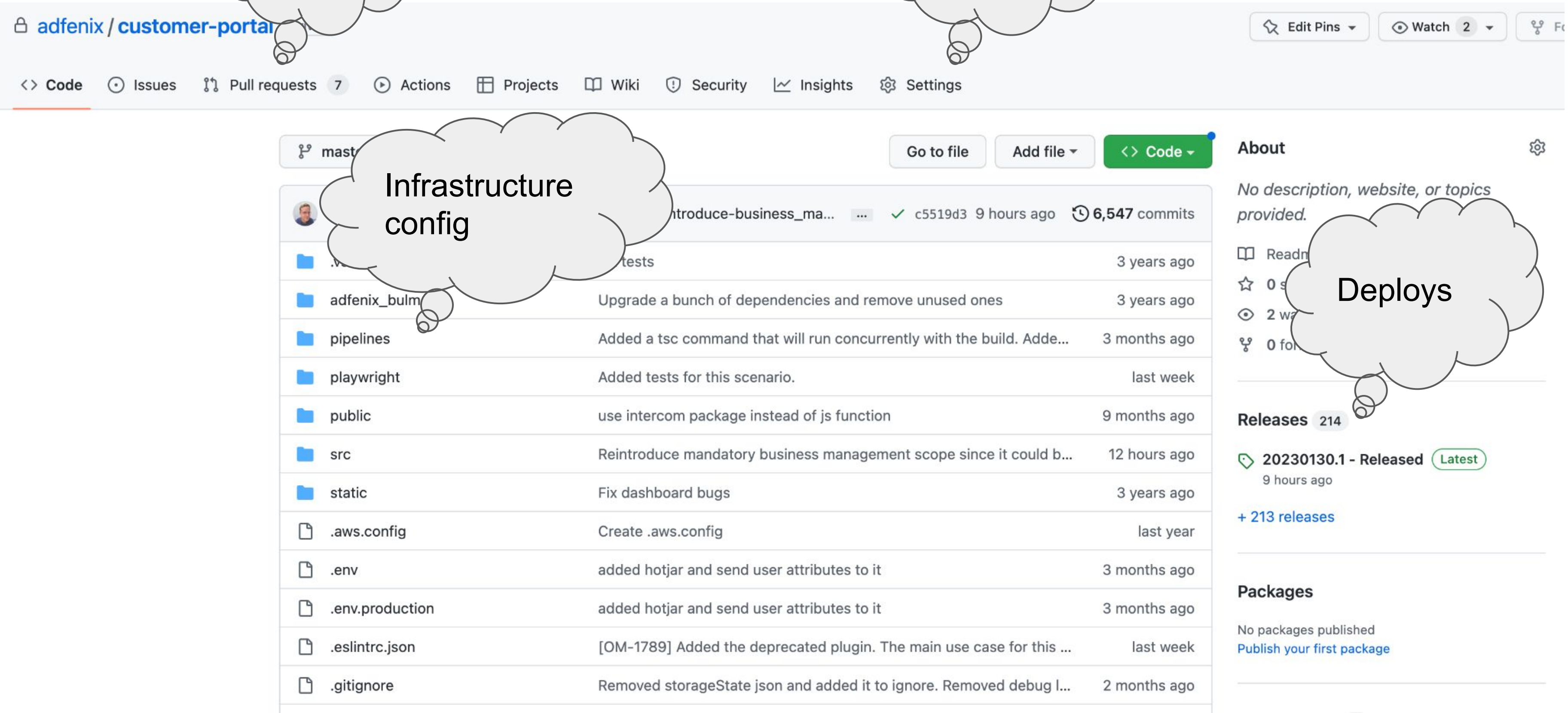
Github

Initiate builds

Common rules

Infrastructure config

Deploys



adfenix / customer-portal

Edit Pins ▾ | Watch 2 ▾ | Fo

Code | Issues | Pull requests 7 | Actions | Projects | Wiki | Security | Insights | Settings

mast | Go to file | Add file ▾ | Code ▾

ntroduce-business_ma... ... ✓ c5519d3 9 hours ago 6,547 commits

.v	tests	3 years ago
adfenix_bulm	Upgrade a bunch of dependencies and remove unused ones	3 years ago
pipelines	Added a tsc command that will run concurrently with the build. Adde...	3 months ago
playwright	Added tests for this scenario.	last week
public	use intercom package instead of js function	9 months ago
src	Reintroduce mandatory business management scope since it could b...	12 hours ago
static	Fix dashboard bugs	3 years ago
.aws.config	Create .aws.config	last year
.env	added hotjar and send user attributes to it	3 months ago
.env.production	added hotjar and send user attributes to it	3 months ago
.eslintrc.json	[OM-1789] Added the deprecated plugin. The main use case for this ...	last week
.gitignore	Removed storageState json and added it to ignore. Removed debug l...	2 months ago

About

No description, website, or topics provided.

Readm

0 s

2 w

0 fo

Releases 214

20230130.1 - Released Latest

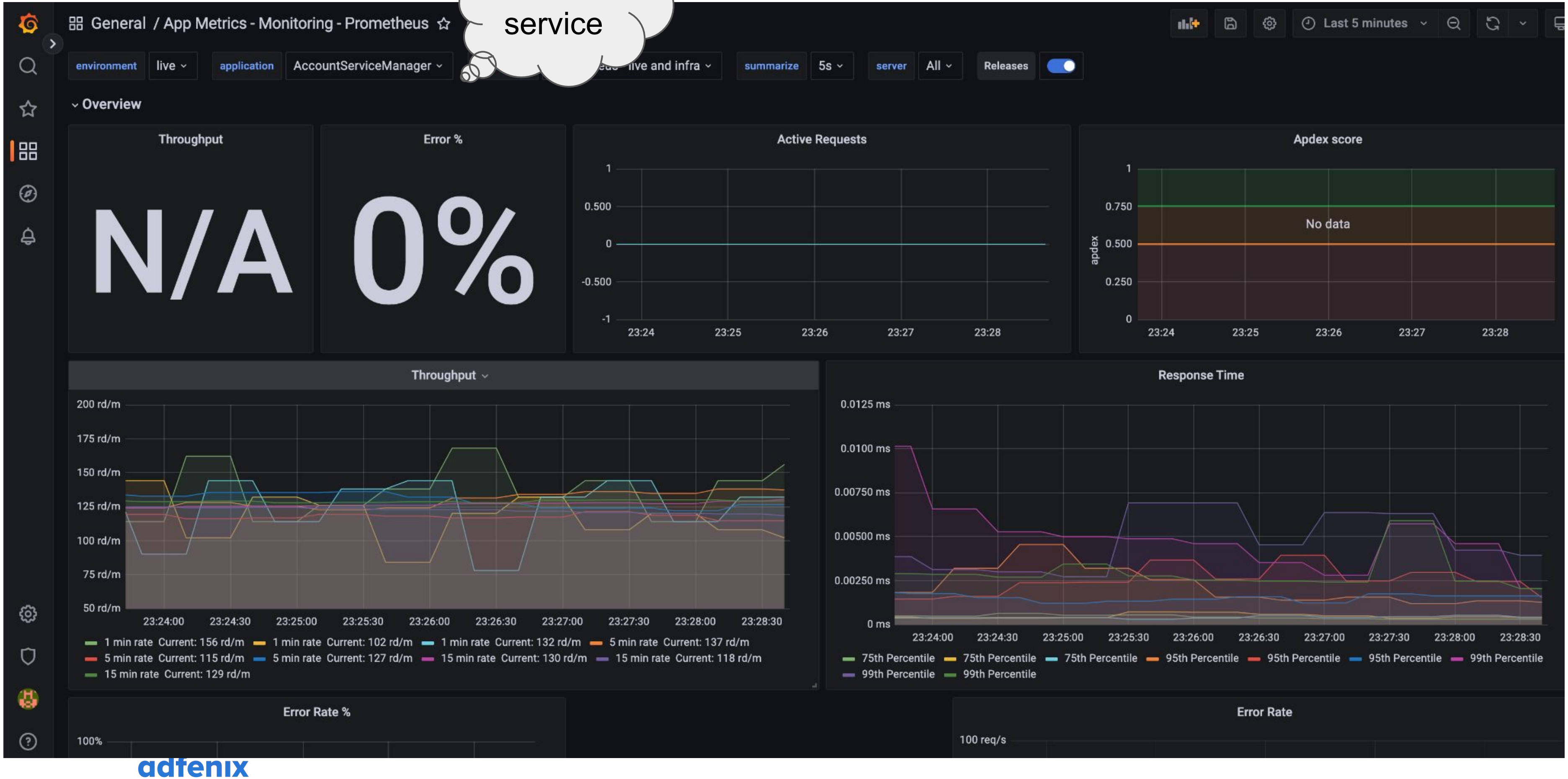
9 hours ago

+ 213 releases

Packages

No packages published

Publish your first package



General / App Metrics - Monitoring - Prometheus

Last 5 minutes

environment: live · application: AccountServiceManager · …ive and infra · summarize: 5s · server: All · Releases

Overview

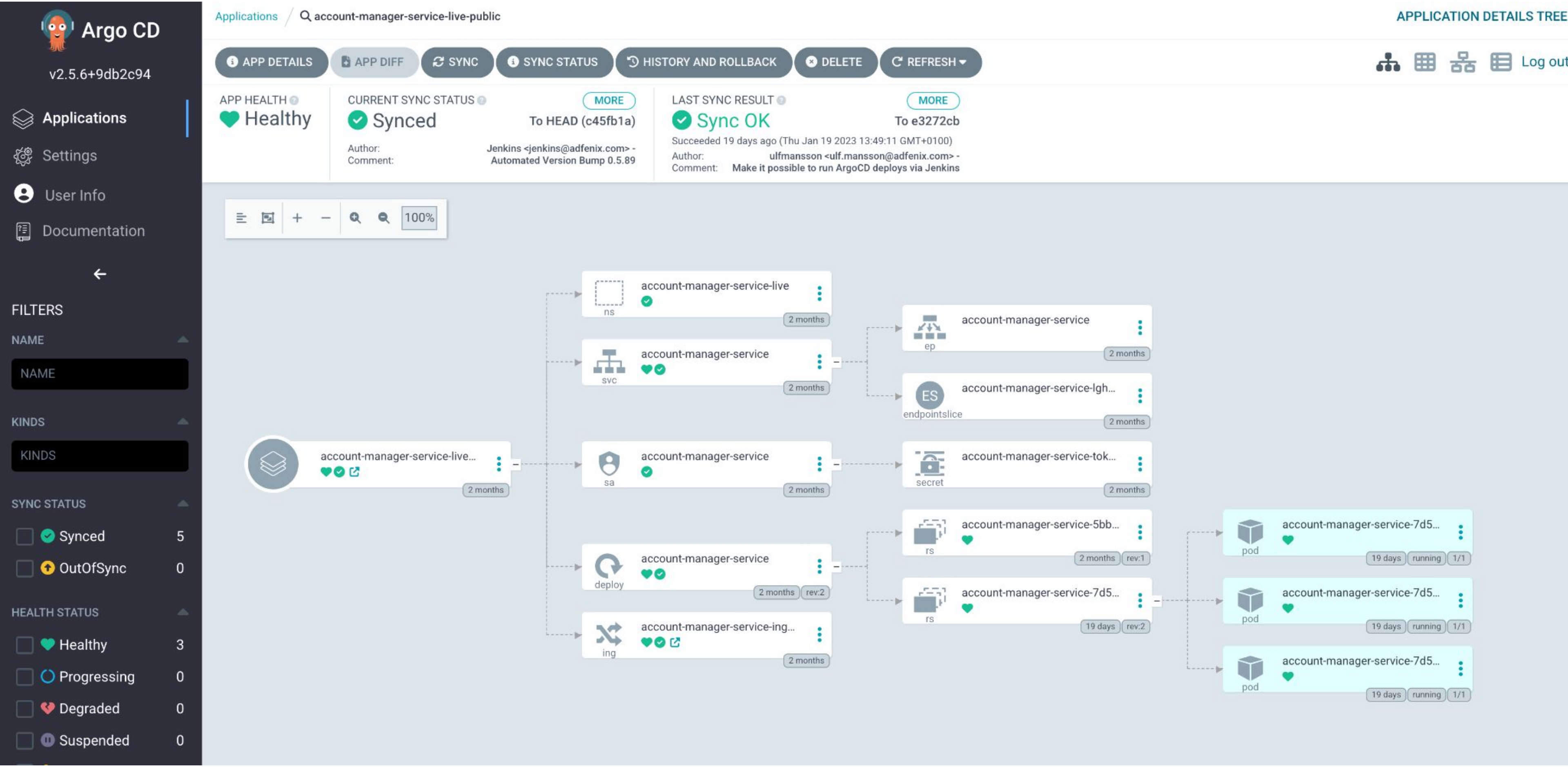
Throughput: N/A

Error %: 0%

Throughput legend:

- 1 min rate Current: 156 rd/m
- 1 min rate Current: 102 rd/m
- 1 min rate Current: 132 rd/m
- 5 min rate Current: 137 rd/m
- 5 min rate Current: 115 rd/m
- 5 min rate Current: 127 rd/m
- 15 min rate Current: 130 rd/m
- 15 min rate Current: 118 rd/m
- 15 min rate Current: 129 rd/m

Select service

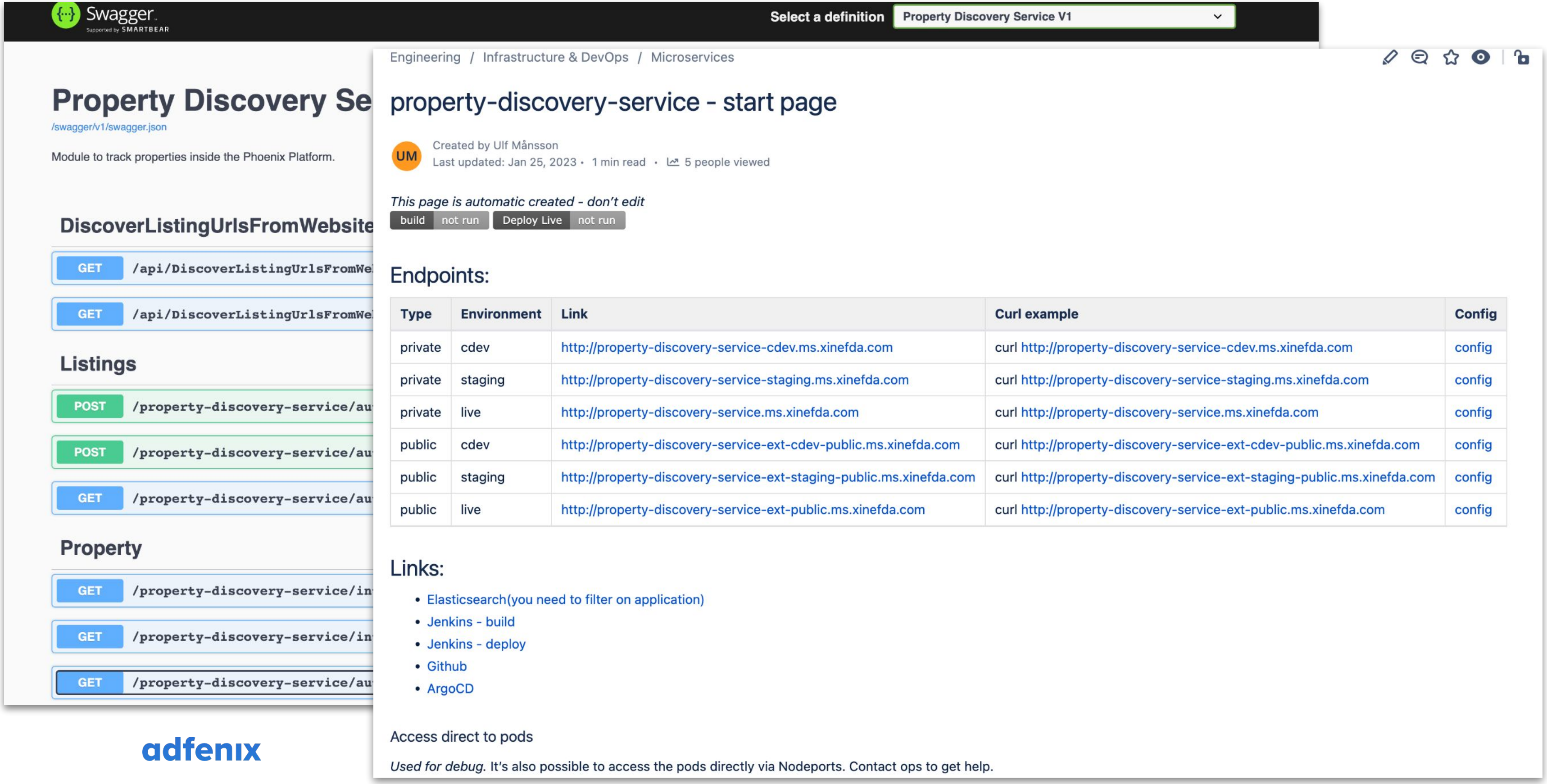


APP HEALTH
Healthy

CURRENT SYNC STATUS
Synced
To HEAD (c45fb1a)
Author: Jenkins <jenkins@adfenix.com> -
Comment: Automated Version Bump 0.5.89

LAST SYNC RESULT
Sync OK
To e3272cb
Succeeded 19 days ago (Thu Jan 19 2023 13:49:11 GMT+0100)
Author: ulfmansson <ulf.mansson@adfenix.com> -
Comment: Make it possible to run ArgoCD deploys via Jenkins

Autogenerated documentation



Property Discovery Se

/swagger/v1/swagger.json

Module to track properties inside the Phoenix Platform.

DiscoverListingUrlsFromWebsite

GET /api/DiscoverListingUrlsFromWe

GET /api/DiscoverListingUrlsFromWe

Listings

POST /property-discovery-service/au

POST /property-discovery-service/au

GET /property-discovery-service/au

Property

GET /property-discovery-service/in

GET /property-discovery-service/in

GET /property-discovery-service/au

Engineering / Infrastructure & DevOps / Microservices

property-discovery-service - start page

UM Created by Ulf Månsson
Last updated: Jan 25, 2023 • 1 min read • 5 people viewed

This page is automatic created - don't edit

build not run Deploy Live not run

Endpoints:

Type	Environment	Link	Curl example	Config
private	cdev	http://property-discovery-service-cdev.ms.xinefda.com	curl http://property-discovery-service-cdev.ms.xinefda.com	config
private	staging	http://property-discovery-service-staging.ms.xinefda.com	curl http://property-discovery-service-staging.ms.xinefda.com	config
private	live	http://property-discovery-service.ms.xinefda.com	curl http://property-discovery-service.ms.xinefda.com	config
public	cdev	http://property-discovery-service-ext-cdev-public.ms.xinefda.com	curl http://property-discovery-service-ext-cdev-public.ms.xinefda.com	config
public	staging	http://property-discovery-service-ext-staging-public.ms.xinefda.com	curl http://property-discovery-service-ext-staging-public.ms.xinefda.com	config
public	live	http://property-discovery-service-ext-public.ms.xinefda.com	curl http://property-discovery-service-ext-public.ms.xinefda.com	config

Links:

- Elasticsearch(you need to filter on application)
- Jenkins - build
- Jenkins - deploy
- Github
- ArgoCD

Access direct to pods

Used for debug. It's also possible to access the pods directly via Nodeports. Contact ops to get help.

Tools used in IDP at Adfenix

- Pulumi
- Jsonnet
- Github
- ArgoCD
- Tanka
- Confluence
- Jenkins
- Ruby
- Chef

Tools used by developers Adfenix - focus on UI and view

- Pulumi
- Jsonnet
- Github
- ArgoCD
- Confluence
- Jenkins
- Ruby
- Chef

What our developers says

- It’s so easy, it makes my life easier
- I can focus on code
- Please, move the company we bought into our platform so we can get logs, metrics etc in proper way

Important to work close with developers

- The team manage the IDP are supplier to the developers
- Important with a good dialogue and understanding
- Empathy

I NEED TO KNOW WHY MOVING OUR APP TO THE CLOUD DIDN'T AUTOMATICALLY SOLVE ALL OUR PROBLEMS.
YOU WOULDN'T LET ME RE-ARCHITECT THE APP TO BE CLOUD-NATIVE.
JUST PUT IT IN CONTAINERS.
YOU CAN'T SOLVE A PROBLEM JUST BY SAYING TECHY THINGS.
KUBERNETES.

Dilbert.com @ScottAdamsSays

11-08-17 © 2017 Scott Adams, Inc./Dist. by Andrews McMeel

Why an IDP can act as a turbo for business growth