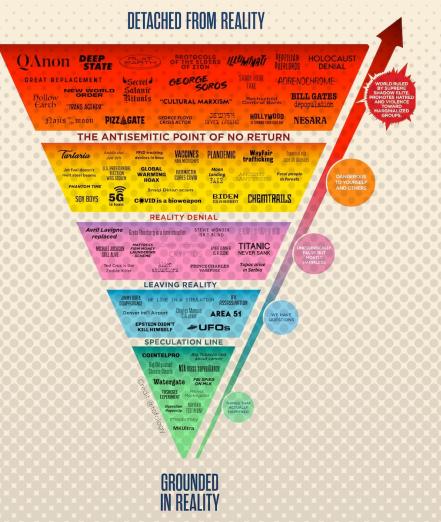
# DEVOPS... REFRAMED

EMBRACING THE PATH TO DEVELOPER PRODUCTIVITY ENGINEERING



## CONSPIRACY THEORY



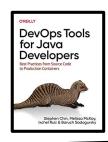


## DEIOPS IS A CONSPIRACY BY OPS PEOPLE TO MAKE US. THE DEVELOPERS, DO THEIR JOB



### BARUCH SADOGURSKY - @JBARUCH

- Developer Productivity Advocate
- × Gradle Inc
- × Development -> DevOps -> #DPE







#### **SHOWNOTES**

- × speaking.jbaru.cl
- × Slides
- × Video
- × All the links!









#### Baruch Sadogursky

Developer Relations and DPE Advocacy



#### AlphaCSP 6 vrs 1 mo

#### Training Division Manager

Jan 2007 - Oct 2010 · 3 yrs 10 mos

- Development and delivery of most of AlphaCSP courses on different Java-related topics and in different levels;

Among the customers: IDF, Cisco, IDI direct insurance, Rafael, PayPal, Opal, BMC, Malam, Checkpoint, HP Software and others.

- Development and delivery Artifactory training for JFrog customers world-wide;

Among the customers: Cisco, Sita, Ansys and others.

- JTeam Extremely successful internal training program in AlphaCSP ¼ of AlphaCSP personnel are JTeam alumni.
- Java department technical lead at MalamTeam Training Center development and delivery of all Java courses.
- Named one of the best speakers in all AlphaCSP events through the years.

#### Consultant & Architect

Jan 2007 - Oct 2010 · 3 yrs 10 mos

Consulting, building architectures and design, mentoring, and developing in various Java-related projects on the topics, described in Specialties section above;

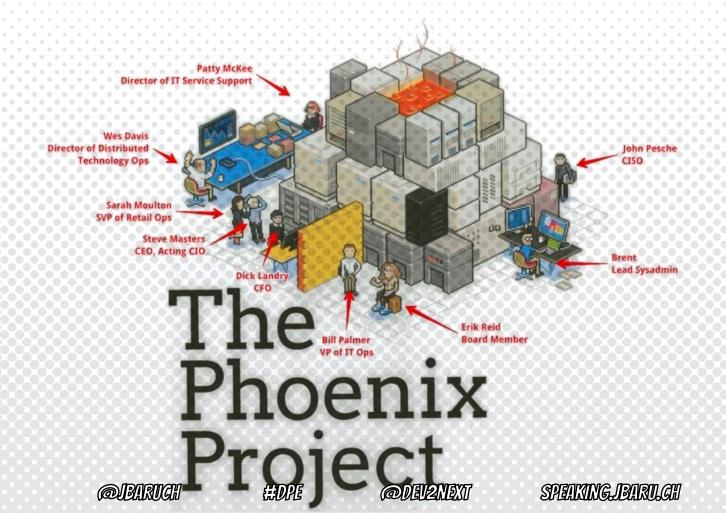
Among the customers: BMC, Logia, IDF, Starhome (Comverse), Malam, Cisco, IDI, IDIT, Isracard, Virtual Tweens, Amobee, SolarEdge, Checkpoint, Cadence, Evolven, ExLibris, Retalix, Schema, Time To Know and others.

#### Senior Developer

Oct 2004 - Jan 2007 · 2 yrs 4 mos OCT 2004 - Jan 2007 · 2 yrs 4 mos Working on various projects in blic Software Israel









## NOT A SINGLE DEVELOPER!





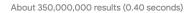
Google













#### Amazon.com

https://aws.amazon.com > devops > what-is-devops

#### What is DevOps? - DevOps Models Explained

DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at ...

AWS DevOps Competency · What is Continuous Integration?



#### Atlassian

https://www.atlassian.com > devops

#### What is DevOps?

DevOps is a set of practices, tools, and a cultural philosophy that automate and integrate the processes between software development and IT teams.



#### GitLab

https://about.gitlab.com > topics > devops

#### What is DevOps?

DevOps is a combination of software development (dev) and operations (ops). It is defined as a software engineering methodology which aims to integrate the work  $\dots$ 

Continuous Delivery (CD): Continuous deliver... Agile: Agile development means taking iter... Continuous Integration (CI): The practice of re... Version control: The fundamental practice o...

DevOps explained · The four phases of DevOps · The DevOps lifecycle and how...



https://learn.microsoft.com > en-us > what-is-devops

#### What is DevOps?

Jan 25, 2023 — DevOps enables coordination and collaboration between formerly siloed roles like development, IT operations, quality engineering, and security.















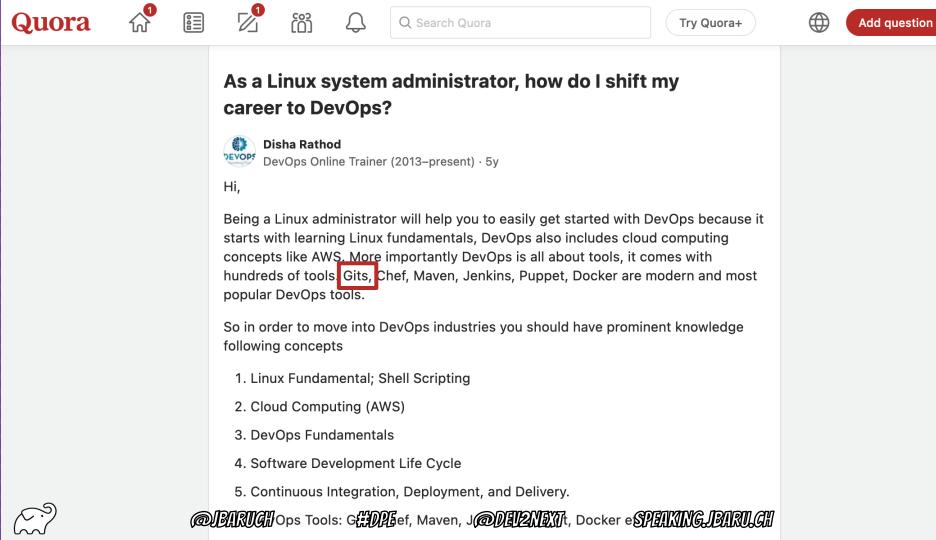




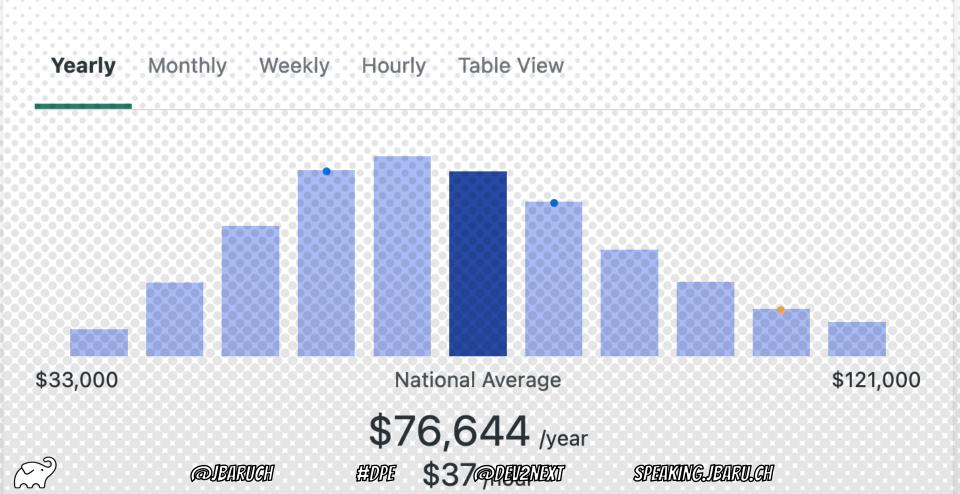
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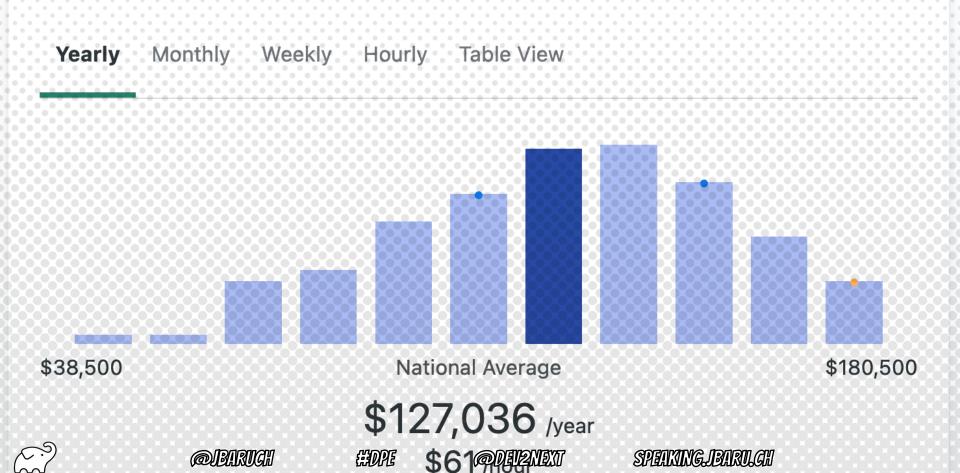
@DEV2NEXT



#### **System Administrator Salary**



#### **Devops Engineer Salary**







## 33(6) (BUT WE'LL GET TO IT LATER)





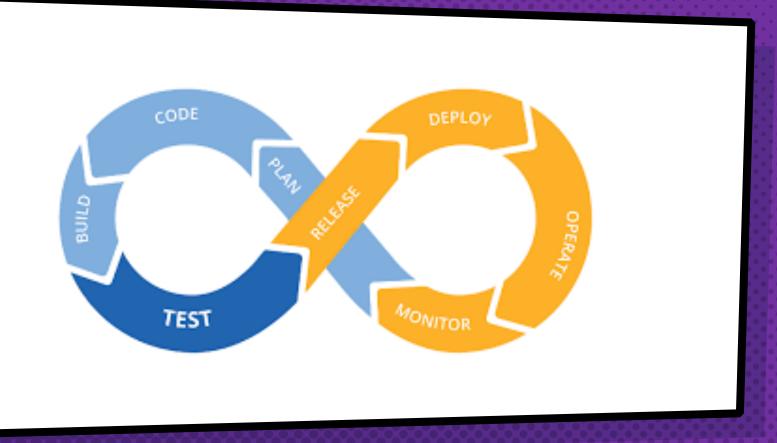
**@JBARUCH** 

#DPE

@DEV2NEXT









@JBARUCH









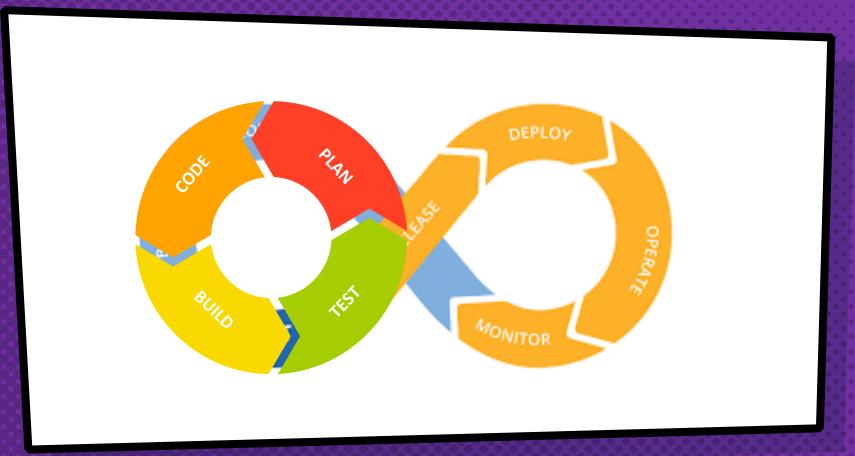




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#DPE

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@JBARUCH



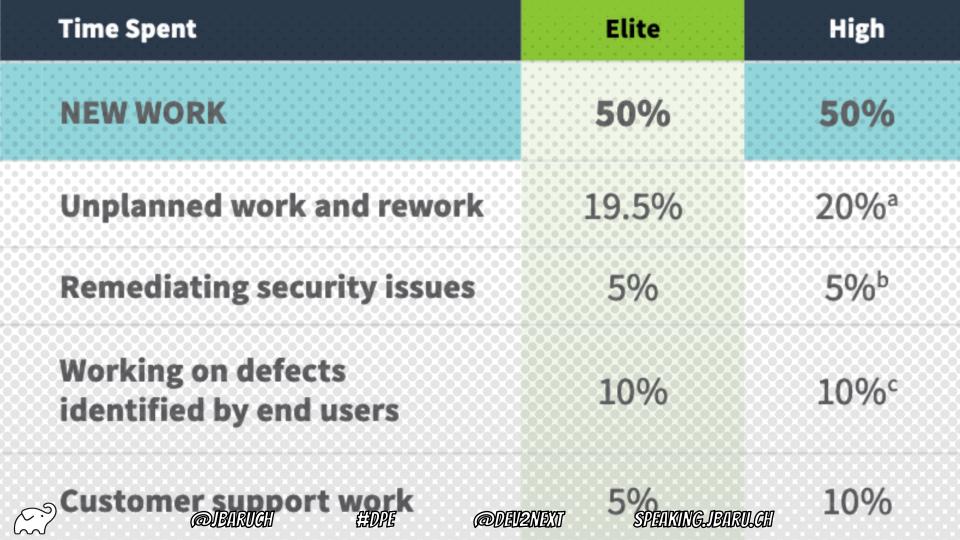


DEVOPS RESEARCH & ASSESSMENT

Accelerate State of DevOps Report #DPE



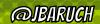




## TYPES OF WORK ACCORDING TO DEVOPS

Planned Work	Business projects or new features
Internal Projects	Server migrations, software updates and so on
Changes	Driven by feedback on completed work
Unplanned Work	Support escalations and emergency outages









# SO FASCINATING....





@JBARUCH

#DPE

@DEV2NEXT

## TYPES OF WORK ACCORDING TO DEVELOPERS

New Features	Writing code
Refactoring	Writing code
Bug Fixes	Writing code











### Manifesto for Software Craftsmanship

Raising the bar.

As aspiring Software Craftsmen we are raising the bar of professional software development by practicing it and helping others learn the craft. Through this work we have come to value:

Not only working software,
but also **well-crafted software** 

Not only responding to change, but also **steadily adding value** 

Not only individuals and interactions, but also **a community of professionals** 

Not only customer collaboration,
but also **productive partnerships** 

That is, in pursuit of the items on the left we have found the 

OBTRUCHON the right FIDE indispense ODEVENEXT SPEAKING JEARU.CH





### SOFTWARE CRAFT-PERSON DEFINITION OF DONE

- We got what they want
- × Clear code
- × Easy to deploy
- × Non-func reqs ✓
- × No new tech dept

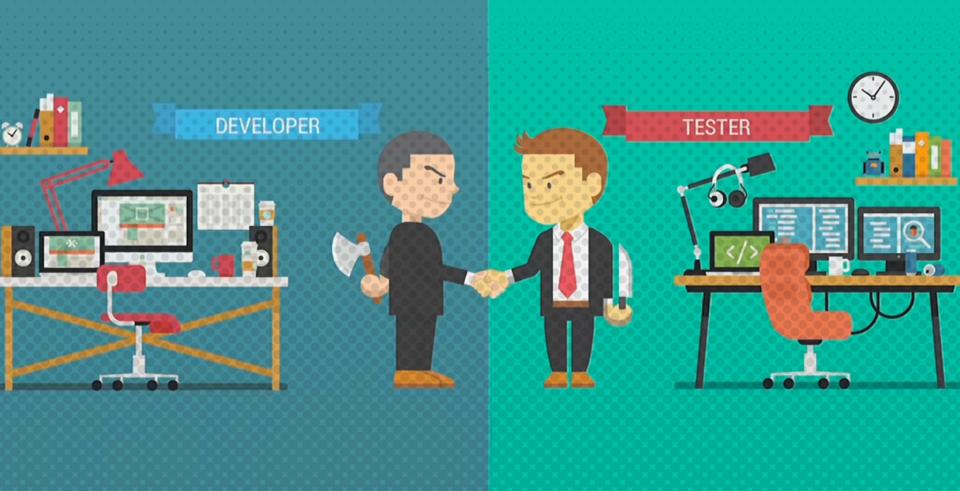
- × Tests √
- × QA are happy
- × Team lead is happy
- Product owner is happy (i.e. customer is happy)















TRACTORMEN, IMPROVE THE QUALITY OF TRACTOR-TRAILER TRACKING!

## SPEAKING JBARU.GH **EEDPE** *@DEVENEXT*



You could win \$10,000 simply by logging on to Chase.com. Details ind ATM / Branches | Co





Personal Banking

Credit Cards

Debit Cards

Savings

• CDs







Returning Users: Log On 11 User ID:

Password:

Remember my User ID ▶ Online Banking & Bill Forgot User ID/Password?

Log On

Security Center Highlights

Chase helps keep you

safe and informed.

▶ Enhanced online security to

▶ Scams involving advance fees

▶ Online fraud and e-mail scams ▶ Ways we protect you ▶ How you can protect yourself

prevent fraud.

and cashier's check.

help

Personal Lending

▶ Home Equity Loans & Lines Mortgage

Auto/Vehicle Loans

Student Loans

Enter the Chase "Log On to Cash In" Sweepstakes.

**DETAILS** 

Business .......

Business Banking Revenues up to \$10MM

Commercial Banking Revenues over \$10MM

▶ Business Credit Cards

Insurance & Investing

Insurance Investing

▶ Retirement Planning



Premier Platinum Banking Exclusive banking and investment benefits for clients with higher balances

Get the Details

News & Announcements

▶ U.S. Armed Forces Overseas Please contact us if you need assistance with your Chase accounts.

▶ Chase offers Zero-Fees! For academic year 2007-2008 the origination fee will be paid on all Federal Stafford Loans that Chase funds directly to students.

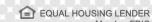
▶ Fair Lending & HMDA Data

Chase Clear & Simple Expands

12 HOURS MAINTENAN FOR WEBSITE UPDATE TO ENSURE QUALITY

JPMorgan | JPMorganChase | En Español

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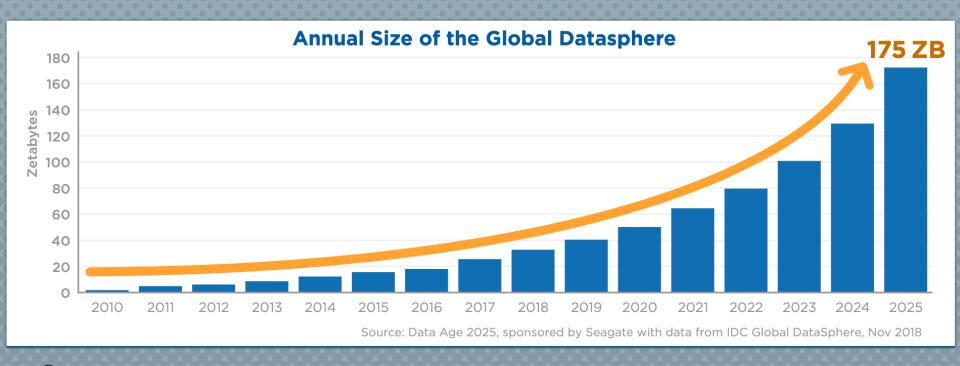








### CODE QUALITY IS NOT ENOUGH

















@JBARUCH

#DPE

@DEV2NEXT





PRODUCTION STEAMS ITS WAY TO THE DEVELOPERS!



# SOFTWARE CRAFT-PERSON DEFINITION OF DONE

- We got what they want
- × Clear code
- Easy to deploy
- × Non-func regs ✓
- No new tech dept

- × Tests √
- × QA are happy
- × Team lead is happy
- Product owner is happy (i.e. customer is happy)
- DevOps are happy









# WHO IS THIS "DELLOPS" PERSON?!

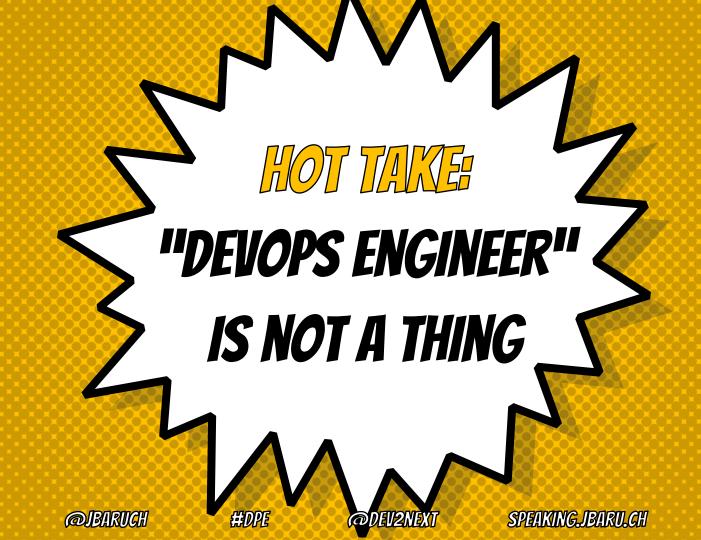


# HELLOS



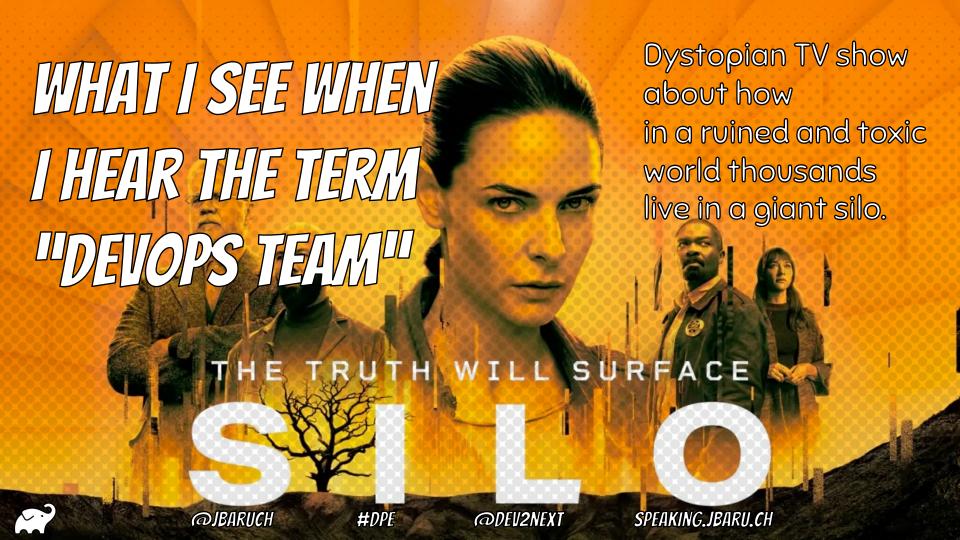
I am Baruch and I have an obsession



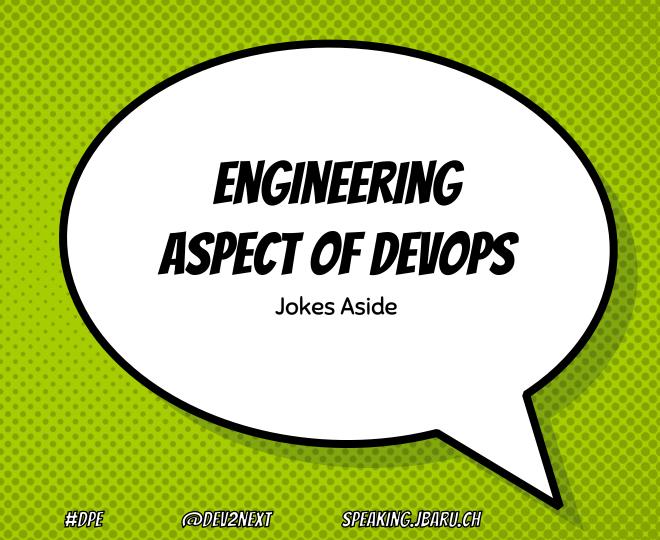




















# "DEVOPS ENGINEERS ARE REBRANDING THEMSELVES AS PLATFORM ENGINEERS"



Scott Shaw Chief Technology Officer, APAC, Thoughtworks













#### platform engineering and devops







Images

News

Jobs Job description

Videos

Salary

Shopping

Maps

Books

About 33,800,000 results (0.41 seconds)



The New Stack

https://thenewstack.io > Blog

#### How Is Platform Engineering Different from DevOps and ...

Sep 16, 2022 — **Platform engineering** is the next stage of the **DevOps** evolution. It encompasses the best intentions of the cultural shifts that came before it.



TechTarget

https://www.techtarget.com > searchitoperations > tip > Pl...

#### Platform engineering vs. DevOps: What's the difference?

Apr 13, 2023 — **DevOps** teams create the software, with a focus on accelerating delivery and enhancing quality, whereas **platform engineers** implement and manage ...

#### People also ask :



Is p@JBARUCHneer same a#DPEOps?





what is platform engineering in a sentence?



Platform engineering is about building and managing scalable infrastructure and services that enable developers to efficiently deploy and run applications.







so, someone who writes all the yaml files for the organzation?



Haha, you could say that! They often handle YAML files for Kubernetes, CI/CD pipelines, and 〇 凸 贝 config management, but their role goes beyond just "YAML engineering." They set the stage for devs to do their best work.













# SOFTWARE CRAFT-PERSON DEFINITION OF DONE

- We got what they want
- × Clear code
- Easy to deploy
- × Non-func regs ✓
- No new tech dept

- × Tests √
- × QA are happy
- × Team lead is happy
- Product owner is happy – (i.e. customer is happy)
- × PEs are happy









# WHAT MAKES PLATFORM ENGINEERS HAPPY

- × Modular
- × Deployable
- × Observable
- × Scalable
- × Upgradable
- × Downgradable









#### THE TWELVE FACTORS

#### I. Codebase

One codebase tracked in revision control, many deploys

#### II. Dependencies

Explicitly declare and isolate dependencies

#### III. Config

Store config in the environment

#### IV. Backing services

Treat backing services as attached resources

#### V. Build, release, run

Strictly separate build and run stages

#### **VI. Processes**

Execute the app as one or more stateless processes

#### VII. Port binding

Export services via port binding

#### VIII. Concurrency

Scale out via the process model

#### IX. Disposability

Maximize robustness with fast startup and graceful shutdown

#### X. Dev/prod parity

Keep development, staging, and production as similar as possible

#### XI. Logs

Treat logs as event streams













TO YEARS OF TRYING...
AND DEVELOPERS STILL
AREN'T EXCITED ABOUT
DEVOPS





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#DPE

@DEV2NEXT

# HOW DO WE GO FROM TO ?!

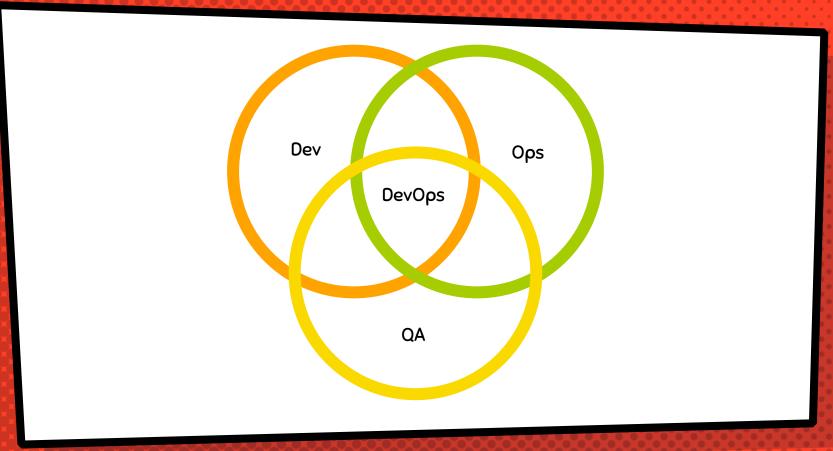




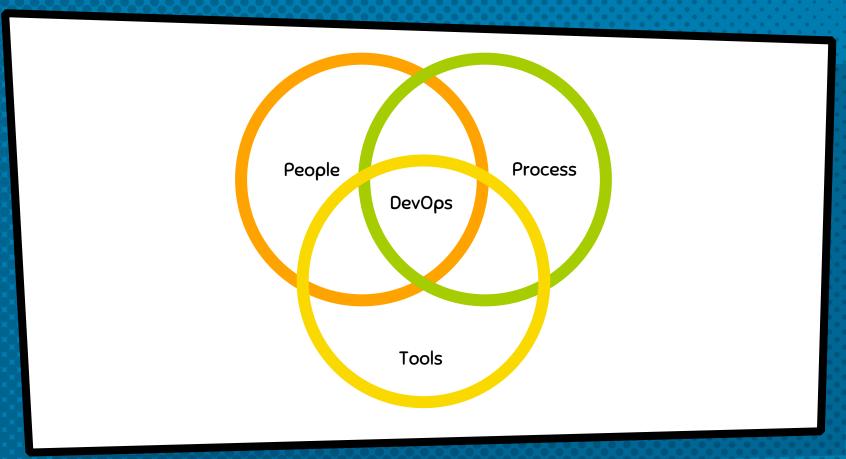
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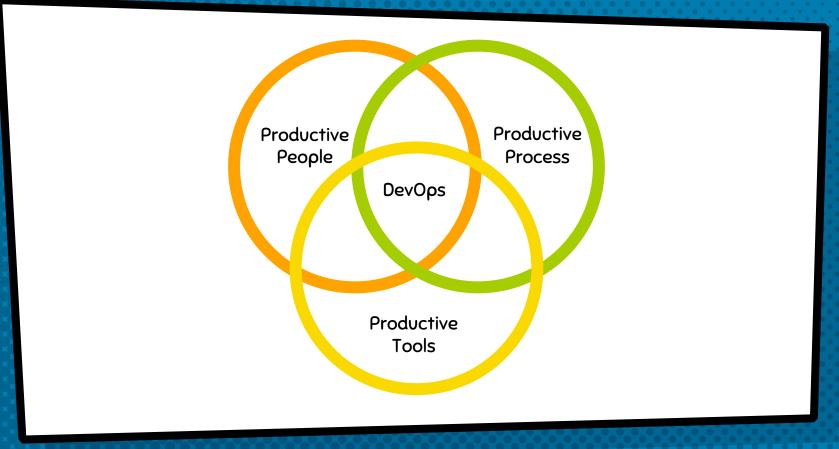
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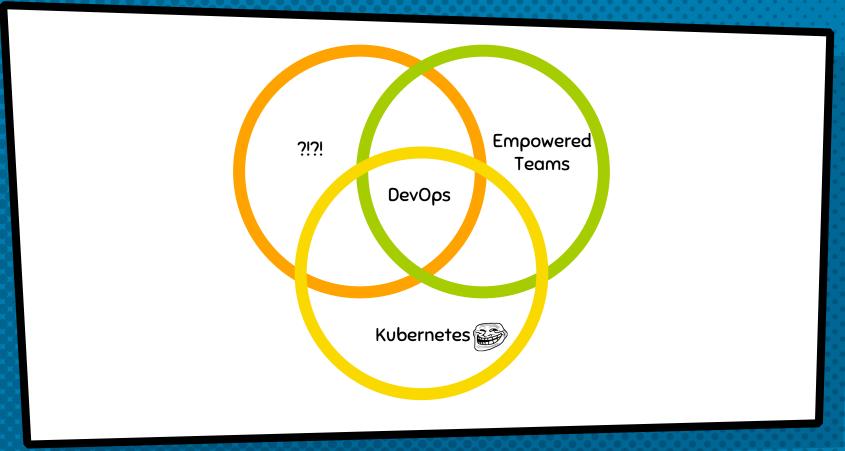














# THE PAIN IS REAL

#### **Builds and Tests are Slow!**

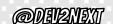
90% of surveyed IT organizations experienced challenges with too much time spent waiting on build and test feedback.







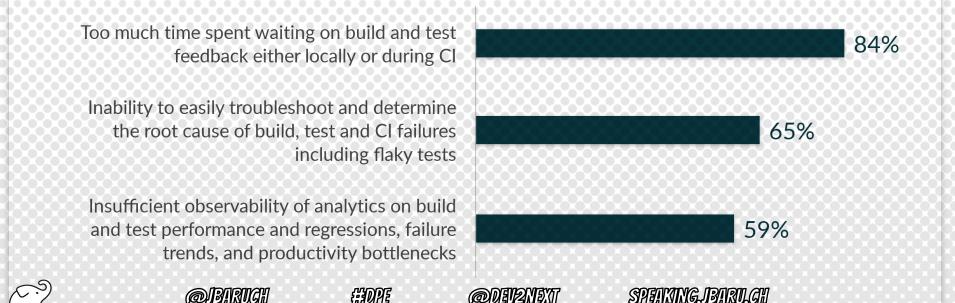




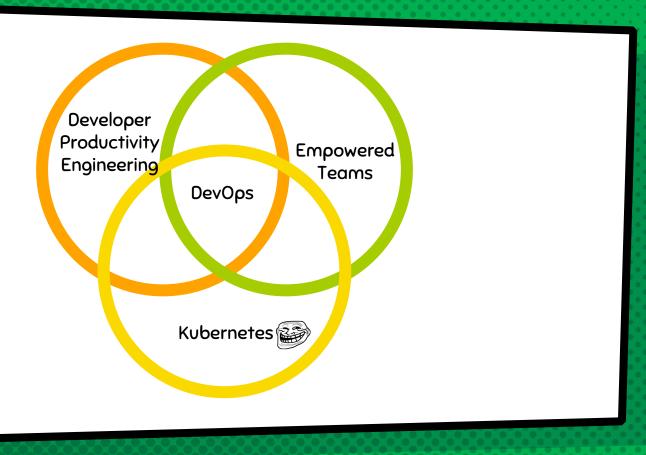


#### **Development Pains are Widespread**

Which of the following challenges or pain points did your organization experience prior to implementing Developer Productivity Engineering?















# DEVELOPER PRODUCTIVITY ENGINEERING

Foster Faster Feedback

Collaborate through Effective Tooling Embrace Rigorous
Observability for
Proactive Improvement

Eliminate Toil for Developers Prioritize Automation and Eliminate Bottlenecks

Dedicated
Organizational Mindset

**Outcomes Over Output** 









# TALK IS CHEAP, SHOW ME THE GOODS!









# SMALL DPE IMPROVEMENTS MAKE A HUGE DIFFERENCE

- × Generate code faster: Better IDE
- × Test better: Testcontainers
- × Enforce better code: Sonar
- × Test more reliably: Flaky test detection
- × Foster Faster Feedback:







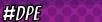


#### FEEDBACK EFFICIENCY

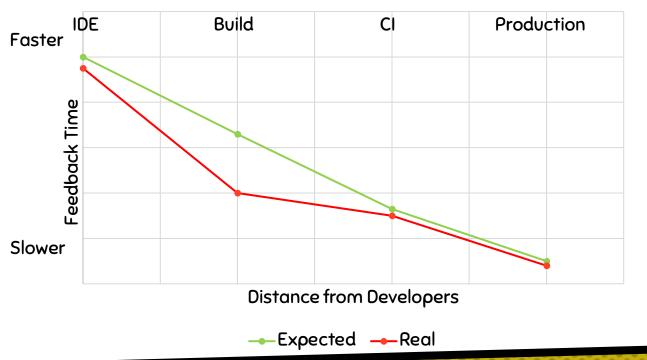
- × IDE: Sub-seconds (I type, it marks it red)
- × Build: Seconds
- × CI: Minutes
- × Production: Hours/Days







#### REVERSE DEPENDENCY ON DISTANCE FROM DEVELOPERS





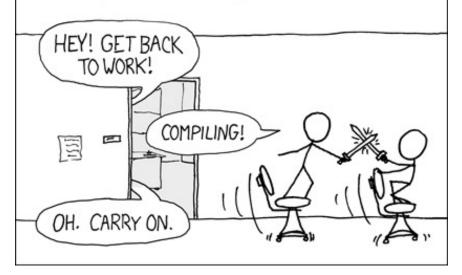






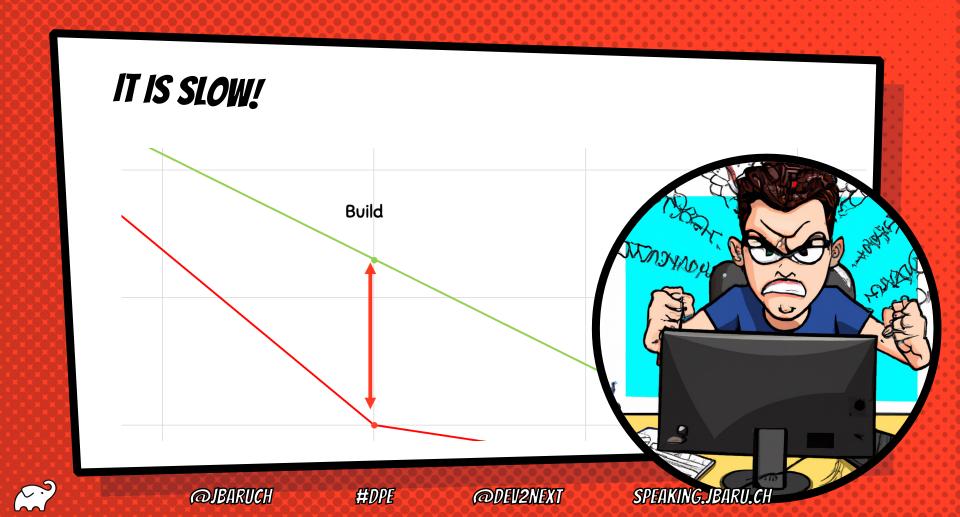
THE #1 PROGRAMMER EXCUSE FOR LEGITIMATELY SLACKING OFF:

"MY CODE'S COMPILING."









 $\leftarrow$   $\rightarrow$   $\bigcirc$  https://www.bruceeckel.com/2021/01/02/the-problem-with-gradle/

#### stymied me. This is the problem I had with Gradle:

#### To do anything you have to know everything

Yes, it's hypothetically possible to create a simple build.gradle file for a basic build. But usually by the time you get to the point of needing a Gradle build, your problem is complicated enough that you must do more. And it turns out that "doing more" translates to "knowing everything." Once you get past the simple things you fall off a cliff.

Think of the grappling shoes in the very first episode of *Rick and Morty*. Rick explains that the shoes allow you to walk on vertical surfaces, so Morty puts them on and promptly falls down a cliff, after which Rick explains that "you have to turn them on." Gradle is my grappling shoes.

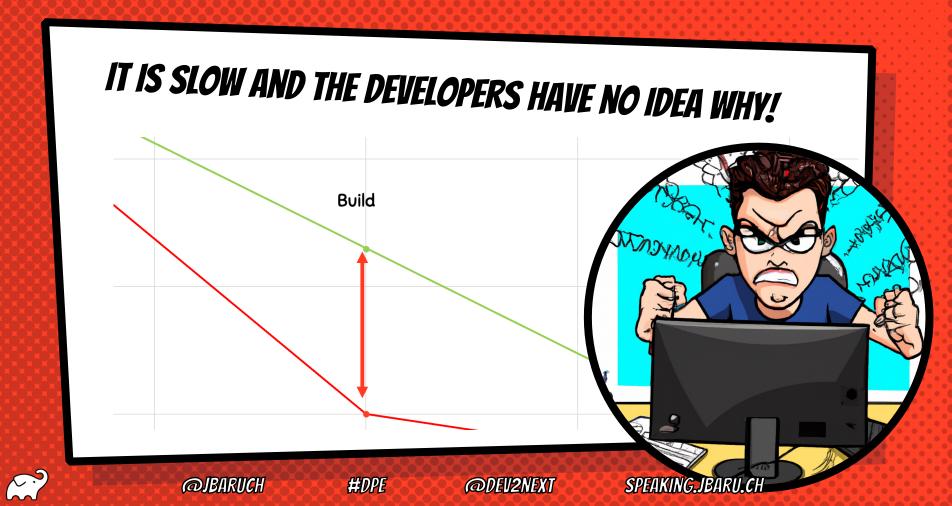
My goal here is to give you perspective, so as you fall down the cliff face you will understand what is happening, and what is necessary to climb back up.











#### WHAT IS BUILD?

- Project setup
- Downloading the Internet
- × Artifact generation: Compilation, packaging, etc
- × Tests
- Artifact deployment





### WHAT CAN GO WRONG?

- Project setup
- × Downloading the Internet
- × Artifact generation: Compilation, packaging, etc
- × Tests
- Artifact deployment





# WHEN CAN IT GO WRONG?

AT ANY TIME.





THE BUILD FRUSTRATES
THE DEVELOPERS





**@JBARUCH** 



#### LET'S ASK CHATGPT



What techniques can I use to speed up a Maven build?



Sure, here are some quick tips to speed up a Maven build:

- Skip Tests: Use `-DskipTests` to skip running tests.
- E.g., '-T 4' for 4 threads.

- 3. Offline Mode: Use `--offline` to avoid checking for updates.
- 4. Incremental Build: Use `mvn -am -pl` to build only changed modules and their dependencies.
- 5. Profile: Use Maven profiles to conditionally enable plugins.
- 6. Resource Filtering: Limit resource filtering to only necessary files.
- 7. **Use a Mirror**: Set up a local Nexus or Artifactory mirror.

Hope that helps! Got a preference for Gradle, but these should give your Maven build a boost.









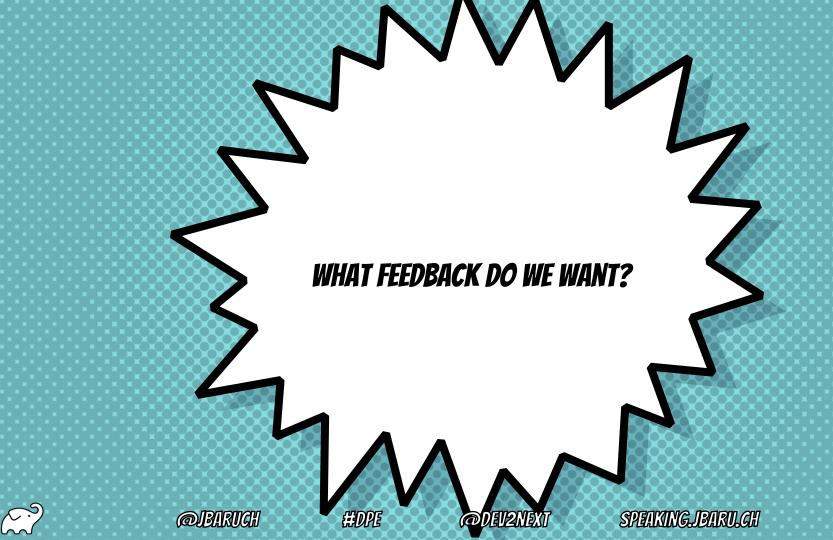
## WHAT THE ACTUAL F\*CK?!

- × Skipping tests defeats the purpose of the build!
- × How about skipping compilation?
- We want faster feedback, not less feedback

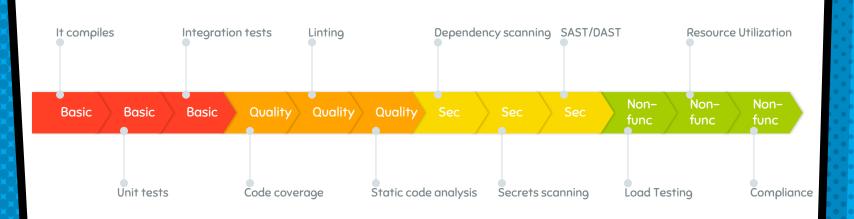








# CI/CD PIPELINE QUALITY GATES

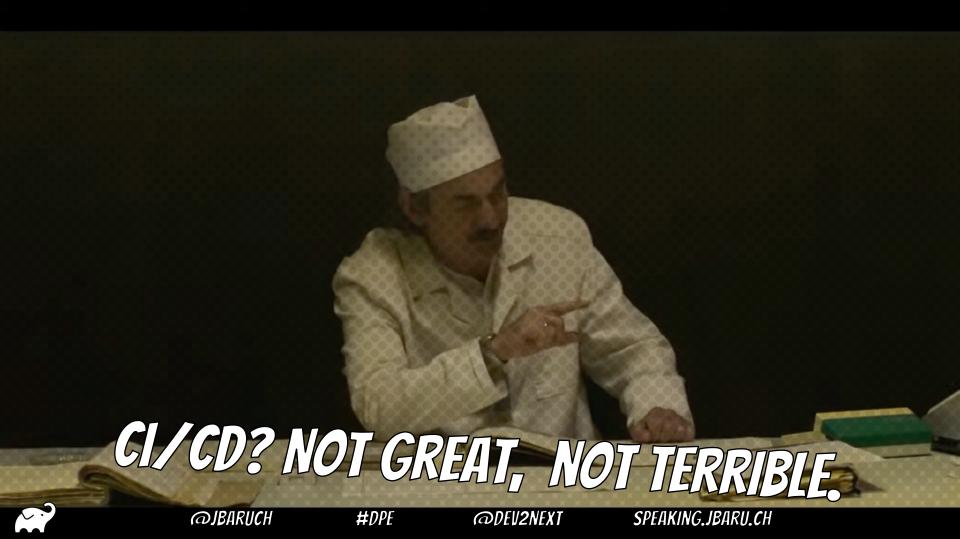












# TWO TYPES OF FEEDBACK

ASYNGHRONOUS	<ul><li>x e.g., CI/CD</li><li>x we never wait for it</li><li>x results are distracting</li></ul>
SYNGHRONOUS	<ul><li>x e.g., build</li><li>x we'll wait for it in the flow</li><li>x we'll be pissed off when it's slow</li></ul>

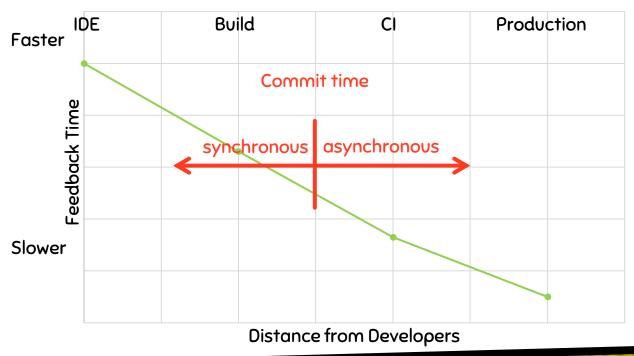








#### REVERSE DEPENDENCY ON DISTANCE FROM DEVELOPERS



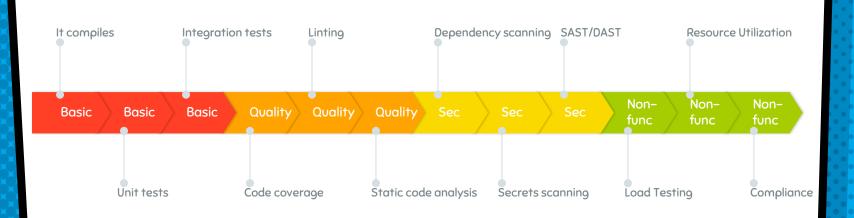








## IDEAL BUILD TIME FEEDBACK











# BUT WON'T IT SLOW DOWN THE BUILD?!











DELIGHTFUL BUILD (PICK TWO):



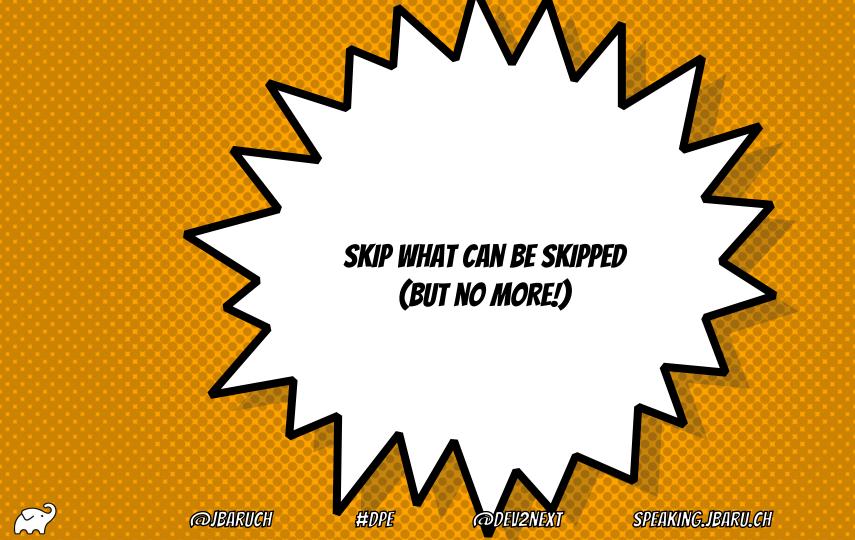
PROVIDES MAX FEEDBACK











# AVOIDANCE: INCREMENTAL BUILD

- Don't build what didn't changed
- Don't build what isn't affected









# AVOIDANCE: INCREMENTAL BUILD SHORTCOMINGS

- × Relies on produced artifacts
- × Relies on architectural decisions





#### AVOIDANCE: CACHING

- × Makes the build faster
- Makes the build faster for everybody
- Makes the build faster always
- × Makes all parts of the build faster











# AVOIDANCE: PREDICTIVE TEST SELECTION

- Learns de-facto code change effects
- Skips tests with high degree of confidence









# PREDICTIVE TEST PREDICTION

What changed Where it changed

Correlate with observed test failures

Predictions
which
changes
will fail
which tests









# BLACK MAGIC IN ACTION

\* The more tests a project has, the less they break

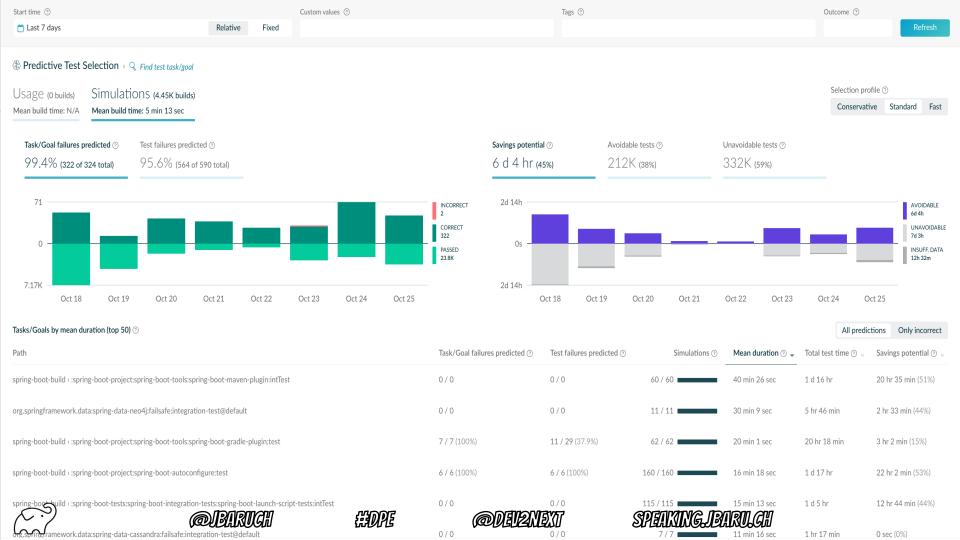
 Refactorings in Java break tests less than in JavaScript





#DPE







### TEST PARALLELIZATION

- Use max power of local machine
- Yes, your boss should buy you the bleeding edge)









Task path	Started after ?	Duration ?
:clean	0.499s	0.053s
:compileJava	0.553s	0.146s
:processResources NO-SOURCE	0.699s	0.001s
:classes	0.700s	0.000s
:jar	0.701s	0.040s
:assemble	0.741s	0.000s
:compileTestJava	0.741s	0.242s
:processTestResources NO-SOURCE	0.984s	0.000s
·testClasses	0 984s	0.001s
:test	0.985s	1m 59.135s
:спеск	2m 0.120s	0.001s
:build	2m 0.121s	0.001s

Task path	Started after ?	Duration ②
:clean	0.416s	0.048s
:compileJava	0.465s	0.085s
:processResources NO-SOURCE	0.550s	0.000s
:classes	0.550s	0.000s
:jar	0.551s	0.040s
:assemble	0.591s	0.000s
:compileTestJava	0.592s	0.212s
:processTestResources NO-SOURCE	0.804s	0.001s
:testClasses	0.805s	0.000s
:test	0.805s	10.553s
:check	11.359s	0.000s
:build	11.359s	0.000s

```
tasks.test { this: Test!
  onlyIf { true }
  useJUnitPlatform()
  maxParallelForks = Runtime.getRuntime().availableProcessors()
  testLogging } this: LestLoggingContainer
```









#### TEST DISTRIBUTION

- Cluses fan-out to speed-up tests
- × Shouldn't you enjoy it for local tests?
- × Use the cloud to distribute test load
- × RUN ALL THE NEEDED TESTS!











#### OBSERVE AND IMPROVE

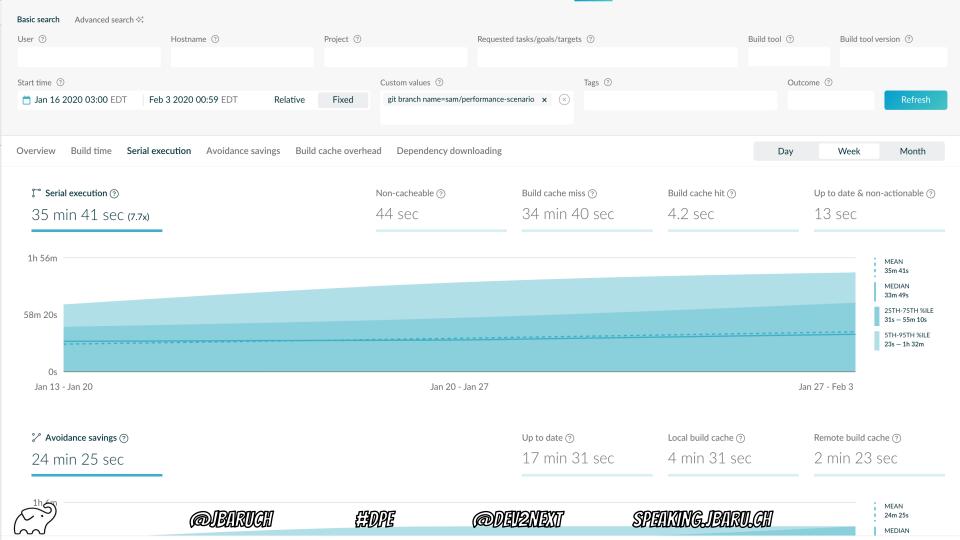
- Measure local build times across time and environments
- Detect downfacing trends
- × Find root causes and improve





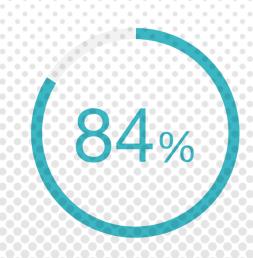






## DPE Dramatically Improves Productivity

Almost every surveyed IT organization agreed that "Since integrating Developer Productivity Engineering into our development process, the time savings we experienced on build and test cycle times have dramatically improved developer productivity."









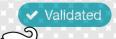




#### **DPE Fosters Developer Joy**

84% of surveyed users agree that DPE's impact on their toolchain makes their job more enjoyable.







Published: Sep. 25, 2023



TVID: 930-05A-A5F





## BUT DPE IS NOT MY JOB!





**@JBARUGH** 

**EEDPE** 

@DEVZNEXT



## BUT DEVOPS IS NOT MY JOB!





@JEARUGH

#DPE

@DEVZNEXT

## DEVOPS US DPE

	DEVOPS	DPE
OUTGOINE	The product	More productive work
URGENGY	On everybody's minds	Slips away
ORG STRUCTURE	Organizational culture	Specialized team





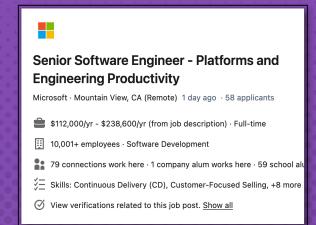








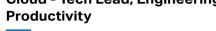










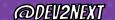


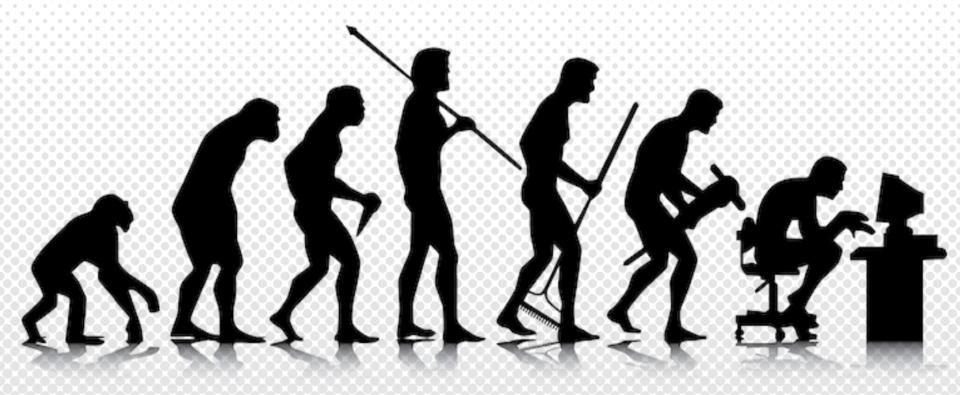
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## DEVOPS? SRE? PE? DPE?

- DevOps mainly solves Ops' concerns
- X It is is a collaborative methodology
- X It needs engineering implementation
- × Call it SRE or call it PE, someone has to write all those YAML files
- But what about People Productivity?
- DPE has the answer and it's another pillar of DevOps Engineering implementation









## LEARN MORE AND TRY IT TODAY!

- Take the Gradle/Maven Speed Challenge
- ➤ Be DPE Agent of Change!
- × Read the DPE Handbook
- × Watch the DPE Summit videos



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# WATCH THE KEYNOTES! OPESUMMIT

September 24-25 | The Midway | San Francisco

Discover the only event dedicated to the practice of Developer Productivity Engineering (DPE) and Developer Experience (DX). Register by August 18 to



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