Microservices

Einstieg

START

Beschreibung

In den Aufgaben dieses Dokuments werden verschiedene Artikel und Erklär-Videos zu Microservices, die unterschiedliche Blickwinkel haben, untersucht. Diese Aufgaben dienen dem Einstieg und einer ersten Auseinandersetzung mit dem Thema Microservices.

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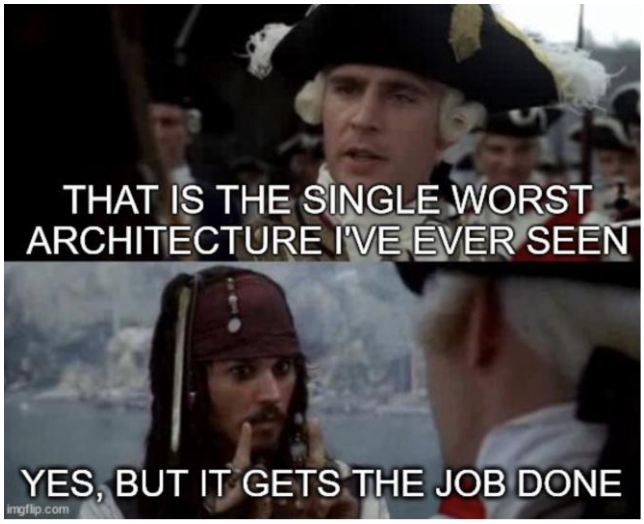
1 Einstieg in Microservices

1.1 Einleitung

«Choosing our system's proper architecture is one of the most important decisions to make before we even think about starting to write code»



1.2 Einführungsvideo

STEP 1 ›

Microservices explained in 5 minutes.
Microservices are a popular architectural pardigm used to build maintainable, evolvable and scalable applications and systems. This video introduces you to microservice concepts and ideas in 5 minutes.
https://www.youtube.com/watch?v=lL_j7ilk7rc

1.3 Artikelstudium

STEP 2 ›

In den kommenden Kapiteln folgen die Artikel für das Artikelstudium

Aufgaben:

a) Lesen Sie den Ihnen zugeteilte Artikel durch und machen Sie sich Notizen.
b) Stellen Sie eine kurze Präsentation zusammen.
   a. Erklären Sie die Betrachtung, die im Artikel gemacht wird.
   b. Suchen Sie im Artikel 3-5 Kernaussagen und fügen Sie diese der Präsentation hinzu.
   c. Nehmen Sie persönlich und subjektiv Stellung zum Artikel und den darin gemachten Aussagen. Fügen Sie die Reflexion bzw. Ihre Stellungnahme zur Präsentation.

1.4 Artikel 1 – Gut oder schlecht?

Microservices: Are they good or bad? The truth is, it depends.
https://levelup.gitconnected.com/microservices-are-they-good-or-bad-the-truth-is-it-depends-d648811d5ac8

1.5 Artikel 2 – Microservices, eine Gegenüberstellung

Monolithic vs. Microservices Architecture
https://medium.com/@ezinneanne/monolithic-vs-microservices-architecture-ed8721d2c9fc

1.6 Artikel 3 – Microservices, eine weitere Gegenüberstellung

Notes on Monolithic vs Microservices Architecture
https://medium.com/@ivak/monolithic-vs-microservices-architecture-c793f1158826

1.7 Artikel 4 – Vorteile und Nachteile, ein Vergleich

Monolith vs. Microservices: Advantages and Disadvantages
https://medium.com/@validate/monolith-vs-microservices-advantages-and-disadvantages-6d67f3812d68

1.8 Artikel 5 – Microservice Architektur, was ist das?

Microservice architecture
https://medium.com/@IvanZmerzlyi/microservice-architecture-f8a382291ff4

1.9 Artikel 6 – Die passende Architektur wählen

Monolithic vs Microservices: Choosing the Right Architecture for Your Project
https://medium.com/@fullstacktips/monolithic-applications-vs-microservices-choosing-the-right-architecture-for-your-project-b8f3bf4fdbc8

1.10 Artikel 7 – Microservices mit Node.js

Microservices Architecture with Node.js: Building Scalable and Robust Applications
https://medium.com/dev-genius/microservices-architecture-with-node-js-building-scalable-and-robust-applications-de278a090c39

1.11 Artikel 8 – Microservices mit Node.js

Microservices Architecture with Node.js: Building Scalable and Robust Applications
https://medium.com/@rathoreaparna678/microservices-architecture-with-node-js-building-scalable-and-robust-applications-e5143567d53b

1.12 Weitere Artikel, Reserve

Node.js VS Spring Boot Framework
https://medium.com/@alimubashar74/node-js-vs-spring-boot-framework-aa947db3e320

2 Microservices

2.1 Microservices explained

STEP 3 >

TechWorld with Nana - the What, Why and How?

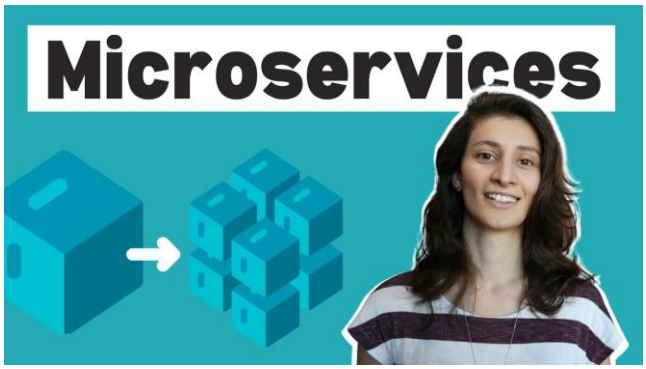
In this video you will learn all you need to know about Microservices in 18 minutes.

First, I will start with what a Monolithic Architecture is, what are some of its challenges and why the industry moved slowly towards the microservices architecture?

Then we will see what microservices or a microservice architecture is exactly, the best practices, benefits and how the communication between microservices works.

And finally, we will also look at the downsides or challenges of a microservices architecture.

We will also see different ways to manage code for microservices application and talk about the difference of monorepo and polyrepo and advantages and disadvantages of both!



https://www.youtube.com/watch?v=rv4LlmLmVWk&t=3s

2.2 Aufgabe

Schauen Sie sich das Video an und machen Sie sich dabei Notizen.

2.3 10 Advantages of Monoliths compared to Microservices

1. Monoliths are simple to develop and maintain because they are self-contained and have a single codebase.
2. Monoliths are easy to deploy because they are a single unit that can be easily installed on a server.
3. Monoliths typically have better performance than microservices because they do not have the overhead of inter-service communication.
4. Monoliths can be more secure than microservices because they are a single unit that can be more easily secured.
5. Monoliths can be more cost-effective than microservices because they require fewer resources and infrastructure to develop and maintain.
6. Monoliths are easier to debug because all the code is in one place and there are no inter-service dependencies to consider.
7. Monoliths can foster stronger team collaboration among teams because all the code is in one place, and everyone is working on the same codebase.
8. Monoliths are well-suited for small teams because they do not require the overhead of managing multiple microservices.
9. Monoliths can be developed faster than microservices because they are a single codebase and do not require complex inter-service communication.
10. Monoliths can be easily scaled by simply adding more resources to the server, whereas microservices require more complex scaling strategies.

2.4 10 Advantages of Microservices compared to Monoliths

1. Microservices allow for more flexible and agile development, as each service can be developed and deployed independently.
2. Microservices can make it easier to scale individual components of an application, rather than scaling the entire monolith.
3. Microservices can make it easier to implement continuous delivery and continuous deployment practices.
4. Microservices can make it easier to reuse components in different applications.
5. Because each service is isolated, there is a reduced risk of cascading failures.
6. Microservices can make it easier to understand and maintain large, complex applications.
7. Microservices can allow for more efficient resource allocation, as services can be scaled up or down based on demand.
8. Microservices can make it easier to replace or update individual components of an application without disrupting the entire system.
9. Microservices can make it easier to migrate applications to different environments or platforms.
10. Microservices can support a wide range of technologies and programming languages, allowing teams to choose the best tools for the job.