Entwickler und Architekten

Strategien 2021

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Oliver Sturm

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- Consultant, trainer, author, software architect and developer for 30 years
- Contact: oliver@oliversturm.com

Agenda

Idee: Technologie diskutieren

Was sind Ihre Fragen? Diskussionspunkte?

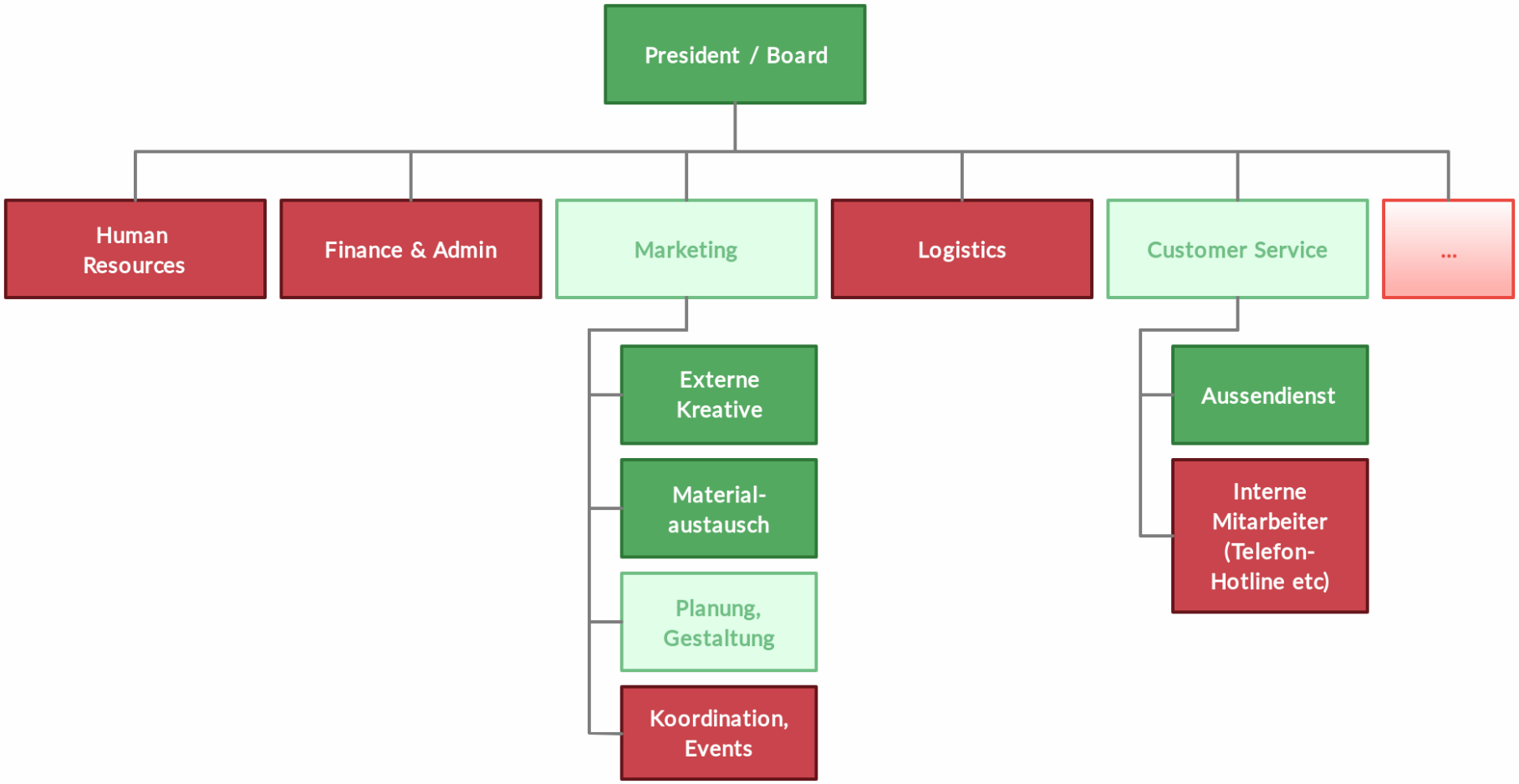
Anregungen

- COVID-19 - was ändert sich?
- Microservices, ja oder nein? Und wie?
- Cloud - muss das sein? Welche? Worauf kommt's an?
- Serverless - wird da nicht alles schwieriger?
- CQRS? Event Sourcing? Eventual Consistency? GraphQL? Moderne Datenzugriffspatterns
- Container und VMs - Docker, Kubernetes, Vagrant, Terraform...
- Blazor? Ist das die Zukunft? Server mit SignalR oder Client mit WASM?
- Wie mache ich am besten Mobile? Oder Desktop? Oder beides?
- gRPC statt JSON-Diensten?
- React vs Vue vs Angular usw....
- TypeScript oder doch einfach JavaScript?
- Oliver Sturm's Best Practices Architekturmodell

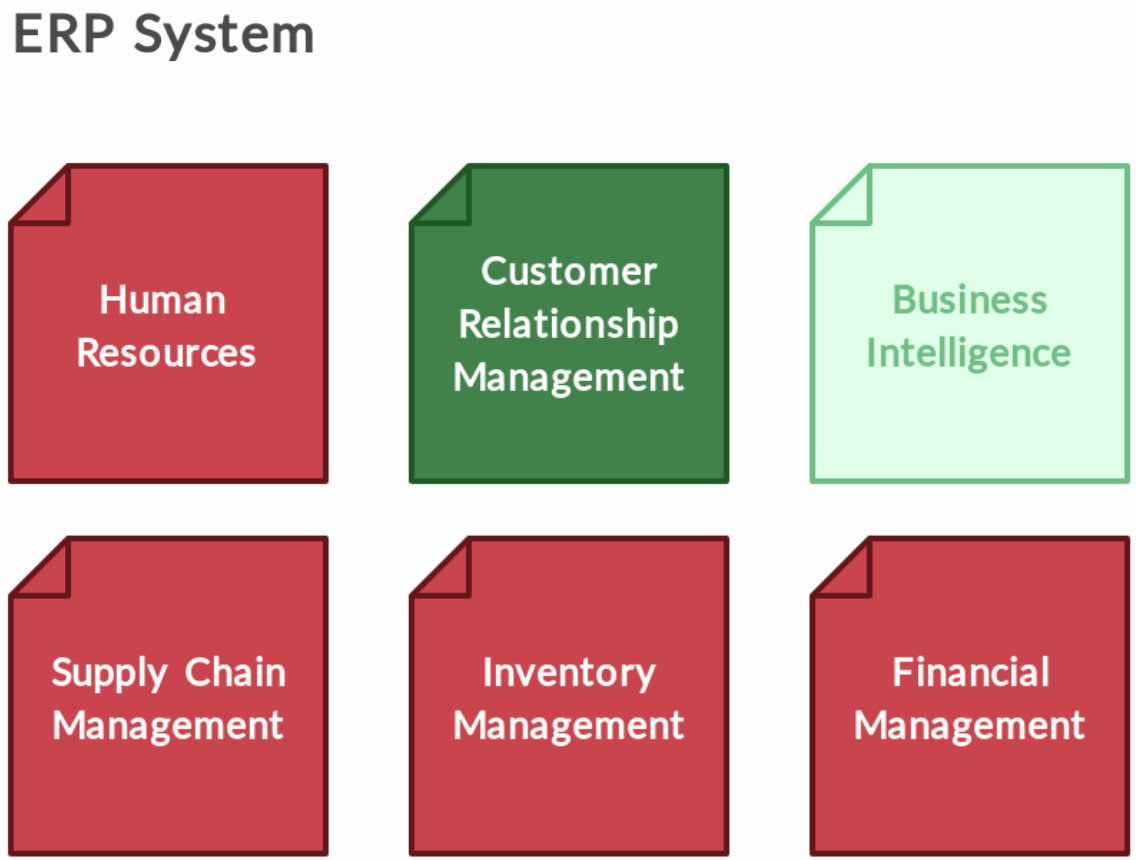
Fragen

- <noch keine>

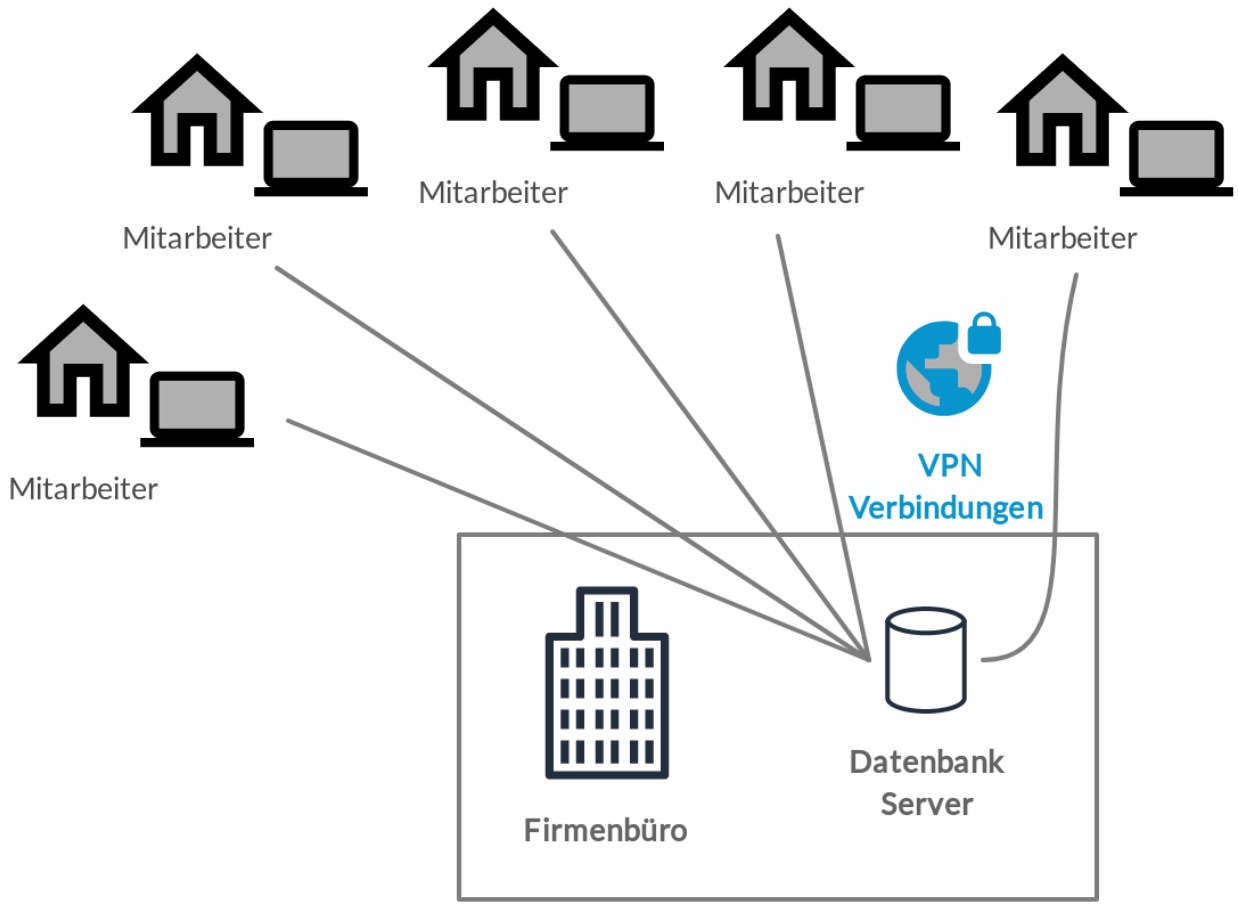
Vor COVID - Eingeschränkter Remotezugriff



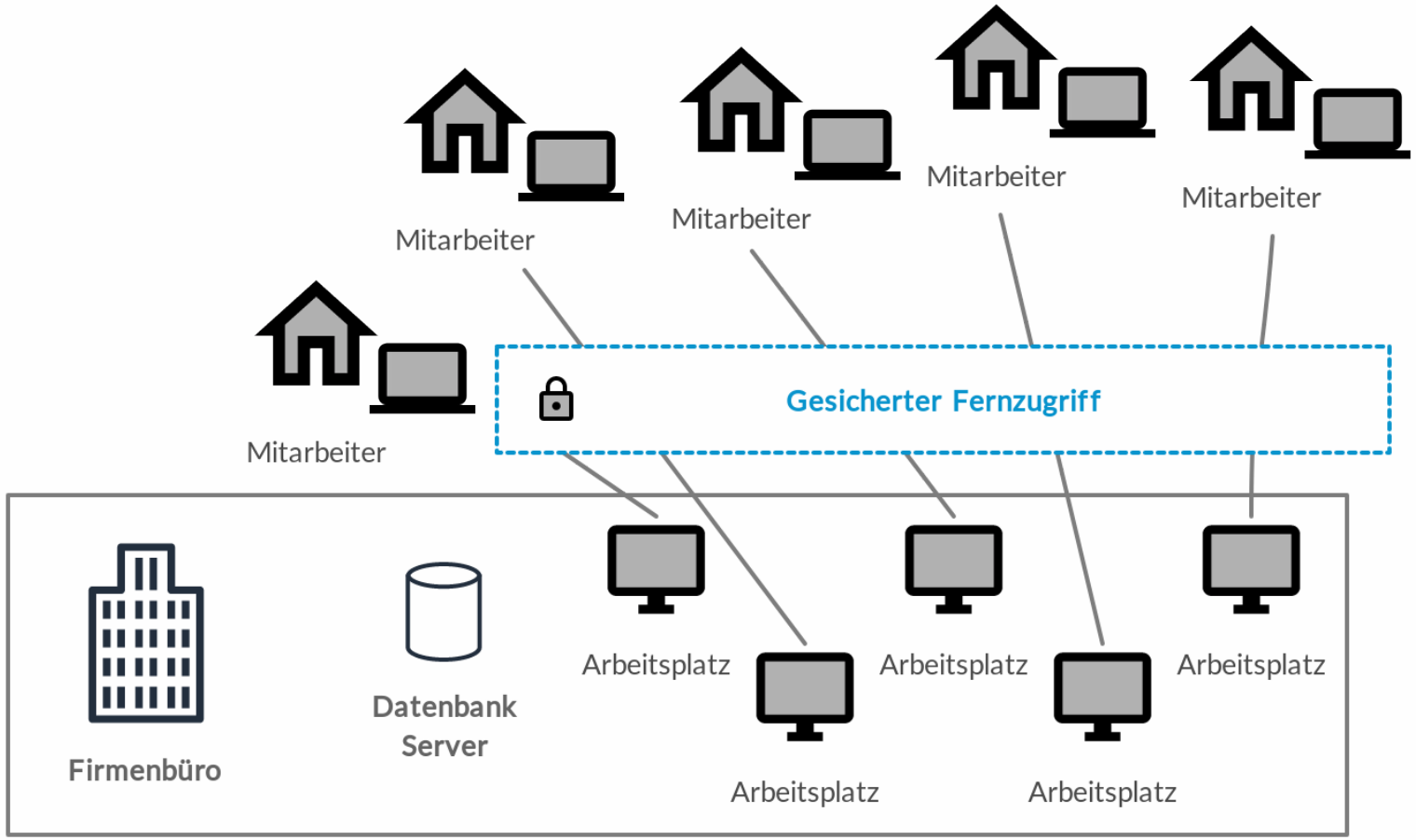
Vor COVID - Eingeschränkte Remote-Funktionalität



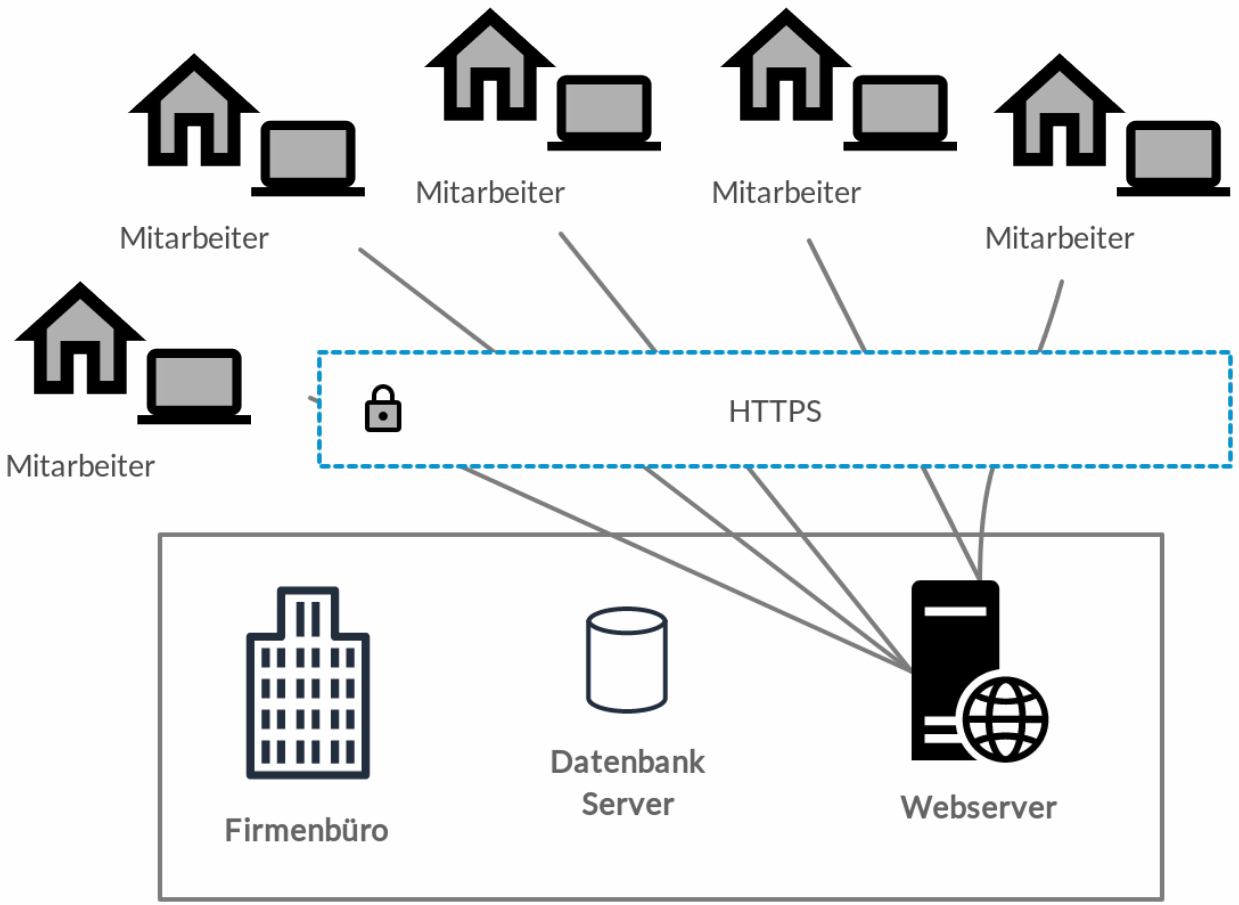
Fernzugriff auf eine Datenbank



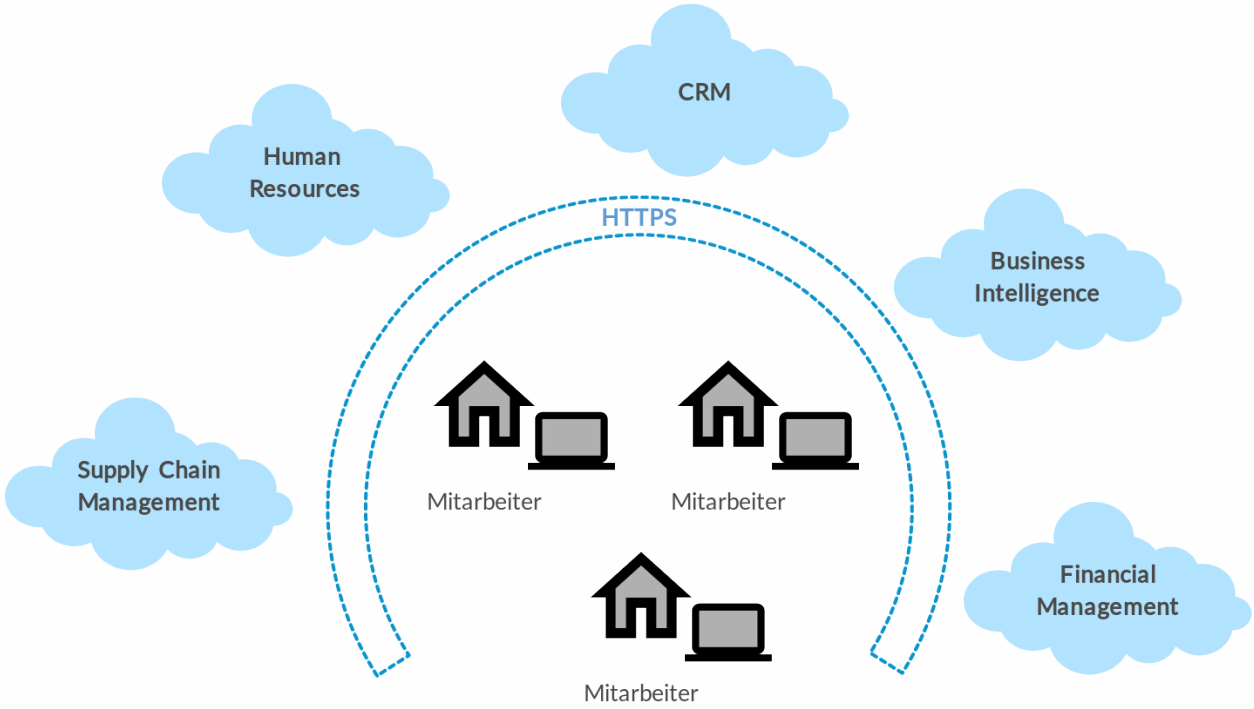
Fernzugriff mit Remote Desktop



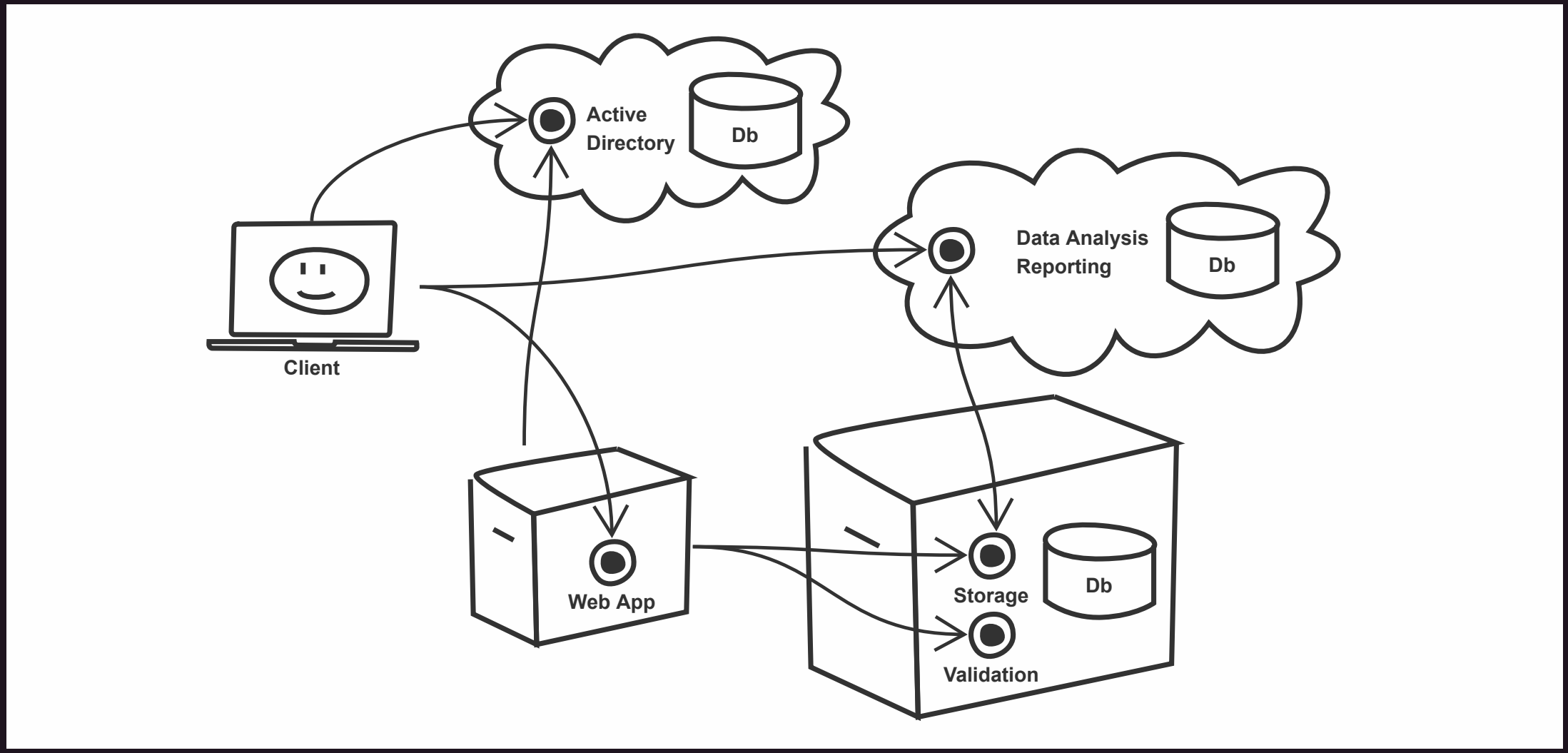
Einfache Web-Anwendung



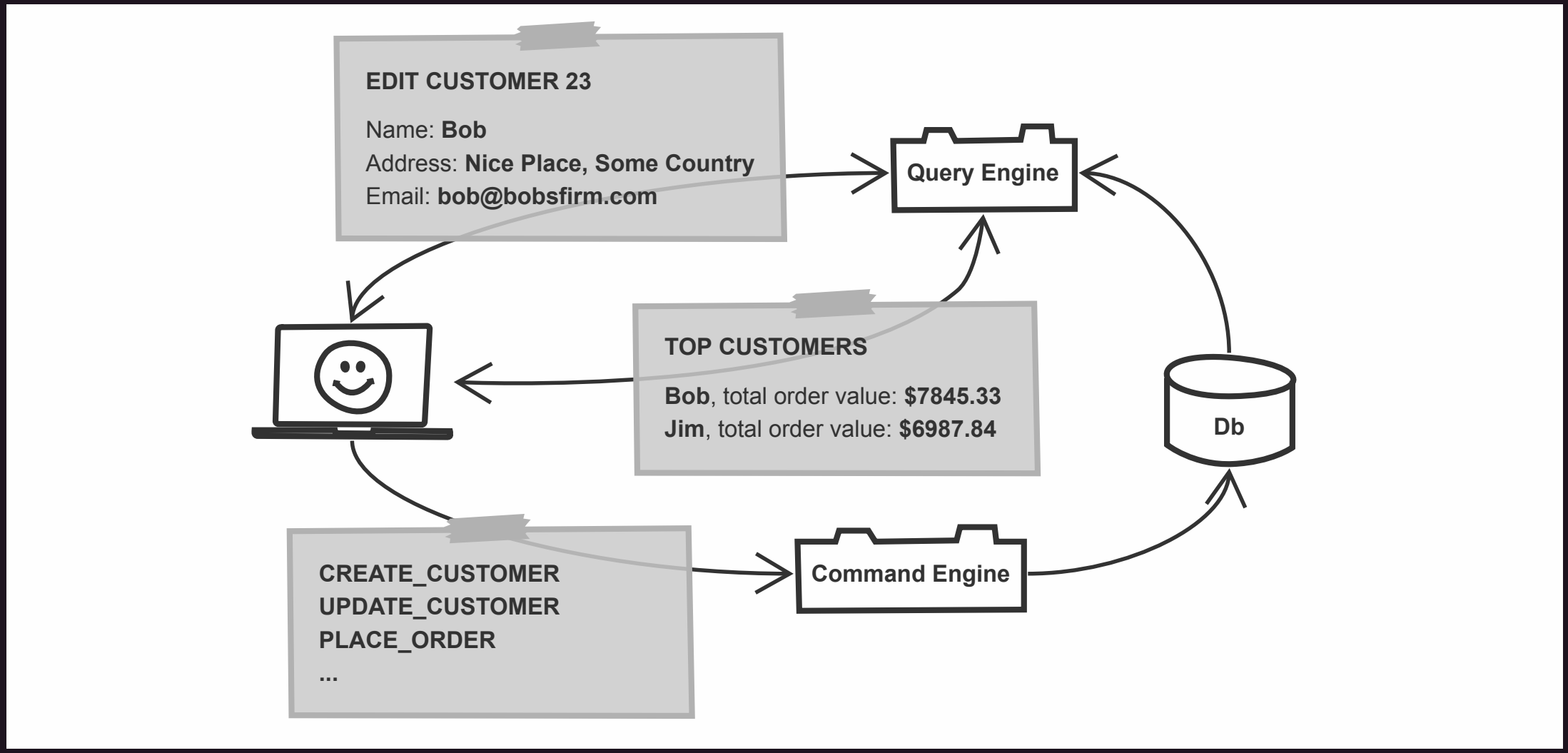
(Micro-?) Services



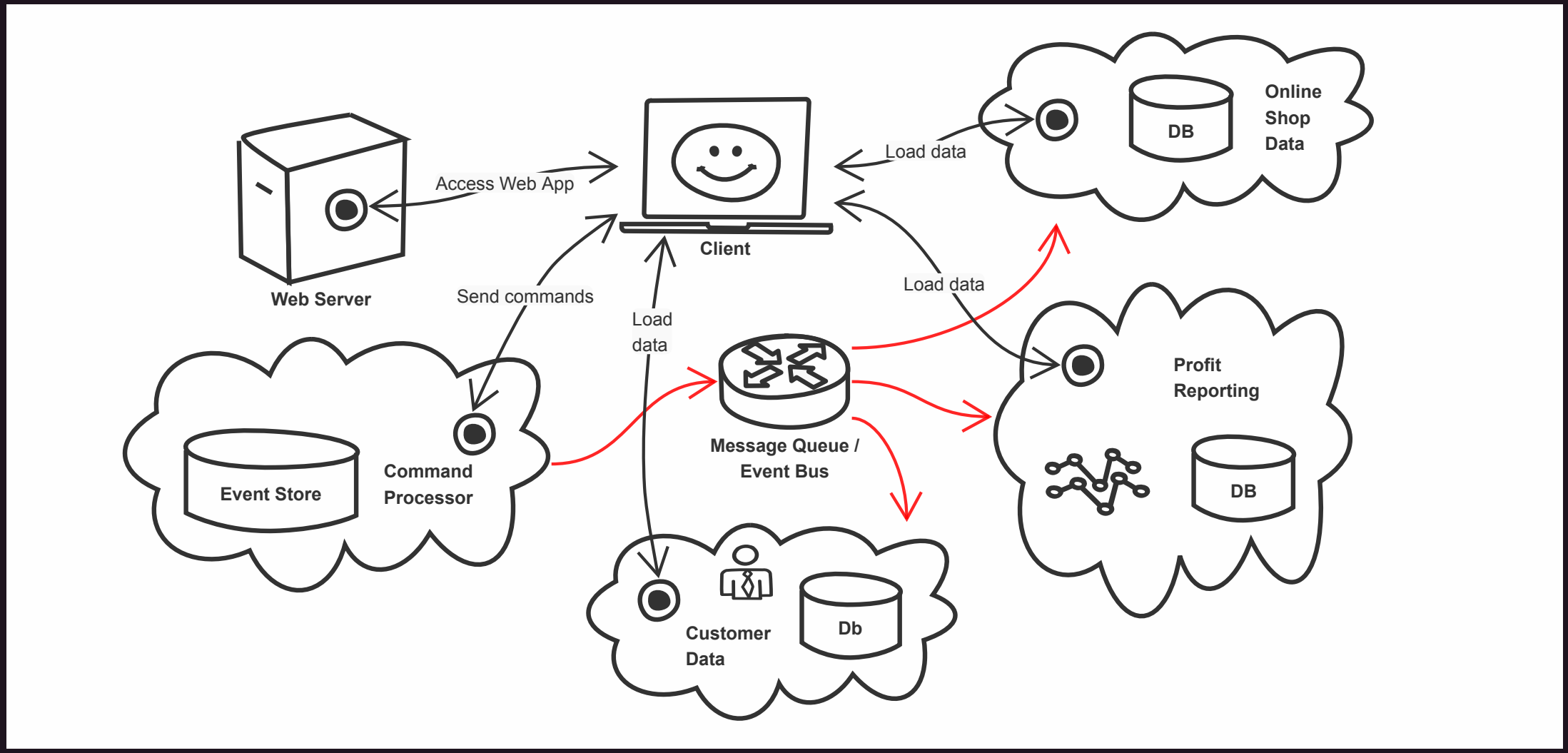
Dienststruktur - Micro oder Größer



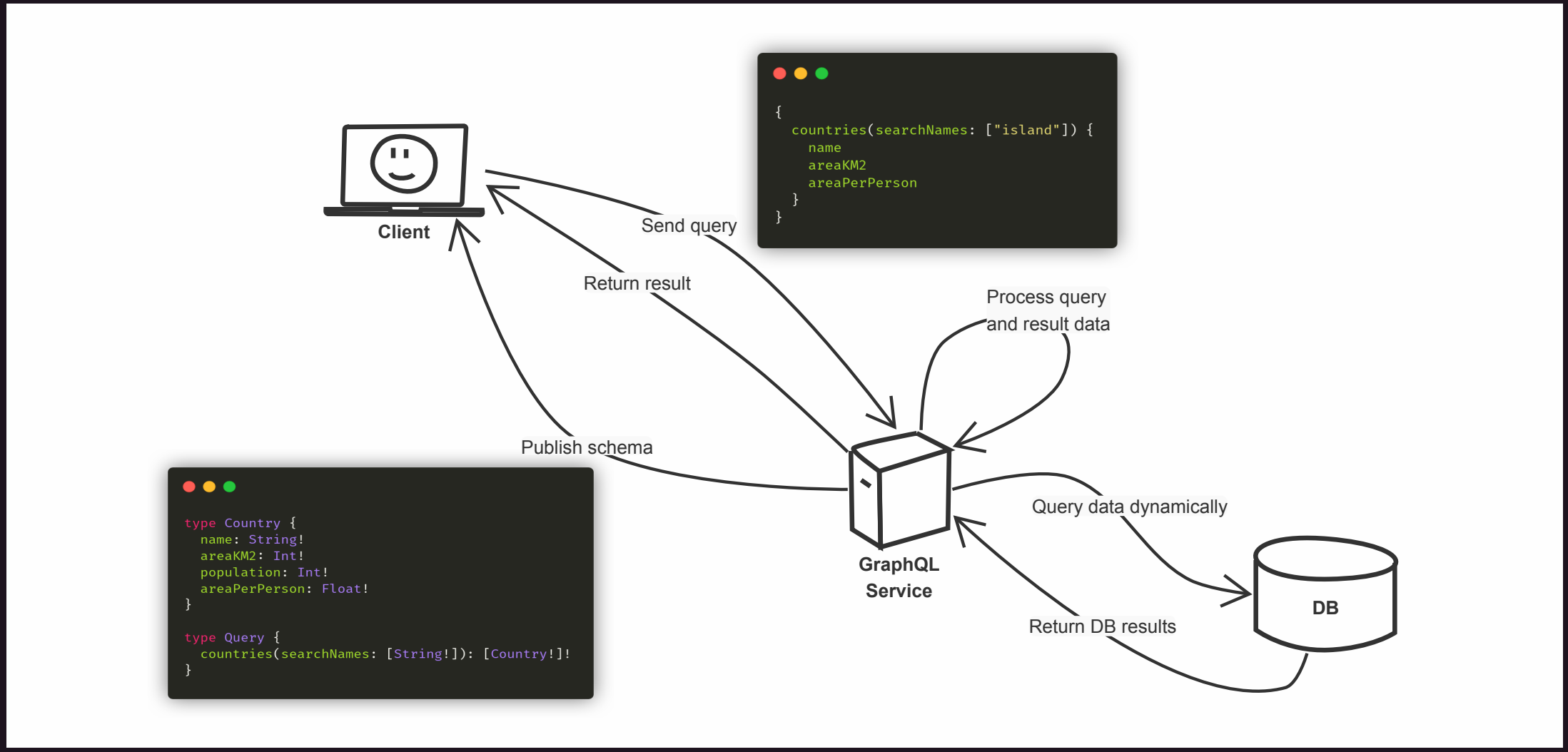
CQRS


EDIT CUSTOMER 23
Name: Bob
Address: Nice Place, Some Country
Email: bob@bobsfirm.com
Query Engine
TOP CUSTOMERS
Bob, total order value: $7845.33
Jim, total order value: $6987.84
Db
CREATE_CUSTOMER
UPDATE_CUSTOMER
PLACE_ORDER
...
Command Engine

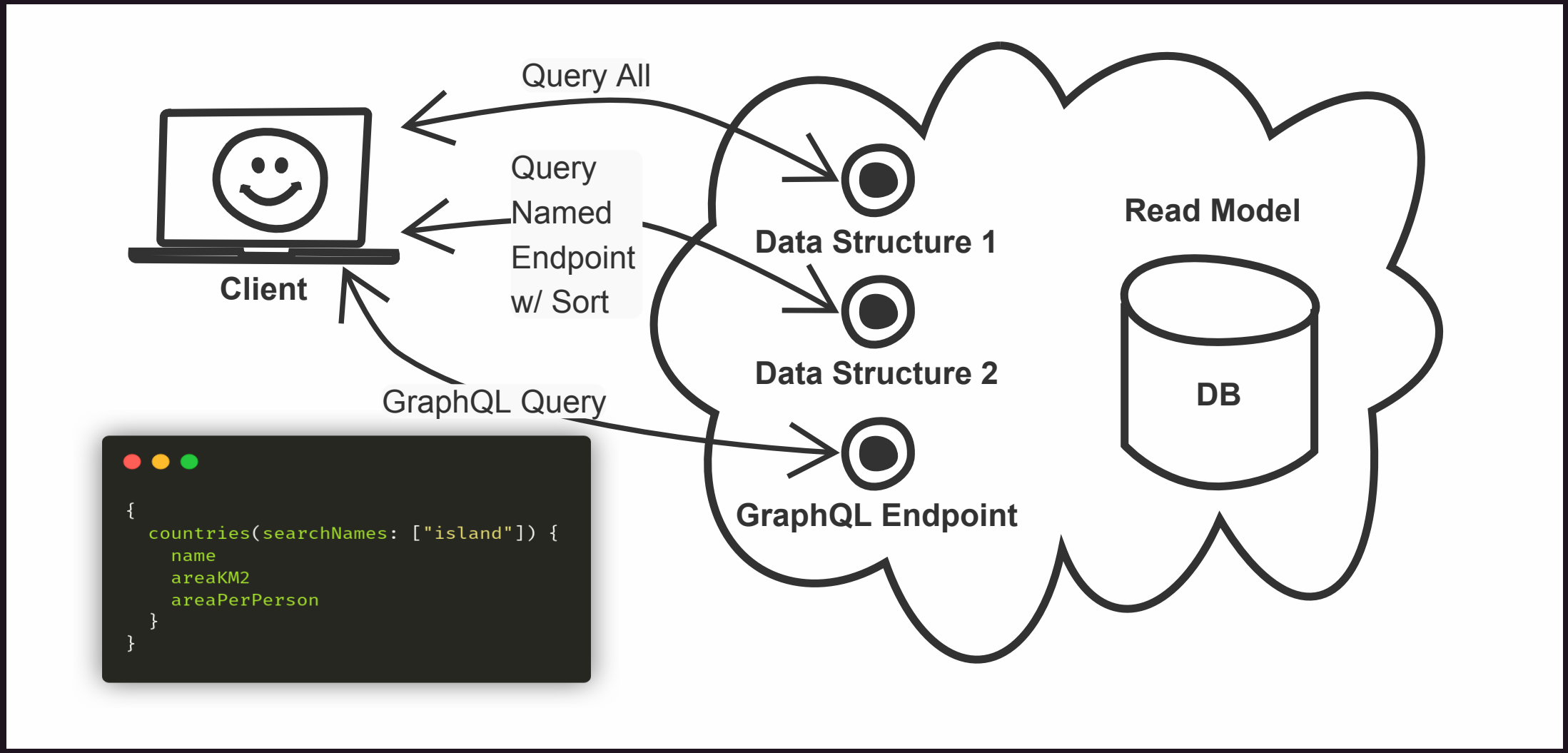
CQRS mit Event Sourcing



GraphQL Basics

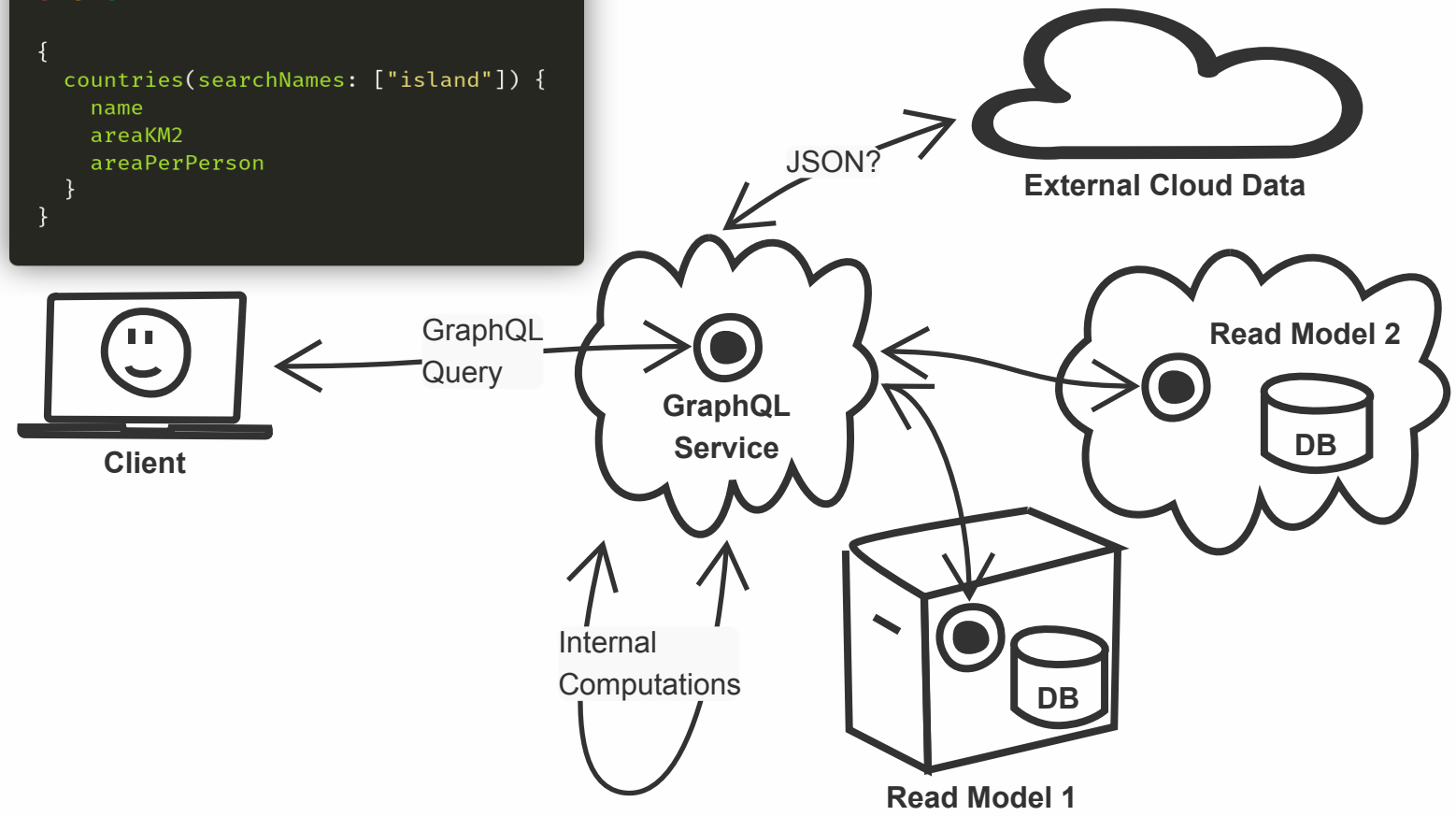


GraphQL Endpoint in Readmodel



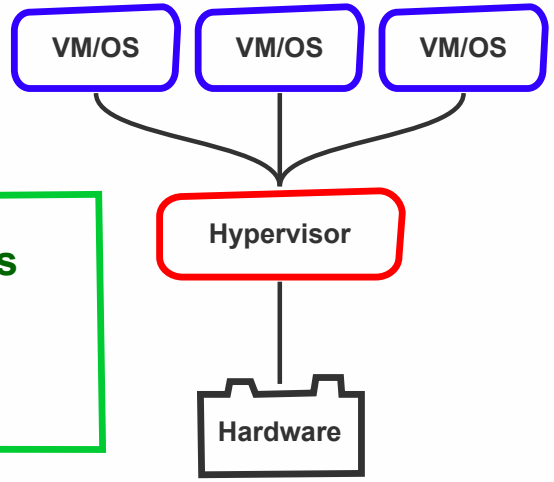
GraphQL - Frontend Service

```
{
  countries(searchNames: ["island"]) {
    name
    areaKM2
    areaPerPerson
  }
}
```



Hypervisors

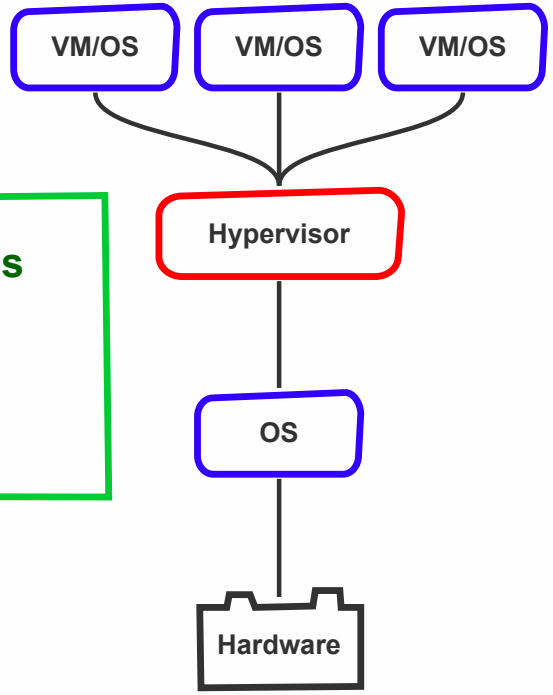
Type 1 Native Hypervisor



Type 1 Examples

- Xen
- Hyper-V
- VMWare ESX(i)

Type 2 Hosted Hypervisor



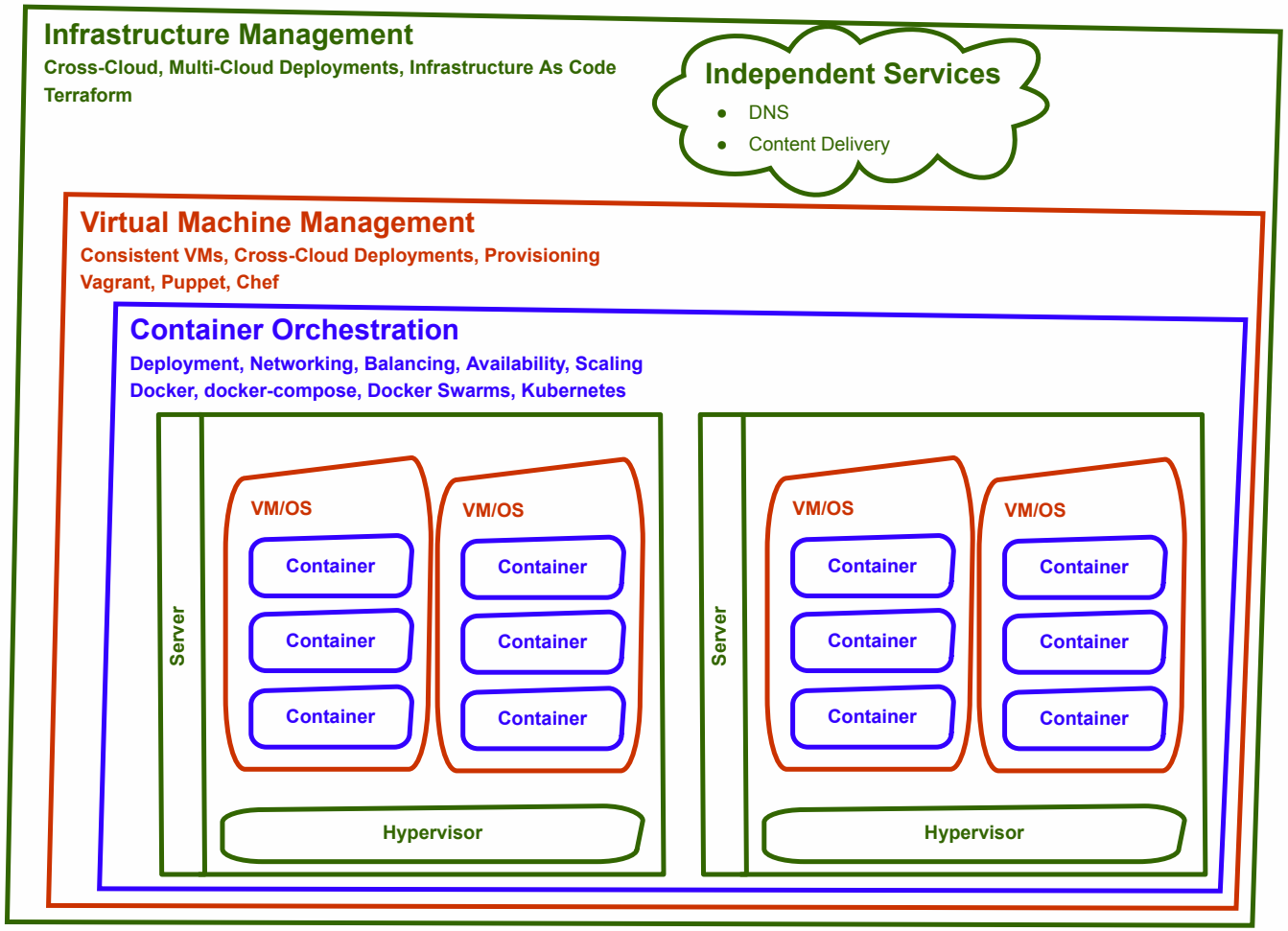
Type 2 Examples

- VMWare
- Parallels
- VirtualBox
- QEMU

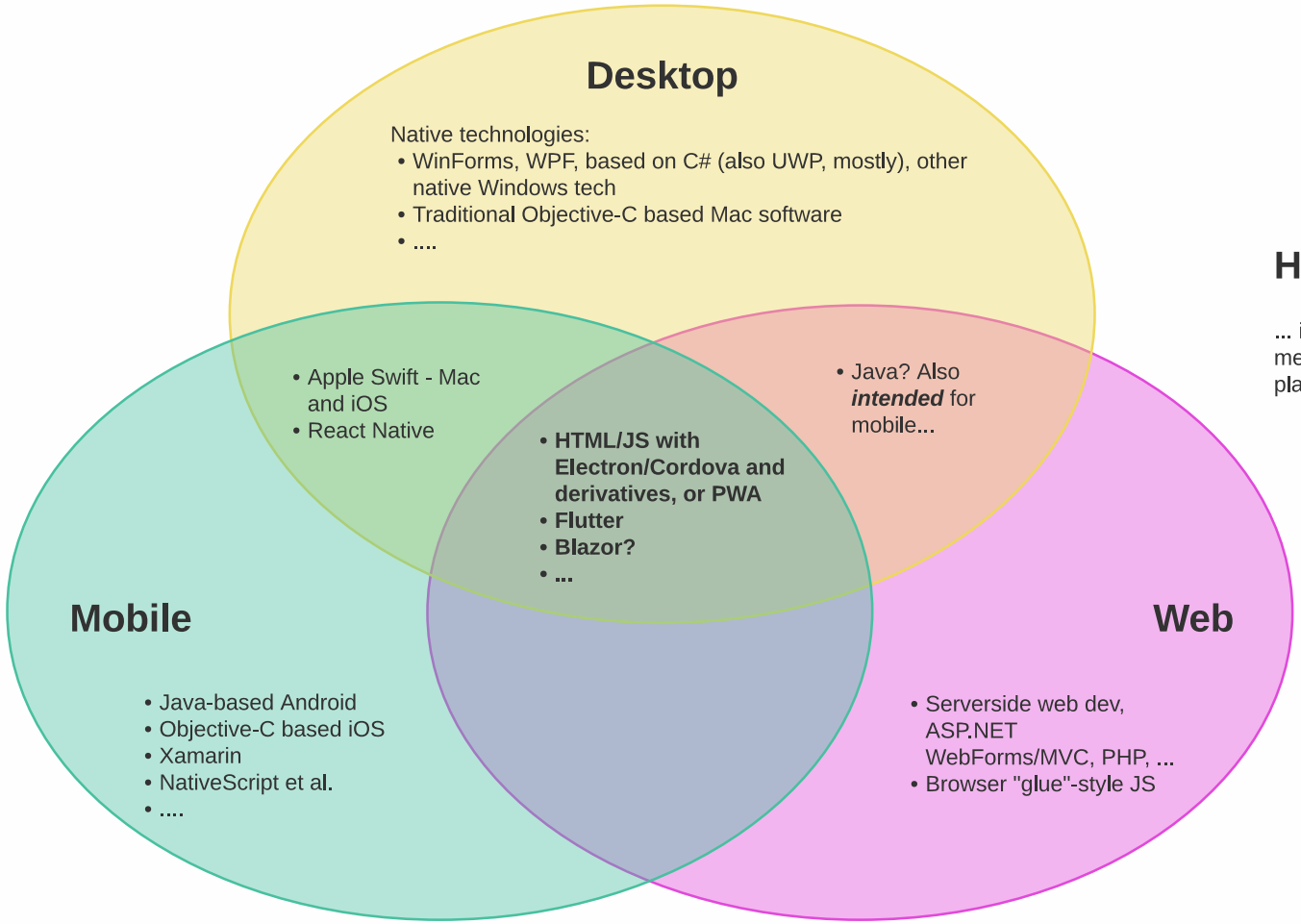
A bit complicated

- KVM - can be type 1 or 2
- Hyper-V really is type 1

Container und VMs



Strategische Entwicklungsplattform



HTML/CSS/JS

... is the most versatile and "open" choice for me (use TS if you prefer). That's my "strategic platform".

CAP Theorem

Two Out of Three Ain't Bad

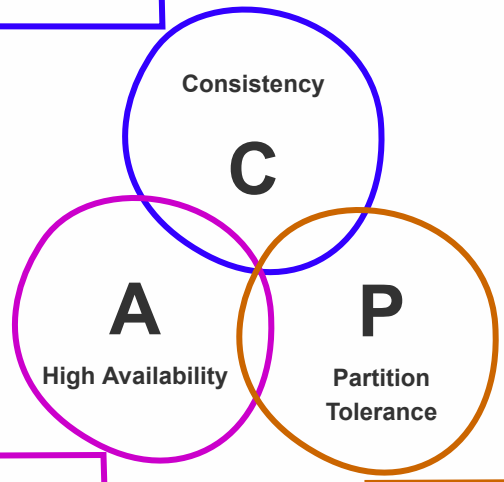
James Richard Steinman, 1977

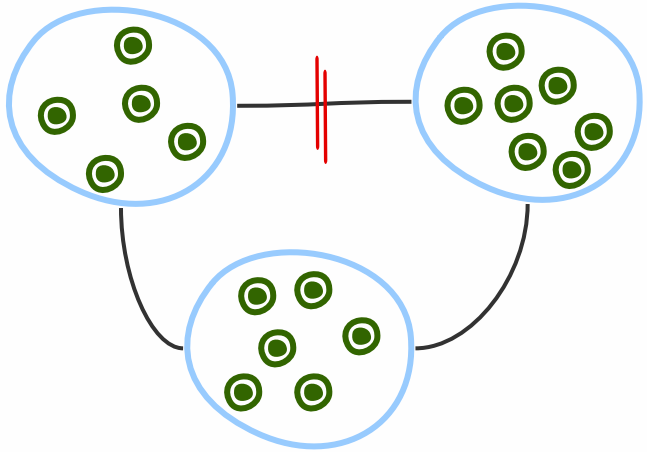
Every read receives latest data or an error

CAP Theorem:

Only two out of the three (C/A/P) guarantees can be provided simultaneously by a distributed data store.

Eric Brewer, 1998





Requests always receive a successful response

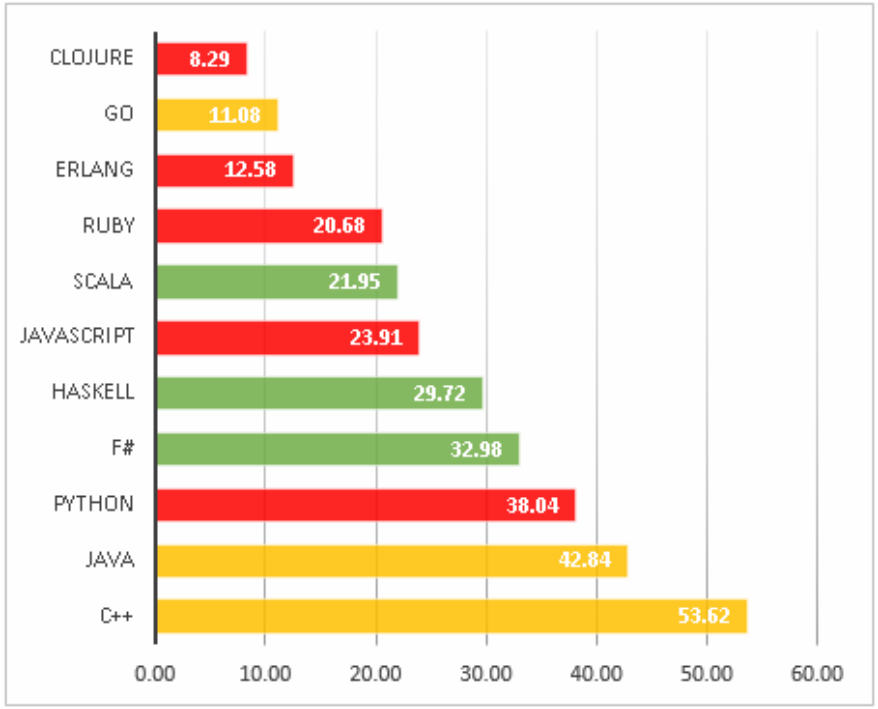
System remains operational in spite of network failures

Typical basic RDBMS: **CA** -- Typical cache-style DB: **CP** -- Eventual Consistency: **AP**
Honorary mention: MongoDB supports ACID guarantees (CP)

JavaScript vs TypeScript

Languages by bug density - GitHub repos with >100 stars

In green, in the "advanced" static typed languages corner: Haskell, Scala and F#.
In orange, in the "old and boring" static typed languages corner: Java, C++ and Go.
In red, in the dynamic typed language corner: JavaScript, Ruby, Python, Clojure and Erlang.



Daniel Lebrero, May 2016, The broken promise of static typing

> ***My own prediction is that TDD is the deciding factor. You don't need static type checking if you have 100% unit test coverage. [...]***
>
> ***I predict, that as TDD becomes ever more accepted as a necessary professional discipline, dynamic languages will become the preferred languages.***

Uncle Bob Martin, May 2016, Type Wars

> **When it comes to bug reduction, I think it's fair to say:**
>
> **Static types are overrated.**

Eric Elliott, June 2016, The Shocking Secret About Static Types

> **I will not use the current version of TypeScript in my next large scale application, because the larger the project is, the more the costs of using TypeScript compound.**

Eric Elliott, January 2019, The TypeScript Tax

Sources

- This presentation:
  - https://oliversturm.github.io/developers-and-architects/basta-spring-2021
  - PDF download: https://oliversturm.github.io/developers-and-architects/basta-spring-2021/slides.pdf

Thank You

Please feel free to contact me about the content anytime.

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