

Something Architecture

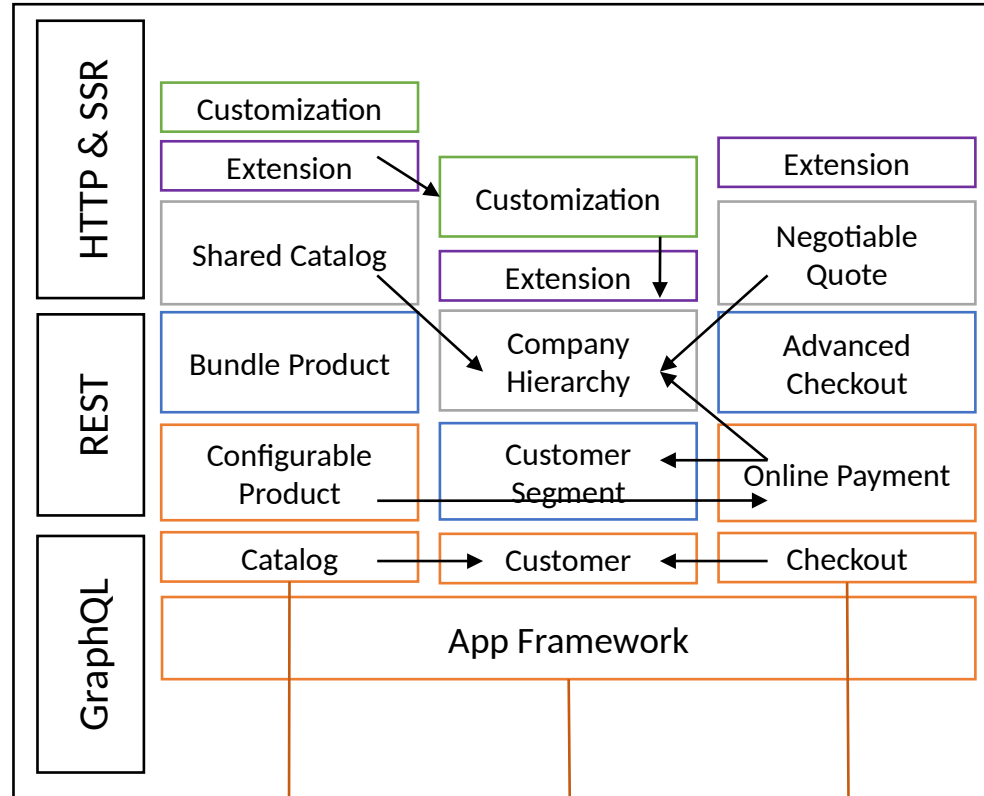
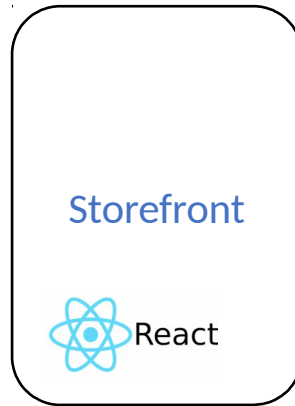
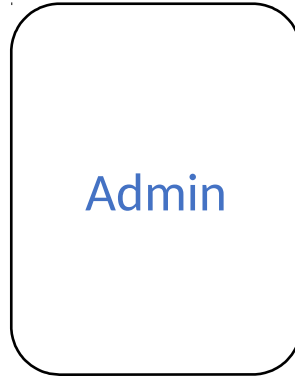
Anton Kril

Director of Architecture

@AntonKril

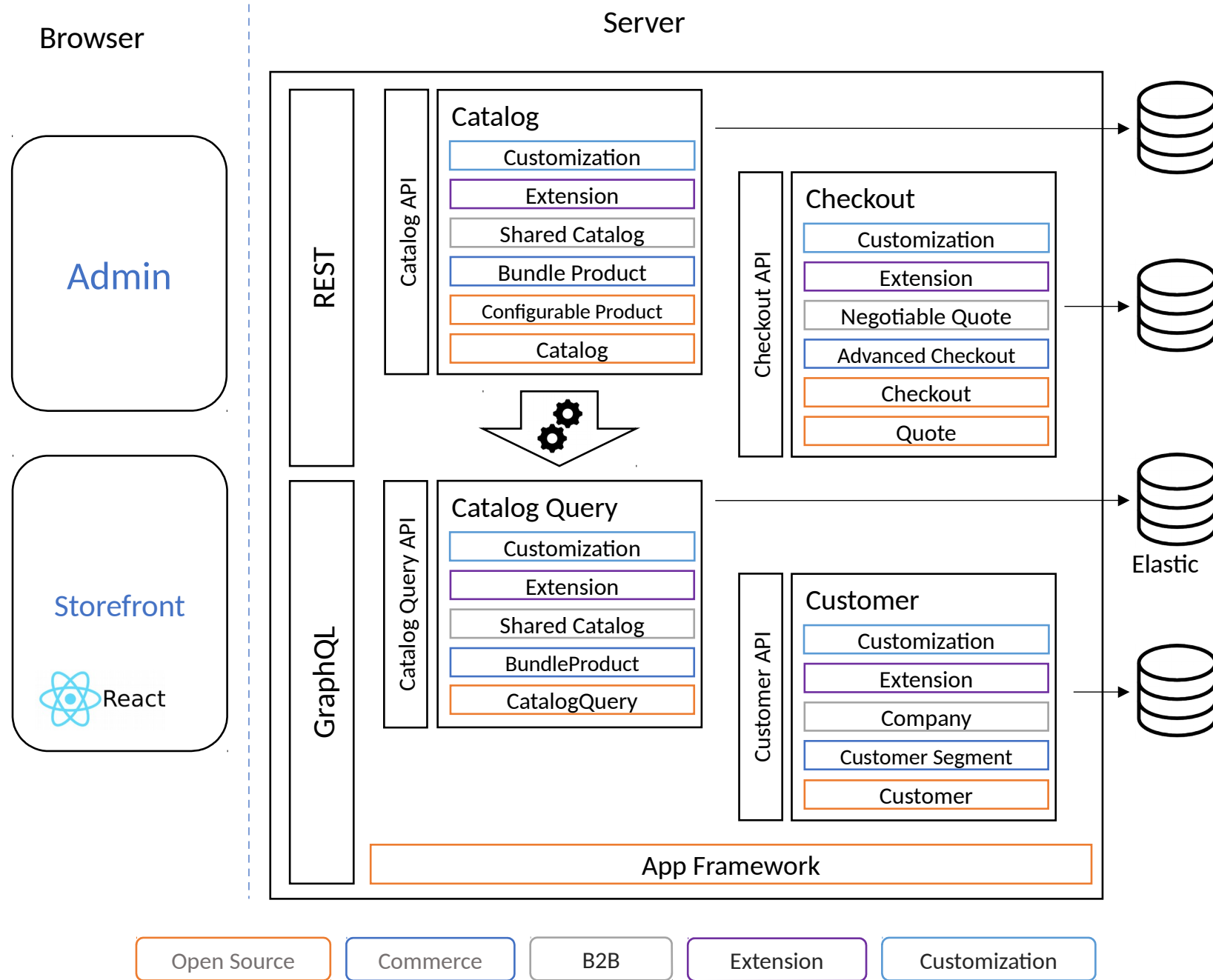
Browser

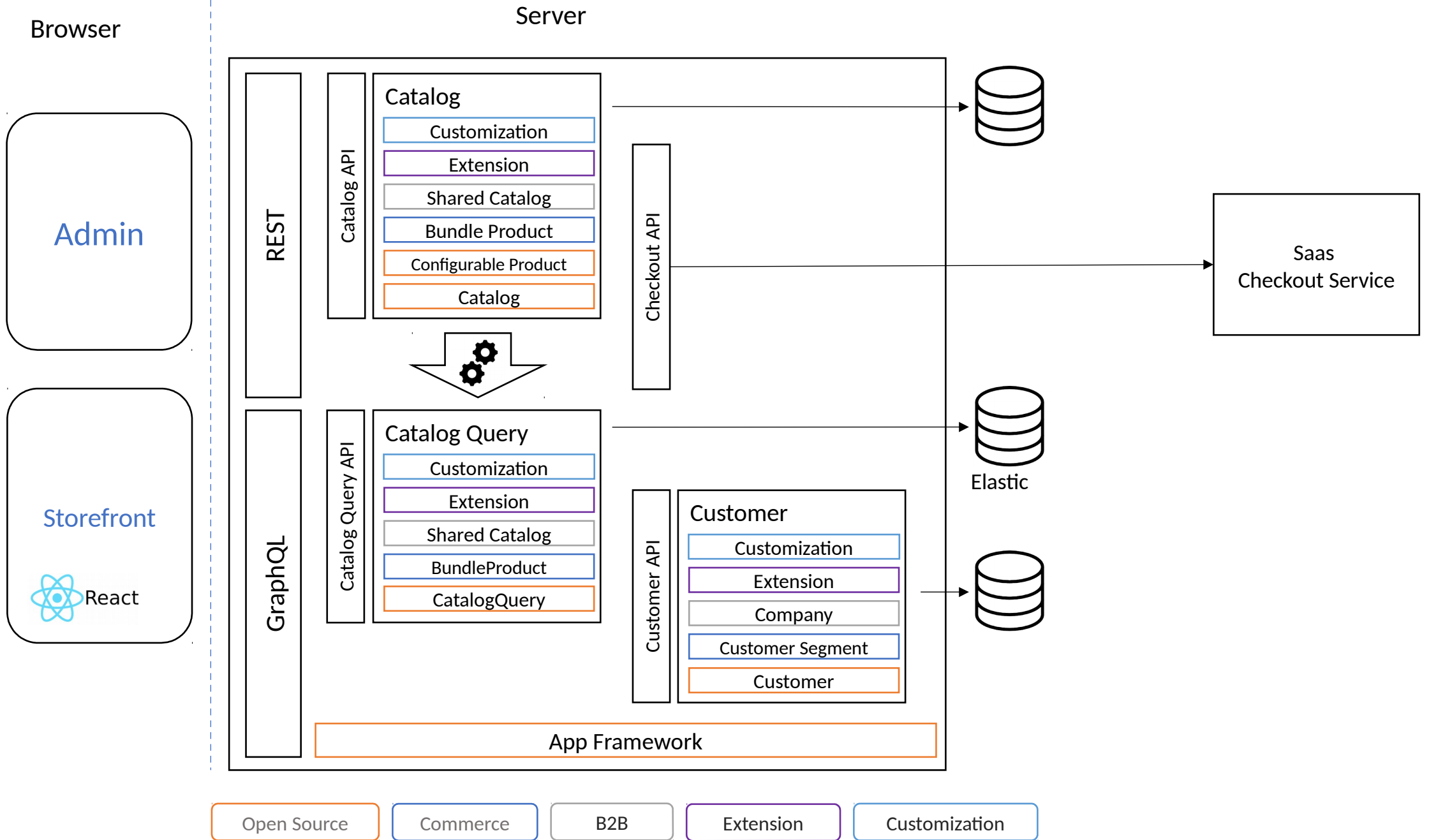
Server



- Open Source
- Commerce
- B2B
- Extension
- Customization

Evolvability of platform guaranteed by ***Isolation of Services*** and ***Stable APIs***





Browser

Admin

Storefront



Admin Gateway REST


UPWARD

Storefront Gateway GraphQL

Catalog

REST


- Customization
- Extension
- Shared Catalog
- Bundle Product
- Configurable Product
- Catalog
- App Framework



Order Management

REST


- Customization
- Extension
- RMA
- Sales
- App Framework



CatalogQuery

REST


- Customization
- SharedCatalog
- CatalogQuery
- App Framework



Customer

REST


- Customization
- Extension
- CompanyHierarchy
- CustomerSegments
- Customer
- App Framework



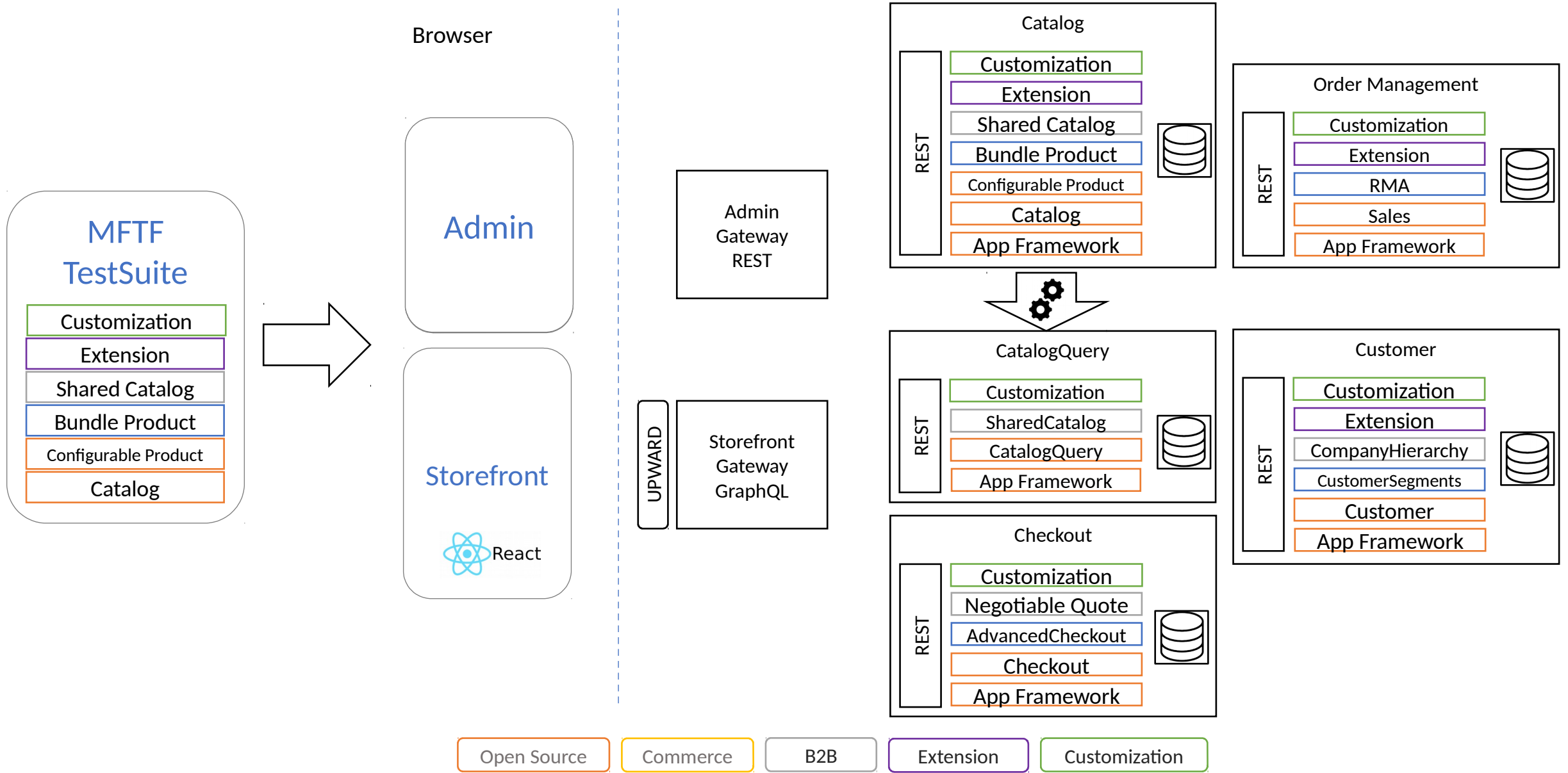
Checkout

REST

- Customization
- Negotiable Quote
- AdvancedCheckout
- Checkout
- App Framework



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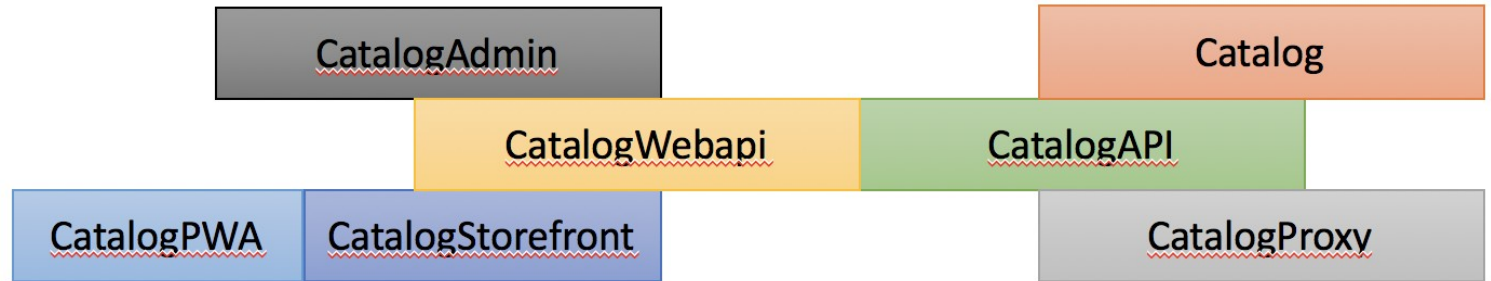


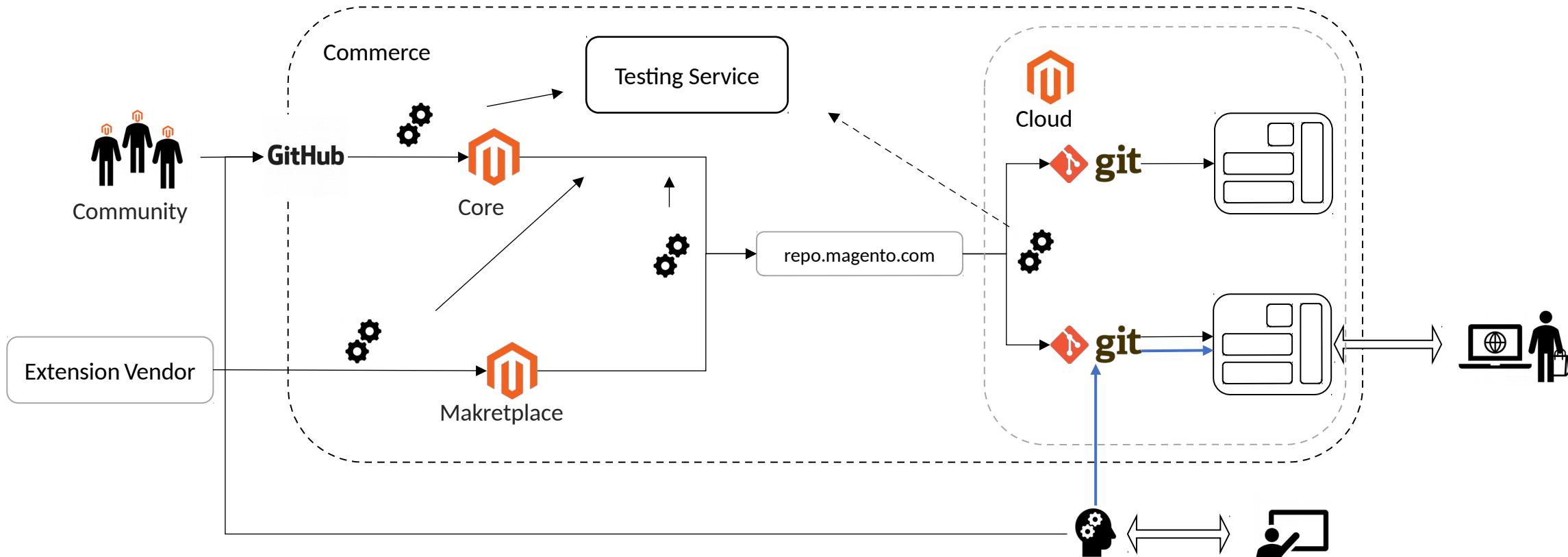
Static decomposition

Before



After







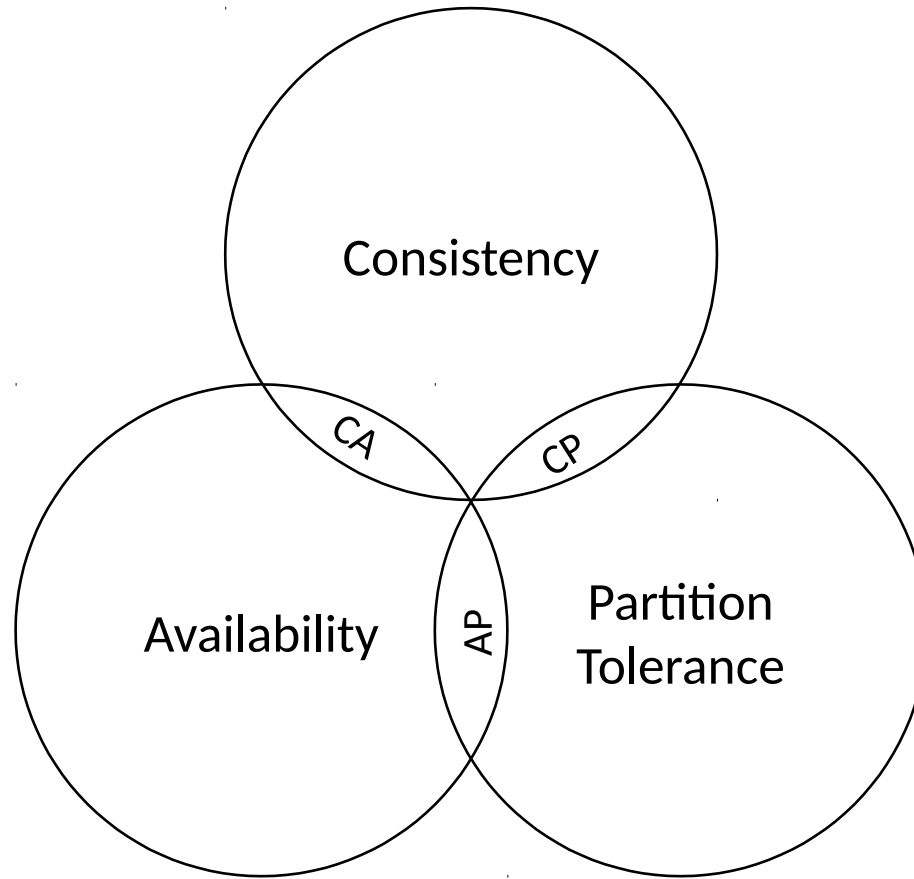
Service Isolation
@AntonKril

<http://bit.ly/magento-service-isolation>



More
Details

CAP Theorem



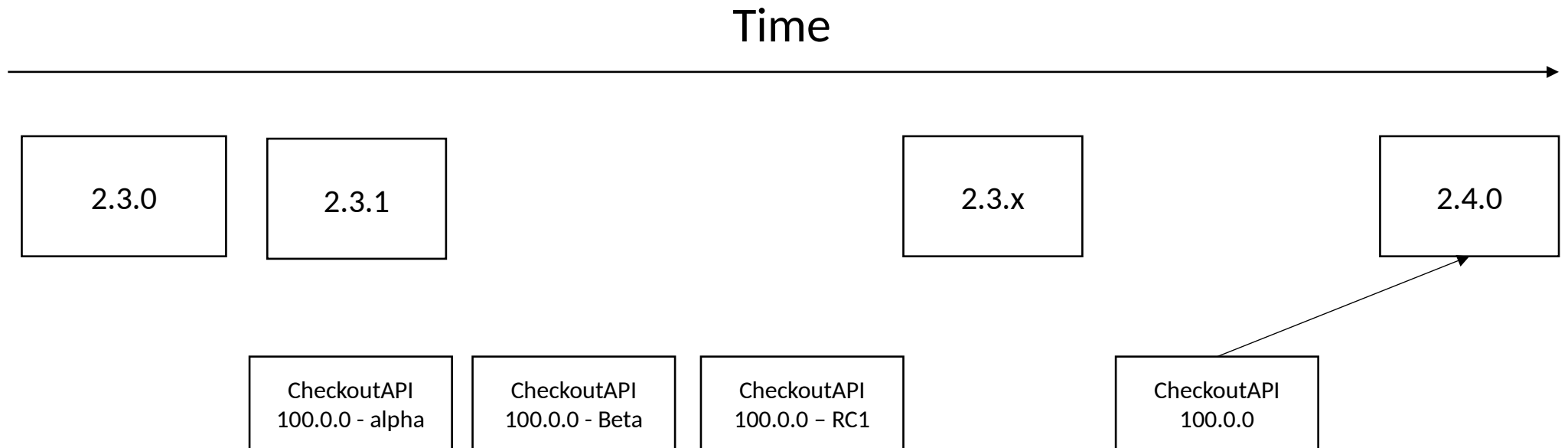
Service design principles

- All merchant operations SHOULD BE *eventually consistent*
- All operations MUST BE *idempotent*.
- There MUST BE *NO data dependencies* between services.
- Sagas and confirmation timeouts SHOULD BE used for *consistency* of distributed operations
- All new state modifying service contracts SHOULD expose *asynchronous bulk* APIs
- *Command & Query* responsibility segregation – storefront APIs for data immutable in storefront (catalog, pricing, promotions) should be optimized for data retrieval
- *Compare and Swap* (CAS) tokens SHOULD be used to avoid race conditions

Manual testing is not an option

- MFTF – modular functional testing framework
- Run MFTF on marketplace to validate extensions & upgrades
- Run MFTF on cloud to validate changes & upgrades
- Add capacity testing capabilities

Reduce WIP



Distributed Deployment

Microservices

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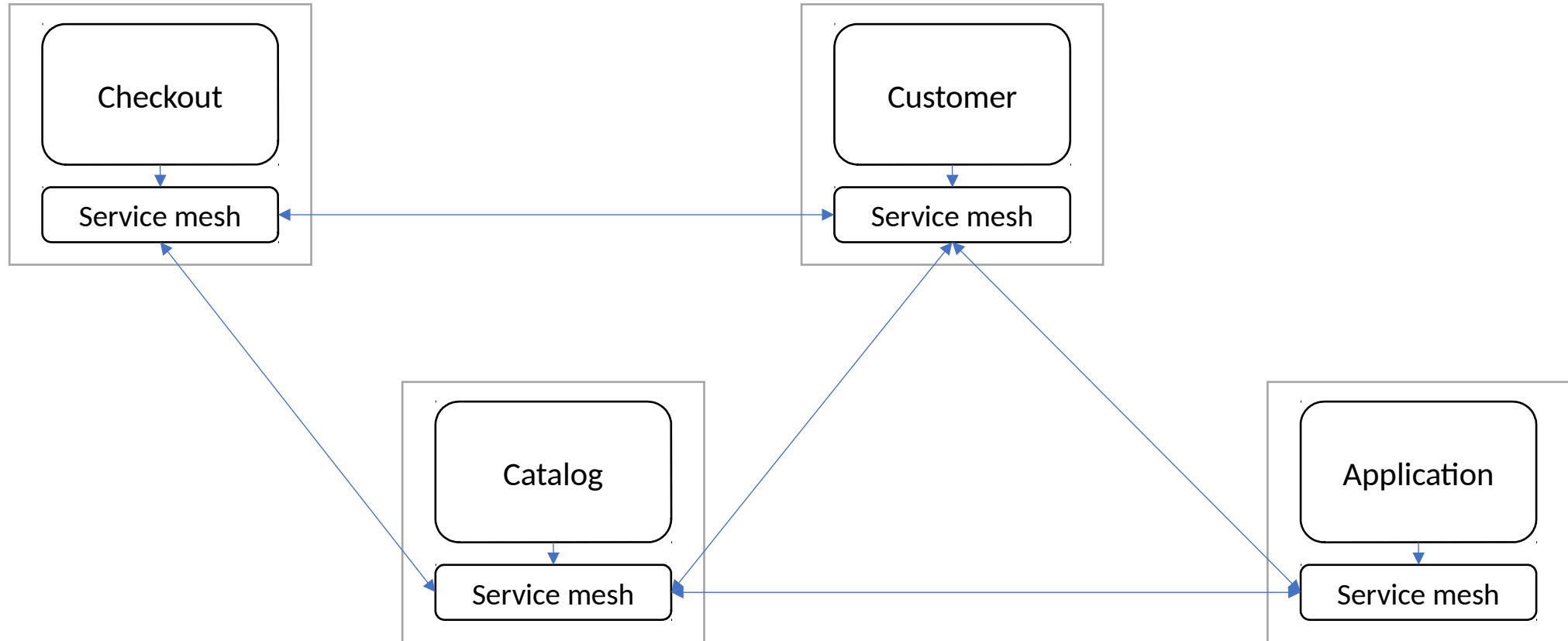
Network is a scary place
It is hard to design distributed systems

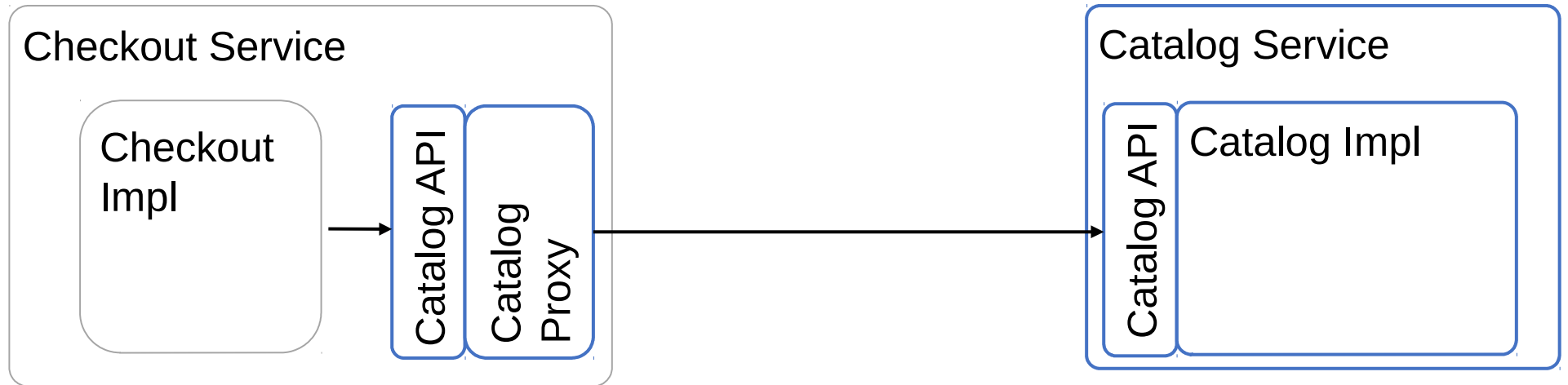
Fallacies of distributed computing

- The network is reliable.
- Latency is zero.
- Bandwidth is infinite.
- The network is secure.
- Topology doesn't change.
- There is one administrator.
- Transport cost is zero.
- The network is homogeneous.

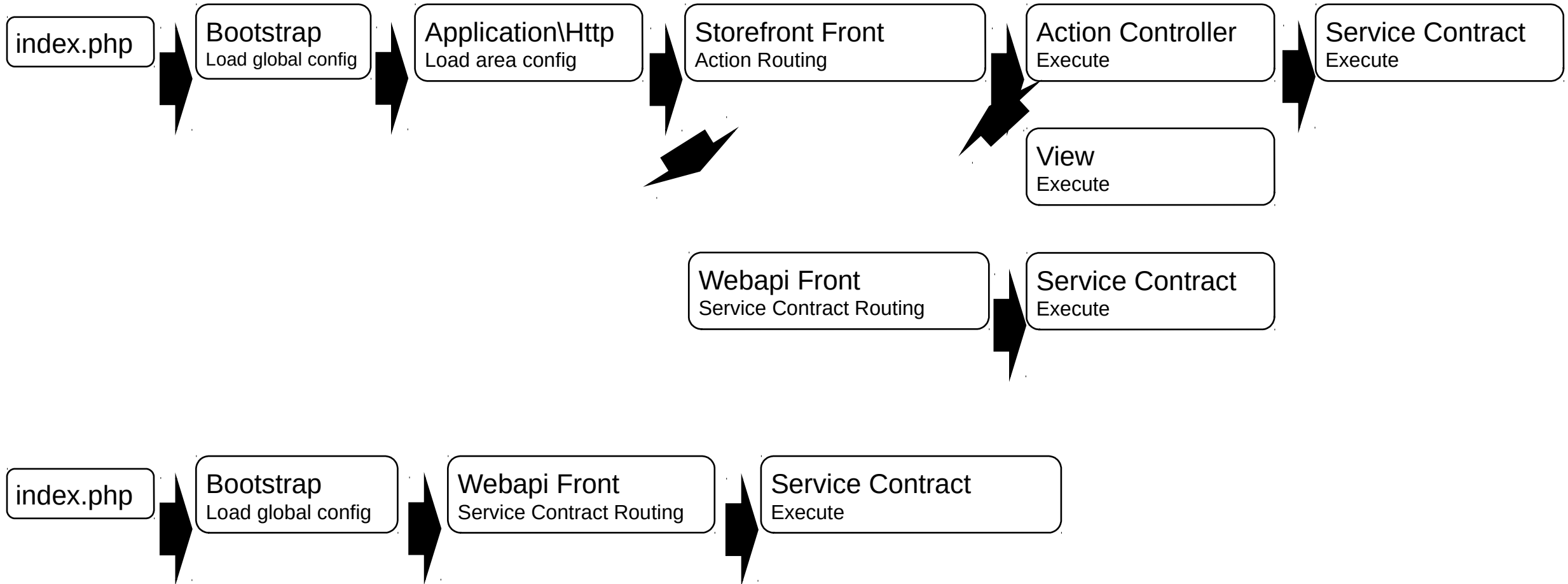
https://en.wikipedia.org/wiki/Fallacies_of_distributed_computing

Service Mesh





Request processing



Lightweight framework

- Automated cache invalidation
- Area is loaded immediately. No intermediate “global” step
- No “isInstalled” checks
- No store resolving
- No application classes
- Lightweight Request/Response class
- No Layout loading
- No UrlRewrite, default store redirect plugins
- Simplified webapi routing
- No “registration.php” loaded per module on every request
-

Unified environment

Dev stack



docker



kubernetes



minikube

Staging & Production stack



docker



kubernetes



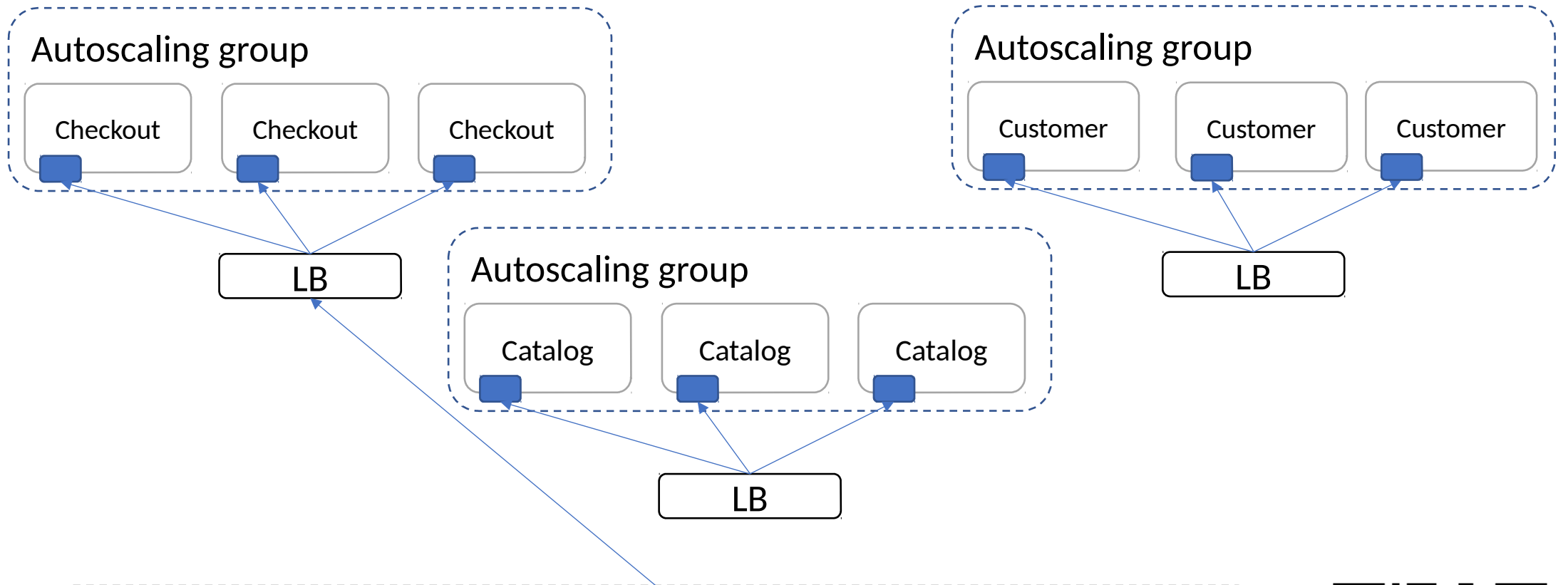
Commerce Cloud



Google Cloud



Microsoft
Azure



Admin machine

```
> magento context:add checkout administrative_endpoint_address  
> magento context:set checkout  
> Magento info:dependencies:show-modules
```





Service Isolation
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