
SwarmESB/PrivateSky

<http://bit.ly/2pRZu86>

Alboaie Sînică

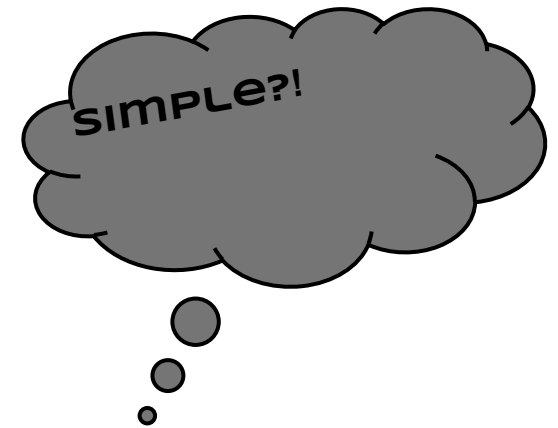
PrivateSky Project

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- Use cases - our architecture
 - A big vote for Redis
 - New concepts
 - SwarmESB/ PrivateSky (Research Project)
 - Node.js + SwarmESB (laboratory)
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EIP Concepts

- Channels (PUB/SUB)
- Message Queues

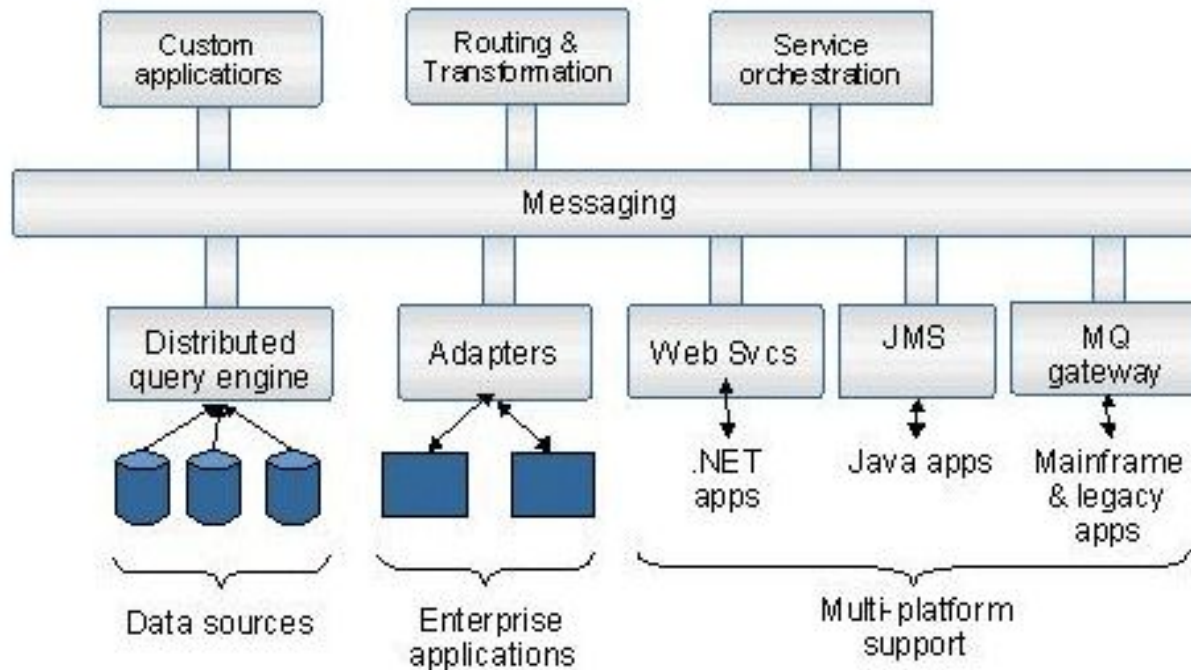


Swarm architectures

- Open Sources
- "swarm-ification" (SOA)
 - microservices
 - small services
 - service adaptors



SOA example



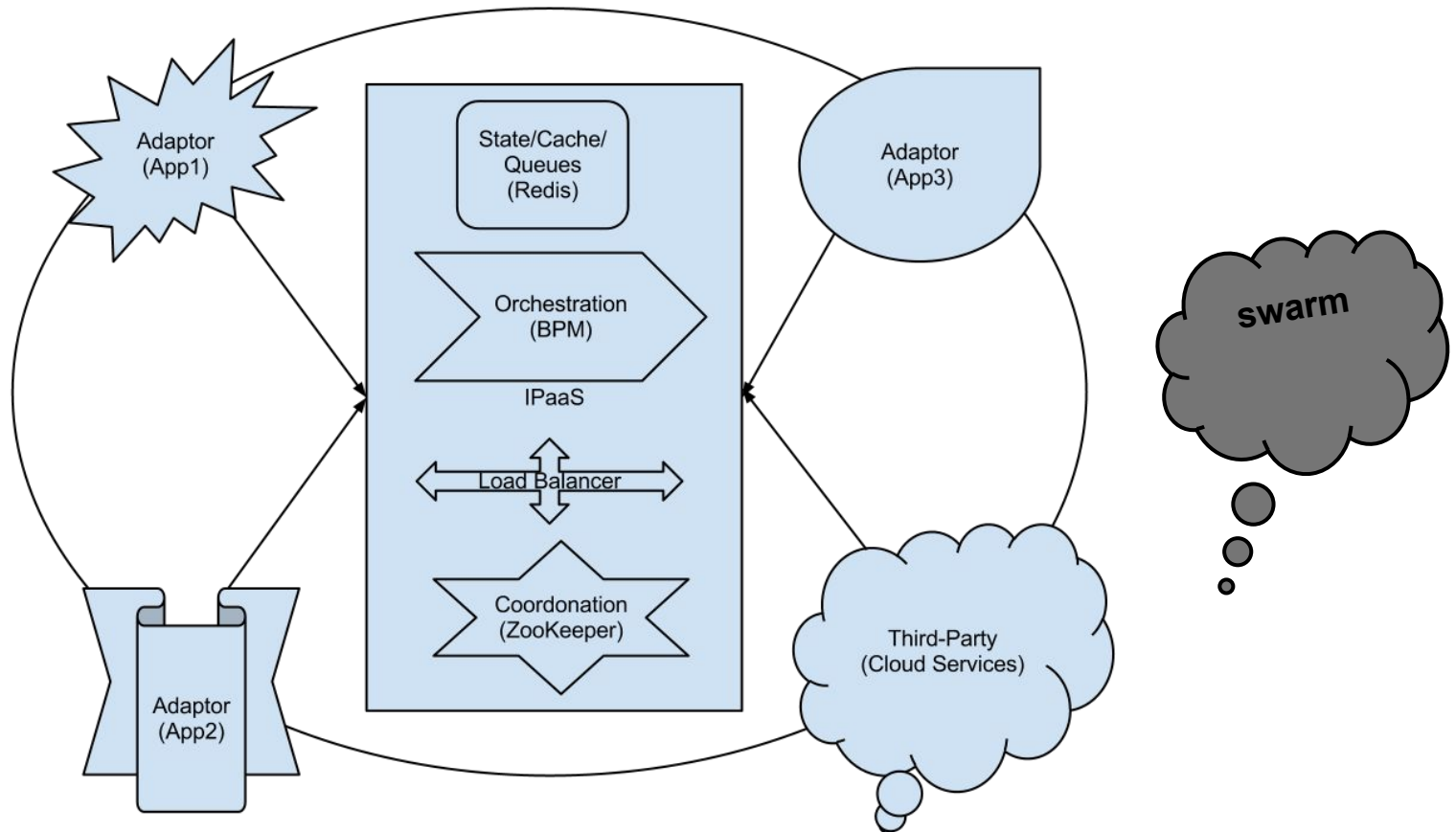
SOA Concepts

- Orchestration
- Choreography



Opportunities in Security, Privacy!

"swarming"



SwarmESB

- Open source: Enterprise Service Bus
- iPaaS
- based on "swarm communication"
- Choreography



<https://github.com/salboaie/SwarmESB>

<https://github.com/PrivateSky>

<https://github.com/MSSOpenTech/redis/releases>

Swarm Concepts

<https://github.com/salboaie/SwarmESB/wiki/Install-guide>

- node : place visited by swarms
 - have identity
 - uuid
 - well known (Core, Logger, ...)
 - part of a group (fleet)
 - swarm: set of related messages
 - swarm description
 - swarm, home, broadcast primitives
-

Hello world with swarms

```
vars:{  
    message:"Hello World"  
},  
start:function(){ //constructor  
    this.swarm("concat");  
},  
concat: { // phase that get executed in "Core" node  
    node:"Core",  
    code : function (){  
        this.message = this.message + " The swarming has begun! ";  
        this.swarm("print"); //move again  
    }  
},  
print:{ //print phase executed in "Logger" node  
    node:"Logger",  
    code : function (){  
        cprint(this.message); //use of some api, specific to the Logger node  
    }  
}
```



Work plan

- Install/test SwarmESB
 - run tests
 -
 - Group work
 - test swarm/broadcast/home
 - test groups
 - modify/run benchmark test in group
-

Benefits

- **programming distributed systems**
 - easier
 - asynchronous but elegant
- **scalability**
 - deploy thousands of processes
 - load balancing
- **performance**
- **high availability**



Homework rules



- Code (github), demo + 1 page documentation

Homework

1. Create a web application:
 - demo/learning resources explaining a module from PrivateSky (apersistence, callflow, whys, safebox, double-check)
 - a chat system
 - a collaborative Paint
 - a collaborative text editor
 2. Create swarm adapters and swarms (with unit tests) to expose towards SwarmESB world a well known cloud service (calendars, google docs, image sites, file systems, etc). --
minim 3
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Good luck!
