UPPSALA UNIVERSITET

Treacherous Talks

actions speak louder than words

ERLANG SOLUTIONS

The project

- 9 students working for one semester
- Over **6000 man-hours** in total
- Goal is to deliver a working system
- Erlang Solutions acts as product owner

Challenges

- The system must be **highly scalable**
- The system must be **fault tolerant**
- The web frontend must use **websockets**
- **Testing** a game is hard

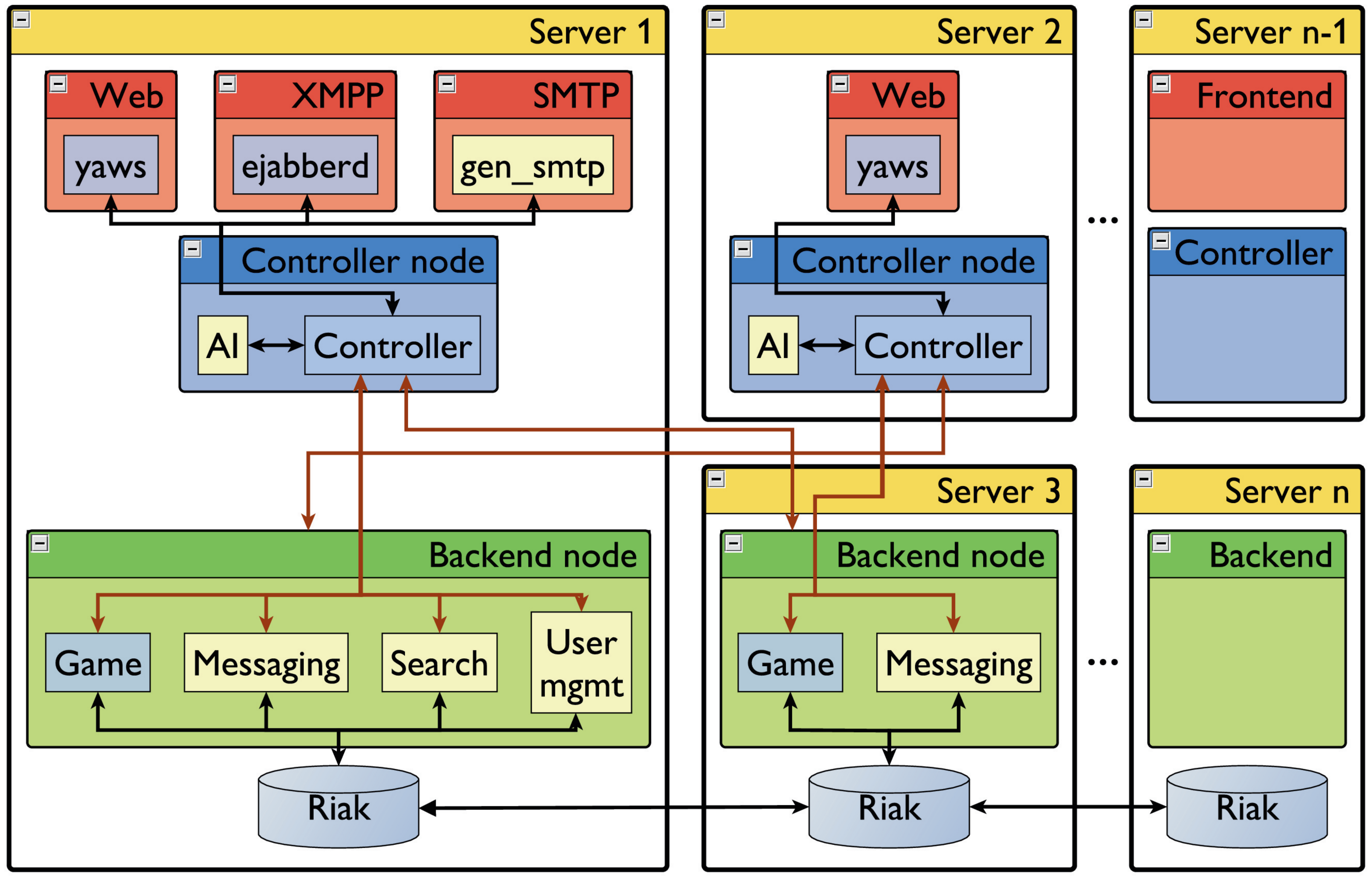
The vision

Diplomacy® is a **turn-based boardgame**. The system should act as a Diplomacy® game server with the following properties:

- Play by mail
- Play via IM
- Play via web
- Simple game AI
- Scalable
- Always available

Database-driven architecture

The demands for fault tolerance and high scalability made the team opt for a database-driven approach using Riak.



Server 1 contains the full stack, while the other servers only contain parts of the system.The system can be distributed in several different ways. By keeping state to a minimum in applications (state is marked with light blue), distribution gets simpler.

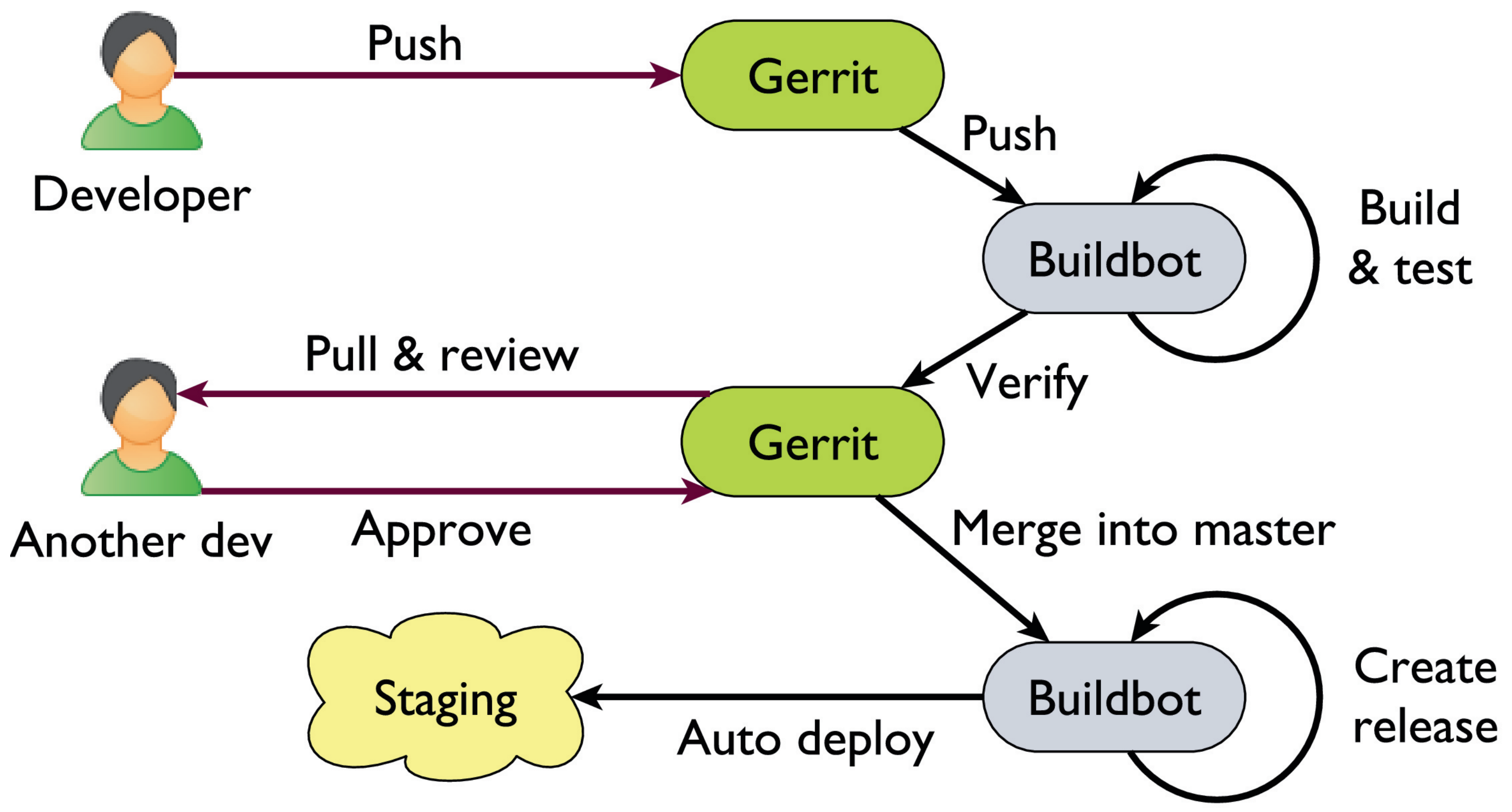
This gives us:

- Simple scaling
- No state in most applications
- Easy fault tolerance

Downsides:

- We hit the database a lot
- Consistency can be tricky
- It is important to get the database schema right

Advanced agile process



- Scrum
- Git
- Redmine
- Gerrit Code Review
- Buildbot
- EUnit
- Rebar
- Meck

Lessons learned

- Architecture and design is hard
- Code reviews are good
- Achieving high availability is hard
- Some things are scarcely documented
- Erlang is nice but has a small community

For more information see http://www.it.uu.se/edu/course/homepage/projektDV/ht11