



Developing Highly Scalable Application in Java A Case Study

Zbyněk Šlajchrt – AVAST Software
slajchrt@avast.com

Web Reputation

The image shows a Google search for 'avast' with a reputation overlay from avast.com. The overlay displays the site's overall rating and a voting interface. Arrows point to reputation icons on the search results.

avast.com OVERALL RATING

This site has a good rating (based on many votes)







CAST YOUR VOTE

How do you like this site?

What type of content does this site provide? (Check all that apply)

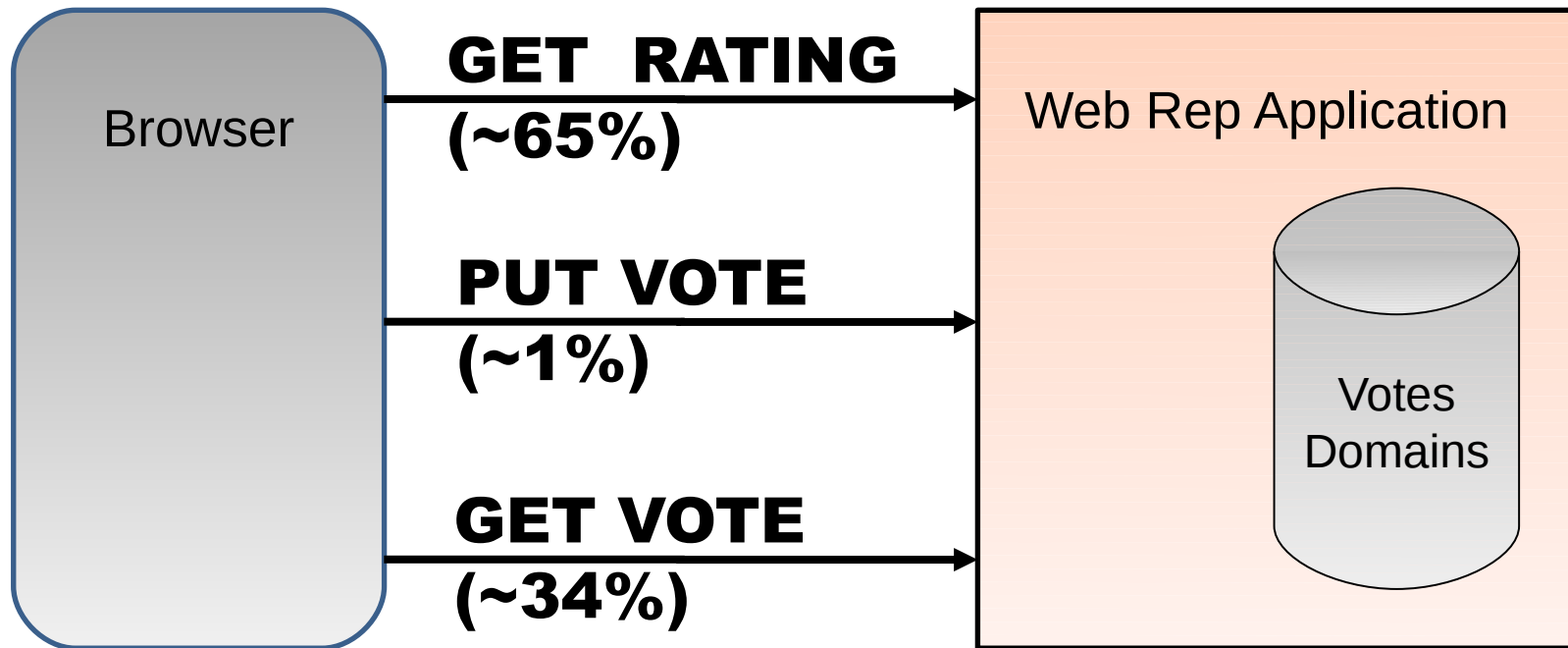
Shopping, Social / Gaming, News / Blog, IT / Download, Corporate, Pornography, Weapons / Violence, Gambling, Alcohol / Drugs, WareZ / Illegal

Search Results:

- avast! - Download... www.avast.com/ Free antivirus with a... Antivirus has better... 
- avast! Free Antivirus is the best... www.avast.com/free-antivirus-downl... 
- Download and try avast... www.avast.com/download-software 
- Download avast! virus... www.avast.com/download-update 
- Register your avast! Free... www.avast.com/registration-free-anti... 
- Proven by over 140 million... www.avast.com/support 
- Maximum virus and anti... www.avast.com/internet-security 

More results from avast.com »

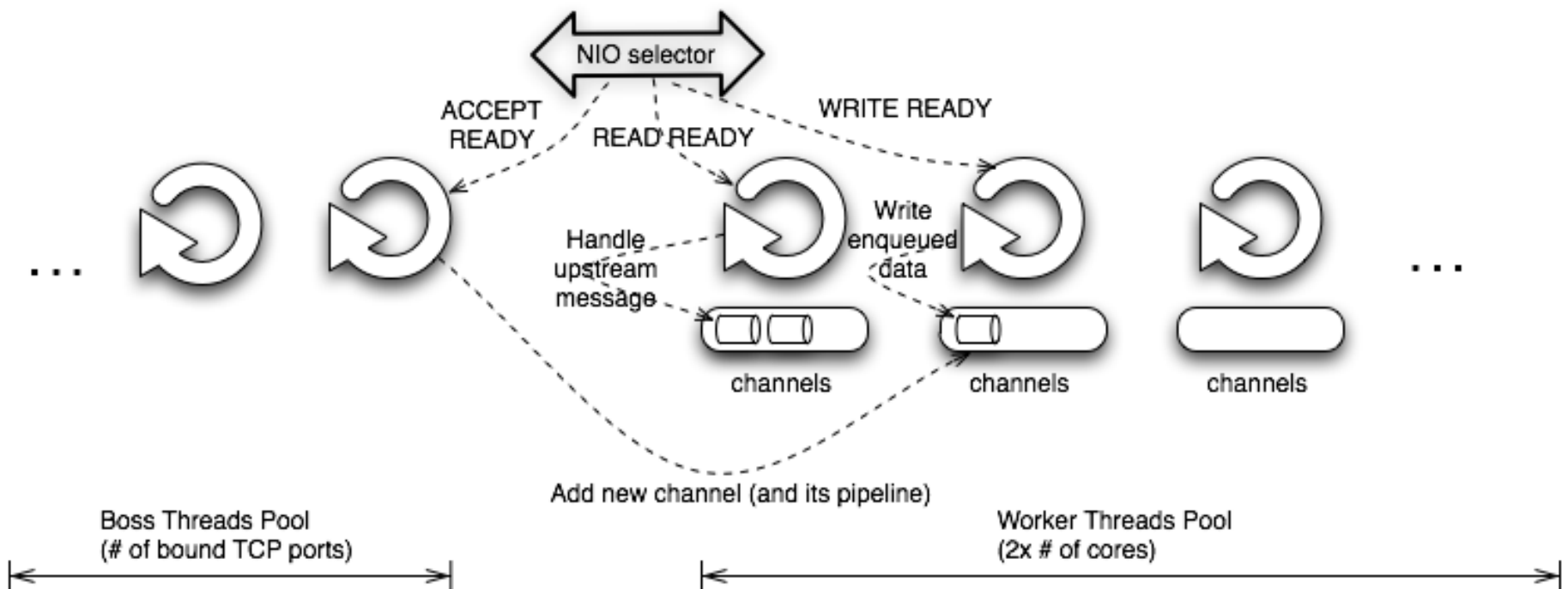
WebRep Service Overview



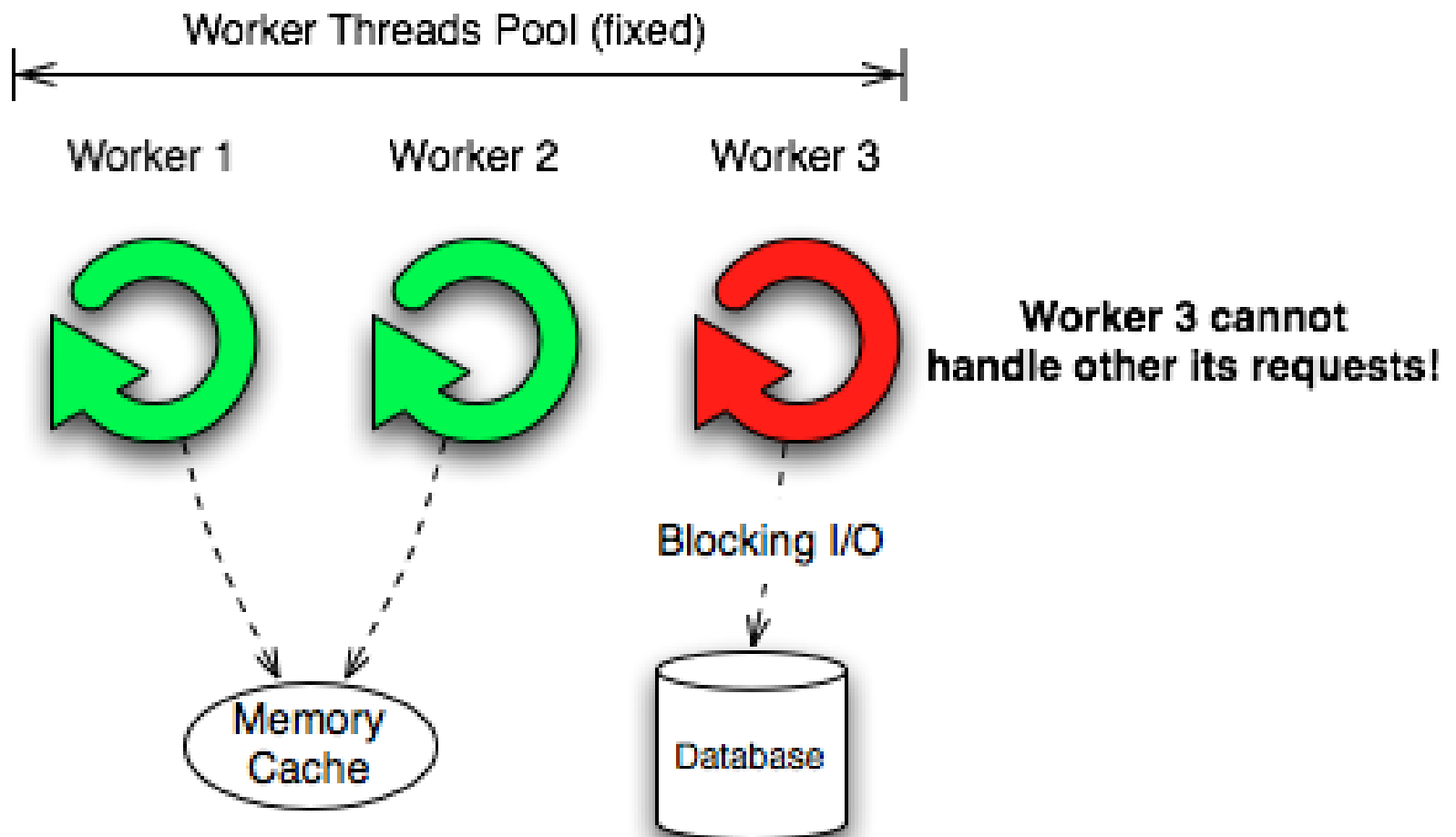
Experience from WebRep

- **Jetty Web Container**
 - A lot of configuration options
 - We couldn't achieve better performance than 2k req/sec
- **Prototype in C** (no db operations)
 - Up to 30k req/sec
- **Netty**
 - Up to 11k req/sec (including db operations)

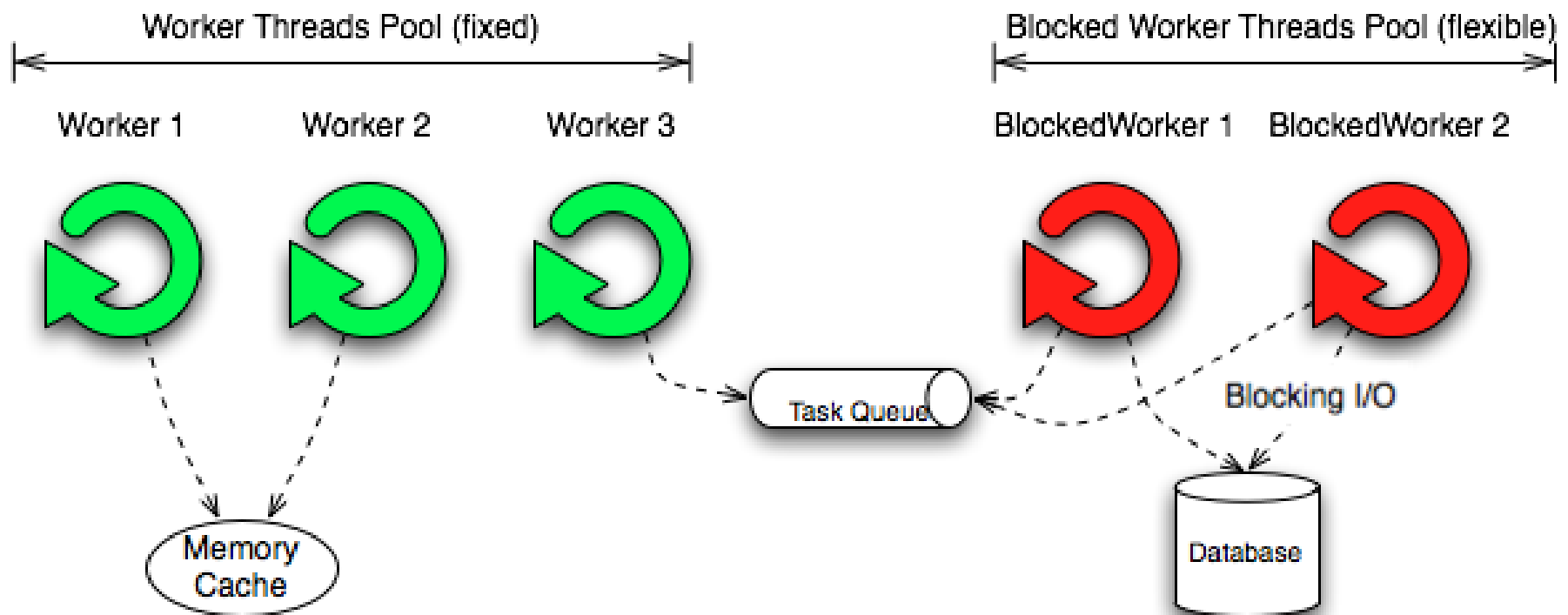
Netty's Non-Blocking I/O



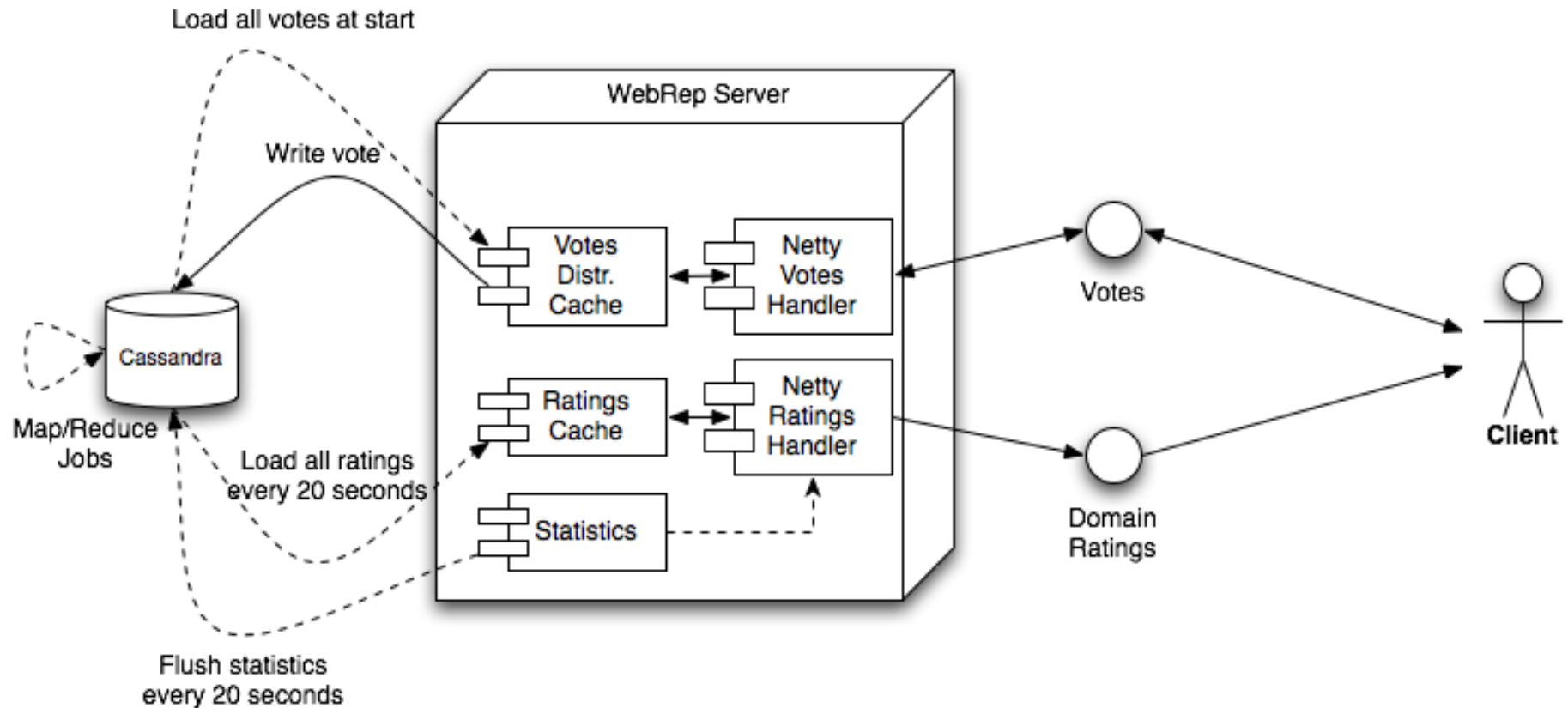
Using Blocking IO Within Non-blocking Threads



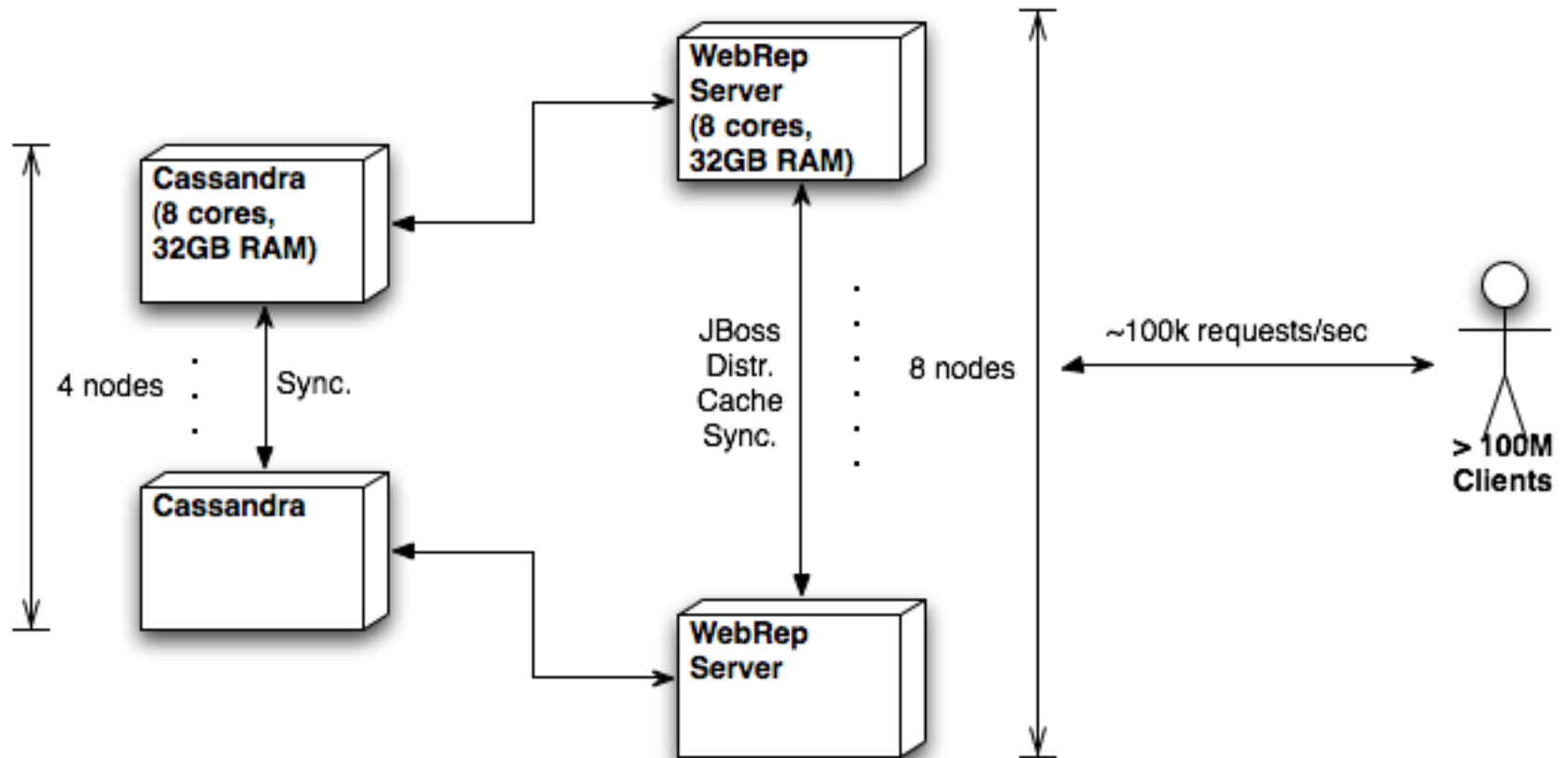
Using Blocking IO Within Non-blocking Threads



WebRep Components



Infrastructure



Conclusion

- Using non-blocking I/O is crucial
- Netty found very flexible and robust
- Serving 100K req/s on 8 nodes
- Technology stack should be as low as possible (Leaky Abstractions)

Q & A

Thanks for your attention!