

School for advanced sciences of Luchon
Network analysis and applications

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- Kulmanov Azamat
- **E-mail:** cool.azamat@gmail.com
- **Bachelor degree:** KBTU, Almaty
- 1st year master student
- **Supervisor:** Prof. Atymtayeva L. B.
- **Interests:** Web developer (PHP, Python, CSS, HTML5, Java)

- Yerbolat Yerlan
- **E-mail:** e_erbolat@nur.kz
- **Bachelor degree:** KBTU, Almaty
- 1st year master student
- **Interests:** Software development (Java, C++, C#, PHP, OS Android)

Daniyar Artykov

E-mail: da_artykov@kbtu.kz

Bachelor degree: FIT, KBTU

1st year master student, FIT, KBTU

Supervisor: Prof. Atymtayeva L. B.

Interest: Software development

Madi Sheriyev

Email: madi.sheri@gmail.com

Education

- International Information Technology University (**IITU**), Almaty
Bachelor degree of Information System (4 year)
- Kazakh British Technical University (**KBTU**), Almaty
1st year MSc of Information System

Interest

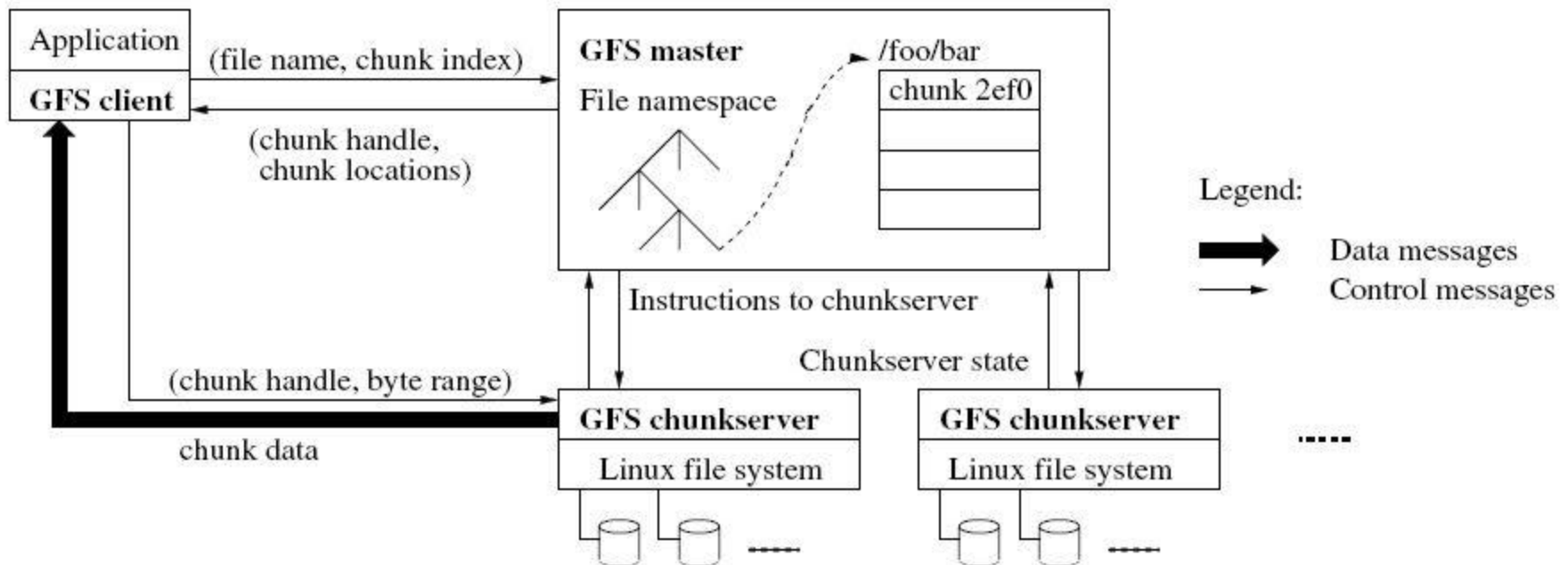
Distributed systems for processing Big Data

Functional

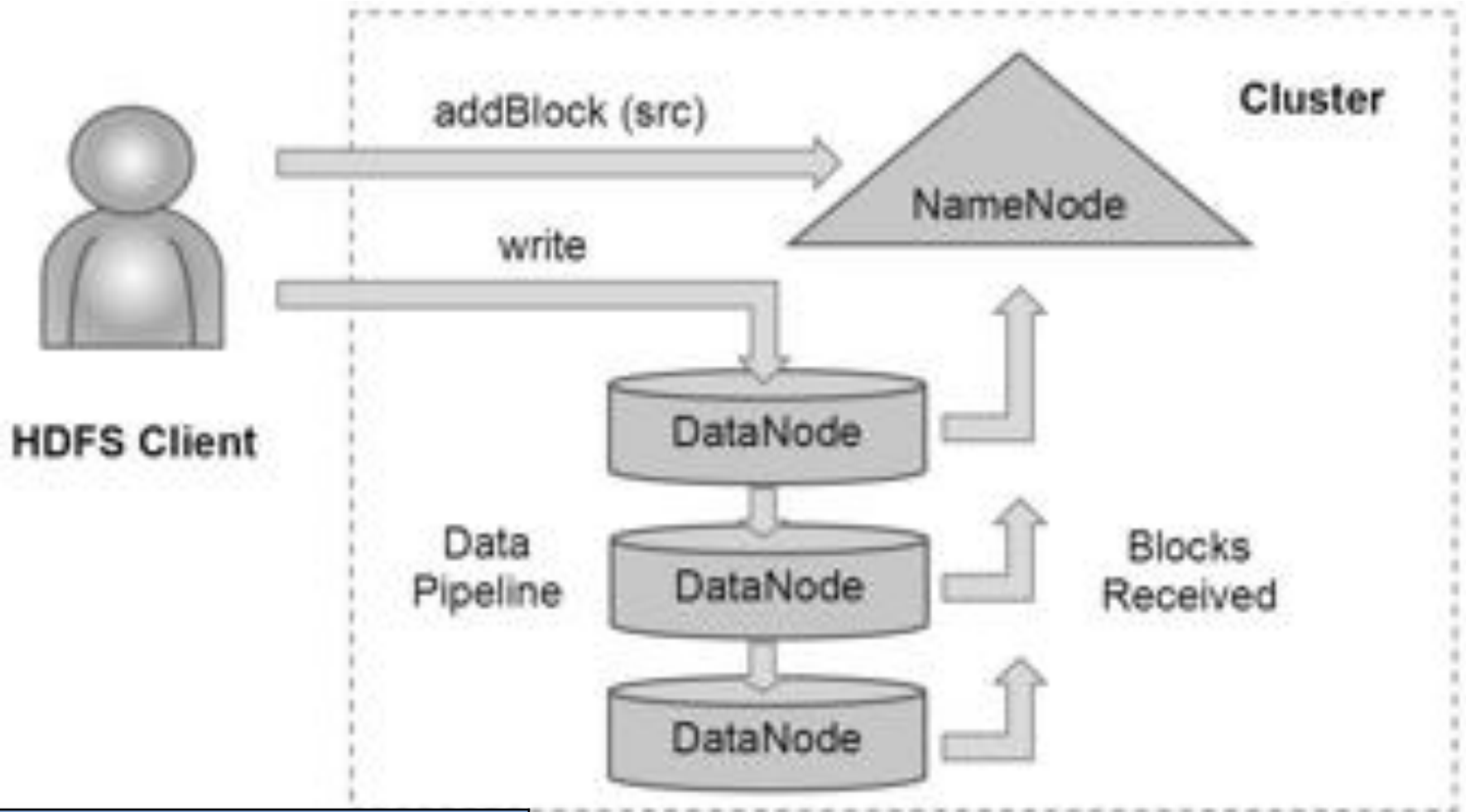
Distributed systems for processing Big Data

- Google File System (GFS)
- Hadoop File System(HDFS)
- DryadLINQ: A System for General-Purpose Distributed Data-Parallel Computing, using a High-Level Language, from Microsoft
- S4: A Distributed Stream Processing Platform, from Yahoo!
- Cassandra: a decentralized structured storage system, from Facebook
- Tao: Facebook's distributed data store for the social graph

Google File System



Hadoop File System



Google

With cluster of 1800 machines there 3 failures each day:

- Hard disk failures
- Network failure
- Power supply failure
- OS failure

Distributed system failures

- Full failure of components
- Byzantine failure (incorrect information)

Paxos Algorithm

Leslie Lamport (ACM Turing award 2013), Microsoft Research

Paxos is a family of protocols for solving consensus in a network of unreliable processors. Consensus is the process of agreeing on one result among a group of participants. This problem becomes difficult when the participants or their communication may experience failures

References

- [1] Lamport, Leslie (May 1998). "The Part-Time Parliament". ACM Transactions on Computer Systems 16 (2): 133–169. doi:10.1145/279227.279229. Retrieved 2007-02-02.
- [2] Sanjay Ghemawat, Howard Gobioff, and Shun-Tak Leung, The Google File System, October 19–22, 2003, Bolton Landing, New York, USA. Copyright 2003 ACM 1-58113-757-5/03/0010
- [3] GFS: the secret at the heart of Google (article), UK: ZDnet, 2005-03-07.