

fbtberger-raft is an independently developed implementation of the Raft consensus algorithm for the JVM. It provides consistent, fault-tolerant state replication across multiple nodes and forms the replication foundation of the solutions built by fbt Berger. The library is freely usable under Apache-2.0; fbt Berger monetises integration, operation and support – not the licence.

Consensus and replication

Leader election	Robust leader selection with randomised timeouts.
Log replication	Consistent, ordered replication of the command log to all followers.
Joint consensus	Safe cluster reconfiguration without downtime (adding and removing nodes).
Snapshotting	Log compaction via snapshots to bound storage growth and recovery times.
PreVote & leader stickiness	Avoids unnecessary term increases and leader flapping during network partitions.

Read consistency

Linearizable reads	Strong consistency via ReadIndex – reads without a log append.
Lease-based reads	Low-latency linear reads through time-based leader leases.

Operations, transport and security

Multi-transport	gRPC/Netty as well as Hadoop RPC – deployable across different infrastructures.
TLS / mTLS	Encrypted, mutually authenticated node-to-node communication.
Observability	Metrics via Prometheus and JMX for monitoring and operations.

Language	Licence	Transport	Security	Monitoring
Java 17 (JVM)	Apache-2.0	gRPC/Netty, Hadoop RPC	TLS / mTLS	Prometheus, JMX

Where it stands

fbtberger-raft covers the feature scope of production-grade Raft implementations and goes well beyond purely didactic reference implementations. As a young library it has a limited operational track record compared with long-standing, community-hardened alternatives – fbt Berger therefore supports adoption and operation closely and transparently. It is in practical use today on an mTLS-secured cluster running a turn-based gaming platform.

Commercial model: the library stays free (Apache-2.0). fbt Berger provides integration, architecture, operation and support.

Contact: kontakt@fbt-berger.ch · +41 77 285 78 38 · fbt-berger.ch