Distributed Backup Service

Cesar Medeiros (up201605344) and Margarida Silva (up201696214)
Class 5, Group 6

Faculty of Engineering of the University of Porto
Course: Distributed Systems

1 Concurrency

In order to deal with concurrency we implement several mechanisms to the communication pipeline. On one hand, for the RMI communication concurrency, we throw a new executor for each request received on each server. On the other hand, we also took care of the concurrency on the multicast subprotocol concurrency. The approach taken was to have a thread pool of *MessageHandlers* which take care of a message upon each request, avoiding possible overheads.

2 Backup enhancement

The backup enhancement consisted on reducing the peers' activity while sparing unneeded file backups when the replication degree is already ensured. In order to achieve this effect we compare the perceived replication degree of a peer to the desired replication degree for that same chunk, contained on the message. If the first is greater than or equal to the second, then there is no need to proceed with the backup. The perceived replication degree is incremented every time a peer receives a STORE message of that same chunk of peers with different id's from the self.

3 Restore enhancement