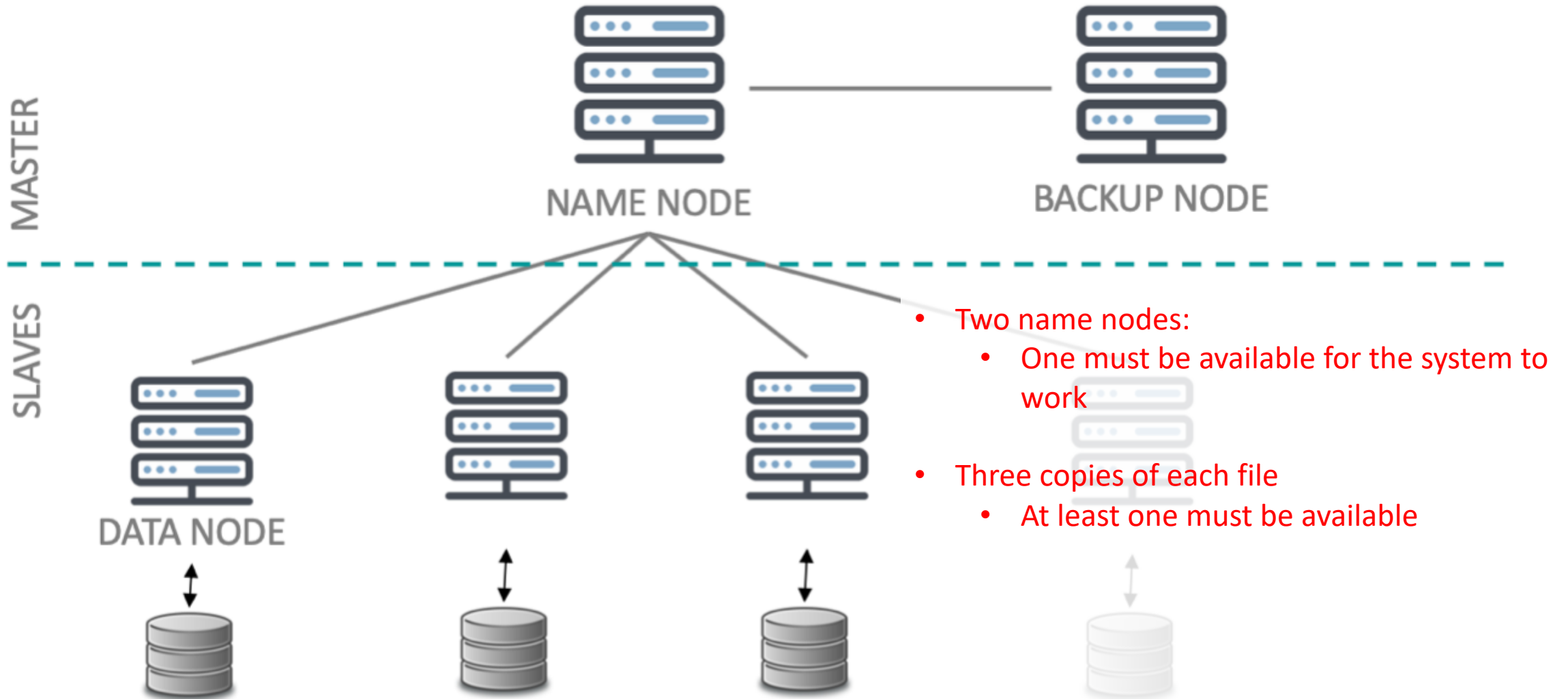


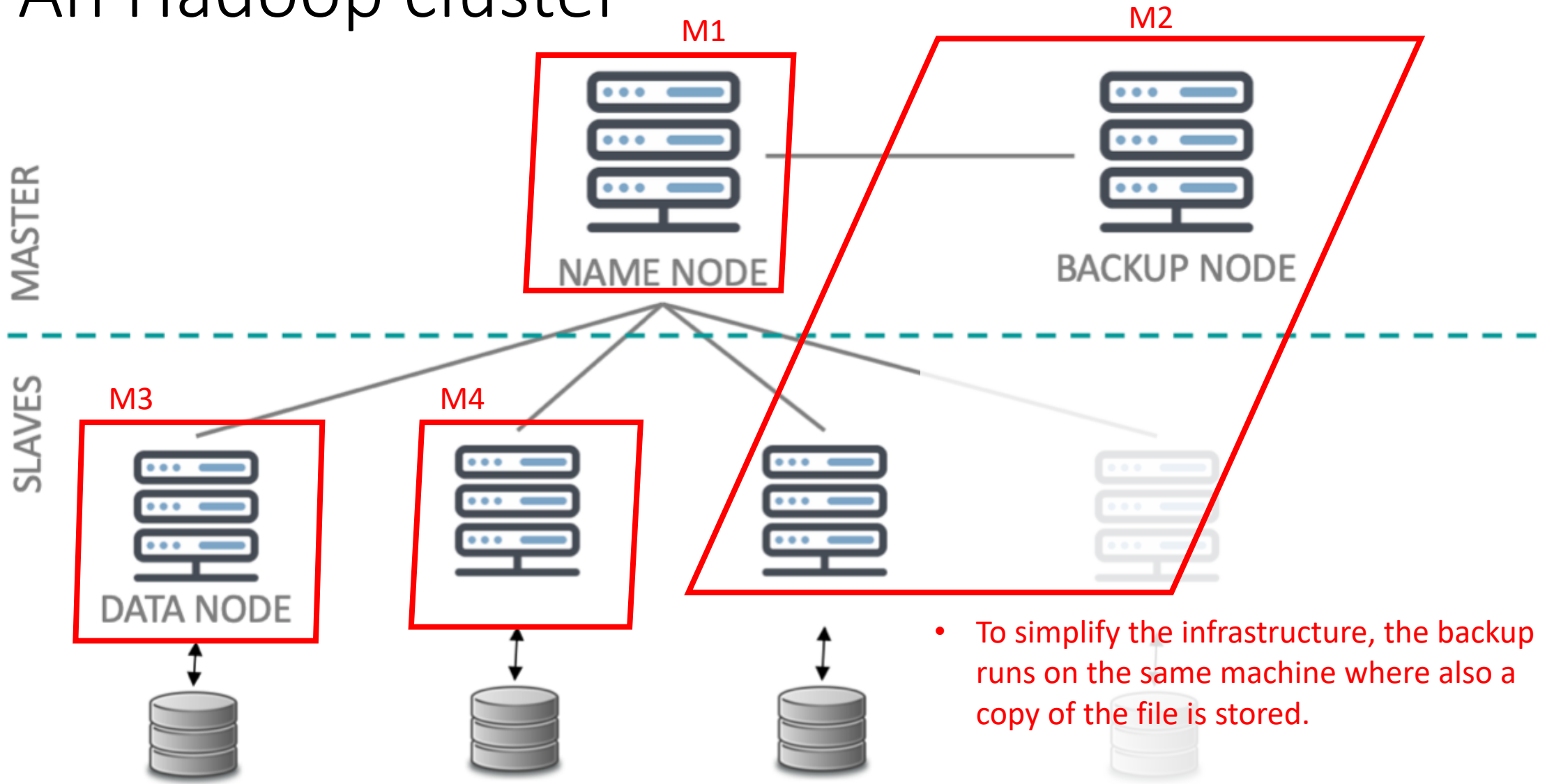
Assignment

(markov models)

An Hadoop cluster



An Hadoop cluster



- To simplify the infrastructure, the backup runs on the same machine where also a copy of the file is stored.

Pamrameters

- Each machine is characterized by different MTTF and MTTR.
- Failure and repair times can be considered exponentially distributed.

Group	M1-MTTF	M1-MTTR	M2-MTTF	M1-MTTR	M3-MTTF	M3-MTTR	M4-MTTF	M4-MTTR
Zibba	2 y	10 d	2.5 y	5 d	10 y	5d	1 y	10 d
The leading guy	4 y	5 d	1.5 y	5 d	15 y	15d	2 y	5 d
gaLoni	5 y	1 m	6 m	15 d	5 y	2d	6 m	5 d
Gnut	1 y	20 d	2 y	1 d	2 y	10d	1.5 y	10 d

Compute

- The time-dependent $A(t)$ and limit availability A_{oo}
- The distribution of the time to the first unavailability period $R(t)$, and the average time to the first unavailability period $MTTF$

(In both cases, consider the system starting with all components fully working)