

## Web service with reporting and maintenance

A web service has **periodic stop**: a short one, to transfer log files and perform reporting; a longer one for maintenance. In particular, maintenance is performed according to an  $Exp<0.001>$  distribution, and reporting according to an  $Exp<0.05>$  distribution. **Maintenance lasts according to an  $Exp<0.05>$  distribution**, while reporting takes an  $Exp<1>$  distributed time. **Maintenance can also occur during reporting**: in case reporting will be aborted, and the system will restart to its normal state.

- Draw a state machine based model of the system
- Implement it in a programming language of your choice
- Compute the probability of normal operation, reporting or maintenance.
- Determine the reporting frequency (how many report per hour are generated).