

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).