



Masterkurs Rechnernetze / Master Lecture on Computer Networks (IN2907) — Tutorial

Class Assignment No. 5, WS 2009/2010

Abgabedatum / To be handed in by: 2010-02-14, 24h

Possible tools to solve this assignment are octave <http://www.gnu.org/software/octave/> or GNU R <http://www.r-project.org/>, but you are free to choose any other program as well.

Exercise 15 — Analysis of webserver usage

Goal: statistics 1-0-1, interpretation of monitoring data

- a) Please download the logfile from the webpage (http://www.net.in.tum.de/fileadmin/TUM/teaching/masterkurs_rechnernetze/ws0910/unixtimes.log.gz). The file contains the request times to a webserver with a resolution of 1 second.
 - *Plot the data in 3 histograms with different aggregation on the timescale (e.g. seconds, minutes, hours).*
 - *Explain in your own words what can be seen in this histograms. How can the results be interpreted. What patterns do you see, and why? Are there anomalies in the traffic?*
 - *The timestamps are given in UTC. Is it possible to identify the original time zone of the server and if so, how?*
 - *Calculate the confidence intervals for the given trace. Don't forget the required checks in order to get meaningful results!*
- b) Calculate the inter-arrival times for requests.
 - *Plot the time series of one day, one hour within this day and one minute within this hour. Compare the plots, what type of distribution do you see? Is the traffic pattern random or self-similar?*
 - *Plot the mean arrival times with their mean deviation based on an aggregation per minute, hour and day. What new information do this plots provide?*

Please provide the code you used to produce the plots.