Technische Universität München
Lehrstuhl für Netzarchitekturen und Netzdienste
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Thesis (B.Sc./M.Sc.)

Evaluation of Different Caching Strategies for Multimedia Content

Motivation

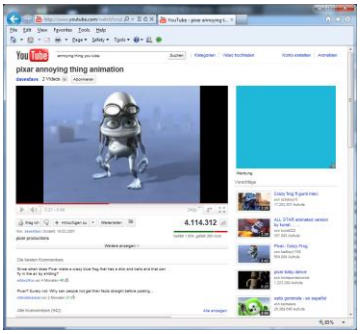
Network providers are interested in reducing inter-AS traffic and to increase the perceived network performance of their users. Therefore, they are interested in applying caching mechanisms within their own network. This reduces the latency and minimizes the inter-AS traffic. The caching can be done in different ways, e.g. by transparent proxy servers. The structure of the servers can be either split up in several smaller servers which are very close to the users or can be aggregated in a central server. The latter solution has the advantage of higher cache hit rates due to the positive impact of aggregation. Besides the cache size and the position of the cache servers, the applied replacement strategy has a large impact on the efficiency. The decision to remove/add certain content can be based on different criteria, e.g. size/type of the content, popularity, largest file first, first in first out, least frequently used. In this thesis you will implement a simulation in order to evaluate the performance of different caching structures and replacement strategies.

Your Task

Your task consists of the following steps.

1) Get familiar with the topic
2) Write the basic simulation components
3) Add functionality for correlated content requests
4) Implement different caching strategies
5) Evaluate the results from the simulation and compare them with the measurements

Depending on the project's scope, the tasks will be more (MA) or less in depth (BA)



Requirements

Previous knowledge of network communication issues and computer networks is useful but not required since you will be provided with the corresponding information.

Keywords

Cache, Simulation, Evaluation
Network, Measurement

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