A Value-Based Cache Replacement Approach for Information-Centric Networks

COE-587 –Performance Evaluation and Analysis Term Project

Student Names: Kh.Shahzada Shahid & Ali Raza
Student IDs: g201304230 & g201304250

Progress Report:

Tasks:

- Literature survey of Information Centric Networks[1][2] is done
- Different Cache Replacement methods[3][4][5] are studied
- Due to the current unavailability of the model for this project a survey of available ICN Models and Simulators is started as per discussion with Dr. Ashraf Al-Fagih.
- Due to inaccessibility of any standard simulator for ICN networks different related research projects are investigated and following models and simulator are found.
  - The *ICN Simulator*[6] was developed by the University of Essex for the PAL Project

    This is based on implementation of Blackadder information-centric networking environment [7] prototype
  - ICN related projects done in Queen's University Canada

    Caching in Dynamic ICNs

    Comparing Caching Methods in ICN

Next Steps:

- Study and evaluation of the above mentioned models
- Deciding the level of details appropriate for performance evaluation

Concerns:

- The model selected may include different set of assumptions than that of used by the author.

References:

[1] Ahlgren, B. ; Dannewitz, C. ; Imbrenda, C. ; Kutscher, D. ; Ohlman, B. "A survey of information-centric networking" Communications Magazine, IEEE vol:50, no: 7 2012, Page(s): 26 – 36

[2] Xylomenos, G. ; Ververidis, C. ; Siris, V. ; Fotiou, N. ; Tsilopoulos, C. ; Vasilakos, X. ; Katsaros, K.; Polyzos, G. "A Survey of Information-Centric Networking Research" Communications Surveys & Tutorials", IEEE vol: 50, no: 99, 2013 , Page(s): 1 – 26

[3] Ming, Z., Xu, M., & Wang, D. (2012, March). "Age-based cooperative caching in information-centric networks." In Computer Communications Workshops (INFOCOM WKSHPS), 2012 IEEE Conference on (pp. 268-273).

[4] Seong-Jin Kang ; Sung-Won Lee ; Young-Bae Ko "A recent popularity based dynamic cache management for Content Centric Networking" Fourth International Conference on Ubiquitous and Future Networks (ICUFN), 2012 , Page(s): 219 – 224

[5] S. Arianfar, P. Nikander & J˙org Ott "Packet-level Caching for Information-centric Networking" Finnish ICT-SHOK Future Internet Project, Technical Report, 2010

[6] Implementation of an Information-Centric Network simulator, following the architecture suggested by Blackadder. University of Essex PAL project
http://privatewww.essex.ac.uk/~nvasta/ICNSim.htm

[7] PURSUIT's new prototype implementation of an information-centric networking environment.
http://www.fp7-pursuit.eu/PursuitWeb/?page_id=338