UNIVERZITA KARLOVA
Matematicko-fyzikální fakulta

Katedra softwarového inženýrství — Akademický rok: 2017/2018

ZADÁNÍ BAKALÁŘSKÉ PRÁCE

Jméno a příjmení: **Michal Bali**

Studijní program: **Informatika**

Studijní obor: **Obecná informatika**

Děkan fakulty Vám podle zákona č. 111/1998 Sb. určuje tuto bakalářskou práci:

Téma práce v českém jazyce: **Plánovač síťového provozu pro diferencované služby**

Téma práce v anglickém jazyce: **Traffic scheduler for Differentiated Services**

Zásady pro vypracování:

The term Differentiated Services is used to denote different requirements of various network services for bandwidth, latency and reliability of packet transport on a shared medium. The thesis aims to design and measure a novel traffic scheduler for internet-related packet switching networks that would improve network behavior in presence of Differentiated Services.

The design builds on active queue management techniques similar to CoDel and SFQ, and improves the handling of Differentiated Services in two ways: First, the scheduler is basically knobless, handling any new kinds of services without modification or reconfiguration, and second, it is simple enough to be placed at the exact bottlenecks of packet-switching networks where it can precisely react to network deficiencies and prevent impact on the quality of delivered service. The new scheduler will be implemented, tested and evaluated in a simulated computer network.

Seznam odborné literatury:

White, Greg, and Joey Padden. Preliminary study of CoDel AQM in a DOCSIS network. Technical Report, CableLabs, 2012.

Al-Saadi, Rasool, and Grenville Armitage. "Dummynet AQM v0. 2–CoDel, FQ-CoDel, PIE and FQ-PIE for FreeBSD's ipfw/dummynet framework." Centre for Advanced Internet Architectures, Swinburne University of Technology, Melbourne, Australia, Tech. Rep. A 160418 (2016): 18.

Casoni, Maurizio, et al. "Towards emergency networks security with per-flow queue rate management." Pervasive Computing and Communication Workshops (PerCom Workshops), 2015 IEEE International Conference on. IEEE, 2015.

McKenney, Paul E. "Stochastic fairness queueing." INFOCOM'90, Ninth Annual Joint Conference of the IEEE Computer and Communication Societies. The Multiple Facets of Integration. Proceedings, IEEE. IEEE, 1990.

Shreedhar, Madhavapeddi, and George Varghese. "Efficient fair queuing using deficit round-robin." IEEE/ACM Transactions on networking 4.3 (1996): 375-385.

Nichols, Kathleen, and Van Jacobson. "Controlling queue delay." Communications of the ACM 55.7 (2012): 42-50.

Wang, Zheng. Internet QoS: architectures and mechanisms for quality of service. Morgan Kaufmann, 2001.

Vedoucí bakalářské práce: **Mgr. Kratochvíl Miroslav**

Navrhovaní oponenti:
Konzultanti:
Datum zadání bakalářské práce: 21.2.2018

Termín odevzdání bakalářské práce: dle harmonogramu příslušného akademického roku

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Vedoucí katedry

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Děkan

V Praze dne 26.2.2018

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