Active Queue Management

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I. Motivation

II. Congestion Control in Network Traffic

Recommendations on Queue Management and Congestion Avoidance in the Internet http://www.hjp.at/doc/rfc/rfc2309.html

Congestion Control in IP/TCP Internetworks http://www.hjp.at/doc/rfc/rfc896.html

Congestion control in computer networks: issues and trends http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.122.4570

Congestion control and traffic management in ATM networks: Recent advances and a survey http://www.sciencedirect.com/science/article/pii/0169755296000128

TCP behavior with many flows http://dl.acm.org/citation.cfm?id=852431&CFID=330551302&CFTOKEN=30669788

Design considerations for supporting TCP with per-flow queueing http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=659666&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D659666

TCP and explicit congestion notification http://dl.acm.org/citation.cfm?id=205512&CFID=330551302&CFTOKEN=30669788

III. Definition and usage of Active Queue Managment

Efficient Active Queue Management for Internet Routers http://www.researchgate.net/publication/2621818_Efficient_Active_Queue_Management_for_Internet_Routers

Router Mechanisms to Support End-to-End Congestion Control http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.39.7772

Sizing router buffers http://dl.acm.org/citation.cfm?id=1015499

Stochastic Modeling and the Theory of Queues http://www.gbv.de/dms/ilmenau/toc/018830102.PDF

Analysis and simulation of a fair queueing algorithm http://dl.acm.org/citation.cfm?id=75248

IV. Algorithms for Active Queue Management

A. Passive Techniques

1) CHOKe: CHOKe - a stateless active queue management scheme for approximating fair bandwidth allocation http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=832269&url=http%3A%2F%2Fieeexplore.ieee.or0%2Fxpls%2Fabs_all.jsp%3Farnumber%3D832269

2) ECN: ECN-Explicit Congestion Notification http://www.hjp.at/doc/rfc/rfc3168.html

B. Random Early Detection

RED Random early detection gateways for congestion avoidance http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=251892&navigation=1 RED + Vorschlge fr Architektur etc. A study of active queue management for congestion control http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=832541&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D832541

RED + Vorschlge fr Architektur etc. A study of active queue management for congestion control http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=832541&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D832541

C. Alternatives to RED

1) PI Controller: PI On designing improved controllers for AQM routers supporting TCP flows http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=916670&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D916670

Vergleich RED, ARED, PI The effects of active queue management on web performance http://dl.acm.org/citation.cfm?id=863986

2) Adaptive Virutal Queue: Adaptive virtual Queue + (Vergleich zu RED, REM, PI) Analysis and design of an adaptive virtual queue (AVQ) algorithm for active queue management http://dl.acm.org/citation.cfm?id=383069

3) BLUE: BLUE The BLUE active queue management algorithms http://dl.acm.org/citation.cfm?id=581869

V. Conclusion and Future Work