Computer Science > Networking and Internet Architecture

Criticisms of modelling packet traffic using long-range dependence (extended version)

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(Submitted on 27 Mar 2013)

This paper criticises the notion that long-range dependence is an important contributor to the queuing behaviour of real Internet traffic. The idea is questioned in two different ways. Firstly, a class of models used to simulate Internet traffic is shown to have important theoretical flaws. It is shown that this behaviour is inconsistent with the behaviour of real traffic traces. Secondly, the notion that long-range correlations significantly affects the queuing performance of traffic is investigated by destroying those correlations in real traffic traces (by reordering). It is shown that the longer ranges of correlations are not important except in one case with an extremely high load.

Comments:	This is an extended version of the conference paper this http URL
Subjects:	**Networking and Internet Architecture (cs.NI)**; Statistics Theory (math.ST)
Journal reference:	Journal of Computer and System Sciences, 77(5) pp 861--868 2010
DOI:	10.1016/j.jcss.2010.08.004
Cite as:	**arXiv:1303.6841 [cs.NI]**
	(or **arXiv:1303.6841v1 [cs.NI]** for this version)

Submission history

From: Richard Clegg [view email]
[v1] Wed, 27 Mar 2013 14:37:43 GMT (574kb)

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