Comcast Internet traffic controlling scheme is in place
January 6, 2009

Comcast, the second-largest US cable television and Internet communications service provider, has a new broadband traffic controlling scheme installed and operating in all of its markets. The ISP’s new regime for restricting its customers’ bandwidth utilization replaces its former practice of arbitrarily blocking subscribers’ peer-to-peer (P2P) upload traffic, which was criticized by the FCC last year after it was exposed by the Associated Press and others.

Comcast's filing with FCC (PDF) says it has put in new hardware and software technology at its Regional Network Routers locations to effect this cunning traffic management plan. Its network throttling implements a two-tier packet queuing system at the routers, driven by two trigger conditions. Comcast's first traffic throttling trigger is tripped by using more than 70 per cent of your maximum downstream or upstream bandwidth for more than 15 minutes. Its second traffic throttling trigger is tripped when the Cable Modem Termination System you're hooked-up to – along with up to 15,000 other Comcast subscribers – gets congested, and your traffic is somehow identified as being responsible. Tripping either of Comcast's high bandwidth usage rate triggers results in throttling for at least 15 minutes, or until your average bandwidth utilisation rate drops below 50 per cent for 15 minutes.

The Comcast two-tier traffic throttling system enforces different quality-of-service levels. Internet packets to and from a specific subscriber are assigned 'Priority Best Effort' (PBE) queuing by default, and the traffic rate is throttled by switching packets to lower priority 'Best Effort' (BE) queuing. Comcast uses a bus analogy to explain how its two-tier traffic throttling system works:

"If there is no congestion, packets from a user in a BE state should have little trouble getting on the bus when they arrive at the bus stop. If, on the other hand, there is congestion in a particular instance, the bus may become filled by packets in a PBE state before any BE packets can get on. In that situation, the BE packets would have to wait for the next bus that is not filled by PBE packets."

According to the company, upstream and downstream traffic is managed separately, and its router packet queuing increments - the waiting time between each 'bus' in its analogy - are two milliseconds, or 1/500th of a second. Comcast says that a throttled subscriber's connection that is forced into the lower BE quality of service queue "may or may not result in the user's traffic being delayed or, in extreme cases, dropped before PBE traffic is dropped."

Thus, Comcast's latest traffic throttling method can lead to transfers being blocked, too. But only in 'extreme cases' it says, so that's alright then. Comcast has also imposed a monthly 250GB bandwidth usage cap on all of its customers, and it will, after one warning, terminate service for one year to those who exceed that cap twice within a six-month period. So you punters who signed up with Comcast as your ISP can be assured that the company will deliver only about half of the maximum bandwidth it advertises, on a consistent basis.