

Placebo setting: QoS bandwidth reservation

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A placebo setting that has been getting a lot of play in recent years is that of QoS bandwidth reservation. The setting in question sets a maximum amount of bandwidth that can be reserved for QoS. I guess one thing people forgot to notice is the word “maximum”. It doesn’t set the amount of reserved bandwidth, just the maximum. Changing the value will in most cases have no effect on your download speed, since the limit kicks in only if you have an application that uses QoS in the first place. QoS, which stands for “quality of service”, is a priority scheme for network bandwidth. A program can request a certain amount of bandwidth, say for media streaming, and when the program accesses the network, up to that much bandwidth is guaranteed to be available to the program. The setting in question controls how much bandwidth can be claimed for high priority network access. If no program is using QoS, then all your bandwidth is available to non-QoS programs. What’s more, even if there is a QoS reservation active, if the program that reserved the bandwidth isn’t actually using it, then the bandwidth is available to non-QoS programs. Consider this analogy: A restaurant seats 100 people, and it has a policy of accepting reservations for at most twenty percent of those seats. This doesn’t mean that twenty seats are sitting empty all the time. If ten people have made reservations for dinner at 8pm, then ninety seats are available for drop-in customers at that time. The twenty percent policy just means that once twenty people have made reservations for dinner at 8pm, the restaurant won’t accept any more reservations. Here’s an example with made-up numbers: Suppose you are downloading a large file over your 720kbps connection. Since there is nothing else using the network, your download proceeds at 720kbps. Now suppose you fire up a program that uses QoS, say, for streaming media. (I don’t know whether Windows Media Player uses QoS.) You connect to a streaming media source, and the media player does some math and determines that in order to give you smooth playback, it needs a minimum of 100kbps. (If it gets more, then great, but it needs at least that much to avoid dropouts.) The program places a reservation of that amount through QoS. With a default maximum reservation of 20% = 144kbps, this reservation request is granted. Playback of the streaming media begins, and your bandwidth is now split, with 100kbps going to your media player and the remaining 620kbps going to your download. Now you hit pause on the media player to answer the phone. Even though the media player has a 100kbps reservation, it’s not using it, so all 720kbps of bandwidth is devoted to your download. You get off the phone and unpauses the media player. Bandwidth

is once again divided 100kbps for the media player and 620kbps for the download. Now, sure, you can set your QoS maximum reservation to zero. This means that when the media player asks for a guarantee of 100kbps, QoS will tell it, “Sorry, no can do.” The media player will still play the streaming media, but since it no longer has a guarantee of bandwidth, there may be stretches where the download consumes most of the network bandwidth and the streaming media gets only 50kbps. Result: dropped frames, stuttering, or pauses for buffering.

So tweak this value all you want, but understand what you’re tweaking.

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