

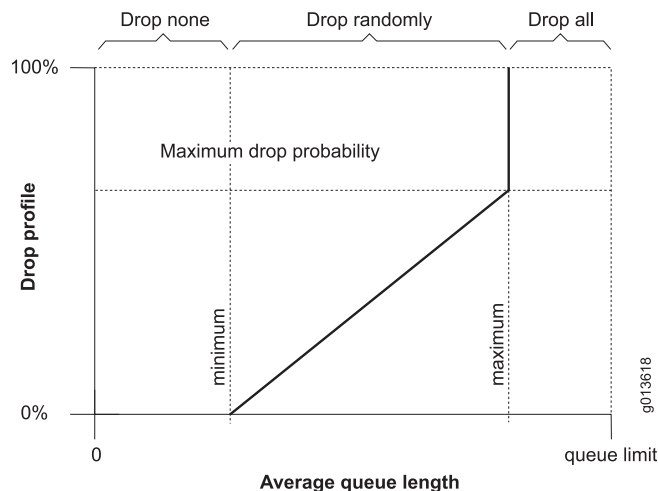
RED and WRED Overview

The scheduler maintains an average queue length for each queue configured for RED. When a packet is enqueued, the current queue length is weighted into the average queue length based on the average-length exponent in the drop profile.

- Small exponent values weight the current queue length heavily, so the average queue length is more responsive to transient bursts.
- Large exponent values weight the current queue length lightly, so the average queue length is less responsive to bursts.

When the average queue length exceeds the minimum threshold, RED begins randomly dropping packets. While the average queue length increases toward the maximum threshold, RED drops packets with increasing frequency, up to the maximum drop probability. When the average queue length exceeds the maximum drop threshold, all packets are dropped. Figure 1 shows this behavior.

Figure 1: Packets Dropped as Queue Length Increases



WRED is an extension of RED that allows you to assign different RED drop thresholds to each color of traffic. The router assigns a color to each packet. Committed means green, conformed means yellow, and exceeded means red. When the queue fills above the exceeded threshold, the router drops red packets, but still queues yellow and green packets. When the queue fills above the conformed drop threshold, the router queues only green packets.

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