Findings about the Queues for the network Switches

Queue Types for the network devices:

1. FIFO: First-In-First Out

In this, the first Packet which is IN is outputted first and the subsequent packets wait in buffer till the last packet has left the buffer. Once the buffer is full, all the new packets are dropped.

Two types of FIFO:

1. BFIFO: The physical buffer size in Kb's determine the size of the queue.
2. PFIFO: The physical number of packets determine the size of the queue.

2. RED: Random early detection

In this, the packets start to drop randomly before the queue gets fully occupied.

3. SFQ: Stochastic Fairness Queuing

In this, the traffic is divided into sub queues, but there is very limited control over the creation of sub queues. (Here the SFQ queue size is as small as 128 packets per queue)

All the queues work same until there is congestion.

Queue size:

If the queue size is small, then the packets are dropped at high rate but the latency is low.

But if the queue size is large then less packets are dropped, but the latency is high.

Queuing:

100% Shaping: We can specify the maximum limit, and all the new packets are dropped once this max-limit is reached. Queue size is zero, as it cannot hold any of the packets without dropping them. (latency is low)

100% Scheduling: Here the packets are queued once they reach the maximum limit. We can specify the queue size to hold the packets. Ideally the queue size is unlimited. Once the Queue gets full, the packets are dropped. (latency is high)