QoS Bandwidth Allocation

Problem 1 : Video Streaming & VoIP

Total available BW = 60 Mbps

Type	Priority	Minimum	Maximum
VoIP	0	10	20
Video Streaming	1	30	60

Data Rate after BW allocation for both = ?

Total minimum = 10 + 30 = 40 Mbps
Extra BW = Total available − Total minimum = 60 − 40 = 20 Mbps

B.W needed for VoIP = Max − Min = 20 − 10 = 10 Mbps

∴ VoIP takes 10 Mbps (allocated (1)) B.W as a higher priority.
Therefore, only 10 Mbps (2) is left for streaming.

Data Rate for VoIP = Min + allocated (1) = 10 + 10 = 20 Mbps
Data Rate for V.streaming = Min + allocated (2) = 30 + 10 = 40 Mbps

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Problem 2 : Web browsing and file transfers

Total available B.W = 67 Mbps

Type	Priority	Minimum	Maximum

Real-time Collaboration	1	15	40
Web browsing	2	20	50
File transfers	3	5	30

Data rate after BW allocation for all = ?

Total minimum = 15 + 20 + 5 = 40 Mbps
Extra BW = 67 - 40 = 27 Mbps

BW needed for R-t Collab = Max − Min = 40 - 15 = 25 Mbps

∴ R-t Collab takes 25 Mbps as the highest priority.
Therefore, only 2 Mbps could be allocated to web browsing.
No extra bandwidth could be given out to file transfers.

Data Rate for R-t. Collab = 15 + 25 = 40 Mbps
Data Rate for web-browsing = 20 + 2 = 22 Mbps
Data Rate for file transfers = 5 + 0 = 5 Mbps

Problem 3 : Gaming and Software Updates

Total BW = 20 Mbps

Type	Priority	Minimum	Maximum
Online Gaming	1	10	15
Software Updates	2	5	10
Social Media	3	2	5

Browsing

Data rate after BW allocation for all = ?

Total minimum = 10 + 5 + 2 = 17 Mbps
Extra BW = 20 - 17 = 3 Mbps

BW needed for online gaming = 15 - 10 = 5 Mbps

∴ Only 3 Mbps could be given out to online gaming.
No extra bandwidth is available for other lines.

Data Rate for online gaming = 10 + 3 = 13 Mbps
Data Rate for software updates = 5 + 0 = 5 Mbps
Data Rate for social media browsing = 2 + 0 = 2 Mbps
