

Phase 3: Three-Protocol Performance Summary (12 SAGIN Topologies)

Metric	Classic NTOR	PQ-NTOR	Hybrid NTOR
Avg CBT (ms)	19.73	19.61	20.13
Std Dev (ms)	1.84	1.84	1.86
Min (ms)	17.99	17.90	18.38
Max (ms)	23.83	23.71	24.22
Avg Overhead	1.000× (baseline)	0.994×	1.020×
Network Ratio (%)	83.1	83.6	81.5