

Metrics Measurement

No. of Nodes (n): the total number of nodes participated during the experiment observation interval.

Arrival rate (λ): mean arrival rate of requests from nodes (Reduced-function devices [RFD])

Service rate (μ): mean service rate for requests from nodes (Full-function devices [FFD])

Utilization ($P=\lambda/\mu$): the average utilization of the system.

Probability ($P_n=(1-P)P^n$): the probability of packet loss for n nodes in the service system.

Process Time (μ s): CC2650 performs an instruction by 0.02 microsecond. So the process time for single instruction is 2×10^{-5} μ s.

Clock cycle needed to perform a service (CPI): Clock cycle of CC2650 is 48 MHz.

Instruction executed per second: For CC2650 the clock cycle is 48 MHz. So around 48,000 instructions can be performed per second.

Message Size: Depending on the hardware equipment the message size is described. Sometimes it varies according to the hardware properties and also depends on the service and request rate.

No. of Full-function device (FFD): Initially only one FFD is present for the network

No. of updated Full-function device (FFD): After some particular amount of time the probability of packet drop is calculated and if it is under the threshold value then the number of FFD remains same and if it is above the threshold value then the number of FFD is increased for better performance of the network.

No. of Nodes n	Frequency (f) (Mhz) Arrival rate (λ)	Frequency (f) (Mhz) Service rate (μ)	Utilization $P = (\lambda/\mu)$	Probability ($1 - P$) P^n	Period (T) (milisecs)	Period (T) / Process Time (microsecs)	Clock Cycle Needed to Perform a Service	Instruction Executed Per sec	Message Size	Packet drop Rate (%)	No. of Server (FFD) Initially	No. of Server (FFD) Updated
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