NETWORK PERFORMANCE TESTS: Packet loss rates with eight nodes sending one packet every minute

Started: Dec 5 approx 11AM
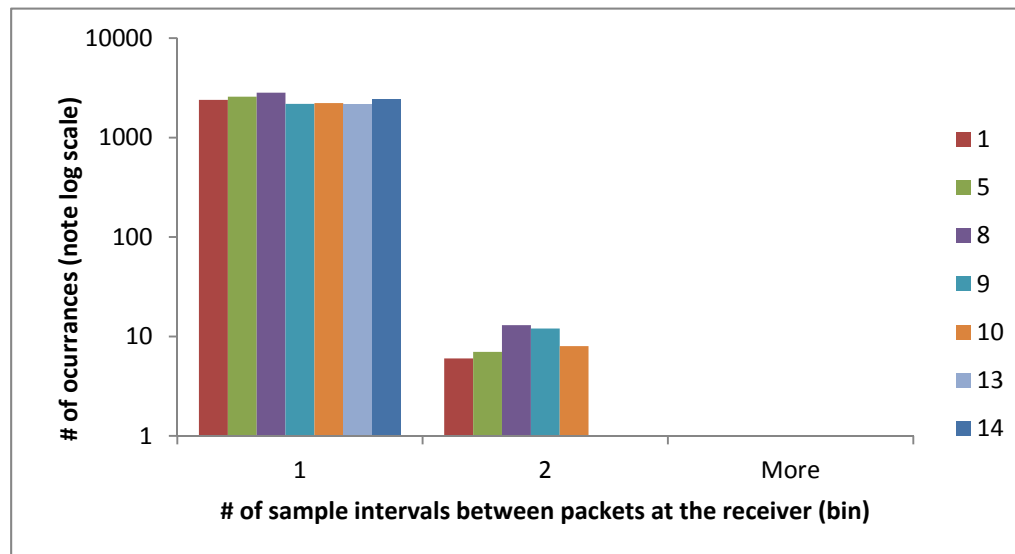
Duration: 186400   **seconds or**   3106.67   **minutes or**   51.78   **hours or**   2.157   **days**

Tx rate: 1 packet transmitted per node per second

Packet success rates: node ID

1	2	5	8	9	10	13	14
99%	94%	98%	99%	99%	99%	100%	100%

Generally packet success rates are close to 100%. One node (2) exhibited decreased performance at several periods, dropping out for nine intervals at one point. For the other nodes losses were fairly evenly distributed in time. The nodes were arranged in various places in an office roughly 12x12 feet. During most of the measurement period nothing was moving in the space (see accompanying diagram).
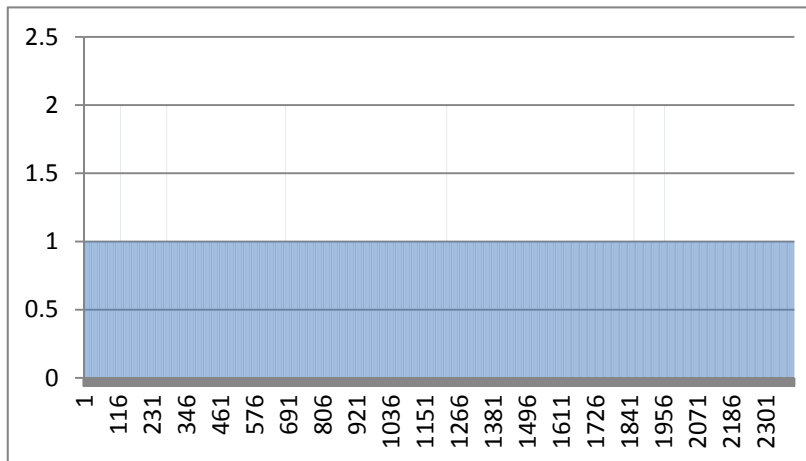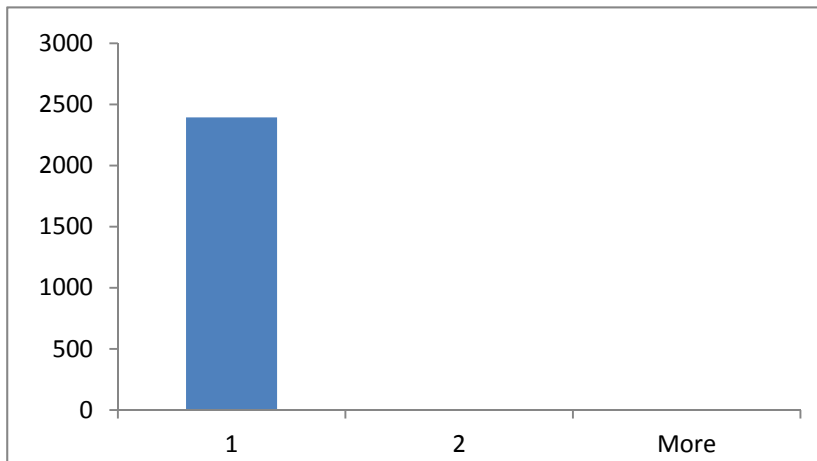

Missed packet histogram

Bin 1 represents the number of times a packet arrived when it should have.

Bin 2 represents the number of times a packet was missed (2 sample intervals between packets). And so on…

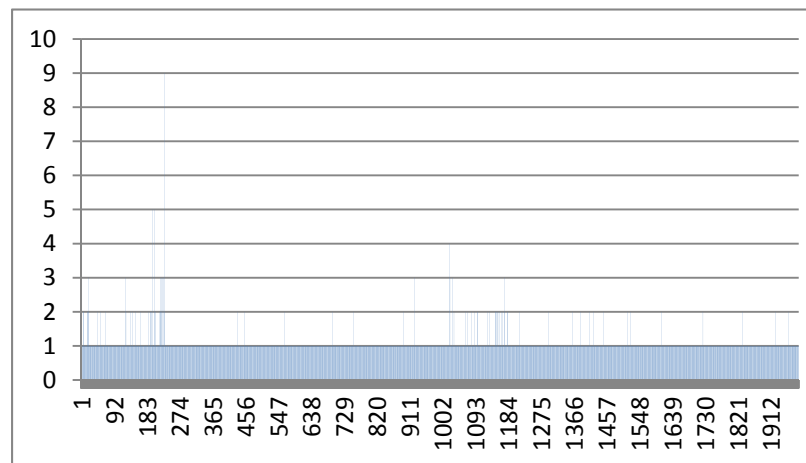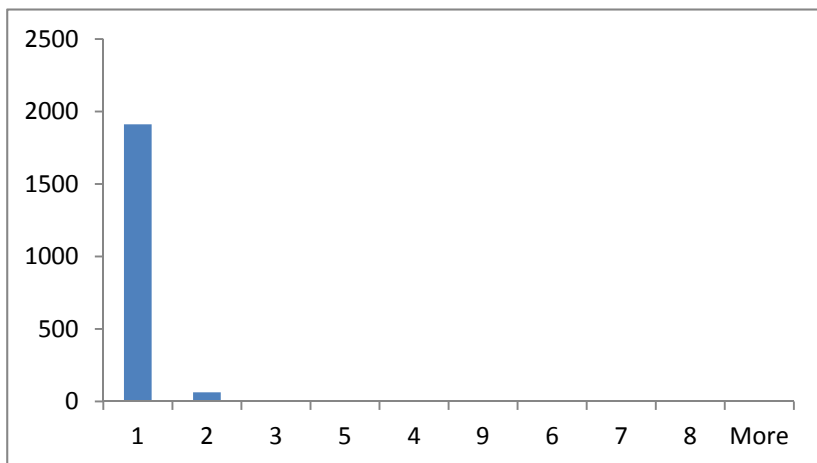Ideally there will be no bars in bins > 1

Node 5 was not included because of poor performance during a short time period.

The following pages contain additional statistics for each device and a second graph that shows packet losses over time. Note that packet losses are fairly uniform except for node 2, which had a several periods where it went off-line for a number of minutes. The X axis is seconds and the Y axis is number of packets between Rx at the access point. As can be seen from the histogram for each node very few packets are missed.
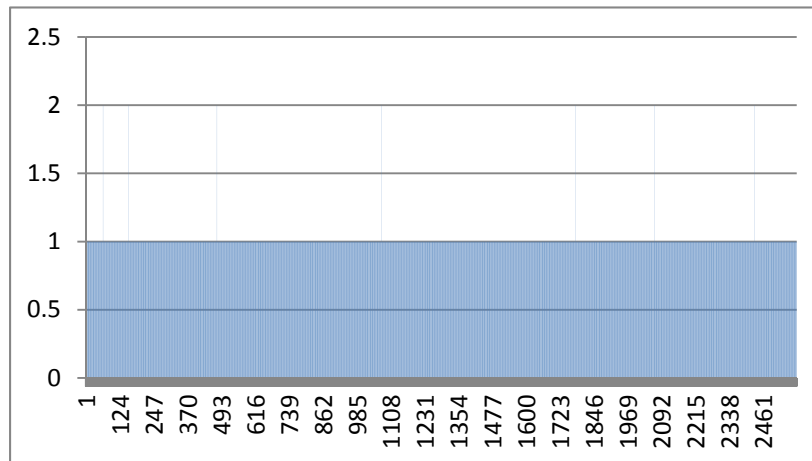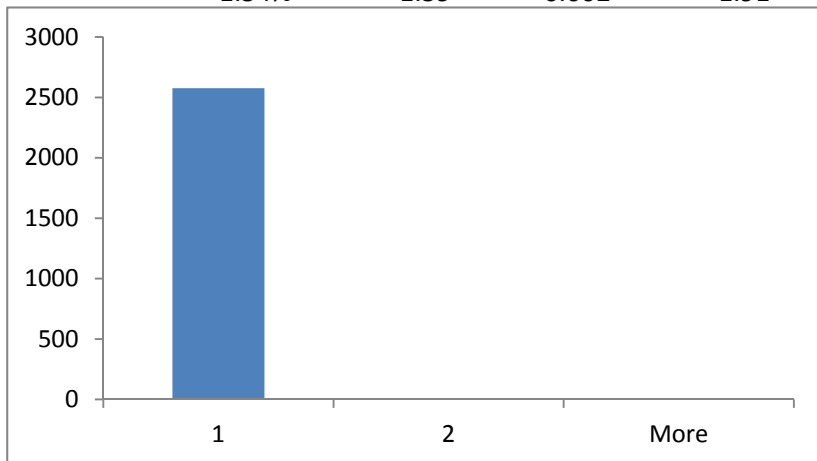
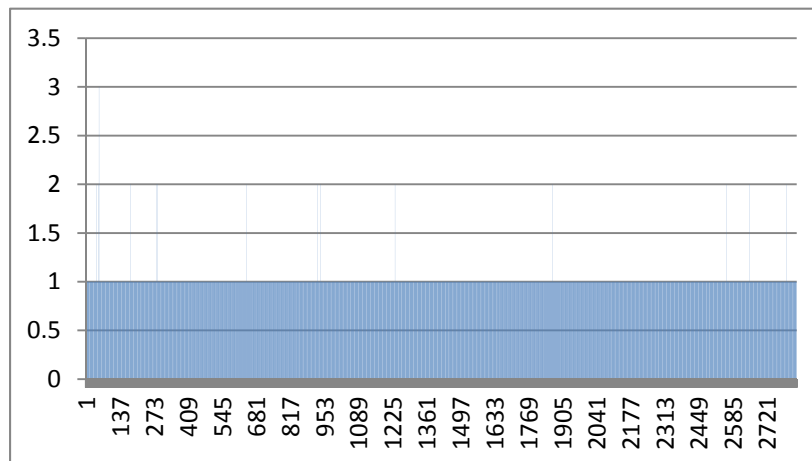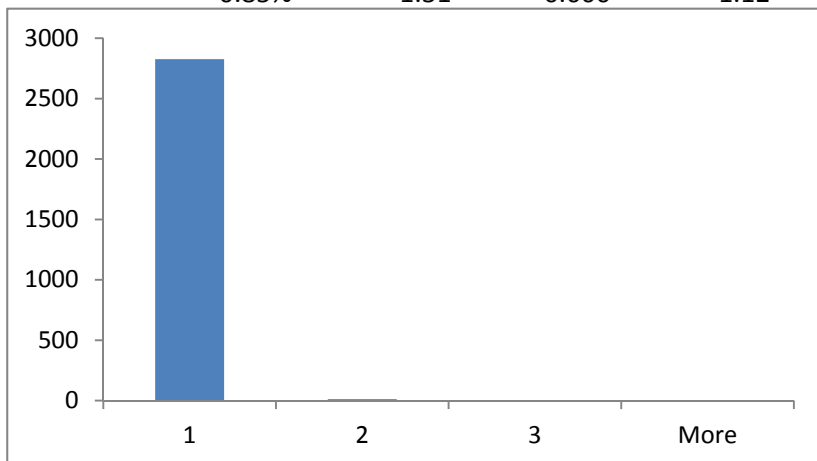| node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
1	99%	73.01	2.722	21.10
	1%	1.16	0.003	0.32

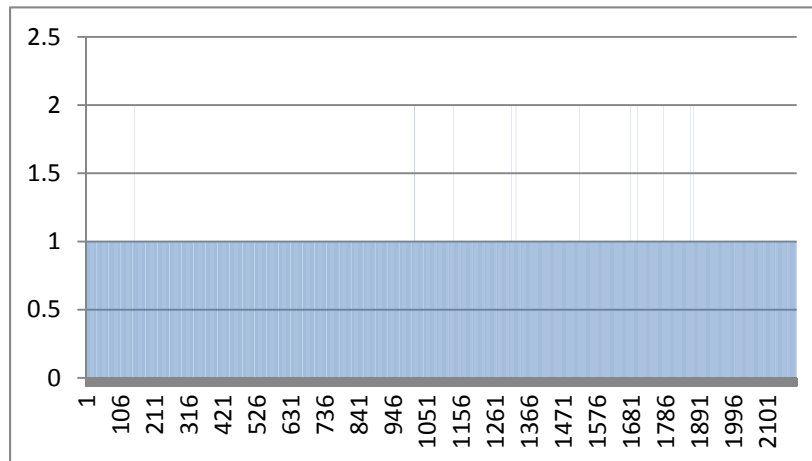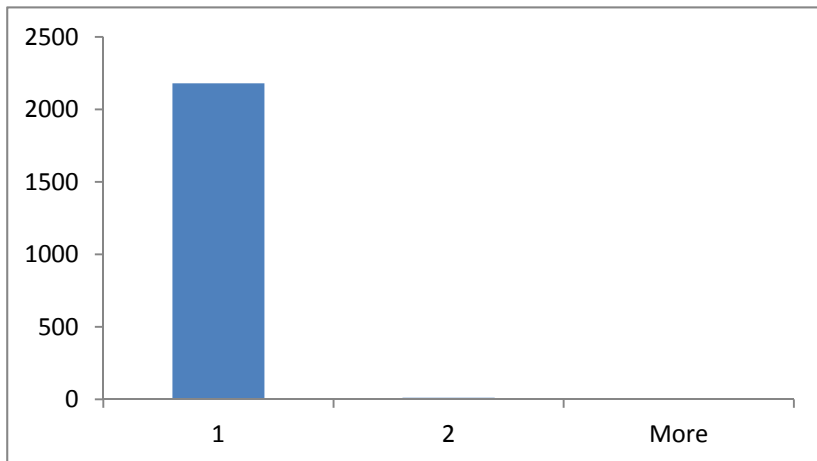| node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
2	93.99%	76.65	2.650	15.56
	6.01%	1.47	0.002	0.70

node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
5	98.46%	73.59	2.733	18.52
	1.54%	1.59	0.002	1.91

node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
8	99.15%	73.91	2.910	20.40
	0.85%	1.31	0.000	1.12

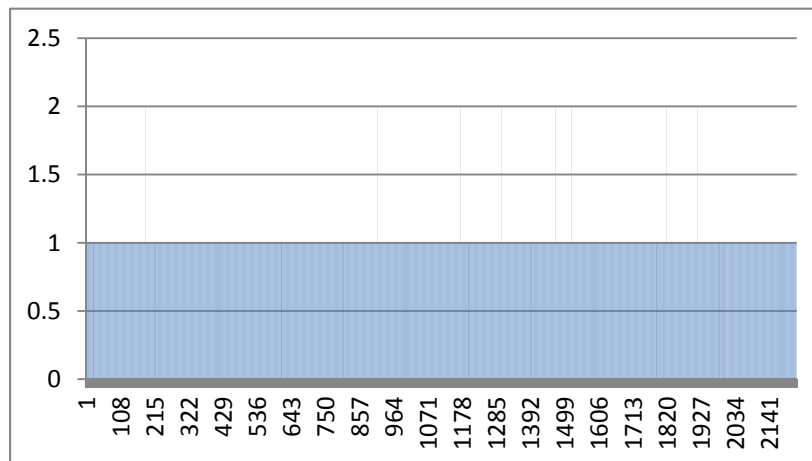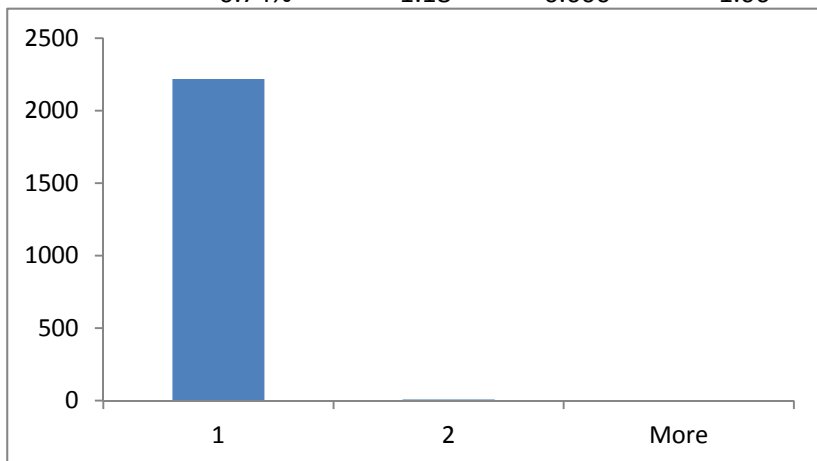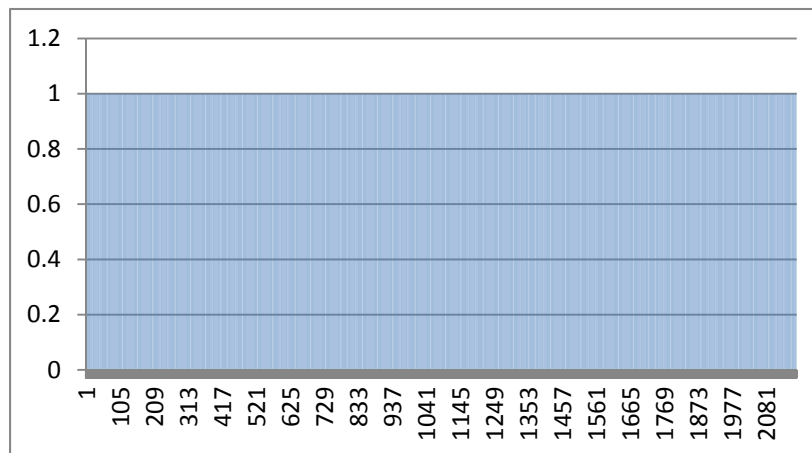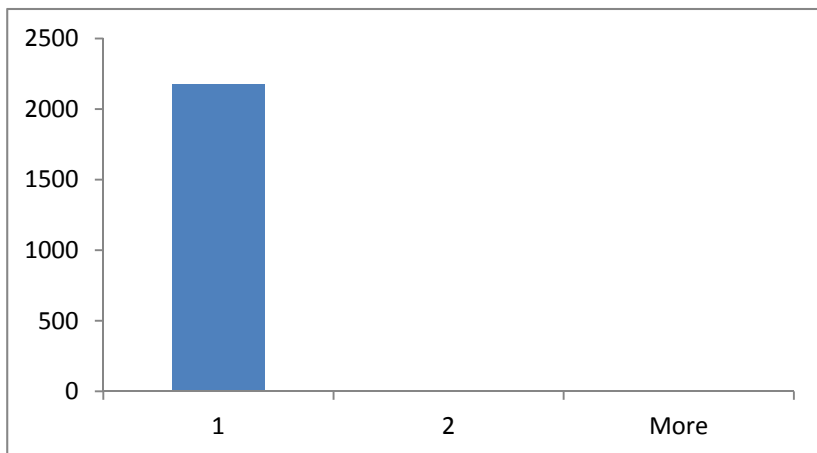| node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
9	98.87%	74.04	3.149	18.56
	1.13%	0.94	0.001	1.05

node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
10	99.26%	73.47	2.681	22.14
	0.74%	1.18	0.000	1.06

node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
13	100.00%	73.49	2.704	26.12
	0.00%	1.32	0.002	0.47

node ID	rcvd/lost	temp/stdv	volt/stdv	rssi/stdv
14	100.00%	74.92	2.908	27.94
	0.00%	7.13	0.002	0.26