PT Histograms by EMPv4

Young-Kyoon Suh
yksuh@cs.arizona.edu

December 14, 2015

1 Experiment Notes

Task Length	Description
PUT1∼PUT4096	Regular PUT experiment with runs of 300 samples (on sodb12). Used for the histograms.
PUT8192	Regular PUT experiment with separate runs (*i.* Apr and *ii.* Nov/Dec) of 40 and 260 samples (on sodb12). Used for the histograms.
PUT16384	Regular PUT experiment with a run of 40 samples (on sodb12). Used for the histograms.

Table 1: Notes on the PUT data used for the histograms

Task Length	Description
PUT4096	Dual PUT experiment wth 1000 samples on sodb8. Now at #743. Estimated time: 4,096 (secs) * 257 (samples) = about 12 days
PUT16384	Regular PUT experiment wth additional 260 samples. Now at #97. Estimated time: 16,384 (secs) * 164 (samples) = about 31 days

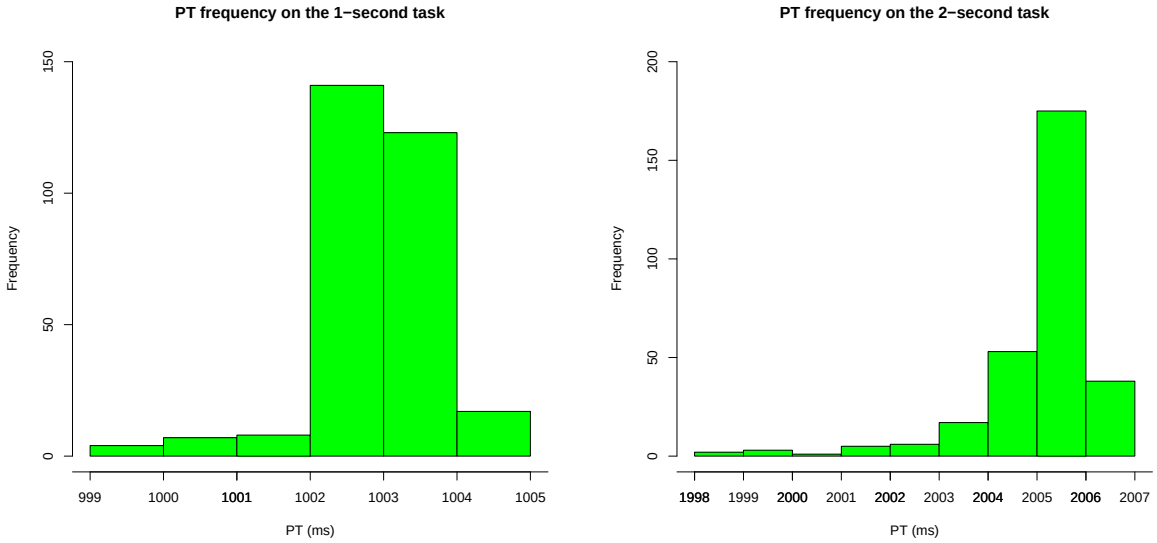
Table 2: Notes on the ongoing PUT experiments

2 Summary of the EMPv4 data

	Num. of Samples	Minimum (msec)	Maximum (msec)	Average (msec)	Std. Dev. (msec)
PUT1	1,000	999.0	1,005.0	1,002.4	0.73
PUT1	300	999.0	1,002.0	1,005.1	0.85
PUT2	1,000	1,996.0	2,007.0	2,004.5	1.38
PUT2	300	1,998.0	2,007.0	2,005.2	1.27
PUT4	1,000	4,004.0	4,012.0	4,008.6	1.64
PUT4	300	4,006.0	4,012.0	4,009.1	1.52
PUT8	1,000	8,014.0	8,023.0	8,018.1	1.72
PUT8	300	8,014.0	8,023.0	8,018.3	1.81
PUT16	1,000	16,029.0	16,041.0	16,034.3	1.86
PUT16	300	16,029.0	16,041.0	16,034.1	1.86
PUT32	1,000	32,064.0	32,084.0	32,068.2	2.05
PUT32	300	32,065.0	32,084.0	32,068.4	1.93
PUT64	1,000	64,129.0	64,145.0	64,135.0	2.27
PUT64	300	64,129.0	64,145.0	64,135.2	2.25
PUT128	300	128,244.0	128,260.0	128,251.2	2.32
PUT256	300	256,494.0	256,523.0	256,502.3	3.29
PUT512	300	512,995.0	513,152.0	513,005.1	9.41
PUT1024	300	1,025,997.0	1,026,141.0	1,026,012.4	11.43
PUT2048	300	2,051,981.0	2,052,156.0	2,052,012.0	11.19
PUT4096	300	4,105,451.0	4,105,629.0	4,105,526.0	25.98
PUT8192	40 (last Apr)	8,207,870.0	8,207,967.0	8,207,918.0	21.03
PUT8192	260 (Nov)	8,210,940.0	8,211,196.0	8,211,049.0	36.60
PUT16384	40	16,415,757.0	16,415,964.0	16,415,810.3	40.43

Table 3: PT statistics by EMPv4 (extension of Table VI in the EMP paper)

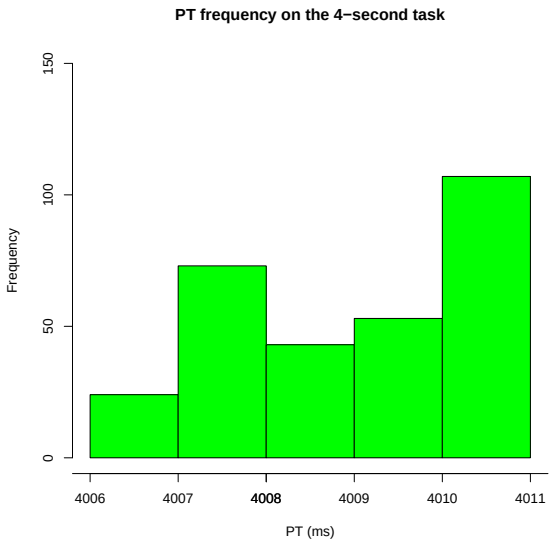
3 Histograms on the EMPv4 Data



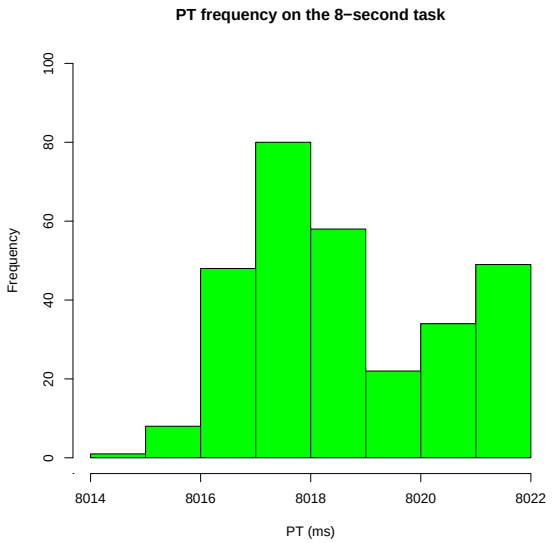
(a) PT frequency on PUT1

(b) PT frequency on PUT2

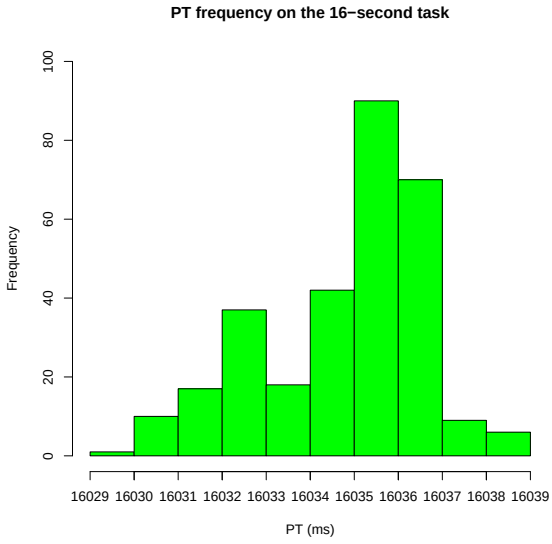
Figure 1: PT Histograms of PUT1 and PUT2



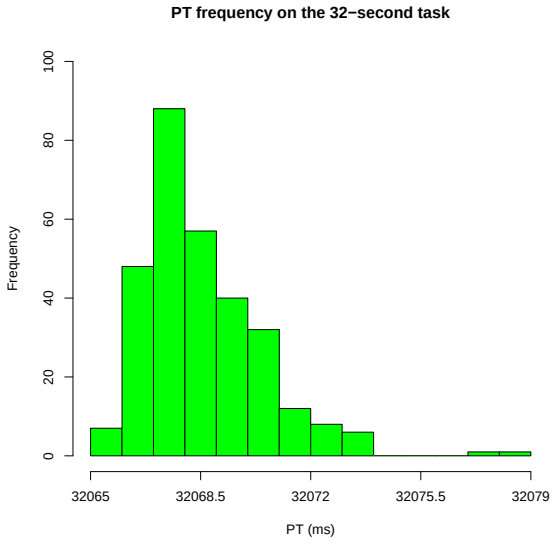
(a) PT frequency on PUT4



(b) PT frequency on PUT8

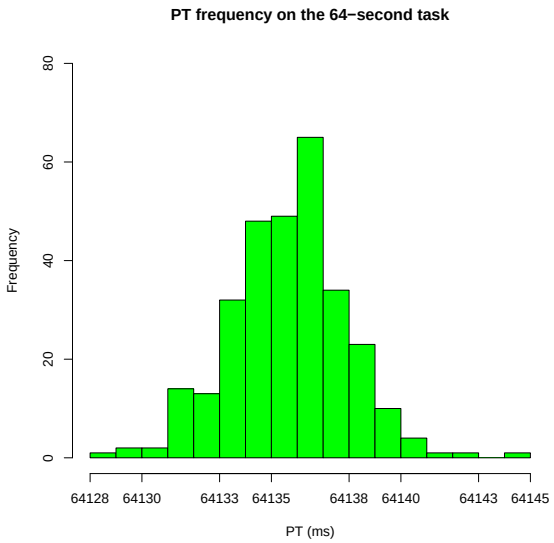


(c) PT frequency on PUT16

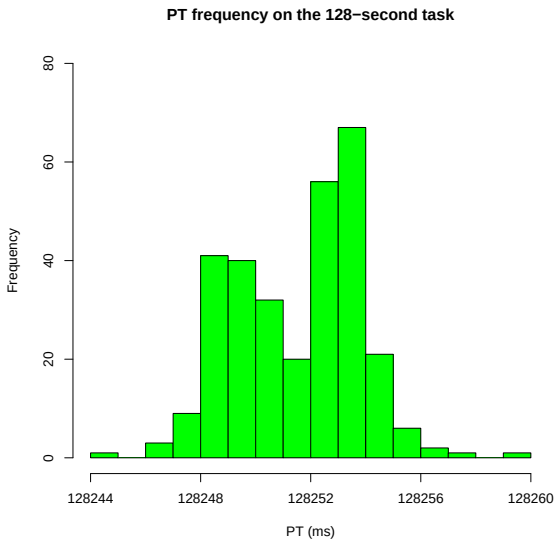


(d) PT frequency on PUT32

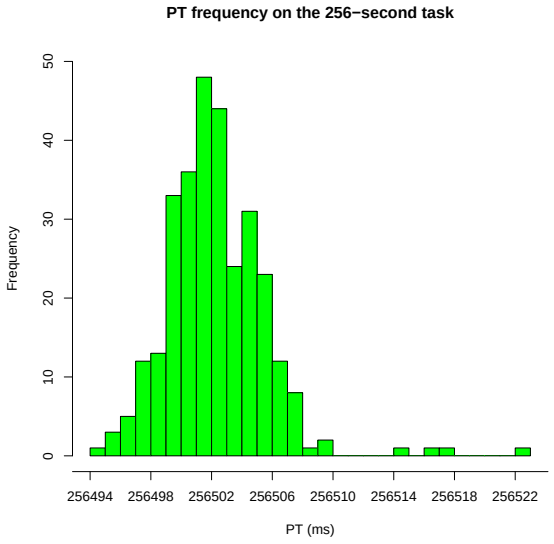
Figure 2: PT Histograms of PUT4 ... PUT32



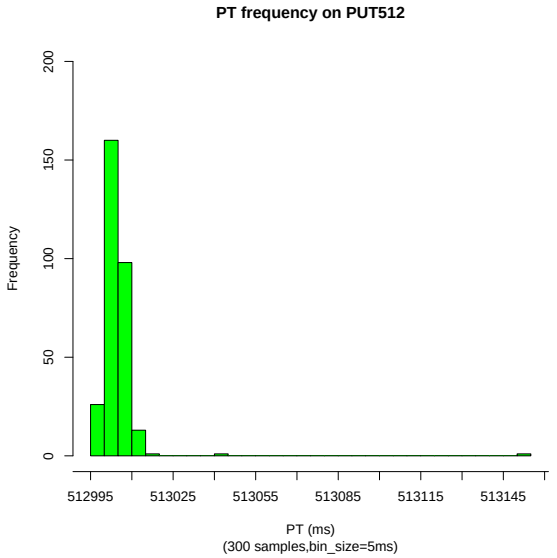
(a) PT frequency on PUT64



(b) PT frequency on PUT128

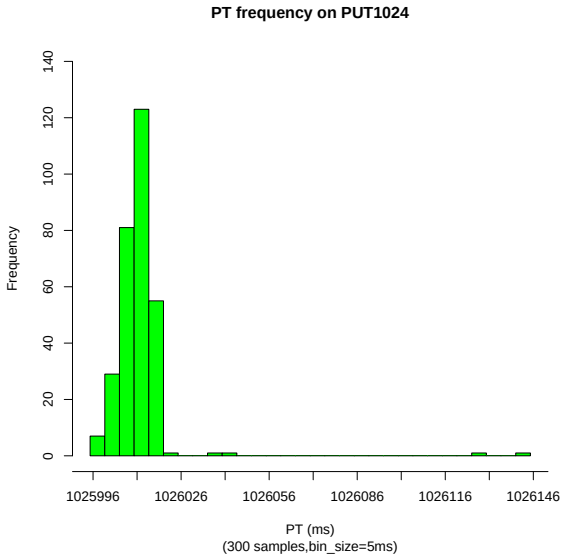


(c) PT frequency on PUT256

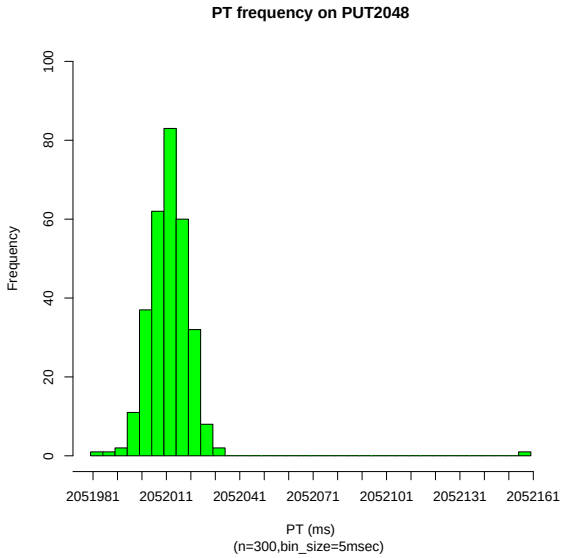


(d) PT frequency on PUT512

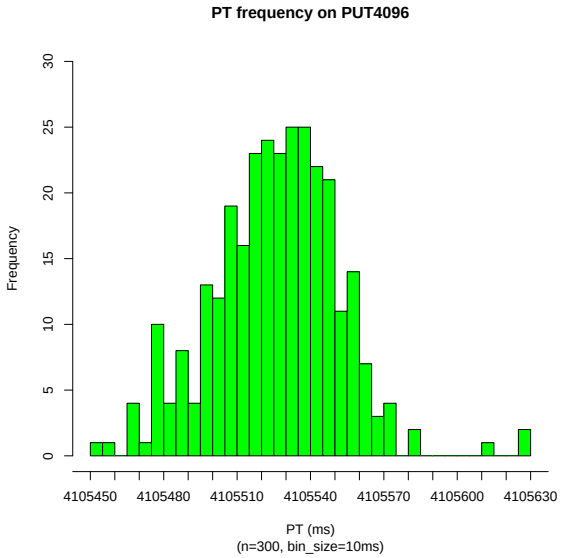
Figure 3: PT Histograms of PUT64 ... PUT512



(a) PT frequency on PUT1024

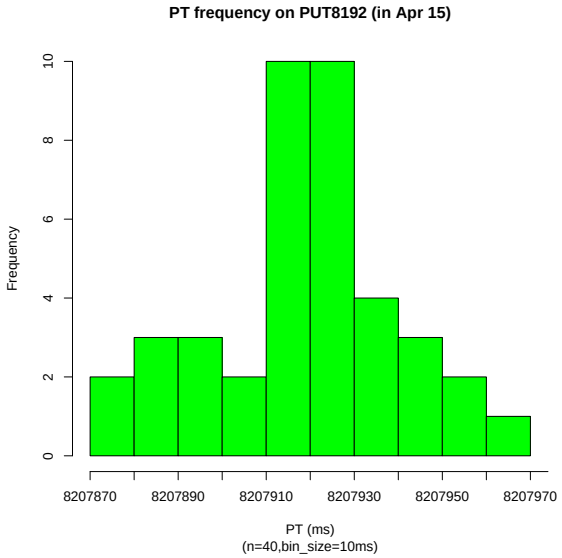


(b) PT frequency on PUT2048

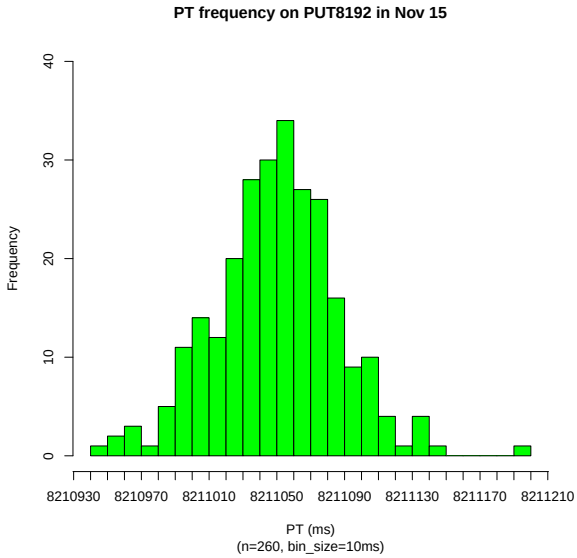


(c) PT frequency on PUT4096

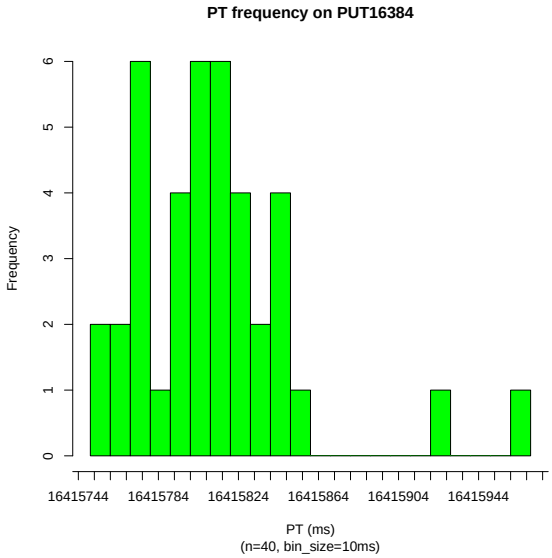
Figure 4: PT Histograms of PUT1024 ... PUT4096



(a) PT frequency on PUT8192 with 40 samples



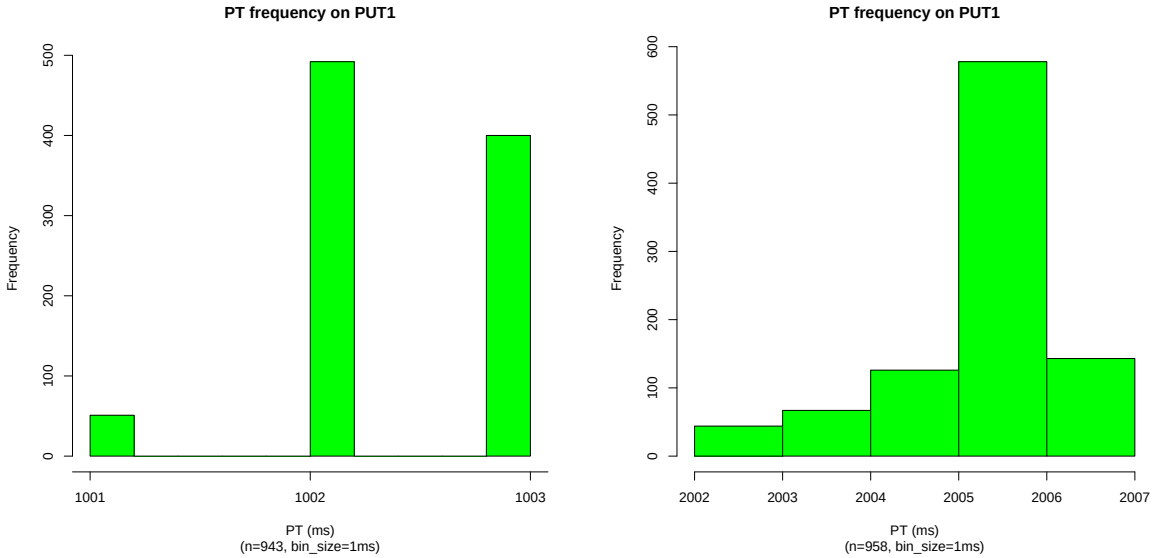
(b) PT frequency on PUT8192 with 260 samples



(c) PT frequency on PUT16384 with 40 samples

Figure 5: PT Histograms of PUT8192 and PUT16384

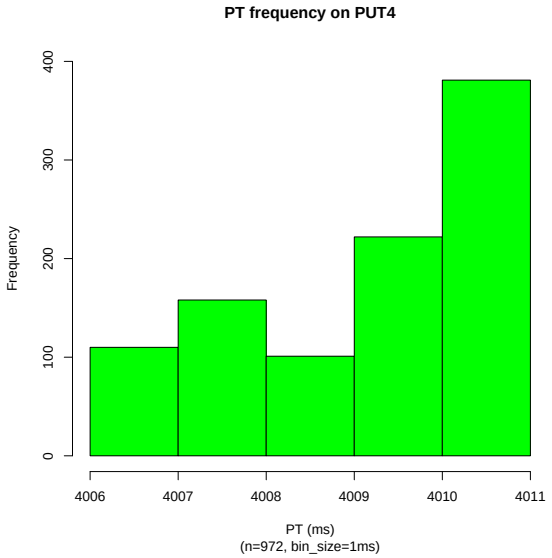
4 Histograms on the EMPv4 Data without Outliers



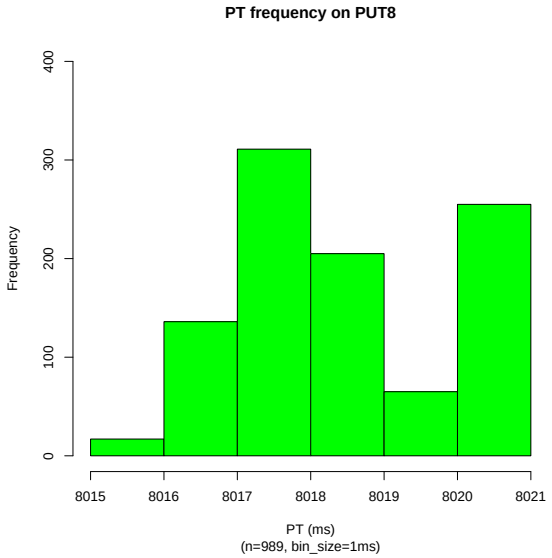
(a) PT frequency on PUT1

(b) PT frequency on PUT2

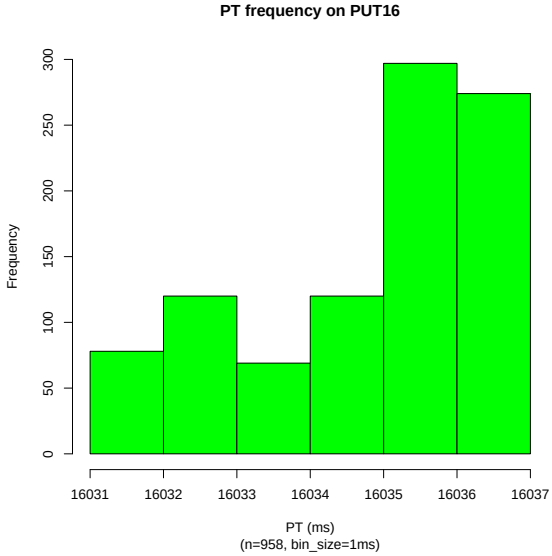
Figure 6: PT Histograms of PUT1 and PUT2



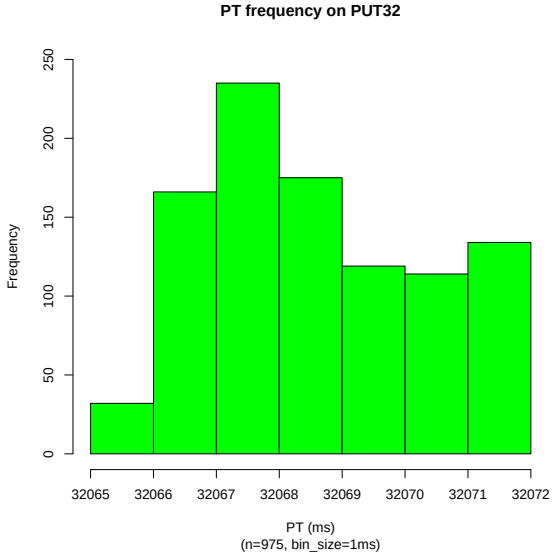
(a) PT frequency on PUT4



(b) PT frequency on PUT8

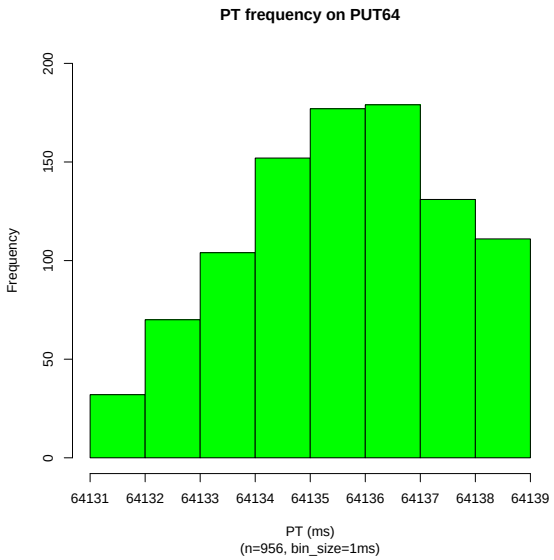


(c) PT frequency on PUT16

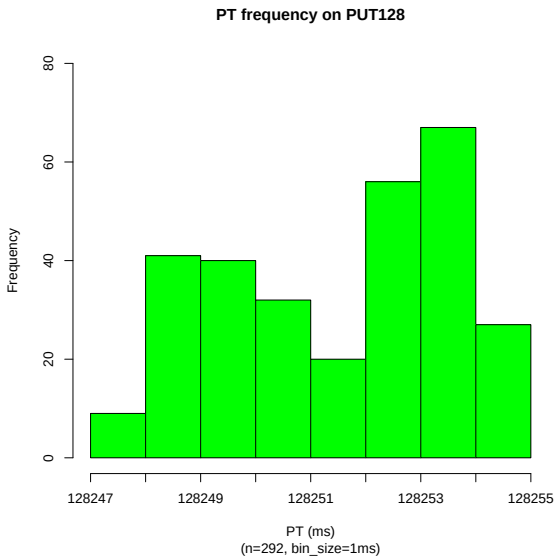


(d) PT frequency on PUT32

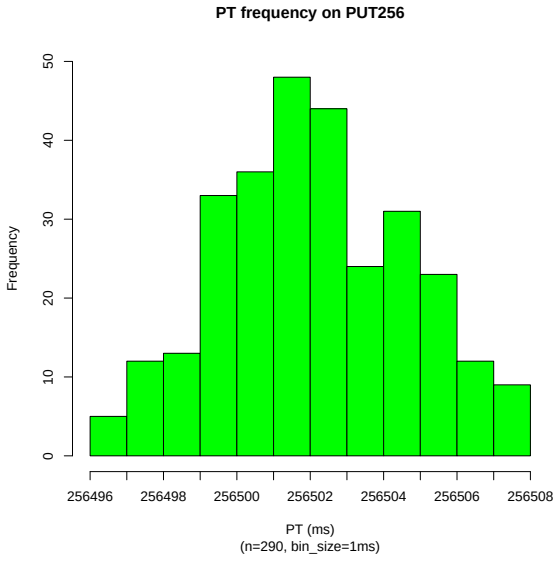
Figure 7: PT Histograms of PUT4 ... PUT32



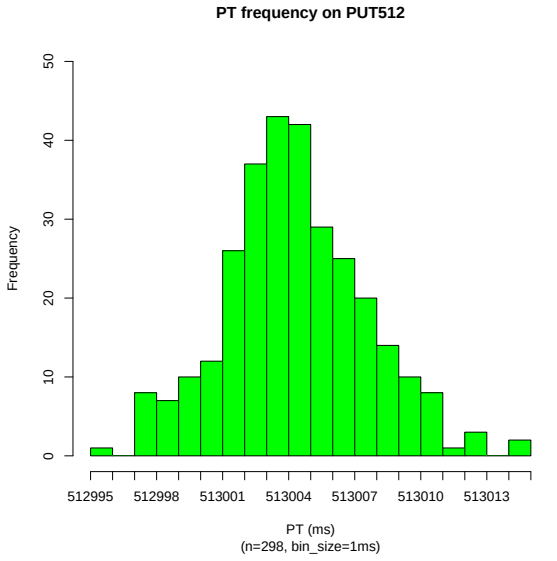
(a) PT frequency on PUT64



(b) PT frequency on PUT128

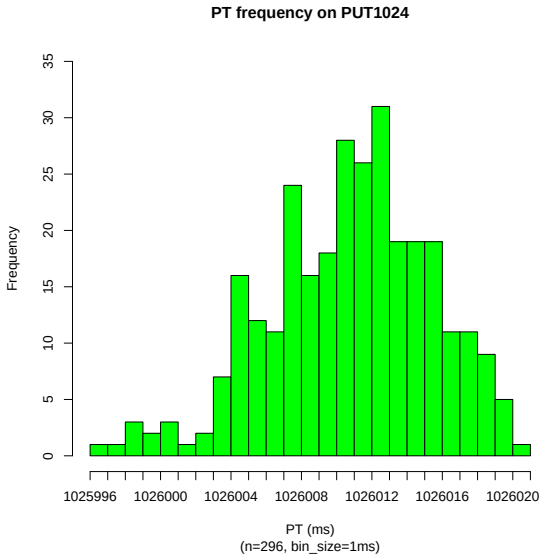


(c) PT frequency on PUT256

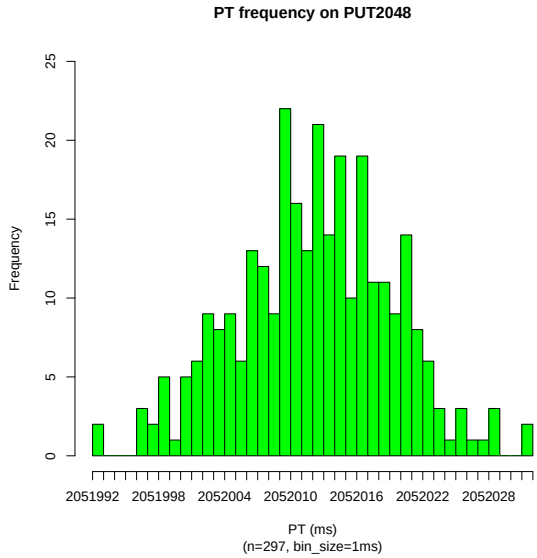


(d) PT frequency on PUT512

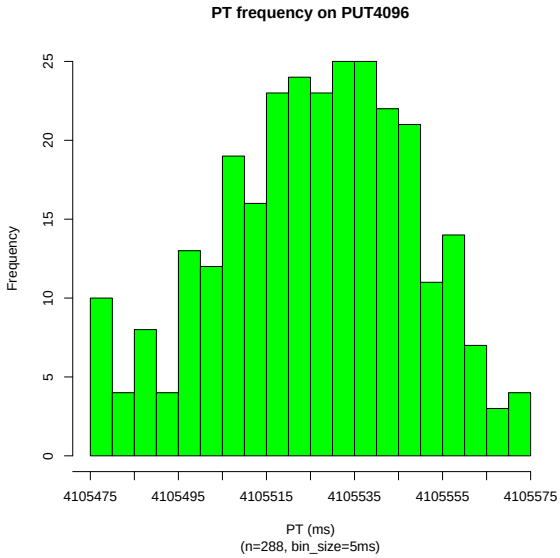
Figure 8: PT Histograms of PUT64 ... PUT512



(a) PT frequency on PUT1024

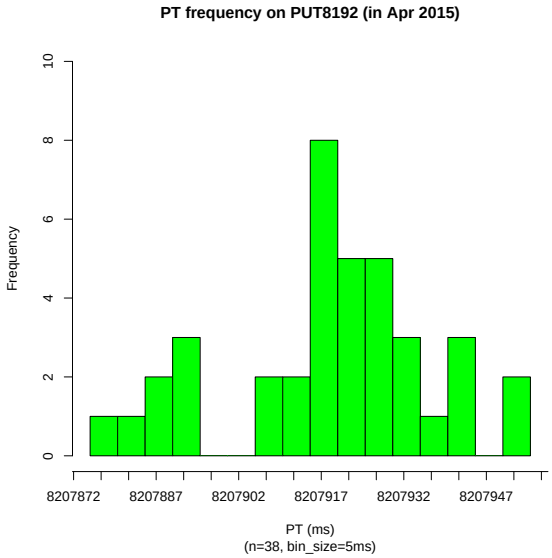


(b) PT frequency on PUT2048

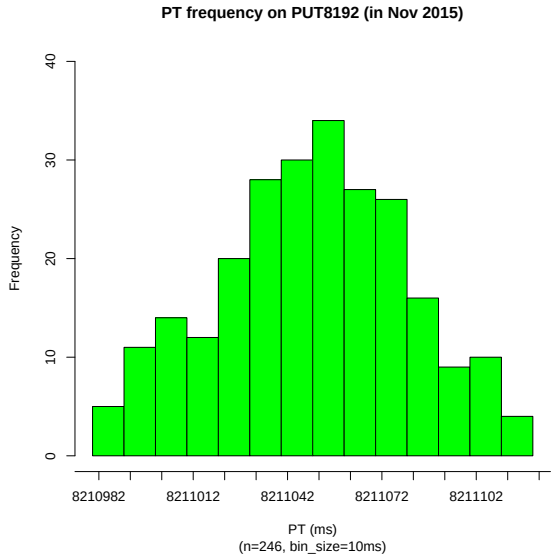


(c) PT frequency on PUT4096

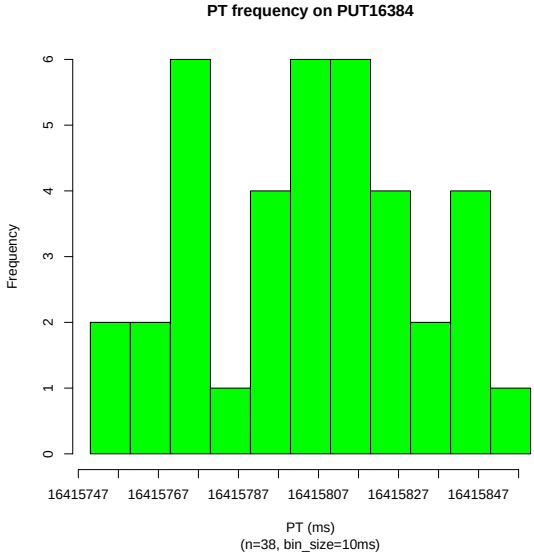
Figure 9: PT Histograms of PUT1024 ... PUT4096



(a) PT frequency on PUT8192 with 40 samples



(b) PT frequency on PUT8192 with 260 samples



(c) PT frequency on PUT16384 with 40 samples

Figure 10: PT Histograms of PUT8192 and PUT16384