A Study of Experiment Repeatability

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1 Description

This document presents histograms rendered based on empirical data of a program under test, called *INC*. Our experiment increases a task length of *INC* from one second to 4096 seconds by a factor of two. We already ran this experiment last month (February 2017), but we reran the experiment this month (March 2017) to check if experiment repeatability holds true.

2 Experiment Notes

Table 1 provides a short description of our experimental runs, on which the following histograms are based.

Machine	Task Length (sec)	Description	Experiment Period
`sodb9`	INC1~INC512	Each run with 1000 samples	2017-03-02 ~ 2017-03-07

Table 1: Notes on experiment runs used for histograms

Now we show histograms of elapsed time (ET) and process time (PT) of INC.

3 Histograms

This section exhibits histograms on the EMPv5 data obtained when the task length of INC increases from 1 second to 2048 seconds. The detailed description of the base data is from Table 1.

3.1 ET

(a) ET frequency on INC1

(b) ET frequency on INC2
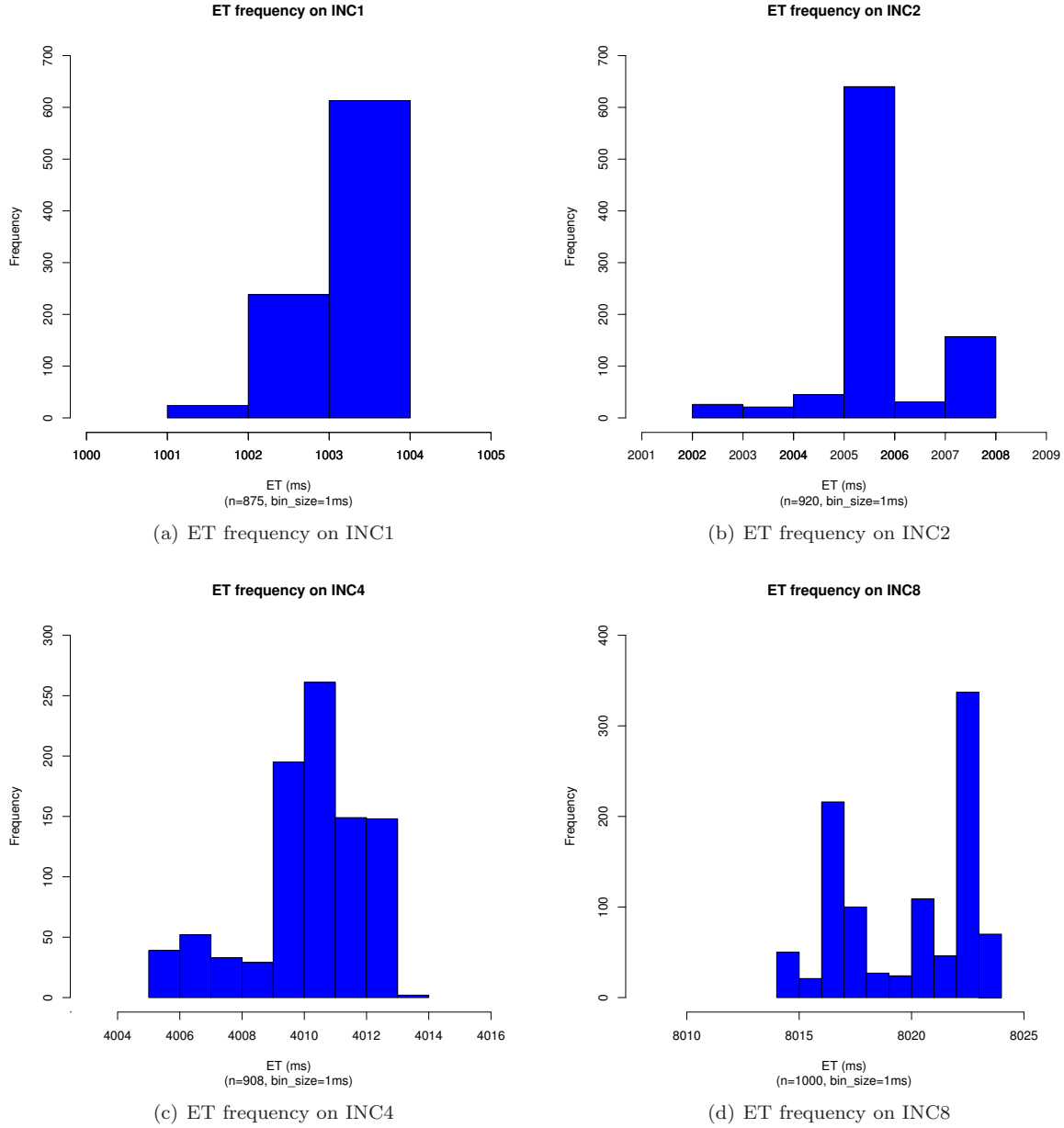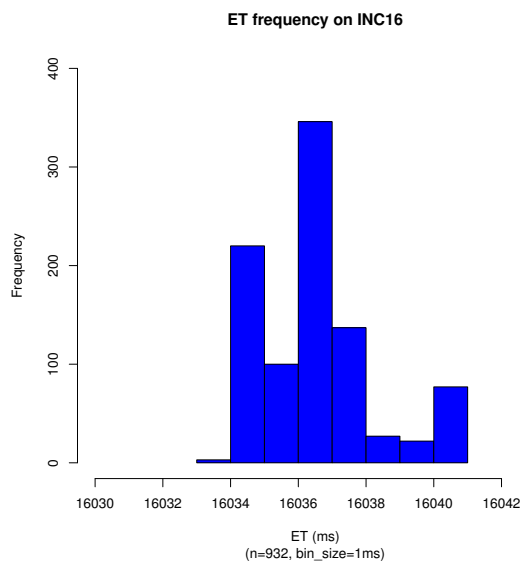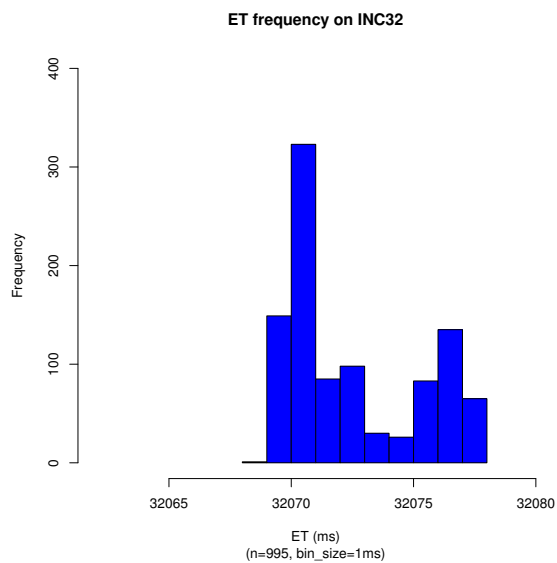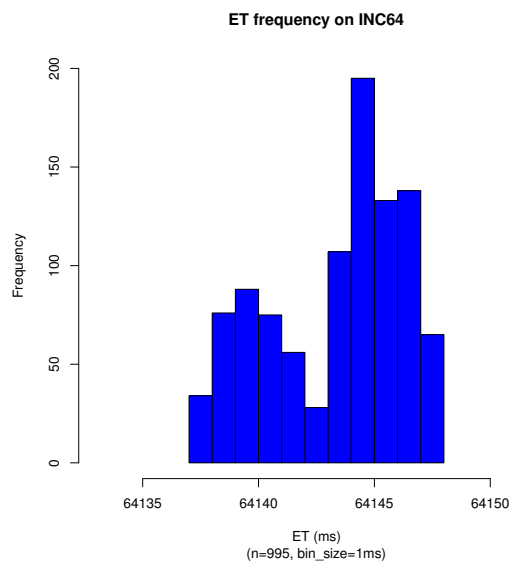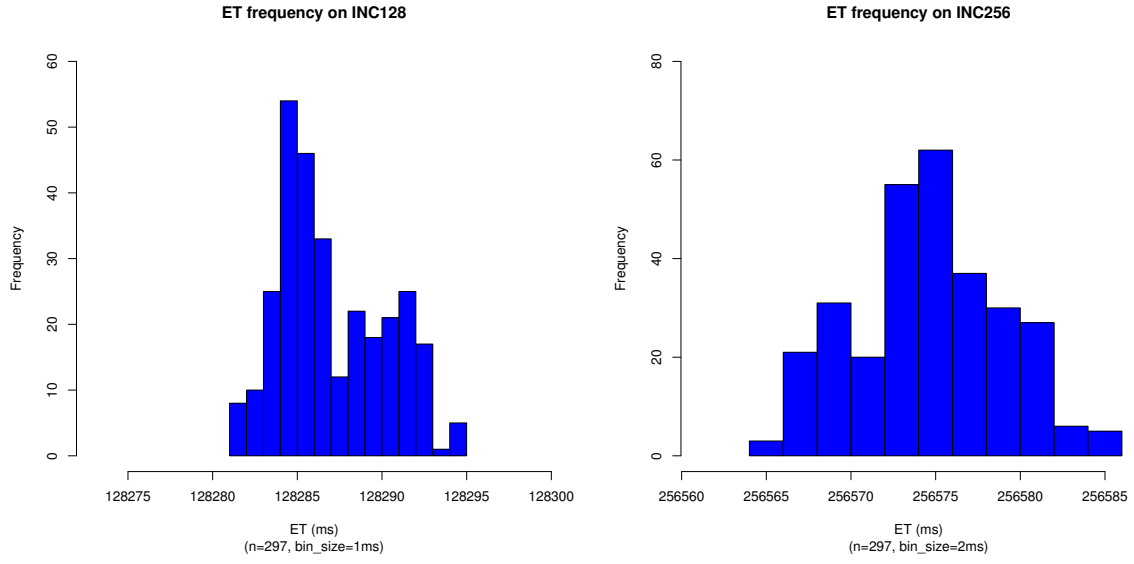
(c) ET frequency on INC4

(d) ET frequency on INC8

Figure 1: ET Histograms of INC1 ... INC8

(a) ET frequency on INC16
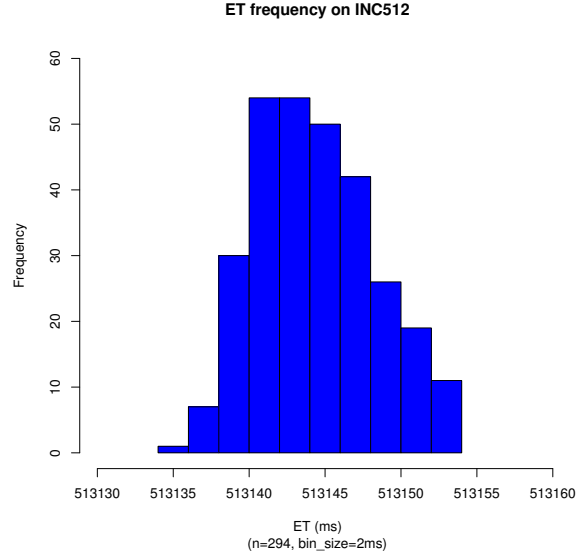

(b) ET frequency on INC32

(c) ET frequency on INC64

Figure 2: ET Histograms of INC16 ... INC64

(a) ET frequency on INC128

(b) ET frequency on INC256

(c) ET frequency on INC512

Figure 3: ET Histograms of INC128 ... INC512

3.2 PT

(a) PT frequency on INC1

(b) PT frequency on INC2
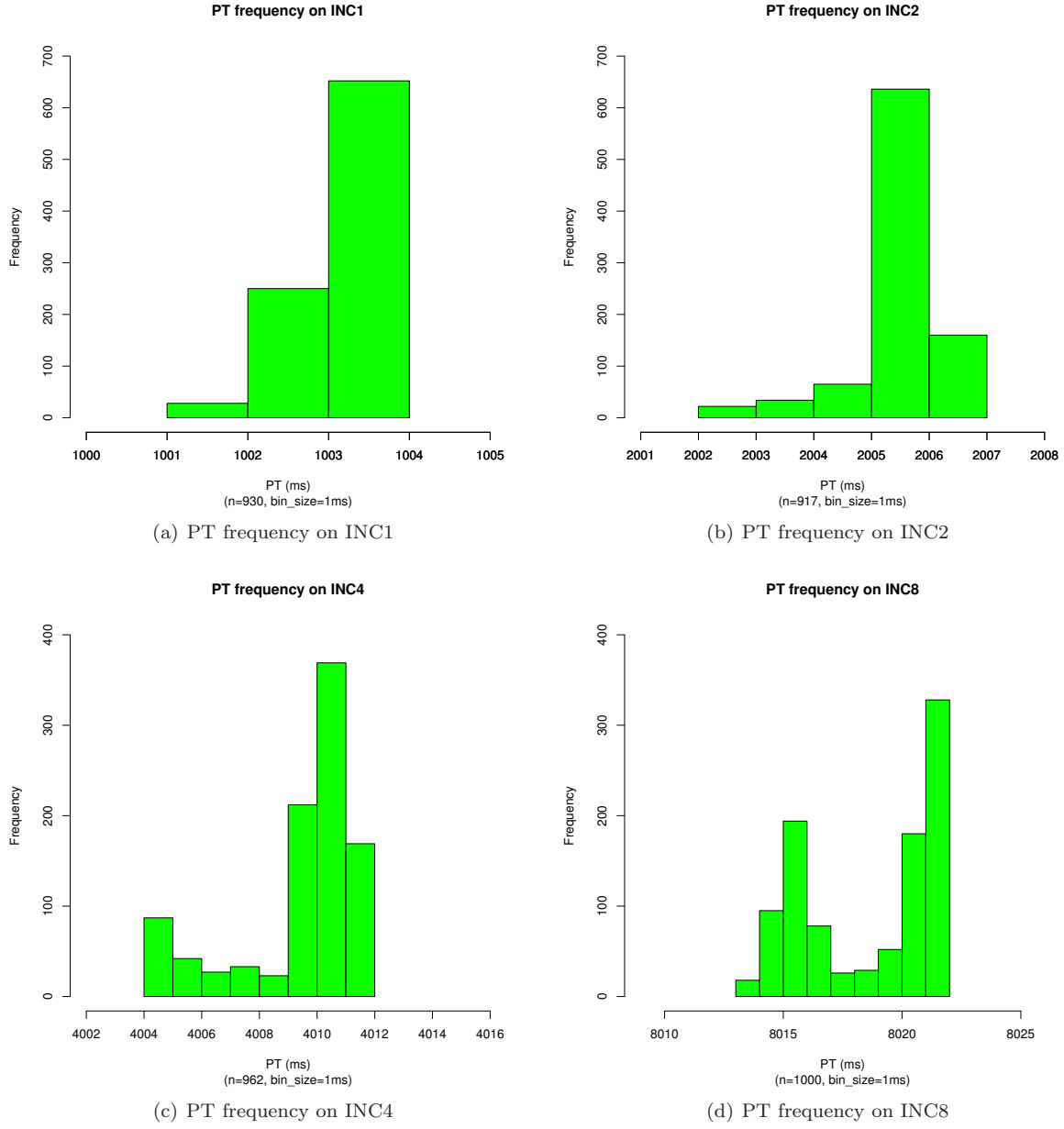
(c) PT frequency on INC4
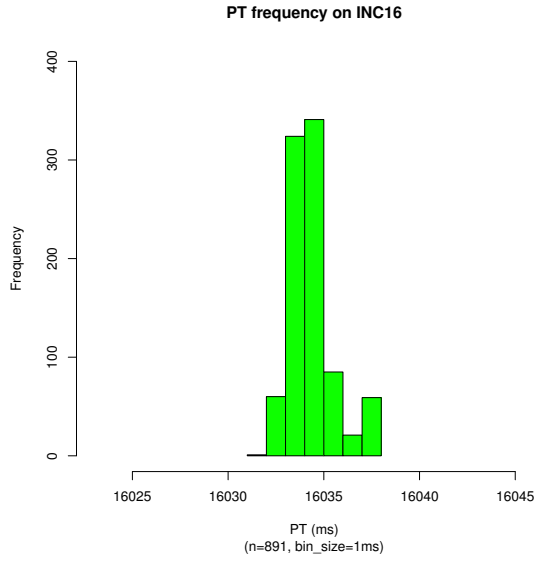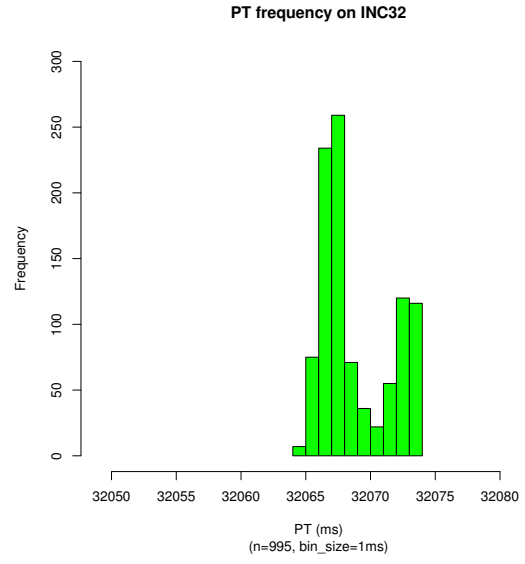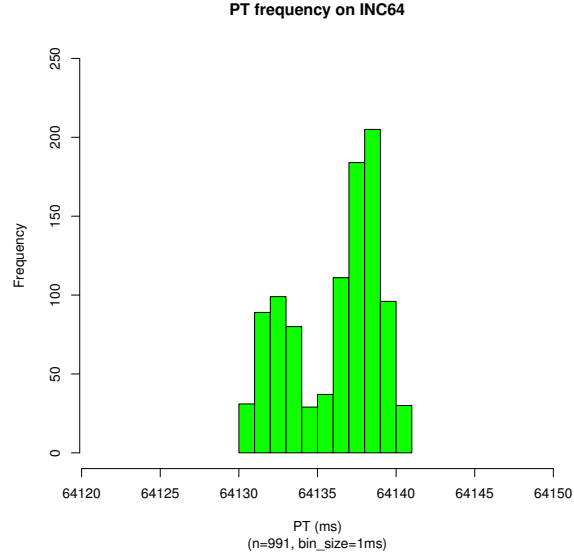
(d) PT frequency on INC8

Figure 4: PT Histograms of INC1 ... INC8
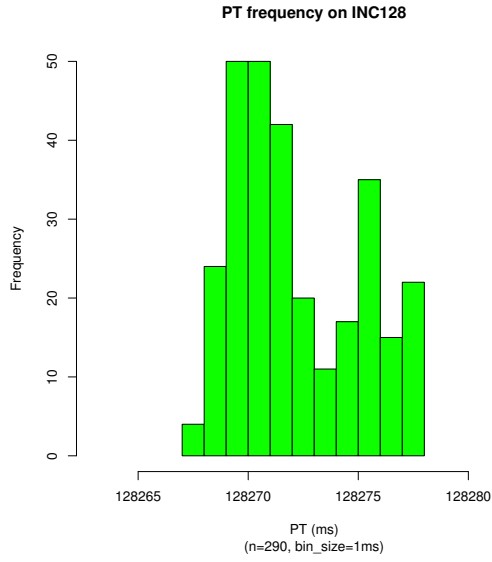
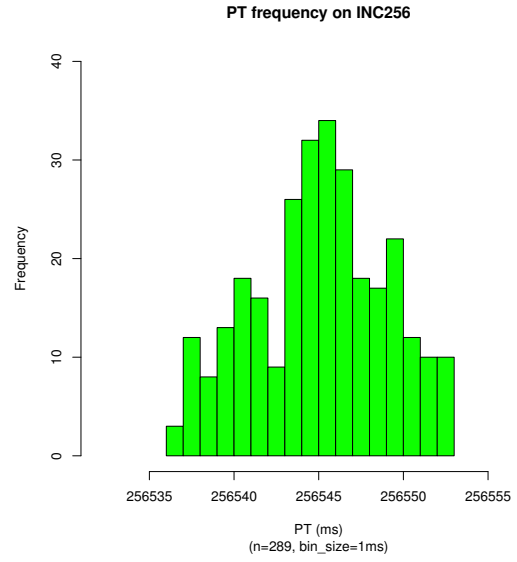(a) PT frequency on INC16

(b) PT frequency on INC32
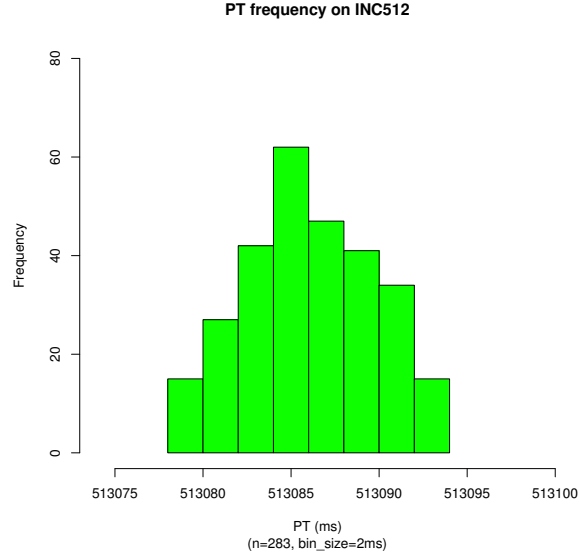

(c) PT frequency on INC64

Figure 5: PT Histograms of INC16 ... INC64

(a) PT frequency on INC128

(b) PT frequency on INC256

(c) PT frequency on INC512

Figure 6: PT Histograms of INC256 ... INC512