

A Project

entitled

combox

by

Siddharth Ravikumar

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the
Masters of Science Degree in Computer Science

Dr. Robert C. Green II, Committee Chair

Dr. XX, Committee Member

Dr. XX, Committee Member

Dr. Michael Ogawa, Dean
College of Graduate Studies

Bowling Green State University

May 2016

Public Domain, No Rights Reserved.

Siddharth Ravikumar has dedicated the work to the public domain by waiving all of his rights to the work worldwide under copyright law, including all related and neighboring rights, to the extent allowed by law. You can copy, modify, distribute and perform the work, even for commercial purposes, all without asking permission.

See <https://creativecommons.org/publicdomain/zero/1.0/legalcode> for the full legal verbiage.

An Abstract of
combox
by
Siddharth Ravikumar

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the
Masters of Science Degree in Computer Science

Bowling Green State University
May 2016

File storage providers on the Internet have made it non-trivial for individuals to store personal files on the file storage provider's computers. After Mr. Snowden disclosed information about the National Security Agency' (NSA) surveillance programs that allowed the NSA to access information stored on file storage provider' computers, online file storage became a non-solution for storing personal files for everyone who detested the possibility of somebody else being able to access their personal files. In the past, there have been separate efforts to come with a solution to allow individuals to use storage space provided by file storage providers in a way that it made it impossible for file storage providers and to access the files. combox is one such effort. It allows an individual to store personal files in the "combox directory" on all her computers (running GNU/Linux or OS X) and the combox program takes the files, splits and encrypts them and spreads them across file storage providers' directories. Therefore, when an individual uses storage space provided by file storage providers through combox, each file storage provider gets only a part of the file in an encrypted form.

Dedicated to the \$EDITOR I use to literally write everything.

Acknowledgments

Dr. Robert C. Green II who gave me an opportunity to work on combox.

Contents

Abstract	iii
Acknowledgments	v
Contents	vi
List of Tables	vii
List of Figures	viii
List of Abbreviations	ix
Preface	x
1 Introduction	1
2 Background	2
3 Literature Review	3
4 combox Architecture and Design	4
5 Use Cases, Benchmarks, and Demonstration	5
6 Conclusion and Future Work	8

List of Tables

List of Figures

5-1	time to process all files	5
5-2	avg. time to split and encrypt	6
5-3	time to process all files - difference between 2015 and 2016	6
5-4	avg. time to split and encrypt - difference between 2015 and 2016	7

List of Abbreviations

YAML YAML Ain't Markup Language

Preface

42.

Chapter 1

Introduction

Chapter 2

Background

Chapter 3

Literature Review

Chapter 4

combox Architecture and Design

Chapter 5

Use Cases, Benchmarks, and Demonstration

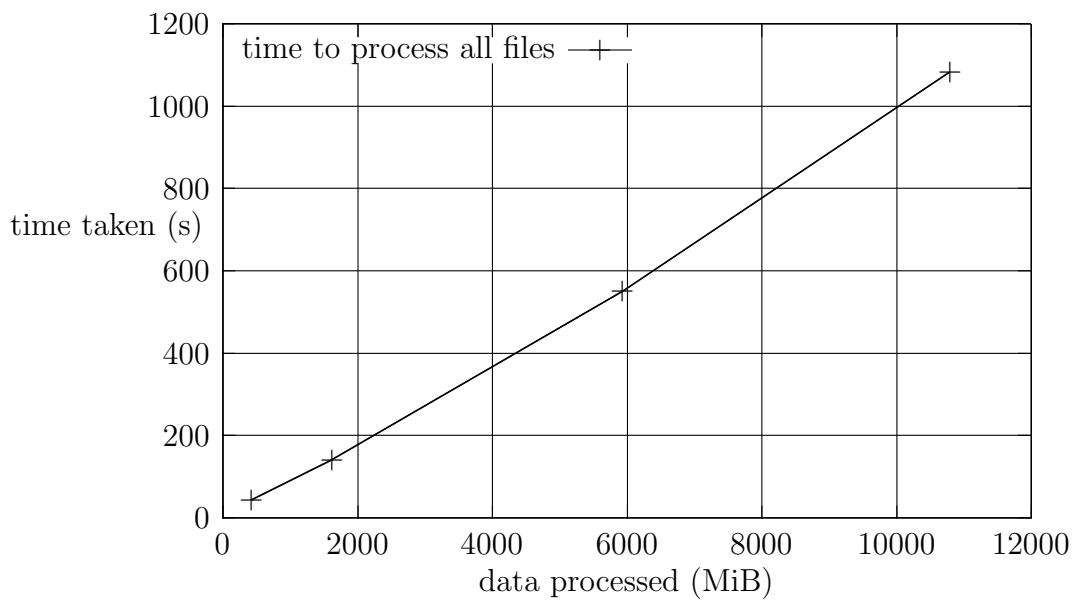


Figure 5-1: time to process all files

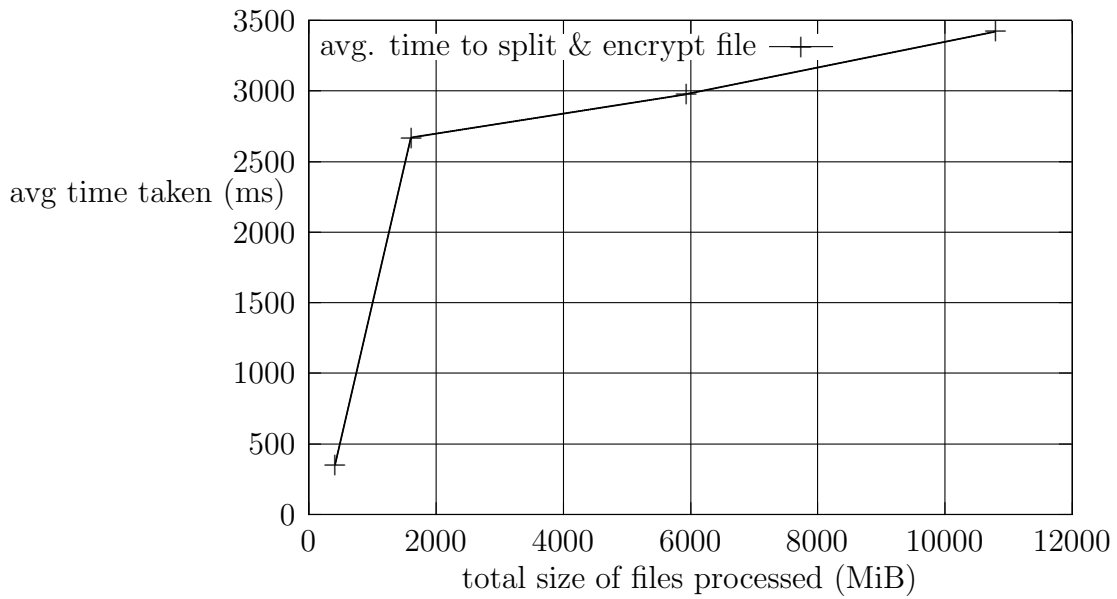


Figure 5-2: avg. time to split and encrypt

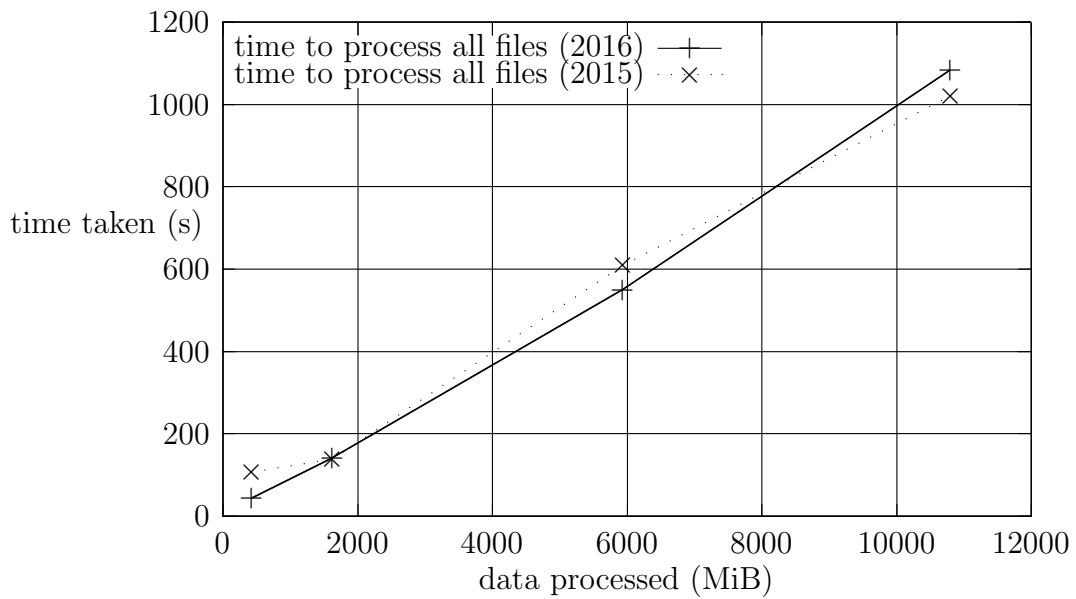


Figure 5-3: time to process all files - difference between 2015 and 2016

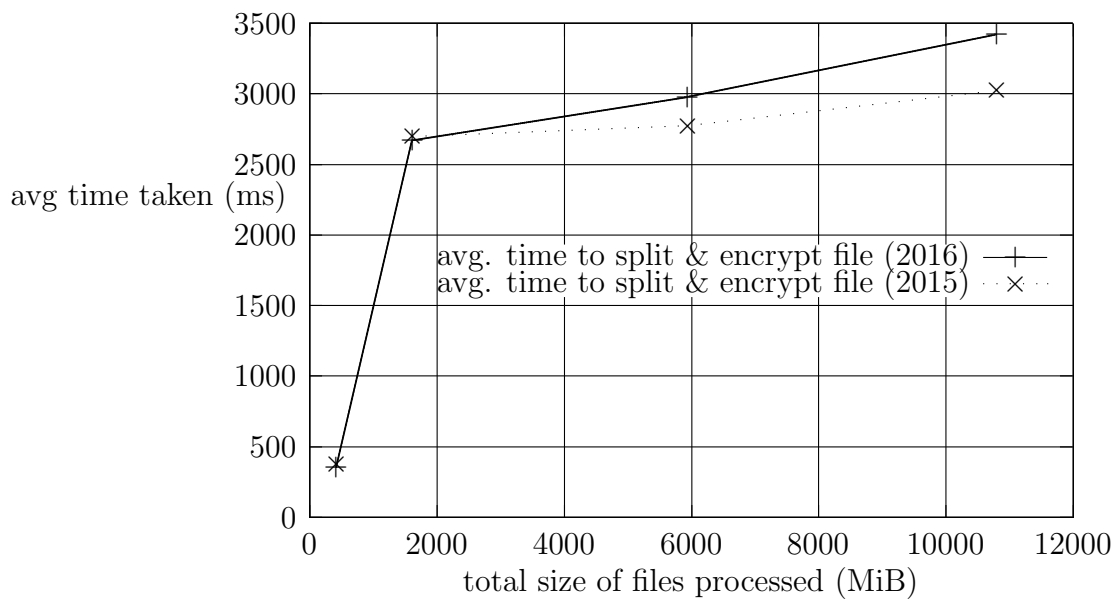


Figure 5-4: avg. time to split and encrypt - difference between 2015 and 2016

Chapter 6

Conclusion and Future Work