TABLE OF CONTENTS

APPROVAL i

SELF DECLARATION AGAINST PLAGIARISM ii

ABSTRACT iii

ABSTRAK iv

ACKNOWLEDGEMENT v

TABLE OF CONTENTS vi

LIST OF FIGURES viii

LIST OF TABLES ix

CHAPTER 1: INTRODUCTION 1

1.1. Problem Backgroud 1

1.2. Problem Statement 3

1.3. Hypothesis 3

1.4. Objectivities 5

1.5. Scope and Delimitation 5

1.6. Importance of the Study 5

1.7. Thesis Organization 5

1.8. Summary 6

CHAPTER 2: REVIEW OF LITERATURE AND STUDIES 7

2.1 Software Defined Networking (SDN) 7

2.2 DDoS Attack 9

2.2.1 Software Attack 10

2.2.2 Protocol Attack 10

2.2.3 Traffic Attack 10

2.3 The DDoS Detection 11

2.3.1 DDoS Detection in Traditional Network 11

2.3.2 DDoS Detection in SDN 12
CHAPTER 3: RESEARCH METHODOLOGY 17
3.1 Research Framework 17
3.1.1 Method of Literature Review 18
3.1.2 Method of Proposed System 20
3.1.4 Experiment Scenario 22
3.2 Data 23
3.3 Environment 23
3.4 Comparison 24
3.5 Experiment 25
3.5.1 Creates mininet simulator environment 25
3.5.2 Run Controller with detection program 26
3.5.3 Run iPerf to inject traffic 29
3.6 Experiment Result 30
3.6.1 Scenario 1 30
3.6.2 Scenario 2 32
CHAPTER 4: ANALYSIS AND DISCUSSION 33
4.1 Scenario 1 33
4.2 Scenario 2 37
4.3 Summary of Findings 39
CHAPTER 5: CONCLUSION AND RECOMMENDATIONs 40
5.1 Conclusion 40
5.2 Future Works 40
REFERENCES 41
APPENDIX 43
A. Lampiran 1 43