



NTNU – Trondheim
Norwegian University of
Science and Technology

Evaluating Software Defined Networking for use in military networks

Erik Sørensen

Submission date: Dec 2013
Responsible professor: Øyvind Kure, ITEM/UNIK
Supervisor: Mariann Hauge, FFI

Norwegian University of Science and Technology
Department of Telematics

Abstract

Preface

Contents

List of Figures	ix
List of Tables	xi
List of Algorithms	xiii
Acronyms	xv
List of Acronyms	xv
1 Background	1
1.1 SDN	1
1.1.1 Some history	1
1.1.2 Virtualize everything	1
1.2 The layering of SDN	1
1.2.1 Network controller	1
1.2.2 Network Operating System	1
1.2.3 Southbound interface	1
1.2.4 OpenFlow	1
1.2.5 Northbound interface	1
1.3 Military networks	1
1.3.1 General characteristics and requirements	1
1.3.2 Specific examples	1
2 Discussion	3
2.1	3
3 Results	5
4 Conclusion	7
References	9

List of Figures

List of Tables

List of Algorithms

Acronyms

SDN Software Defined Networking

Chapter 1

Background

1.1 SDN

[\[2\]](#) [\[1\]](#) [\[3\]](#) [\[4\]](#)

1.1.1 Some history

1.1.2 Virtualize everything

[Software Defined Networking \(SDN\)](#) is a term coined by researchers at Stanford University some time during 2008.

1.2 The layering of SDN

1.2.1 Network controller

1.2.2 Network Operating System

1.2.3 Southbound interface

1.2.4 OpenFlow

1.2.5 Northbound interface

1.3 Military networks

1.3.1 General characteristics and requirements

Heterogeneous in nature

1.3.2 Specific examples

Chapter 2

Discussion

2.1

Chapter 3

Results

Here will the results appear

Chapter 4

Conclusion

References

- [1] Christopher Monsanto, Joshua Reich, N. F. J. R. D. W. (2013). Composing software-defined networks. In *USENIX Symposium on Networked Systems Design and Implementation (NSDI)*.
- [2] McKeown, N., Anderson, T., Balakrishnan, H., Parulkar, G., Peterson, L., Rexford, J., Shenker, S., and Turner, J. (2008). Openflow: enabling innovation in campus networks. *SIGCOMM Comput. Commun. Rev.*, 38(2):69–74.
- [3] Mendonca, M., Obraczka, K., and Turetti, T. (2012). The case for software-defined networking in heterogeneous networked environments. In *Proceedings of the 2012 ACM conference on CoNEXT student workshop*, CoNEXT Student '12, pages 59–60, New York, NY, USA. ACM.
- [4] Stallings, W. (2013). Software-defined networks and openflow. *The Internet Protocol Journal*, 16(1):2–14.