

“ Dynamic Switch”

*

, **, **, Tao Lin*, Scott.F. Midkiff***
, *

Validation of Ad-hoc Network Emulator “ Dynamic Switch” *

Nakjung Choi**, Jeongkeun Lee**, Yanghee Choi**,
Tao Lin***, Scott.F. Midkiff***

School of Computer Science and Engineering, Seoul National University**
Bradley Department of Electrical and Computer Engineering, Virginia Tech.***

가

가

Virginia Tech.

Dynamic Switch

Dynamic Switch

, Virginia Tech.

1.

, Virginia Tech.

Dynamic Switch

2

Dynamic Switch

3

Dynamic Switch

4

Dynamic

NS2

Switch

5

가

2. Dynamic Switch

IP

ATM

IP

MAC

[1]

가

가

MAC

IP

가

가

Dynamic Switch 가

Bradley Department of Electrical and
Computer Engineering, Virginia Tech.

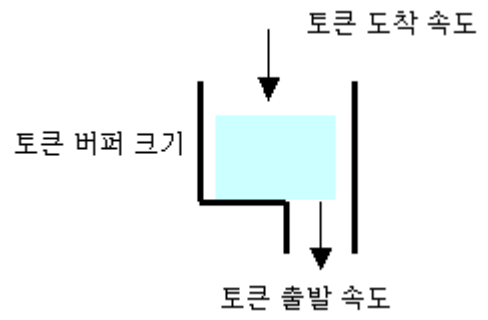
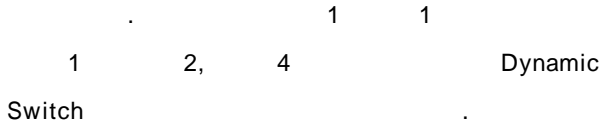
Dynamic Switch

Dynamic Switch

2.1.

Dynamic Switch

Dynamic Switch



3. leaky-bucket



1.

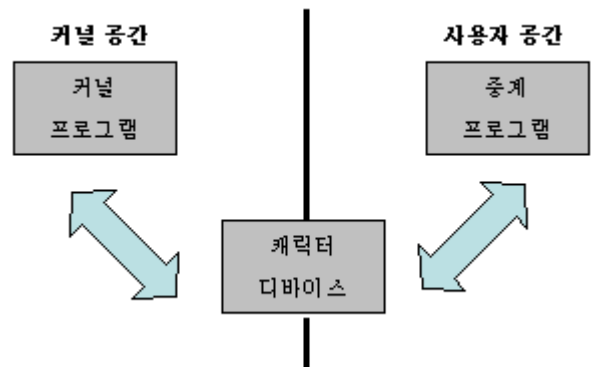
입력포트	노드 1	노드 2	노드 3	노드 4
출력포트	노드 2, 노드 4	노드 1, 노드 3	노드 2, 노드 4	노드 1, 노드 3

1. Dynamic Switch

2.3. Dynamic Switch

Redhat 7.0 2.2.16 2 4

Dynamic Switch



4. Dynamic Switch

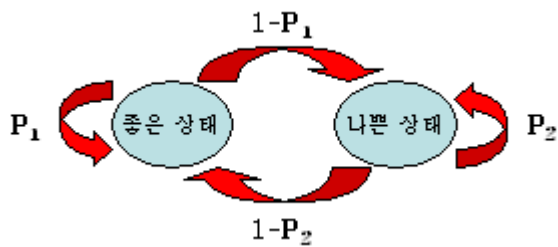
2.2.

Dynamic Switch

two-state Markov

chain .[2]

“ ” “ ” 가 가



2. two-state Markov chain

Dynamic Switch

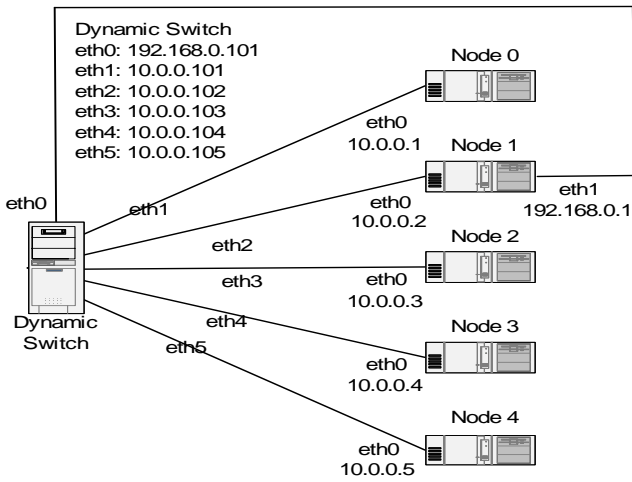
leaky-bucket

.[3]

IP MAC

3.

5 Dynamic Switch



5.

Dynamic Switch

5

1 eth1

Dynamic

Switch

1

4. Dynamic Switch

Dynamic Switch

NS2(network simulator 2)[4]

Dynamic Switch

reactive Proactive

가

Reactive

가

on-

demand

Dynamic Switch

IETF(Internet Engineering Task Force) MANET(Mobile

Ad-hoc Networks) WG

OLSR(Optimized

Link State Routing)[5]

AODV(Ad-hoc On-demand

Distance Vector)[6]

OLSR proactive

AODV reactive

NS2

가

가

2

5

파라미터	기본값
실험 시간	300 (s)
실험 환경 크기	100x100 (unit ²)
노드의 멈춤 시간	10 (s)
노드의 평균 속도	20 (units/s)
노드의 이동 시간	10 (s)
노드의 전송 범위	20 - 90 (units)

2.

4.1. OLSR

HIPERCOM

OLSR

ns2

[7]

0

3

4

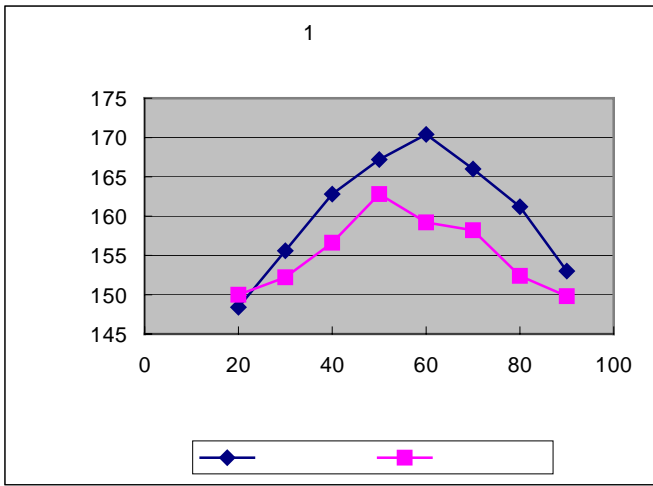
proactive

OLSR

가

1

6



AODV reactive
 가
 . OLSR
 . 1 0
 1000 0.02 .
 5 1 eth1 Dynamic Switch
 1 .
 . 1 4
 7, 8 .

6. 1

Proactive

가

가 20

가

가

가

가 90

가

가

가

가

가

가

NS2

가

가 60

6.57(%)

5(%)

NS2

가

Dynamic Switch

가

4.2. AODV

Uppsala

AODV

ns2

.[8] 0

4

5

1 0

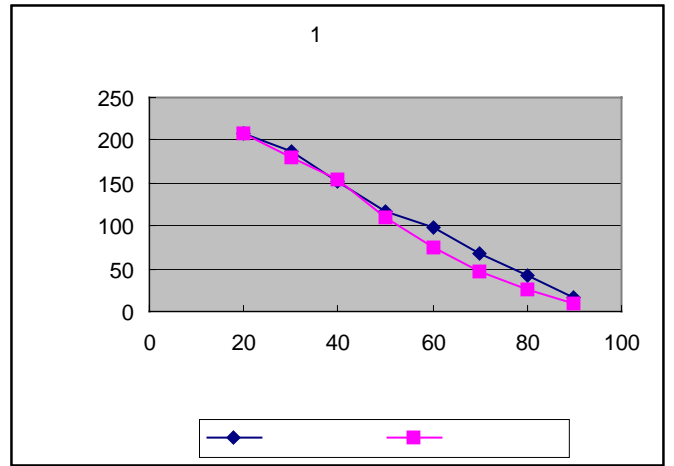
가 0

가

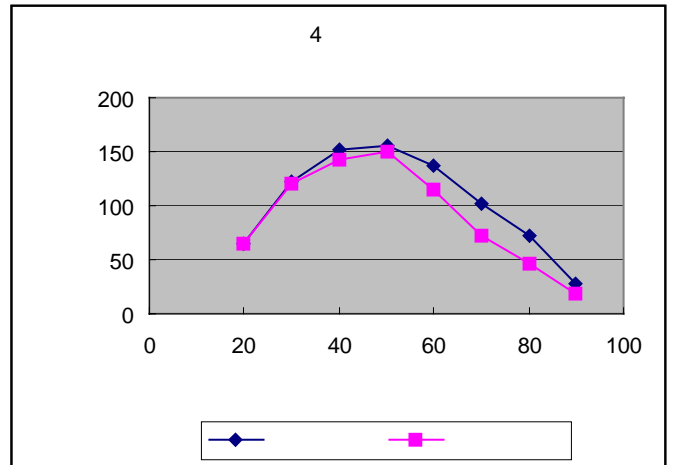
1 0

가 20

가



7. 1



8. 4

가 1 0 Dynamic Switch

0 AP

가 Dynamic Switch

가 90

0 1

가

가

0

가

가 가

NS2

1

30(%) OLSR 가

AODV 가 reactive

7(%)

reactive NS2

가

Dynamic Switch

가

5.

Dynamic Switch

가 .4

MAC

가

[1] S.-J. Lee, C.-K. Toh, and M. Gerla, " Performance Evaluation of Table -Driven and On-Demand Ad Hoc Routing Protocols," Proceedings of IEEE PIMRC'99, Osaka, Japan, Sep. 1999, pp. 297-301.

[2] W.Feller, An Introduction to Probability Theory and Its Applications, 3rd edition, John Wiley and Sons, Inc., New York, NY, 1967.

[3] L.L.Peterson and B.S. Davie, Computer Networks, 2nd edition, Morgan Kaufmann Publishers, San Francisco, CA, 2000.

[4] " The Network Simulator – NS2" , <http://www.isi.edu/nsnam/ns>.

[5] T.Clausen, P.Jacquet, A.Laouiti, P.Minet, P.Muhlethaler, A.Qayyum, and L.Viennot, " Optimized Link State Routing Protocol," Internet Engineering Task Force Draft version 7.

[6] Charles E. Perkins, Elizabeth M. Belding-Royer, " Ad hoc On-Demand Distance Vector Routing," Internet Task Force Draft version 12.

[7] HIPERCOM, OLSR (Optimized Link State Routing), <http://hipercom.inria.fr/olsr>

[8] AODV-UU (AODV at Uppsala University), <http://www.docs.uu.se/docs/research/projects/scanet/aodv>