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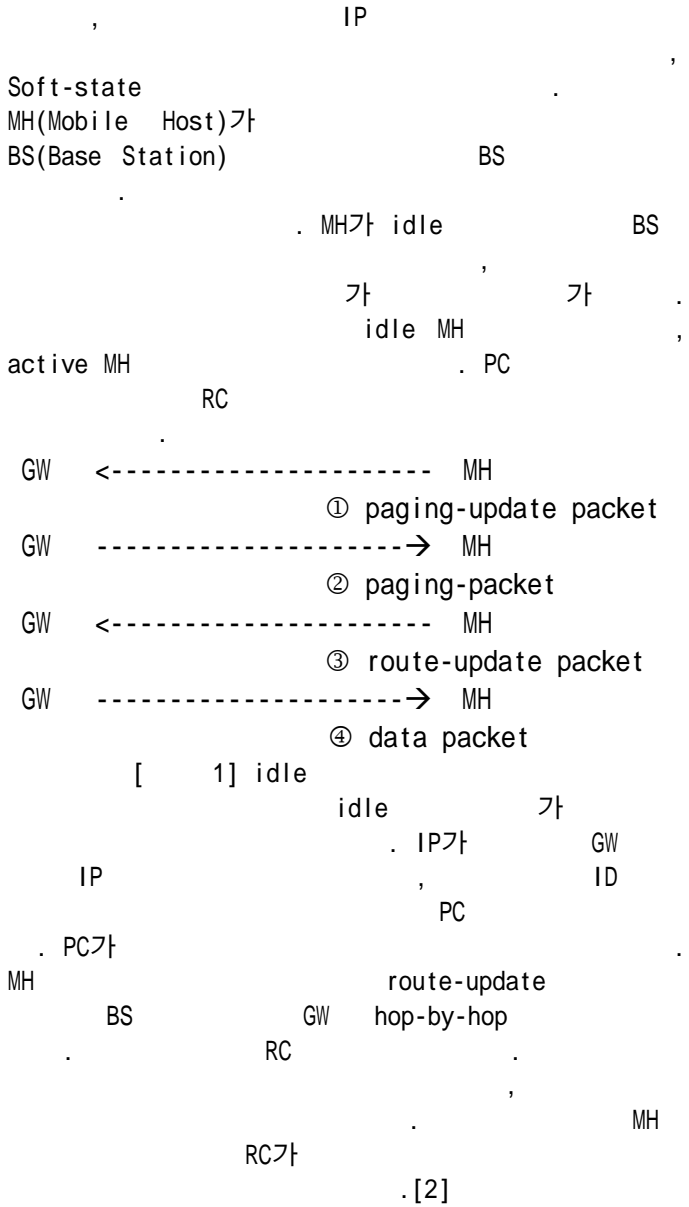
(scace⁰, pretty, yhchoi)⁰@mmlab.snu.ac.kr

Evaluating the performance of Variant TCP over Micro-mobility protocols

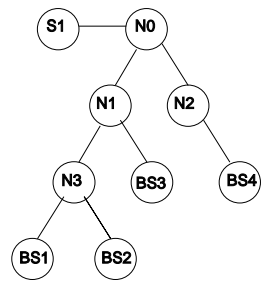
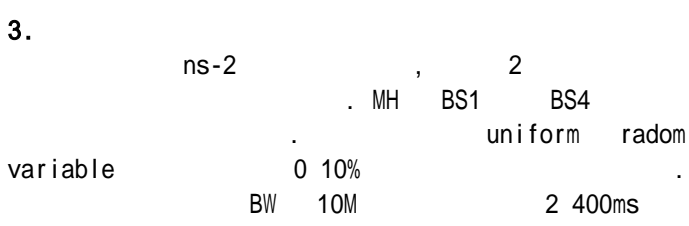
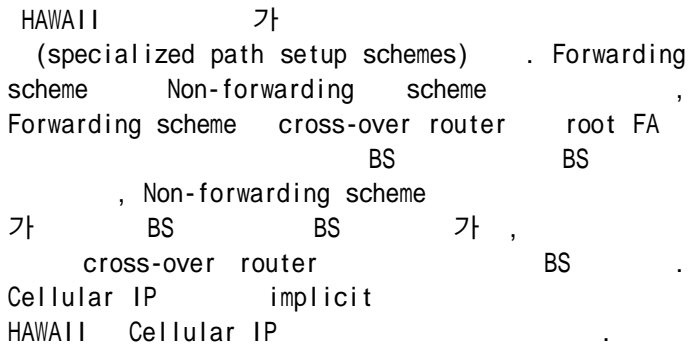
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Mobile IP macro-mobility, Mobile IP
mobility mobile IP HA(Home Agent) Micro-
TCP(Transmission Control Protocol)
TCP Mobile IP
NewReno, SACK micro-mobility TCP Tahoe, Reno,
mobility 가 TCP micro-

1. Micro-mobility Mobile IP mobile IP cell
가 Cellular IP, 가
HAWAII(Handoff Aware Wireless Access Internet
Infrastructure), THEMA(Transparent Hierarchical
Mobility Agents)[1], hierarchical foreign agent,
hierarchical IPv6 micro-mobility TCP TCP
Mobile IP 가 Cellular IP HAWAII ns-2
, 2
, 3
, 4 . 5
micro-mobility
IP Cellular IP 가
Cellular IP HAWAII
path setup scheme
Micro-mobility mobile IP
micro-mobility
HA



2.2 HAWAII



Error rate	Handoff #	Connection #	Packet size
0	2	1	500
0.01	4	2	1000
0.05	7	6	1500
0.1	10	11	
	18	16	

[1] 가 micro-mobility

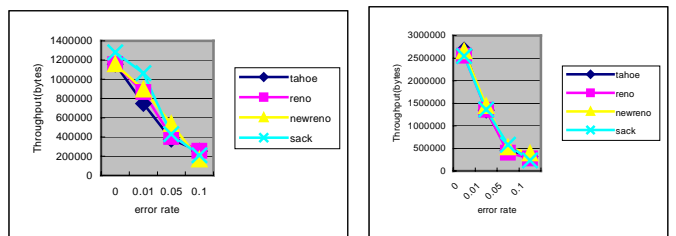
GNUPLLOT

3.1 가

2가 가 Micro-mobility protocol connection

4.

4.1



[3]Error rate vs. Throughput(CIP, HAWAII)

[3] TCP 30 3 가

Throughput Cellular IP TCP 가

SACK(Selective Acknowledgement) SACK ACK packet

10% 가 TCP reno 가

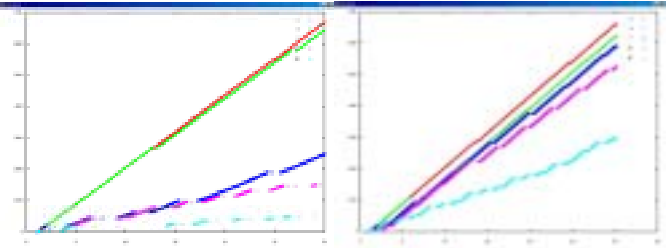
1/3~1/4 가 Reno Slow-start

HAWAII CIP MSF

NewReno SACK
NewReno

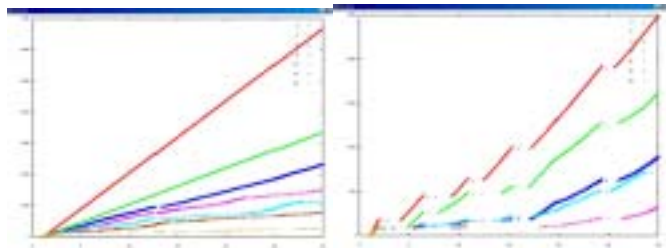
RTT

4.2

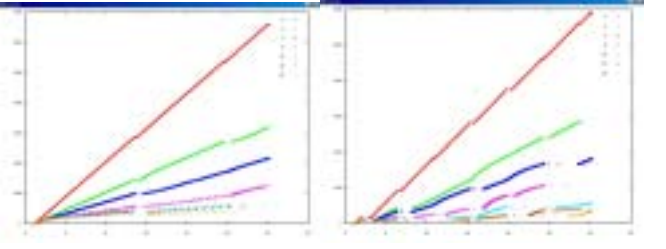


[4] Handoff # vs. TCP performance(CIP, HAWAII)

micro-mobility
Cellular IP MSF
BS TCP 가 7
HAWAII TCP 가 10
TCP HAWAII



[5] Cellular IP connection # (2, 7)



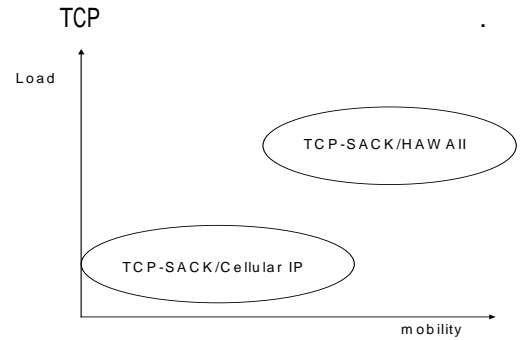
[6] HAWAII Connection # (2, 7)

Cellular IP HAWAII
(a) 가 (2, 5, 6)
(b) Cellular IP HAWAII connection
가 connection
HAWAII가 TCP 가
HAWAII가 TCP

5. 5.1

micro-mobility TCP
TCP 가 (Congestion)
TCP
HAWAII Cellular IP TCP Cellular IP HAWAII

Cellular IP



[7]

5.2

micro-mobility VoIP
QoS QoS RSVP micro-mobility protocol 가

6.

[1] <http://ntrg.cs.tcd.ie/htewari/papers/draft-mccann-thema-00.txt>
 [2] Andrew T. Campbell, Javier Gomez, Sanghyo Kim, Andras G. Valko, and Chieh-Yih Wan, *Design, Implementation, and Evaluation of Cellular IP*, IEEE Personal Communications Mag. Aug. 2000.
 [3] R. Ramjee, T. La Porta, S.Thuel, K. Varadhan, Hawaii : A Domain-based Approach for Supporting Mobility in Wide-area Wireless Networks, IEEE ICNP. 1999.
 [4] <http://comet.ctr.columbia.edu/micromobility/software.htm>
 [5] <http://www.icsi.berkeley.edu/widmer/mnav/ns-extension/>
 [6] <http://comet.ctr.columbia.edu/micromobility/overview.htm>