

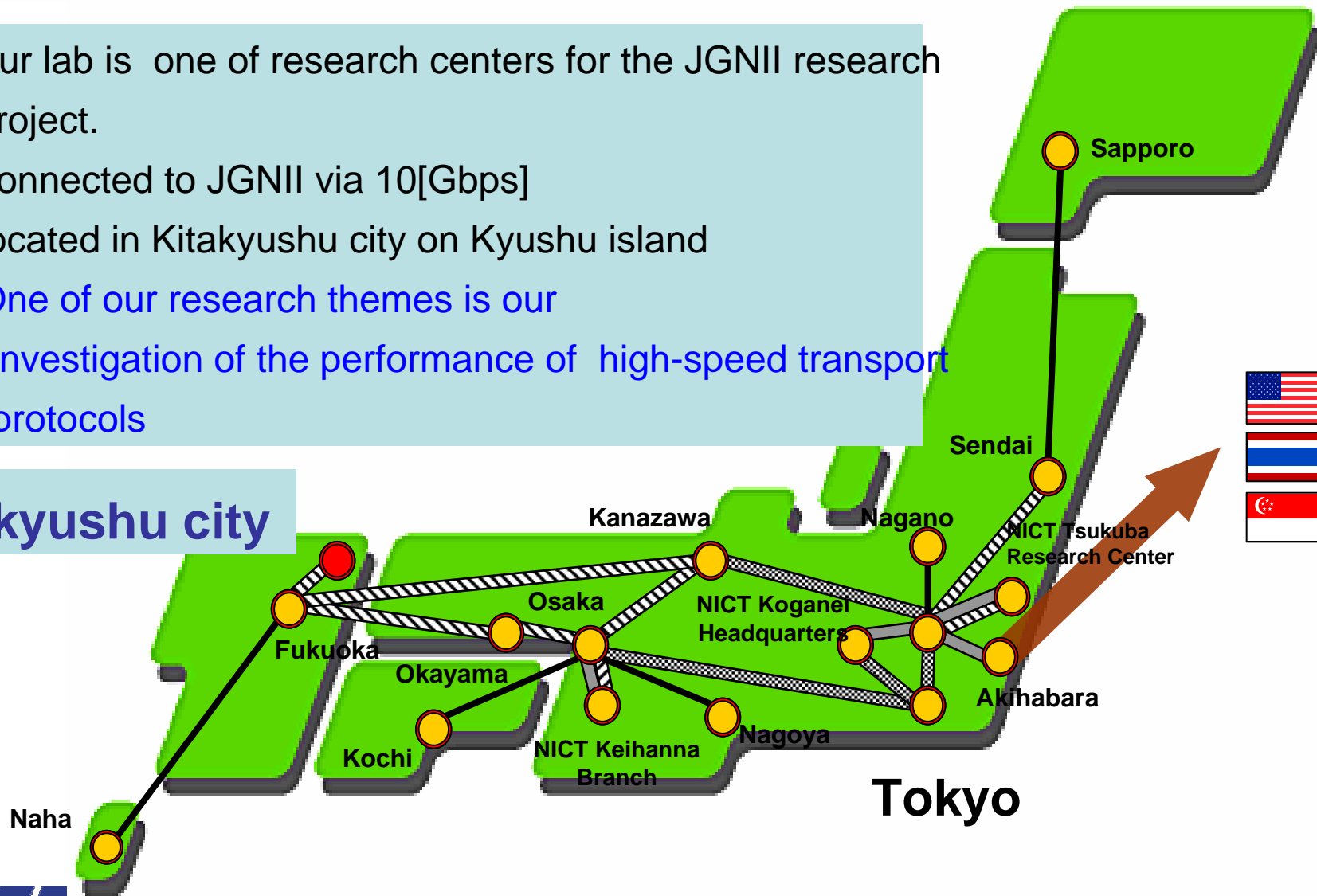
Investigating the Performance of High-Speed Transport Protocols on the JGNII

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NICT Kyushu Research Center

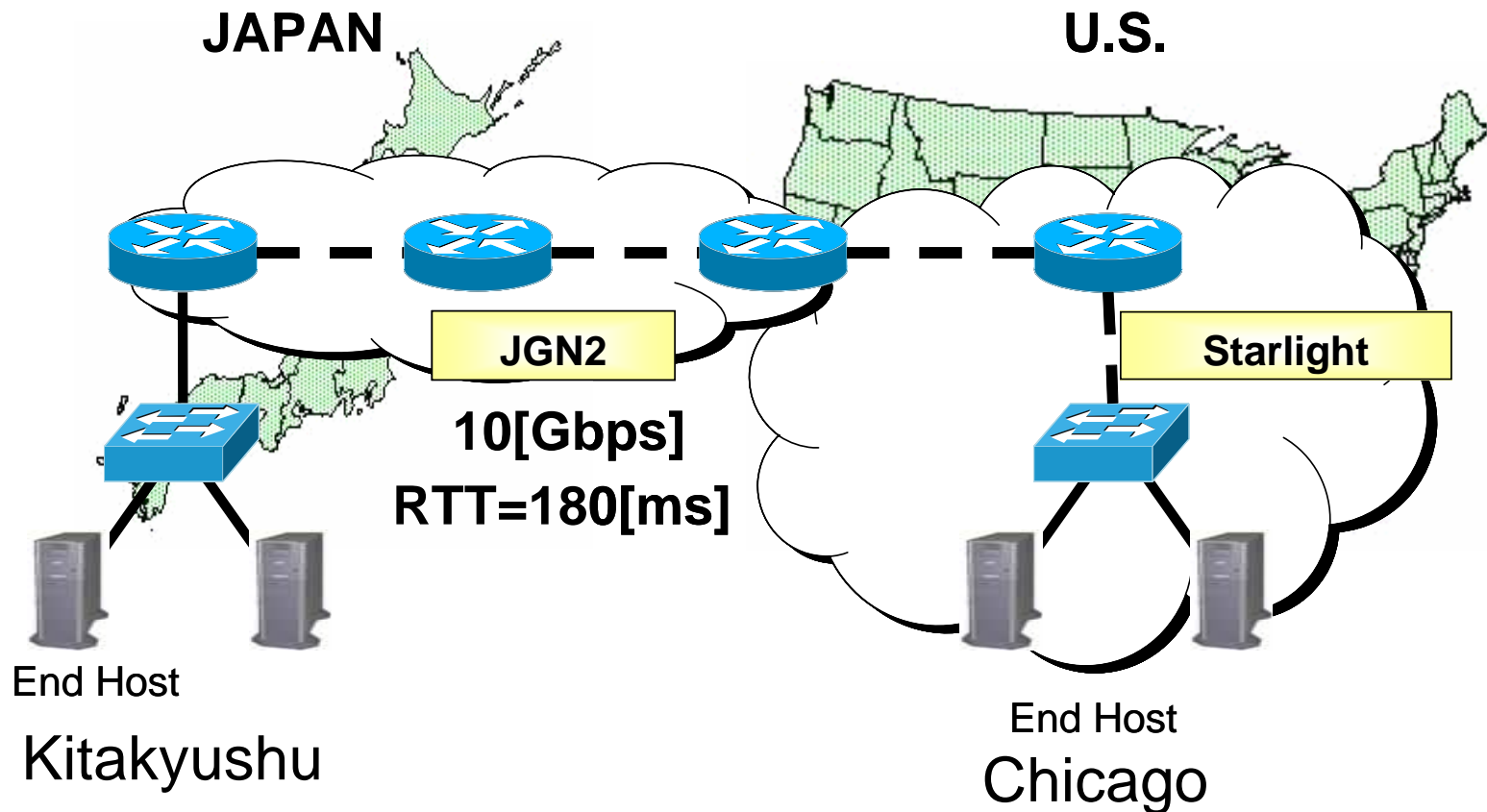
- our lab is one of research centers for the JGNII research project.
- connected to JGNII via 10[Gbps]
- located in Kitakyushu city on Kyushu island
- One of our research themes is our investigation of the performance of high-speed transport protocols

Kitakyushu city



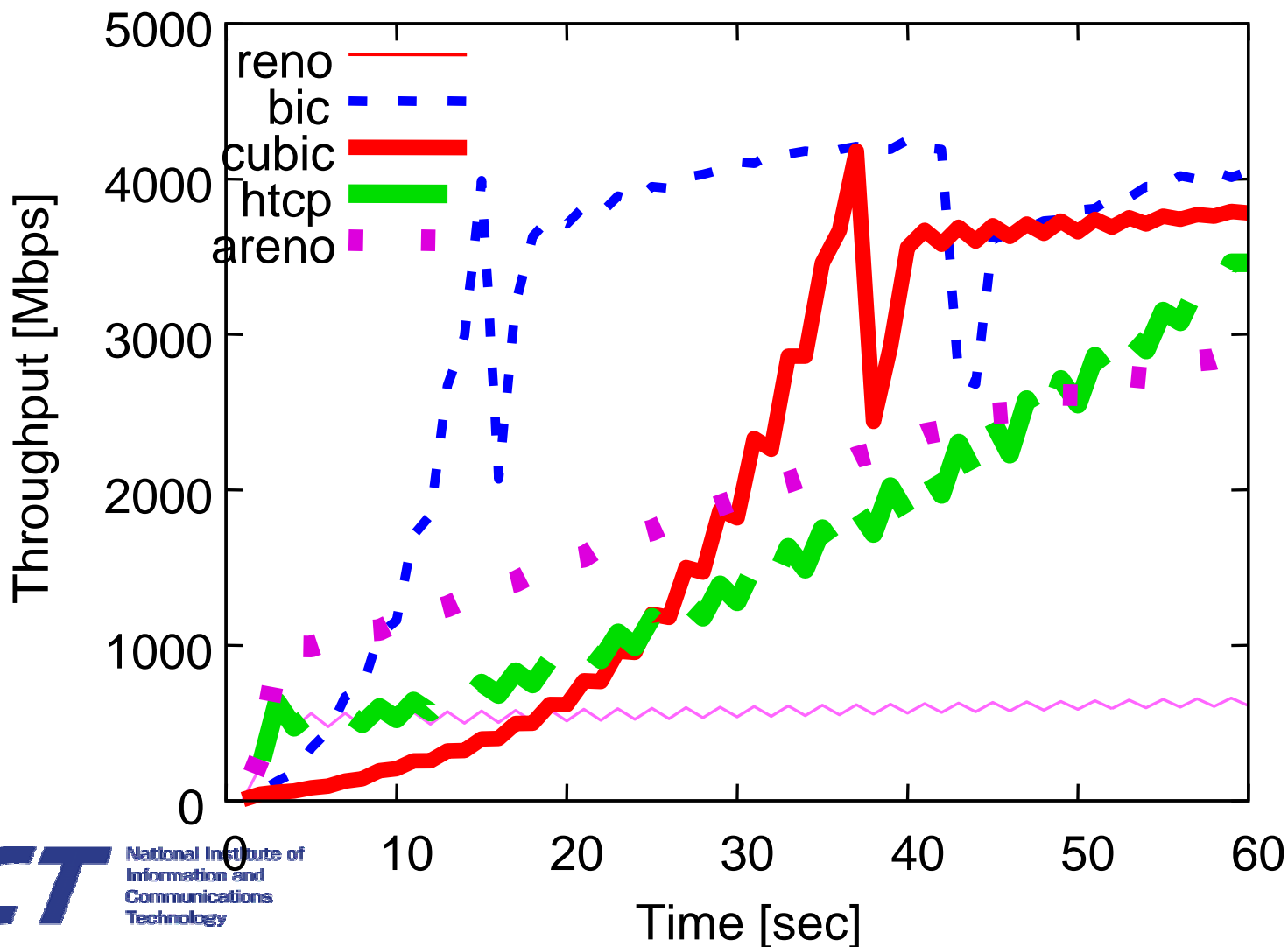
Configuration of network : JGNII

- Kitakyushu – Chicago: (RTT=180[ms])
- End-to-end: 10[Gbps]



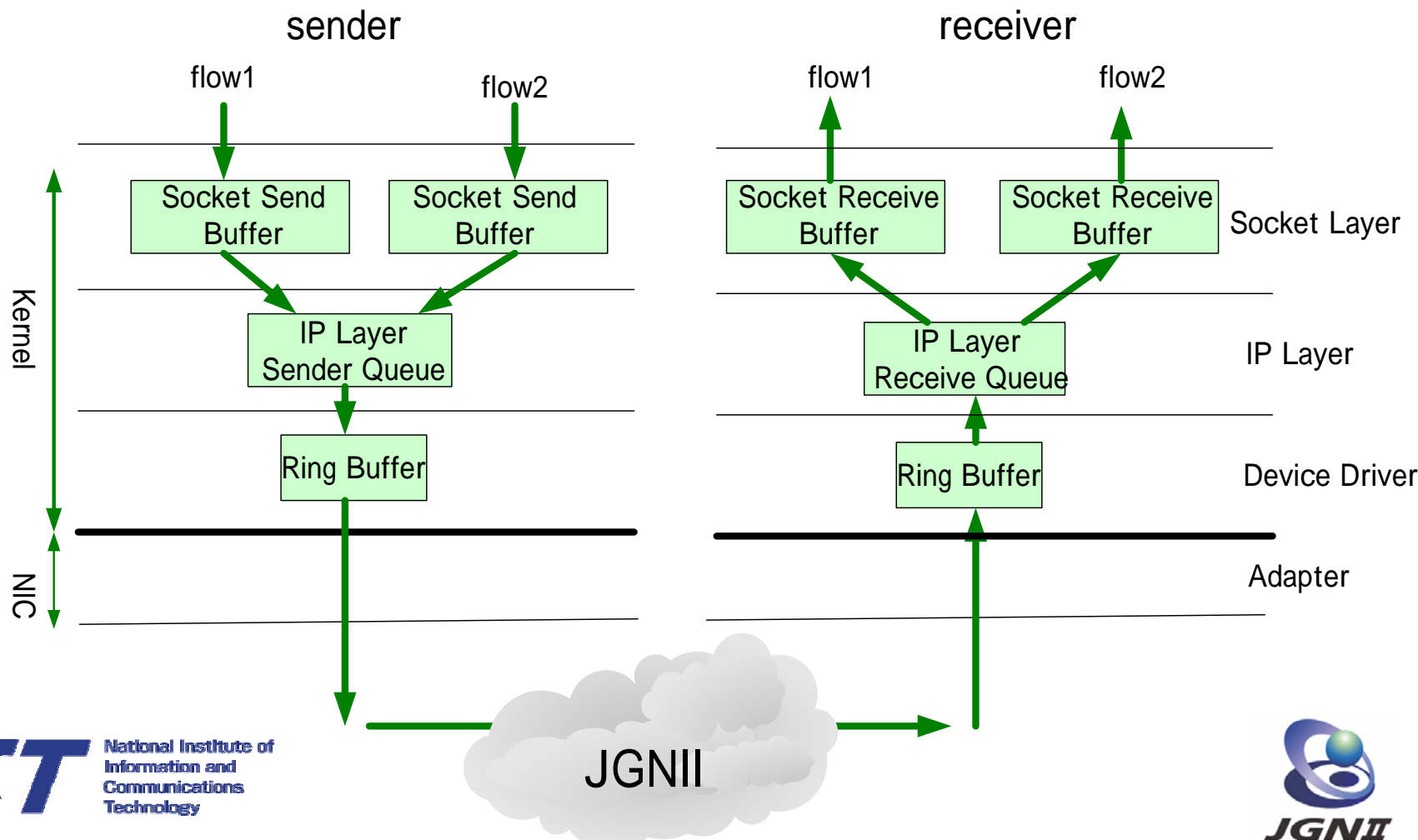
Throughput of a single flow

■ JGNII International Line (RTT = 180[ms])

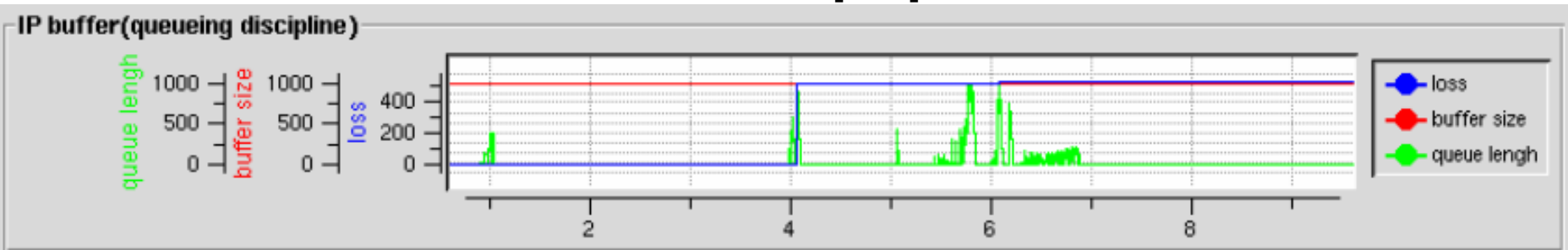
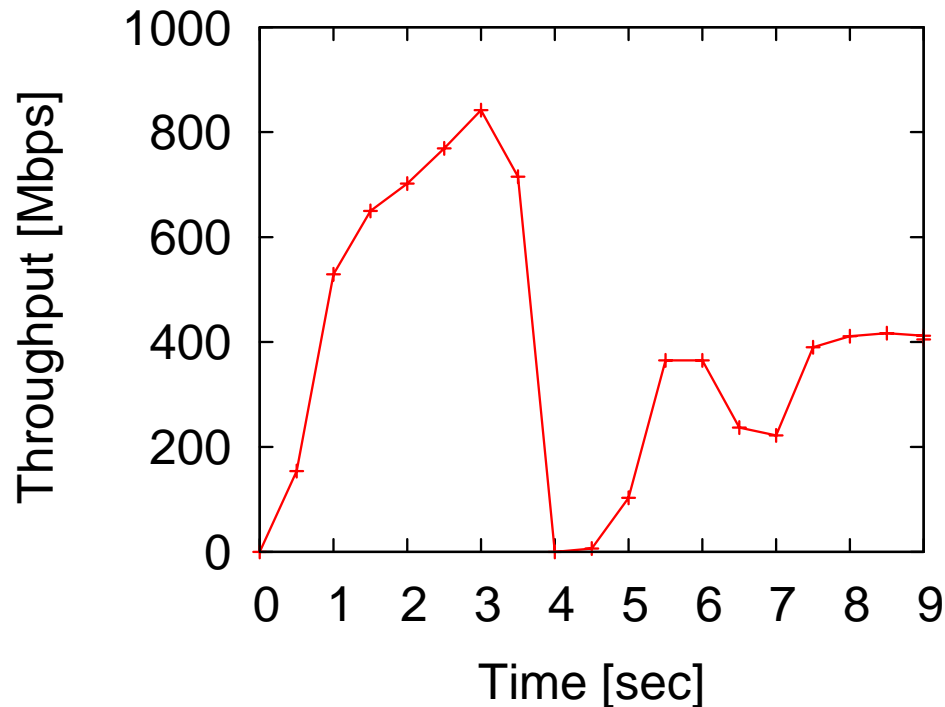


TCPVisible

- Packet losses may occur at: network or end host internal
- monitoring tools for packet losses at Linux kernel internal



Monitoring the status of queue via TCPVisible



txqueue: one of the queues at Linux Kernel

Future Plan for JGN2

- Investigate the performance of high-speed transport protocols in various scenarios on JGNII
 - change the OS of end hosts (windows XP)
 - coexisting flows on the same path (protocols, RTT, 1[Gbps] and 10[Gbps])
- – Develop a 10[Gbps] TCPVisible version

■ Please check out our activities at:

<http://kyushu.nict.go.jp>

- “Transport Protocols for Fast Long-Distance Networks: Evaluation of Their Penetration and Robustness on JGNII,” Kazumi Kumazoe, Katsushi Kouyama, Yoshiaki Hori, Masato Tsuru, Yuji Oie, PFLDnet 2005, Lyon, France, Feb. 2005
- “Can high-speed transport protocols be deployed on the Internet? : Evaluation through experiments on JGNII,” Kazumi Kumazoe, Katsushi Kouyama, Yoshiaki Hori, Masato Tsuru, Yuji Oie, PFLDnet 2006, Nara, Japan, Feb. 2006