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**ANALISIS KINERJA *ROUTING PROTOCOL* BGP DAN
EIGRP TERHADAP SERANGAN *PACKET SNIFFING*
DAN *SPOOFING* BERBASIS GNS3**

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NEGERI
JAKARTA**

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**PROGRAM STUDI TEKNIK MULTIMEDIA DAN
JARINGAN
JURUSAN TEKNIK INFORMATIKA DAN
KOMPUTER
POLITEKNIK NEGERI JAKARTA**

2023



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DAN *EIGRP* TERHADAP SERANGAN *PACKET*
SNIFFING DAN *SPOOFING* BERBASIS *GNS3***

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NEGERI
JAKARTA**

**Dibuat untuk Melengkapi Syarat-Syarat yang Diperlukan
untuk Memperoleh Diploma Empat Politeknik**

Esmeralda Wangsa

1907423001

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Telah diuji oleh tim penguji dalam Sidang Skripsi pada hari *Selasa*, Tanggal *1*, Bulan *Agustus*, Tahun *2023* dan dinyatakan **LULUS**.

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KATA PENGANTAR

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Demi pengembangan ilmu pengetahuan , menyetujui untuk memberikan kepada Politeknik Negeri Jakarta Hak Bebas Royalti Non-Eksklusif atas karya ilmiah saya yang berjudul :

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Yang membuat pernyataan



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Analisis Kinerja Terhadap *Routing Protocol* BGP Dan EIGRP Untuk Serangan *Packet Sniffing* Dan *Spoofing* Berbasis GNS3

Abstrak

Keamanan jaringan yang kuat sangat penting bagi organisasi atau individu yang bergantung pada infrastruktur jaringan karena jika gagal dalam pengamanan dapat membuat jaringan terkena serangan. *Routing protocol* yang tidak aman atau rentan terhadap serangan dapat menyebabkan ketidakstabilan jaringan seperti serangan *spoofing* dan *sniffing* yang dapat menyebabkan paket data diarahkan ke jalur yang salah atau terhenti, mengakibatkan gangguan jaringan. Peretas dapat menciptakan peluang untuk menyerang dan merusak jaringan yang dibangun. Permasalahannya adalah bagaimana kinerja suatu jaringan yang menggunakan BGP dan EIGRP dalam menggunakan serangan *sniffing* dan *spoofing* dan pengamanan berbasis *firewall* dengan simulasi GNS3. Tujuan dari penelitian ini adalah untuk menganalisis performa dari BGP dan EIGRP dengan serangan *sniffing* dan *spoofing* menggunakan simulasi GNS3 berdasarkan parameter *packet loss*, *jitter*, *throughput* dan *delay*. Analisis kinerja protokol BGP dan EIGRP diperlukan untuk memahami dampak terhadap serangan dan metode pengamanan yang diterapkan. Metode pengamanan yang digunakan pada penelitian ini adalah pemisahan VLAN dan pemasangan *firewall*. Parameter yang digunakan pada penelitian ini adalah *packet loss*, *jitter*, dan *delay*. Protokol EIGRP dengan serangan *spoofing* dan *sniffing* memiliki nilai *packet loss* lebih rendah sebesar 6.16% dibandingkan BGP. Protokol BGP dengan serangan *spoofing* dan *sniffing* memiliki nilai *jitter* lebih rendah sebesar 61.26 ms dan *delay* lebih rendah sebesar 44.31 ms dibandingkan EIGRP. Hasil penelitian menunjukkan protokol BGP terbukti lebih unggul dibandingkan protokol EIGRP dalam berbagai kondisi uji. Meskipun protokol EIGRP menunjukkan keunggulan dalam beberapa aspek pada beberapa kondisi uji tertentu, namun secara keseluruhan, protokol BGP dapat dianggap lebih unggul dalam situasi yang lebih umum yang diuji.

Kata kunci: *packet sniffing*, *spoofing*, BGP, EIGRP

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BAB I

PENDAHULUAN

1.1 Latar belakang

Keamanan jaringan yang kuat sangat penting bagi organisasi atau individu yang bergantung pada infrastruktur jaringan karena jika gagal dalam pengamanan dapat membuat jaringan terkena serangan. *Routing protocol* yang tidak aman atau rentan terhadap serangan dapat menyebabkan ketidakstabilan jaringan seperti serangan *spoofing* yang dapat menyebabkan paket data diarahkan ke jalur yang salah atau terhenti, mengakibatkan gangguan jaringan. Keamanan pada *routing protocol* yang baik dapat membantu mencegah serangan terhadap jaringan, seperti serangan *spoofing*, *sniffing*, dan lainnya. Hal ini berdampak pada stabilitas dan ketersediaan jaringan secara keseluruhan. Semakin hari serangan semakin meningkat, hal ini didukung oleh laporan Kaspersky yang menyatakan bahwa aktivitas jaringan yang mencurigakan mencapai 22%. Salah satunya adalah adanya serangan spoofing(Hafizh, Riadi and Fadlil, 2020). *Spoofing* adalah teknik serangan yang cara kerjanya dengan penyerang menyamar sebagai sumber terpercaya atau resmi untuk memperoleh akses yang tidak sah. Selain *spoofing*, terdapat serangan metode *packet sniffing*. *Packet sniffing* menyediakan konfigurasi antarmuka jaringan untuk menampilkan semua informasi ditransmisikan melalui jaringan(Albadri, 2020). *Packet sniffer* juga dapat digunakan oleh peretas untuk menangkap informasi jaringan yang sensitif seperti kata sandi dan informasi akun, dan lain lain(Mphil and Saranya, 2018). *Attacker* yang digunakan yaitu Ettercap dengan memanfaatkan service ARP (*Address Resolution Protocol poisoning*). ARP (*Address Resolution Protocol poisoning*) adalah serangan di mana penyerang *poisoning* cache ARP target host dan menempatkan dirinya di antara lalu lintas sah yang mengarah ke serangan seperti MITM (*Man in the Middle Attack*), *sniffing*, *connection hijacking*, *connection spoofing* dan DoS (*Denial of Service*)(Alam, 2018). Ettercap menganalisis serangan ARP *poisoning* dengan memeriksa paket dari sumber ke tujuan dan korban ARP *poisoning*(Majidha and Santhiyakumari, 2021). *Operator data center* umumnya

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menggunakan BGP untuk perutean dan BGP telah membuat terobosan ke *data center* karena skalabilitasnya, kontrol kebijakan yang ekstensif, dan rekam jejak yang terbukti dalam menjalankan internet selama beberapa dekade (Abhashkumar *et al.*, 2021). *Border Gateway Protocol* (BGP) sebagai protokol perutean standar yang menghubungkan internet untuk membawa data ke seluruh dunia rentan terhadap serangan spoofing (Banu.A and Ganapathi, 2021). EIGRP memiliki waktu konvergensi yang cepat dan dapat dengan cepat beradaptasi dengan perubahan di jaringan dan memperbarui tabel perutean (Prehanto, Indriyanti and Permadi, 2021). EIGRP dapat diskalakan dan dapat mendukung jaringan besar dengan banyak router (Hossain *et al.*, 2020). EIGRP adalah pilihan terbaik untuk jaringan besar dan kecil karena memiliki konvergensi tercepat dan EIGRP menggunakan *bandwidth* secara efisien (Hossain *et al.*, 2020). Serangan *spoofing* dan *sniffing* dapat menyebabkan gangguan serius pada kinerja jaringan, menyebabkan peningkatan *packet loss*, dan meningkatkan *jitter* serta *delay* dalam pengiriman data. Selain itu, serangan-serangan ini juga dapat mengancam keamanan data dan informasi sensitif yang dikirimkan melalui jaringan. Mengidentifikasi dan mengatasi ancaman ini dengan mengimplementasikan mekanisme keamanan seperti performa jaringan dan pengamanan menjadi suatu keharusan untuk memastikan kinerja jaringan yang optimal dan melindungi data dari potensi kebocoran atau manipulasi yang merugikan. Dengan meningkatkan kesadaran akan pengaruh serangan *spoofing* dan *sniffing* terhadap kinerja jaringan, organisasi dan pengelola jaringan dapat mengambil langkah-langkah proaktif untuk meningkatkan keamanan dan kinerja jaringan mereka.

Serangan *Packet Sniffing* terhadap *Routing Protocol* RIPv2, OSPF, dan EIGRP pernah dibuat peneliti sebelumnya yaitu Sigit Widodo (Widodo, 2021). Penelitian tersebut dirancang 2 model topologi dengan 6 skenario dan 4 parameter *Quality of Service* menggunakan *routing protocol* yang digunakan yaitu RIPv2, OSPF, dan EIGRP serta menggunakan GNS3. Hasil penelitian menunjukkan *routing protocol* EIGRP skenario normal memiliki keunggulan di parameter *throughput* dan *jitter*, *routing protocol* RIPv2 skenario normal memiliki keunggulan di parameter *packet loss* dan *latency*, dan *routing protocol* RIPv2, OSPF, dan EIGRP dengan serangan

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packet sniffing selalu bernilai lebih buruk dibandingkan *routing protocol normal*. Pada penelitian tersebut tidak menggunakan *routing protocol* BGP. Deteksi dan Mitigasi Spoofing Border Gateway Protocol pernah dibuat peneliti sebelumnya yaitu (Banu.A and Ganapthi, 2021) dengan menggunakan Algoritma Hybrid Bat Optimization dan Kriptografi. Pada penelitian tersebut tidak menggunakan metode serangan *packet sniffing*.

Penulis melakukan pengembangan dari kedua penelitian tersebut. Penelitian ini membahas tentang deteksi dan pengamanan dari serangan *Packet Sniffing* dan *Spoofing* terhadap *Routing Protocol* BGP dan EIGRP menggunakan GNS3 untuk pengembangan penelitian sebelumnya. Metode serangan yang digunakan pada penelitian ini adalah *Packet Sniffing* dan *Spoofing* terhadap *Routing Protocol* BGP dan EIGRP menggunakan aplikasi Wireshark dan Ettercap. Pengamanan dari serangan *packet sniffing* dan *spoofing* terhadap *Routing Protocol* BGP dan EIGRP adalah dengan pemisahan VLAN, pemasangan *firewall* dan enkripsi *web server* (HTTPS). Parameter dalam penelitian ini adalah *packet loss*, *jitter*, *throughput* dan *delay*.

1.2 Perumusan Masalah

Rumusan masalah dalam penelitian ini adalah: Bagaimana melihat kinerja *routing protocol* BGP dan EIGRP terhadap serangan *packet sniffing* dan *spoofing* berdasarkan *packet loss*, *jitter*, *throughput* dan *delay*?

1.3 Batasan Masalah

Batasan masalah yang ditentukan dalam pengamanan dari serangan *packet sniffing* dan *spoofing* terhadap *routing protocol* BGP menggunakan GNS3 adalah sebagai berikut:

1. Penelitian ini menggunakan metode simulasi jaringan dengan aplikasi GNS3 versi 2.2.40.
2. *Routing protocol* yang digunakan adalah BGP dan EIGRP.
3. Penelitian ini menggunakan dua metode serangan yaitu *packet sniffing* dan *spoofing*. Tools yang digunakan untuk serangan *packet sniffing* dan *spoofing* adalah ettercap dan wireshark.

4. *Client* diserang oleh *attacker* dalam jaringan yang sama.
5. Penelitian ini menggunakan metode pengamanan dengan pemisahan VLAN, pemasangan *firewall* dan enkripsi *web server* (HTTPS).
6. Penelitian ini menggunakan parameter *packet loss*, *jitter*, *throughput* dan *delay*.

1.4 Tujuan dan Manfaat

1.4.1 Tujuan

Tujuan dari penelitian ini adalah untuk menganalisis performa dari BGP dan EIGRP dengan serangan *sniffing* dan *spoofing* menggunakan simulasi GNS3 berdasarkan parameter *packet loss*, *jitter*, *throughput* dan *delay*.

1.4.2 Manfaat

Hasil penelitian ini dapat bermanfaat untuk mengetahui protokol routing BGP atau EIGRP yang lebih baik sehingga ketahanan serangan lebih tinggi dan kinerja lebih stabil.

1.5 Sistematika Penulisan

Berikut adalah sistematika penulisan yang digunakan dalam penelitian ini, yaitu sebagai berikut:

1. Bab I Pendahuluan
Bab I merupakan pendahuluan yang membahas tentang latar belakang dari penelitian, rumusan masalah, batasan masalah, tujuan dan manfaat dari penelitian, dan sistematika penulisan penelitian ini.
2. Bab II Tinjauan Pustaka
Bab II merupakan tinjauan pustaka yang berisi tentang landasan-landasan teori pada penelitian ini dan penelitian-penelitian terdahulu yang sejenis.
3. Bab III Metode Penelitian
Bab III merupakan metode penelitian yang berisi tentang rancangan penelitian, tahapan penelitian, dan objek penelitian.
4. Bab IV Pembahasan



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Bab IV merupakan pembahasan yang berisi analisis kebutuhan, perancangan sistem, implementasi sistem, pengujian, deskripsi pengujian, prosedur pengujian, data hasil pengujian, dan analisis data atau evaluasi.

5. Bab V Penutup

Bab V merupakan penutup yang berisi kesimpulan dan saran.



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BAB V

PENUTUP

5.1 Kesimpulan

Kesimpulan dari penelitian dengan 8 skenario, protokol BGP lebih unggul daripada protokol EIGRP. Akan tetapi, protokol EIGRP lebih unggul dalam 2 kondisi yaitu *packet loss* dengan gabungan serangan spoofing dan sniffing dan jitter dengan pengamanan. Berdasarkan jumlah keseluruhan nilai rata-rata dari 8 skenario dengan indeks parameter QoS standarisasi dari TIPHON, protokol BGP memiliki nilai rata-rata sebesar 2.88 dan dikategorikan sebagai 'Sedang', sementara protokol EIGRP memiliki nilai rata-rata sebesar 2.75 dan juga dikategorikan sebagai 'Sedang'. Dalam hal nilai rata-rata sesuai standarisasi TIPHON, protokol BGP memiliki keunggulan sebesar 0.13 poin dibandingkan dengan protokol EIGRP.

5.2 Saran

Sebagai arah penelitian selanjutnya, disarankan untuk menjelajahi variasi protokol routing yang lain, bersama dengan pendekatan baru dalam hal serangan dan keamanan jaringan. Selain itu, menggali metode baru untuk menghadapi ancaman siber yang terus berkembang akan membantu mengantisipasi tantangan keamanan di masa depan. Mengintegrasikan strategi perlindungan yang inovatif dan adaptif dalam lingkungan jaringan dapat memberikan pandangan yang lebih kaya tentang upaya perlindungan data dan infrastruktur secara menyeluruh.

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Lahir di Medan pada tanggal 8 Maret 2001.

Riwayat pendidikan penulis adalah lulusan dari SD Pelita II, SMP Pelita II, dan SMKN 1 Jakarta. Pada tahun 2019 penulis melanjutkan pendidikan tinggi di kampus Politeknik Negeri Jakarta jurusan Teknik Informatika dan Komputer dengan Program Studi Teknik Multimedia dan Jaringan.

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LAMPIRAN

Screenshot hasil pengujian *spoofing* protokol BGP dengan *bandwidth* 1K.

The screenshot displays two terminal windows. The left window shows the output of the `iperf3` command, indicating a connection to `esmeralda.com` on port 5201. It lists 23 local connections with their respective ports and shows a summary table of transfer, bitrate, and jitter. The right window shows the output of the `ping` command, displaying 10 successful pings to `esmeralda.com` with various TTL and time values, and a summary of 10 packets transmitted with 0% loss.

```

root@alda: /home/alda
File Actions Edit View Help
root@alda) ~ /home/alda
# iperf3 -c esmeralda.com -u -b 1K -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 46416 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 43203 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 60401 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 55242 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 37463 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 50330 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 35461 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 60725 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 53269 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 46105 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[ 7] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[ 9] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[11] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[13] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[15] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[17] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[19] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[21] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[23] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes  16.4 Kbits/sec 10
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total  Datagram
[ 5] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 7] 0.00-10.03 sec 2.00 KBytes  1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 9] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[11] 0.00-10.03 sec 2.00 KBytes  1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[13] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[15] 0.00-10.03 sec 2.00 KBytes  1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[17] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[19] 0.00-10.03 sec 2.00 KBytes  1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[21] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[23] 0.00-10.03 sec 2.00 KBytes  1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[SUM] 0.00-10.00 sec 20.0 KBytes  16.4 Kbits/sec 0.000 ms 0/10 (0%) sender
[SUM] 0.00-10.03 sec 20.0 KBytes  16.3 Kbits/sec 0.000 ms 0/10 (0%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
root@alda) ~ /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=42.7 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=2 tt
l=61 time=39.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=41.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=37.9 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=5 tt
l=61 time=52.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=40.7 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=7 tt
l=61 time=44.5 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=8 tt
l=61 time=41.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=61.1 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=10 tt
l=61 time=34.9 ms
--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9006ms
rtt min/avg/max/mdev = 34.878/43.565/61.061/7.279 ms
root@alda) ~ /home/alda
#
root@alda) ~ /home/alda
#

```

Screenshot hasil pengujian *spoofing* protokol BGP dengan *bandwidth* 50M.

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```

root@alda: /home/alda
File Actions Edit View Help

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 58503 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 33644 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 39292 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 37289 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 47248 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 47789 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 39126 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 45984 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 39757 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 45137 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00 sec 17.2 MBytes  14.4 Mbits/sec 8789
[ 7] 0.00-10.00 sec 17.2 MBytes  14.4 Mbits/sec 8782
[ 9] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 8779
[11] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 8772
[13] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 8765
[15] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 8759
[17] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 8745
[19] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 8735
[21] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 8731
[23] 0.00-10.00 sec 17.0 MBytes  14.3 Mbits/sec 8722
[SUM] 0.00-10.00 sec 171 MBytes  143 Mbits/sec 87579

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec 17.2 MBytes  14.4 Mbits/sec 0.000 ms 0/8789 (0%) sender
[ 5] 0.00-18.29 sec 10.0 KBytes  4.48 Kbits/sec 793.713 ms 110/115 (96%) receiver

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 7] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8779 (0%) sender
[ 7] 0.00-18.29 sec 10.0 KBytes  4.48 Kbits/sec 793.706 ms 110/115 (96%) receiver
[ 9] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8779 (0%) sender
[ 9] 0.00-18.29 sec 12.0 KBytes  5.37 Kbits/sec 785.267 ms 109/115 (95%) receiver
[11] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8772 (0%) sender
[11] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 750.634 ms 340/347 (98%) receiver
[13] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8765 (0%) sender
[13] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 711.883 ms 340/347 (98%) receiver
[15] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8759 (0%) sender
[15] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 709.289 ms 340/347 (98%) receiver
[17] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8745 (0%) sender
[17] 0.00-18.29 sec 16.0 KBytes  7.17 Kbits/sec 665.567 ms 336/344 (98%) receiver
[19] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8735 (0%) sender
[19] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 704.457 ms 337/344 (98%) receiver

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 7] 0.00-10.00 sec 17.2 MBytes  14.4 Mbits/sec 0.000 ms 0/8782 (0%) sender
[ 7] 0.00-18.29 sec 10.0 KBytes  4.48 Kbits/sec 793.706 ms 110/115 (96%) receiver
[ 9] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8779 (0%) sender
[ 9] 0.00-18.29 sec 12.0 KBytes  5.37 Kbits/sec 785.267 ms 109/115 (95%) receiver
[11] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8772 (0%) sender
[11] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 750.634 ms 340/347 (98%) receiver
[13] 0.00-10.00 sec 17.1 MBytes  14.4 Mbits/sec 0.000 ms 0/8765 (0%) sender
[13] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 711.883 ms 340/347 (98%) receiver
[15] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8759 (0%) sender
[15] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 709.289 ms 340/347 (98%) receiver
[17] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8745 (0%) sender
[17] 0.00-18.29 sec 16.0 KBytes  7.17 Kbits/sec 665.567 ms 336/344 (98%) receiver
[19] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8735 (0%) sender
[19] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 704.457 ms 337/344 (98%) receiver
[21] 0.00-10.00 sec 17.1 MBytes  14.3 Mbits/sec 0.000 ms 0/8731 (0%) sender
[21] 0.00-18.29 sec 14.0 KBytes  6.27 Kbits/sec 706.470 ms 337/344 (98%) receiver
[23] 0.00-10.00 sec 17.0 MBytes  14.3 Mbits/sec 0.000 ms 0/8722 (0%) sender
[23] 0.00-18.29 sec 12.0 KBytes  5.37 Kbits/sec 741.826 ms 108/114 (95%) receiver
[SUM] 0.00-10.00 sec 171 MBytes  143 Mbits/sec 0.000 ms 0/87579 (0%) sender
[SUM] 0.00-18.29 sec 130 KBytes  58.2 Kbits/sec 736.281 ms 2467/2532 (2.8%) receiver

```

```

root@alda: /home/alda
File Actions Edit View Help

root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=84.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=52.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=51.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=114 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=47.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=101 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=119 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9050ms
rtt min/avg/max/mdev = 47.768/81.448/118.780/28.548 ms

more you are able to hear"

```

```

root@alda: /home/alda
File Actions Edit View Help

root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=84.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=52.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=51.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=114 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=47.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=101 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=119 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9050ms
rtt min/avg/max/mdev = 47.768/81.448/118.780/28.548 ms

more you are able to hear"

```

```

root@alda: /home/alda
File Actions Edit View Help

root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=84.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=52.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=51.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=114 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=47.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=101 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=119 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9050ms
rtt min/avg/max/mdev = 47.768/81.448/118.780/28.548 ms

more you are able to hear"

```

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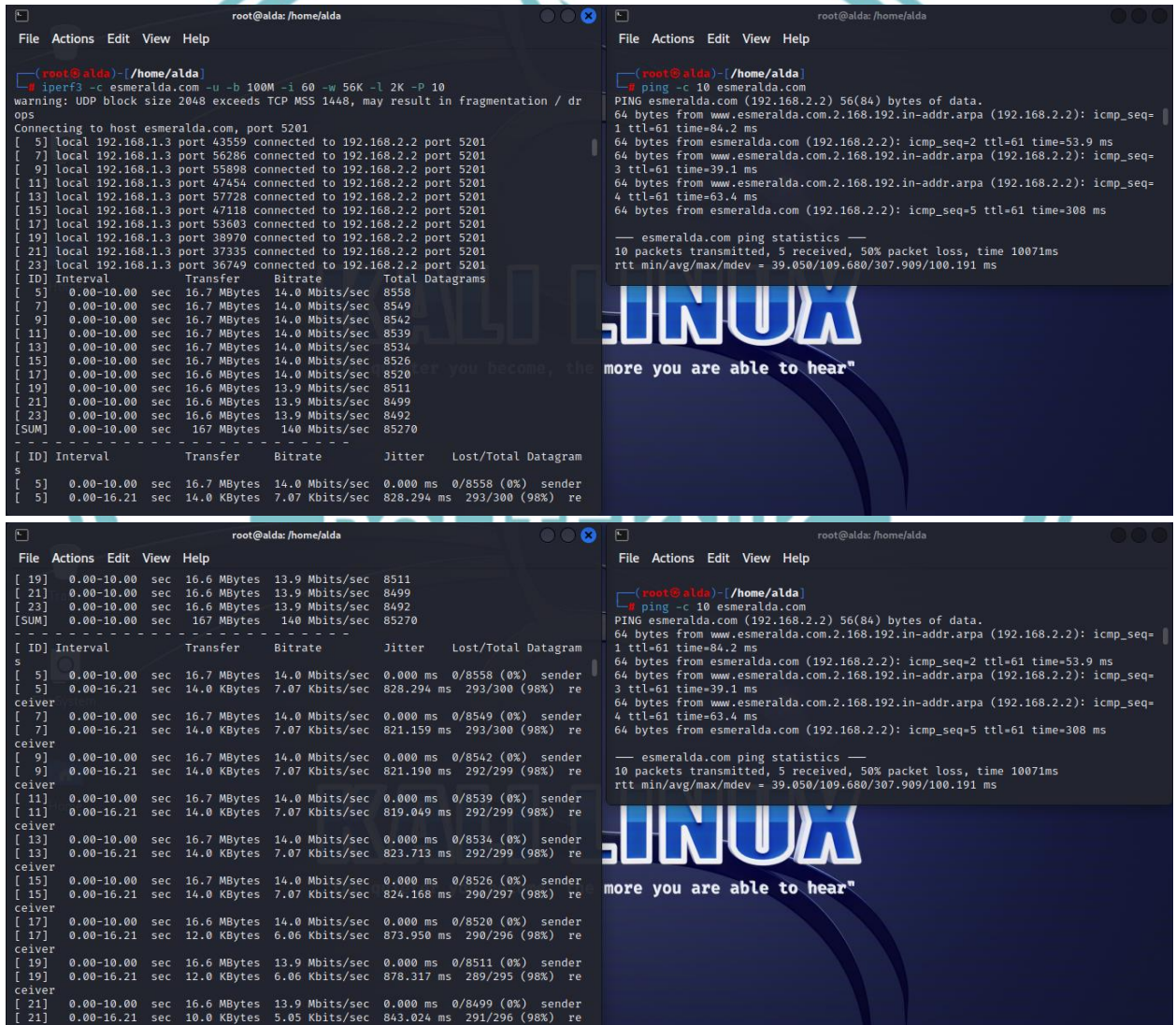
```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 55537 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00    sec 5.96 MBytes 49.9 Mbits/sec
[ 5] 1.00-2.00    sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 2.00-3.00    sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 3.00-4.00    sec 5.88 MBytes 49.2 Mbits/sec
[ 5] 4.00-5.00    sec 6.04 MBytes 50.7 Mbits/sec
[ 5] 5.00-6.00    sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 6.00-7.00    sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 7.00-8.00    sec 5.94 MBytes 49.8 Mbits/sec
[ 5] 8.00-9.00    sec 5.98 MBytes 50.2 Mbits/sec
[ 5] 9.00-10.00   sec 5.96 MBytes 50.0 Mbits/sec
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00   sec 59.6 MBytes 50.0 Mbits/sec
[ 5] 0.00-18.80   sec 349 KBytes  152 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian *spoofing* protokol BGP dengan *bandwidth* 100M.



```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 100M -i 60 -w 56K -l 2K -P 10
Warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 43559 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 56286 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 55898 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 47454 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 57728 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 47118 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 53603 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 38970 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 37335 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 36749 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Jitter    Lost/Total Datagram
s
[ 5] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8558 (0%) sender
[ 7] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8549 (0%) sender
[ 9] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8542 (0%) sender
[11] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8539 (0%) sender
[13] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8534 (0%) sender
[15] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8526 (0%) sender
[17] 0.00-10.00   sec 16.6 MBytes 14.0 Mbits/sec 0.000 ms 0/8520 (0%) sender
[19] 0.00-10.00   sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8511 (0%) sender
[21] 0.00-10.00   sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8499 (0%) sender
[23] 0.00-10.00   sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8492 (0%) sender
[SUM] 0.00-10.00   sec 167 MBytes 140 Mbits/sec 85270

[ ID] Interval      Transfer      Bitrate      Jitter    Lost/Total Datagram
s
[ 5] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8558 (0%) sender
[ 5] 0.00-16.21   sec 14.0 KBytes  7.07 Kbits/sec 828.294 ms 293/300 (98%) re
ceiver
[ 7] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8549 (0%) sender
[ 7] 0.00-16.21   sec 14.0 KBytes  7.07 Kbits/sec 821.159 ms 293/300 (98%) re
ceiver
[ 9] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8542 (0%) sender
[ 9] 0.00-16.21   sec 14.0 KBytes  7.07 Kbits/sec 821.190 ms 292/299 (98%) re
ceiver
[11] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8539 (0%) sender
[11] 0.00-16.21   sec 14.0 KBytes  7.07 Kbits/sec 819.049 ms 292/299 (98%) re
ceiver
[13] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8534 (0%) sender
[13] 0.00-16.21   sec 14.0 KBytes  7.07 Kbits/sec 823.713 ms 292/299 (98%) re
ceiver
[15] 0.00-10.00   sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8526 (0%) sender
[15] 0.00-16.21   sec 14.0 KBytes  7.07 Kbits/sec 824.168 ms 290/297 (98%) re
ceiver
[17] 0.00-10.00   sec 16.6 MBytes 14.0 Mbits/sec 0.000 ms 0/8520 (0%) sender
[17] 0.00-16.21   sec 12.0 KBytes  6.06 Kbits/sec 873.950 ms 290/296 (98%) re
ceiver
[19] 0.00-10.00   sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8511 (0%) sender
[19] 0.00-16.21   sec 12.0 KBytes  6.06 Kbits/sec 878.317 ms 289/295 (98%) re
ceiver
[21] 0.00-10.00   sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8499 (0%) sender
[21] 0.00-16.21   sec 10.0 KBytes  5.05 Kbits/sec 843.024 ms 291/296 (98%) re
ceiver

```

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```

root@alda: /home/alda
File Actions Edit View Help
ceiver
[ 7 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8549 (0%) sender
[ 7 ] 0.00-16.21 sec 14.0 KBytes 7.07 Kbits/sec 821.159 ms 293/300 (98%) re
ceiver
[ 9 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8542 (0%) sender
[ 9 ] 0.00-16.21 sec 14.0 KBytes 7.07 Kbits/sec 821.190 ms 292/299 (98%) re
ceiver
[ 11 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8539 (0%) sender
[ 11 ] 0.00-16.21 sec 14.0 KBytes 7.07 Kbits/sec 819.049 ms 292/299 (98%) re
ceiver
[ 13 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8534 (0%) sender
[ 13 ] 0.00-16.21 sec 14.0 KBytes 7.07 Kbits/sec 823.713 ms 292/299 (98%) re
ceiver
[ 15 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8526 (0%) sender
[ 15 ] 0.00-16.21 sec 14.0 KBytes 7.07 Kbits/sec 824.168 ms 290/297 (98%) re
ceiver
[ 17 ] 0.00-10.00 sec 16.6 MBytes 14.0 Mbits/sec 0.000 ms 0/8520 (0%) sender
[ 17 ] 0.00-16.21 sec 12.0 KBytes 6.06 Kbits/sec 873.950 ms 290/296 (98%) re
ceiver
[ 19 ] 0.00-10.00 sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8511 (0%) sender
[ 19 ] 0.00-16.21 sec 12.0 KBytes 6.06 Kbits/sec 878.317 ms 289/295 (98%) re
ceiver
[ 21 ] 0.00-10.00 sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8499 (0%) sender
[ 21 ] 0.00-16.21 sec 10.0 KBytes 5.05 Kbits/sec 843.024 ms 291/296 (98%) re
ceiver
[ 23 ] 0.00-10.00 sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8492 (0%) sender
[ 23 ] 0.00-16.21 sec 10.0 KBytes 5.05 Kbits/sec 795.105 ms 291/296 (98%) re
ceiver
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 0.000 ms 0/85270 (0%) sende
r
[SUM] 0.00-16.21 sec 128 KBytes 64.7 Kbits/sec 832.797 ms 2913/2977 (3.4%)
receiver

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 100M
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 50710 connected to 192.1
[ ID] Interval      Transfer      Bitrate
[ 5 ] 0.00-1.00    sec 11.9 MBytes 99.9 Mbits/sec
[ 5 ] 1.00-2.00    sec 11.9 MBytes 100 Mbits/sec
[ 5 ] 2.00-3.00    sec 11.9 MBytes 99.9 Mbits/sec
[ 5 ] 3.00-4.00    sec 11.6 MBytes 97.6 Mbits/sec
[ 5 ] 4.00-5.00    sec 12.2 MBytes 102 Mbits/sec
[ 5 ] 5.00-6.00    sec 11.9 MBytes 99.8 Mbits/sec
[ 5 ] 6.00-7.00    sec 12.0 MBytes 100 Mbits/sec
[ 5 ] 7.00-8.00    sec 11.9 MBytes 100 Mbits/sec
[ 5 ] 8.00-9.00    sec 11.9 MBytes 100 Mbits/sec
[ 5 ] 9.00-10.00   sec 11.9 MBytes 99.9 Mbits/sec
[ ID] Interval      Transfer      Bitrate
[ 5 ] 0.00-10.00   sec 119 MBytes 100 Mbits/sec
[ 5 ] 0.00-24.16   sec 298 KBytes 101 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian *spoofing* protokol BGP dengan *bandwidth* 150M.

```

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 150M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 44785 connected to 192.168.2.2 port 5201
[ 7 ] local 192.168.1.3 port 44350 connected to 192.168.2.2 port 5201
[ 9 ] local 192.168.1.3 port 45465 connected to 192.168.2.2 port 5201
[ 11 ] local 192.168.1.3 port 45836 connected to 192.168.2.2 port 5201
[ 13 ] local 192.168.1.3 port 43942 connected to 192.168.2.2 port 5201
[ 15 ] local 192.168.1.3 port 42280 connected to 192.168.2.2 port 5201
[ 17 ] local 192.168.1.3 port 48797 connected to 192.168.2.2 port 5201
[ 19 ] local 192.168.1.3 port 35715 connected to 192.168.2.2 port 5201
[ 21 ] local 192.168.1.3 port 43795 connected to 192.168.2.2 port 5201
[ 23 ] local 192.168.1.3 port 49146 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
Datagrams
[ 5 ] 0.00-10.01   sec 9.15 MBytes 7.67 Mbits/sec 4683
[ 7 ] 0.00-10.01   sec 9.13 MBytes 7.66 Mbits/sec 4677
[ 9 ] 0.00-10.01   sec 9.12 MBytes 7.65 Mbits/sec 4671
[ 11 ] 0.00-10.01   sec 9.12 MBytes 7.64 Mbits/sec 4669
[ 13 ] 0.00-10.01   sec 9.11 MBytes 7.64 Mbits/sec 4665
[ 15 ] 0.00-10.01   sec 9.10 MBytes 7.63 Mbits/sec 4661
[ 17 ] 0.00-10.01   sec 9.10 MBytes 7.62 Mbits/sec 4657
[ 19 ] 0.00-10.01   sec 9.09 MBytes 7.62 Mbits/sec 4653
[ 21 ] 0.00-10.01   sec 9.07 MBytes 7.60 Mbits/sec 4644
[ 23 ] 0.00-10.01   sec 9.05 MBytes 7.59 Mbits/sec 4636
[SUM] 0.00-10.01   sec 91.0 MBytes 76.3 Mbits/sec 46616
[ ID] Interval      Transfer      Bitrate      Jitter    Lost/Total
Datagram

```

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```

root@alda: /home/alda
File Actions Edit View Help
[ 23] 0.00-10.01 sec 9.05 MBytes 7.59 Mbits/sec 4636
[SUM] 0.00-10.01 sec 91.0 MBytes 76.3 Mbits/sec 46616

[ ID] Interval Transfer Bitrate Jitter Lost/Total Datagrams
[ 5] 0.00-10.01 sec 9.15 MBytes 7.67 Mbits/sec 0.000 ms 0/4683 (0%) sender
[ 5] 0.00-42.95 sec 14.0 KBytes 2.67 Kbits/sec 1213.251 ms 2587/2594 (1e+02%) receiver
[ 7] 0.00-10.01 sec 9.13 MBytes 7.66 Mbits/sec 0.000 ms 0/4677 (0%) sender
[ 7] 0.00-42.95 sec 12.0 KBytes 2.29 Kbits/sec 1117.384 ms 2584/2590 (1e+02%) receiver
[ 9] 0.00-10.01 sec 9.12 MBytes 7.65 Mbits/sec 0.000 ms 0/4671 (0%) sender
[ 9] 0.00-42.95 sec 10.0 KBytes 1.91 Kbits/sec 1025.071 ms 2583/2588 (1e+02%) receiver
[ 11] 0.00-10.01 sec 9.12 MBytes 7.64 Mbits/sec 0.000 ms 0/4669 (0%) sender
[ 11] 0.00-42.95 sec 10.0 KBytes 1.91 Kbits/sec 1067.939 ms 2583/2588 (1e+02%) receiver
[ 13] 0.00-10.01 sec 9.11 MBytes 7.64 Mbits/sec 0.000 ms 0/4665 (0%) sender
[ 13] 0.00-42.95 sec 8.00 KBytes 1.53 Kbits/sec 1016.118 ms 2582/2586 (1e+02%) receiver
[ 15] 0.00-10.01 sec 9.10 MBytes 7.63 Mbits/sec 0.000 ms 0/4661 (0%) sender
[ 15] 0.00-42.95 sec 6.00 KBytes 1.14 Kbits/sec 1019.057 ms 2583/2586 (1e+02%) receiver
[ 17] 0.00-10.01 sec 9.10 MBytes 7.62 Mbits/sec 0.000 ms 0/4657 (0%) sender
[ 17] 0.00-42.95 sec 12.0 KBytes 2.29 Kbits/sec 1162.264 ms 2577/2583 (1e+02%) receiver
[ 19] 0.00-10.01 sec 9.09 MBytes 7.62 Mbits/sec 0.000 ms 0/4653 (0%) sender
[ 19] 0.00-42.95 sec 14.0 KBytes 2.67 Kbits/sec 1244.786 ms 2575/2582 (1e+02%) receiver
[ 21] 0.00-10.01 sec 9.07 MBytes 7.60 Mbits/sec 0.000 ms 0/4644 (0%) sender
[ 21] 0.00-42.95 sec 14.0 KBytes 2.67 Kbits/sec 1040.900 ms 2569/2576 (1e+02%) receiver

root@alda: /home/alda
File Actions Edit View Help
[ 7] 0.00-10.01 sec 9.13 MBytes 7.66 Mbits/sec 0.000 ms 0/4677 (0%) sender
[ 7] 0.00-42.95 sec 12.0 KBytes 2.29 Kbits/sec 1117.384 ms 2584/2590 (1e+02%) receiver
[ 9] 0.00-10.01 sec 9.12 MBytes 7.65 Mbits/sec 0.000 ms 0/4671 (0%) sender
[ 9] 0.00-42.95 sec 10.0 KBytes 1.91 Kbits/sec 1025.071 ms 2583/2588 (1e+02%) receiver
[ 11] 0.00-10.01 sec 9.12 MBytes 7.64 Mbits/sec 0.000 ms 0/4669 (0%) sender
[ 11] 0.00-42.95 sec 10.0 KBytes 1.91 Kbits/sec 1067.939 ms 2583/2588 (1e+02%) receiver
[ 13] 0.00-10.01 sec 9.11 MBytes 7.64 Mbits/sec 0.000 ms 0/4665 (0%) sender
[ 13] 0.00-42.95 sec 8.00 KBytes 1.53 Kbits/sec 1016.118 ms 2582/2586 (1e+02%) receiver
[ 15] 0.00-10.01 sec 9.10 MBytes 7.63 Mbits/sec 0.000 ms 0/4661 (0%) sender
[ 15] 0.00-42.95 sec 6.00 KBytes 1.14 Kbits/sec 1019.057 ms 2583/2586 (1e+02%) receiver
[ 17] 0.00-10.01 sec 9.10 MBytes 7.62 Mbits/sec 0.000 ms 0/4657 (0%) sender
[ 17] 0.00-42.95 sec 12.0 KBytes 2.29 Kbits/sec 1162.264 ms 2577/2583 (1e+02%) receiver
[ 19] 0.00-10.01 sec 9.09 MBytes 7.62 Mbits/sec 0.000 ms 0/4653 (0%) sender
[ 19] 0.00-42.95 sec 14.0 KBytes 2.67 Kbits/sec 1244.786 ms 2575/2582 (1e+02%) receiver
[ 21] 0.00-10.01 sec 9.07 MBytes 7.60 Mbits/sec 0.000 ms 0/4644 (0%) sender
[ 21] 0.00-42.95 sec 14.0 KBytes 2.67 Kbits/sec 1040.900 ms 2569/2576 (1e+02%) receiver
[ 23] 0.00-10.01 sec 9.05 MBytes 7.59 Mbits/sec 0.000 ms 0/4636 (0%) sender
[ 23] 0.00-42.95 sec 10.0 KBytes 1.91 Kbits/sec 1107.184 ms 2563/2568 (1e+02%) receiver
[SUM] 0.00-10.01 sec 91.0 MBytes 76.3 Mbits/sec 0.000 ms 0/46616 (0%) sender
[SUM] 0.00-42.95 sec 110 KBytes 21.0 Kbits/sec 1101.395 ms 25786/25841 (55%) receiver

root@alda: /home/alda
File Actions Edit View Help
[ 5] 0.00-1.00 sec 16.3 MBytes 137 Mbits/sec
[ 5] 1.00-2.00 sec 16.5 MBytes 139 Mbits/sec
[ 5] 2.00-3.00 sec 16.6 MBytes 139 Mbits/sec
[ 5] 3.00-4.00 sec 16.6 MBytes 140 Mbits/sec
[ 5] 4.00-5.00 sec 17.3 MBytes 145 Mbits/sec
[ 5] 5.00-6.00 sec 16.7 MBytes 140 Mbits/sec
[ 5] 6.00-7.00 sec 15.6 MBytes 131 Mbits/sec
[ 5] 7.00-8.00 sec 16.8 MBytes 141 Mbits/sec
[ 5] 8.00-9.00 sec 17.2 MBytes 145 Mbits/sec
[ 5] 9.00-10.00 sec 17.5 MBytes 147 Mbits/sec

[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 167 MBytes 140 Mbits/sec
[ 5] 0.00-18.86 sec 219 KBytes 95.2 Kbits/sec

iperf Done.
  
```

Screenshot hasil pengujian *spoofing* protokol BGP dengan *bandwidth* 200M.

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
root@alda)~# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 60858 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 34101 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 56896 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 55800 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 35808 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 60848 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 46466 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 53920 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 52045 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 36917 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.01 sec  15.3 MBytes  12.9 Mbits/sec  7850
[ 7] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7845
[ 9] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7843
[11] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7838
[13] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7832
[15] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7826
[17] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7822
[19] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  7817
[21] 0.00-10.01 sec  15.2 MBytes  12.8 Mbits/sec  7808
[23] 0.00-10.01 sec  15.2 MBytes  12.8 Mbits/sec  7806
[SUM] 0.00-10.01 sec  153 MBytes  128 Mbits/sec  78287
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
root@alda)~# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=135 ms
64 bytes from ww.esmeralda.com (192.168.2.2): icmp_seq=2
ttl=61 time=248 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 2 received, 80% packet loss, time 14629ms
rtt min/avg/max/mdev = 134.617/191.165/247.714/56.548 ms

root@alda: /home/alda
File Actions Edit View Help
root@alda)~# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.01 sec  15.3 MBytes  12.9 Mbits/sec  0.000 ms  0/7850 (0%) sender
[ 5] 0.00-31.06 sec  28.0 KBytes  7.39 Kbits/sec  1386.034 ms  5581/5595 (1e+02
%) receiver
[ 7] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7845 (0%) sender
[ 7] 0.00-31.06 sec  28.0 KBytes  7.39 Kbits/sec  1373.980 ms  5577/5591 (1e+02
%) receiver
[ 9] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7843 (0%) sender
[ 9] 0.00-31.06 sec  28.0 KBytes  7.39 Kbits/sec  1373.776 ms  5575/5589 (1e+02
%) receiver
[11] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7838 (0%) sender
[11] 0.00-31.06 sec  24.0 KBytes  6.33 Kbits/sec  1287.076 ms  5572/5584 (1e+02
%) receiver
[13] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7832 (0%) sender
[13] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1278.398 ms  5568/5581 (1e+02
%) receiver
[15] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7826 (0%) sender
[15] 0.00-31.06 sec  24.0 KBytes  6.33 Kbits/sec  1150.359 ms  4006/4018 (1e+02
%) receiver
[17] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7822 (0%) sender
[17] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1126.431 ms  4003/4016 (1e+02
%) receiver
[19] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7817 (0%) sender
[19] 0.00-31.06 sec  24.0 KBytes  6.33 Kbits/sec  1135.529 ms  4002/4014 (1e+02
%) receiver
[21] 0.00-10.01 sec  15.2 MBytes  12.8 Mbits/sec  0.000 ms  0/7808 (0%) sender
[21] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1156.500 ms  3995/4008 (1e+02
%) receiver
[23] 0.00-10.01 sec  15.2 MBytes  12.8 Mbits/sec  0.000 ms  0/7806 (0%) sender
[23] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1290.127 ms  3994/4007 (1e+02
%) receiver
[SUM] 0.00-10.01 sec  153 MBytes  128 Mbits/sec  0.000 ms  0/78287 (0%) sende
r
[SUM] 0.00-31.06 sec  260 KBytes  68.6 Kbits/sec  1255.821 ms  47873/48003 (61%
) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
root@alda)~# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=135 ms
64 bytes from ww.esmeralda.com (192.168.2.2): icmp_seq=2
ttl=61 time=248 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 2 received, 80% packet loss, time 14629ms
rtt min/avg/max/mdev = 134.617/191.165/247.714/56.548 ms

root@alda: /home/alda
File Actions Edit View Help
root@alda)~# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.01 sec  15.3 MBytes  12.9 Mbits/sec  0.000 ms  0/7850 (0%) sender
[ 5] 0.00-31.06 sec  28.0 KBytes  7.39 Kbits/sec  1386.034 ms  5581/5595 (1e+02
%) receiver
[ 7] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7845 (0%) sender
[ 7] 0.00-31.06 sec  28.0 KBytes  7.39 Kbits/sec  1373.980 ms  5577/5591 (1e+02
%) receiver
[ 9] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7843 (0%) sender
[ 9] 0.00-31.06 sec  28.0 KBytes  7.39 Kbits/sec  1373.776 ms  5575/5589 (1e+02
%) receiver
[11] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7838 (0%) sender
[11] 0.00-31.06 sec  24.0 KBytes  6.33 Kbits/sec  1287.076 ms  5572/5584 (1e+02
%) receiver
[13] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7832 (0%) sender
[13] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1278.398 ms  5568/5581 (1e+02
%) receiver
[15] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7826 (0%) sender
[15] 0.00-31.06 sec  24.0 KBytes  6.33 Kbits/sec  1150.359 ms  4006/4018 (1e+02
%) receiver
[17] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7822 (0%) sender
[17] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1126.431 ms  4003/4016 (1e+02
%) receiver
[19] 0.00-10.01 sec  15.3 MBytes  12.8 Mbits/sec  0.000 ms  0/7817 (0%) sender
[19] 0.00-31.06 sec  24.0 KBytes  6.33 Kbits/sec  1135.529 ms  4002/4014 (1e+02
%) receiver
[21] 0.00-10.01 sec  15.2 MBytes  12.8 Mbits/sec  0.000 ms  0/7808 (0%) sender
[21] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1156.500 ms  3995/4008 (1e+02
%) receiver
[23] 0.00-10.01 sec  15.2 MBytes  12.8 Mbits/sec  0.000 ms  0/7806 (0%) sender
[23] 0.00-31.06 sec  26.0 KBytes  6.86 Kbits/sec  1290.127 ms  3994/4007 (1e+02
%) receiver
[SUM] 0.00-10.01 sec  153 MBytes  128 Mbits/sec  0.000 ms  0/78287 (0%) sende
r
[SUM] 0.00-31.06 sec  260 KBytes  68.6 Kbits/sec  1255.821 ms  47873/48003 (61%
) receiver
iperf Done.

```


Hak Cipta :

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber :
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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengemukakan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 200M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 47181 connected to 192.1
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec  14.9 MBytes  125 Mbits/sec
[ 5] 1.00-2.00 sec  17.8 MBytes  149 Mbits/sec
[ 5] 2.00-3.00 sec  16.5 MBytes  138 Mbits/sec
[ 5] 3.00-4.00 sec  16.3 MBytes  137 Mbits/sec
[ 5] 4.00-5.00 sec  17.2 MBytes  144 Mbits/sec
[ 5] 5.00-6.00 sec  16.6 MBytes  138 Mbits/sec
[ 5] 6.00-7.01 sec  17.5 MBytes  146 Mbits/sec
[ 5] 7.01-8.00 sec  16.7 MBytes  141 Mbits/sec
[ 5] 8.00-9.00 sec  16.8 MBytes  141 Mbits/sec
[ 5] 9.00-10.00 sec 15.5 MBytes  130 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 166 MBytes  139 Mbits/sec
[ 5] 0.00-13.34 sec 164 KBytes  101 Kbits/sec

iperf Done.
  
```

Screenshot hasil pengujian *sniffing* protokol BGP dengan *bandwidth* 1K.

```

root@alda:~/home/alda
File Actions Edit View Help
[alda@alda]~
$ sudo su
[sudo] password for alda:
root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 1K -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation /
ops:
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 47611 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 42794 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 40032 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 41305 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 46252 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 48005 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 53372 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 44168 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 55953 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 39969 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[ 7] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[ 9] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[11] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[13] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[15] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[17] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[19] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[21] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
[23] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  1
  
```

```

root@alda:~/home/alda
File Actions Edit View Help
[alda@alda]~
$ sudo su
[sudo] password for alda:
root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 tt
l=61 time=43.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=71.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=37.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 tt
l=61 time=56.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 tt
l=61 time=65.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=6 tt
l=61 time=52.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=42.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=47.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=59.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=88.6 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9006ms
rtt min/avg/max/mdev = 37.390/56.482/88.644/14.668 ms

root@alda:~/home/alda
# ping -c 10 esmeralda.com
ping: esmeralda.com: Temporary failure in name resolution
  
```

```

root@alda:~/home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec  20.0 KBytes  16.4 Kbits/sec  10
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datag
s
[ 5] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  0.000 ms  0/1 (0%) sender
[ 7] 0.00-10.00 sec  2.00 KBytes  1.63 Kbits/sec  0.000 ms  0/1 (0%) sender
[ 9] 0.00-10.07 sec  2.00 KBytes  1.63 Kbits/sec  0.000 ms  0/1 (0%) receiver
[11] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  0.000 ms  0/1 (0%) sender
[13] 0.00-10.07 sec  2.00 KBytes  1.63 Kbits/sec  0.000 ms  0/1 (0%) receiver
[15] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  0.000 ms  0/1 (0%) sender
[17] 0.00-10.07 sec  2.00 KBytes  1.63 Kbits/sec  0.000 ms  0/1 (0%) receiver
[19] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  0.000 ms  0/1 (0%) sender
[21] 0.00-10.07 sec  2.00 KBytes  1.63 Kbits/sec  0.000 ms  0/1 (0%) receiver
[23] 0.00-10.00 sec  2.00 KBytes  1.64 Kbits/sec  0.000 ms  0/1 (0%) sender
[SUM] 0.00-10.00 sec  20.0 KBytes  16.4 Kbits/sec  0.000 ms  0/10 (0%) sende
[SUM] 0.00-10.07 sec  20.0 KBytes  16.3 Kbits/sec  0.000 ms  0/10 (0%) recei

iperf Done.
  
```

```

root@alda:~/home/alda
File Actions Edit View Help
[alda@alda]~
$ sudo su
[sudo] password for alda:
root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 tt
l=61 time=43.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=71.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=37.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 tt
l=61 time=56.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 tt
l=61 time=65.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=6 tt
l=61 time=52.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=42.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=47.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=59.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=88.6 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9006ms
rtt min/avg/max/mdev = 37.390/56.482/88.644/14.668 ms

root@alda:~/home/alda
# ping -c 10 esmeralda.com
ping: esmeralda.com: Temporary failure in name resolution
  
```



Hak Cipta milik Politeknik Negeri Jakarta

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumunkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 1K
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 36392 connected to 192.
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec  1.41 KBytes  11.6 Kbits/sec
[ 5] 1.00-2.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 2.00-3.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 3.00-4.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 4.00-5.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 5.00-6.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 6.00-7.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 7.00-8.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 8.00-9.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 9.00-10.00 sec 0.00 Bytes  0.00 bits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 1.41 KBytes  1.16 Kbits/sec
[ 5] 0.00-10.09 sec 1.41 KBytes  1.15 Kbits/sec
iperf Done.
  
```

Screenshot hasil pengujian sniffing protokol BGP dengan bandwidth 50M.

```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 48120 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 53223 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 37288 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 42651 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 41669 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 58608 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 47344 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 56139 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 45723 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 42929 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00 sec 16.1 MBytes  13.5 Mbits/sec  8232
[ 7] 0.00-10.00 sec 16.1 MBytes  13.5 Mbits/sec  8220
[ 9] 0.00-10.00 sec 16.0 MBytes  13.5 Mbits/sec  8213
[11] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8205
[13] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8201
[15] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8196
[17] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8191
[19] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8182
[21] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8173
[23] 0.00-10.00 sec 15.9 MBytes  13.4 Mbits/sec  8163
[SUM] 0.00-10.00 sec 160 MBytes  134 Mbits/sec  81976
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 16.1 MBytes  13.5 Mbits/sec  0.000 ms  0/8232 (0%) sender
[ 5] 0.00-17.55 sec 16.0 KBytes  7.47 Kbits/sec  902.509 ms 247/255 (97%) re
ceiver
[ 7] 0.00-10.00 sec 16.1 MBytes  13.5 Mbits/sec  0.000 ms  0/8220 (0%) sender
[ 7] 0.00-17.55 sec 16.0 KBytes  7.47 Kbits/sec  879.383 ms 247/255 (97%) re
ceiver
[ 9] 0.00-10.00 sec 16.0 MBytes  13.5 Mbits/sec  0.000 ms  0/8213 (0%) sender
[ 9] 0.00-17.55 sec 16.0 KBytes  5.60 Kbits/sec  472.718 ms 246/252 (98%) re
ceiver
[11] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8205 (0%) sender
[11] 0.00-17.55 sec 14.0 KBytes  6.54 Kbits/sec  467.741 ms 244/251 (97%) re
ceiver
[13] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8201 (0%) sender
[13] 0.00-17.55 sec 12.0 KBytes  5.60 Kbits/sec  472.427 ms 245/251 (98%) re
ceiver
[15] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8196 (0%) sender
[15] 0.00-17.55 sec 10.0 KBytes  4.67 Kbits/sec  474.787 ms 246/251 (98%) re
ceiver
[17] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8191 (0%) sender
[17] 0.00-17.55 sec 12.0 KBytes  5.60 Kbits/sec  470.061 ms 245/251 (98%) re
ceiver
[19] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8182 (0%) sender
[19] 0.00-17.55 sec 12.0 KBytes  5.60 Kbits/sec  883.018 ms 245/251 (98%) re
ceiver
  
```

```

root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=76.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=77.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=58.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=49.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=30.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=99.6 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
7 ttl=61 time=44.0 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
8 ttl=61 time=68.7 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
9 ttl=61 time=102 ms
-----
esmeralda.com ping statistics ---
10 packets transmitted, 9 received, 10% packet loss, time 9014ms
rtt min/avg/max/mdev = 30.043/67.291/102.070/23.013 ms
  
```

```

root@alda:~/home/alda
[13] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8201
[15] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8196
[17] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8191
[19] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8182
[21] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  8173
[23] 0.00-10.00 sec 15.9 MBytes  13.4 Mbits/sec  8163
[SUM] 0.00-10.00 sec 160 MBytes  134 Mbits/sec  81976
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 16.1 MBytes  13.5 Mbits/sec  0.000 ms  0/8232 (0%) sender
[ 5] 0.00-17.55 sec 16.0 KBytes  7.47 Kbits/sec  902.509 ms 247/255 (97%) re
ceiver
[ 7] 0.00-10.00 sec 16.1 MBytes  13.5 Mbits/sec  0.000 ms  0/8220 (0%) sender
[ 7] 0.00-17.55 sec 16.0 KBytes  7.47 Kbits/sec  879.383 ms 247/255 (97%) re
ceiver
[ 9] 0.00-10.00 sec 16.0 MBytes  13.5 Mbits/sec  0.000 ms  0/8213 (0%) sender
[ 9] 0.00-17.55 sec 16.0 KBytes  5.60 Kbits/sec  472.718 ms 246/252 (98%) re
ceiver
[11] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8205 (0%) sender
[11] 0.00-17.55 sec 14.0 KBytes  6.54 Kbits/sec  467.741 ms 244/251 (97%) re
ceiver
[13] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8201 (0%) sender
[13] 0.00-17.55 sec 12.0 KBytes  5.60 Kbits/sec  472.427 ms 245/251 (98%) re
ceiver
[15] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8196 (0%) sender
[15] 0.00-17.55 sec 10.0 KBytes  4.67 Kbits/sec  474.787 ms 246/251 (98%) re
ceiver
[17] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8191 (0%) sender
[17] 0.00-17.55 sec 12.0 KBytes  5.60 Kbits/sec  470.061 ms 245/251 (98%) re
ceiver
[19] 0.00-10.00 sec 16.0 MBytes  13.4 Mbits/sec  0.000 ms  0/8182 (0%) sender
[19] 0.00-17.55 sec 12.0 KBytes  5.60 Kbits/sec  883.018 ms 245/251 (98%) re
ceiver
  
```

```

root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=76.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=77.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=58.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=49.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=30.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=99.6 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
7 ttl=61 time=44.0 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
8 ttl=61 time=68.7 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
9 ttl=61 time=102 ms
-----
esmeralda.com ping statistics ---
10 packets transmitted, 9 received, 10% packet loss, time 9014ms
rtt min/avg/max/mdev = 30.043/67.291/102.070/23.013 ms
  
```

Hak Cipta milik Politeknik Negeri Jakarta

Hak Cipta :

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
ceiver
[ 7 ] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8220 (0%) sender
[ 7 ] 0.00-17.55 sec 16.0 KBytes 7.47 Kbits/sec 879.383 ms 247/255 (97%) re
ceiver
[ 9 ] 0.00-10.00 sec 16.0 MBytes 13.5 Mbits/sec 0.000 ms 0/8213 (0%) sender
[ 9 ] 0.00-17.55 sec 12.0 KBytes 5.60 Kbits/sec 472.718 ms 246/252 (98%) re
ceiver
[ 11 ] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8205 (0%) sender
[ 11 ] 0.00-17.55 sec 14.0 KBytes 6.54 Kbits/sec 467.741 ms 244/251 (97%) re
ceiver
[ 13 ] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8201 (0%) sender
[ 13 ] 0.00-17.55 sec 12.0 KBytes 5.60 Kbits/sec 472.427 ms 245/251 (98%) re
ceiver
[ 15 ] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8196 (0%) sender
[ 15 ] 0.00-17.55 sec 10.0 KBytes 4.67 Kbits/sec 474.787 ms 246/251 (98%) re
ceiver
[ 17 ] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8191 (0%) sender
[ 17 ] 0.00-17.55 sec 12.0 KBytes 5.60 Kbits/sec 470.061 ms 245/251 (98%) re
ceiver
[ 19 ] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8182 (0%) sender
[ 19 ] 0.00-17.55 sec 12.0 KBytes 5.60 Kbits/sec 883.018 ms 245/251 (98%) re
ceiver
[ 21 ] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8173 (0%) sender
[ 21 ] 0.00-17.55 sec 12.0 KBytes 5.60 Kbits/sec 877.908 ms 244/250 (98%) re
ceiver
[ 23 ] 0.00-10.00 sec 15.9 MBytes 13.4 Mbits/sec 0.000 ms 0/8163 (0%) sender
[ 23 ] 0.00-17.55 sec 12.0 KBytes 5.60 Kbits/sec 878.657 ms 243/249 (98%) re
ceiver
[SUM] 0.00-10.00 sec 160 MBytes 134 Mbits/sec 0.000 ms 0/81976 (0%) sende
r
[SUM] 0.00-17.55 sec 128 KBytes 59.8 Kbits/sec 677.921 ms 2452/2516 (3%) r
eceiver
    
```

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=76.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=77.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=58.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=49.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=30.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=99.6 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
7 ttl=61 time=44.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
8 ttl=61 time=68.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
9 ttl=61 time=102 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 9 received, 10% packet loss, time 9014ms
rtt min/avg/max/mdev = 30.043/67.291/102.070/23.013 ms

more you are able to hear"
    
```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 53682 connected to 192.168.2.2 port 5201
[ ID ] Interval Transfer Bitrate
[ 5 ] 0.00-1.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 1.00-2.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 2.00-3.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 3.00-4.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 4.00-5.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 5.00-6.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 6.00-7.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 7.00-8.00 sec 5.97 MBytes 50.0 Mbits/sec
[ 5 ] 8.00-9.00 sec 5.95 MBytes 49.9 Mbits/sec
[ 5 ] 9.00-10.00 sec 5.97 MBytes 50.1 Mbits/sec

[ ID ] Interval Transfer Bitrate
[ 5 ] 0.00-10.00 sec 59.6 MBytes 50.0 Mbits/sec
[ 5 ] 0.00-18.75 sec 264 KBytes 116 Kbits/sec

iperf Done.
    
```

Screenshot hasil pengujian sniffing protokol BGP dengan bandwidth 100M.

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# iperf3 -c esmeralda.com -u -b 100M -i 60 -w 56K -L 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 55798 connected to 192.168.2.2 port 5201
[ 7 ] local 192.168.1.3 port 55823 connected to 192.168.2.2 port 5201
[ 9 ] local 192.168.1.3 port 57517 connected to 192.168.2.2 port 5201
[ 11 ] local 192.168.1.3 port 46549 connected to 192.168.2.2 port 5201
[ 13 ] local 192.168.1.3 port 48811 connected to 192.168.2.2 port 5201
[ 15 ] local 192.168.1.3 port 35715 connected to 192.168.2.2 port 5201
[ 17 ] local 192.168.1.3 port 35781 connected to 192.168.2.2 port 5201
[ 19 ] local 192.168.1.3 port 33677 connected to 192.168.2.2 port 5201
[ 21 ] local 192.168.1.3 port 54935 connected to 192.168.2.2 port 5201
[ 23 ] local 192.168.1.3 port 45010 connected to 192.168.2.2 port 5201
[ ID ] Interval Transfer Bitrate Total Datagrams
[ 5 ] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 8588
[ 7 ] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 8586
[ 9 ] 0.00-10.00 sec 16.8 MBytes 14.0 Mbits/sec 8576
[ 11 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8571
[ 13 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8561
[ 15 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8554
[ 17 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8551
[ 19 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8549
[ 21 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8536
[ 23 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8526
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 85598

[ ID ] Interval Transfer Bitrate Jitter Lost/Total Datagram
s
[ 5 ] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8588 (0%) sender
[ 5 ] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.533 ms 291/298 (98%) re
    
```

```

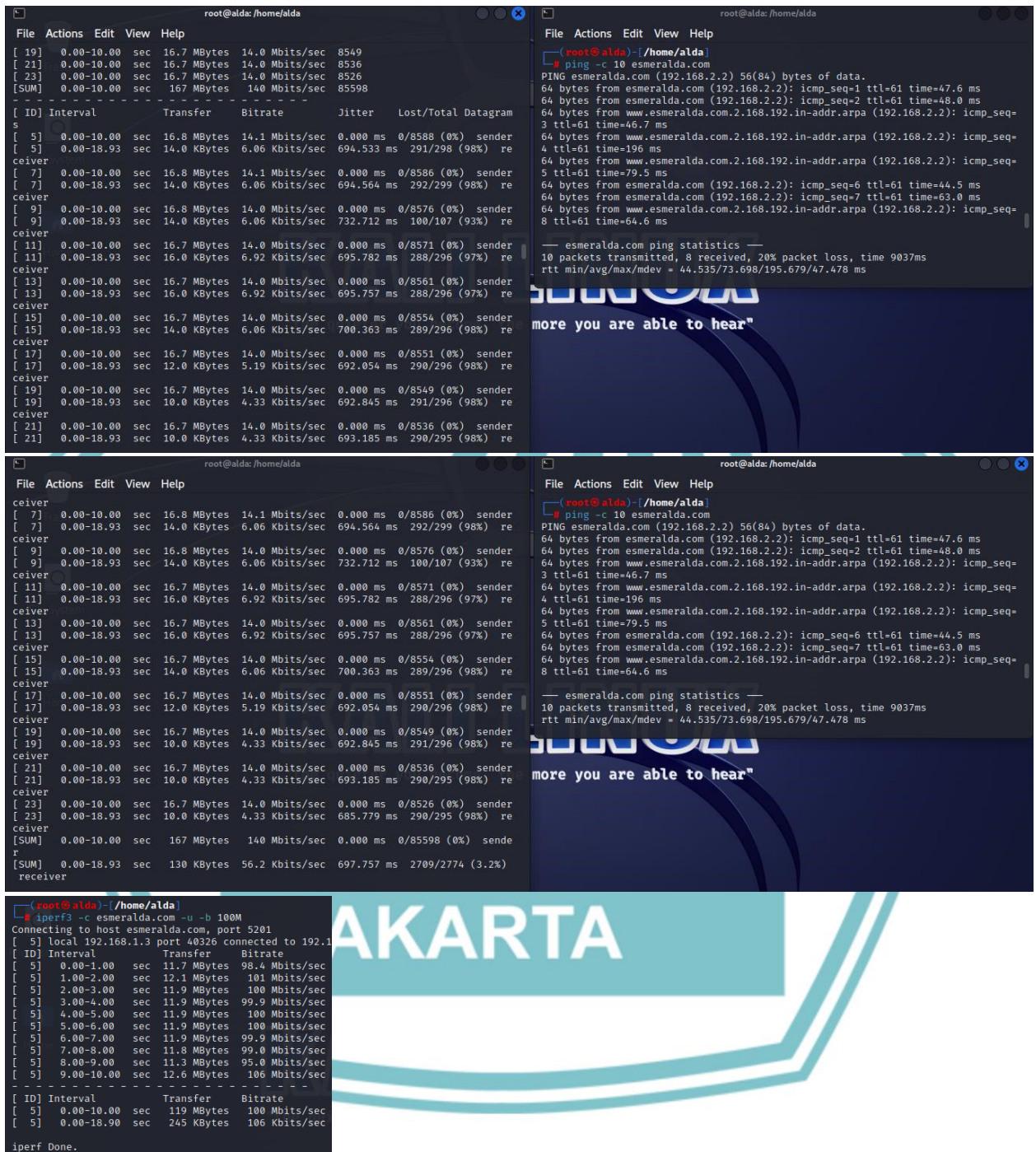
root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=47.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=48.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=46.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
4 ttl=61 time=196 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
5 ttl=61 time=79.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=44.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=63.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
8 ttl=61 time=64.6 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 8 received, 20% packet loss, time 9037ms
rtt min/avg/max/mdev = 44.535/73.698/195.679/47.478 ms

more you are able to hear"
    
```

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 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penulisan laporan, penulisan kritik atau tinjauan suatu masalah.
 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta



```

root@alda: /home/alda
File Actions Edit View Help
[ 19] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8549
[ 21] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8536
[ 23] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8526
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 85598

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8588 (0%) sender
[ 5] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.533 ms 291/298 (98%) receiver
[ 7] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8586 (0%) sender
[ 7] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.564 ms 292/299 (98%) receiver
[ 9] 0.00-10.00 sec 16.8 MBytes 14.0 Mbits/sec 0.000 ms 0/8576 (0%) sender
[ 9] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 732.712 ms 100/107 (93%) receiver
[11] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8571 (0%) sender
[11] 0.00-18.93 sec 16.0 KBytes 6.92 Kbits/sec 695.782 ms 288/296 (97%) receiver
[13] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8561 (0%) sender
[13] 0.00-18.93 sec 16.0 KBytes 6.92 Kbits/sec 695.757 ms 288/296 (97%) receiver
[15] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8554 (0%) sender
[15] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 700.363 ms 289/296 (98%) receiver
[17] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8551 (0%) sender
[17] 0.00-18.93 sec 12.0 KBytes 5.19 Kbits/sec 692.054 ms 290/296 (98%) receiver
[19] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8549 (0%) sender
[19] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 692.845 ms 291/296 (98%) receiver
[21] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8536 (0%) sender
[21] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 693.185 ms 290/295 (98%) receiver

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=47.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=48.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=46.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=196 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=79.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=44.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=63.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=8 ttl=61 time=64.6 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 8 received, 20% packet loss, time 9037ms
rtt min/avg/max/mdev = 44.535/73.698/195.679/47.478 ms

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=47.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=48.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=46.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=196 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=79.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=44.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=63.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=8 ttl=61 time=64.6 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 8 received, 20% packet loss, time 9037ms
rtt min/avg/max/mdev = 44.535/73.698/195.679/47.478 ms

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 100M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 40326 connected to 192.168.1.3
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec 11.7 MBytes 98.4 Mbits/sec
[ 5] 1.00-2.00 sec 12.1 MBytes 101 Mbits/sec
[ 5] 2.00-3.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 3.00-4.00 sec 11.9 MBytes 99.9 Mbits/sec
[ 5] 4.00-5.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 5.00-6.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 6.00-7.00 sec 11.9 MBytes 99.9 Mbits/sec
[ 5] 7.00-8.00 sec 11.8 MBytes 99.0 Mbits/sec
[ 5] 8.00-9.00 sec 11.3 MBytes 95.0 Mbits/sec
[ 5] 9.00-10.00 sec 12.6 MBytes 106 Mbits/sec
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 119 MBytes 100 Mbits/sec
[ 5] 0.00-18.90 sec 245 KBytes 106 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian *sniffing* protokol BGP dengan *bandwidth* 150M.

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The image displays a series of terminal windows from a Linux system, showing network performance tests. The left column shows the output of the `iperf3` command, which measures network bandwidth. The right column shows the output of the `ping` command, which tests network reachability and latency.

iperf3 Output Summary:

| [ID] | Interval | Transfer | Bitrate | Jitter | Lost/Total | Datagram s |
|-------|------------|-----------------|----------------|-------------|-----------------|------------|
| [5] | 0.00-10.00 | sec 17.0 MBytes | 14.3 Mbits/sec | 0.000 ms | 0/8718 (0%) | sender |
| [5] | 0.00-28.18 | sec 14.0 KBytes | 4.07 Kbits/sec | 1171.832 ms | 1047/1054 (99%) | receiver |
| [7] | 0.00-10.00 | sec 17.0 MBytes | 14.3 Mbits/sec | 0.000 ms | 0/8713 (0%) | sender |
| [7] | 0.00-28.18 | sec 14.0 KBytes | 4.07 Kbits/sec | 1213.032 ms | 1047/1054 (99%) | receiver |
| [9] | 0.00-10.00 | sec 17.0 MBytes | 14.3 Mbits/sec | 0.000 ms | 0/8706 (0%) | sender |
| [9] | 0.00-28.18 | sec 14.0 KBytes | 4.07 Kbits/sec | 1192.422 ms | 1047/1054 (99%) | receiver |
| [11] | 0.00-10.00 | sec 17.0 MBytes | 14.3 Mbits/sec | 0.000 ms | 0/8701 (0%) | sender |
| [11] | 0.00-28.18 | sec 14.0 KBytes | 4.07 Kbits/sec | 1256.159 ms | 680/687 (99%) | receiver |
| [13] | 0.00-10.00 | sec 17.0 MBytes | 14.2 Mbits/sec | 0.000 ms | 0/8697 (0%) | sender |
| [13] | 0.00-28.18 | sec 16.0 KBytes | 4.65 Kbits/sec | 1276.647 ms | 679/687 (99%) | receiver |
| [15] | 0.00-10.00 | sec 17.0 MBytes | 14.2 Mbits/sec | 0.000 ms | 0/8688 (0%) | sender |
| [15] | 0.00-28.18 | sec 14.0 KBytes | 4.07 Kbits/sec | 1273.258 ms | 678/685 (99%) | receiver |
| [17] | 0.00-10.00 | sec 17.0 MBytes | 14.2 Mbits/sec | 0.000 ms | 0/8682 (0%) | sender |
| [17] | 0.00-28.18 | sec 16.0 KBytes | 4.65 Kbits/sec | 1217.301 ms | 1038/1046 (99%) | receiver |
| [19] | 0.00-10.00 | sec 16.9 MBytes | 14.2 Mbits/sec | 0.000 ms | 0/8676 (0%) | sender |
| [19] | 0.00-28.18 | sec 16.0 KBytes | 4.65 Kbits/sec | 1150.370 ms | 1036/1044 (99%) | receiver |
| [21] | 0.00-10.00 | sec 16.9 MBytes | 14.2 Mbits/sec | 0.000 ms | 0/8672 (0%) | sender |
| [21] | 0.00-28.18 | sec 16.0 KBytes | 4.65 Kbits/sec | 1150.290 ms | 1036/1044 (99%) | receiver |
| [23] | 0.00-10.00 | sec 16.9 MBytes | 14.2 Mbits/sec | 0.000 ms | 0/8663 (0%) | sender |
| [23] | 0.00-28.18 | sec 14.0 KBytes | 4.07 Kbits/sec | 1219.244 ms | 1038/1045 (99%) | receiver |
| [SUM] | 0.00-10.00 | sec 170 MBytes | 142 Mbits/sec | 86916 | | |
| [SUM] | 0.00-28.18 | sec 148 KBytes | 43.0 Kbits/sec | 1212.056 ms | 9326/9400 (11%) | receiver |

ping Output Summary:

```

PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=78.2 ms
64 bytes from www.esmeralda.com (2.168.192.in-addr.arpa (192.168.2.2)): icmp_seq=2 ttl=61 time=90.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=90.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=40.4 ms
64 bytes from www.esmeralda.com (2.168.192.in-addr.arpa (192.168.2.2)): icmp_seq=5 ttl=61 time=101 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=102 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=51.8 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9066ms
rtt min/avg/max/mdev = 40.429/79.301/101.775/22.450 ms
  
```

Hak Cipta :

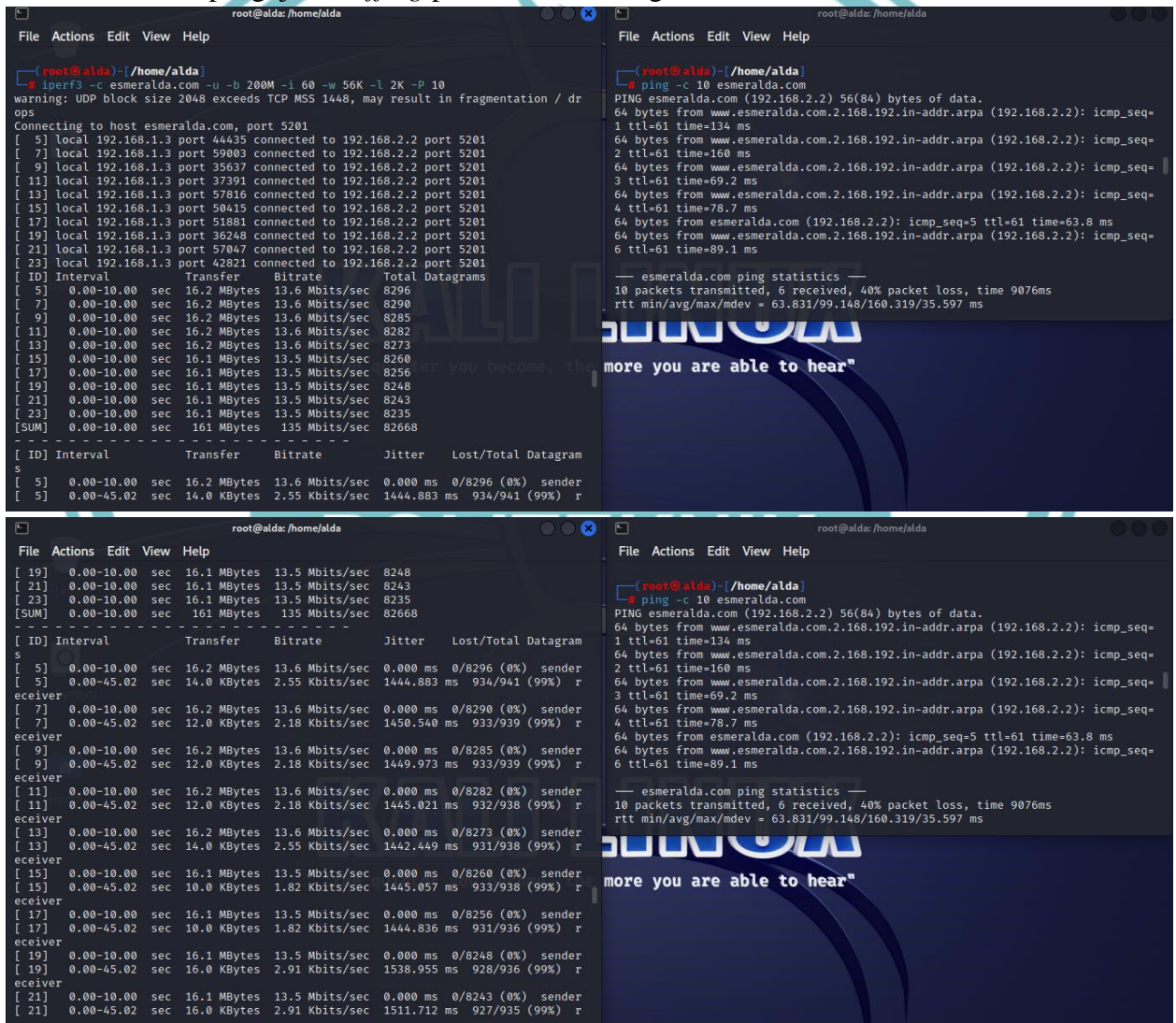
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```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 55321 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00    sec 15.8 Mbytes  133 Mbits/sec
[ 5] 1.00-2.00    sec 16.4 Mbytes  137 Mbits/sec
[ 5] 2.00-3.00    sec 18.1 Mbytes  152 Mbits/sec
[ 5] 3.00-4.00    sec 17.1 Mbytes  144 Mbits/sec
[ 5] 4.00-5.01    sec 16.9 Mbytes  140 Mbits/sec
[ 5] 5.01-6.01    sec 15.0 Mbytes  126 Mbits/sec
[ 5] 6.01-7.00    sec 16.4 Mbytes  139 Mbits/sec
[ 5] 7.00-8.00    sec 16.3 Mbytes  137 Mbits/sec
[ 5] 8.00-9.00    sec 18.2 Mbytes  152 Mbits/sec
[ 5] 9.00-10.00   sec 17.5 Mbytes  147 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00   sec 168 Mbytes  141 Mbits/sec
[ 5] 0.00-14.19   sec 230 Kbytes  133 Kbits/sec

iperf Done.
  
```

Screenshot hasil pengujian *sniffing* protokol BGP dengan *bandwidth* 200M.



```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 44435 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 59003 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 35637 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 57816 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 50415 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 51881 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 36248 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 57047 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 42821 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  8296
[ 7] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  8290
[ 9] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  8285
[13] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  8282
[15] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  8273
[17] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  8260
[19] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  8248
[21] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  8243
[23] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  8235
[SUM] 0.00-10.00   sec 161 Mbytes  135 Mbits/sec  82668

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
[ 5] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  0.000 ms  0/8296 (0%) sender
[ 5] 0.00-45.02   sec 14.0 Kbytes  2.55 Kbits/sec  1444.883 ms  934/941 (99%) r
[ 7] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  0.000 ms  0/8290 (0%) sender
[ 7] 0.00-45.02   sec 12.0 Kbytes  2.18 Kbits/sec  1450.540 ms  933/939 (99%) r
[ 9] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  0.000 ms  0/8285 (0%) sender
[ 9] 0.00-45.02   sec 12.0 Kbytes  2.18 Kbits/sec  1449.973 ms  933/939 (99%) r
[11] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  0.000 ms  0/8282 (0%) sender
[11] 0.00-45.02   sec 12.0 Kbytes  2.18 Kbits/sec  1445.021 ms  932/938 (99%) r
[13] 0.00-10.00   sec 16.2 Mbytes  13.6 Mbits/sec  0.000 ms  0/8273 (0%) sender
[13] 0.00-45.02   sec 14.0 Kbytes  2.55 Kbits/sec  1442.449 ms  931/938 (99%) r
[15] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  0.000 ms  0/8260 (0%) sender
[15] 0.00-45.02   sec 10.0 Kbytes  1.82 Kbits/sec  1445.057 ms  933/938 (99%) r
[17] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  0.000 ms  0/8256 (0%) sender
[17] 0.00-45.02   sec 10.0 Kbytes  1.82 Kbits/sec  1444.836 ms  931/936 (99%) r
[19] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  0.000 ms  0/8248 (0%) sender
[19] 0.00-45.02   sec 16.0 Kbytes  2.91 Kbits/sec  1538.955 ms  928/936 (99%) r
[21] 0.00-10.00   sec 16.1 Mbytes  13.5 Mbits/sec  0.000 ms  0/8243 (0%) sender
[21] 0.00-45.02   sec 16.0 Kbytes  2.91 Kbits/sec  1511.712 ms  927/935 (99%) r
  
```

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```

root@alda: /home/alda
File Actions Edit View Help
eceiver
[ 7 ] 0.00-10.00 sec 16.2 MBytes 13.6 Mbits/sec 0.000 ms 0/8290 (0%) sender
[ 7 ] 0.00-45.02 sec 12.0 KBytes 2.18 Kbits/sec 1450.540 ms 933/938 (99%) r
eceiver
[ 9 ] 0.00-10.00 sec 16.2 MBytes 13.6 Mbits/sec 0.000 ms 0/8285 (0%) sender
[ 9 ] 0.00-45.02 sec 12.0 KBytes 2.18 Kbits/sec 1449.973 ms 933/939 (99%) r
eceiver
[ 11 ] 0.00-10.00 sec 16.2 MBytes 13.6 Mbits/sec 0.000 ms 0/8282 (0%) sender
[ 11 ] 0.00-45.02 sec 12.0 KBytes 2.18 Kbits/sec 1442.449 ms 931/938 (99%) r
eceiver
[ 13 ] 0.00-10.00 sec 16.2 MBytes 13.6 Mbits/sec 0.000 ms 0/8273 (0%) sender
[ 13 ] 0.00-45.02 sec 14.0 KBytes 2.55 Kbits/sec 1442.449 ms 931/938 (99%) r
eceiver
[ 15 ] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8260 (0%) sender
[ 15 ] 0.00-45.02 sec 10.0 KBytes 1.82 Kbits/sec 1445.057 ms 933/938 (99%) r
eceiver
[ 17 ] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8256 (0%) sender
[ 17 ] 0.00-45.02 sec 10.0 KBytes 1.82 Kbits/sec 1444.836 ms 931/936 (99%) r
eceiver
[ 19 ] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8248 (0%) sender
[ 19 ] 0.00-45.02 sec 16.0 KBytes 2.91 Kbits/sec 1538.955 ms 928/936 (99%) r
eceiver
[ 21 ] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8243 (0%) sender
[ 21 ] 0.00-45.02 sec 16.0 KBytes 2.91 Kbits/sec 1511.712 ms 927/935 (99%) r
eceiver
[ 23 ] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8235 (0%) sender
[ 23 ] 0.00-45.02 sec 14.0 KBytes 2.55 Kbits/sec 1460.670 ms 927/934 (99%) r
eceiver
[SUM] 0.00-10.00 sec 161 MBytes 135 Mbits/sec 0.000 ms 0/82668 (0%) sende
r
[SUM] 0.00-45.02 sec 130 KBytes 23.7 Kbits/sec 1463.410 ms 9309/9374 (11%)
receiver

```

```

root@alda: /home/alda
File Actions Edit View Help
root@alda: ~
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=134 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=160 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=69.2 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
4 ttl=61 time=78.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=63.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=89.1 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 6 received, 40% packet loss, time 9076ms
rtt min/avg/max/mdev = 63.831/99.148/160.319/35.597 ms

```

```

root@alda: ~
# iperf3 -c esmeralda.com -u -b 200M
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 53636 connected to 192.1
[ ID] Interval      Transfer      Bitrate
[ 5 ] 0.00-1.00 sec 14.0 MBytes 117 Mbits/sec
[ 5 ] 1.00-2.00 sec 17.7 MBytes 148 Mbits/sec
[ 5 ] 2.00-3.00 sec 18.6 MBytes 156 Mbits/sec
[ 5 ] 3.00-4.00 sec 17.4 MBytes 146 Mbits/sec
[ 5 ] 4.00-5.00 sec 16.8 MBytes 141 Mbits/sec
[ 5 ] 5.00-6.00 sec 17.3 MBytes 145 Mbits/sec
[ 5 ] 6.00-7.00 sec 17.4 MBytes 146 Mbits/sec
[ 5 ] 7.00-8.00 sec 17.1 MBytes 143 Mbits/sec
[ 5 ] 8.00-9.00 sec 17.8 MBytes 149 Mbits/sec
[ 5 ] 9.00-10.00 sec 17.0 MBytes 142 Mbits/sec
[ ID] Interval      Transfer      Bitrate
[ 5 ] 0.00-10.00 sec 171 MBytes 143 Mbits/sec
[ 5 ] 0.00-11.28 sec 143 KBytes 104 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian *spoofing* dan *sniffing* protokol BGP dengan *bandwidth* 1K.

```

root@alda: /home/alda
File Actions Edit View Help
iperf Done.
root@alda: ~
# iperf3 -c esmeralda.com -u -b 1K -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 44556 connected to 192.168.2.2 port 5201
[ 7 ] local 192.168.1.3 port 39714 connected to 192.168.2.2 port 5201
[ 9 ] local 192.168.1.3 port 54026 connected to 192.168.2.2 port 5201
[ 11 ] local 192.168.1.3 port 33415 connected to 192.168.2.2 port 5201
[ 13 ] local 192.168.1.3 port 49199 connected to 192.168.2.2 port 5201
[ 15 ] local 192.168.1.3 port 53066 connected to 192.168.2.2 port 5201
[ 17 ] local 192.168.1.3 port 36238 connected to 192.168.2.2 port 5201
[ 19 ] local 192.168.1.3 port 49472 connected to 192.168.2.2 port 5201
[ 21 ] local 192.168.1.3 port 49267 connected to 192.168.2.2 port 5201
[ 23 ] local 192.168.1.3 port 44868 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 7 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 9 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 11 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 13 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 15 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 17 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 19 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 21 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 23 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 10
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s

```

```

root@alda: /home/alda
File Actions Edit View Help
root@alda: ~
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=242 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=384 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3
ttl=61 time=50.2 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4
ttl=61 time=60.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=50.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=6
ttl=61 time=35.2 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7
ttl=61 time=68.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=229 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=67.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=57.0 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9006ms
rtt min/avg/max/mdev = 35.153/124.389/383.977/112.323 ms

```

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkannya dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
[ 21] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 23] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 10

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 5] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 7] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 7] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 9] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 9] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[11] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[11] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[13] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[13] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[15] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[15] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[17] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[17] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[19] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[19] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[21] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[21] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[23] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[23] 0.00-11.73 sec 2.00 KBytes 1.40 Kbits/sec 0.000 ms 0/1 (0%) receiver
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 0.000 ms 0/10 (0%) sender
[SUM] 0.00-11.73 sec 20.0 KBytes 14.0 Kbits/sec 0.000 ms 0/10 (0%) receiver

iperf Done.

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 1K
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 40008 connected to 192.
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec 1.41 KBytes 11.6 Kbits/sec
[ 5] 1.00-2.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 2.00-3.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 3.00-4.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 4.00-5.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 5.00-6.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 6.00-7.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 7.00-8.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 8.00-9.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 9.00-10.00 sec 0.00 Bytes 0.00 bits/sec
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 1.41 KBytes 1.16 Kbits/sec
[ 5] 0.00-10.09 sec 1.41 KBytes 1.15 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian *spoofing* dan *sniffing* protokol BGP dengan *bandwidth* 50M.

```

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -p 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 57291 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 33853 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 54988 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 45527 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 38704 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 34503 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 59976 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 42578 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 34468 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 45358 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
Datagrams
[ 5] 0.00-10.00 sec 16.7 MBytes 14.0 Mb/s/sec 8540
[ 7] 0.00-10.00 sec 16.7 MBytes 14.0 Mb/s/sec 8528
[ 9] 0.00-10.00 sec 16.6 MBytes 13.9 Mb/s/sec 8514
[11] 0.00-10.00 sec 16.6 MBytes 13.9 Mb/s/sec 8504
[13] 0.00-10.00 sec 16.6 MBytes 13.9 Mb/s/sec 8491
[15] 0.00-10.00 sec 16.5 MBytes 13.9 Mb/s/sec 8471
[17] 0.00-10.00 sec 16.5 MBytes 13.9 Mb/s/sec 8456
[19] 0.00-10.00 sec 16.5 MBytes 13.8 Mb/s/sec 8447
[21] 0.00-10.00 sec 16.5 MBytes 13.8 Mb/s/sec 8435
[23] 0.00-10.00 sec 16.5 MBytes 13.8 Mb/s/sec 8416
[SUM] 0.00-10.00 sec 166 MBytes 139 Mb/s/sec 84802

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=86.5 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=41.9 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=104 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=242 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=52.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=84.5 ms
64 bytes from www.esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=108 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=74.4 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 8 received, 20% packet loss, time 9027ms
rtt min/avg/max/mdev = 41.893/99.140/241.611/57.967 ms

```


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The screenshot displays three terminal windows showing network performance metrics. The top window shows a bandwidth test with a total transfer of 166 MBytes and a bitrate of 139 Mbits/sec. The middle window shows ping statistics for esmeralda.com with a 20% packet loss and a round-trip time of 9027ms. The bottom window shows a bandwidth test with a total transfer of 310 KBytes and a bitrate of 193 Kbits/sec.

```

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 166 MBytes 139 Mbits/sec 84802

[ ID] Interval Transfer Bitrate Jitter Lost/Total Datagram
[ 5] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8540 (0%) sender
[ 5] 0.00-18.74 sec 12.0 KBytes 5.25 Kbits/sec 760.092 ms 425/431 (99%) receiver
[ 7] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8528 (0%) sender
[ 7] 0.00-18.74 sec 12.0 KBytes 5.25 Kbits/sec 788.362 ms 424/430 (99%) receiver
[ 9] 0.00-10.00 sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8514 (0%) sender
[ 9] 0.00-18.74 sec 10.0 KBytes 4.37 Kbits/sec 803.899 ms 422/427 (99%) receiver
[ 11] 0.00-10.00 sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8504 (0%) sender
[ 11] 0.00-18.74 sec 10.0 KBytes 4.37 Kbits/sec 769.955 ms 422/427 (99%) receiver
[ 13] 0.00-10.00 sec 16.6 MBytes 13.9 Mbits/sec 0.000 ms 0/8491 (0%) sender
[ 13] 0.00-18.74 sec 10.0 KBytes 4.37 Kbits/sec 770.052 ms 422/427 (99%) receiver
[ 15] 0.00-10.00 sec 16.5 MBytes 13.9 Mbits/sec 0.000 ms 0/8471 (0%) sender
[ 15] 0.00-18.74 sec 12.0 KBytes 5.25 Kbits/sec 754.705 ms 419/425 (99%) receiver
[ 17] 0.00-10.00 sec 16.5 MBytes 13.9 Mbits/sec 0.000 ms 0/8456 (0%) sender
[ 17] 0.00-18.74 sec 12.0 KBytes 5.25 Kbits/sec 754.706 ms 418/424 (99%) receiver
[ 19] 0.00-10.00 sec 16.5 MBytes 13.8 Mbits/sec 0.000 ms 0/8447 (0%) sender
[ 19] 0.00-18.74 sec 12.0 KBytes 5.25 Kbits/sec 724.554 ms 418/424 (99%) receiver
[ 21] 0.00-10.00 sec 16.5 MBytes 13.8 Mbits/sec 0.000 ms 0/8435 (0%) sender

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=86.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=41.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=104 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=242 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=52.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=84.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 ttl=61 time=108 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=74.4 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 8 received, 20% packet loss, time 9027ms
rtt min/avg/max/mdev = 41.893/99.140/241.611/57.967 ms

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=86.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=41.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=104 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=242 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=52.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=84.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 ttl=61 time=108 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=74.4 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 8 received, 20% packet loss, time 9027ms
rtt min/avg/max/mdev = 41.893/99.140/241.611/57.967 ms

root@alda: /home/alda
iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 41222 connected to 192.168.2.2
[ ID] Interval Transfer Bitrate
[ 5] 0.00-1.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 1.00-2.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 2.00-3.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 3.00-4.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 4.00-5.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 5.00-6.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 6.00-7.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 7.00-8.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 8.00-9.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 9.00-10.00 sec 5.89 MBytes 49.5 Mbits/sec

[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 59.5 MBytes 49.9 Mbits/sec
[ 5] 0.00-13.11 sec 310 KBytes 193 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian *spoofing* dan *sniffing* protokol BGP dengan *bandwidth* 100M.

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The image displays six terminal windows from a Linux environment, showing network performance tests. The top-left window shows the execution of `iperf3 -c esmeralda.com`, which successfully connects to the host and reports a transfer rate of 137 Mb/s. The top-right window shows a `ping -c 10 esmeralda.com` command, resulting in 100% success with a 30% packet loss rate. The middle-left window provides a detailed breakdown of the iperf3 test, showing a 98% success rate for both sender and receiver. The middle-right window shows another successful ping test. The bottom-left window shows a final iperf3 test with a 98% success rate and a 3.4% packet loss rate. The bottom-right window shows a final successful ping test.

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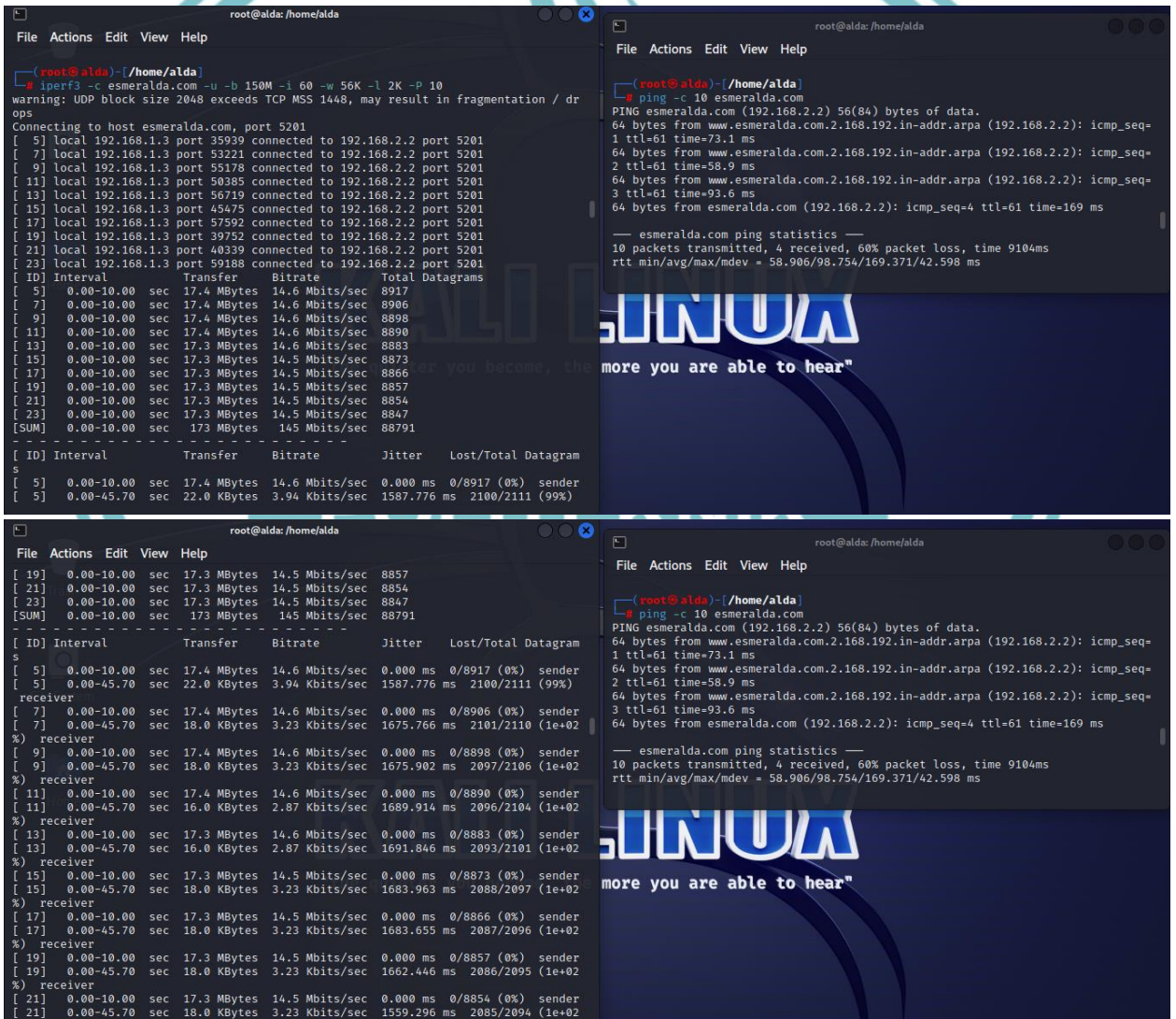
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```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 100M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 32962 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.01 sec  11.6 MBytes  96.1 Mbits/sec
[ 5] 1.01-2.00 sec  12.0 MBytes  102 Mbits/sec
[ 5] 2.00-3.00 sec  11.9 MBytes  100 Mbits/sec
[ 5] 3.00-4.00 sec  11.8 MBytes  99.0 Mbits/sec
[ 5] 4.00-5.00 sec  12.1 MBytes  101 Mbits/sec
[ 5] 5.00-6.00 sec  11.8 MBytes  99.4 Mbits/sec
[ 5] 6.00-7.01 sec  12.0 MBytes  100 Mbits/sec
[ 5] 7.01-8.00 sec  11.7 MBytes  98.9 Mbits/sec
[ 5] 8.00-9.00 sec  12.2 MBytes  103 Mbits/sec
[ 5] 9.00-10.00 sec 11.7 MBytes  98.5 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 119 MBytes  99.8 Mbits/sec
[ 5] 0.00-14.69 sec 219 KBytes  122 Kbits/sec

iperf Done.
  
```

Screenshot hasil pengujian *spoofing* dan *sniffing* protokol BGP dengan *bandwidth* 150M.



```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 150M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 35939 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 53221 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 55178 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 50385 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 56719 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 45475 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 97592 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 39752 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 40330 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 59188 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  8917
[ 7] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  8906
[ 9] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  8898
[11] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  8890
[13] 0.00-10.00 sec  17.3 MBytes  14.6 Mbits/sec  8883
[15] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  8873
[17] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  8866
[19] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  8857
[21] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  8854
[23] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  8847
[SUM] 0.00-10.00 sec  173 MBytes  145 Mbits/sec  88791
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  0.000 ms  0/8917 (0%) sender
[ 5] 0.00-45.70 sec  22.0 KBytes  3.94 Kbits/sec  1587.776 ms  2100/2111 (99%)
receiver
[ 7] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  0.000 ms  0/8906 (0%) sender
[ 7] 0.00-45.70 sec  18.0 KBytes  3.23 Kbits/sec  1675.766 ms  2101/2110 (1e+02
%) receiver
[ 9] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  0.000 ms  0/8898 (0%) sender
[ 9] 0.00-45.70 sec  18.0 KBytes  3.23 Kbits/sec  1675.902 ms  2097/2106 (1e+02
%) receiver
[11] 0.00-10.00 sec  17.4 MBytes  14.6 Mbits/sec  0.000 ms  0/8890 (0%) sender
[11] 0.00-45.70 sec  16.0 KBytes  2.87 Kbits/sec  1689.914 ms  2096/2104 (1e+02
%) receiver
[13] 0.00-10.00 sec  17.3 MBytes  14.6 Mbits/sec  0.000 ms  0/8883 (0%) sender
[13] 0.00-45.70 sec  16.0 KBytes  2.87 Kbits/sec  1691.846 ms  2093/2101 (1e+02
%) receiver
[15] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  0.000 ms  0/8873 (0%) sender
[15] 0.00-45.70 sec  18.0 KBytes  3.23 Kbits/sec  1683.963 ms  2088/2097 (1e+02
%) receiver
[17] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  0.000 ms  0/8866 (0%) sender
[17] 0.00-45.70 sec  18.0 KBytes  3.23 Kbits/sec  1683.655 ms  2087/2096 (1e+02
%) receiver
[19] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  0.000 ms  0/8857 (0%) sender
[19] 0.00-45.70 sec  18.0 KBytes  3.23 Kbits/sec  1662.446 ms  2086/2095 (1e+02
%) receiver
[21] 0.00-10.00 sec  17.3 MBytes  14.5 Mbits/sec  0.000 ms  0/8854 (0%) sender
[21] 0.00-45.70 sec  18.0 KBytes  3.23 Kbits/sec  1559.296 ms  2085/2094 (1e+02
%) receiver
  
```

```

root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=73.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=58.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=93.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=169 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 4 received, 60% packet loss, time 9104ms
rtt min/avg/max/mdev = 58.906/98.754/169.371/42.598 ms
  
```

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```

root@alda: /home/alda
File Actions Edit View Help
receiver
[ 7 ] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8906 (0%) sender
[ 7 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1675.766 ms 2101/2110 (1e+02%) receiver
[ 9 ] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8898 (0%) sender
[ 9 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1675.902 ms 2097/2106 (1e+02%) receiver
[ 11 ] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8890 (0%) sender
[ 11 ] 0.00-45.70 sec 16.0 KBytes 2.87 Kbits/sec 1689.914 ms 2096/2104 (1e+02%) receiver
[ 13 ] 0.00-10.00 sec 17.3 MBytes 14.6 Mbits/sec 0.000 ms 0/8883 (0%) sender
[ 13 ] 0.00-45.70 sec 16.0 KBytes 2.87 Kbits/sec 1691.846 ms 2093/2101 (1e+02%) receiver
[ 15 ] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8873 (0%) sender
[ 15 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1683.963 ms 2088/2097 (1e+02%) receiver
[ 17 ] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8866 (0%) sender
[ 17 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1683.655 ms 2087/2096 (1e+02%) receiver
[ 19 ] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8857 (0%) sender
[ 19 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1662.446 ms 2086/2095 (1e+02%) receiver
[ 21 ] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8854 (0%) sender
[ 21 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1559.296 ms 2085/2094 (1e+02%) receiver
[ 23 ] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8847 (0%) sender
[ 23 ] 0.00-45.70 sec 18.0 KBytes 3.23 Kbits/sec 1561.254 ms 2084/2093 (1e+02%) receiver
[SUM] 0.00-10.00 sec 173 MBytes 145 Mbits/sec 0.000 ms 0/88791 (0%) sender
[SUM] 0.00-45.70 sec 180 KBytes 32.3 Kbits/sec 1647.182 ms 20917/21007 (24%) receiver
    
```

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/ /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=73.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=58.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=93.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=169 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 4 received, 60% packet loss, time 9104ms
rtt min/avg/max/mdev = 58.906/98.754/169.371/42.598 ms
    
```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 51624 connected to 192.168.2.2 port 5201
[ ID ] Interval Transfer Bitrate
[ 5 ] 0.00-1.00 sec 14.7 MBytes 124 Mbits/sec
[ 5 ] 1.00-2.00 sec 17.5 MBytes 147 Mbits/sec
[ 5 ] 2.00-3.00 sec 15.9 MBytes 133 Mbits/sec
[ 5 ] 3.00-4.00 sec 16.6 MBytes 139 Mbits/sec
[ 5 ] 4.00-5.02 sec 17.1 MBytes 141 Mbits/sec
[ 5 ] 5.02-6.00 sec 16.6 MBytes 142 Mbits/sec
[ 5 ] 6.00-7.00 sec 16.2 MBytes 136 Mbits/sec
[ 5 ] 7.00-8.00 sec 15.8 MBytes 132 Mbits/sec
[ 5 ] 8.00-9.00 sec 16.2 MBytes 136 Mbits/sec
[ 5 ] 9.00-10.00 sec 16.2 MBytes 135 Mbits/sec
-----
[ ID ] Interval Transfer Bitrate
[ 5 ] 0.00-10.00 sec 163 MBytes 137 Mbits/sec
[ 5 ] 0.00-27.60 sec 253 KBytes 75.1 Kbits/sec
iperf Done.
    
```

Screenshot hasil pengujian spoofing dan sniffing protokol BGP dengan bandwidth 200M.

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/ /home/alda
# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr ops
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 45831 connected to 192.168.2.2 port 5201
[ 7 ] local 192.168.1.3 port 44523 connected to 192.168.2.2 port 5201
[ 9 ] local 192.168.1.3 port 53111 connected to 192.168.2.2 port 5201
[ 13 ] local 192.168.1.3 port 41466 connected to 192.168.2.2 port 5201
[ 15 ] local 192.168.1.3 port 54784 connected to 192.168.2.2 port 5201
[ 17 ] local 192.168.1.3 port 33308 connected to 192.168.2.2 port 5201
[ 19 ] local 192.168.1.3 port 35535 connected to 192.168.2.2 port 5201
[ 21 ] local 192.168.1.3 port 38496 connected to 192.168.2.2 port 5201
[ 23 ] local 192.168.1.3 port 48386 connected to 192.168.2.2 port 5201
[ ID ] Interval Transfer Bitrate Total Datagrams
[ 5 ] 0.00-10.01 sec 14.9 MBytes 12.5 Mbits/sec 7609
[ 7 ] 0.00-10.01 sec 14.8 MBytes 12.4 Mbits/sec 7601
[ 9 ] 0.00-10.01 sec 14.8 MBytes 12.4 Mbits/sec 7596
[ 13 ] 0.00-10.01 sec 14.8 MBytes 12.4 Mbits/sec 7587
[ 15 ] 0.00-10.01 sec 14.8 MBytes 12.4 Mbits/sec 7575
[ 17 ] 0.00-10.01 sec 14.8 MBytes 12.4 Mbits/sec 7571
[ 19 ] 0.00-10.01 sec 14.8 MBytes 12.4 Mbits/sec 7564
[ 21 ] 0.00-10.01 sec 14.7 MBytes 12.4 Mbits/sec 7559
[ 23 ] 0.00-10.01 sec 14.7 MBytes 12.3 Mbits/sec 7545
[SUM] 0.00-10.01 sec 148 MBytes 124 Mbits/sec 75747
-----
[ ID ] Interval Transfer Bitrate Jitter Lost/Total Datagrams
[ 5 ] 0.00-10.01 sec 14.9 MBytes 12.5 Mbits/sec 0.000 ms 0/7609 (0%) sender
[ 5 ] 0.00-46.86 sec 16.0 KBytes 2.80 Kbits/sec 1819.227 ms 3549/3557 (1e+02%) receiver
    
```

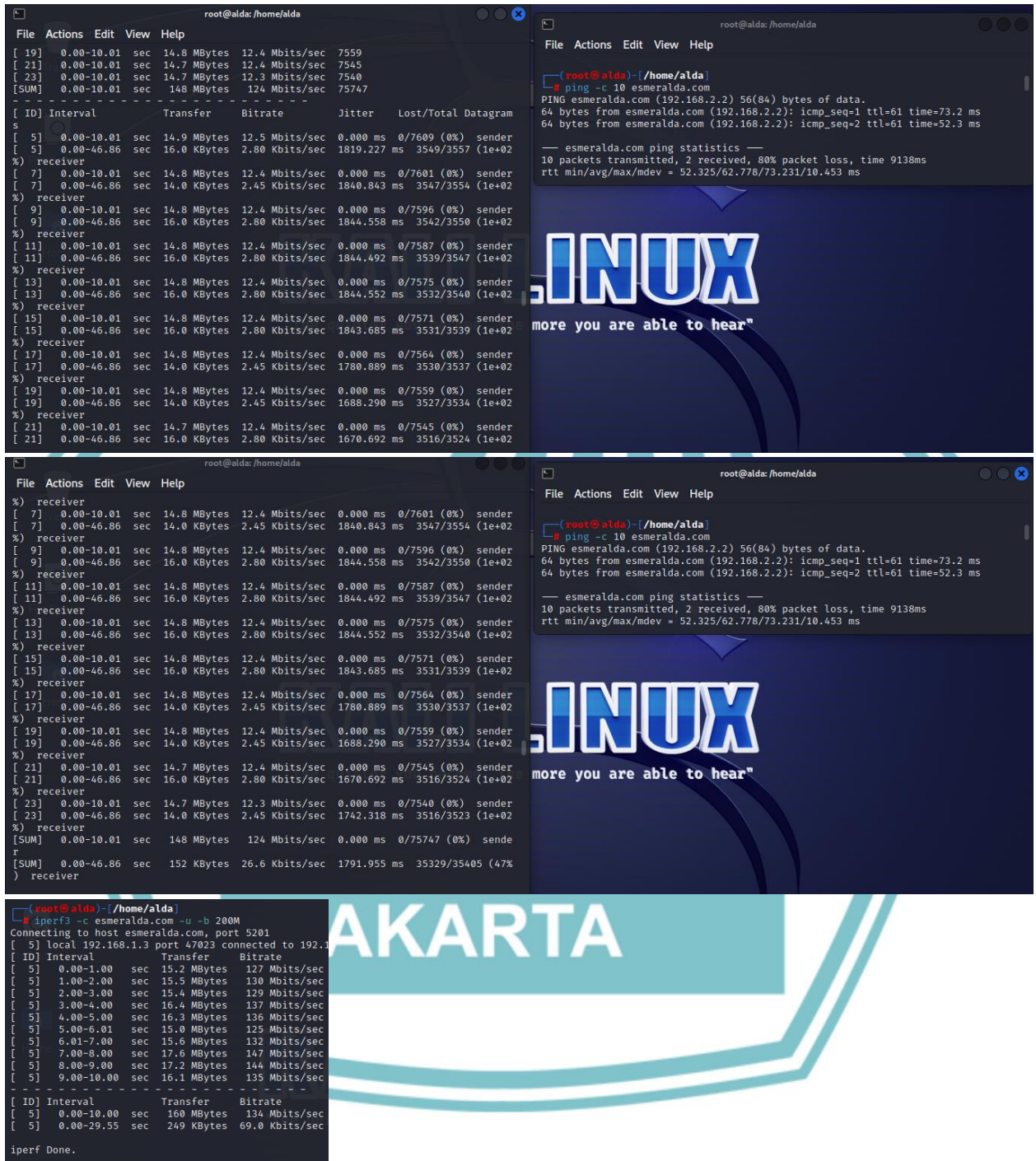
```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/ /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=73.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=52.3 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 2 received, 80% packet loss, time 9138ms
rtt min/avg/max/mdev = 52.325/62.778/73.231/10.453 ms
    
```

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The screenshot displays three terminal windows from a Linux environment (root@alda: /home/alda).

Top Window: Ping Test
 Command: `ping -c 10 esmeralda.com`
 Output: 10 packets transmitted, 2 received, 80% packet loss, time 9138ms
 rtt min/avg/max/mdev = 52.325/62.778/73.231/10.453 ms

Middle Window: iperf3 Test
 Command: `iperf3 -c esmeralda.com -u -b 200M`
 Output: Connecting to host esmeralda.com, port 5201
 [5] local 192.168.1.3 port 47023 connected to 192.168.1.3
 Table showing Transfer and Bitrate over 10-second intervals:

| ID | Interval | Transfer | Bitrate |
|------|------------|-------------|---------------|
| [5] | 0.00-1.00 | 15.2 MBytes | 127 Mbits/sec |
| [5] | 1.00-2.00 | 15.5 MBytes | 130 Mbits/sec |
| [5] | 2.00-3.00 | 15.4 MBytes | 129 Mbits/sec |
| [5] | 3.00-4.00 | 16.4 MBytes | 137 Mbits/sec |
| [5] | 4.00-5.00 | 16.3 MBytes | 136 Mbits/sec |
| [5] | 5.00-6.01 | 15.0 MBytes | 125 Mbits/sec |
| [5] | 6.01-7.00 | 15.6 MBytes | 132 Mbits/sec |
| [5] | 7.00-8.00 | 17.6 MBytes | 147 Mbits/sec |
| [5] | 8.00-9.00 | 17.2 MBytes | 144 Mbits/sec |
| [5] | 9.00-10.00 | 16.1 MBytes | 135 Mbits/sec |

 Summary:

| ID | Interval | Transfer | Bitrate |
|------|------------|------------|----------------|
| [5] | 0.00-10.00 | 160 MBytes | 134 Mbits/sec |
| [5] | 0.00-29.55 | 249 KBytes | 69.0 Kbits/sec |

 iperf Done.

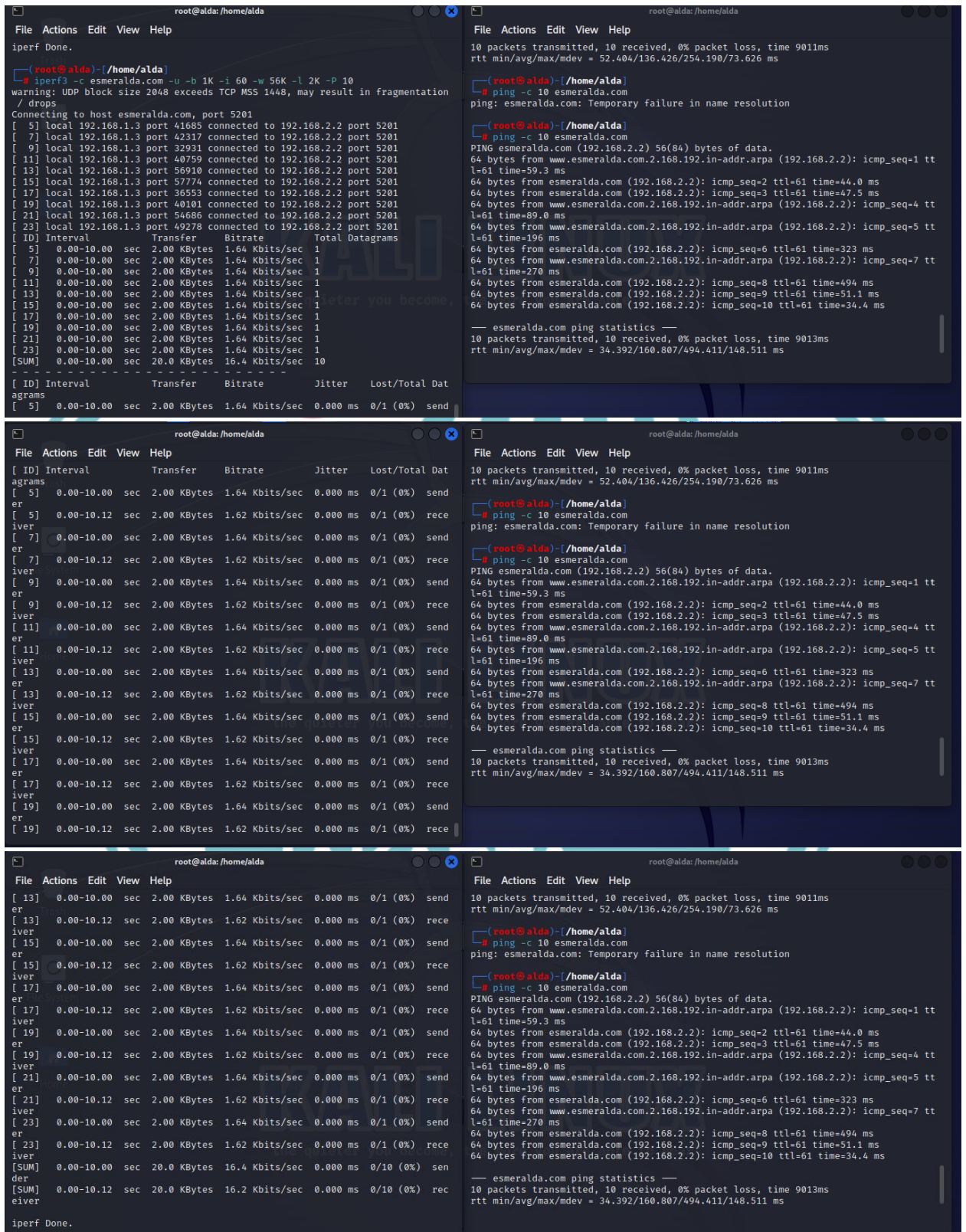
Bottom Window: Summary of iperf3 Test
 Table showing Transfer and Bitrate over 10-second intervals:

| ID | Interval | Transfer | Bitrate | Jitter | Lost/Total | Datagram |
|-------|------------|-------------|----------------|-------------|-------------------|------------------|
| [5] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7609 (0%) | sender |
| [5] | 0.00-46.86 | 16.0 KBytes | 2.80 Kbits/sec | 1819.227 ms | 3549/3557 | (1e+02) receiver |
| [7] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7601 (0%) | sender |
| [7] | 0.00-46.86 | 14.0 KBytes | 2.45 Kbits/sec | 1840.843 ms | 3547/3554 | (1e+02) receiver |
| [9] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7596 (0%) | sender |
| [9] | 0.00-46.86 | 16.0 KBytes | 2.80 Kbits/sec | 1844.558 ms | 3542/3550 | (1e+02) receiver |
| [11] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7587 (0%) | sender |
| [11] | 0.00-46.86 | 16.0 KBytes | 2.80 Kbits/sec | 1844.492 ms | 3539/3547 | (1e+02) receiver |
| [13] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7575 (0%) | sender |
| [13] | 0.00-46.86 | 16.0 KBytes | 2.80 Kbits/sec | 1844.552 ms | 3532/3540 | (1e+02) receiver |
| [15] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7571 (0%) | sender |
| [15] | 0.00-46.86 | 16.0 KBytes | 2.80 Kbits/sec | 1843.685 ms | 3531/3539 | (1e+02) receiver |
| [17] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7564 (0%) | sender |
| [17] | 0.00-46.86 | 14.0 KBytes | 2.45 Kbits/sec | 1780.889 ms | 3530/3537 | (1e+02) receiver |
| [19] | 0.00-10.01 | 14.8 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7559 (0%) | sender |
| [19] | 0.00-46.86 | 14.0 KBytes | 2.45 Kbits/sec | 1688.290 ms | 3527/3534 | (1e+02) receiver |
| [21] | 0.00-10.01 | 14.7 MBytes | 12.4 Mbits/sec | 0.000 ms | 0/7545 (0%) | sender |
| [21] | 0.00-46.86 | 16.0 KBytes | 2.80 Kbits/sec | 1670.692 ms | 3516/3524 | (1e+02) receiver |
| [23] | 0.00-10.01 | 14.7 MBytes | 12.3 Mbits/sec | 0.000 ms | 0/7540 (0%) | sender |
| [23] | 0.00-46.86 | 14.0 KBytes | 2.45 Kbits/sec | 1742.318 ms | 3516/3523 | (1e+02) receiver |
| [SUM] | 0.00-10.01 | 148 MBytes | 124 Mbits/sec | 0.000 ms | 0/75747 (0%) | sender |
| [SUM] | 0.00-46.86 | 152 KBytes | 26.6 Kbits/sec | 1791.955 ms | 35329/35405 (47%) | receiver |

Screenshot hasil pengujian pengamanan protokol BGP dengan *bandwidth* 1K.

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2. Dilarang mengumumkannya dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta



The image displays three terminal windows showing network performance tests. The left window shows the output of an iperf3 test, which measures bandwidth between a local host (192.168.1.3) and a remote host (esmeralda.com, 192.168.2.2). The test results show a transfer rate of approximately 2.00 KBytes/sec and a bitrate of 1.64 Kbits/sec. The middle and right windows show the output of a ping test, which measures the round-trip time (RTT) for 10 packets. The ping test results show an average RTT of approximately 34.392 ms and 0% packet loss.

```

root@alda: /home/alda
File Actions Edit View Help
iperf Done.

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 1K -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation
/ drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 41685 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 42317 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 32931 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 40759 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 56910 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 57774 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 36553 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 40101 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 54686 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 49278 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[ 7] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[ 9] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[11] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[13] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[15] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[17] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[19] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[21] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[23] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes  16.4 Kbits/sec 10

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[ 5] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[ 7] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[ 7] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[ 9] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[ 9] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[11] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[11] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[13] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[13] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[15] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[15] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[17] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[17] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[19] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) send
er
[19] 0.00-10.12 sec 2.00 KBytes  1.62 Kbits/sec 0.000 ms 0/1 (0%) receive
[SUM] 0.00-10.00 sec 20.0 KBytes  16.4 Kbits/sec 0.000 ms 0/10 (0%) send
er
[SUM] 0.00-10.12 sec 20.0 KBytes  16.2 Kbits/sec 0.000 ms 0/10 (0%) receive
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 52.404/136.426/254.190/73.626 ms

root@alda: /home/alda
# ping -c 10 esmeralda.com
ping: esmeralda.com: Temporary failure in name resolution

root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=59.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=44.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=47.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=89.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=196 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=323 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 ttl=61 time=270 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=494 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=51.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=34.4 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9013ms
rtt min/avg/max/mdev = 34.392/160.807/494.411/148.511 ms

root@alda: /home/alda
File Actions Edit View Help
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 52.404/136.426/254.190/73.626 ms

root@alda: /home/alda
# ping -c 10 esmeralda.com
ping: esmeralda.com: Temporary failure in name resolution

root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=59.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=44.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=47.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=89.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=196 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=323 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 ttl=61 time=270 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=494 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=51.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=34.4 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9013ms
rtt min/avg/max/mdev = 34.392/160.807/494.411/148.511 ms

```

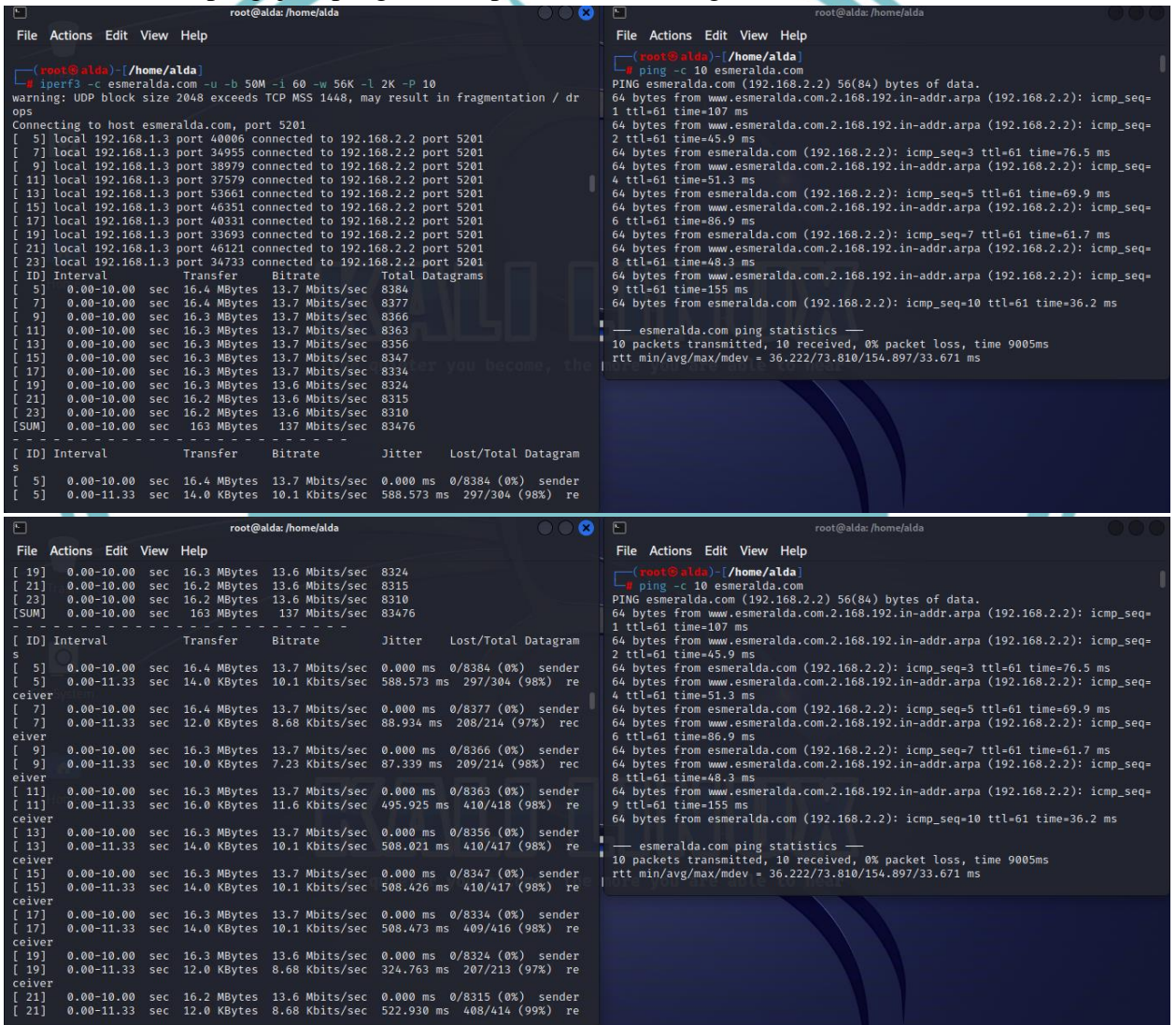
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```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 1k
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 52626 connected to 192.
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.55 sec  1.41 KBytes  7.68 Kbits/sec
[ 5] 1.55-2.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 2.00-3.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 3.00-4.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 4.00-5.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 5.00-6.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 6.00-7.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 7.00-8.00 sec  0.00 Bytes  0.00 bits/sec
[ 5] 8.00-9.03 sec  0.00 Bytes  0.00 bits/sec
[ 5] 9.03-10.00 sec 0.00 Bytes  0.00 bits/sec
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 1.41 KBytes  1.16 Kbits/sec
[ 5] 0.00-10.99 sec 1.41 KBytes  1.05 Kbits/sec
iperf Done.
  
```

Screenshot hasil pengujian pengamanan protokol BGP dengan *bandwidth* 50M.



```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 40006 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 34955 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 38979 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 37579 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 93661 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 46351 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 40331 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 33693 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 46121 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 34733 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00 sec 16.4 MBytes  13.7 Mbits/sec 8384
[ 7] 0.00-10.00 sec 16.4 MBytes  13.7 Mbits/sec 8377
[ 9] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 8366
[11] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 8363
[13] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 8356
[15] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 8347
[17] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 8324
[19] 0.00-10.00 sec 16.3 MBytes  13.6 Mbits/sec 8324
[21] 0.00-10.00 sec 16.2 MBytes  13.6 Mbits/sec 8315
[23] 0.00-10.00 sec 16.2 MBytes  13.6 Mbits/sec 8310
[SUM] 0.00-10.00 sec 163 MBytes  137 Mbits/sec 83476
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 16.4 MBytes  13.7 Mbits/sec 0.000 ms 0/8384 (0%) sender
[ 5] 0.00-11.33 sec 14.0 KBytes  10.1 Kbits/sec 588.573 ms 297/304 (98%) re
ceiver
[ 7] 0.00-10.00 sec 16.4 MBytes  13.7 Mbits/sec 0.000 ms 0/8377 (0%) sender
[ 7] 0.00-11.33 sec 12.0 KBytes  8.68 Kbits/sec 88.934 ms 208/214 (97%) re
ceiver
[ 9] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 0.000 ms 0/8366 (0%) sender
[ 9] 0.00-11.33 sec 10.0 KBytes  7.23 Kbits/sec 87.339 ms 209/214 (98%) re
ceiver
[11] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 0.000 ms 0/8363 (0%) sender
[11] 0.00-11.33 sec 16.0 KBytes  11.6 Kbits/sec 495.925 ms 410/418 (98%) re
ceiver
[13] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 0.000 ms 0/8356 (0%) sender
[13] 0.00-11.33 sec 14.0 KBytes  10.1 Kbits/sec 508.021 ms 410/417 (98%) re
ceiver
[15] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 0.000 ms 0/8347 (0%) sender
[15] 0.00-11.33 sec 14.0 KBytes  10.1 Kbits/sec 508.426 ms 410/417 (98%) re
ceiver
[17] 0.00-10.00 sec 16.3 MBytes  13.7 Mbits/sec 0.000 ms 0/8334 (0%) sender
[17] 0.00-11.33 sec 14.0 KBytes  10.1 Kbits/sec 508.473 ms 409/416 (98%) re
ceiver
[19] 0.00-10.00 sec 16.3 MBytes  13.6 Mbits/sec 0.000 ms 0/8324 (0%) sender
[19] 0.00-11.33 sec 12.0 KBytes  8.68 Kbits/sec 324.763 ms 207/213 (97%) re
ceiver
[21] 0.00-10.00 sec 16.2 MBytes  13.6 Mbits/sec 0.000 ms 0/8315 (0%) sender
[21] 0.00-11.33 sec 12.0 KBytes  8.68 Kbits/sec 522.930 ms 408/414 (99%) re
ceiver
  
```

```

root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=107 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=45.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=76.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
4 ttl=61 time=51.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=69.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=86.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=61.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
8 ttl=61 time=48.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
9 ttl=61 time=155 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=36.2 ms
--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9005ms
rtt min/avg/max/mdev = 36.222/73.810/154.897/33.671 ms
  
```

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
ceiver
[ 7 ] 0.00-10.00 sec 16.4 MBytes 13.7 Mbits/sec 0.000 ms 0/8377 (0%) sender
[ 7 ] 0.00-11.33 sec 12.0 KBytes 8.68 Kbits/sec 88.934 ms 208/214 (97%) rec
eiver
[ 9 ] 0.00-10.00 sec 16.3 MBytes 13.7 Mbits/sec 0.000 ms 0/8366 (0%) sender
[ 9 ] 0.00-11.33 sec 10.0 KBytes 7.23 Kbits/sec 87.339 ms 209/214 (98%) rec
eiver
[ 11 ] 0.00-10.00 sec 16.3 MBytes 13.7 Mbits/sec 0.000 ms 0/8363 (0%) sender
[ 11 ] 0.00-11.33 sec 16.0 KBytes 11.6 Kbits/sec 495.925 ms 410/418 (98%) re
ceiver
ceiver
[ 13 ] 0.00-10.00 sec 16.3 MBytes 13.7 Mbits/sec 0.000 ms 0/8356 (0%) sender
[ 13 ] 0.00-11.33 sec 14.0 KBytes 10.1 Kbits/sec 508.021 ms 410/417 (98%) re
ceiver
ceiver
[ 15 ] 0.00-10.00 sec 16.3 MBytes 13.7 Mbits/sec 0.000 ms 0/8347 (0%) sender
[ 15 ] 0.00-11.33 sec 14.0 KBytes 10.1 Kbits/sec 508.426 ms 410/417 (98%) re
ceiver
ceiver
[ 17 ] 0.00-10.00 sec 16.3 MBytes 13.7 Mbits/sec 0.000 ms 0/8334 (0%) sender
[ 17 ] 0.00-11.33 sec 12.0 KBytes 10.1 Kbits/sec 508.473 ms 409/416 (98%) re
ceiver
ceiver
[ 19 ] 0.00-10.00 sec 16.3 MBytes 13.6 Mbits/sec 0.000 ms 0/8324 (0%) sender
[ 19 ] 0.00-11.33 sec 12.0 KBytes 8.68 Kbits/sec 324.763 ms 207/213 (97%) re
ceiver
ceiver
[ 21 ] 0.00-10.00 sec 16.2 MBytes 13.6 Mbits/sec 0.000 ms 0/8315 (0%) sender
[ 21 ] 0.00-11.33 sec 12.0 KBytes 8.68 Kbits/sec 522.930 ms 408/414 (99%) re
ceiver
ceiver
[ 23 ] 0.00-10.00 sec 16.2 MBytes 13.6 Mbits/sec 0.000 ms 0/8310 (0%) sender
[ 23 ] 0.00-11.33 sec 12.0 KBytes 8.68 Kbits/sec 524.397 ms 295/301 (98%) re
ceiver
ceiver
[SUM] 0.00-10.00 sec 163 MBytes 137 Mbits/sec 0.000 ms 0/83476 (0%) sende
r
[SUM] 0.00-11.33 sec 130 KBytes 94.0 Kbits/sec 415.778 ms 3263/3328 (3.9%)
receiver

```

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=107 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
2 ttl=61 time=45.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=76.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
4 ttl=61 time=51.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=69.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=86.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=61.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
8 ttl=61 time=48.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
9 ttl=61 time=155 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=36.2 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9005ms
rtt min/avg/max/mdev = 36.222/73.810/154.897/33.671 ms

```

```

root@alda]~/home/alda
# iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 60591 connected to 192.1
[ ID] Interval Transfer Bitrate
[ 5 ] 0.00-1.59 sec 1.41 KBytes 7.29 Kbits/sec
[ 5 ] 1.59-2.00 sec 6.09 MBytes 124 Mbits/sec
[ 5 ] 2.00-3.00 sec 11.1 MBytes 92.3 Mbits/sec
[ 5 ] 3.00-4.01 sec 6.69 MBytes 55.6 Mbits/sec
[ 5 ] 4.01-5.00 sec 5.86 MBytes 49.8 Mbits/sec
[ 5 ] 5.00-6.00 sec 6.06 MBytes 50.8 Mbits/sec
[ 5 ] 6.00-7.00 sec 5.98 MBytes 50.2 Mbits/sec
[ 5 ] 7.00-8.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5 ] 8.00-9.00 sec 5.92 MBytes 49.7 Mbits/sec
[ 5 ] 9.00-10.00 sec 5.97 MBytes 50.1 Mbits/sec
-----
[ ID] Interval Transfer Bitrate
[ 5 ] 0.00-10.00 sec 59.6 MBytes 50.0 Mbits/sec
[ 5 ] 0.00-32.77 sec 188 KBytes 47.0 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian pengamanan protokol BGP dengan *bandwidth* 100M.

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# iperf3 -c esmeralda.com -u -b 100M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 55798 connected to 192.168.2.2 port 5201
[ 7 ] local 192.168.1.3 port 55823 connected to 192.168.2.2 port 5201
[ 9 ] local 192.168.1.3 port 57517 connected to 192.168.2.2 port 5201
[ 11 ] local 192.168.1.3 port 46549 connected to 192.168.2.2 port 5201
[ 13 ] local 192.168.1.3 port 48011 connected to 192.168.2.2 port 5201
[ 15 ] local 192.168.1.3 port 35715 connected to 192.168.2.2 port 5201
[ 17 ] local 192.168.1.3 port 35781 connected to 192.168.2.2 port 5201
[ 19 ] local 192.168.1.3 port 33677 connected to 192.168.2.2 port 5201
[ 21 ] local 192.168.1.3 port 54935 connected to 192.168.2.2 port 5201
[ 23 ] local 192.168.1.3 port 45010 connected to 192.168.2.2 port 5201
[ ID] Interval Transfer Bitrate Total Datagrams
[ 5 ] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 8588
[ 7 ] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 8586
[ 9 ] 0.00-10.00 sec 16.8 MBytes 14.0 Mbits/sec 8576
[ 11 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8571
[ 13 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8561
[ 15 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8554
[ 17 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8551
[ 19 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8549
[ 21 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8536
[ 23 ] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 8526
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 85598
-----
[ ID] Interval Transfer Bitrate Jitter Lost/Total Datagram
s
[ 5 ] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8588 (0%) sender
[ 5 ] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.533 ms 291/298 (98%) re

```

```

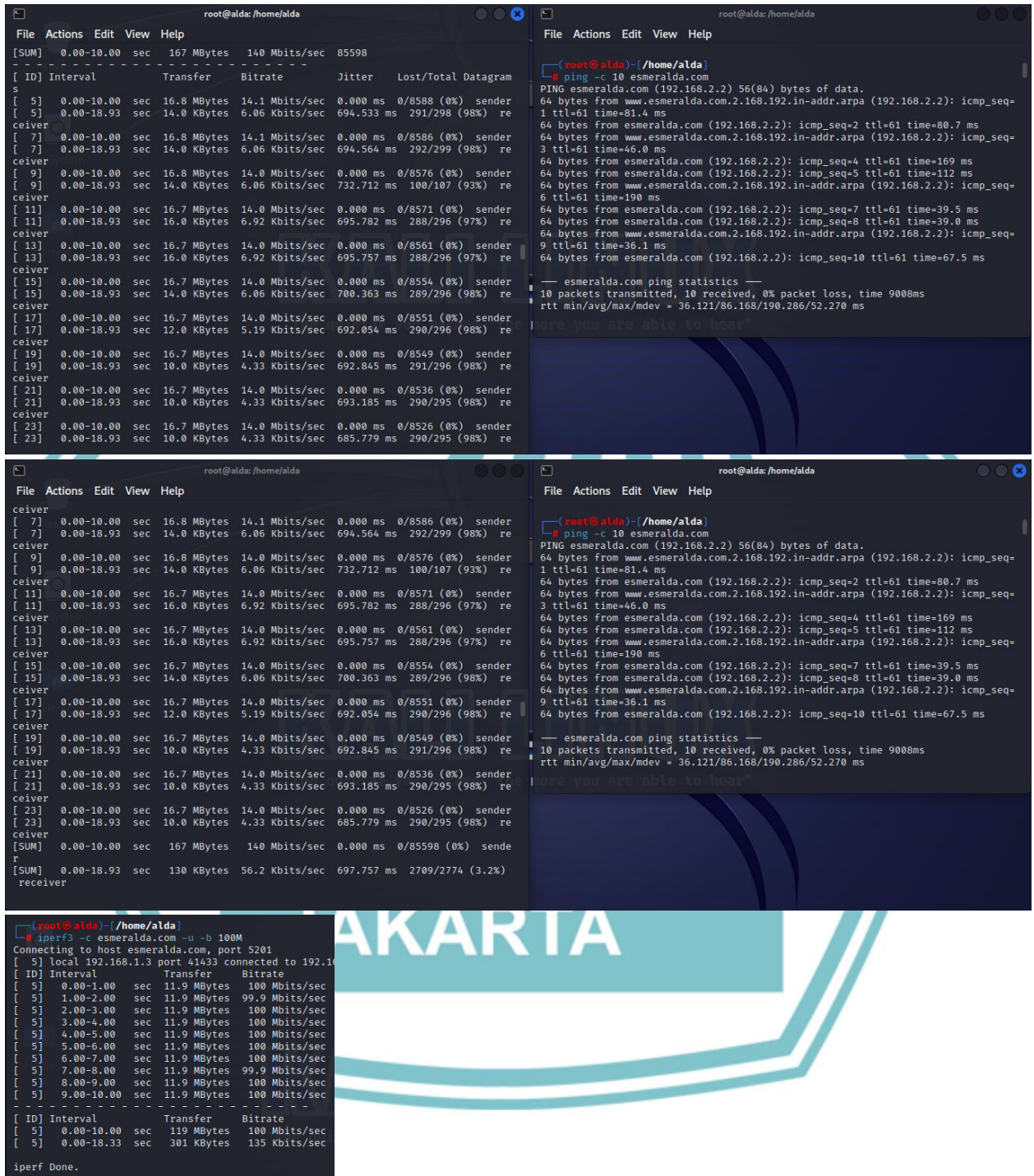
root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=81.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=80.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=46.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=169 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=112 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=190 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=39.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=39.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
9 ttl=61 time=36.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=67.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9008ms
rtt min/avg/max/mdev = 36.121/86.168/190.286/52.270 ms

```


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```

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 85598
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8588 (0%) sender
[ 5] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.533 ms 291/298 (98%) re
ceiver
[ 7] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8586 (0%) sender
[ 7] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.564 ms 292/299 (98%) re
ceiver
[ 9] 0.00-10.00 sec 16.8 MBytes 14.0 Mbits/sec 0.000 ms 0/8576 (0%) sender
[ 9] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 732.712 ms 100/107 (93%) re
ceiver
[11] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8571 (0%) sender
[11] 0.00-18.93 sec 16.0 KBytes 6.92 Kbits/sec 695.782 ms 288/296 (97%) re
ceiver
[13] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8561 (0%) sender
[13] 0.00-18.93 sec 16.0 KBytes 6.92 Kbits/sec 695.757 ms 288/296 (97%) re
ceiver
[15] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8554 (0%) sender
[15] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 700.363 ms 289/296 (98%) re
ceiver
[17] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8551 (0%) sender
[17] 0.00-18.93 sec 12.0 KBytes 5.19 Kbits/sec 692.054 ms 290/296 (98%) re
ceiver
[19] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8549 (0%) sender
[19] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 692.845 ms 291/296 (98%) re
ceiver
[21] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8536 (0%) sender
[21] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 693.185 ms 290/295 (98%) re
ceiver
[23] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8526 (0%) sender
[23] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 685.779 ms 290/295 (98%) re
ceiver

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 85598
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8588 (0%) sender
[ 5] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.533 ms 291/298 (98%) re
ceiver
[ 7] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8586 (0%) sender
[ 7] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 694.564 ms 292/299 (98%) re
ceiver
[ 9] 0.00-10.00 sec 16.8 MBytes 14.0 Mbits/sec 0.000 ms 0/8576 (0%) sender
[ 9] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 732.712 ms 100/107 (93%) re
ceiver
[11] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8571 (0%) sender
[11] 0.00-18.93 sec 16.0 KBytes 6.92 Kbits/sec 695.782 ms 288/296 (97%) re
ceiver
[13] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8561 (0%) sender
[13] 0.00-18.93 sec 16.0 KBytes 6.92 Kbits/sec 695.757 ms 288/296 (97%) re
ceiver
[15] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8554 (0%) sender
[15] 0.00-18.93 sec 14.0 KBytes 6.06 Kbits/sec 700.363 ms 289/296 (98%) re
ceiver
[17] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8551 (0%) sender
[17] 0.00-18.93 sec 12.0 KBytes 5.19 Kbits/sec 692.054 ms 290/296 (98%) re
ceiver
[19] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8549 (0%) sender
[19] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 692.845 ms 291/296 (98%) re
ceiver
[21] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8536 (0%) sender
[21] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 693.185 ms 290/295 (98%) re
ceiver
[23] 0.00-10.00 sec 16.7 MBytes 14.0 Mbits/sec 0.000 ms 0/8526 (0%) sender
[23] 0.00-18.93 sec 10.0 KBytes 4.33 Kbits/sec 685.779 ms 290/295 (98%) re
ceiver
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 0.000 ms 0/85598 (0%) sende
r
[SUM] 0.00-18.93 sec 130 KBytes 56.2 Kbits/sec 697.757 ms 2709/2774 (3.2%) re
ceiver

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 167 MBytes 140 Mbits/sec 85598
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-1.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 1.00-2.00 sec 11.9 MBytes 99.9 Mbits/sec
[ 5] 2.00-3.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 3.00-4.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 4.00-5.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 5.00-6.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 6.00-7.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 7.00-8.00 sec 11.9 MBytes 99.9 Mbits/sec
[ 5] 8.00-9.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 9.00-10.00 sec 11.9 MBytes 100 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 119 MBytes 100 Mbits/sec
[ 5] 0.00-18.33 sec 301 KBytes 135 Kbits/sec

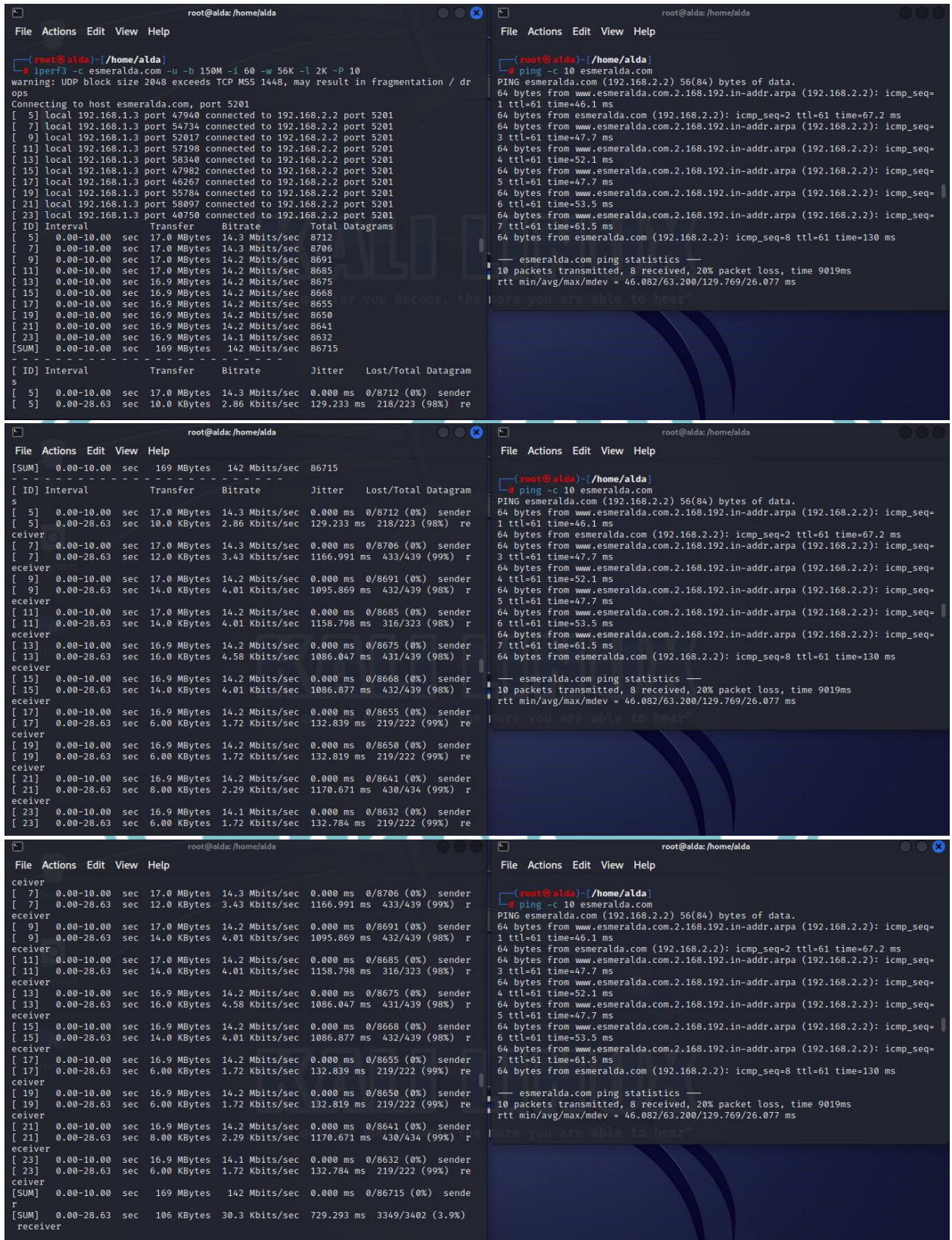
iperf Done.

```

Screenshot hasil pengujian pengamanan protokol BGP dengan *bandwidth* 150M.

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2. Dilarang mengumumkannya dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta



```

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# iperf3 -c esmeralda.com -i -b 150M -l 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 47940 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 54734 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 52017 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 57198 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 58340 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 47982 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 46267 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 55784 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 58097 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 40750 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total      Datagrams
[ 5] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 8712
[ 7] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 8706
[ 9] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 8691
[11] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 8685
[13] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8675
[15] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8668
[17] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8655
[19] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8650
[21] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8641
[23] 0.00-10.00 sec 16.9 MBytes 14.1 Mbits/sec 8632
[SUM] 0.00-10.00 sec 169 MBytes 142 Mbits/sec 86715
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 0.000 ms 0/8712 (0%) sender
[ 5] 0.00-28.63 sec 10.0 KBytes 2.86 Kbits/sec 129.233 ms 218/223 (98%) receiver
[ 7] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 0.000 ms 0/8706 (0%) sender
[ 7] 0.00-28.63 sec 12.0 KBytes 3.43 Kbits/sec 1166.991 ms 433/439 (99%) receiver
[ 9] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8691 (0%) sender
[ 9] 0.00-28.63 sec 14.0 KBytes 4.01 Kbits/sec 1095.869 ms 432/439 (98%) receiver
[11] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8685 (0%) sender
[11] 0.00-28.63 sec 14.0 KBytes 4.01 Kbits/sec 1158.798 ms 316/323 (98%) receiver
[13] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8675 (0%) sender
[13] 0.00-28.63 sec 16.0 KBytes 4.58 Kbits/sec 1086.047 ms 431/439 (98%) receiver
[15] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8668 (0%) sender
[15] 0.00-28.63 sec 14.0 KBytes 4.01 Kbits/sec 1086.877 ms 432/439 (98%) receiver
[17] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8655 (0%) sender
[17] 0.00-28.63 sec 6.00 KBytes 1.72 Kbits/sec 132.839 ms 219/222 (99%) receiver
[19] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8650 (0%) sender
[19] 0.00-28.63 sec 6.00 KBytes 1.72 Kbits/sec 132.819 ms 219/222 (99%) receiver
[21] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8641 (0%) sender
[21] 0.00-28.63 sec 8.00 KBytes 2.29 Kbits/sec 1170.671 ms 430/434 (99%) receiver
[23] 0.00-10.00 sec 16.9 MBytes 14.1 Mbits/sec 0.000 ms 0/8632 (0%) sender
[23] 0.00-28.63 sec 6.00 KBytes 1.72 Kbits/sec 132.784 ms 219/222 (99%) receiver
[SUM] 0.00-10.00 sec 169 MBytes 142 Mbits/sec 0.000 ms 0/86715 (0%) sender
[SUM] 0.00-28.63 sec 106 KBytes 30.3 Kbits/sec 729.293 ms 3349/3402 (3.9%) receiver

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=46.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=67.2 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=47.7 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
4 ttl=61 time=52.1 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
5 ttl=61 time=47.7 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
6 ttl=61 time=53.5 ms
64 bytes from www.esmeralda.com:2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
7 ttl=61 time=61.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=130 ms
--- esmeralda.com ping statistics ---
10 packets transmitted, 8 received, 20% packet loss, time 9019ms
rtt min/avg/max/mdev = 46.082/63.200/129.769/26.077 ms

```

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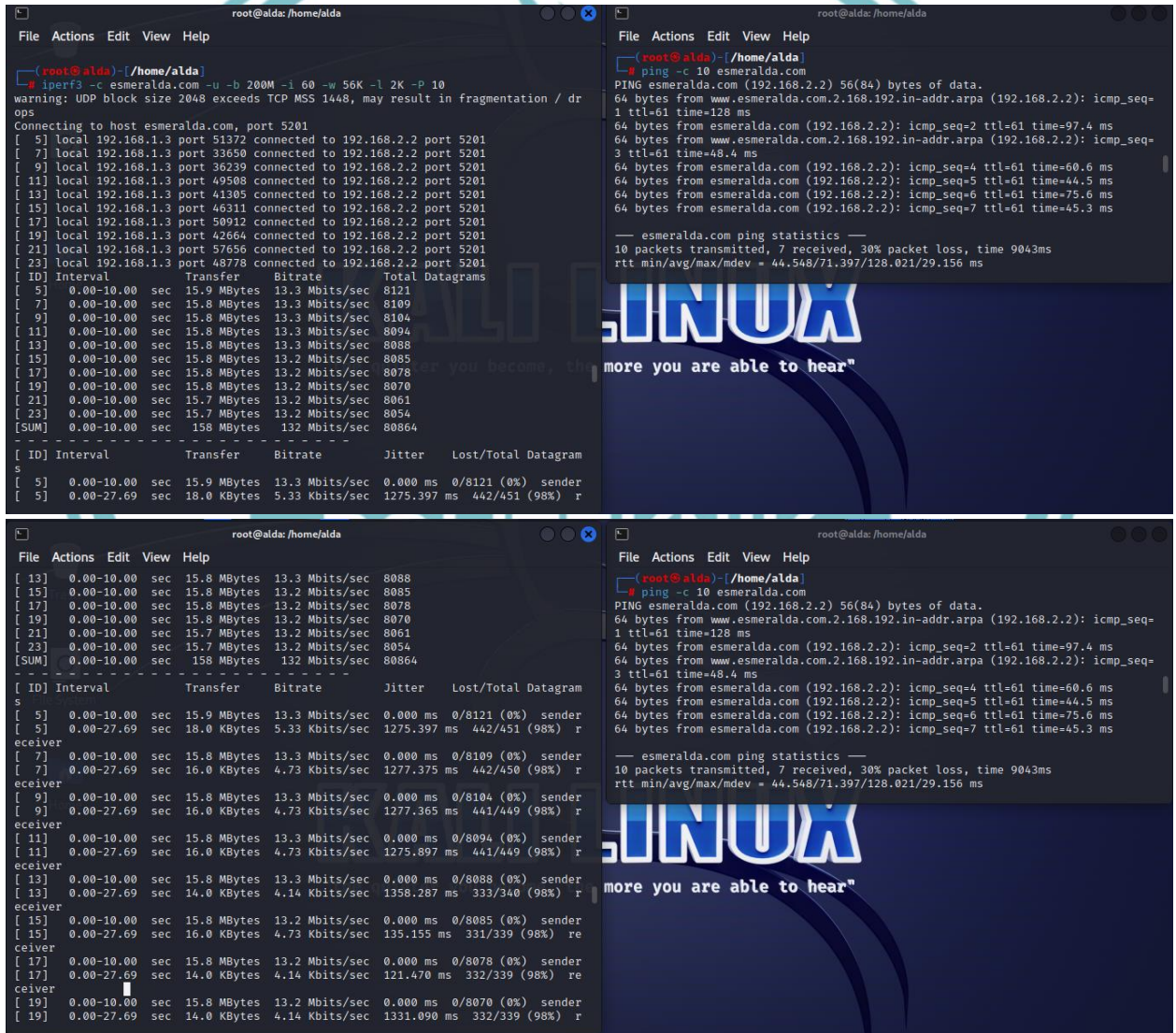
```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 57227 connected to 192.1
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec  16.7 MBytes  141 Mbits/sec
[ 5] 1.00-2.00 sec  17.3 MBytes  145 Mbits/sec
[ 5] 2.00-3.00 sec  17.7 MBytes  149 Mbits/sec
[ 5] 3.00-4.00 sec  17.6 MBytes  148 Mbits/sec
[ 5] 4.00-5.00 sec  16.9 MBytes  141 Mbits/sec
[ 5] 5.00-6.00 sec  16.5 MBytes  139 Mbits/sec
[ 5] 6.00-7.00 sec  17.5 MBytes  147 Mbits/sec
[ 5] 7.00-8.00 sec  17.5 MBytes  147 Mbits/sec
[ 5] 8.00-9.01 sec  19.7 MBytes  163 Mbits/sec
[ 5] 9.01-10.00 sec 18.8 MBytes  160 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 176 MBytes   148 Mbits/sec
[ 5] 0.00-25.50 sec 274 KBytes    88.1 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian pengamanan protokol BGP dengan *bandwidth* 200M.



```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 51372 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 33650 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 36239 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 49508 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 41305 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 46311 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 50912 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 42664 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 57656 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 48778 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.00 sec  15.9 MBytes  13.3 Mbits/sec 8121 Datagrams
[ 7] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 8109
[ 9] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 8104
[11] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 8094
[13] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 8088
[15] 0.00-10.00 sec  15.8 MBytes  13.2 Mbits/sec 8085
[17] 0.00-10.00 sec  15.8 MBytes  13.2 Mbits/sec 8078
[19] 0.00-10.00 sec  15.8 MBytes  13.2 Mbits/sec 8070
[21] 0.00-10.00 sec  15.7 MBytes  13.2 Mbits/sec 8061
[23] 0.00-10.00 sec  15.7 MBytes  13.2 Mbits/sec 8054
[SUM] 0.00-10.00 sec  158 MBytes  132 Mbits/sec 80864
-----
[ ID] Interval      Transfer      Bitrate      Jitter    Lost/Total Datagram
[ 5] 0.00-10.00 sec  15.9 MBytes  13.3 Mbits/sec 0.000 ms 0/8121 (0%) sender
[ 5] 0.00-27.69 sec  18.0 KBytes  5.33 Kbits/sec 1275.397 ms 442/451 (98%) r
eceiver
[ 7] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 0.000 ms 0/8109 (0%) sender
[ 7] 0.00-27.69 sec  16.0 KBytes  4.73 Kbits/sec 1277.375 ms 442/450 (98%) r
eceiver
[ 9] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 0.000 ms 0/8104 (0%) sender
[ 9] 0.00-27.69 sec  16.0 KBytes  4.73 Kbits/sec 1277.365 ms 441/449 (98%) r
eceiver
[11] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 0.000 ms 0/8094 (0%) sender
[11] 0.00-27.69 sec  16.0 KBytes  4.73 Kbits/sec 1275.897 ms 441/449 (98%) r
eceiver
[13] 0.00-10.00 sec  15.8 MBytes  13.3 Mbits/sec 0.000 ms 0/8088 (0%) sender
[13] 0.00-27.69 sec  14.0 KBytes  4.14 Kbits/sec 1358.287 ms 333/340 (98%) r
eceiver
[15] 0.00-10.00 sec  15.8 MBytes  13.2 Mbits/sec 0.000 ms 0/8085 (0%) sender
[15] 0.00-27.69 sec  16.0 KBytes  4.73 Kbits/sec 135.155 ms 331/339 (98%) r
eceiver
[17] 0.00-10.00 sec  15.8 MBytes  13.2 Mbits/sec 0.000 ms 0/8078 (0%) sender
[17] 0.00-27.69 sec  14.0 KBytes  4.14 Kbits/sec 121.470 ms 332/339 (98%) r
eceiver
[19] 0.00-10.00 sec  15.8 MBytes  13.2 Mbits/sec 0.000 ms 0/8070 (0%) sender
[19] 0.00-27.69 sec  14.0 KBytes  4.14 Kbits/sec 1331.090 ms 332/339 (98%) r
eceiver

```

```

root@alda:~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
1 ttl=61 time=128 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=97.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=
3 ttl=61 time=48.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=60.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=44.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=75.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=45.3 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9043ms
rtt min/avg/max/mdev = 44.548/71.397/128.021/29.156 ms

```

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The screenshot shows two terminal windows. The left window displays a table of network traffic statistics for a receiver, including columns for ID, Interval, Transfer, and Bitrate. The right window shows the output of a ping command to 'esmeralda.com', displaying packet loss and round-trip time statistics.

The screenshot shows a terminal window with the command 'iperf3 -c esmeralda.com -u -b 200M'. The output displays a table of bandwidth test results with columns for ID, Interval, Transfer, and Bitrate, showing a consistent performance of approximately 140-150 Mbits/sec.

Screenshot hasil pengujian serangan spoofing protokol EIGRP dengan bandwidth 1K.

The screenshot shows two terminal windows. The left window shows the command 'iperf3 -c esmeralda.com -u -b 1K -i 60 -w 56K -l 2K -P 10' and a warning about UDP block size. The right window shows the output of a ping command to 'esmeralda.com' with detailed statistics.

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```

root@alda: /home/alda
File Actions Edit View Help
[ 21] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 23] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 10

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 5] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 7] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 7] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 9] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 9] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[11] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[11] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[13] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[13] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[15] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[15] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[17] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[17] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[19] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[19] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[21] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[21] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[23] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[23] 0.00-10.11 sec 2.00 KBytes 1.62 Kbits/sec 0.000 ms 0/1 (0%) receiver
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 0.000 ms 0/10 (0%) sender
[SUM] 0.00-10.11 sec 20.0 KBytes 16.2 Kbits/sec 0.000 ms 0/10 (0%) receiver

iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[root@alda] ~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 t
tl=61 time=285 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 t
tl=61 time=190 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=44.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 t
tl=61 time=37.2 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 t
tl=61 time=47.2 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=6 t
tl=61 time=116 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 t
tl=61 time=47.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=8 t
tl=61 time=46.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=43.2 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=10 ttl=61 time=39.8 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 10 received, 0% packet loss, time 9002ms
rtt min/avg/max/mdev = 37.158/89.649/285.098/79.938 ms

[root@alda] ~/home/alda

```

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda] ~/home/alda
# iperf3 -c esmeralda.com -u -b 1K
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 35471 connected to 192.168.2.2 port 5201

[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec 1.41 KBytes 11.6 Kbits/sec
[ 5] 1.00-2.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 2.00-3.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 3.00-4.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 4.00-5.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 5.00-6.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 6.00-7.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 7.00-8.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 8.00-9.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 9.00-10.00 sec 0.00 Bytes 0.00 bits/sec

[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 1.41 KBytes 1.16 Kbits/sec
[ 5] 0.00-10.16 sec 1.41 KBytes 1.14 Kbits/sec

iperf Done.

```

Screenshot hasil pengujian serangan *spoofing* protokol EIGRP dengan *bandwidth* 50M.

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda] ~/home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 35622 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 54455 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 49874 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 45439 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 37216 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 45874 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 46942 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 46816 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 36892 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 35100 connected to 192.168.2.2 port 5201

[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 8247
[ 7] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 8241
[ 9] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 8234
[11] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 8231
[13] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 8222
[15] 0.00-10.00 sec 16.0 MBytes 13.5 Mbits/sec 8215
[17] 0.00-10.00 sec 16.0 MBytes 13.5 Mbits/sec 8211
[19] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 8209
[21] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 8205
[23] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 8201
[SUM] 0.00-10.00 sec 161 MBytes 135 Mbits/sec 82216

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8247 (0%) sender
[ 5] 0.00-19.35 sec 16.0 KBytes 6.77 Kbits/sec 933.280 ms 220/228 (96%) re

```

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```

root@alda: /home/alda
File Actions Edit View Help
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8247 (0%) sender
[ 5] 0.00-19.35 sec 16.0 KBytes 6.77 Kbits/sec 933.280 ms 220/228 (96%) receiver
[ 7] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8241 (0%) sender
[ 7] 0.00-19.35 sec 16.0 KBytes 6.77 Kbits/sec 930.351 ms 220/228 (96%) receiver
[ 9] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8234 (0%) sender
[ 9] 0.00-19.35 sec 16.0 KBytes 6.77 Kbits/sec 930.141 ms 219/227 (96%) receiver
[11] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8231 (0%) sender
[11] 0.00-19.35 sec 16.0 KBytes 6.77 Kbits/sec 925.580 ms 219/227 (96%) receiver
[13] 0.00-10.00 sec 16.1 MBytes 13.5 Mbits/sec 0.000 ms 0/8222 (0%) sender
[13] 0.00-19.35 sec 18.0 KBytes 7.62 Kbits/sec 868.399 ms 217/226 (96%) receiver
[15] 0.00-10.00 sec 16.0 MBytes 13.5 Mbits/sec 0.000 ms 0/8215 (0%) sender
[15] 0.00-19.35 sec 18.0 KBytes 7.62 Kbits/sec 837.611 ms 216/225 (96%) receiver
[17] 0.00-10.00 sec 16.0 MBytes 13.5 Mbits/sec 0.000 ms 0/8211 (0%) sender
[17] 0.00-19.35 sec 18.0 KBytes 7.62 Kbits/sec 835.104 ms 216/225 (96%) receiver
[19] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8209 (0%) sender
[19] 0.00-19.35 sec 16.0 KBytes 6.77 Kbits/sec 842.660 ms 217/225 (96%) receiver
[21] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8205 (0%) sender
[21] 0.00-19.35 sec 14.0 KBytes 5.93 Kbits/sec 884.620 ms 218/225 (97%) receiver
[23] 0.00-10.00 sec 16.0 MBytes 13.4 Mbits/sec 0.000 ms 0/8201 (0%) sender
[23] 0.00-19.35 sec 14.0 KBytes 5.93 Kbits/sec 883.087 ms 218/225 (97%) receiver
[SUM] 0.00-10.00 sec 161 MBytes 135 Mbits/sec 0.000 ms 0/82216 (0%) sender
[SUM] 0.00-19.35 sec 162 KBytes 68.6 Kbits/sec 887.083 ms 2180/2261 (2.7%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
(root@alda) ~/home/alda
ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=73.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=114 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=35.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=140 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 4 received, 60% packet loss, time 9127ms

root@alda: /home/alda
File Actions Edit View Help
(root@alda) ~/home/alda
ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=73.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=114 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=35.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=140 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 4 received, 60% packet loss, time 9127ms

root@alda: /home/alda
File Actions Edit View Help
(root@alda) ~/home/alda
iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 46266 connected to 192.168.1.3
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 1.00-2.01 sec 5.94 MBytes 49.3 Mbits/sec
[ 5] 2.01-3.00 sec 5.99 MBytes 50.8 Mbits/sec
[ 5] 3.00-4.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 4.00-5.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 5.00-6.02 sec 5.91 MBytes 48.6 Mbits/sec
[ 5] 6.02-7.00 sec 6.01 MBytes 51.4 Mbits/sec
[ 5] 7.00-8.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 8.00-9.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 9.00-10.00 sec 5.96 MBytes 50.0 Mbits/sec

[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 59.6 MBytes 50.0 Mbits/sec
[ 5] 0.00-18.89 sec 230 KBytes 100 Kbits/sec
iperf3 Done.

```

Screenshot hasil pengujian serangan *spoofing* protokol EIGRP dengan *bandwidth* 100M.

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The image displays three sequential screenshots of a Linux terminal window. The terminal shows the execution of an iperf test and subsequent ping tests between two hosts: esmeralda.com (192.168.2.2) and www.esmeralda.com (192.168.2.2).

Terminal Screenshot 1 (Top): Shows the iperf test results. The test is run from the root user on alda. The output shows a connection to host esmeralda.com on port 5201. The test duration is 10 seconds. The total transfer is 154 MBytes, with a bitrate of 129 Mbits/sec. The jitter is 0.000 ms, and the total datagrams sent are 7905.

| ID | Interval | Transfer | Bitrate | Total |
|--------|------------|-----------------|----------------|-------|
| [5] | 0.00-10.00 | sec 15.4 MBytes | 13.0 Mbits/sec | 7905 |
| [7] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7901 |
| [9] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7900 |
| [11] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7894 |
| [13] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7890 |
| [15] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7888 |
| [17] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7885 |
| [19] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7879 |
| [21] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7875 |
| [23] | 0.00-10.00 | sec 15.4 MBytes | 12.9 Mbits/sec | 7870 |
| [SUM] | 0.00-10.00 | sec 154 MBytes | 129 Mbits/sec | 78887 |

Terminal Screenshot 2 (Middle): Shows the ping test results. The test is run from the root user on alda. The output shows 10 packets transmitted, 3 received, and 70% packet loss. The time taken for the ping is 9141ms. The rtt min/avg/max/mdev is 36.921/59.981/101.913/29.699 ms.

Terminal Screenshot 3 (Bottom): Shows the ping test results. The test is run from the root user on alda. The output shows 10 packets transmitted, 3 received, and 70% packet loss. The time taken for the ping is 9141ms. The rtt min/avg/max/mdev is 36.921/59.981/101.913/29.699 ms.

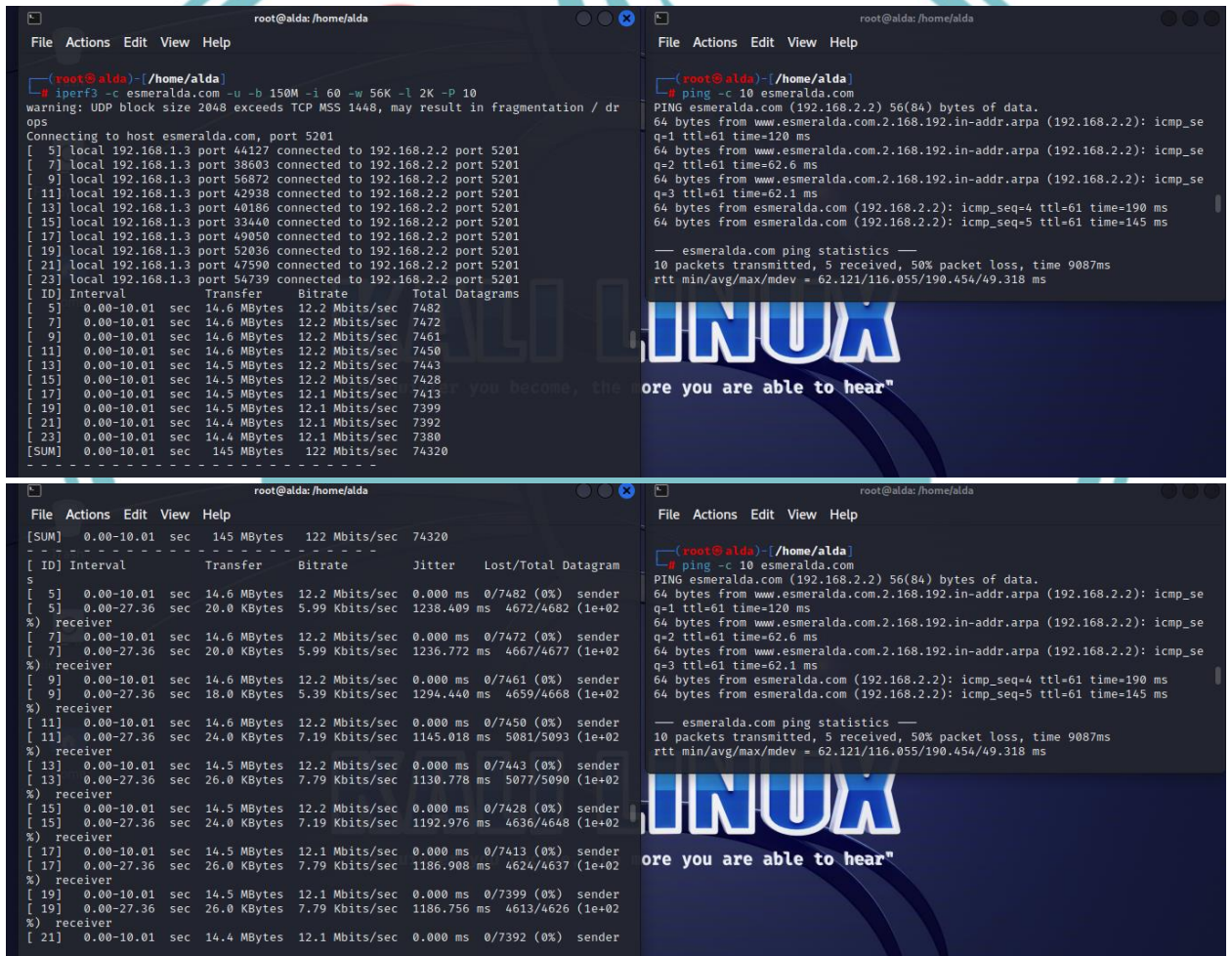
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```
(root@alda) ~/home/alda
# iperf3 -c esmeralda.com -u -b 100M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 55213 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00    sec 11.9 MBytes  99.3 Mb/s/sec
[ 5] 1.00-2.00    sec 12.0 MBytes  101 Mb/s/sec
[ 5] 2.00-3.00    sec 11.9 MBytes  100 Mb/s/sec
[ 5] 3.00-4.00    sec 11.9 MBytes  100 Mb/s/sec
[ 5] 4.00-5.00    sec 11.9 MBytes  99.9 Mb/s/sec
[ 5] 5.00-6.00    sec 11.7 MBytes  98.2 Mb/s/sec
[ 5] 6.00-7.00    sec 12.1 MBytes  102 Mb/s/sec
[ 5] 7.00-8.00    sec 11.9 MBytes  100 Mb/s/sec
[ 5] 8.00-9.00    sec 11.9 MBytes  100 Mb/s/sec
[ 5] 9.00-10.00   sec 11.9 MBytes  100 Mb/s/sec
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00   sec 119 KBytes   100 Mb/s/sec
[ 5] 0.00-27.53   sec 296 KBytes   87.9 Kbits/sec

iperf Done.
```

Screenshot hasil pengujian serangan *spoofing* protokol EIGRP dengan *bandwidth* 150M.



```
(root@alda) ~/home/alda
# iperf3 -c esmeralda.com -u -b 150M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 44127 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 38603 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 56872 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 42938 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 40186 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 33440 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 49050 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 52036 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 47590 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 54739 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 7482
[ 7] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 7472
[ 9] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 7461
[11] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 7450
[13] 0.00-10.01   sec 14.5 MBytes  12.2 Mb/s/sec 7443
[15] 0.00-10.01   sec 14.5 MBytes  12.2 Mb/s/sec 7428
[17] 0.00-10.01   sec 14.5 MBytes  12.1 Mb/s/sec 7413
[19] 0.00-10.01   sec 14.5 MBytes  12.1 Mb/s/sec 7399
[21] 0.00-10.01   sec 14.4 MBytes  12.1 Mb/s/sec 7392
[23] 0.00-10.01   sec 14.4 MBytes  12.1 Mb/s/sec 7380
[SUM] 0.00-10.01 sec 145 MBytes  122 Mb/s/sec 74320

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
[ 5] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 0.000 ms 0/7482 (0%) sender
[ 5] 0.00-27.36   sec 20.0 KBytes  5.99 Kbits/sec 1238.409 ms 4672/4682 (1e+02%) receiver
[ 7] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 0.000 ms 0/7472 (0%) sender
[ 7] 0.00-27.36   sec 20.0 KBytes  5.99 Kbits/sec 1236.772 ms 4667/4677 (1e+02%) receiver
[ 9] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 0.000 ms 0/7461 (0%) sender
[ 9] 0.00-27.36   sec 18.0 KBytes  5.39 Kbits/sec 1294.440 ms 4659/4668 (1e+02%) receiver
[11] 0.00-10.01   sec 14.6 MBytes  12.2 Mb/s/sec 0.000 ms 0/7450 (0%) sender
[11] 0.00-27.36   sec 24.0 KBytes  7.19 Kbits/sec 1145.018 ms 5081/5093 (1e+02%) receiver
[13] 0.00-10.01   sec 14.5 MBytes  12.2 Mb/s/sec 0.000 ms 0/7443 (0%) sender
[13] 0.00-27.36   sec 26.0 KBytes  7.79 Kbits/sec 1130.778 ms 5077/5090 (1e+02%) receiver
[15] 0.00-10.01   sec 14.5 MBytes  12.2 Mb/s/sec 0.000 ms 0/7428 (0%) sender
[15] 0.00-27.36   sec 24.0 KBytes  7.19 Kbits/sec 1192.976 ms 4636/4648 (1e+02%) receiver
[17] 0.00-10.01   sec 14.5 MBytes  12.1 Mb/s/sec 0.000 ms 0/7413 (0%) sender
[17] 0.00-27.36   sec 26.0 KBytes  7.79 Kbits/sec 1186.908 ms 4624/4637 (1e+02%) receiver
[19] 0.00-10.01   sec 14.5 MBytes  12.1 Mb/s/sec 0.000 ms 0/7399 (0%) sender
[19] 0.00-27.36   sec 26.0 KBytes  7.79 Kbits/sec 1186.756 ms 4613/4626 (1e+02%) receiver
[21] 0.00-10.01   sec 14.4 MBytes  12.1 Mb/s/sec 0.000 ms 0/7392 (0%) sender
```

```
(root@alda) ~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=120 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=62.6 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=62.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=190 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=145 ms

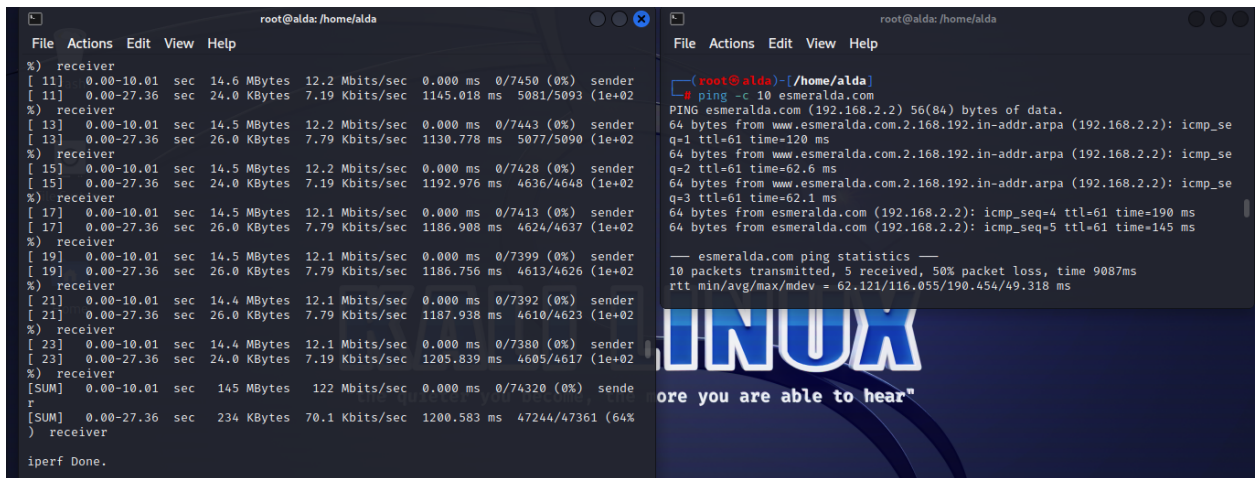
--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9087ms
rtt min/avg/max/mdev = 62.121/116.055/190.454/49.318 ms
```

```
(root@alda) ~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=120 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=62.6 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=62.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=190 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=145 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9087ms
rtt min/avg/max/mdev = 62.121/116.055/190.454/49.318 ms
```


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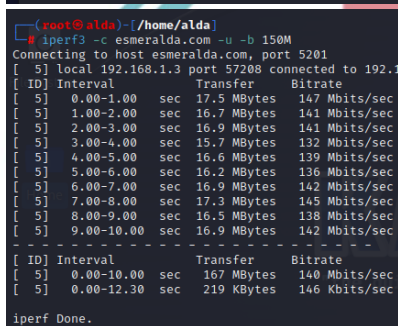
```

root@alda: /home/alda
File Actions Edit View Help
% receiver
[ 11] 0.00-10.01 sec 14.6 MBytes 12.2 Mbits/sec 0.000 ms 0/7450 (0%) sender
[ 11] 0.00-27.36 sec 24.0 KBytes 7.19 Kbits/sec 1145.018 ms 5081/5093 (1e+02)
% receiver
[ 13] 0.00-10.01 sec 14.5 MBytes 12.2 Mbits/sec 0.000 ms 0/7443 (0%) sender
[ 13] 0.00-27.36 sec 26.0 KBytes 7.79 Kbits/sec 1130.778 ms 5077/5090 (1e+02)
% receiver
[ 15] 0.00-10.01 sec 14.5 MBytes 12.2 Mbits/sec 0.000 ms 0/7428 (0%) sender
[ 15] 0.00-27.36 sec 24.0 KBytes 7.19 Kbits/sec 1192.976 ms 4636/4648 (1e+02)
% receiver
[ 17] 0.00-10.01 sec 14.5 MBytes 12.1 Mbits/sec 0.000 ms 0/7413 (0%) sender
[ 17] 0.00-27.36 sec 26.0 KBytes 7.79 Kbits/sec 1186.908 ms 4624/4637 (1e+02)
% receiver
[ 19] 0.00-10.01 sec 14.5 MBytes 12.1 Mbits/sec 0.000 ms 0/7399 (0%) sender
[ 19] 0.00-27.36 sec 26.0 KBytes 7.79 Kbits/sec 1186.756 ms 4613/4626 (1e+02)
% receiver
[ 21] 0.00-10.01 sec 14.4 MBytes 12.1 Mbits/sec 0.000 ms 0/7392 (0%) sender
[ 21] 0.00-27.36 sec 26.0 KBytes 7.79 Kbits/sec 1187.938 ms 4610/4623 (1e+02)
% receiver
[ 23] 0.00-10.01 sec 14.4 MBytes 12.1 Mbits/sec 0.000 ms 0/7380 (0%) sender
[ 23] 0.00-27.36 sec 24.0 KBytes 7.19 Kbits/sec 1205.839 ms 4605/4617 (1e+02)
% receiver
[SUM] 0.00-10.01 sec 145 MBytes 122 Mbits/sec 0.000 ms 0/74320 (0%) sender
[SUM] 0.00-27.36 sec 234 KBytes 70.1 Kbits/sec 1200.583 ms 47244/47361 (64%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=120 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=62.6 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=62.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=190 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=145 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9087ms
rtt min/avg/max/mdev = 62.121/116.055/190.454/49.318 ms

```

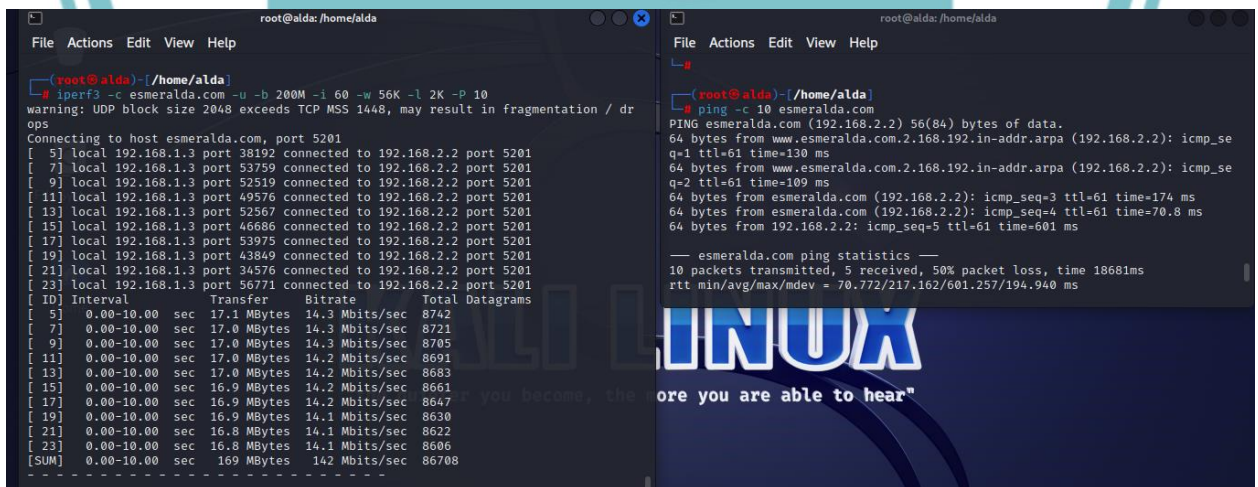


```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 57208 connected to 192.168.2.2 port 5201
[ID] Interval Transfer Bitrate
[ 5] 0.00-1.00 sec 17.5 MBytes 147 Mbits/sec
[ 5] 1.00-2.00 sec 16.7 MBytes 141 Mbits/sec
[ 5] 2.00-3.00 sec 16.9 MBytes 141 Mbits/sec
[ 5] 3.00-4.00 sec 15.7 MBytes 132 Mbits/sec
[ 5] 4.00-5.00 sec 16.6 MBytes 139 Mbits/sec
[ 5] 5.00-6.00 sec 16.2 MBytes 136 Mbits/sec
[ 5] 6.00-7.00 sec 16.9 MBytes 142 Mbits/sec
[ 5] 7.00-8.00 sec 17.3 MBytes 145 Mbits/sec
[ 5] 8.00-9.00 sec 16.5 MBytes 138 Mbits/sec
[ 5] 9.00-10.00 sec 16.9 MBytes 142 Mbits/sec
-----
[ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 167 MBytes 140 Mbits/sec
[ 5] 0.00-12.30 sec 219 KBytes 146 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian serangan *spoofing* protokol EIGRP dengan *bandwidth* 200M.



```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 38192 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 53759 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 52519 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 49576 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 52567 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 46686 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 53975 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 43849 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 34576 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 56771 connected to 192.168.2.2 port 5201
[ID] Interval Transfer Bitrate Total Datagrams
[ 5] 0.00-10.00 sec 17.1 MBytes 14.3 Mbits/sec 8742
[ 7] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 8721
[ 9] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 8705
[11] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 8691
[13] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 8683
[15] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8661
[17] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 8647
[19] 0.00-10.00 sec 16.9 MBytes 14.1 Mbits/sec 8630
[21] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 8622
[23] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 8606
[SUM] 0.00-10.00 sec 169 MBytes 142 Mbits/sec 86708

```

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```

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 169 MBytes 142 Mbits/sec 86708
[ ID] Interval Transfer Bitrate Jitter Lost/Total Datagram
[ 5] 0.00-10.00 sec 17.1 MBytes 14.3 Mbits/sec 0.000 ms 0/8742 (0%) sender
[ 5] 0.00-24.91 sec 18.0 KBytes 5.92 Kbits/sec 706.648 ms 7841/77850 (1e+02%) receiver
[ 7] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 0.000 ms 0/8721 (0%) sender
[ 7] 0.00-24.91 sec 24.0 KBytes 7.89 Kbits/sec 1531.230 ms 7819/7831 (1e+02%) receiver
[ 9] 0.00-10.00 sec 17.0 MBytes 14.3 Mbits/sec 0.000 ms 0/8705 (0%) sender
[ 9] 0.00-24.91 sec 22.0 KBytes 7.24 Kbits/sec 1581.575 ms 7806/7817 (1e+02%) receiver
[11] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8691 (0%) sender
[11] 0.00-24.91 sec 24.0 KBytes 7.89 Kbits/sec 1560.923 ms 7793/7805 (1e+02%) receiver
[13] 0.00-10.00 sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8683 (0%) sender
[13] 0.00-24.91 sec 22.0 KBytes 7.24 Kbits/sec 1556.994 ms 7787/7798 (1e+02%) receiver
[15] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8661 (0%) sender
[15] 0.00-24.91 sec 18.0 KBytes 5.92 Kbits/sec 1569.866 ms 7769/7778 (1e+02%) receiver
[17] 0.00-10.00 sec 16.9 MBytes 14.2 Mbits/sec 0.000 ms 0/8647 (0%) sender
[17] 0.00-24.91 sec 20.0 KBytes 6.58 Kbits/sec 1560.801 ms 7755/7765 (1e+02%) receiver
[19] 0.00-10.00 sec 16.9 MBytes 14.1 Mbits/sec 0.000 ms 0/8630 (0%) sender
[19] 0.00-24.91 sec 22.0 KBytes 7.24 Kbits/sec 1544.108 ms 7739/7750 (1e+02%) receiver
[21] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8622 (0%) sender
[21] 0.00-24.91 sec 22.0 KBytes 7.24 Kbits/sec 1543.788 ms 7731/7742 (1e+02%) receiver
[23] 0.00-10.00 sec 16.8 MBytes 14.1 Mbits/sec 0.000 ms 0/8606 (0%) sender
[23] 0.00-24.91 sec 20.0 KBytes 6.58 Kbits/sec 741.144 ms 7716/7726 (1e+02%) receiver
[SUM] 0.00-10.00 sec 169 MBytes 142 Mbits/sec 0.000 ms 0/86708 (0%) sender
[SUM] 0.00-24.91 sec 212 KBytes 69.7 Kbits/sec 1389.708 ms 77756/77862 (90%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 169 MBytes 142 Mbits/sec 0.000 ms 0/86708 (0%) sender
[SUM] 0.00-24.91 sec 212 KBytes 69.7 Kbits/sec 1389.708 ms 77756/77862 (90%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 165 MBytes 139 Mbits/sec
[SUM] 0.00-20.83 sec 175 KBytes 69.0 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian serangan *sniffing* protokol EIGRP dengan *bandwidth* 1K.

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2. Dilarang mengumumkannya dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta



```

root@alda: /home/alda
File Actions Edit View Help
root@alda)~/home/alda
# iperf3 -c esmeralda.com -u -b 1K -l 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 60990 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 34901 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44585 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 44077 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 39859 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 39603 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 37553 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 56486 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 36235 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 43322 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[ 7] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[ 9] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[11] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[13] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[15] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[17] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[19] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[21] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[23] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes  16.4 Kbits/sec 10
-----
[ ID] Interval      Transfer      Bitrate      Jitter    Lost/Total Datagram
[ 5] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 7] 0.00-10.00 sec 2.00 KBytes  1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 9] 0.00-10.00 sec 2.00 KBytes  1.61 Kbits/sec 0.000 ms 0/1 (0%) sender
[11] 0.00-10.00 sec 2.00 KBytes  1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[13] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[15] 0.00-10.00 sec 2.00 KBytes  1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[17] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) receiver
[19] 0.00-10.00 sec 2.00 KBytes  1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[21] 0.00-10.00 sec 2.00 KBytes  1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[23] 0.00-10.00 sec 2.00 KBytes  1.61 Kbits/sec 0.000 ms 0/1 (0%) sender
[SUM] 0.00-10.00 sec 20.0 KBytes  16.4 Kbits/sec 0.000 ms 0/10 (0%) sender
iperf Done.

root@alda)~/home/alda
# iperf3 -c esmeralda.com -u -b 1K
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 35116 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec 1.41 KBytes  11.6 Kbits/sec
[ 5] 1.00-2.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 2.00-3.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 3.00-4.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 4.00-5.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 5.00-6.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 6.00-7.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 7.00-8.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 8.00-9.00 sec 0.00 Bytes  0.00 bits/sec
[ 5] 9.00-10.00 sec 0.00 Bytes  0.00 bits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 1.41 KBytes  1.16 Kbits/sec
[ 5] 0.00-10.12 sec 1.41 KBytes  1.14 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian serangan *sniffing* protokol EIGRP dengan *bandwidth* 50M.

Hak Cipta milik Politeknik Negeri Jakarta

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda:~/home/alda
File Actions Edit View Help
root@alda)~# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 48364 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 47639 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 38183 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 58162 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 34560 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 34023 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 54655 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 54993 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 56896 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 55095 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.00 sec 14.1 MBytes  11.9 Mbits/sec 7244
[ 7] 0.00-10.00 sec 14.1 MBytes  11.9 Mbits/sec 7239
[ 9] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7229
[11] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7226
[13] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7217
[15] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7208
[17] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7205
[19] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7200
[21] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 7194
[23] 0.00-10.00 sec 14.0 MBytes  11.8 Mbits/sec 7189
[SUM] 0.00-10.00 sec 141 MBytes  118 Mbits/sec 72151

root@alda:~/home/alda
File Actions Edit View Help
alda@alda)~# sudo su
[sudo] password for alda:
root@alda)~# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=68.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=237 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=47.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=71.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=57.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=50.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=57.6 ms
--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9049ms
rtt min/avg/max/mdev = 47.265/84.306/237.170/62.943 ms

root@alda:~/home/alda
File Actions Edit View Help
alda@alda)~# sudo su
[sudo] password for alda:
root@alda)~# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=68.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=237 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=47.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=71.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=57.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=50.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=57.6 ms
--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9049ms
rtt min/avg/max/mdev = 47.265/84.306/237.170/62.943 ms

root@alda:~/home/alda
File Actions Edit View Help
alda@alda)~# sudo su
[sudo] password for alda:
root@alda)~# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=68.8 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=237 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=47.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=71.4 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=57.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=50.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=57.6 ms
--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9049ms
rtt min/avg/max/mdev = 47.265/84.306/237.170/62.943 ms

root@alda:~/home/alda
File Actions Edit View Help
[ 23] 0.00-10.00 sec 14.0 MBytes  11.8 Mbits/sec 7189
[SUM] 0.00-10.00 sec 141 MBytes  118 Mbits/sec 72151

[ ID] Interval      Transfer      Bitrate      Jitter  Lost/Total Datagr
ams
[ 5] 0.00-10.00 sec 14.1 MBytes  11.9 Mbits/sec 0.000 ms 0/7244 (0%) send
er
[ 5] 0.00-14.61 sec 20.0 KBytes  11.2 Kbits/sec 527.800 ms 866/876 (99%) receiver
[ 7] 0.00-10.00 sec 14.1 MBytes  11.9 Mbits/sec 0.000 ms 0/7239 (0%) send
er
[ 7] 0.00-14.61 sec 18.0 KBytes  10.1 Kbits/sec 538.345 ms 867/876 (99%) receiver
[ 9] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7229 (0%) send
er
[ 9] 0.00-14.61 sec 18.0 KBytes  10.1 Kbits/sec 538.321 ms 867/876 (99%) receiver
[11] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7226 (0%) send
er
[11] 0.00-14.61 sec 12.0 KBytes  6.73 Kbits/sec 584.400 ms 446/452 (99%) receiver
[13] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7217 (0%) send
er
[13] 0.00-14.61 sec 12.0 KBytes  6.73 Kbits/sec 584.400 ms 446/452 (99%) receiver
[15] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7208 (0%) send
er
[15] 0.00-14.61 sec 12.0 KBytes  6.73 Kbits/sec 576.976 ms 446/452 (99%) receiver

root@alda:~/home/alda
File Actions Edit View Help
[ 15] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7208 (0%) send
er
[ 15] 0.00-14.61 sec 12.0 KBytes  6.73 Kbits/sec 576.976 ms 446/452 (99%) receiver
[ 17] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7205 (0%) send
er
[ 17] 0.00-14.61 sec 14.0 KBytes  7.85 Kbits/sec 565.595 ms 445/452 (98%) receiver
[ 19] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7200 (0%) send
er
[ 19] 0.00-14.61 sec 14.0 KBytes  7.85 Kbits/sec 564.318 ms 445/452 (98%) receiver
[ 21] 0.00-10.00 sec 14.1 MBytes  11.8 Mbits/sec 0.000 ms 0/7194 (0%) send
er
[ 21] 0.00-14.61 sec 16.0 KBytes  8.97 Kbits/sec 536.266 ms 541/549 (99%) receiver
[ 23] 0.00-10.00 sec 14.0 MBytes  11.8 Mbits/sec 0.000 ms 0/7189 (0%) send
er
[ 23] 0.00-14.61 sec 16.0 KBytes  8.97 Kbits/sec 536.327 ms 540/548 (99%) receiver
[SUM] 0.00-10.00 sec 141 MBytes  118 Mbits/sec 0.000 ms 0/72151 (0%) sen
der
[SUM] 0.00-14.61 sec 154 KBytes  86.3 Kbits/sec 553.039 ms 6007/6084 (8.3%
) receiver
iperf Done.
  
```

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2. Dilarang mengumunkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 53652 connected to 192.1
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 1.00-2.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 2.00-3.00 sec  5.94 MBytes  49.8 Mbits/sec
[ 5] 3.00-4.00 sec  5.98 MBytes  50.1 Mbits/sec
[ 5] 4.00-5.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 5.00-6.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 6.00-7.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 7.00-8.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 8.00-9.00 sec  5.96 MBytes  50.0 Mbits/sec
[ 5] 9.00-10.00 sec 5.96 MBytes  50.0 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 59.6 MBytes  50.0 Mbits/sec
[ 5] 0.00-18.90 sec 370 KBytes    161 Kbits/sec

iperf Done.
  
```

Screenshot hasil pengujian serangan *sniffing* protokol EIGRP dengan *bandwidth* 100M.

```

root@alda:~/home/alda
iperf Done.

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 100M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 58987 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 55937 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44880 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 55417 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 58069 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 46068 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 49196 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 50845 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 57552 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 56770 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.01 sec  9.53 MBytes  7.99 Mbits/sec  4880
[ 7] 0.00-10.01 sec  9.52 MBytes  7.98 Mbits/sec  4876
[ 9] 0.00-10.01 sec  9.52 MBytes  7.98 Mbits/sec  4875
[11] 0.00-10.01 sec  9.52 MBytes  7.98 Mbits/sec  4873
[13] 0.00-10.01 sec  9.50 MBytes  7.96 Mbits/sec  4865
[15] 0.00-10.01 sec  9.50 MBytes  7.96 Mbits/sec  4864
[17] 0.00-10.01 sec  9.50 MBytes  7.96 Mbits/sec  4862
[19] 0.00-10.01 sec  9.49 MBytes  7.95 Mbits/sec  4857
[21] 0.00-10.01 sec  9.48 MBytes  7.95 Mbits/sec  4854
[23] 0.00-10.01 sec  9.47 MBytes  7.94 Mbits/sec  4850
[SUM] 0.00-10.01 sec  95.0 MBytes  79.7 Mbits/sec  48656

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
  
```

```

root@alda:~/home/alda
iperf Done.

root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 100M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 58987 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 55937 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44880 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 55417 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 58069 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 46068 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 49196 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 50845 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 57552 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 56770 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.01 sec  9.53 MBytes  7.99 Mbits/sec  0.000 ms  0/4880 (0%) sender
[ 5] 0.00-14.56 sec  14.0 KBytes  7.87 Kbits/sec  622.273 ms 169/176 (96%) re
ceiver
[ 7] 0.00-10.01 sec  9.52 MBytes  7.98 Mbits/sec  0.000 ms  0/4876 (0%) sender
[ 7] 0.00-14.56 sec  12.0 KBytes  6.75 Kbits/sec  625.746 ms 170/176 (97%) re
ceiver
[ 9] 0.00-10.01 sec  9.52 MBytes  7.98 Mbits/sec  0.000 ms  0/4875 (0%) sender
[ 9] 0.00-14.56 sec  14.0 KBytes  7.87 Kbits/sec  590.178 ms 519/526 (99%) re
ceiver
[11] 0.00-10.01 sec  9.52 MBytes  7.98 Mbits/sec  0.000 ms  0/4873 (0%) sender
[11] 0.00-14.56 sec  14.0 KBytes  7.87 Kbits/sec  590.147 ms 520/527 (99%) re
ceiver
[13] 0.00-10.01 sec  9.50 MBytes  7.96 Mbits/sec  0.000 ms  0/4865 (0%) sender
[13] 0.00-14.56 sec  14.0 KBytes  7.87 Kbits/sec  572.765 ms 519/526 (99%) re
ceiver
[15] 0.00-10.01 sec  9.50 MBytes  7.96 Mbits/sec  0.000 ms  0/4864 (0%) sender
[15] 0.00-14.56 sec  14.0 KBytes  7.87 Kbits/sec  572.737 ms 519/526 (99%) re
ceiver
[17] 0.00-10.01 sec  9.50 MBytes  7.96 Mbits/sec  0.000 ms  0/4862 (0%) sender
  
```

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```

root@alda: /home/alda
File Actions Edit View Help
[ 9] 0.00-10.01 sec 9.52 MBytes 7.98 Mbits/sec 0.000 ms 0/4875 (0%) sender
[ 9] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 590.178 ms 519/526 (99%) receiver
[11] 0.00-10.01 sec 9.52 MBytes 7.98 Mbits/sec 0.000 ms 0/4873 (0%) sender
[11] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 590.147 ms 520/527 (99%) receiver
[13] 0.00-10.01 sec 9.50 MBytes 7.96 Mbits/sec 0.000 ms 0/4865 (0%) sender
[13] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 572.765 ms 519/526 (99%) receiver
[15] 0.00-10.01 sec 9.50 MBytes 7.96 Mbits/sec 0.000 ms 0/4864 (0%) sender
[15] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 572.737 ms 519/526 (99%) receiver
[17] 0.00-10.01 sec 9.50 MBytes 7.96 Mbits/sec 0.000 ms 0/4862 (0%) sender
[17] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 572.776 ms 519/526 (99%) receiver
[19] 0.00-10.01 sec 9.49 MBytes 7.95 Mbits/sec 0.000 ms 0/4857 (0%) sender
[19] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 575.236 ms 519/526 (99%) receiver
[21] 0.00-10.01 sec 9.48 MBytes 7.95 Mbits/sec 0.000 ms 0/4854 (0%) sender
[21] 0.00-14.56 sec 14.0 KBytes 7.87 Kbits/sec 573.893 ms 518/525 (99%) receiver
[23] 0.00-10.01 sec 9.47 MBytes 7.94 Mbits/sec 0.000 ms 0/4850 (0%) sender
[23] 0.00-14.56 sec 16.0 KBytes 9.00 Kbits/sec 561.890 ms 516/524 (98%) receiver
[SUM] 0.00-10.01 sec 95.0 MBytes 79.7 Mbits/sec 0.000 ms 0/48656 (0%) sender
[SUM] 0.00-14.56 sec 140 KBytes 78.7 Kbits/sec 585.764 ms 4488/4558 (9.2%) receiver
iperf Done.

```

```

root@alda: /home/alda
File Actions Edit View Help
[ root@alda ] ~ /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=57.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=54.9 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=211 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=143 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=75.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9100ms
rtt min/avg/max/mdev = 54.939/108.247/210.799/60.435 ms

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 100M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 41856 connected to 192.168.2.2 port 5201
[ ID] Interval Transfer Bitrate
[ 5] 0.00-1.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 1.00-2.00 sec 12.0 MBytes 100 Mbits/sec
[ 5] 2.00-3.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 3.00-4.00 sec 11.9 MBytes 99.9 Mbits/sec
[ 5] 4.00-5.00 sec 11.8 MBytes 99.0 Mbits/sec
[ 5] 5.00-6.00 sec 11.8 MBytes 99.4 Mbits/sec
[ 5] 6.00-7.00 sec 12.1 MBytes 102 Mbits/sec
[ 5] 7.00-8.00 sec 11.9 MBytes 100 Mbits/sec
[ 5] 8.00-9.00 sec 11.9 MBytes 99.9 Mbits/sec
[ 5] 9.00-10.00 sec 11.9 MBytes 100 Mbits/sec
[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 119 MBytes 100 Mbits/sec
[ 5] 0.00-15.12 sec 230 KBytes 125 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian serangan *sniffing* protokol EIGRP dengan *bandwidth* 150M.

```

root@alda: /home/alda
File Actions Edit View Help
[ root@alda ] ~ /home/alda
# iperf3 -c esmeralda.com -u -b 150M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 47192 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 56112 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 46633 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 56114 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 33519 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 48497 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 41497 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 55195 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 35212 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 52888 connected to 192.168.2.2 port 5201
[ ID] Interval Transfer Bitrate Total Datagrams
[ 5] 0.00-10.00 sec 12.8 MBytes 10.7 Mbits/sec 6543
[ 7] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 6746
[ 9] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 6738
[11] 0.00-10.00 sec 12.7 MBytes 10.7 Mbits/sec 6516
[13] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 6728
[15] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 6722
[17] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 6714
[19] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 6711
[21] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 6707
[23] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 6707
[SUM] 0.00-10.00 sec 131 MBytes 100 Mbits/sec 66832
[ ID] Interval Transfer Bitrate Jitter Lost/Total Datagram
[ 5] 0.00-10.00 sec 12.8 MBytes 10.7 Mbits/sec 0.000 ms 0/6543 (0%) sender

```

```

root@alda: /home/alda
File Actions Edit View Help
[ root@alda ] ~ /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=191 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=347 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=160 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=95.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=68.6 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9094ms
rtt min/avg/max/mdev = 68.612/172.436/347.120/97.638 ms

```

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```

root@alda: /home/alda
File Actions Edit View Help
s
[ 5] 0.00-10.00 sec 12.8 MBytes 10.7 Mbits/sec 0.000 ms 0/6543 (0%) sender
[ 5] 0.00-18.51 sec 16.0 KBytes 7.08 Kbits/sec 684.520 ms 1350/1358 (99%) receiver
[ 7] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6746 (0%) sender
[ 7] 0.00-18.51 sec 12.0 KBytes 5.31 Kbits/sec 738.620 ms 1405/1411 (1e+02%) receiver
[ 9] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6738 (0%) sender
[ 9] 0.00-18.51 sec 12.0 KBytes 5.31 Kbits/sec 740.641 ms 1402/1408 (1e+02%) receiver
[11] 0.00-10.00 sec 12.7 MBytes 10.7 Mbits/sec 0.000 ms 0/6516 (0%) sender
[11] 0.00-18.51 sec 12.0 KBytes 5.31 Kbits/sec 740.609 ms 1344/1350 (1e+02%) receiver
[13] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6728 (0%) sender
[13] 0.00-18.51 sec 14.0 KBytes 6.20 Kbits/sec 658.284 ms 1395/1402 (1e+02%) receiver
[15] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6722 (0%) sender
[15] 0.00-18.51 sec 12.0 KBytes 5.31 Kbits/sec 702.074 ms 1396/1402 (1e+02%) receiver
[17] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6714 (0%) sender
[17] 0.00-18.51 sec 12.0 KBytes 5.31 Kbits/sec 702.081 ms 1395/1401 (1e+02%) receiver
[19] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6711 (0%) sender
[19] 0.00-18.51 sec 10.0 KBytes 4.43 Kbits/sec 81.504 ms 311/316 (98%) receiver
[21] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6707 (0%) sender
[21] 0.00-18.51 sec 14.0 KBytes 6.20 Kbits/sec 738.971 ms 1393/1400 (1e+02%) receiver
[23] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6707 (0%) sender
[23] 0.00-18.51 sec 16.0 KBytes 7.08 Kbits/sec 690.713 ms 1393/1401 (99%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[ root@alda ]- [ /home/alda ]
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=191 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=347 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=160 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=95.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=68.6 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9094ms
rtt min/avg/max/mdev = 68.612/172.436/347.120/97.638 ms

root@alda: /home/alda
File Actions Edit View Help
[ root@alda ]- [ /home/alda ]
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=191 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=347 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 ttl=61 time=160 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=95.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=68.6 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 5 received, 50% packet loss, time 9094ms
rtt min/avg/max/mdev = 68.612/172.436/347.120/97.638 ms

root@alda: /home/alda
File Actions Edit View Help
[ root@alda ]- [ /home/alda ]
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 68811 connected to 192.168.2.2
[ ID] Interval Transfer Bitrate
[ 5] 0.00-1.00 sec 16.9 MBytes 141 Mbits/sec
[ 5] 1.00-2.00 sec 15.8 MBytes 132 Mbits/sec
[ 5] 2.00-3.00 sec 16.7 MBytes 141 Mbits/sec
[ 5] 3.00-4.00 sec 16.7 MBytes 140 Mbits/sec
[ 5] 4.00-5.00 sec 16.7 MBytes 140 Mbits/sec
[ 5] 5.00-6.00 sec 16.1 MBytes 135 Mbits/sec
[ 5] 6.00-7.00 sec 17.2 MBytes 144 Mbits/sec
[ 5] 7.00-8.00 sec 17.4 MBytes 146 Mbits/sec
[ 5] 8.00-9.00 sec 17.5 MBytes 147 Mbits/sec
[ 5] 9.00-10.00 sec 16.3 MBytes 137 Mbits/sec
[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 167 MBytes 140 Mbits/sec
[ 5] 0.00-21.11 sec 119 KBytes 46.1 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian serangan *sniffing* protokol EIGRP dengan *bandwidth* 200M.

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The image displays six terminal windows arranged in a 3x2 grid, showing network performance metrics. The left column contains the output of the 'iperf3' command, which measures bandwidth and network conditions. The right column shows the output of the 'ping' command, which tests the reachability and round-trip time of a host.

Terminal 1 (Top Left): Shows 'iperf3' output for port 5201. The summary row indicates a transfer of 161 MBytes at 135 Mbits/sec over a 10-second interval, with 0.000 ms of jitter and 0/82608 datagrams lost.

| ID | Interval | Transfer | Bitrate | Jitter | Lost/Total Datagram |
|--------|----------------|-------------|----------------|----------|---------------------|
| [5] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 8293 | 0/8293 (0%) sender |
| [7] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 8289 | 0/8289 (0%) sender |
| [9] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 8282 | 0/8282 (0%) sender |
| [11] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8266 | 0/8266 (0%) sender |
| [13] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8259 | 0/8259 (0%) sender |
| [15] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8247 | 0/8247 (0%) sender |
| [17] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8241 | 0/8241 (0%) sender |
| [19] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8233 | 0/8233 (0%) sender |
| [21] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8226 | 0/8226 (0%) sender |
| [23] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 8268 | 0/8268 (0%) sender |
| [SUM] | 0.00-10.00 sec | 161 MBytes | 135 Mbits/sec | 0.000 ms | 0/82608 (0%) sender |

Terminal 2 (Top Right): Shows 'ping' output for port 5201. It reports 10 packets transmitted, 2 received, and 80% packet loss. The round-trip time statistics are: min=109.073ms, avg=178.222ms, max=247.372ms, mdev=69.149ms.

Terminal 3 (Middle Left): Shows 'iperf3' output for port 5202. The summary row indicates a transfer of 152 KBytes at 51.0 Kbits/sec over a 24.41-second interval, with 717.115 ms of jitter and 36689/36765 (44%) datagrams lost.

| ID | Interval | Transfer | Bitrate | Jitter | Lost/Total Datagram |
|--------|----------------|-------------|----------------|------------|-----------------------------|
| [5] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8293 (0%) sender |
| [5] | 0.00-24.41 sec | 14.0 KBytes | 4.70 Kbits/sec | 691.911 ms | 3663/3670 (1e+02%) receiver |
| [7] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8289 (0%) sender |
| [7] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 725.683 ms | 3659/3668 (1e+02%) receiver |
| [9] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8282 (0%) sender |
| [9] | 0.00-24.41 sec | 16.0 KBytes | 5.37 Kbits/sec | 774.706 ms | 3655/3663 (1e+02%) receiver |
| [11] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8272 (0%) sender |
| [11] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 718.647 ms | 3710/3719 (1e+02%) receiver |
| [13] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8266 (0%) sender |
| [13] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 719.467 ms | 3706/3715 (1e+02%) receiver |
| [15] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8259 (0%) sender |
| [15] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 633.460 ms | 3703/3712 (1e+02%) receiver |
| [17] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8247 (0%) sender |
| [17] | 0.00-24.41 sec | 14.0 KBytes | 4.70 Kbits/sec | 802.515 ms | 3699/3706 (1e+02%) receiver |
| [19] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8241 (0%) sender |
| [19] | 0.00-24.41 sec | 12.0 KBytes | 4.03 Kbits/sec | 798.251 ms | 3636/3642 (1e+02%) receiver |
| [21] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8233 (0%) sender |
| [21] | 0.00-24.41 sec | 12.0 KBytes | 4.03 Kbits/sec | 653.204 ms | 3630/3636 (1e+02%) receiver |
| [23] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8226 (0%) sender |
| [23] | 0.00-24.41 sec | 12.0 KBytes | 4.03 Kbits/sec | 653.306 ms | 3628/3634 (1e+02%) receiver |
| [SUM] | 0.00-10.00 sec | 161 MBytes | 135 Mbits/sec | 0.000 ms | 0/82608 (0%) sender |
| [SUM] | 0.00-24.41 sec | 152 KBytes | 51.0 Kbits/sec | 717.115 ms | 36689/36765 (44%) receiver |

Terminal 4 (Middle Right): Shows 'ping' output for port 5202. It reports 10 packets transmitted, 2 received, and 80% packet loss. The round-trip time statistics are: min=109.073ms, avg=178.222ms, max=247.372ms, mdev=69.149ms.

Terminal 5 (Bottom Left): Shows 'iperf3' output for port 5203. The summary row indicates a transfer of 152 KBytes at 51.0 Kbits/sec over a 24.41-second interval, with 717.115 ms of jitter and 36689/36765 (44%) datagrams lost.

| ID | Interval | Transfer | Bitrate | Jitter | Lost/Total Datagram |
|--------|----------------|-------------|----------------|------------|-----------------------------|
| [7] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8289 (0%) sender |
| [7] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 725.683 ms | 3659/3668 (1e+02%) receiver |
| [9] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8282 (0%) sender |
| [9] | 0.00-24.41 sec | 16.0 KBytes | 5.37 Kbits/sec | 774.706 ms | 3655/3663 (1e+02%) receiver |
| [11] | 0.00-10.00 sec | 16.2 MBytes | 13.6 Mbits/sec | 0.000 ms | 0/8272 (0%) sender |
| [11] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 718.647 ms | 3710/3719 (1e+02%) receiver |
| [13] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8266 (0%) sender |
| [13] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 719.467 ms | 3706/3715 (1e+02%) receiver |
| [15] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8259 (0%) sender |
| [15] | 0.00-24.41 sec | 18.0 KBytes | 6.04 Kbits/sec | 633.460 ms | 3703/3712 (1e+02%) receiver |
| [17] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8247 (0%) sender |
| [17] | 0.00-24.41 sec | 14.0 KBytes | 4.70 Kbits/sec | 802.515 ms | 3699/3706 (1e+02%) receiver |
| [19] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8241 (0%) sender |
| [19] | 0.00-24.41 sec | 12.0 KBytes | 4.03 Kbits/sec | 798.251 ms | 3636/3642 (1e+02%) receiver |
| [21] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8233 (0%) sender |
| [21] | 0.00-24.41 sec | 12.0 KBytes | 4.03 Kbits/sec | 653.204 ms | 3630/3636 (1e+02%) receiver |
| [23] | 0.00-10.00 sec | 16.1 MBytes | 13.5 Mbits/sec | 0.000 ms | 0/8226 (0%) sender |
| [23] | 0.00-24.41 sec | 12.0 KBytes | 4.03 Kbits/sec | 653.306 ms | 3628/3634 (1e+02%) receiver |
| [SUM] | 0.00-10.00 sec | 161 MBytes | 135 Mbits/sec | 0.000 ms | 0/82608 (0%) sender |
| [SUM] | 0.00-24.41 sec | 152 KBytes | 51.0 Kbits/sec | 717.115 ms | 36689/36765 (44%) receiver |

Terminal 6 (Bottom Right): Shows 'ping' output for port 5203. It reports 10 packets transmitted, 2 received, and 80% packet loss. The round-trip time statistics are: min=109.073ms, avg=178.222ms, max=247.372ms, mdev=69.149ms.

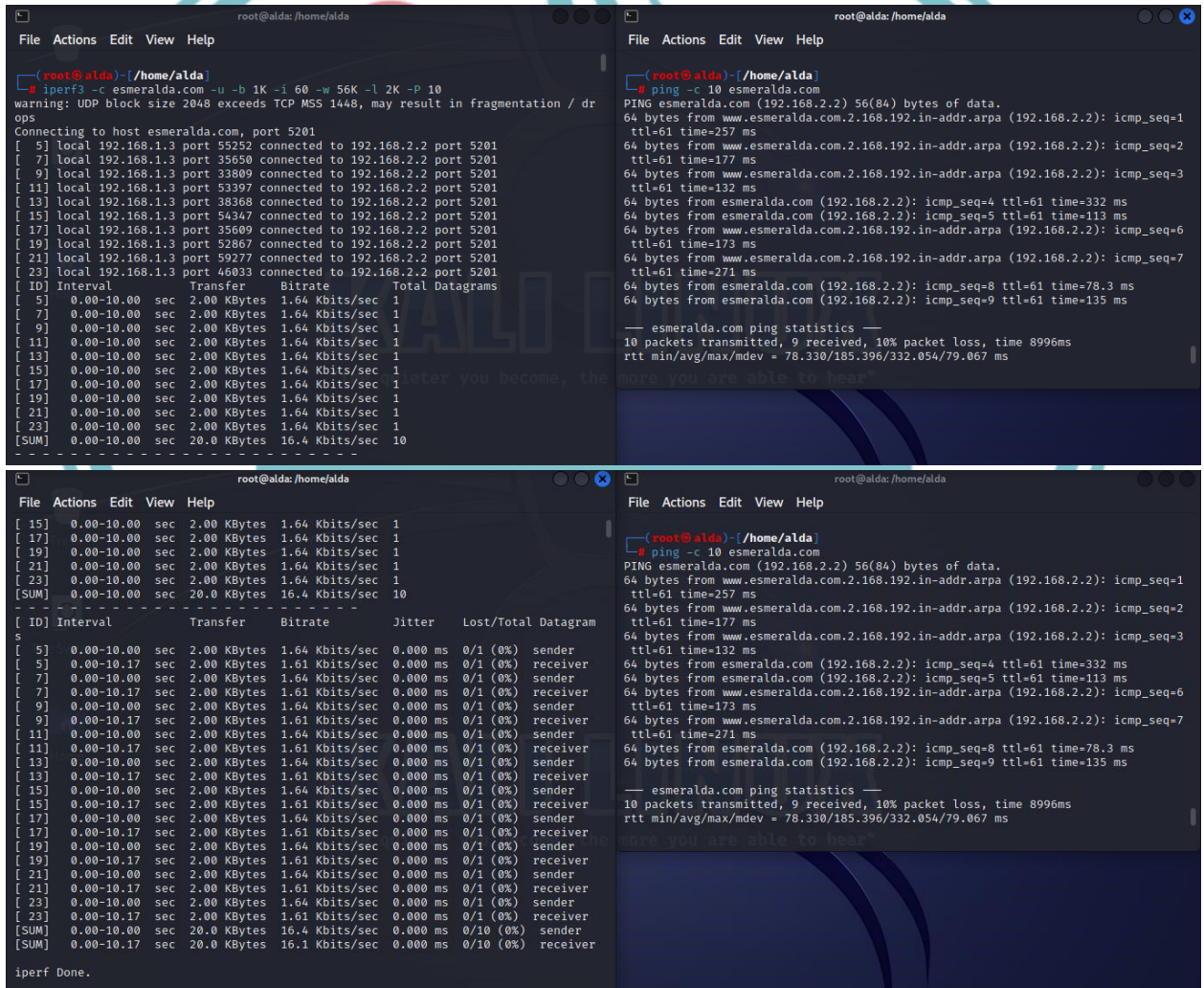
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```
(root@alda)-[~/home/alda]
# iperf3 -c esmeralda.com -u -b 200M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 60959 connected to 192.1
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00    sec 16.3 MBytes 137 Mb/s/sec
[ 5] 1.00-2.00    sec 17.3 MBytes 145 Mb/s/sec
[ 5] 2.00-3.00    sec 16.6 MBytes 140 Mb/s/sec
[ 5] 3.00-4.00    sec 17.2 MBytes 144 Mb/s/sec
[ 5] 4.00-5.00    sec 16.8 MBytes 141 Mb/s/sec
[ 5] 5.00-6.00    sec 16.1 MBytes 135 Mb/s/sec
[ 5] 6.00-7.00    sec 17.0 MBytes 143 Mb/s/sec
[ 5] 7.00-8.00    sec 16.5 MBytes 139 Mb/s/sec
[ 5] 8.00-9.00    sec 16.6 MBytes 140 Mb/s/sec
[ 5] 9.00-10.00   sec 17.2 MBytes 144 Mb/s/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00   sec 168 MBytes 141 Mb/s/sec
[ 5] 0.00-19.50   sec 206 KBytes  86.7 Kb/s/sec

iperf Done.
```

Screenshot hasil pengujian serangan *spoofing* dan *sniffing* protokol EIGRP dengan *bandwidth* 1K.



```
(root@alda)-[~/home/alda]
# iperf3 -c esmeralda.com -u -b 1K -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 55252 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 35650 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 33809 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 93397 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 38308 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 54347 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 35609 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 52867 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 59277 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 46033 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[ 7] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[ 9] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[11] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[13] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[15] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[17] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[19] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[21] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[23] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 10

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
[ 5] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 5] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 7] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 7] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 9] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 9] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[11] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[11] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[13] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[13] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[15] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[15] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[17] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[17] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[19] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[19] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[21] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[21] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[23] 0.00-10.00   sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[23] 0.00-10.17   sec 2.00 KBytes 1.61 Kbits/sec 0.000 ms 0/1 (0%) receiver
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 0.000 ms 0/10 (0%) sender
[SUM] 0.00-10.17 sec 20.0 KBytes 16.1 Kbits/sec 0.000 ms 0/10 (0%) receiver

iperf Done.
```

```
(root@alda)-[~/home/alda]
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1
ttl=61 time=257 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2
ttl=61 time=177 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3
ttl=61 time=132 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=332 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=113 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=6
ttl=61 time=173 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7
ttl=61 time=271 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=78.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=9 ttl=61 time=135 ms

-- esmeralda.com ping statistics --
10 packets transmitted, 9 received, 10% packet loss, time 8996ms
rtt min/avg/max/mdev = 78.330/185.396/332.054/79.067 ms
```

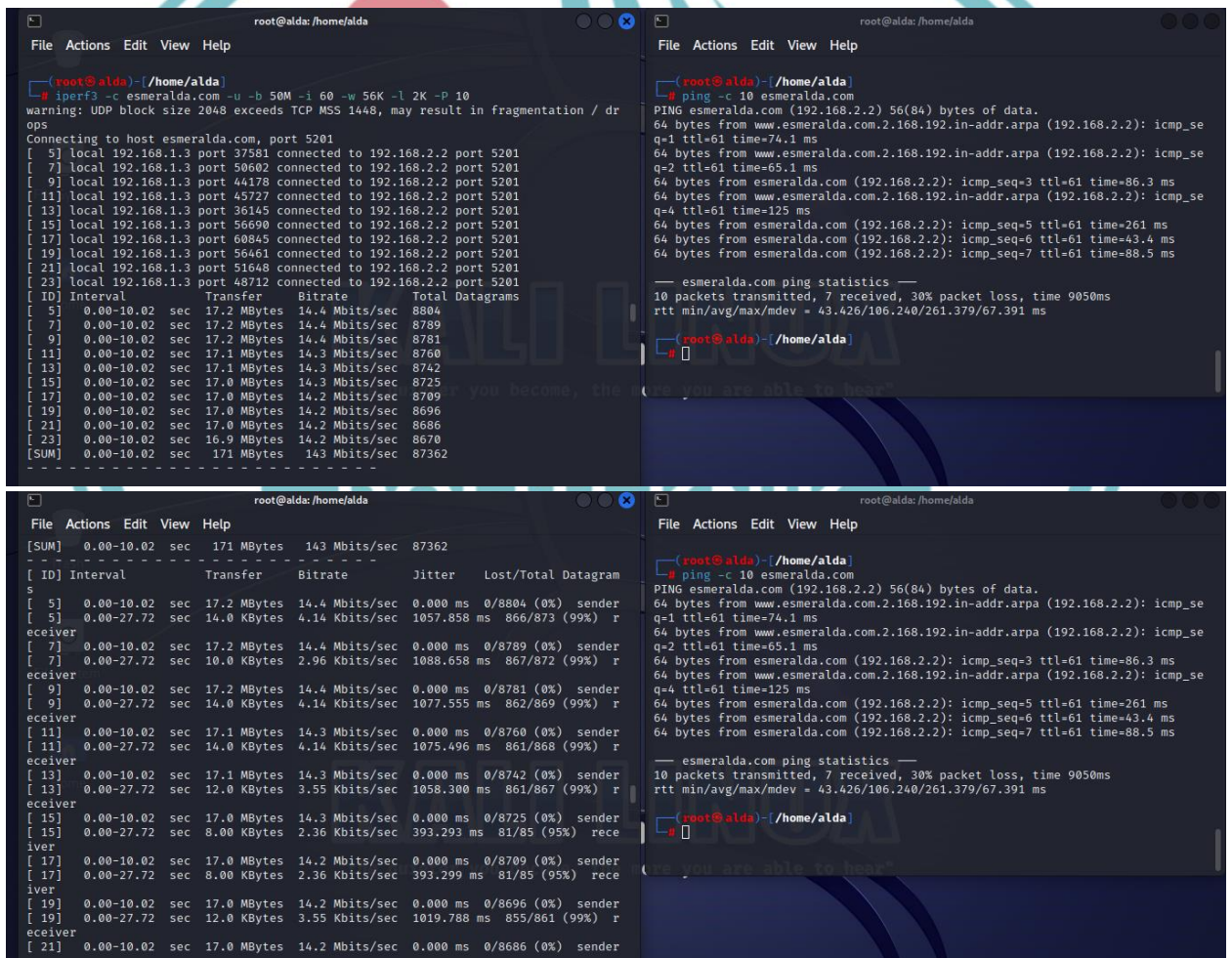
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```

root@alda: ~/home/alda
# iperf3 -c esmeralda.com -u -b 1K
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 38803 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00    sec 1.41 KBytes 11.6 Kbits/sec
[ 5] 1.00-2.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 2.00-3.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 3.00-4.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 4.00-5.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 5.00-6.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 6.00-7.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 7.00-8.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 8.00-9.00    sec 0.00 Bytes  0.00 bits/sec
[ 5] 9.00-10.00   sec 0.00 Bytes  0.00 bits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00   sec 1.41 KBytes  1.16 Kbits/sec
iperf Done.
  
```

Screenshot hasil pengujian serangan *spoofing* dan *sniffing* protokol EIGRP dengan *bandwidth* 50M.



```

root@alda: ~/home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP packet size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 37581 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 50602 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44178 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 45727 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 36145 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 56690 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 60845 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 56461 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 51648 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 48712 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.02   sec 17.2 MBytes 14.4 Mbits/sec 8804
[ 7] 0.00-10.02   sec 17.2 MBytes 14.4 Mbits/sec 8789
[ 9] 0.00-10.02   sec 17.2 MBytes 14.4 Mbits/sec 8781
[11] 0.00-10.02   sec 17.1 MBytes 14.3 Mbits/sec 8760
[13] 0.00-10.02   sec 17.1 MBytes 14.3 Mbits/sec 8742
[15] 0.00-10.02   sec 17.0 MBytes 14.3 Mbits/sec 8725
[17] 0.00-10.02   sec 17.0 MBytes 14.2 Mbits/sec 8709
[19] 0.00-10.02   sec 17.0 MBytes 14.2 Mbits/sec 8696
[21] 0.00-10.02   sec 17.0 MBytes 14.2 Mbits/sec 8686
[23] 0.00-10.02   sec 16.9 MBytes 14.2 Mbits/sec 8670
[SUM] 0.00-10.02   sec 171 MBytes 143 Mbits/sec 87362
  
```

```

root@alda: ~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=74.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=65.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=86.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=125 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=261 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=43.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=88.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9050ms
rtt min/avg/max/mdev = 43.426/106.240/261.379/67.391 ms
  
```

```

root@alda: ~/home/alda
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP packet size 2048 exceeds TCP MSS 1448, may result in fragmentation / drops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 37581 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 50602 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44178 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 45727 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 36145 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 56690 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 60845 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 56461 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 51648 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 48712 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/TOTAL Datagram
s
[ 5] 0.00-10.02   sec 17.2 MBytes 14.4 Mbits/sec 0.000 ms 0/8804 (0%) sender
[ 5] 0.00-27.72   sec 14.0 KBytes 4.14 Kbits/sec 1057.858 ms 866/873 (99%) receiver
[ 7] 0.00-10.02   sec 17.2 MBytes 14.4 Mbits/sec 0.000 ms 0/8789 (0%) sender
[ 7] 0.00-27.72   sec 10.0 KBytes 2.96 Kbits/sec 1088.658 ms 867/872 (99%) receiver
[ 9] 0.00-10.02   sec 17.2 MBytes 14.4 Mbits/sec 0.000 ms 0/8781 (0%) sender
[ 9] 0.00-27.72   sec 14.0 KBytes 4.14 Kbits/sec 1077.555 ms 862/869 (99%) receiver
[11] 0.00-10.02   sec 17.1 MBytes 14.3 Mbits/sec 0.000 ms 0/8760 (0%) sender
[11] 0.00-27.72   sec 14.0 KBytes 4.14 Kbits/sec 1075.496 ms 861/868 (99%) receiver
[13] 0.00-10.02   sec 17.1 MBytes 14.3 Mbits/sec 0.000 ms 0/8742 (0%) sender
[13] 0.00-27.72   sec 12.0 KBytes 3.55 Kbits/sec 1058.300 ms 861/867 (99%) receiver
[15] 0.00-10.02   sec 17.0 MBytes 14.3 Mbits/sec 0.000 ms 0/8725 (0%) sender
[15] 0.00-27.72   sec 8.00 KBytes 2.36 Kbits/sec 393.293 ms 81/85 (95%) receiver
[17] 0.00-10.02   sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8709 (0%) sender
[17] 0.00-27.72   sec 8.00 KBytes 2.36 Kbits/sec 393.299 ms 81/85 (95%) receiver
[19] 0.00-10.02   sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8696 (0%) sender
[19] 0.00-27.72   sec 12.0 KBytes 3.55 Kbits/sec 1019.788 ms 855/861 (99%) receiver
[21] 0.00-10.02   sec 17.0 MBytes 14.2 Mbits/sec 0.000 ms 0/8686 (0%) sender
  
```

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 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
receiver
[ 11] 0.00-10.02 sec 17.1 MBytes 14.3 Mb/s 0.000 ms 0/8760 (0%) sender
[ 11] 0.00-27.72 sec 14.0 KBytes 4.14 Kbits/sec 1075.496 ms 861/868 (99%) r
receiver
[ 13] 0.00-10.02 sec 17.1 MBytes 14.3 Mb/s 0.000 ms 0/8742 (0%) sender
[ 13] 0.00-27.72 sec 12.0 KBytes 3.55 Kbits/sec 1058.300 ms 861/867 (99%) r
receiver
[ 15] 0.00-10.02 sec 17.0 MBytes 14.3 Mb/s 0.000 ms 0/8725 (0%) sender
[ 15] 0.00-27.72 sec 8.00 KBytes 2.36 Kbits/sec 393.293 ms 81/85 (95%) r
receiver
[ 17] 0.00-10.02 sec 17.0 MBytes 14.2 Mb/s 0.000 ms 0/8709 (0%) sender
[ 17] 0.00-27.72 sec 8.00 KBytes 2.36 Kbits/sec 393.299 ms 81/85 (95%) r
receiver
[ 19] 0.00-10.02 sec 17.0 MBytes 14.2 Mb/s 0.000 ms 0/8696 (0%) sender
[ 19] 0.00-27.72 sec 12.0 KBytes 3.55 Kbits/sec 1019.788 ms 855/861 (99%) r
receiver
[ 21] 0.00-10.02 sec 17.0 MBytes 14.2 Mb/s 0.000 ms 0/8686 (0%) sender
[ 21] 0.00-27.72 sec 12.0 KBytes 3.55 Kbits/sec 1017.064 ms 856/862 (99%) r
receiver
[ 23] 0.00-10.02 sec 16.9 MBytes 14.2 Mb/s 0.000 ms 0/8670 (0%) sender
[ 23] 0.00-27.72 sec 12.0 KBytes 3.55 Kbits/sec 1017.098 ms 856/862 (99%) r
receiver
[SUM] 0.00-10.02 sec 171 MBytes 143 Mb/s 0.000 ms 0/87362 (0%) sender
[SUM] 0.00-27.72 sec 116 KBytes 34.3 Kbits/sec 919.841 ms 7046/7104 (8.1%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=1 ttl=61 time=74.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=65.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=86.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=125 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=261 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=43.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=88.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9050ms
rtt min/avg/max/mdev = 43.426/106.240/261.379/67.391 ms

root@alda: /home/alda
#

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 50M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 60217 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec  4.72 MBytes  39.2 Mb/s
[ 5] 1.01-2.00 sec  7.13 MBytes  60.2 Mb/s
[ 5] 2.00-3.00 sec  6.04 MBytes  50.8 Mb/s
[ 5] 3.00-4.00 sec  5.96 MBytes  50.0 Mb/s
[ 5] 4.00-5.00 sec  5.96 MBytes  50.0 Mb/s
[ 5] 5.00-6.01 sec  5.94 MBytes  49.3 Mb/s
[ 5] 6.01-7.00 sec  5.98 MBytes  50.8 Mb/s
[ 5] 7.00-8.00 sec  5.96 MBytes  50.0 Mb/s
[ 5] 8.00-9.00 sec  5.96 MBytes  50.0 Mb/s
[ 5] 9.00-10.00 sec 5.76 MBytes  48.3 Mb/s
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.00 sec 59.4 MBytes  49.8 Mb/s
[ 5] 0.00-37.60 sec 296 KBytes   64.4 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian serangan *spoofing* dan *sniffing* protokol EIGRP dengan *bandwidth* 100M.

```

root@alda: /home/alda
File Actions Edit View Help

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 100M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / drop
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 32808 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 38121 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 60786 connected to 192.168.2.2 port 5201
[ 11] local 192.168.1.3 port 56318 connected to 192.168.2.2 port 5201
[ 13] local 192.168.1.3 port 60362 connected to 192.168.2.2 port 5201
[ 15] local 192.168.1.3 port 49736 connected to 192.168.2.2 port 5201
[ 17] local 192.168.1.3 port 33076 connected to 192.168.2.2 port 5201
[ 19] local 192.168.1.3 port 55743 connected to 192.168.2.2 port 5201
[ 21] local 192.168.1.3 port 45163 connected to 192.168.2.2 port 5201
[ 23] local 192.168.1.3 port 40956 connected to 192.168.2.2 port 5201
[ 10] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-10.00 sec  16.3 MBytes  13.7 Mb/s      8338
[ 7] 0.00-10.00 sec  16.3 MBytes  13.6 Mb/s      8329
[ 9] 0.00-10.00 sec  16.2 MBytes  13.6 Mb/s      8312
[ 11] 0.00-10.00 sec  16.2 MBytes  13.6 Mb/s      8300
[ 13] 0.00-10.00 sec  16.2 MBytes  13.6 Mb/s      8287
[ 15] 0.00-10.00 sec  16.2 MBytes  13.6 Mb/s      8275
[ 17] 0.00-10.00 sec  16.1 MBytes  13.5 Mb/s      8259
[ 19] 0.00-10.00 sec  16.1 MBytes  13.5 Mb/s      8244
[ 21] 0.00-10.00 sec  16.1 MBytes  13.5 Mb/s      8225
[ 23] 0.00-10.00 sec  16.1 MBytes  13.5 Mb/s      8219
[SUM] 0.00-10.00 sec  162 MBytes  136 Mb/s      82788

root@alda: /home/alda
File Actions Edit View Help

root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=201 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=119 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=117 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4 ttl=61 time=115 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=188 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=94.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 ttl=61 time=73.7 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9124ms
rtt min/avg/max/mdev = 73.734/129.800/201.476/43.915 ms

```

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The screenshot displays a network traffic analysis tool interface, likely Wireshark, showing a detailed view of network traffic. The interface is split into several panes:

- Packet List:** Shows a list of captured packets with columns for ID, Interval, Transfer, Bitrate, Jitter, and Lost/Total Datagram. The data indicates a high volume of traffic, with a total transfer of 126 KBytes and a bitrate of 35.2 Kbits/sec.
- Packet Details:** Provides a hierarchical view of the selected packet, showing the protocol structure and associated data.
- Packet Bytes:** Displays the raw hexadecimal and ASCII data of the selected packet.
- Statistics:** Shows summary statistics for the selected protocol, including the number of packets transmitted and received, and the percentage of packet loss.

The traffic analysis shows a significant amount of data being transmitted, consistent with the 150M bandwidth mentioned in the caption. The interface also includes a search bar and various filters to refine the captured data.

Screenshot hasil pengujian serangan *spoofing* dan *sniffing* protokol EIGRP dengan *bandwidth* 150M.

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The image displays a series of terminal windows showing network performance tests. The tests are conducted from a root shell on a host named 'alda'.

Top Row (Left): Shows the execution of `iperf` on the host 'alda'. The command is `iperf3 -c esmeralda.com -u -b 150M -i 60 -w 56K -l 2K -P 10`. The output shows connections to various ports on 'esmeralda.com' and a summary of performance metrics.

Top Row (Right): Shows a `ping` test to 'esmeralda.com'. The command is `ping -c 10 esmeralda.com`. The output shows 10 packets transmitted, 2 received, and an 80% packet loss. The round-trip time (rtt) statistics are: min/avg/max/mdev = 137.374/183.026/228.679/45.652 ms.

Middle Row (Left): Shows a detailed `iperf` output for the test on 'alda'. It includes a table with columns for ID, Interval, Transfer, Bitrate, Jitter, and Lost/Total Datagram. The summary shows a total transfer of 136 MBytes and a bitrate of 114 Mbits/sec.

Middle Row (Right): Shows another `ping` test to 'esmeralda.com'. The output is identical to the first ping test, showing 10 packets transmitted, 2 received, and an 80% packet loss.

Bottom Row (Left): Shows a final `iperf` output for the test on 'alda'. It includes a table with columns for ID, Interval, Transfer, Bitrate, Jitter, and Lost/Total Datagram. The summary shows a total transfer of 122 KBytes and a bitrate of 21.9 Kbits/sec.

Bottom Row (Right): Shows a third `ping` test to 'esmeralda.com'. The output is identical to the previous ping tests, showing 10 packets transmitted, 2 received, and an 80% packet loss.

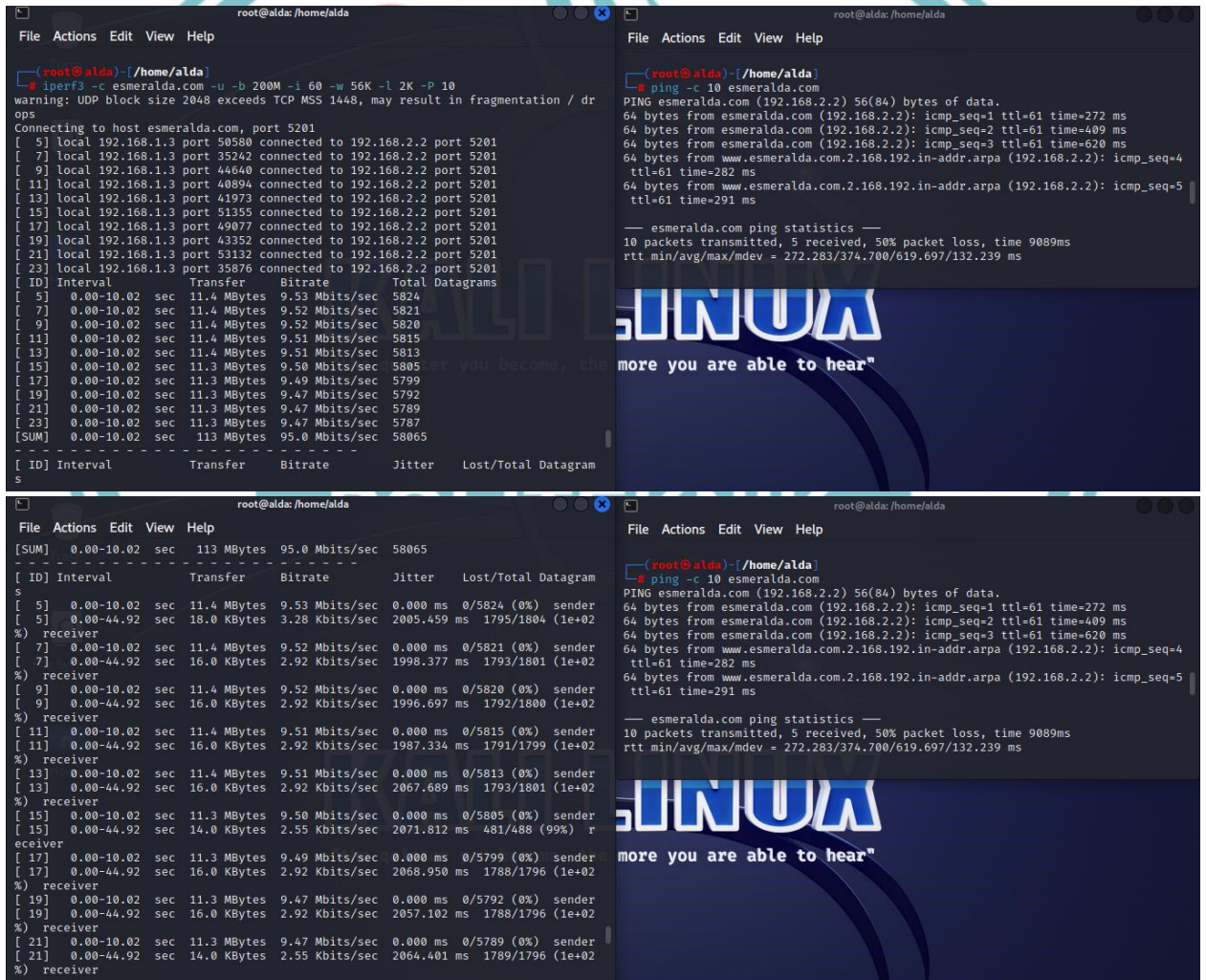
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```
(root@alda)~/home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 38410 connected to 192.168.2.2
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-1.00 sec  15.3 MBytes  128 Mbits/sec
[ 5] 1.00-2.00 sec  16.5 MBytes  139 Mbits/sec
[ 5] 2.00-3.00 sec  15.7 MBytes  132 Mbits/sec
[ 5] 3.00-4.00 sec  17.1 MBytes  144 Mbits/sec
[ 5] 4.00-5.00 sec  17.2 MBytes  144 Mbits/sec
[ 5] 5.00-6.00 sec  17.3 MBytes  145 Mbits/sec
[ 5] 6.00-7.00 sec  16.4 MBytes  137 Mbits/sec
[ 5] 7.00-8.00 sec  16.3 MBytes  137 Mbits/sec
[ 5] 8.00-9.00 sec  14.7 MBytes  123 Mbits/sec
[ 5] 9.00-10.02 sec 15.6 MBytes  129 Mbits/sec
-----
[ ID] Interval      Transfer      Bitrate
[ 5] 0.00-10.02 sec 162 MBytes  136 Mbits/sec
[ 5] 0.00-27.79 sec 180 KBytes  52.9 Kbits/sec

iperf Done.
```

Screenshot hasil pengujian serangan *spoofing* dan *sniffing* protokol EIGRP dengan *bandwidth* 200M.



```
root@alda:~/home/alda
# iperf3 -c esmeralda.com -u -b 200M -l 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 50580 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 35242 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44640 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 40894 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 41973 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 51355 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 49077 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 43352 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 53132 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 35876 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total
[ 5] 0.00-10.02 sec  11.4 MBytes  9.53 Mbits/sec  5824
[ 7] 0.00-10.02 sec  11.4 MBytes  9.52 Mbits/sec  5821
[ 9] 0.00-10.02 sec  11.4 MBytes  9.52 Mbits/sec  5820
[11] 0.00-10.02 sec  11.4 MBytes  9.51 Mbits/sec  5815
[13] 0.00-10.02 sec  11.4 MBytes  9.51 Mbits/sec  5813
[15] 0.00-10.02 sec  11.3 MBytes  9.50 Mbits/sec  5805
[17] 0.00-10.02 sec  11.3 MBytes  9.49 Mbits/sec  5799
[19] 0.00-10.02 sec  11.3 MBytes  9.47 Mbits/sec  5792
[21] 0.00-10.02 sec  11.3 MBytes  9.47 Mbits/sec  5789
[23] 0.00-10.02 sec  11.3 MBytes  9.47 Mbits/sec  5787
[SUM] 0.00-10.02 sec  113 MBytes  95.0 Mbits/sec  58065
[ ID] Interval      Transfer      Bitrate      Jitter    Lost/Total Datagram
[ 5] 0.00-10.02 sec  11.4 MBytes  9.53 Mbits/sec  0.000 ms  0/5824 (0%) sender
[ 5] 0.00-44.92 sec  18.0 KBytes  3.28 Kbits/sec  2005.459 ms 1795/1804 (1e+02
%) receiver
[ 7] 0.00-10.02 sec  11.4 MBytes  9.52 Mbits/sec  0.000 ms  0/5821 (0%) sender
[ 7] 0.00-44.92 sec  16.0 KBytes  2.92 Kbits/sec  1998.377 ms 1793/1801 (1e+02
%) receiver
[ 9] 0.00-10.02 sec  11.4 MBytes  9.52 Mbits/sec  0.000 ms  0/5820 (0%) sender
[ 9] 0.00-44.92 sec  16.0 KBytes  2.92 Kbits/sec  1996.697 ms 1792/1800 (1e+02
%) receiver
[11] 0.00-10.02 sec  11.4 MBytes  9.51 Mbits/sec  0.000 ms  0/5815 (0%) sender
[11] 0.00-44.92 sec  16.0 KBytes  2.92 Kbits/sec  1987.334 ms 1791/1799 (1e+02
%) receiver
[13] 0.00-10.02 sec  11.4 MBytes  9.51 Mbits/sec  0.000 ms  0/5813 (0%) sender
[13] 0.00-44.92 sec  16.0 KBytes  2.92 Kbits/sec  2067.689 ms 1793/1801 (1e+02
%) receiver
[15] 0.00-10.02 sec  11.3 MBytes  9.50 Mbits/sec  0.000 ms  0/5805 (0%) sender
[15] 0.00-44.92 sec  14.0 KBytes  2.55 Kbits/sec  2071.812 ms 481/488 (99%) r
eceiver
[17] 0.00-10.02 sec  11.3 MBytes  9.49 Mbits/sec  0.000 ms  0/5799 (0%) sender
[17] 0.00-44.92 sec  16.0 KBytes  2.92 Kbits/sec  2068.950 ms 1788/1796 (1e+02
%) receiver
[19] 0.00-10.02 sec  11.3 MBytes  9.47 Mbits/sec  0.000 ms  0/5792 (0%) sender
[19] 0.00-44.92 sec  16.0 KBytes  2.92 Kbits/sec  2057.102 ms 1788/1796 (1e+02
%) receiver
[21] 0.00-10.02 sec  11.3 MBytes  9.47 Mbits/sec  0.000 ms  0/5789 (0%) sender
[21] 0.00-44.92 sec  14.0 KBytes  2.55 Kbits/sec  2064.401 ms 1789/1796 (1e+02
%) receiver
```

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```

root@alda: /home/alda
File Actions Edit View Help
%) receiver
[ 9 ] 0.00-10.02 sec 11.4 MBytes 9.52 Mbits/sec 0.000 ms 0/5820 (0%) sender
[ 9 ] 0.00-44.92 sec 16.0 KBytes 2.92 Kbits/sec 1996.697 ms 1792/1800 (1e+02
%) receiver
[ 11 ] 0.00-10.02 sec 11.4 MBytes 9.51 Mbits/sec 0.000 ms 0/5815 (0%) sender
[ 11 ] 0.00-44.92 sec 16.0 KBytes 2.92 Kbits/sec 1987.334 ms 1791/1799 (1e+02
%) receiver
[ 13 ] 0.00-10.02 sec 11.4 MBytes 9.51 Mbits/sec 0.000 ms 0/5813 (0%) sender
[ 13 ] 0.00-44.92 sec 16.0 KBytes 2.92 Kbits/sec 2067.689 ms 1793/1801 (1e+02
%) receiver
[ 15 ] 0.00-10.02 sec 11.3 MBytes 9.50 Mbits/sec 0.000 ms 0/5805 (0%) sender
[ 15 ] 0.00-44.92 sec 14.0 KBytes 2.55 Kbits/sec 2071.812 ms 481/488 (99%) r
%) receiver
[ 17 ] 0.00-10.02 sec 11.3 MBytes 9.49 Mbits/sec 0.000 ms 0/5799 (0%) sender
[ 17 ] 0.00-44.92 sec 16.0 KBytes 2.92 Kbits/sec 2068.950 ms 1788/1796 (1e+02
%) receiver
[ 19 ] 0.00-10.02 sec 11.3 MBytes 9.47 Mbits/sec 0.000 ms 0/5792 (0%) sender
[ 19 ] 0.00-44.92 sec 16.0 KBytes 2.92 Kbits/sec 2057.102 ms 1788/1796 (1e+02
%) receiver
[ 21 ] 0.00-10.02 sec 11.3 MBytes 9.47 Mbits/sec 0.000 ms 0/5789 (0%) sender
[ 21 ] 0.00-44.92 sec 14.0 KBytes 2.55 Kbits/sec 2064.401 ms 1789/1796 (1e+02
%) receiver
[ 23 ] 0.00-10.02 sec 11.3 MBytes 9.47 Mbits/sec 0.000 ms 0/5787 (0%) sender
[ 23 ] 0.00-44.92 sec 14.0 KBytes 2.55 Kbits/sec 1843.806 ms 1887/1894 (1e+02
%) receiver
[SUM] 0.00-10.02 sec 113 MBytes 95.0 Mbits/sec 0.000 ms 0/58065 (0%) sende
r
[SUM] 0.00-44.92 sec 156 KBytes 28.5 Kbits/sec 2016.163 ms 16697/16775 (29%
) receiver
iperf Done.

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 37957 connected to 192.1
[ ID ] Interval Transfer Bitrate
[ 5 ] 0.00-1.00 sec 14.5 MBytes 122 Mbits/sec
[ 5 ] 1.00-2.02 sec 15.6 MBytes 129 Mbits/sec
[ 5 ] 2.02-3.00 sec 16.4 MBytes 139 Mbits/sec
[ 5 ] 3.00-4.00 sec 15.5 MBytes 130 Mbits/sec
[ 5 ] 4.00-5.01 sec 16.1 MBytes 133 Mbits/sec
[ 5 ] 5.01-6.00 sec 14.8 MBytes 126 Mbits/sec
[ 5 ] 6.00-7.00 sec 18.0 MBytes 151 Mbits/sec
[ 5 ] 7.00-8.00 sec 15.9 MBytes 134 Mbits/sec
[ 5 ] 8.00-9.00 sec 16.8 MBytes 141 Mbits/sec
[ 5 ] 9.00-10.01 sec 15.6 MBytes 130 Mbits/sec
[ ID ] Interval Transfer Bitrate
[ 5 ] 0.00-10.01 sec 159 MBytes 133 Mbits/sec
[ 5 ] 0.00-20.99 sec 211 KBytes 82.2 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian pengamanan protokol EIGRP dengan *bandwidth* 1K.

```

root@alda: /home/alda
File Actions Edit View Help
root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 1K -l 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5 ] local 192.168.1.3 port 49226 connected to 192.168.2.2 port 5201
[ 7 ] local 192.168.1.3 port 53700 connected to 192.168.2.2 port 5201
[ 9 ] local 192.168.1.3 port 44688 connected to 192.168.2.2 port 5201
[ 11 ] local 192.168.1.3 port 52840 connected to 192.168.2.2 port 5201
[ 13 ] local 192.168.1.3 port 47158 connected to 192.168.2.2 port 5201
[ 15 ] local 192.168.1.3 port 55021 connected to 192.168.2.2 port 5201
[ 17 ] local 192.168.1.3 port 39789 connected to 192.168.2.2 port 5201
[ 19 ] local 192.168.1.3 port 39310 connected to 192.168.2.2 port 5201
[ 21 ] local 192.168.1.3 port 39137 connected to 192.168.2.2 port 5201
[ 23 ] local 192.168.1.3 port 55434 connected to 192.168.2.2 port 5201
[ ID ] Interval Transfer Bitrate Total Datagrams
[ 5 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 7 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 9 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 11 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 13 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 15 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 17 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 19 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 21 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[ 23 ] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 1
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 10
[ ID ] Interval Transfer Bitrate Jitter Lost/Total Datagram
root@alda: /home/alda
File Actions Edit View Help
ping: esmeralda.com: Temporary failure in name resolution
root@alda: /home/alda
# ping -c 10 esmeralda.com
ping: esmeralda.com: Temporary failure in name resolution
root@alda: /home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=41.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=42.1 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 t
tl=61 time=57.9 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=34.2 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 t
tl=61 time=62.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=83.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 t
tl=61 time=48.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=38.7 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=9 t
tl=61 time=41.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=10
ttl=61 time=61.8 ms
— esmeralda.com ping statistics —
10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 34.224/51.162/83.691/14.384 ms

```

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```

root@alda: /home/alda
File Actions Edit View Help
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 10

[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 5] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 7] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 7] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[ 9] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[ 9] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[11] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[11] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[13] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[13] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[15] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[15] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[17] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[17] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[19] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[19] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[21] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[21] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[23] 0.00-10.00 sec 2.00 KBytes 1.64 Kbits/sec 0.000 ms 0/1 (0%) sender
[23] 0.00-10.08 sec 2.00 KBytes 1.63 Kbits/sec 0.000 ms 0/1 (0%) receiver
[SUM] 0.00-10.00 sec 20.0 KBytes 16.4 Kbits/sec 0.000 ms 0/10 (0%) sender
[SUM] 0.00-10.08 sec 20.0 KBytes 16.3 Kbits/sec 0.000 ms 0/10 (0%) receiver
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
ing: esmeralda.com: Temporary failure in name resolution
--(root@alda)-[/home/alda]
# ping -c 10 esmeralda.com
ing: esmeralda.com: Temporary failure in name resolution
--(root@alda)-[/home/alda]
# ping -c 10 esmeralda.com
ING esmeralda.com (192.168.2.2) 56(84) bytes of data.
: bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=41.3 ms
: bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=42.1 ms
: bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=3 t
l=61 time=57.9 ms
: bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=34.2 ms
: bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 t
l=61 time=62.4 ms
: bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=83.7 ms
: bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7 t
l=61 time=48.0 ms
: bytes from esmeralda.com (192.168.2.2): icmp_seq=8 ttl=61 time=38.7 ms
: bytes from ww.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=9 t
l=61 time=41.5 ms
: bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=10
ttl=61 time=61.8 ms
-- esmeralda.com ping statistics --
: 10 packets transmitted, 10 received, 0% packet loss, time 9011ms
rtt min/avg/max/mdev = 34.224/51.162/83.691/14.384 ms

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 1K
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 51396 connected to 192.
[ ID] Interval      Transfer      Bitrate
s
[ 5] 0.00-1.00 sec 1.41 KBytes 11.6 Kbits/sec
[ 5] 1.00-2.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 2.00-3.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 3.00-4.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 4.00-5.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 5.00-6.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 6.00-7.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 7.00-8.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 8.00-9.00 sec 0.00 Bytes 0.00 bits/sec
[ 5] 9.00-10.00 sec 0.00 Bytes 0.00 bits/sec
[ ID] Interval      Transfer      Bitrate
s
[ 5] 0.00-10.00 sec 1.41 KBytes 1.16 Kbits/sec
[ 5] 0.00-10.06 sec 1.41 KBytes 1.15 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian pengamanan protokol EIGRP dengan *bandwidth* 50M.

```

root@alda: /home/alda
File Actions Edit View Help
--(root@alda)-[/home/alda]
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data.
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=70.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=48.3 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=63.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=4
ttl=61 time=130 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=47.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=31.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=7
ttl=61 time=41.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=8
ttl=61 time=35.0 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=9
ttl=61 time=148 ms
-- esmeralda.com ping statistics --
10 packets transmitted, 9 received, 10% packet loss, time 12442ms
rtt min/avg/max/mdev = 31.777/68.295/147.537/39.595 ms

more you are able to hear"

```


```

root@alda: /home/alda
File Actions Edit View Help
--(root@alda)-[/home/alda]
# iperf3 -c esmeralda.com -u -b 50M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 45769 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 38419 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 44352 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 45742 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 57397 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 57624 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 44567 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 59628 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 59468 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 58000 connected to 192.168.2.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
s
[ 5] 0.00-10.00 sec 17.5 MBytes 14.7 Mbits/sec 8946
[ 7] 0.00-10.00 sec 17.5 MBytes 14.6 Mbits/sec 8936
[ 9] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 8920
[11] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 8903
[13] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 8890
[15] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 8868
[17] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 8860
[19] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 8847
[21] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 8839
[23] 0.00-10.00 sec 17.2 MBytes 14.5 Mbits/sec 8824
[SUM] 0.00-10.00 sec 174 MBytes 145 Mbits/sec 88833
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 17.5 MBytes 14.7 Mbits/sec 0.000 ms 0/8946 (0%) sender
[ 5] 0.00-18.86 sec 16.0 KBytes 6.95 Kbits/sec 215.094 ms 289/297 (97%) re

```


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```

root@alda: /home/alda
File Actions Edit View Help
[ 5] 0.00-10.00 sec 17.5 MBytes 14.7 Mbits/sec 0.000 ms 0/8946 (0%) sender
[ 5] 0.00-18.86 sec 16.0 KBytes 6.95 Kbits/sec 215.094 ms 289/297 (97%) receiver
[ 7] 0.00-10.00 sec 17.5 MBytes 14.6 Mbits/sec 0.000 ms 0/8936 (0%) sender
[ 7] 0.00-18.86 sec 16.0 KBytes 6.95 Kbits/sec 215.105 ms 289/297 (97%) receiver
[ 9] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8920 (0%) sender
[ 9] 0.00-18.86 sec 14.0 KBytes 6.08 Kbits/sec 210.348 ms 290/297 (98%) receiver
[ 11] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8903 (0%) sender
[ 11] 0.00-18.86 sec 14.0 KBytes 6.08 Kbits/sec 206.506 ms 289/296 (98%) receiver
[ 13] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8890 (0%) sender
[ 13] 0.00-18.86 sec 12.0 KBytes 5.21 Kbits/sec 220.172 ms 288/294 (98%) receiver
[ 15] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8868 (0%) sender
[ 15] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.264 ms 289/294 (98%) receiver
[ 17] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8860 (0%) sender
[ 17] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.262 ms 289/294 (98%) receiver
[ 19] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8847 (0%) sender
[ 19] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.259 ms 288/293 (98%) receiver
[ 21] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8839 (0%) sender
[ 21] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.235 ms 288/293 (98%) receiver
[ 23] 0.00-10.00 sec 17.2 MBytes 14.5 Mbits/sec 0.000 ms 0/8824 (0%) sender
[ 23] 0.00-18.86 sec 14.0 KBytes 6.08 Kbits/sec 167.664 ms 286/293 (98%) receiver
[SUM] 0.00-10.00 sec 174 MBytes 145 Mbits/sec 0.000 ms 0/88833 (0%) sender
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[ 9] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8920 (0%) sender
[ 9] 0.00-18.86 sec 14.0 KBytes 6.08 Kbits/sec 210.348 ms 290/297 (98%) receiver
[ 11] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8903 (0%) sender
[ 11] 0.00-18.86 sec 14.0 KBytes 6.08 Kbits/sec 206.506 ms 289/296 (98%) receiver
[ 13] 0.00-10.00 sec 17.4 MBytes 14.6 Mbits/sec 0.000 ms 0/8890 (0%) sender
[ 13] 0.00-18.86 sec 12.0 KBytes 5.21 Kbits/sec 220.172 ms 288/294 (98%) receiver
[ 15] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8868 (0%) sender
[ 15] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.264 ms 289/294 (98%) receiver
[ 17] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8860 (0%) sender
[ 17] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.262 ms 289/294 (98%) receiver
[ 19] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8847 (0%) sender
[ 19] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.259 ms 288/293 (98%) receiver
[ 21] 0.00-10.00 sec 17.3 MBytes 14.5 Mbits/sec 0.000 ms 0/8839 (0%) sender
[ 21] 0.00-18.86 sec 10.0 KBytes 4.34 Kbits/sec 166.235 ms 288/293 (98%) receiver
[ 23] 0.00-10.00 sec 17.2 MBytes 14.5 Mbits/sec 0.000 ms 0/8824 (0%) sender
[ 23] 0.00-18.86 sec 14.0 KBytes 6.08 Kbits/sec 167.664 ms 286/293 (98%) receiver
[SUM] 0.00-10.00 sec 174 MBytes 145 Mbits/sec 0.000 ms 0/88833 (0%) sender
iperf Done.

root@alda: /home/alda
File Actions Edit View Help
[ 5] 0.00-1.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 1.00-2.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 2.00-3.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 3.00-4.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 4.00-5.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 5.00-6.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 6.00-7.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 7.00-8.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 8.00-9.00 sec 5.96 MBytes 50.0 Mbits/sec
[ 5] 9.00-10.00 sec 5.96 MBytes 50.0 Mbits/sec
[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 59.6 MBytes 50.0 Mbits/sec
[ 5] 0.00-42.96 sec 274 KBytes 52.3 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian pengamanan protokol EIGRP dengan *bandwidth* 100M.

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The image displays six terminal windows arranged in a 2x3 grid, showing network performance tests. Each window has a title bar with 'root@alda: /home/alda' and a menu bar with 'File Actions Edit View Help'.

Top Left Terminal: Shows a successful iperf3 test. The output includes connection details for multiple ports and a summary table:

| ID | Interval | Transfer | Bitrate | Total | Datagrams |
|--------|------------|-----------------|----------------|-------|-----------|
| [5] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 6805 | |
| [7] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 6801 | |
| [9] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 6796 | |
| [11] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 6790 | |
| [13] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 6789 | |
| [15] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 6785 | |
| [17] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 6783 | |
| [19] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 6779 | |
| [21] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 6770 | |
| [23] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 6764 | |
| [SUM] | 0.00-10.00 | sec 133 MBytes | 111 Mbits/sec | 67862 | |

Top Right Terminal: Shows a successful ping test to esmeralda.com. The output includes ping statistics:

```

PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=110 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=80.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=61.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=46.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=91.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=69.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=56.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9063ms
rtt min/avg/max/mdev = 46.274/73.705/110.418/20.439 ms
  
```

Middle Left Terminal: Shows a failed iperf3 test. The output includes connection details and a summary table:

| ID | Interval | Transfer | Bitrate | Jitter | Lost/Total | Datagram s |
|--------|------------|-----------------|----------------|------------|---------------|------------|
| [5] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6805 (0%) | sender |
| [5] | 0.00-10.70 | sec 16.0 KBytes | 12.3 Kbits/sec | 462.370 ms | 484/492 (98%) | receiver |
| [7] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6801 (0%) | sender |
| [7] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 412.710 ms | 485/491 (99%) | receiver |
| [9] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6796 (0%) | sender |
| [9] | 0.00-10.70 | sec 14.0 KBytes | 10.7 Kbits/sec | 399.243 ms | 484/491 (99%) | receiver |
| [11] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6790 (0%) | sender |
| [11] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 393.841 ms | 485/491 (99%) | receiver |
| [13] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6789 (0%) | sender |
| [13] | 0.00-10.70 | sec 16.0 KBytes | 12.3 Kbits/sec | 397.964 ms | 482/490 (98%) | receiver |
| [15] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6785 (0%) | sender |
| [15] | 0.00-10.70 | sec 18.0 KBytes | 13.8 Kbits/sec | 376.094 ms | 481/490 (98%) | receiver |
| [17] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6783 (0%) | sender |
| [17] | 0.00-10.70 | sec 10.0 KBytes | 7.66 Kbits/sec | 128.563 ms | 88/93 (95%) | receiver |
| [19] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6779 (0%) | sender |
| [19] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 420.747 ms | 130/136 (96%) | receiver |
| [21] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6770 (0%) | sender |
| [21] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 418.114 ms | 130/136 (96%) | receiver |
| [23] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6766 (0%) | sender |
| [23] | 0.00-10.70 | sec 10.0 KBytes | 7.66 Kbits/sec | 421.854 ms | 131/136 (96%) | receiver |

Middle Right Terminal: Shows a failed ping test to esmeralda.com. The output includes ping statistics:

```

PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=110 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=80.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=61.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=46.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=91.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=69.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=56.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9063ms
rtt min/avg/max/mdev = 46.274/73.705/110.418/20.439 ms
  
```

Bottom Left Terminal: Shows a successful iperf3 test. The output includes connection details and a summary table:

| ID | Interval | Transfer | Bitrate | Jitter | Lost/Total | Datagram s |
|--------|------------|-----------------|----------------|------------|----------------|------------|
| [5] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6796 (0%) | sender |
| [5] | 0.00-10.70 | sec 14.0 KBytes | 10.7 Kbits/sec | 399.243 ms | 484/491 (99%) | receiver |
| [7] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6790 (0%) | sender |
| [7] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 393.841 ms | 485/491 (99%) | receiver |
| [9] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6789 (0%) | sender |
| [9] | 0.00-10.70 | sec 16.0 KBytes | 12.3 Kbits/sec | 397.964 ms | 482/490 (98%) | receiver |
| [11] | 0.00-10.00 | sec 13.3 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6785 (0%) | sender |
| [11] | 0.00-10.70 | sec 18.0 KBytes | 13.8 Kbits/sec | 376.094 ms | 481/490 (98%) | receiver |
| [13] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6783 (0%) | sender |
| [13] | 0.00-10.70 | sec 10.0 KBytes | 7.66 Kbits/sec | 128.563 ms | 88/93 (95%) | receiver |
| [15] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6779 (0%) | sender |
| [15] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 420.747 ms | 130/136 (96%) | receiver |
| [17] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6770 (0%) | sender |
| [17] | 0.00-10.70 | sec 12.0 KBytes | 9.19 Kbits/sec | 418.114 ms | 130/136 (96%) | receiver |
| [19] | 0.00-10.00 | sec 13.2 MBytes | 11.1 Mbits/sec | 0.000 ms | 0/6766 (0%) | sender |
| [19] | 0.00-10.70 | sec 10.0 KBytes | 7.66 Kbits/sec | 421.854 ms | 131/136 (96%) | receiver |
| [SUM] | 0.00-10.00 | sec 133 MBytes | 111 Mbits/sec | 0.000 ms | 0/67862 (0%) | sender |
| [SUM] | 0.00-10.70 | sec 132 KBytes | 101 Kbits/sec | 383.150 ms | 3380/3446 (5%) | receiver |

Bottom Right Terminal: Shows a successful ping test to esmeralda.com. The output includes ping statistics:

```

PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=110 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=2 ttl=61 time=80.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=61.4 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=46.3 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq=5 ttl=61 time=91.6 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=69.7 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=7 ttl=61 time=56.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 7 received, 30% packet loss, time 9063ms
rtt min/avg/max/mdev = 46.274/73.705/110.418/20.439 ms
  
```


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2. Dilarang mengumumkan dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
[ 7] 0.00-10.00 sec 13.3 MBytes 11.1 Mbits/sec 0.000 ms 0/6798 (0%) sender
[ 7] 0.00-14.23 sec 16.0 KBytes 9.21 Kbits/sec 597.323 ms 246/254 (97%) re
ceiver
[ 9] 0.00-10.00 sec 13.3 MBytes 11.1 Mbits/sec 0.000 ms 0/6790 (0%) sender
[ 9] 0.00-14.23 sec 16.0 KBytes 9.21 Kbits/sec 603.994 ms 246/254 (97%) re
ceiver
[11] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6782 (0%) sender
[11] 0.00-14.23 sec 18.0 KBytes 10.4 Kbits/sec 639.824 ms 1101/1110 (99%) re
ceiver
[13] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6778 (0%) sender
[13] 0.00-14.23 sec 20.0 KBytes 11.5 Kbits/sec 569.866 ms 1100/1110 (99%) re
ceiver
[15] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6773 (0%) sender
[15] 0.00-14.23 sec 18.0 KBytes 10.4 Kbits/sec 526.294 ms 244/253 (96%) re
ceiver
[17] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6771 (0%) sender
[17] 0.00-14.23 sec 18.0 KBytes 10.4 Kbits/sec 528.537 ms 244/253 (96%) re
ceiver
[19] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6766 (0%) sender
[19] 0.00-14.23 sec 16.0 KBytes 9.21 Kbits/sec 559.083 ms 243/251 (97%) re
ceiver
[21] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6760 (0%) sender
[21] 0.00-14.23 sec 16.0 KBytes 9.21 Kbits/sec 556.379 ms 243/251 (97%) re
ceiver
[23] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6754 (0%) sender
[23] 0.00-14.23 sec 14.0 KBytes 8.06 Kbits/sec 567.170 ms 244/251 (97%) re
ceiver
[SUM] 0.00-10.00 sec 132 MBytes 111 Mbits/sec 0.000 ms 0/67775 (0%) sende
r
[SUM] 0.00-14.23 sec 170 KBytes 97.8 Kbits/sec 577.577 ms 4156/4241 (6.1%)

```

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq
=1 ttl=61 time=57.5 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq
=2 ttl=61 time=53.8 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq
=3 ttl=61 time=109 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq
=4 ttl=61 time=71.5 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=109 ms
64 bytes from www.esmeralda.com.2.168.192.in-addr.arpa (192.168.2.2): icmp_seq
=6 ttl=61 time=67.5 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 6 received, 40% packet loss, time 9095ms
rtt min/avg/max/mdev = 53.757/78.015/109.292/22.625 ms

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 150M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 59474 connected to 192.168.2.2 port 5201
[ ID] Interval Transfer Bitrate
[ 5] 0.00-1.00 sec 14.2 MBytes 119 Mbits/sec
[ 5] 1.00-2.00 sec 16.2 MBytes 136 Mbits/sec
[ 5] 2.00-3.00 sec 16.0 MBytes 134 Mbits/sec
[ 5] 3.00-4.00 sec 17.6 MBytes 147 Mbits/sec
[ 5] 4.00-5.00 sec 18.8 MBytes 158 Mbits/sec
[ 5] 5.00-6.00 sec 17.0 MBytes 142 Mbits/sec
[ 5] 6.00-7.00 sec 16.9 MBytes 142 Mbits/sec
[ 5] 7.00-8.00 sec 16.6 MBytes 139 Mbits/sec
[ 5] 8.00-9.00 sec 16.7 MBytes 141 Mbits/sec
[ 5] 9.00-10.00 sec 19.2 MBytes 161 Mbits/sec
-----
[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 169 MBytes 142 Mbits/sec
[ 5] 0.00-15.85 sec 178 KBytes 92.1 Kbits/sec
iperf Done.

```

Screenshot hasil pengujian pengamanan protokol EIGRP dengan *bandwidth* 200M.

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# iperf3 -c esmeralda.com -u -b 200M -i 60 -w 56K -l 2K -P 10
warning: UDP block size 2048 exceeds TCP MSS 1448, may result in fragmentation / dr
ops
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 35200 connected to 192.168.2.2 port 5201
[ 7] local 192.168.1.3 port 57330 connected to 192.168.2.2 port 5201
[ 9] local 192.168.1.3 port 43141 connected to 192.168.2.2 port 5201
[11] local 192.168.1.3 port 36253 connected to 192.168.2.2 port 5201
[13] local 192.168.1.3 port 59362 connected to 192.168.2.2 port 5201
[15] local 192.168.1.3 port 60200 connected to 192.168.2.2 port 5201
[17] local 192.168.1.3 port 47106 connected to 192.168.2.2 port 5201
[19] local 192.168.1.3 port 44665 connected to 192.168.2.2 port 5201
[21] local 192.168.1.3 port 43038 connected to 192.168.2.2 port 5201
[23] local 192.168.1.3 port 49112 connected to 192.168.2.2 port 5201
[ ID] Interval Transfer Bitrate Total Datagrams
[ 5] 0.00-10.00 sec 13.4 MBytes 11.3 Mbits/sec 6885
[ 7] 0.00-10.00 sec 13.4 MBytes 11.3 Mbits/sec 6880
[ 9] 0.00-10.00 sec 13.4 MBytes 11.3 Mbits/sec 6877
[11] 0.00-10.00 sec 13.4 MBytes 11.3 Mbits/sec 6869
[13] 0.00-10.00 sec 13.4 MBytes 11.2 Mbits/sec 6864
[15] 0.00-10.00 sec 13.4 MBytes 11.2 Mbits/sec 6858
[17] 0.00-10.00 sec 13.4 MBytes 11.2 Mbits/sec 6854
[19] 0.00-10.00 sec 13.4 MBytes 11.2 Mbits/sec 6853
[21] 0.00-10.00 sec 13.4 MBytes 11.2 Mbits/sec 6848
[23] 0.00-10.00 sec 13.4 MBytes 11.2 Mbits/sec 6846
[SUM] 0.00-10.00 sec 134 MBytes 112 Mbits/sec 68634

[ ID] Interval Transfer Bitrate Jitter Lost/Total Datagram
s
[ 5] 0.00-10.00 sec 13.4 MBytes 11.3 Mbits/sec 0.000 ms 0/6885 (0%) sender

```

```

root@alda: /home/alda
File Actions Edit View Help
[root@alda]~/home/alda
# ping -c 10 esmeralda.com
PING esmeralda.com (192.168.2.2) 56(84) bytes of data:
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=1 ttl=61 time=86.0 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=2 ttl=61 time=201 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=3 ttl=61 time=120 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=4 ttl=61 time=31.1 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=5 ttl=61 time=146 ms
64 bytes from esmeralda.com (192.168.2.2): icmp_seq=6 ttl=61 time=72.1 ms

--- esmeralda.com ping statistics ---
10 packets transmitted, 6 received, 40% packet loss, time 9091ms
rtt min/avg/max/mdev = 31.061/109.444/201.357/54.787 ms

```

Hak Cipta milik Politeknik Negeri Jakarta

Hak Cipta :

1. Dilarang mengutip sebagian atau seluruh karya tulis ini tanpa mencantumkan dan menyebutkan sumber :
 - a. Pengutipan hanya untuk kepentingan pendidikan, penelitian, penulisan karya ilmiah, penulisan laporan, penulisan kritik atau tinjauan suatu masalah.
 - b. Pengutipan tidak merugikan kepentingan yang wajar Politeknik Negeri Jakarta
2. Dilarang mengumumkannya dan memperbanyak sebagian atau seluruh karya tulis ini dalam bentuk apapun tanpa izin Politeknik Negeri Jakarta

```

root@alda: /home/alda
File Actions Edit View Help
s
[ 5] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6765 (0%) sender
[ 5] 0.00-14.65 sec 16.0 KBytes 8.94 Kbits/sec 674.941 ms 515/523 (98%) re
ceiver
[ 7] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6764 (0%) sender
[ 7] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 644.273 ms 516/523 (99%) re
ceiver
[ 9] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6761 (0%) sender
[ 9] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 639.149 ms 516/523 (99%) re
ceiver
[11] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6753 (0%) sender
[11] 0.00-14.65 sec 12.0 KBytes 6.71 Kbits/sec 677.192 ms 516/522 (99%) re
ceiver
[13] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6750 (0%) sender
[13] 0.00-14.65 sec 12.0 KBytes 6.71 Kbits/sec 672.083 ms 516/522 (99%) re
ceiver
[15] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6745 (0%) sender
[15] 0.00-14.65 sec 16.0 KBytes 8.94 Kbits/sec 616.844 ms 514/522 (98%) re
ceiver
[17] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6740 (0%) sender
[17] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 625.393 ms 515/522 (99%) re
ceiver
[19] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6736 (0%) sender
[19] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 627.056 ms 515/522 (99%) re
ceiver
[21] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6729 (0%) sender
[21] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 626.333 ms 514/521 (99%) re
ceiver
[23] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6726 (0%) sender
[23] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 628.323 ms 514/521 (99%) re
ceiver
[SUM] 0.00-10.00 sec 132 MBytes 111 Mbits/sec 0.000 ms 0/67469 (0%) sende

```

```

root@alda: /home/alda
File Actions Edit View Help
ceiver
[ 9] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6761 (0%) sender
[ 9] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 639.149 ms 516/523 (99%) re
ceiver
[11] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6753 (0%) sender
[11] 0.00-14.65 sec 12.0 KBytes 6.71 Kbits/sec 677.192 ms 516/522 (99%) re
ceiver
[13] 0.00-10.00 sec 13.2 MBytes 11.1 Mbits/sec 0.000 ms 0/6750 (0%) sender
[13] 0.00-14.65 sec 12.0 KBytes 6.71 Kbits/sec 672.083 ms 516/522 (99%) re
ceiver
[15] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6745 (0%) sender
[15] 0.00-14.65 sec 16.0 KBytes 8.94 Kbits/sec 616.844 ms 514/522 (98%) re
ceiver
[17] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6740 (0%) sender
[17] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 625.393 ms 515/522 (99%) re
ceiver
[19] 0.00-10.00 sec 13.2 MBytes 11.0 Mbits/sec 0.000 ms 0/6736 (0%) sender
[19] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 627.056 ms 515/522 (99%) re
ceiver
[21] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6729 (0%) sender
[21] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 626.333 ms 514/521 (99%) re
ceiver
[23] 0.00-10.00 sec 13.1 MBytes 11.0 Mbits/sec 0.000 ms 0/6726 (0%) sender
[23] 0.00-14.65 sec 14.0 KBytes 7.83 Kbits/sec 628.323 ms 514/521 (99%) re
ceiver
[SUM] 0.00-10.00 sec 132 MBytes 111 Mbits/sec 0.000 ms 0/67469 (0%) sende
r
[SUM] 0.00-14.65 sec 140 KBytes 78.3 Kbits/sec 643.159 ms 5151/5221 (7.6%)
receiver
iperf Done.

```

```

root@alda: /home/alda
# iperf3 -c esmeralda.com -u -b 200M
Connecting to host esmeralda.com, port 5201
[ 5] local 192.168.1.3 port 46493 connected to 192.1
[ ID] Interval Transfer Bitrate
[ 5] 0.00-1.00 sec 17.9 MBytes 150 Mbits/sec
[ 5] 1.00-2.00 sec 15.8 MBytes 133 Mbits/sec
[ 5] 2.00-3.00 sec 18.1 MBytes 152 Mbits/sec
[ 5] 3.00-4.00 sec 19.5 MBytes 164 Mbits/sec
[ 5] 4.00-5.00 sec 17.2 MBytes 145 Mbits/sec
[ 5] 5.00-6.00 sec 17.2 MBytes 145 Mbits/sec
[ 5] 6.00-7.00 sec 16.9 MBytes 142 Mbits/sec
[ 5] 7.00-8.00 sec 16.7 MBytes 140 Mbits/sec
[ 5] 8.00-9.00 sec 15.9 MBytes 133 Mbits/sec
[ 5] 9.00-10.00 sec 16.6 MBytes 139 Mbits/sec
-----
[ ID] Interval Transfer Bitrate
[ 5] 0.00-10.00 sec 172 MBytes 144 Mbits/sec
[ 5] 0.00-26.66 sec 274 KBytes 84.3 Kbits/sec
iperf Done.

```