

# **KEAMANAN JARINGAN KOMPUTER**



**Disusun Oleh :**

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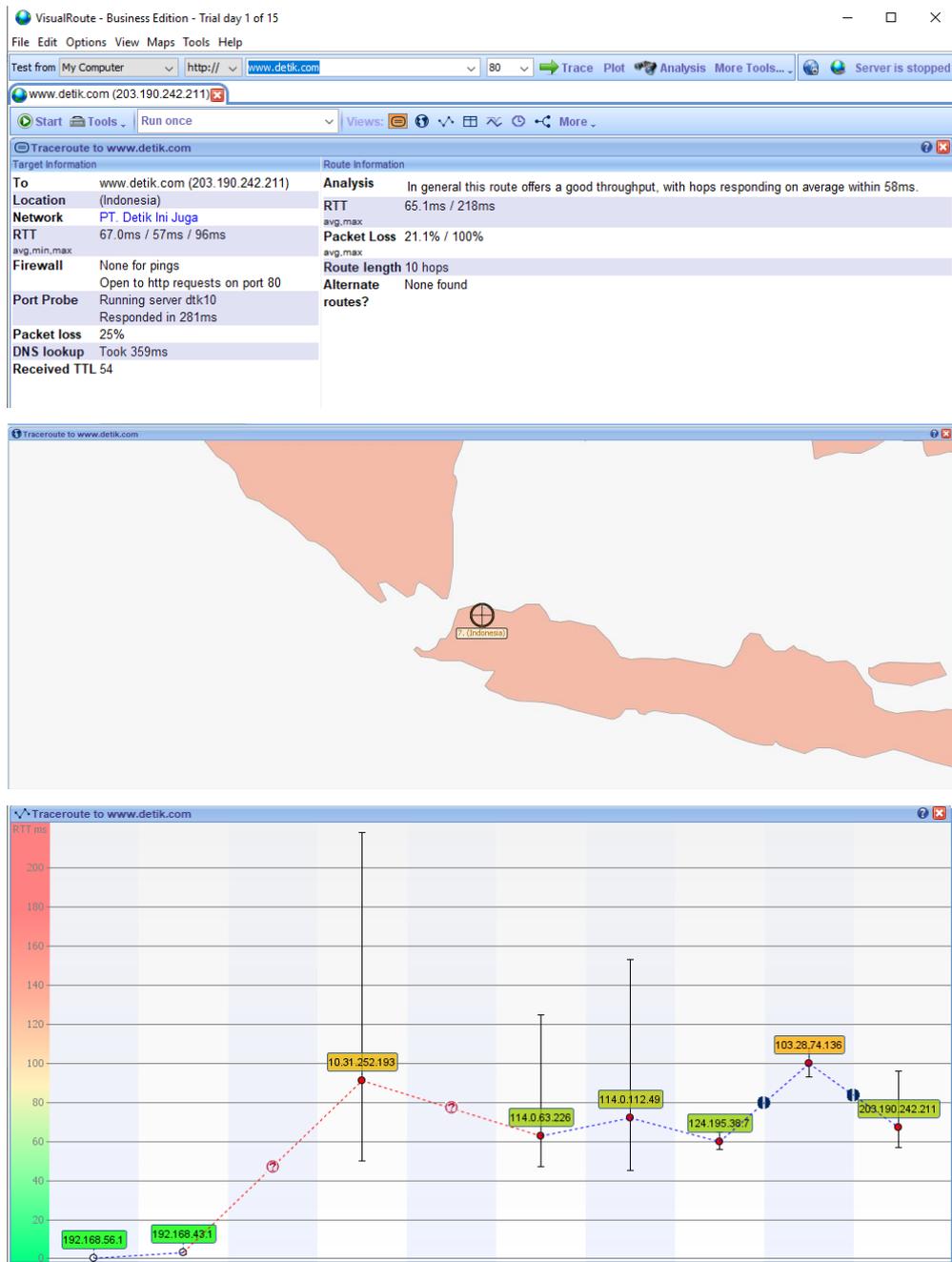
**Kelas : SK7 Palembang**

**SISTEM KOMPUTER**  
**FAKULTAS ILMU KOMPUTER**  
**UNIVERSITAS SRIWIJAYA**

Pada tugas ini untuk mengidentifikasi hop dari web yang mempunyai server dalam negeri dan luar negeri serta mengidentifikasi IP yang menjadi hop hingga mencapai server web tersebut atau hingga dapat mengakses web tersebut.

### Cek IP address dengan server/website dalam negeri (Indonesia)

1. Pertama kita buka software VisualRouter 2010 lalu masukkan website yang ada di indonesia seperti <http://www.detik.com> dengan IP (203.100.242.211). server [www.detik.com](http://www.detik.com) ini berada di negara Indonesia.



2. Setelah itu kita cek pada command prompt dan masukkan perintah `tracert detik.com`. Disini dapat kita lihat ada 9 hop (loncatan) dengan masing-masing IP Address yang berbeda sampai menuju ke IP dari website yang dituju.

```
C:\Users\asus>tracert detik.com
Tracing route to detik.com [103.49.221.211]
over a maximum of 30 hops:
  0  47 ms   23 ms   13 ms  172.20.10.1
  1  79 ms   56 ms   57 ms  10.195.162.244
  2  129 ms  78 ms   63 ms  10.195.32.206
  3  359 ms  285 ms  261 ms  112.215.259.134
  4  283 ms  97 ms   259 ms  112.215.81.46
  5  141 ms  98 ms   78 ms  detik-as24211.iix.net.id [103.28.74.136]
  6  84 ms  104 ms  143 ms  s211-cast-211-221-49-103.detik.com [103.49.221.211]
Trace complete.
C:\Users\asus>
```

Command Prompt dan software Visual Route hasilnya tidak jauh berbeda dan hal itu dianggap wajar karena suatu paket akan mencari hop terbaiknya yang mana setiap detiknya tentu akan berubah tergantung kesibukan dari hop yang dilewati tersebut.

3. Untuk mengetahui IP address dari pengguna yang menggunakan web tersebut, kita dapat mengecek IP address tersebut dengan menggunakan command prompt dengan memasukkan IP pengguna dan akan muncul informasi dari IP pengguna tersebut. Semakin sedikit hop/loncatannya maka semakin cepat paket data yang diterima.

Disini akan saya jelaskan IP dari beberapa hop yang terdapat pada Visual Route :

1. IP **192.168.56.1** Merupakan IP lokal yang saya miliki dengan nama Laptop G6KU139F dan berstatus Local Network.

```
Prompt Perintah
C:\Users\asus>tracert 192.168.56.1
Tracing route to LAPTOP-G6KU139F [192.168.56.1]
over a maximum of 30 hops:
  0  <1 ms   <1 ms   <1 ms  LAPTOP-G6KU139F [192.168.56.1]
```

2. IP **192.168.43.1** dan berstatus Local Network.

```
C:\Users\asus>tracert 192.168.43.1
Tracing route to 192.168.43.1 over a maximum of 30 hops
  0  23 ms   3 ms   4 ms  192.168.43.1
Trace complete.
```

### 3. IP 10.31.252.193 dan berstatus Local Network.

```
C:\Users\asus>tracert 10.31.252.193
Tracing route to 10.31.252.193 over a maximum of 30 hops
  1  27 ms  2 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  86 ms  39 ms  236 ms  10.31.252.193
Trace complete.
```

### 4. IP 114.0.63.226 adalah sebuah IP yang dimiliki oleh resources.indosat.com

```
C:\Users\asus>tracert 114.0.63.226
Tracing route to 114-0-63-226.resources.indosat.com [114.0.63.226]
over a maximum of 30 hops:
  1  4 ms  4 ms  6 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  *      112 ms  *      10.31.252.193
  4  *      *      *      Request timed out.
  5  73 ms  38 ms  *      114-0-63-226.resources.indosat.com [114.0.63.226]
  6  174 ms  49 ms  48 ms  114-0-63-226.resources.indosat.com [114.0.63.226]
Trace complete.
```

### 5. IP 114.0.112.49 adalah sebuah IP yang dimiliki oleh resources.indosat.com

```
C:\Users\asus>tracert 114.0.112.49
Tracing route to 114-0-112-49.resources.indosat.com [114.0.112.49]
over a maximum of 30 hops:
  1  23 ms  2 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  75 ms  46 ms  51 ms  10.31.252.193
  4  *      *      *      Request timed out.
  5  *      *      83 ms  114-0-63-226.resources.indosat.com [114.0.63.226]
  6  99 ms  43 ms  56 ms  114-0-112-49.resources.indosat.com [114.0.112.49]
Trace complete.
```

### 6. IP 124.195.38.7 adalah sebuah IP yang dimiliki oleh resource.indosat.com

```
PromptPeintah
C:\Users\asus>tracert 124.195.38.7
Tracing route to 124-195-38-7.resources.indosat.com [124.195.38.7]
over a maximum of 30 hops:
  1  22 ms  8 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  96 ms  81 ms  *      10.31.252.193
  4  *      *      *      Request timed out.
  5  66 ms  42 ms  70 ms  114-0-63-226.resources.indosat.com [114.0.63.226]
  6  66 ms  42 ms  68 ms  114-0-112-47.resources.indosat.com [114.0.112.47]
  7  69 ms  66 ms  71 ms  124-195-38-7.resources.indosat.com [124.195.38.7]
Trace complete.
```

### 7. IP 103.28.74.136 adalah sebuah IP yang dimiliki oleh detik-as24211.iix.net.id.

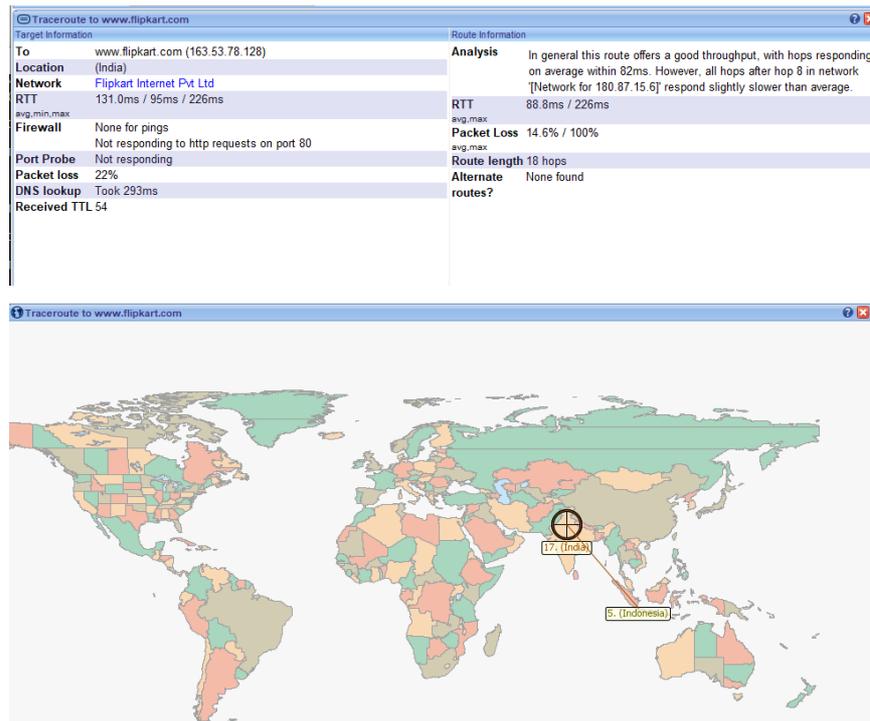
```
C:\Users\asus>tracert 103.28.74.136
Tracing route to detik-as24211.iix.net.id [103.28.74.136]
over a maximum of 30 hops:
  1  2 ms  1 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  70 ms  44 ms  49 ms  10.31.252.193
  4  *      *      *      Request timed out.
  5  *      *      *      Request timed out.
  6  91 ms  46 ms  *      114-0-63-226.resources.indosat.com [114.0.63.226]
  7  69 ms  80 ms  *      114-0-112-49.resources.indosat.com [114.0.112.49]
  8  *      85 ms  *      124-195-38-7.resources.indosat.com [124.195.38.7]
  9  109 ms  98 ms  *      detik-as24211.iix.net.id [103.28.74.136]
  9  98 ms  96 ms  88 ms  detik-as24211.iix.net.id [103.28.74.136]
Trace complete.
```

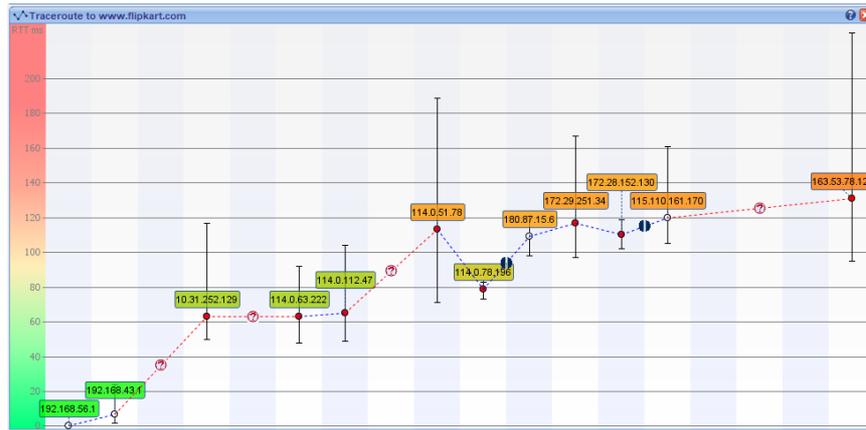
8. IP **202.190.242.211** adalah IP dari website **detik.com** itu sendiri yang berlokasi di Indonesia.

```
Prompt Perintah
C:\Users\asus>tracert 203.190.242.211
Tracing route to s2-211-242.190.203.detik.com [203.190.242.211]
over a maximum of 30 hops:
  0  4 ms  4 ms  10 ms  192.168.43.1
  1  *      *      *      Request timed out.
  2  55 ms  61 ms  76 ms  10.31.252.193
  3  *      *      *      Request timed out.
  4  62 ms  475 ms  54 ms  114-0-63-226.resources.indosat.com [114.0.63.226]
  5  51 ms  45 ms  61 ms  114-0-112-49.resources.indosat.com [114.0.112.49]
  6  65 ms  51 ms  66 ms  124-195-38-7.resources.indosat.com [124.195.38.7]
  7  169 ms  95 ms  102 ms  detik-as24211.iix.net.id [103.28.74.136]
  8  *      *      67 ms  s2-211-242.190.203.detik.com [203.190.242.211]
Trace complete.
```

### Cek IP address dengan server/website Luar Negeri (

1. Pertama kita buka software VisualRouter 2010 lalu masukkan website yang ada di indonesia seperti <http://www.flipkart.com> dengan IP (163.53.78.128). server [www.flipkart.com](http://www.flipkart.com) ini berada di negara India.





- Setelah itu kita cek pada command prompt dan masukkan perintah `tracert detik.com`. Disini dapat kita lihat ada 17 hop (loncatan) dengan masing-masing IP Address yang berbeda sampai menuju ke IP dari website yang dituju.

```

C:\Users\asus>tracert flipkart.com

Tracing route to flipkart.com [163.53.78.128]
over a maximum of 30 hops:
  0  2 ms  2 ms  2 ms  192.168.43.1
  1  *      *      *      Request timed out.
  2  *      *      *      Request timed out.
  3  79 ms  51 ms  59 ms  10.31.252.129
  4  *      *      *      Request timed out.
  5  67 ms  56 ms  50 ms  114.0.63.222.resources.indosat.com [114.0.63.222]
  6  *      *      56 ms  114.0.112.47.resources.indosat.com [114.0.112.47]
  7  *      *      *      Request timed out.
  8  91 ms  70 ms  *      114.0.51.78.resources.indosat.com [114.0.51.78]
  9  *      88 ms  66 ms  114.0.78.196.resources.indosat.com [114.0.78.196]
 10 135 ms 132 ms *      180.87.15.6
 11 103 ms *      159 ms 172.29.251.34
 12 146 ms 107 ms 114 ms 172.28.152.130
 13 *      112 ms 98 ms 115.110.161.170.static.vsnl.net.in [115.110.161.170]
 14 *      *      *      Request timed out.
 15 *      *      *      Request timed out.
 16 *      *      *      Request timed out.
 17 110 ms 118 ms 117 ms 163.53.78.128

Trace complete.

```

Command Prompt dan software Visual Route hasilnya tidak jauh berbeda dan hal itu dianggap wajar karena suatu paket akan mencari hop terbaiknya yang mana setiap detiknya tentu akan berubah tergantung kesibukan dari hop yang dilewati tersebut.

- Untuk mengetahui IP address dari pengguna yang menggunakan web tersebut, kita dapat mengecek IP address tersebut dengan menggunakan command prompt dengan memasukkan IP pengguna dan akan muncul informasi dari IP pengguna tersebut. Semakin sedikit hop/loncatannya maka semakin cepat paket data yang diterima.

Disini akan saya jelaskan IP dari beberapa hop yang terdapat pada Visual Route :

1. IP **192.168.56.1** Merupakan IP lokal yang saya miliki dengan nama Laptop G6KU139F dan berstatus Local Network.

```
Prompt Perintah
C:\Users\asus>tracert 192.168.56.1
Tracing route to LAPTOP-G6KU139F [192.168.56.1]
over a maximum of 30 hops:
  1  <1 ms  <1 ms  <1 ms  LAPTOP-G6KU139F [192.168.56.1]
```

2. IP **192.168.43.1** dan berstatus Local Network.

```
C:\Users\asus>tracert 192.168.43.1
Tracing route to 192.168.43.1 over a maximum of 30 hops
  1  23 ms  3 ms  4 ms  192.168.43.1
Trace complete.
```

3. IP **10.31.252.129** dan berstatus Local Network.

```
Prompt Perintah
C:\Users\asus>tracert 10.31.252.129
Tracing route to 10.31.252.129 over a maximum of 30 hops
  1  34 ms  3 ms  3 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  52 ms  49 ms  *      10.31.252.129
  4  57 ms  *      51 ms  10.31.252.129
Trace complete.
```

4. IP **114.0.63.222** adalah sebuah IP yang dimiliki oleh resources.indosat.com

```
C:\Users\asus>tracert 114.0.63.222
Tracing route to 114-0-63-222.resources.indosat.com [114.0.63.222]
over a maximum of 30 hops:
  1  4 ms  4 ms  4 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  70 ms  54 ms  48 ms  10.31.252.193
  4  *      *      *      Request timed out.
  5  52 ms  48 ms  47 ms  114-0-63-226.resources.indosat.com [114.0.63.226]
  6  *      53 ms  79 ms  114-0-112-49.resources.indosat.com [114.0.112.49]
  7  51 ms  52 ms  59 ms  114-0-63-222.resources.indosat.com [114.0.63.222]
Trace complete.
```

5. IP **114.0.112.47** adalah sebuah IP yang dimiliki oleh resources.indosat.com

```
C:\Users\asus>tracert 114.0.112.47
Tracing route to 114-0-112-47.resources.indosat.com [114.0.112.47]
over a maximum of 30 hops:
  1  2 ms  2 ms  2 ms  192.168.43.1
  2  *      *      *      Request timed out.
  3  63 ms  187 ms  65 ms  10.31.252.193
  4  *      *      *      Request timed out.
  5  66 ms  63 ms  53 ms  114-0-63-226.resources.indosat.com [114.0.63.226]
  6  106 ms  59 ms  63 ms  114-0-112-47.resources.indosat.com [114.0.112.47]
Trace complete.
```

6. IP **114.0.51.78** adalah sebuah IP yang dimiliki oleh resources.indosat.com

```
Prompt Perintah
Tracing route to 114-0-51-78.resources.indosat.com [114.0.51.78]
over a maximum of 30 hops:
  0  2 ms   4 ms   4 ms  192.168.43.1
  1  *      *      *      Request timed out.
  2  *      *      *      Request timed out.
  3  62 ms  40 ms  46 ms  10.31.252.129
  4  *      *      *      Request timed out.
  5  209 ms *      97 ms  114-0-63-222.resources.indosat.com [114.0.63.222]
  6  98 ms  65 ms  52 ms  114-0-112-47.resources.indosat.com [114.0.112.47]
  7  *      *      *      Request timed out.
  8  *      *      *      Request timed out.
  9  *      *      *      Request timed out.
 10  *      *      *      Request timed out.
 11  *      *      *      Request timed out.
 12  *      *      *      Request timed out.
 13  *      *      *      Request timed out.
 14  *      *      *      Request timed out.
 15  *      *      *      Request timed out.
 16  *      *      *      Request timed out.
 17  *      *      *      Request timed out.
 18  *      *      *      Request timed out.
 19  *      *      *      Request timed out.
 20  *      *      *      Request timed out.
 21  *      *      *      Request timed out.
 22  *      *      *      Request timed out.
 23  *      *      *      Request timed out.
 24  *      *      *      Request timed out.
 25  *      *      *      Request timed out.
 26  *      *      *      Request timed out.
 27  *      *      *      Request timed out.
 28  *      *      *      Request timed out.
 29  *      *      *      Request timed out.
 30  *      *      *      Request timed out.
Trace complete.
```

7. IP 114.0.78. 196 adalah sebuah IP yang dimiliki oleh resources.indosat.com

```
C:\Users\asus>tracert 114.0.78.196
Tracing route to 114-0-78-196.resources.indosat.com [114.0.78.196]
over a maximum of 30 hops:
  0  4 ms   2 ms   4 ms  192.168.43.1
  1  *      *      *      Request timed out.
  2  *      *      *      Request timed out.
  3  59 ms  49 ms  50 ms  10.31.252.193
  4  *      *      *      Request timed out.
  5  48 ms  46 ms  *      114-0-63-226.resources.indosat.com [114.0.63.226]
  6  236 ms 54 ms  57 ms  114-0-112-49.resources.indosat.com [114.0.112.49]
  7  *      *      *      Request timed out.
  8  77 ms  72 ms  83 ms  114-0-51-78.resources.indosat.com [114.0.51.78]
  9  72 ms  137 ms 78 ms  114-0-78-196.resources.indosat.com [114.0.78.196]
Trace complete.
```

8. IP 180.87.15.6 adalah sebuah IP yang dimiliki oleh negara Singapura dan berstatus network Singapura.

```
C:\Users\asus>tracert 180.87.15.6
Tracing route to 180.87.15.6 over a maximum of 30 hops
  0  4 ms   4 ms   4 ms  192.168.43.1
  1  *      *      *      Request timed out.
  2  *      *      *      Request timed out.
  3  46 ms  56 ms  54 ms  10.31.252.129
  4  *      *      *      Request timed out.
  5  126 ms 50 ms  47 ms  114-0-63-222.resources.indosat.com [114.0.63.222]
  6  58 ms  58 ms  47 ms  114-0-112-47.resources.indosat.com [114.0.112.47]
  7  *      *      *      Request timed out.
  8  73 ms  122 ms 79 ms  114-0-51-78.resources.indosat.com [114.0.51.78]
  9  *      81 ms  134 ms  114-0-78-196.resources.indosat.com [114.0.78.196]
 10  115 ms *      106 ms  180.87.15.6
Trace complete.
```

## 9. IP 172.29.251.34

```
C:\Users\asus>tracert 172.29.251.34
Tracing route to 172.29.251.34 over a maximum of 30 hops
  1  24 ms    1 ms     2 ms    192.168.43.1
  2  *        *        *        Request timed out.
  3  70 ms    47 ms    45 ms    10.31.252.193
  4  *        *        *        Request timed out.
  5  149 ms   41 ms    50 ms    114-0-63-226.resources.indosat.com [114.0.63.226]
  6  71 ms    83 ms    46 ms    114-0-112-49.resources.indosat.com [114.0.112.49]
  7  *        *        *        Request timed out.
  8  *        *        *        Request timed out.
  9  *        *        *        Request timed out.
 10  *        *        *        Request timed out.
 11  *        *        *        Request timed out.
 12  *        *        *        Request timed out.
 13  *        *        *        Request timed out.
 14  *        *        *        Request timed out.
 15  *        *        *        Request timed out.
 16  *        *        *        Request timed out.
 17  *        *        *        Request timed out.
 18  *        *        *        Request timed out.
 19  *        *        *        Request timed out.
 20  *        *        *        Request timed out.
 21  *        *        *        Request timed out.
 22  *        *        *        Request timed out.
 23  *        *        *        Request timed out.
 24  *        *        *        Request timed out.
 25  *        *        *        Request timed out.
 26  *        *        *        Request timed out.
 27  *        *        *        Request timed out.
 28  *        *        *        Request timed out.
 29  *        *        *        Request timed out.
 30  *        *        *        Request timed out.

Trace complete.
```

## 10. IP 172.28.152.130

```
Prompt Perintah
C:\Users\asus>tracert 172.28.152.130
Tracing route to 172.28.152.130 over a maximum of 30 hops
  1  2 ms     1 ms     2 ms    192.168.43.1
  2  *        *        *        Request timed out.
  3  63 ms   135 ms   66 ms   10.31.252.193
  4  *        *        *        Request timed out.
  5  73 ms   48 ms    53 ms   114-0-63-226.resources.indosat.com [114.0.63.226]
  6  59 ms   37 ms    49 ms   114-0-112-49.resources.indosat.com [114.0.112.49]
  7  *        *        *        Request timed out.
  8  *        *        *        Request timed out.
  9  *        *        *        Request timed out.
 10  *        *        *        Request timed out.
 11  *        *        *        Request timed out.
 12  *        *        *        Request timed out.
 13  *        *        *        Request timed out.
 14  *        *        *        Request timed out.
 15  *        *        *        Request timed out.
 16  *        *        *        Request timed out.
 17  *        *        *        Request timed out.
 18  *        *        *        Request timed out.
 19  *        *        *        Request timed out.
 20  *        *        *        Request timed out.
 21  *        *        *        Request timed out.
 22  *        *        *        Request timed out.
 23  *        *        *        Request timed out.
 24  *        *        *        Request timed out.
 25  *        *        *        Request timed out.
 26  *        *        *        Request timed out.
 27  *        *        *        Request timed out.
 28  *        *        *        Request timed out.
 29  *        *        *        Request timed out.
 30  *        *        *        Request timed out.

Trace complete.
```

## 11. IP 115.110.161.170 adalah sebuah IP yang dimiliki oleh static.vsnl.net.in.

```
Prompt Perintah
C:\Users\asus>tracert 115.110.161.170
Tracing route to 115.110.161.170.static.vsnl.net.in [115.110.161.170]
over a maximum of 30 hops:
  1  4 ms     3 ms     2 ms    192.168.43.1
  2  *        *        *        Request timed out.
  3  49 ms    70 ms    54 ms    10.31.252.129
  4  *        *        *        Request timed out.
  5  68 ms    47 ms    75 ms    114-0-63-222.resources.indosat.com [114.0.63.222]
  6  56 ms    *        145 ms   114-0-112-47.resources.indosat.com [114.0.112.47]
  7  *        *        *        Request timed out.
  8  75 ms    *        *        114-0-51-78.resources.indosat.com [114.0.51.78]
  9  106 ms   82 ms    84 ms    114-0-78-196.resources.indosat.com [114.0.78.196]
 10  122 ms   105 ms   105 ms   180.87.15.6
 11  172 ms   112 ms   106 ms   172.28.152.130
 12  128 ms   115 ms   112 ms   115.110.161.170.static.vsnl.net.in [115.110.161.170]

Trace complete.
```

12. IP 163.53.78.128 adalah IP dari website **flipkart.com** itu sendiri yang berlokasi di India.

```
Microsoft Windows [Version 10.0.17763.805]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\asus>tracert 163.53.78.128

Tracing route to 163.53.78.128 over a maximum of 30 hops:

  0  *  *  *  192.168.43.1
  1  *  *  *  Request timed out.
  2  *  *  *  10.31.252.129
  3  *  *  *  Request timed out.
  4  *  *  *  Request timed out.
  5  71 ms 49 ms 61 ms 114.0.63.222,resources.indosat.com [114.0.63.222]
  6  43 ms * 197 ms 114.0.112.47,resources.indosat.com [114.0.112.47]
  7  *  *  *  Request timed out.
  8  *  74 ms 68 ms 114.0.51.78,resources.indosat.com [114.0.51.78]
  9  82 ms 65 ms 66 ms 114.0.78.196,resources.indosat.com [114.0.78.196]
 10 106 ms 170 ms 113 ms 180.87.15.6
 11 121 ms 118 ms 124 ms 172.29.251.34
 12 128 ms 108 ms 119 ms 172.28.152.130
 13 115 ms 112 ms 100 ms 115.110.161.170,static.vsnl.net.in [115.110.161.170]
 14  *  *  *  Request timed out.
 15  *  *  *  Request timed out.
 16  *  *  *  Request timed out.
 17 109 ms 104 ms * 163.53.78.128
 18 115 ms 100 ms 93 ms 163.53.78.128

Trace complete.
```





