Tutorial 3
Computer Networks
CS321

Submitted By: Aditya Kumar (B18CSE002)

1 - Total Number of IP Prefixes that given internet has = 525483
   Total Number of Unique Ases= 48237

2 - There is a total of 130 entries associated with Insti-A in the routing table:
Here Insti-A is IIT Bombay from whois record(IITB-IN)

Routing Table of Insti-A :

Prefix = 103.21.124.0/24 AS Path= 11537 7660 7660 7660 24287 24490 55824 132423
Prefix = 103.21.124.0/24 AS Path= 8492 9002 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 3561 1299 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 1239 1299 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 293 3257 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 701 1299 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 2914 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 1668 3257 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 37100 6453 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 13030 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 1299 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 3257 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 3130 2914 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 7660 24287 24490 55824 132423
Prefix = 103.21.124.0/24 AS Path= 40191 3257 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 2152 2153 11537 7660 7660 7660 24287 24490 55824 132423
Prefix = 103.21.124.0/24 AS Path= 5413 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 3741 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 3356 15412 15412 15412 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 852 1299 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 1221 4637 15412 18101 9885 55824 132423
Prefix = 103.21.124.0/24 AS Path= 6762 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 11686 19782 11537 7660 7660 7660 24287 24490 55824 132423

Prefix = 103.21.124.0/24 AS Path= 3549 3356 15412 15412 15412 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 22652 3257 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 6939 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 6539 577 2914 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 286 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 3549 3356 15412 15412 15412 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 7018 2914 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 3130 2914 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 3303 15412 18101 9885 55824 132423

Prefix = 103.21.124.0/24 AS Path= 2497 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 11537 7660 7660 7660 24287 24490 55824 132423

Prefix = 103.21.125.0/24 AS Path= 8492 9002 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 3561 1299 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 1239 1299 15412 18101 9885 55824 132423

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Prefix = 103.21.125.0/24 AS Path= 7660 24287 24490 55824 132423

Prefix = 103.21.125.0/24 AS Path= 40191 3257 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 2152 2153 11537 7660 7660 7660 24287 24490 55824 132423

Prefix = 103.21.125.0/24 AS Path= 5413 15412 18101 9885 55824 132423

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Prefix = 103.21.125.0/24 AS Path= 1221 4637 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 6762 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 11686 19782 11537 7660 7660 7660 24287 24490 55824 132423

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Prefix = 103.21.125.0/24 AS Path= 7018 2914 15412 18101 9885 55824 132423

Prefix = 103.21.125.0/24 AS Path= 3130 2914 15412 18101 9885 55824 132423

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Prefix = 103.21.126.0/24 AS Path= 8492 3209 3209 55410 132423 132423 132423 132423 132423 132423

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Prefix = 103.21.127.0/24 AS Path= 2497 6453 4755 132423
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Prefix = 103.21.127.0/24 AS Path= 3549 6453 4755 132423
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Prefix = 103.21.127.0/24 AS Path= 3257 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 3130 1239 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 13030 3549 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 286 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 7018 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 3549 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 1299 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 6939 1299 6453 4755 132423
Prefix = 103.21.127.0/24 AS Path= 40191 3257 6453 4755 132423

3 - Insti-A Buys Service from 3 ISPS and their AS Numbers and Name from whois record are:-
i)   55824 NKN-CORE-NW
ii) 55410 TATACOMM-AS
iii) 4755   VIL-AS-AP

4 - Top 10 AS with most numbers of connection with other ASes are:-
The number of connections is also denoted by the degree.

i) AS Number = 174 Total Connection = 4304 Name - COGENT-174
ii) AS Number = 3356 Total Connection = 4032 Name - LEVEL3
iii) AS Number = 6939 Total Connection = 3056 Name - HURRICANE
iv) AS Number = 7018 Total Connection = 2373 Name - ATT-INTERNET4
v) AS Number = 4323 Total Connection = 1869 Name -
CENTURYLINK-LEGACY-TWTC
vi) AS Number = 209 Total Connection = 1546 Name -
CENTURYLINK-US-LEGACY-QWEST
vii) AS Number = 701 Total Connection = 1449 Name - UUNET
viii) AS Number = 6461 Total Connection = 1220 Name - ZAYO-6461
ix) AS Number = 3549 Total Connection = 1108 Name - LVLT-3549
x) AS Number = 9002 Total Connection = 1105 Name - RETN-AS

These Ases are ISPs because they have a very high degree of connectivity whereas
end-user has a low degree of less than 5