

Longest Prefix Matching Worksheet

Suppose you are using 8-bit values for addressing in a forwarding table using longest prefix matching. You are given the following table:

1
2
3
4
5

Prefix	Link Interface
001	0
00101	1
0	2
1011	0
Otherwise	3

1. For each address below, which link will be selected?

a. 0000 0000

3 link 2

b. 0011 0110

link 0

c. 0010 1110

link 1

d. 0101 1011

link 2

e. 1011 0101

- link 0

f. 1010 0101

link 3

2. What are the ranges in binary for each interface?

Link Interface	Range(s)
0	0010 0000 - 0011 0110 - 0011 1111
1	0010 1000 - 0010 1111
→ 2	0000 0000 - 0001 1111 0100 0000 - 0101 1111
3	

0-31
64-127

00011111
+1

00010000