Computer networking in ZhangJiang campus

Description

Motivation

At Zhangjiang campus of ShanghaiTech University, Network, as an important infrastructure, should be double checked. To realize FTTH(Fiber To The Home), working stuff suffers from a problem:**the decay of signal**, with respect to the distance between nodes. The remote terminal cannot receive the weak signal from server.

An abstract model has been designed to analyze this challenge. First, regard the whole network structure on campus as a tree:

1. Root node is a server, which releases signal to all terminals. There is only one server in this model for a tree.
2. Leaf nodes are terminals.
3. Intermediate nodes are packet switches.
4. The edges between nodes are cables.
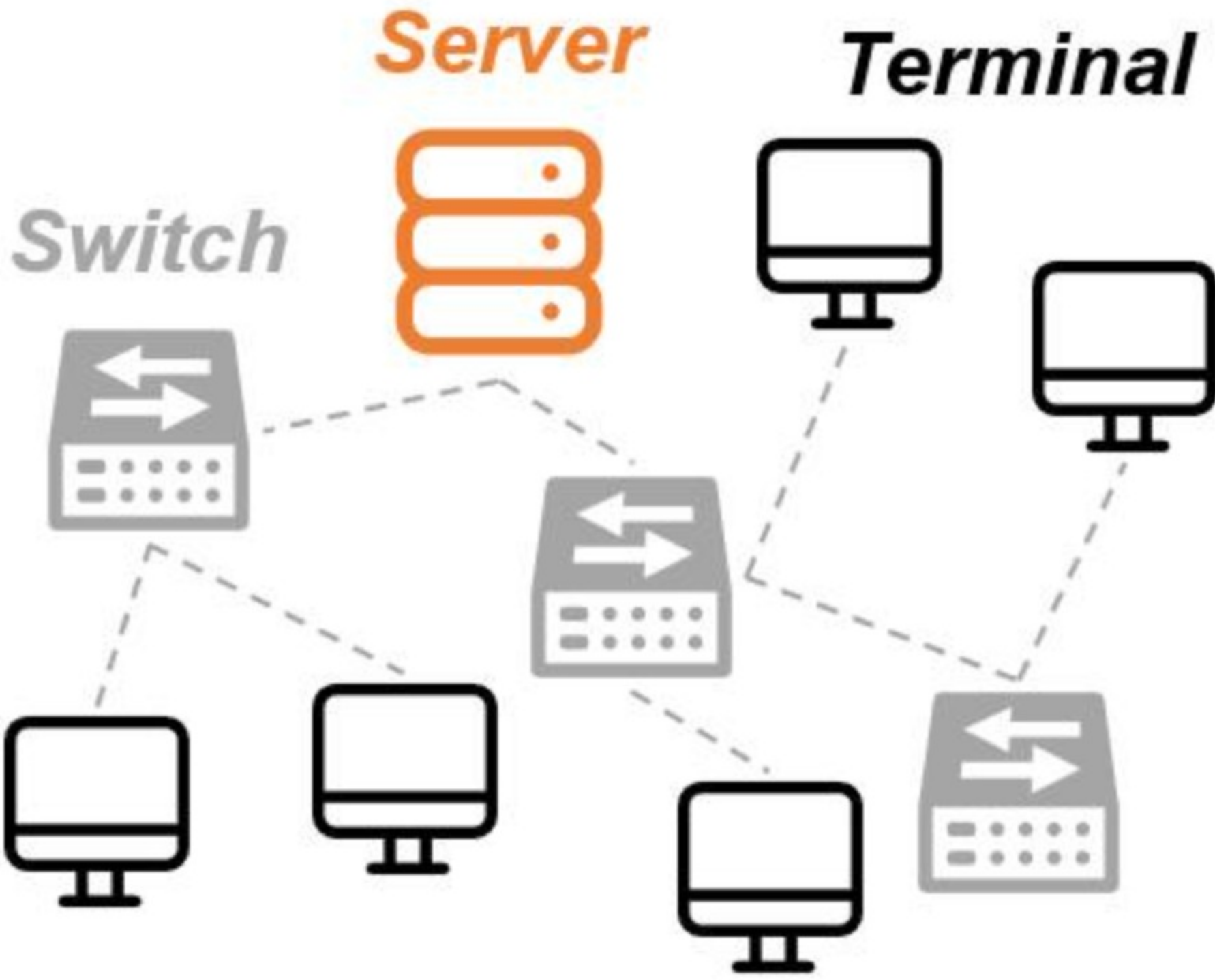
The signal starts from the server and ends at terminal. It will decay with the rules below:

1. The strength of signals shares an initial value at root(server).
2. Each edge is assigned with a decay value. The signal strength will decrease by that value if it passes that cable(edge).
3. If the signal reaches the terminal with positive signal strength, it means the signal is successfully received.
4. If the signal from server can successfully reaches the terminal, the terminal is feasible. Otherwise, it is infeasible.
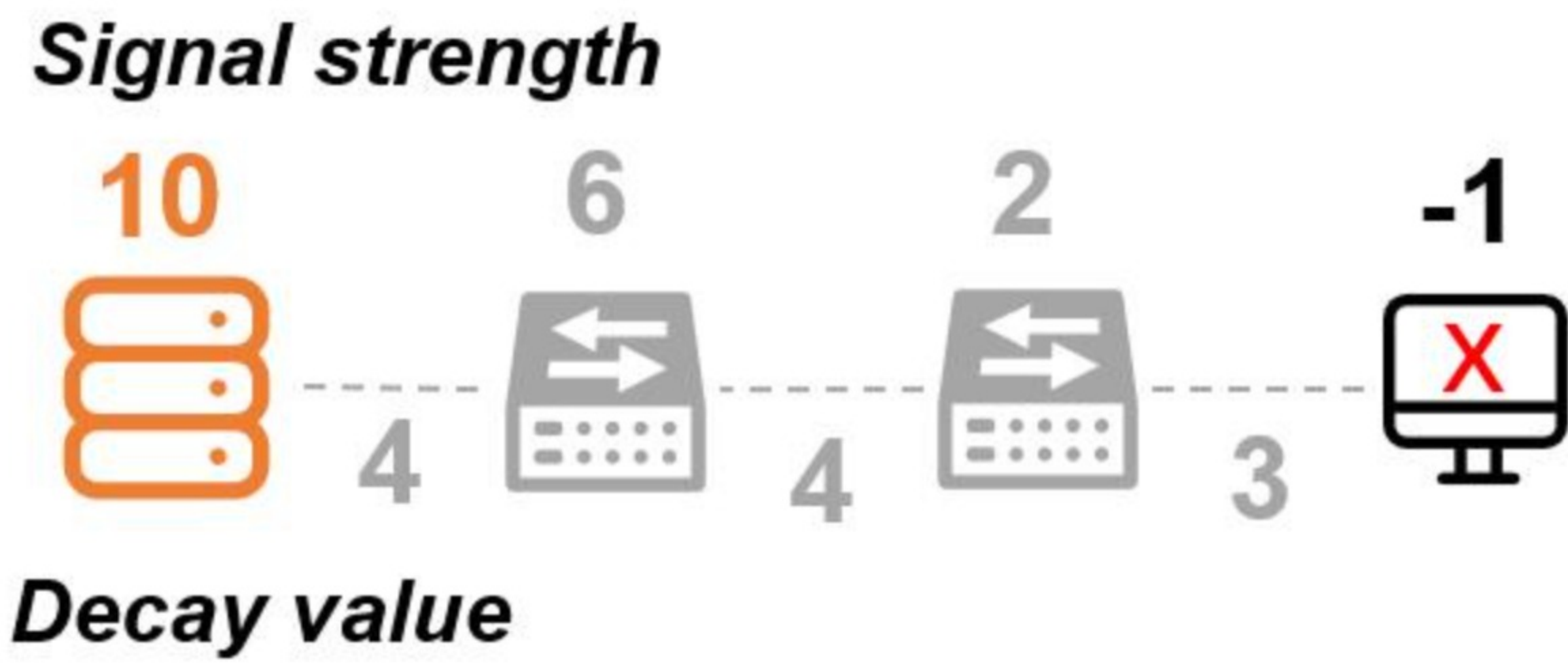
In most cases, not all terminals are feasible. The IT section gives a proposal: the signal amplifier. A signal amplifier will reconstruct the signal and reset the signal strength as the initial value at server(root). It can be installed on switches. BUT signal shall reach the switches with positive signal strength first.
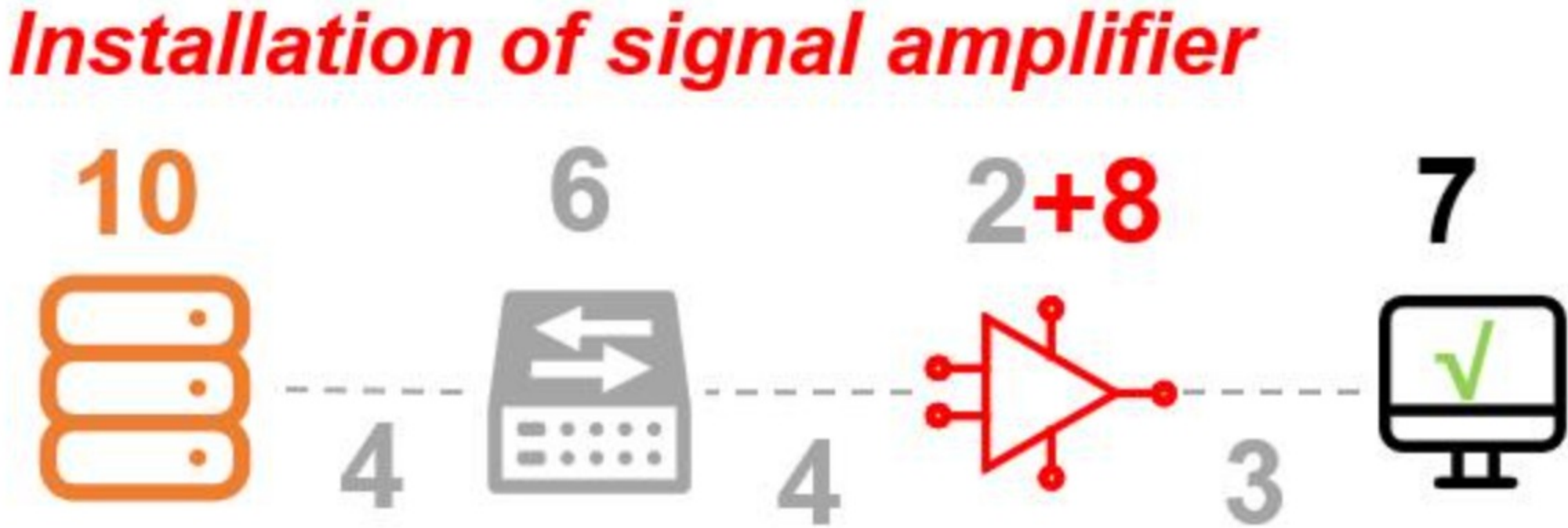
Signal on each cable is directional, which means no signal could backtrack.

Goal

To reduce the cost, for a specific network, we are curious about the minimal quantity of signal amplifier when all terminals are feasible.

Input

1. The first line is an integer n, indicating the total number of nodes in the network.
2. The root is defined as node 1. The nodes is numbered from 1 to n.
3. The next $n-1$ lines represent the cables. Each line has three integer a_i, b_i, c_i, which means there is a cable connecting node a_i and b_i with decay c_i. The input is guaranteed to be a valid tree.
4. The last line contains an integer m, indicating the initial signal strength.

- For 10% cases, $n \le 10$
- For 50% cases, $n \le 2e4$
- For 100% cases, $1 \le n \le 5e5, 1 \le c_i \le 1e5, 1 \le m \le 1e6$

Output

An integer, the minimal quantity of signal amplifier that makes all terminals feasible.

If it is impossible, output "No solution." (Pay attention to the capital letter and the full stop)

Sample Input 1

```
5
1 2 1
2 4 3
2 5 5
1 3 2
6
```

Sample Output 1

```
1
```

Language: C   Theme: Solarized Light

Information

ID	2001
Time Limit	1500MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	root
Level	Low
Score	100
Tags	Show

Statistic   Details

AC | WA

AC: 26 13.68%
WA: 164 86.32%