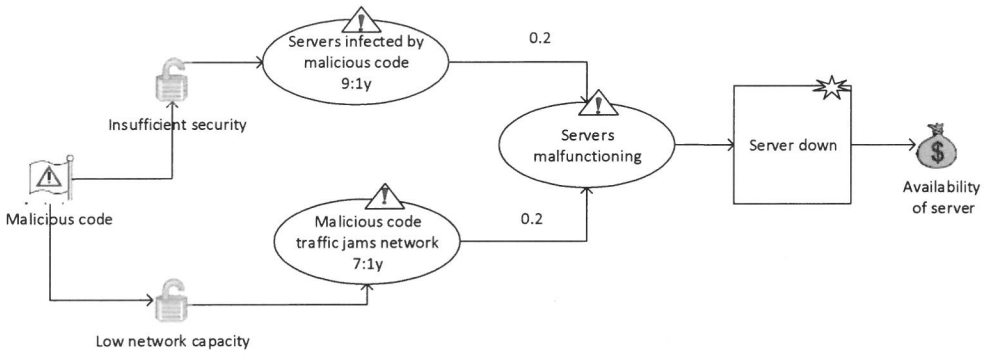
3 Security Risk Analysis

a)



b) If the diagram is complete, then there are no external threat, and we can calculate the frequency of the threat scenario Servers malfunctioning with the help of the other two threats: Servers infected by malicious code and Malicious code traffic jams network.

Let f be the frequency to be calculated for servers malfunctioning.

Since both the other two threats are independent of one another

F = 9:1y *0.2 + 7:1y * 0.2 = 1.8:1y + 1.4:1y = 3.2:1y

c) If the threat diagram is not complete then there can be other threats along with the threats: Servers infected by malicious code and Malicious code traffic jams network leading to the threat Servers malfunctioning. Therefore, the frequency of the threat Servers malfunctioning is at least 3.2:1y calculated by the minimal frequency but the maximum is not known.

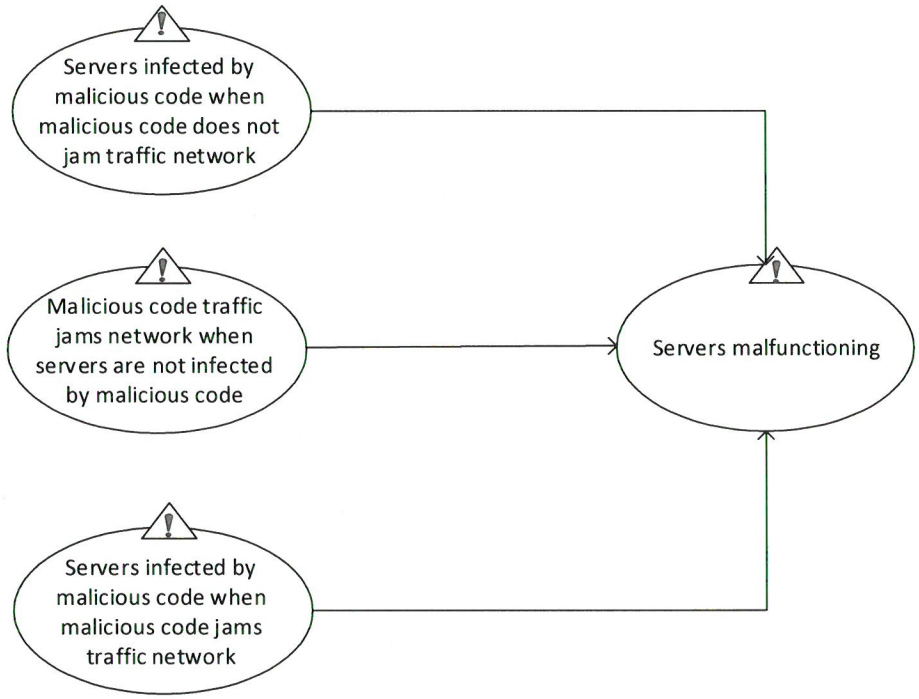
d) If we do not know whether the threats Servers infected by malicious code and Malicious code traffic jams network are separate and the diagram is complete then the frequency for the threat Servers malfunctioning would be at least the frequency by threat Servers infected by malicious code i.e. 9:1y* 0.2 = 1.8:1y. This is because it occurs 9 times in a year and it can overlap with the other threat Malicious code traffic jams network. However, we cannot assume only the threat Malicious code traffic jams network since it occurs only 7 times in a year.

And the maximum frequency would be the frequency calculated by the minimal frequency formula i.e.

9:1y *0.2 + 7:1y * 0.2 = 1.8:1y + 1.4:1y = 3.2:1y

Hence frequency f for Server malfunctioning would be f: [1.8:1y, 3.2:1y]

e) The diagram above can be redrawn into a threat diagram where the two threat scenarios to the left that may or may not be separate by clarifying the title of the threats.



Now all the threats are independent of one another and are separate. After that we add frequency to the individual threats.