

Has anyone calculated this:

Assuming that 10000 nodes randomly divided into 100 shards. What is the number of malicious nodes, such that the situation where at least one shard having 51% or more malicious nodes occurs with probability p ?

For example, it would be important to know the number of malicious nodes such that there is a 50% chance of launching a 1% attack.

In analogy to the birthday problem, the number should be significantly less than 5000.