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Blockchain based database.

# **Abstract**

# Introduction

# Design

## Setup

Machine setup mesh

Machine1 🡨-🡪 Machine 2

Machine 3🡨-🡪 Machine 4

# Experiment

## Node authentication

## Node synchronisation

## Proof of work

### Key notes

Any peer can replace nodes

The proof of work makes it expensive to generate corrupt chains

Manageable to submit one block, unproductive to generate entire chain

### Ransomware attack

#### 51% attack

A 51% attack for bitcoin would be more than $6billion dollars [proof]

The dishonest would loose money as a result of attacking and undermining its accuracy.

#### Preventing 51% attack using ‘nonce’ value

Create difficulty in producing a hash value with some level of difficulty. This makes it computationally harder to create new hashes easily and add them to the block-chain. This also deteriorates performance.

As an alternative, we can use the threat-level based on perceived threat to adjust difficulty and thus making it easier/harder to add new blocks, and therefore optimizing the performance as needed.

#### Difficulty level

A difficulty level may vary from 1 to 10 and the computing power increases exponentially as shown below.

# Result