# Research On Ethereum Blockchain

# Document History

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## Abstract

Ever since the inception of Ethereum, scalability has been in the forefront of developer’s minds. From the very beginning, it was understood that 15 transactions per second would be insufficient to support a large ecosystem of thousands of applications with billions of dollars of values changing hands every day. As early as 2017, a mere two years after the lunch of Ethereum, Vitalik Buterin and Joseph Poon were already researching layer two scaling solutions in their paper [Plasma: Scalable Autonomous Smart Contracts](https://plasma.io/plasma.pdf). Since then, developers have been working on numerous other approaches to scale Ethereum. I aim at characterizing different layer two scalable solutions to answer my research question – How to clone Ethereum Defi protocol with the hope of reducing high transaction fees and increasing the 15 transactions per second which is a very big problem with Ethereum products. I conducted a library research strategy to identify available Ethereum Defi protocols, to find out if they have implemented the suggested layer two scalable solutions. Based on my findings which is explained below, the few who have implemented the layer two scalable solutions have better scalability.

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Contents

[Research On Ethereum Blockchain 1](#_Toc96430221)

[Document History 1](#_Toc96430222)

[Abstract 1](#_Toc96430223)

[Acknowledgement 2](#_Toc96430224)

[Introduction 2](#_Toc96430225)

## Introduction

### What is an Ethereum node or client?

Ethereum nodes are computers participating in Ethereum blockchain network. These nodes are actual computers running software that verifies, stores and sometimes creates blocks. The actual software is called “client”, and it allows us to interact with the blockchain using the JSON-RPC API, parse and verify the blockchain, and read or write to smart-contracts.

Ethereum is reaching far more developers than ever, with this growth adoption of Ethereum, there has been a flow of multiple Ethereum clients in the industry with the likes of Nethermind, Aleth, Get and Trinity being the official library written and maintained by Ethereum foundation,