

FS20

DISTRIBUTED SYSTEMS

In the news, week 13

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■ 20.03.2020: Discord was offline for 1 hour

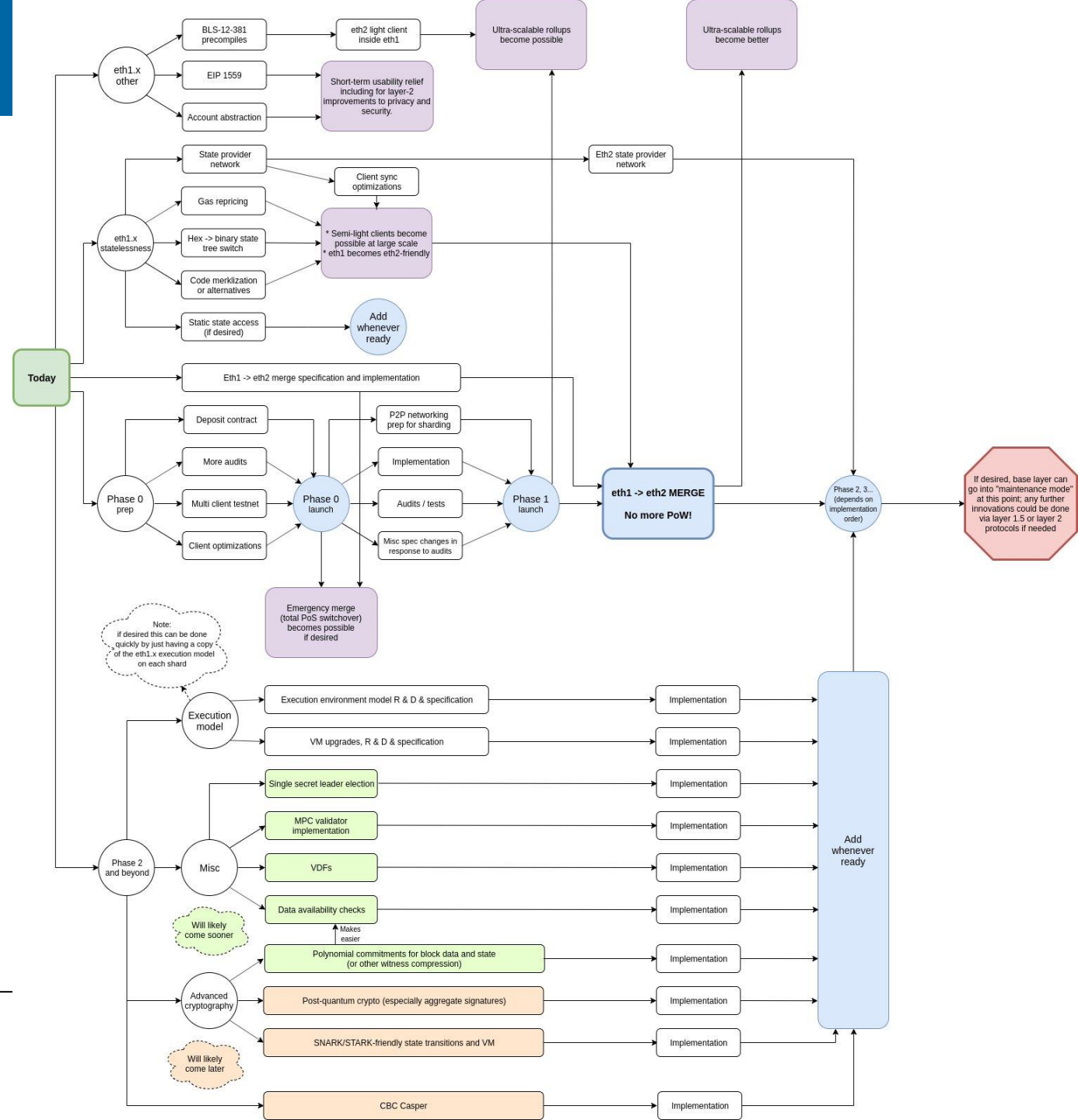
- Due to a bug in the service discovery system
 - Used internally to discover services
 - E.g., to discover the RPC endpoint that they use to load data from our databases
- 14:18 – scaling API traffic nodes, one failed
- 14:19 – Other services started to crash due to this
- 14:21 – Monitoring kicked in
- 14:24 – Status page is shown that incident is being investigated
- 14:55 – API service discovery processes in a crash loop due to an unexpected deserialization error, due to loop, machines restarted, happened to 50% of nodes using this service

- Root cause:
- “Our etcd client uses Python's builtin HTTP client, and sends a PUT request (along with the Content-Length header) in one packet, and the request body in another packet. We determined that the connection was reset after sending the first packet, but before the second packet could be sent.”
- “In order to parse the form body sent from clients, it uses the `net.http/Request.ParseForm()` method. This method does not check to see if the request body's length matches the length that was specified in the Content-Length header.”
- Key written as empty string → invalid key to be written to service discovery

Distributed Systems - In the News

■ 18.03.2020: Ethereum 2.0 Roadmap

- 5-10 years roadmap from Vitalik Buterin
- In the last 2 years, figuring out what can be implemented
- Much better picture of PoS, sharding, and ZK-SNARKS
- Also, polynomial commitments to replace Merkle trees
 - Merkle tree 0.5MB pre tx, polynomial commitment between 0.001 and 0.01 MB
- Reducing complexity!



Questions?



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