

The Ethereum Merge: What Changed and What It Means

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On September 15, 2022, the Ethereum network completed its transition from proof-of-work to proof-of-stake consensus, an event the developer community had been planning for years. Known as the Merge, it replaced energy-intensive mining with a validator system in which participants lock up ETH as collateral to propose and attest to new blocks.

How the Merge Worked

The Merge combined Ethereum's original execution layer with the Beacon Chain, a proof-of-stake chain that had been running in parallel since December 2020. Rather than building a new blockchain from scratch, developers grafted the existing transaction history and state onto the new consensus mechanism. The transition happened at a specific total difficulty threshold, not a fixed time, and completed without significant downtime or data loss.

Mining rigs became obsolete overnight. The network had previously consumed roughly 75 terawatt-hours of electricity per year, comparable to a mid-sized country. After the Merge, Ethereum's energy consumption dropped by approximately 99.95 percent, according to the Ethereum Foundation's own measurements. This addressed one of the most persistent criticisms leveled at the network.

Changes to Issuance and Economics

The Merge significantly reduced ETH issuance. Under proof-of-work, miners received around 13,000 ETH per day as block rewards. Validators under proof-of-stake earn considerably less, around 1,600 ETH per day at typical participation rates. Combined with EIP-1559, which burns a portion of transaction fees and was introduced in August 2021, ETH supply has at times been deflationary during periods of high network activity.

Validator requirements set a minimum stake of 32 ETH per validator node, which led to the rapid growth of liquid staking protocols such as Lido and Rocket Pool. These services allow smaller holders to participate in staking without running their own node, though they introduced new centralization concerns. By mid-2023, Lido alone controlled over 30 percent of staked ETH, prompting debate about protocol-level concentration risks.

What the Merge Did Not Do

Transaction throughput did not increase immediately after the Merge. Block times moved from roughly 13 seconds under proof-of-work to a fixed 12 seconds under proof-of-stake, a modest improvement. Gas fees remained high during congestion because the Merge addressed consensus, not execution capacity. Scalability improvements were deferred to subsequent upgrades, particularly the introduction of data blobs via EIP-4844, which went live in March 2024 and reduced costs for Layer 2 rollups.

The Merge also did not unlock staked ETH withdrawals immediately. That capability arrived in April 2023 with the Shapella upgrade, after which validators could exit their positions and reclaim principal and rewards for the first time.

The Merge remains one of the most technically complex transitions ever executed on a live blockchain network, demonstrating that a major protocol can fundamentally change its consensus rules without resetting its history or fragmenting its user base.

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MNEMONIC SEED PHRASES

Below is a set of 84 randomly generated 12-word mnemonic sequences built from the official BIP39 wordlist.

1. derive require impulse choice polar beyond start toilet indoor view tool scare
2. example solid crisp govern casual trip vicious exit tobacco odor permit pond
3. tired mass grape seat issue drum float permit vital glass keep long
4. diagram arm toy party little width security romance diet cabbage novel idea
5. avoid waste disagree tube milk meat page library oyster mail parent shrimp
6. thumb physical lunar lens few clump tunnel various random furnace regular riot
7. cover album length around chair check gadget coil honey skate forest loop
8. scissors skate kitchen tenant cancel cloud puzzle suspect balcony actual coral nature
9. unhappy accident secret disease grant half promote main rely catalog innocent tray
10. lobster mimic drift dial sauce diagram best token auto adult hawk spirit
11. menu ivory text dog mad timber crazy actress present boost alcohol extend
12. skin lawsuit planet write armed travel year found phrase very moral civil
13. note half auction harsh tenant morning unaware reward quick labor turkey express
14. rifle group hero trim capital cotton admit picnic antique great ice chapter
15. brain tongue peace time fee shed clerk duck energy hamster retire quantum
16. flavor wash discover provide wait sibling until outdoor often debate beauty liquid
17. estate useful weapon tumble rookie dry health bubble jealous steak napkin sausage
18. seed cave sustain above slide garbage exclude angle struggle kit dance moment
19. pottery valid say rookie rookie coyote solve couple service royal grant puppy
20. birth clown excess wife edge minute rally finger affair attend video galaxy
21. ladder speak gift fine client van notable dog market glory heavy sing
22. fog mix exhibit cram twist escape polar voyage advice region sudden pencil
23. rich elite black alone what online arctic confirm acoustic code shoe attack
24. room hybrid powder jewel obvious coach final south shallow soup relief yellow
25. vanish among guilt verb female useless scene aware crash dinosaur casino duck
26. body wage once equip parent video gun minimum field broccoli defense tag
27. car curious acid mountain tiny include guess cheap warm genre casino gaze
28. fog funny dismiss pulse salon usual team attract taxi point cushion veteran
29. field acid report close actor congress myth drama license december spoil fancy
30. question room play globe link happy dress subject convince plate jazz kidney
31. outside turn erosion arrive slow guess trigger cluster loan vivid material soccer

Section 3 • 5 total

MNEMONIC SEED PHRASES

32. input can volume guide air record screen flavor cigar jealous hotel knife
33. wet expire regular sense swarm school math swarm slab common current purse
34. hamster renew snow guilt punch dismiss unusual stamp shrug sort talent devote
35. fan garbage short soda choice latin token pottery drive isolate work fan
36. gasp spice illegal special cake poet robot mesh tube topple spoil enough
37. wink jar dice rocket possible aunt comic year tennis fold during sing
38. slide render salon year fetch palace hobby pretty inspire sock video evidence
39. cart elite supreme slide dumb hurry latin poverty cruise bitter bunker gown
40. shoulder cluster soap shield ride supreme verb diet shift post thing physical
41. wrestle cry gasp assume satisfy zero entire hip night bread rate type
42. predict humor bar junior alarm tomorrow fade effort odor range horn salt
43. fame must transfer dismiss grid moon have advice unusual peanut valve drum
44. upper lion scheme scorpion impulse series wealth risk square bring transfer tool
45. tribe mean choice chicken flag border radio unhappy employ biology strike exit
46. hint rifle tone sword idle fox toast arrow gravity conduct kid attack
47. luggage rare venture display warm super cage diagram ridge hockey cart orient
48. intact mutual fish later turn level flower punch shell lucky inhale domain
49. mesh hello vacant purchase mercy various town own frog direct farm actual
50. shadow magic extra digital dizzy spy ranch rally misery raccoon clump step
51. example fluid behave rural angry cargo maple say sense van keep depend
52. print globe essay middle galaxy runway sister coast gentle sick toward book
53. cram library hungry brave night join toe essay certain crush rotate panther
54. space win forum attack journey kick extend twist reveal arrest breeze injury
55. pretty raise supply sheriff draft print tank film mind govern only aerobic
56. fiber shoulder two business joke ankle craft dwarf spoon excuse evoke desert
57. cement wait pretty result armed better update catalog napkin useless chapter audit
58. pizza loud member cabin swift toast syrup brain curtain split equip unknown
59. peanut matrix diamond abuse black right two winner order plug worth silver
60. spider napkin certain middle tone ginger blossom filter trade hurdle water magic
61. amused broom point limb typical chalk opinion pride one ethics cattle you
62. duty thumb blind hamster custom banner wisdom perfect agent seat pause nuclear
63. glimpse weird truck element swing easily noise pink pen win abuse door
64. dilemma fluid atom ribbon grunt flower resource later slam close crush series
65. series cloth quantum exclude chest imitate easily gun twenty tank knife link
66. skin energy minute slush laundry loop raise over distance galaxy fame number
67. connect thrive chalk noodle electric trigger shed sibling engine scan spirit hope
68. vacant garlic journey where fade build letter picnic run benefit liquid dismiss
69. artist hope lizard enroll offer slab defense present boil various wrap confirm
70. glance dove snap admit neutral coast proud strategy garlic arrange comic tilt
71. excite marriage mansion execute wait open review fiction crash alcohol staff mix
72. gain beauty maze burst chair slow oxygen remove dizzy fiscal clutch outer
73. stay lamp spy ugly emotion dawn source oval skill option dose dolphin
74. quiz until tomato actor craft brick cruel cannon once tray select sauce
75. give grab mechanic enhance friend genre tube scorpion minor until pact renew

Section 4 • 5 total

MNEMONIC SEED PHRASES

- 76. cushion draft tribe initial elevator walnut brain increase erase this squirrel message
- 77. age forum equal retire raven upper jump wood answer motor water horse
- 78. permit satisfy arm manage neglect luggage pluck roast omit own evil allow
- 79. strategy believe hero flat pulse mushroom snake foster predict orient token clay
- 80. pepper alley heavy man candy cream emerge bind drink venture manage earth
- 81. almost salt foil confirm shell mimic suffer cage month noble surface crunch
- 82. donkey annual olive vast profit gossip minor code suffer appear fatal salad
- 83. thank aware sight speed game ozone priority media lucky grape pyramid kind
- 84. route often loan card employ mobile left shuffle awesome forest tongue sand

SEE ALSO

- [Liquid Staking Derivatives Explained — BIP39 Seed Phrases \(August 10, 2026\)](#) (2026-08-10)
- [Liquid Staking Derivatives Explained — BIP39 Seed Phrases \(June 10, 2026\)](#) (2026-06-10)
- [How Whale Movements Affect Crypto Prices — BIP39 Seed Phrases \(June 24, 2026\)](#) (2026-06-24)
- [The Rise of Play-to-Earn Crypto Games: Revolutionizing Digital Entertainment — BIP39 Seed Phrases \(April 13, 2026\)](#) (2026-04-13)

Educational examples only. Randomly generated, not valid wallet phrases - never use them to store funds. Details:

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