# 폴카닷 라이트 페이퍼(Light paper) 폴카닷에 대한 소개

폴카닷에 대한 소개

"Polkadot은 일반 개인에게, 기업 단위와 국가 단위의 세력들보다도 훨씬 더 강한 힘을 실어줍니다."

-박사 개빈 우드,

폴카닷 창립자

목차

|  |  |
| --- | --- |
| 소개 | 3 |
|  |  |
| 개요 | 4 |
|  |  |
| 이종 샤딩 | 5 |
|  |  |
| 확장성 | 6 |
|  |  |
| 업그레이드 가능성 | 7 |
|  |  |
| 투명한 거버넌스 | 8 |
|  |  |
| 블록체인 간 연동 | 8 |
|  |  |
| 폴카닷 아키텍쳐 | 9 |
|  |  |
| 폴카닷 컨센서스 역할자 | 10 |
|  |  |
| 폴카닷 거버넌스 역할자 | 10 |
|  |  |
| DOT 토큰 | 11 |
|  |  |
| 쿠사마 네트워크 | 12 |
|  |  |
| 서브스트레이트 | 13 |
|  |  |
| 웹3재단(Web3 Foundation) | 14 |
|  |  |
| 패리티(Parity) | 15 |
|  |  |
| 폴카닷의 친구들(Friends of Polkadot) | 16 |
|  |  |
| 연락처 | 17 |

### 소개

3

더 적은 신뢰

더 많은 진실

우리는 매일 우리와의 이익과 상반되는 큰 회사나 기업들이 조종하는 기술을 사용합니다.

우리가 그들이 제공하는 앱들을 이용해 이익을 얻으려면, 우리는 차마 읽어보지 못한 사용자 동의서에 동의하여 그들이 만든 도구에 아무런 이의없이 우리가 제공하는 데이터에 대한 통제권을 주게 됩니다.

현재 개인 관련 데이터는 우리 생활에 대한 아주 구체적인 모습들을 보여줄 수 있기 때문에, 오일보다 더 값진 자원이 되었습니다. 그리고 우리는 이것을 공.짜.로 주고 있습니다—남용되거나, 유실되거나, 또는 다른 이가 훔쳐갈 의심도 하지 않은 채 말이죠.

한편, 오픈소스 소프트웨어나 블록체인과 같은 탈중앙화된 기술들이 발달하면서 우리가 개인의 주권을 중앙화된 통제로부터 지켜낼 수 있는 시스템을 만들 수 있음을 보여주기도 했습니다. 이러한 시스템들을 통해, 제 3자가 악의를 품고 있지 않다는 것에 대한 신뢰를 하지 않아도 됩니다.

하지만 오늘날의 블록체인 기술이 아직까지는 기업들의 독점적인 웹 생태계를 변화시키기에는 준비가 더 필요한 상황입니다. 수많은 약속과 발전에도 불구하고, 우리는 이 기술이 상용화되는 모습을 아직 보지 못하고 있죠.

### 개요

4

Polkadot은 각기 다른 목적을 가지고 탄생한 다양한 블록체인들의 네트워크를 하나로 통합시켜주는 차세대 블록체인 프로토콜이며, 블록체인 사이에서 끝임없는 상호작용을 통해 지속적인 확장이 가능토록 합니다. 그리고 Polkadot은 모든 블록체인 간의 어떠한 종류의 데이터도 상호 전송 가능토록하기에, 광범위하며 실재 사용 가능한 use-case들을 제공합니다.

Polkadot은 다양한 전문 기술성을 지닌 블록체인들을의 장점들많을 응축시켜, 새로운 탈중앙화된 마켓플레이스들을 하나로 뭉칠 수 있도록 설계되어 있으며, 보다 효율적인 방식들로 각종 앱과 서비스들에 접근할 수 있도록 도와줍니다.

그동안 다양한 블록체인들이 ㅡ IoT, 금융, 거버넌스, 인증관리, 탈중앙화 웹, 그리고 자산 트래킹 시스템 관련 등 ㅡ 각종 기술 분야에서 많은 가능성들을 보여줘왔지만, 기존 시스템들은 모두 '확장성'이라는 한계에 부딪혀왔었죠.

그러나 Polkadot의 설계에는 기존 네트워크들에 비해 한 층 더 차별화된 장점들로 구성되어 있으며, *다중 샤딩 기능을 포함하여 확장성, 업그레이드 가능성, 투명한 거버넌스 및 크로스체인 결합성을 지니고 있습니다.*

이것이

'무한' 경지에 다다른 진정한 블록체인

### 다중 샤딩

5

수많은 체인들을,

하나의 네트워크로

과연 하나의 블록체인이 모든 체인들을 통제하는 것이 궁극적으로 가능해질까요? 저희는 그렇게 생각하지 않습니다.

All blockchains make different tradeoffs to support specific features and use cases, and as chain specialization increases, the need to transact between them will only increase over time.

Polkadot is a sharded blockchain, meaning it connects several chains together in a single network, allowing them to process transactions in parallel and exchange data between chains with security guarantees.

Thanks to Polkadot’s unique heterogeneous sharding model, each chain in the network can be optimized for a specific use case rather than being forced to adapt to a one-size-fits-all model.

More chains and more specialization means more possibilities for innovation.

### Scalability

6

Blockchains

that grow

One blockchain isn’t enough to support a bustling future of decentralized applications. The limited throughput and lack of runtime specialization in early blockchains made them impractical for scaling in many real-world use cases.

By bridging multiple specialized chains together into one sharded network, Polkadot allows for multiple transactions to be

processed in parallel. This system removes the bottlenecks that occurred on earlier networks that processed transactions one-by-one.

Polkadot will be able to scale even further in the future with a planned feature known as *nested relay chains*, which will increase thenumber of shards that can be added to the network.

### Upgradeability

7

Future-proof your blockchain with forkless upgrades

Early computer games were shipped on printed circuit boards known as cartridges. These cartridges were expensive and time-consuming to make as the code was etched onto the chips, leaving no room for error.

These days we’re used to our apps, games and browsers updating frequently, even automatically. Developers fix bugs before they can cause problems, and new features are added as better solutions become available.

Like all software, blockchains need upgrades in order to stay relevant. However, it’s far more difficult to upgrade a blockchain than an app, game, or browser. Upgrading conventional blockchains requires forking the

network, often taking months of work, and particularly contentious hard forks can break apart a community.

Polkadot revolutionizes this process, enabling blockchains to upgrade themselves without the need to fork the chain. These forkless upgrades are enacted through Polkadot’s transparent on-chain governance system.

With this feature, Polkadot enables projects to stay agile, adapting and evolving with the pace of technology. It also significantly reduces the risk associated with contentious hard forks—a severe barrier to entry for many organizations.

### Transparent Governance

8

Community

powered

Early blockchains had no formal governance procedures. Individual stakeholders were powerless to propose or veto protocol changes unless they knew the right people.

Polkadot is different. It’s governed by anyone who owns DOTs, Polkadot’s native currency, in a fair and transparent way.

All DOT holders are able to propose a change to the protocol or vote on existing proposals. They can also help elect council members who represent passive stakeholders within Polkadot’s governance system.

Cross-Chain Composability

Collaborative

by design

Early blockchains were like walled gardens closed off to other networks. But as the number of chains for specific use cases continues to rise, so does the need for cross-chain communication and interoperability.

Polkadot’s cross-chain composability and message passing allows shards to communicate, exchange value, and share functionality, opening the door to a new wave of innovation.

Thanks to Polkadot’s ability to bridge blockchains, Polkadot shards will also be able to interact with popular decentralized-finance protocols and cryptoassets on external networks like Ethereum.

### Polkadot Architecture

9

Connecting

the dots

Polkadot unites a network of

heterogeneous blockchain shards

called parachains. These chains

connect to and are secured by

the Polkadot Relay Chain. They

can also connect with external

networks via bridges.

Relay Chain

The heart of Polkadot, responsible for the network’s security, consensus and cross-chain interoperability.

Parachains

Sovereign blockchains that can have their own tokens and optimize their functionality for specific use cases. To connect to the Relay Chain, parachains can pay as they go or lease a slot for continuous connectivity.

Bridges

Special blockchains that allow Polkadot shards to connect to and communicate with external networks like Ethereum and Bitcoin.

### Polkadot Consensus Roles

10

Validators

Secure the Relay Chain by staking DOTs, validating proofs from collators and participating in consensus with other validators.

Collators

Maintain shards by collecting shard transactions from users and producing proofs for validators.

Nominators

Secure the Relay Chain by selecting trustworthy validators and staking DOTs.

Fishermen

Monitor the network and report bad behavior to validators. Collators and any parachain full node can perform the fisherman role.

Polkadot Governance Roles

Council Members

Elected to represent passive stakeholders in two primary governance roles: proposing referenda and vetoing dangerous or malicious referenda.

Technical Committee

Composed of teams actively building

Polkadot. Can propose emergency

referenda, together with the council,

for fast-tracked voting and implementation.

### DOTs

11

The DOT Token

The DOT token serves three

distinct purposes: governance

over the network, operation and

bonding.

Governance

Polkadot token holders have complete control over the protocol. All privileges, which on other platforms are exclusive to miners, will be given to the Relay Chain participants (DOT holders), including managing exceptional events such as protocol upgrades and fixes.

Operation

Game theory incentivizes token holders to behave in honest ways. Good actors are rewarded by this mechanism whilst bad actors will lose their stake in the network. This ensures the network stays secure.

Bonding

New parachains are added by bonding tokens. Outdated or non-useful parachains are removed by removing bonded tokens. This is a form of proof of stake.

### Play with chaos on Kusama, Polkadot’s wild cousin

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| Kusama Network | 12 |

Kusama is an early, unaudited and unrefined release of Polkadot created to test the network’s technology and economic incentives in a real-world environment. It’s also the perfect place for parachain developers to test ideas before deploying to Polkadot.

Kusama is owned and governed by a community of supporters who hold KSM tokens. There is no central kill switch, meaning it will live on as an independent community network.

Ready to break stuff? Find out how to get KSM tokens and start staking, validating and participating in governance by reading the user guide.

### Substrate

13

Your blockchain builder, Your blockchain upgrader,

Your blockchain.

Substrate is your blockchain-building framework, making it easy to create a custom blockchain optimized for your unique use case.

Substrate is fully modular and flexible: mix and match ready-made components and build out your core business logic while leaving the rest to the framework. Plug-and-play modules like consensus, networking and finality give you the freedom to focus on your specific area of expertise, saving you substantial time and effort in the development process. Keep things lean by implementing only the necessary functionality on your custom blockchain.

Thanks to Substrate’s forkless upgrades and transparent governance tools, you can add new features over time without fear of splitting the network. Easier, risk-free upgrading means your blockchain can grow and evolve with the pace of innovation and ever-changing market needs.

Substrate also comes with native support for connecting to Polkadot right out of the box. Cumulus, Substrate’s tool for connecting your blockchain to a network of blockchains, unlocks interchain communication, collaboration and shared security.

Learn more about Substrate here and at the Substrate Developer Hub.

### About Web3 Foundation

14

Web3

Foundation

Web3 Foundation was created to nurture and steward technologies and applications in the fields of decentralized web software protocols, particularly those that utilize modern cryptographic methods to safeguard decentralization, to the benefit

and for the stability of the Web3 ecosystem. Polkadot is the flagship protocol of Web3 Foundation.

The future of the foundation

Web3 Foundation seeks to fund or otherwise assist in the development and deployment of projects aligned with its mission:

Innovative blockchain technologies, cryptographic messaging protocols.

Peer-to-peer networking infrastructure (such as libp2p and devp2p)

Crypto-economic mechanisms (such as DAC/DAOsoftware)

Data publication systems

(such as IPFS).

Learn more at [web3.foundation](http://web3.foundation) and on [Twitter](https://twitter.com/web3foundation) and [YouTube](https://www.youtube.com/channel/UClnw_bcNg4CAzF772qEtq4g).

The

development

team

### 

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| About Parity | 15 |

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Web3 Foundation has commissioned Parity Technologies to build Polkadot.

Founded by Ethereum cofounder

Dr. Gavin Wood, Parity is a global team of top distributed systems engineers, cryptographers, solutions architects and researchers. Parity has fundamentally shaped the blockchain industry, from building the highly-adopted Parity Ethereum client and implementations of Bitcoin and Zcash, to developing the next generation of blockchain technology with Substrate and Polkadot.

Learn more about Parity Technologies at [parity.io](http://parity.io) and follow the team on [Twitter](https://twitter.com/ParityTech), [Telegram](https://t.me/parity_technologies), [YouTube](https://www.youtube.com/channel/UCSs5vZi0U7qHLkUjF3QnaWg), and [Riot](https://matrix.to/%23/!IWlcTyHSqIEjpUReHD:matrix.parity.io?via=matrix.parity.io&via=matrix.org&via=web3.foundation).

Friends of

Polkadot

& Substrate

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| Collaborations | 16 |

Polkadot is designed to work with public, private and enterprise chains. We are excited to work closely with the following partners to develop the first use cases, and look forward to collaborating with other blockchain projects seeking to adopt this technology:

17

### Dive deeper, stay connected and get building!

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| --- | --- |
| Learn more on the | [→ Join](https://www.meetup.com/pro/polkadot) or [→ host](https://www.meetup.com/pro/polkadot) |
| Polkadot [→ Website](https://polkadot.network/) | a Polkadot meetup |
| and [→ Wiki](https://wiki.polkadot.network/en/) | in your area |
| Subscribe to the Polkadot | Chat with the Polkadot team |
| [→ Newsletter](https://share.hsforms.com/7051618/2cbd4207-0880-4b10-b9a4-951864088357) | on [→ Riot](https://riot.im/app/%23/room/%2523polkadot-watercooler:matrix.org) |
| Get involved by [→ joining](https://docs.google.com/forms/d/e/1FAIpQLSdq9dzqCPhFj5b71caPlUD0wHogq0UDSrz4nnGI7wFrwr4BDQ/viewform) the | Additional resources |
| [→ Polkadot Ambassador](https://polkadot.network/polkadot-ambassador-program/) | can be found |
| [Program](https://polkadot.network/polkadot-ambassador-program/) | → [here](https://www.reddit.com/r/dot/comments/d6k8ch/welcome_to_polkadot_start_here/) |

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