

# EXPLAINED

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Physical imitation of bitcoins.  

Bitcoin went through a major upgrade on Sunday that enables its blockchain to execute more complex transactions, potentially widening the virtual currency's use cases and making it a little more competitive with Ethereum for processing smart contracts.

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Smart contracts are self-executing transactions whose results depend on pre-programmed inputs.

The enhancement, called Taproot, is the most significant change to the bitcoin protocol since the SegWit (Segregated Witness) block capacity change in 2017. SegWit effectively increased the amount of transactions that could fit into a block by pulling data on signatures from bitcoin transactions.

Noelle Acheson, head of market insights at Genesis, a digital currency prime broker, said bitcoin's potential applications have become broader with Taproot.

"More flexible transaction types and lower costs are likely to support more development of DeFi (decentralized finance) and NFTs (non-fungible tokens) on bitcoin, and could set the stage for a wave of technological progress on the original crypto network," she added.

The run-up to Taproot's activation has spurred, in part, a rally in bitcoin, pushing it to an all-time high of \$69,000 on November 10. Over the last two months, bitcoin has surged about 47%.

## What is Taproot?

The Taproot upgrade consists of three separate upgrade proposals. However, at its core, the upgrade introduces a new digital signature scheme called "Schnorr" that will help bitcoin transactions become more efficient and more private. Schnorr can also be leveraged to let bitcoin users execute more complex smart contracts.

## When was Taproot officially activated?

Taproot was officially activated on Sunday on block 709,632. Blockchains settle transactions in batches or blocks. Each block can contain only a certain number of transactions.

Discussions on this particular upgrade began as early as 2016, market participants said. The Taproot upgrade has been included in the bitcoin software since September.

## What is its impact on Bitcoin?

The biggest impact would be the bitcoin network's ability to process more smart contracts, similar to what Ethereum does.

Katherine Dowling, general counsel & chief compliance officer at digital asset investment firm Bitwise, said bitcoin has historically been much more limited in processing smart contracts compared with Ethereum.

"But, while bitcoin likely won't ever be as flexible as Ethereum from a smart-contract standpoint, with Taproot that gap will now narrow. And that means we'll likely see an increase in day-to-day applications for bitcoin," she added.

### **What are the other enhancements?**

Taproot increases privacy by obscuring what type of transaction is being executed. The Schnorr signatures can make more complex transactions on the bitcoin protocol, such as those from wallets that require multiple signatures, look like just any other transaction. This makes transactions more private and more secure.

Bitcoin transactions will also become more data-efficient, optimizing block capacity and leading to lower transaction fees, said Genesis' Acheson.

### **What does Taproot mean for investors?**

Bitwise's Dowling said these large scale upgrades have paved the way for the next phase of innovation in the bitcoin network. She noted that the last major upgrade in 2017 helped launch the Lightning Network, which facilitated much faster and cheaper bitcoin payments than before.

She expects Taproot to lead to similar wave of innovation in bitcoin centered around smart contracts.

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To make the metaverse work, some developers say they are going to have to form a set of industry standards similar to those that coalesced around HTML, the open "markup language" that's been used to structure websites since the 1990s.

EU industry chief Thierry Breton criticised the increased lobbying by technology companies over the draft rules and urged lawmakers fighting over the scope of the DSA to step up their deliberations.

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