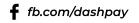


Overview

As cryptocurrency markets have matured and become more mainstream, regulators in a multitude of jurisdictions have expressed concerns about the possibility that cryptocurrencies may be used to facilitate illicit activities, including money laundering. One common reaction of legislative bodies and enforcement agencies is to attempt to ban exchanges and other market participants from integrating so-called "privacy-centric" cryptocurrencies, based on the assumption that these cryptocurrencies would be preferred by criminals. However, thus far the sophistication of the proposed bans appears to be on the basis of brand reputation, rather than on the basis of technical facts.

Since Dash is commonly labeled as "privacy centric" in the media, it is sometimes included in proposed "ban lists". This is an incorrect treatment of Dash from both regulatory and legal stances. This document argues that Dash's transaction rules are in fact identical to Bitcoin, and therefore for regulatory and compliance purposes Dash can and should be treated identically to Bitcoin.







This is not to say that Dash wallets do not offer its users enhanced privacy. Privacy and anonymity features are not binary, but rather a spectrum. This spectrum includes complete shielding of transactions (in which addresses and amounts are completely obscured from third-party observers), optional shielding of transactions, and completely transparent transactions. For example, with ZCash, shielded addresses are not visible and transactions between shielded addresses do not reveal either address, the transaction amount or the contents of an encrypted memo field. In contrast, Dash transactions are all completely transparent and auditable, identical to Bitcoin (upon which Dash is based), including the amounts and addresses party to each transaction. Dash's privacy features — as we will demonstrate — are nearly identical in nature to the privacy technologies currently available to Bitcoin users.

Properly categorized, Dash is a payments-focused digital currency that is based on Bitcoin. It is a public blockchain with added privacy functionality in its desktop wallet. Dash is not explicitly optimized for maximum privacy, which would involve technologies requiring substantial compromises to scalability, speed, transaction cost, and user experience. For example, many cryptocurrencies that optimize for maximum privacy utilize technologies that prevent them from being used on mobile devices due to extensive data storage and processing requirements. Rather, Dash balances user needs for many attributes beyond privacy, including speed, reliability, scalability, security, and cost. Dash should not be treated any differently than other networks with similar attributes, regardless of how the media portrays the project.

Dash Market Perceptions



Dash has been stereotyped and labeled within cryptocurrency media as a "privacy centric" currency. This labeling is rooted in the currency's history and initial focus, as PrivateSend was the first feature on which the initial developers focused their improvements. The label as a "privacy centric" currency is now extremely outdated because the project expanded its improvement efforts toward overall usability for the last four years. Today, Dash offers the fastest transaction speed and even greater security than Bitcoin. Dash is also highly focused on the overall user experience, making cryptocurrency more familiar and accessible for mainstream users. The next major release will introduce usernames, contact lists, and data storage capabilities to make transactions easier and more customizable.

Dash was launched in 2014 as "Xcoin" by developer Evan Duffield. One of the first enhancements Duffield pursued was the implementation of CoinJoin into Dash's desktop wallet. CoinJoin is a technique for combining multiple payments from multiple spenders into a single transaction or a series of transactions to make it more difficult for outside parties to determine which spender paid which recipient or recipients. Unlike many other privacy solutions, CoinJoin transactions do not require any modification to the bitcoin protocol. All transactions remain transparent on the blockchain, including all sources of funds used in the transaction, the destination address(es), and the amounts. Therefore, these transactions can easily be identified as such by any observer - including third party observers - and analyzed by compliance software.

Dash's reputation is undoubtedly impacted by the decision of the founding team to capitalize on the differentiation of its PrivateSend feature by rebranding Xcoin to "Darkcoin" in early 2014. As the project continued to grow and introduce new features, such as instant transactions, the Darkcoin branding was hindering adoption because of negative connotations evoked by dark markets. Although the network name was changed to "Dash" in early 2015, the stigma from naming the coin Darkcoin has proved to be persistent, especially with journalists. This history is undoubtedly one of the key reasons Dash continues to be labeled as "privacy centric". However, brand history is no rationale for legal treatment today.

In parallel, Bitcoin and other leading projects have enhanced their own privacy features using approaches that are nearly identical to Dash's PrivateSend implementation, utilizing their own versions of CoinJoin. Note that this is the same technology Dash utilized in 2014 to enhance user privacy. While Dash's implementation of CoinJoin is faster, easier, and less expensive than similar options available through Bitcoin wallets, there are no legally definable differences in the resulting transactions, as we will demonstrate. The main improvements compared to Bitcoin (e.g., ease-of-use, speed, security, and cost) are attributes shared by all Dash transactions compared to Bitcoin, and are in no way attributable to Dash's implementation of CoinJoin.

As noted above, CoinJoin has been implemented in a number of wallets, tools, and protocols within Bitcoin or other Bitcoin-forked projects, including:

Joinmarket	Dark Wallet	CoinJumble	CoinMux
CoinShuffle++	ZeroLink	Samurai Wallet	Wassabi Wallet
CashShuffle (walle	et for Bitcoin Cash)		

Many of these options have been available since 2015, only one year after Dash's PrivateSend became operational. In addition, there are a number of third-party Bitcoin services that charge users a fee for providing coins that have undergone CoinJoin mixing. These options operated even prior to Dash's PrivateSend feature, which was introduced in 2014. Finally, there are a number of similar technologies such as TumbleBit and CoinSwap that offer similar privacy benefits, but are not CoinJoin-based.

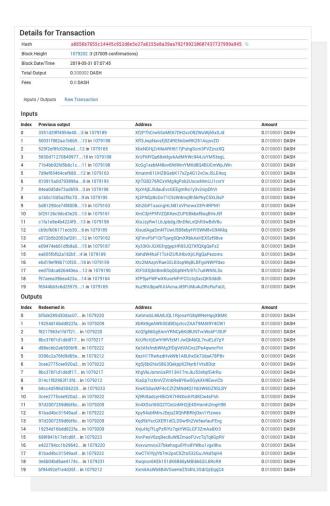
New technologies continue to improve privacy as well. There have been notable improvements in CoinJoin implementations on Bitcoin, such as Chaumin CoinJoin, that prevents the server that is coordinating the transaction between users from seeing which addresses belong to which transaction participant. In this way, even the server coordinating the transaction obtains no identifiable information. In addition, new off-chain transaction methods have been implemented on Bitcoin's network, which include the Lightning Network (LN). Individual LN transactions are not recorded on the Bitcoin blockchain at all, and only the participants to the transactions have any visibility to them. Even within the LN, routing servers (a.k.a., "nodes") have no visibility to the starting and ending points of a transaction.

Despite the advances in sophistication, accessibility, and user experience, the use of privacy tools remains quite low. In fact, CoinJoin transactions currently constitute less than 1% of all transactions on both Bitcoin and Dash, and LN adoption has been slow to develop. Even if usage rates were different, drawing a legal distinction between Bitcoin and Dash is increasingly unjustified given the multitude of similar implementations that now exist in the market. PrivateSend is simply a brand name for the specific CoinJoin implementation found in Dash's desktop wallet.

Identical Transaction Rules

Furthermore, the Bitcoin and Dash transaction rulesets are mutually inclusive. This means that a valid Bitcoin transaction would be valid on the Dash network and vice versa. It also means that an invalid Bitcoin transaction would be invalid on the Dash network and vice versa. Dash addresses and transactions between them are publicly viewable on the Dash blockchain, in the exact same manner that Bitcoin addresses are publicly viewable. In short, the rules that determine a valid user transaction are completely identical. Simply, there is no logical argument for why Dash should be treated any differently than Bitcoin for compliance or regulatory purposes.

In addition, Dash maintains upstream Bitcoin compatibility, as improvements are made to Bitcoin's codebase. The result is that there are no substantial differences between Dash and Bitcoin transactions. In fact, PrivateSend transactions can be performed on Bitcoin's transaction ledger. We do not simply assert this is the case¹ - we provide proof. The following two transactions were conducted on the Dash and Bitcoin networks respectively. They both feature 20 inputs and 20 outputs of 0.0100001 units each. As is plainly apparent, the Bitcoin transaction is not similar... it is *completely identical*.²



Hash	2e9aa4e7c7aa704055a	dc7ce396533164a097515189a30f1e9c8fa73b21dc174	b
Block I	Height 577483 :3 (11439 confirm	ations)	
Block E	Date/Time 2019-05-24 00:40:12		
Total C	Output 0.200002 BTC		
Fees	0.0 BTC		
nput	s / Outputs Raw Transaction		
Index	Previous output	Address	Amount
0	9e282babcc3f7e87:13 in 576482	3DaZAtmn8fJqi9c7DXKbQaqWNz4ur7cF2U	0.0100001 BTC
1	35e9162025fae810:1 in 576482	3NSPG9RESDi9EZ9QVvN3exJDJAEVWjYHns	0.0100001 BTC
2	97e298f41b158f36:3 in 576482	39aXKtYo1hAkPbHMD1YYGetgGAUQDmmb7	0.0100001 BTC
3	97e298f41b158f36:2 in 576482	32kJQqt4TLMPPprknH5rj5RHCmJQLt6m3X	0.0100001 BTC
1	97e298f41b158f36:1 in 576482	3An6bhS9fooC7BMkFBPUmSWmSSW6cEL2Fo	0.0100001 BT0
5	9e282babcc3f7e87:4 in 576482	3GVpGywmTaqYvg67C67Zkgs7oeRK9Mw7wo	0.0100001 BT0
5	9e282babcc3f7e87:15 in 576482	3EQxekPMNuPsBxMh9oYSG2t9MY54DkBo4a	0.0100001 BT0
7	9e282babcc3f7e87:8 in 576482	3PiS5UC1AmMJ2vKFoxcUhDMBNCak5DgRqs	0.0100001 BT0
В	97e298f41b158f36:6 in 576482	3DXYqtHJVAHZTiNua7RGpxWsMffA2xYrAY	0.0100001 BTC
9	9e282babcc3f7e87:10 in 576482	3LrSbToKr6Bsqv9tUdTKjtNuLFHuVj9Km6	0.0100001 BT0
10	35e9162025fae810:9 in 576482	34awUoUyMydiqHodCm1QJwFnmUYm7oZz8N	0.0100001 BT0
11	97e298f41b158f36:0 in 576482	32HEVaRFnwqK2ti4efVeHm7fRxLAo4R7tL	0.0100001 BT0
12	97e298f41b158f36:7 in 576482	31hR6Fiv3hnaE6Sa3vpMkWTX9v7KiQVTEj	0.0100001 BT0
13	9e282babcc3f7e87:14 in 576482	3CbYZuzUH36CkDEGQ9MQkjXRGJzb85hZwM	0.0100001 BT0
14	9e282babcc3f7e87:7 in 576482	3KnLTKSWKrCtGXb3AQoHrvADPWPp3JDv2m	0.0100001 BT0
15	9e282babcc3f7e87:11 in 576482	3N898ukac4X7ZsbEcs66qY85taok485D7c	0.0100001 BT0
16	9e282babcc3f7e87:2 in 576482	3FVW3xfEddr884fxc9xLLfZaiCGDtVmyCT	0.0100001 BT0
17	35e9162025fae810:5 in 576482	3Dxa32wRKsTrbJtWqE9ZWm4NtXSGvK5nbA	0.0100001 BT0
18	9e282babcc3f7e87:9 in 576482	3BqJ9Rju7vcghpdoKrRaVZgbpCG1gQBao2	0.0100001 BT0
19	35e9162025fae810:11 in 576482	3K1muFQWKYTavVKKnSp9zj7d6x4jATNfTB	0.0100001 BT0
Outpu	uts		
ndex	Redeemed in	Address	Amount
)	22263b2d509f3faf in 578751	3H2Lng4izNJ1wsafJPkPDASGJKKeRSMw2y	0.0100001 BT0
	22263b2d509f3faf in 578751	31z8iSCXk4NEQcfqEKaccsgzVLBupzavXG	0.0100001 BT0
2	87130c1004a9d74e in 578751	3FNzoDfriuAyrvkMenhDKSTBBeSGcJNNqn	0.0100001 BTC
3	22263b2d509f3faf in 578751	3NfNNZUNq98UMBVprV3rnkvJht98CcphK6	0.0100001 BT0
4	22263b2d509f3faf in 578751	3MRaC4TAz8X4gC5bgVrWemWr5EFYJcoi9S	0.0100001 BT0
5	87130c1004a9d74e in 578751	3LvXx9f4YQrGB28Tzb29PgLLNXyDpNuR3L	0.0100001 BT0
5	22263b2d509f3faf in 578751	37JzqDdadhyUsZdDpC9e8rpq7LcPTA6P75	0.0100001 BT0
7	22263b2d509f3faf in 578751	3JSUFmxu9sz5iszwZsgwFcNcXcGMNWsuBf	0.0100001 BT0
В	22263b2d509f3faf in 578751	3HvSZhxSnJvfLH8pWYiohRdCx8wfUn6j67	0.0100001 BT0
9	87130c1004a9d74e in 578751	3Ai2rE8Hzv8qb2TKdRiBceTWuRyQ3gQ2vN	0.0100001 BT0
10	87130c1004a9d74e in 578751	3L4ctwaoJCzcNDjUZ5hZYDdKNg2xG4wVuD	0.0100001 BT0
11	22263b2d509f3faf in 578751	3JCZFu2wuiBjrhcxk8Yyutraawrb935MeC	0.0100001 BT0
2	22263b2d509f3faf in 578751	35mRoaNqYU8L46ZXNV6YXNuiowuTYvAqXt	0.0100001 BT0
13	87130c1004a9d74e in 578751	3FboJM7m7BVWvibvDeSfPXdKgaf3kYefhZ	0.0100001 BT0
4	87130c1004a9d74e in 578751	3QmUmwXGiaTcSiWGjQLcUJs99pJrnqqvvA	0.0100001 BT0
15	22263b2d509f3faf in 578751	3MWaXiwzWzDEZSo7LJkg4WVFQirvFzFCmi	0.0100001 BT0
16	87130c1004a9d74e in 578751	3E3DtmgKdSiFMXRFdLY2D3esQMsNfdmDej	0.0100001 BT0
	87130c1004a9d74e in 578751	3PSCb7wyudQ9S7TytbH9ZWPadsbumkrTRQ	0.0100001 BT0
17			
17	22263b2d509f3faf in 578751	35LDgFq36KkX7ZkHt7ZGuNGG1k4XbWr8H4	0.0100001 BT0

^{1.} Technically, there are some minor differences that would not differentiate Dash and Bitcoin from a legal perspective. For example, Dash introduced "special transactions" that are non-economic in nature (e.g., for storing data on the blockchain). This transaction type is not supported within the Bitcoin network. Also, Bitcoin introduced "segregated witness" which removes a portion of the transaction data to reduce the amount of data a transaction requires. However, none of these minor differences change the fundamental format of the currency transactions. Both networks list the input addresses, output addresses, and amounts, and reveal this information publicly on both networks.

Why Privacy Is Important?

Privacy is required for effective business operations and is a standard requirement in the world of finance. If cryptocurrencies are going to be adopted by mainstream users and businesses, privacy tools are needed to protect confidential information (e.g., how much you pay employees, what you charge others for services, what political parties you support). There are many legitimate reasons for users to require privacy, especially given that public blockchains are much less anonymous than physical cash or even bank accounts, which are only visible by a reduced number of parties.

In particular, user security is critically important with regard to cryptocurrency. There are numerous examples of physical assault, kidnapping, ransom, hacking, and other illegal acts against large holders of Bitcoin and other cryptocurrencies. And it isn't just hardened criminals that have stolen funds. It is far more common for family, friends, roommates, or other acquaintances with access to the victim's devices to steal funds from users. Dash's PrivateSend helps protect users from having their transactions or balances readily accessible on the blockchain for criminals to identify attractive targets, or roommates to be tempted to steal after identifying the user's address (and balances). Therefore, privacy features are critically important for user safety.

Privacy is also a feature that is necessary to meet expectations created by privacy regulations like General Data Protection Regulation (GDPR) in the European Union or the The California Consumer Privacy Act. Regulations around the world such as these seek to balance public protection for their privacy and safety with the need to also prevent the use of cryptocurrency for illicit purposes. Dash's PrivateSend feature arms users with an option to improve their privacy profile, despite the public nature of the blockchain.

Compliance Considerations



Exchanges and other access points to traditional financial entities are required to meet stringent compliance requirements similar to rules applicable to cash deposits and withdrawals. Compliant exchanges are required to maintain a set of policies and procedures to risk score transactions, identify the users, and report suspicious activities. Because of their nature, compliance requirements for Dash transactions are identical to Bitcoin transactions. Exchanges or other money services businesses seeking to integrate Dash likely only need to replicate their policies and processes already utilized for Bitcoin.

Many exchanges rely on third-party providers to support their compliance programs, rather than develop their own technology. These services are available to support both Bitcoin and Dash. BlockchainIntel and Coinfirm are both KYC / AML service providers that offer services covering both Bitcoin and Dash blockchains.

There are no differences between Bitcoin and Dash from a compliance perspective. The mechanisms and protections that are currently utilized in the Bitcoin ecosystem for money laundering prevention are equally applicable to Dash. PrivateSend transactions can be readily distinguished as such on the blockchain (just as with Bitcoin CoinJoin transactions), and all transactions can be risk scored based on behavioral patterns, proximity to problematic addresses, value, or other criteria defined by the exchange.

Conclusion

Despite the frequent categorization of Dash as a "privacy centric" cryptocurrency by the press and industry commentators, it is important for regulators and exchanges to understand that Dash is legally and technically identical to Bitcoin. There is simply no legal basis for treating Dash any differently than Bitcoin for compliance or regulatory purposes. In fact, it would be unfair, anti-competitive, and potentially illegal for regulators to single out Dash from a compliance standpoint since the two transaction rulesets and formats are identical. Laws should be written in a way that sets rules based on a digital asset's attributes and technology, not by attempting to name individual blockchains — whose technology evolves over time — based purely on reputation, branding, or perception.

Dash Core Group remains committed to user privacy and has continued to make enhancements to PrivateSend that have significantly increased the speed of this feature. In addition, recent advancements in our technologies (LLMQs) make it feasible to add PrivateSend to mobile wallets, which we plan to do. As advancements in privacy continue, we will evaluate new technologies through the lens of the overall user experience, because we believe privacy should not come at the expense of other important capabilities of a payment network. The Dash project has been a pioneer in pursuing new technologies aimed at delivering user and merchant value and will continue to do so.

Any exchanges, money services businesses, legislative bodies, or enforcement agencies seeking additional information on the regulatory treatment of Dash can obtain support through Dash Core Group, one of many entities that serve the needs of the Dash network. Dash Core Group is a Delaware corporation headquartered in Scottsdale, Arizona, USA. Dash Core Group is 100% owned by the Dash DAO Irrevocable Trust for the benefit of Dash users. Dash Core Group proactively engages with regulators such as the SEC, Japan Financial Services Agency, EU Commission, and EU Parliament on behalf of the network.



Dash Core Group can be reached at support@dash.org

© 2019 Dash www.dash.org