InstantSend Resources

InstantSend is a feature provided by the Dash network that allows for 0-confirmation transactions to be safely accepted by Merchants and other service providers. Secured by the Masternode Network, this mechanism eliminates the risk of a "Double Spend" by locking transaction inputs for a given transaction at a protocol level.

InstantSend Transactions vs. Standard Transactions

From an integration perspective there are only minor differences between an InstantSend Transaction and a Standard Transaction. Both transaction types are formed in the same way and are signed using the same process; the key difference is the fee structure and input requirements for InstantSend.

1. Fee Structure: InstantSend utilizes a "per-input" fee of 0.0001 DASH per Input.

2. Input Requirements: All inputs for an InstantSend transaction must have at least 6 confirmations.

In the event that a given transaction does not meet both criteria it will revert to a standard transaction.

Receiving InstantSend Transactions

InstantSend Transactions are handled in the same way as a Standard Transaction, typically through JSON-RPC, Insight API, or an internal notification script / service that is configured at a server level.

1. JSON-RPC: The following RPC commands will include InstantSend-related information. Within the response you'll find an "InstantLock" field the status of a given Transaction. This true/false (boolean) value will indicate whether an InstantSend has been observed.

    a. GetTransaction: https://dash-docs.github.io/en/developer-reference#gettransaction

    b. ListTransactions: https://dash-docs.github.io/en/developer-reference#listtransactions

    c. ListSinceBlock: https://dash-docs.github.io/en/developer-reference#listsinceblock

2. Insight API: Insight API can be used to detect InstantSend transactions and to push notifications to clients using WebSockets. The API can also be manually polled to retrieve Transaction information including InstantSend status.

    a. Web Socket: https://github.com/dashpay/insight-api-dash#web-socket-api

    b. Transaction API: https://github.com/dashpay/insight-api-dash#instantsend-transactions

3. Script Notify: The Dash Core Daemon can be configured to execute an external script whenever an InstantSend transaction relating to that wallet is observed. This is configured by adding the following line to the dash.conf file:

    instantsendnotify=/path/to/concurrent/safe/handler %s

    Note that only addresses imported to the wallet will be monitored for InstantSend Transactions.

Broadcasting InstantSend Transactions

InstantSend Transactions can be constructed and broadcast using an approach similar to Standard Transactions. Provided the InstantSend Fee Structure and Input Requirements are met, an InstantSend can be broadcast using JSON-RPC or Insight API as a Raw Transaction.

1. JSON-RPC: The "SendRawTransaction" RPC command can be utilized to broadcast a raw transaction using InstantSend. When utilizing this command be sure to set both optional parameters as "true"

   sendrawtransaction "hexstring" (allowhighfees instantsend)
   sendrawtransaction "hexstring" true true

   More Information: https://dash-docs.github.io/en/developer-reference#sendrawtransaction

2. Insight API: Raw Transactions can also be broadcast as an InstantSend using Insight API. In this case all that is required is to POST the raw transaction using the /tx/sendix route.

   More Information: https://github.com/dashevo/insight-api#instantsend-transaction

Additional Resources:

The following resources provide additional information about InstantSend and are intended to help provide a more complete understanding of the underlying technologies.

1. InstantSend Whitepaper
   https://dashpay.atlassian.net/wiki/download/attachments/75530298/Dash%20Whitepaper%20-%20InstantTX.pdf

2. How Dash "InstantSend" Protect Merchants from Double Spends
   https://www.youtube.com/watch?v=HJx82On8jig

3. InstantSend Presentation from the Dash Conference London 2017
   https://www.youtube.com/watch?v=n4PELomRiFY