

The custody transfer mechanism in BP serves two purposes.

First, it provides a means of ensuring bundle delivery at the destination node. When the custodian of a bundle forwards that bundle it SHOULD set a retransmission timer; upon expiration of that timer, absent reception of a responding custody acceptance or refusal signal from a downstream node, the custodian MUST re-forward the bundle. Computation of the timeout interval for a bundle's custodial retransmission timer (i.e., determination of the moment at which a responding custody signal is expected) is an implementation matter and may be dynamically responsive to changes in connectivity. In some environments it may be impossible to compute this interval with operationally satisfactory accuracy; in such environments the use of custody transfer to ensure bundle delivery at the destination node is contraindicated.

Second, it provides a means of optimizing recovery from forwarding failures. When a bundle for which custody has been taken arrives at a node from which it must be forwarded, but forwarding is impossible, the receiving node SHOULD send a custody refusal signal to the current custodian node, causing the custodian to re-forward the bundle on a different path.

Alternatively, when custody transfer for a given bundle is not requested:

- Delivery of the bundle at the destination node can be ensured by utilizing reliable convergence-layer protocols between neighbors on all segments of the end-to-end path. This approach may make more efficient use of links than custody transfer because a convergence-layer protocol may perform finer-grained retransmission than custody transfer does, retransmitting only the specific portions of a transmitted bundle that were not received, rather than the entire bundle. However, in some environments there may be segments of the end-to-end path for which no reliable convergence-layer protocol is available; in such environments the use of reliable convergence-layer protocols wherever possible can minimize the incidence of data loss but bundle delivery at the destination node cannot be ensured.
- Recovery from a forwarding failure can be accomplished by "returning" the bundle back toward some node for forwarding along some other path in the network.