

IEEE P802.1EJ

Backward Notification

Don't tell me what to do, just tell me what's happening

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AGENDA

- Why Backward Notification (BN)
- What - taxonomy
- How - BN lifecycle
- Scope - IEEE P802.1EJ
- Join

Need Faster Feedback!



Transient workload

Transient hotspots.
Faster feedback eases buffer pressure
and reduces the chance of packet loss.



Long-RTT links

Fabrics scale, especially 'scale-across'.
BN cuts feedback to sub-RTT, where the
gain is significant.

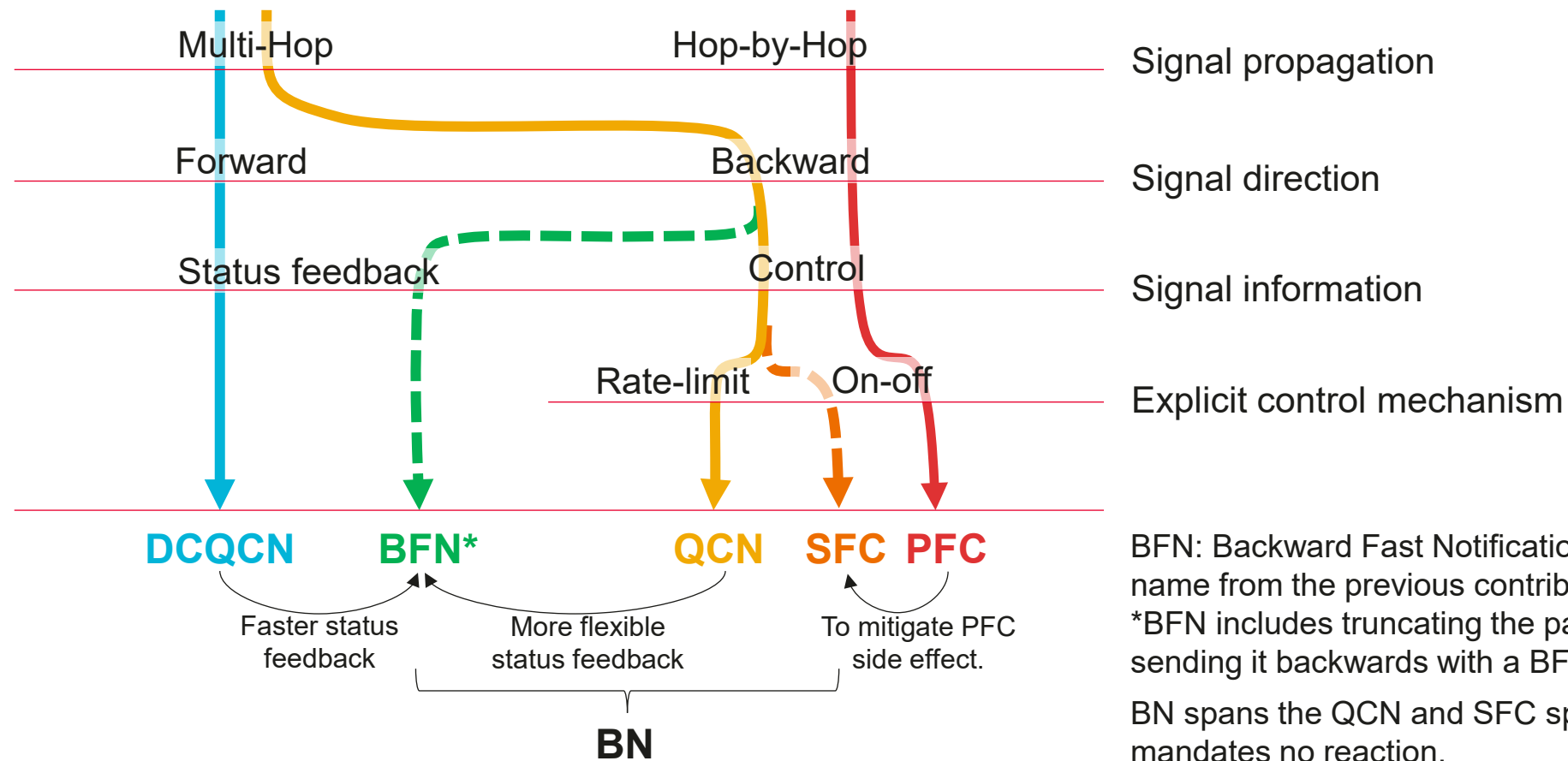


Path failures

Forward path unavailable.
Without BN, the sender waits for an RTO.

- **More than speed:** BN carries richer information that's extensible over time, allowing the endpoint to use freely.
- **Already in silicon:** Multiple vendors ship proprietary backward signaling today. What's missing is an end-network interoperable mechanism to hand those signals to the layers above.

Taxonomy - where BN sits



BFN: Backward Fast Notification - A temporary name from the previous contribution.

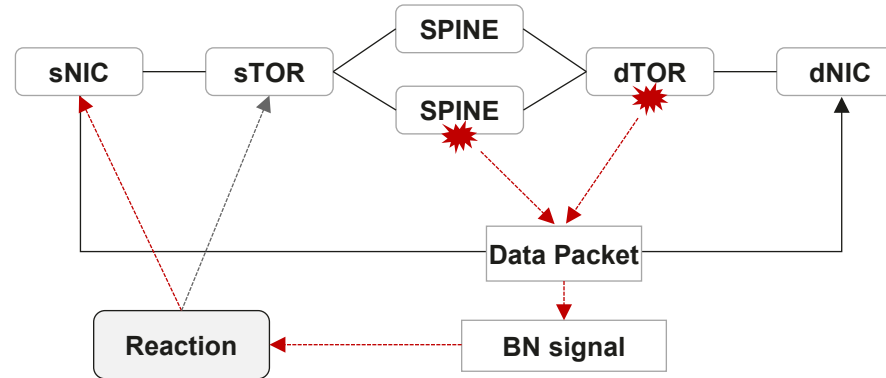
*BFN includes truncating the packet and sending it backwards with a BFN header.

BN spans the QCN and SFC space but mandates no reaction.

The BN lifecycle

4 Expose

Notifications are exposed to entities above the data link layer (UEC PCM, RoCE CC, load balancing, etc.) through a service interface.



1 Trigger

Any bridge that detects a qualified condition — queue/buffer threshold, delay, ECN, drop, trim, link failure. Throttling mechanism.

3 Forward

Destination is derived from the original data packet's source address. No additional path state required.

2 Signals

Carries signal type and value (network conditions). Additionally, truncated original packet, location, timestamp, etc.

One mechanism for multiple use cases.

Scope of IEEE P802.1EJ Backward Notification

- This standard specifies procedures, protocols, and managed objects for **backward notification to signal data center network conditions toward the source end station**... The notification mechanism conveys information for congestion management, path rebalancing, and failure recovery. This standard specifies **how notifications are triggered and constructed, and a service interface for exposing the information to entities above the data link layer**. This standard supports managed objects and a YANG data model for backward notification.
- Out of scope: CC algorithms, application layer use of BN information, mandated reaction behavior.

Welcome to join!

- Broad industry backing
 - Huawei, Cisco, AMD, China Mobile
- Bring you use case
- Come build it with us in IEEE 802.1
 - <https://1.ieee802.org/>

Project timeline

- **March 2026**
802.1 authorizes TSN TG to generate PAR & CSD for BN for pre-circulation to LMSC.
- **May 2026**
Finish drafting the PAR & CSD.
- **Jul 2026 ◀ now**
Responding to comments and submitting the PAR.
- **After**
(Subject to PAR approval,) start drafting the standard.

**IEEE
802**

