Revisiting DTN Architecture RFC 4838 bis

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RFC 4838

- Published in April 2007.
- Authors: Vint Cerf, Scott Burleigh, Bob Durst, Kevin Fall, Keith Scott, Leigh Torgerson, Howie Weiss
- Contents:
  - Why an Architecture for Delay-Tolerant Networking?
  - DTN Architectural Description
  - State Management Considerations
  - Application and Structuring Issues
  - Convergence Layer Considerations for Use of Underlying Protocols
  - Security and IANA Considerations

Motivation for 4838bis

- Publication on an IETF engineering stream
  - Original RFC 4838 published within IRTF, but the architecture is now mature enough to be published within IETF.
- Incorporation of lessons learned
  - We now have 18 years of experience with the DTN architecture and understand a few things more fully.
  - Protocols proposed in 2007 have now been implemented and exercised.
- Also an opportunity to formally recognize the contributions of Adrian Hooke.

draft-cerf-dtn-4838bis-00

- General plan:
  - Mainly remove concepts that have been overtaken by events.
  - Borrow some document structure from RFC 8655.
- Drafted in Markdown, taking advantage of modern I-D publication procedures.
- Publication date: 7 July 2025
- Download link: https://datatracker.ietf.org/doc/draft-cerf-dtn-4838bis/

Revisions and reorganization (1 of 2)

- Longer introduction
  - Notes on motivation for the architecture moved from section 2 to section 1.
  - Introduction of Bundle Protocol.
  - Remarks on “flattening” the stack: adding capabilities as protocol extensions rather than additional protocol layers.
- Detailed section on terminology
- Description of the service provided by the DTN Overlay
  - Explanation of Custody Transfer **concept**, not the RFC5050 mechanism.
  - Discussion of various priority strategies.
  - Postal-style delivery options.

Revisions and reorganization (2 of 2)

- Architectural concepts
  - Fragmentation/reassembly <u>omitted</u>
  - Lengthy discussion of custody transfer mechanism <u>omitted</u>

Status

- Draft version -00 expires 8 January 2026.
- Comments welcome!