

THE PPSP PEER PROTOCOL (PPSPP)

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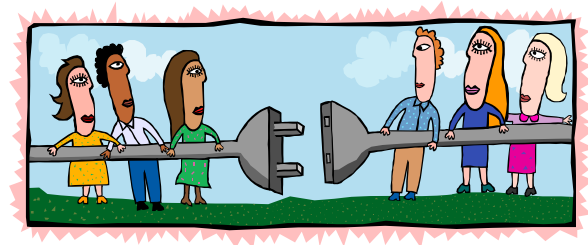
OVERVIEW

- Updates since IETF 85:
- -05:
 - Filled in **IANA Considerations** Section.
- -06:
 - Added **Operations and Management** Section at chairs' request.
- -07:
 - Received **AD Review**
 - Processed most major points, -08 planned



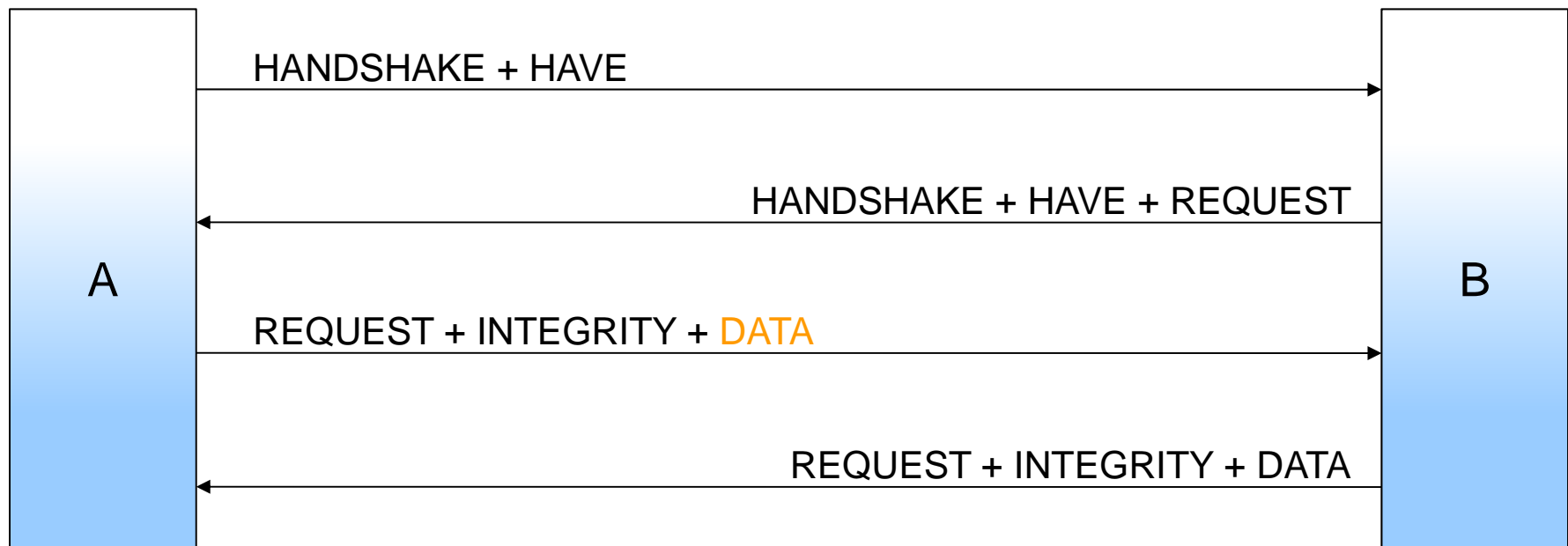
REFRESH: PPSPP MESSAGES

- Basic unit of communication: **Message**
 - HANDSHAKE
 - HAVE: convey chunk availability
 - REQUEST: request chunks
 - DATA: actual chunk
 - INTEGRITY: hashes to enable integrity verification
 - ...
- Messages are **multiplexed** together when sent over the wire.



EXAMPLE PPSPP ON THE WIRE

- Peer A and B both have some chunks:



- Note: **low latency**, data transfer already in 3rd datagram.

-05 CHANGES

- All protocol constants put in tables.
- Section 11: **IANA Considerations** updated.
- Registry requested for each table.



Internet Assigned Numbers Authority

-06 CHANGES

- Section 12: **Manageability Considerations** added, following checklist in [RFC5706].
- Subsection **Operations**:
 - Installation and Initial Setup
 - Requirements on Other Protocols/Components
 - Migration Path
 - Impact on Network Operations
 - Verifying Correct Operation
 - Configuration



-06 CHANGES (CONT'D)

- Subsection **Management**:
 - Management Interoperability and Information
 - Fault Management
 - Configuration Management
 - Accounting Management
 - Performance Management
 - Security Management



-07 CHANGES

- Addressed High-level issues from AD Review:
 1. **Merkle Hash Trees mandatory?**
 - Yes, required for content integrity protection
 2. **LEDBAT as congestion control**
 - Propose DOWNREF procedure
 - Protocol is mature and in widespread use (BitTorrent μ TP)
 3. **No formal protocol message definition**
 - Will be added
 4. **Implicit use of default values**
 - Removed, 1 KiB chunk size recommendation
 5. **Concept of channels**
 - Introduced in Section 3

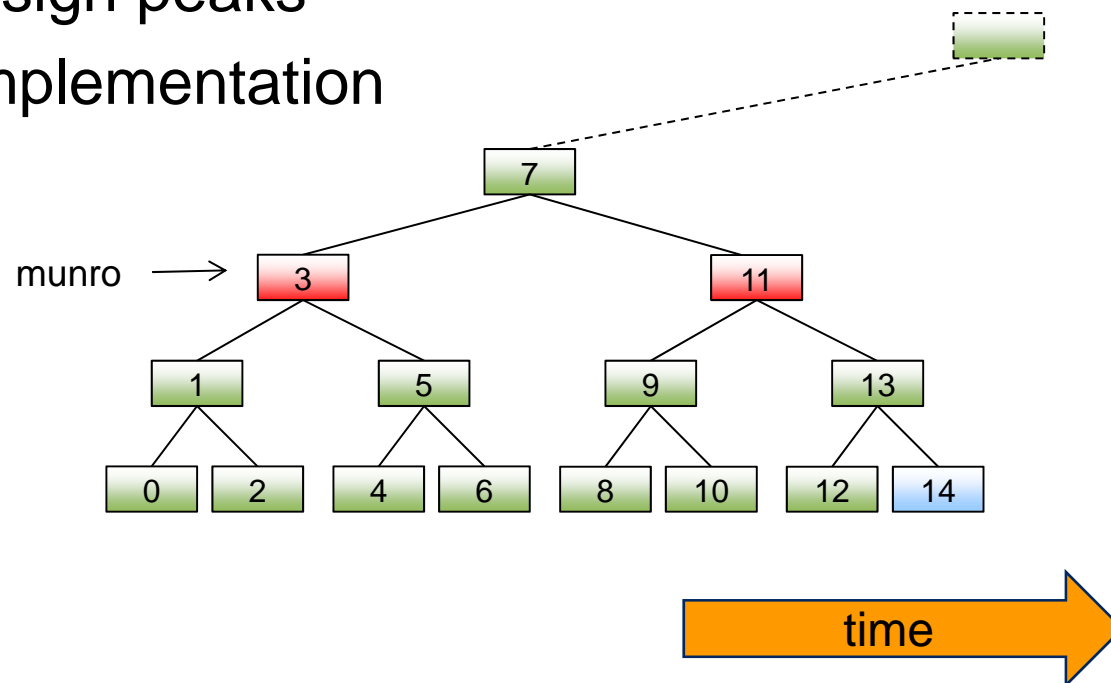
-7 CHANGED (CONT'D)

- Addressed most Technicals.
- Addressed most Editorials.
- Simplified integrity protection for live streaming.
- See [Revision History](#) at end of draft.



LIVE INTEGRITY PROTECTION

- Source generates chunks: 0, 2, 4, 6
- Source signs top of hash subtree covering N chunks:
 - Munro
- Previous: sign peaks
- Simpler implementation



FUTURE

- Finish processing AD comments.
- Discuss with AD if resolved.

