

DTN Reference Implementation Update

Michael Demmer

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Outline

- Status
- Deployments
- Future Directions

Implementation Status

- 55,431 Source Lines of code
 - (reported by David Wheeler's SLOCcount)
- Up to date with the Bundle Spec v4
- Tested on Linux (x86 and ARM), Mac OS X (PPC), Windows / Cygwin
- Active development / user community
 - 100 subscribers to dtn-users mailing list

2.2.0 Release (coming soon)

- Updates to match the bundle spec, including the dtn: scheme, SDNV implementation, status reports, bundle format changes, etc.
- Custody Transfer implementation
- File based storage system
- TCA implementation from Waterloo
- Initial Bluetooth convergence layer support
- Minor updates, stability improvements, scalability, bug fixes, etc

DTN/TierStore in Cambodia

- TIER (Technology and Infrastructure for Emerging Regions) project
 - Partner with Asia Foundation funded Cambodian Information Centers
- Distributed storage system (TierStore)
 - Filesystem-like storage replicated over DTN
- Disconnected web cache (wwwoffle)
 - Plans to extend to email

DTN based data collection

- TIER summer projects
 - Survey collection in Rwanda
 - Fair trade coffee tracking in Brazil
- System architecture:
 - Cell phone for data input
 - DTN transport when connectivity is available (or via sneakernet)
 - Database backend in data center

Future Directions

- Input Links / Last Hop header
 - Identify where a bundle came from
- Bidirectional TCP Convergence Layer
 - Better support for opportunistic contacts, NAT busting, more efficient bundle flow
 - Abstract code for any connection-oriented transport (e.g. Bluetooth, SCTP)
- Integrate security implementation
- File based convergence layer

Future Directions (2)

- Enhanced route matching hooks
 - Select route based on input link, priority of bundle, source eid, etc
- Policy hooks for routing (Waterloo?)
- Prophet implementation (Jeff Wilson?)