Standardizing Reliable Multicast

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RM is not TCP

- **One Size Doesn't Fit All**
  - No one protocol can satisfy all the requirements.

- **How should the IETF go about standardizing RM?**

One Size Doesn't Fit All

- **Does your application:**
  - Need to know that everyone got the data?
  - Need to constrain differences between receivers?
  - Need to scale to large numbers of receivers?
  - Need to be totally reliable?
  - Need many interacting senders?
  - Need to work in the public Internet?
  - Need to work without a return path (eg satellite)?

- **The answers to these questions constrain the design space.**

One Size Doesn't Fit All

- **RM protocols can perform better with network support.**
- **In some cases (high value applications) the cost benefit tradeoff of adding network support may be worthwhile.**
- **In other cases the cost is too high.**

We Don't Know It All (Yet)

- **Lots of aspects of RM are still research.**
- **There's a forum for RM research:**
  - The IRTF Reliable Multicast Research Group.
  - http://www.east.isi.edu/rm
- **Also an IRTF Secure Multicast Research Group.**
- **When things are well enough understood, they move from the IRTF to the IETF for standardization.**
  - The IETF should not do research in WGs.

We Don't Know It All (Yet)

- **It's important to standardize to allow interoperability.**

- **It's important to standardize:**
  - early enough that proprietary solutions don't become poor de-facto standards.
  - late enough to allow the best technology to be in the standard.
  - late enough that we're solving the real problems.

- **When, how and what should we standardize RM?**

When should we standardize RM?

- **We should start as soon as we have protocols demonstrated to be safe to deploy in the public Internet.**
  - Congestion Control
  - Security
- **We should recognize that the solutions required by many applications are still research.**
  - We MUST NOT close the door to future enhancements and approaches.
- **Getting the balance right is hard.**

How should we standardize RM?

- **One IETF WG for RM standardization?**
  - + Good communication
  - + Hopefully better reuse
  - - A lot of work for one group?
- **One IETF WG per "whole protocol"?**
  - + WG can concentrate on a specific solution
  - - Many groups won't talk to each other
  - - More closed solutions are likely
- **Hybrids are also possible.**
- **This BOF needs to lead to a decision on this.**

What should we standardize?

- **The IETF should be standardizing protocols designed to work in the public Internet.**
- **If a solution can be tuned to work better in an Intranet, that's OK.**
- **We should not focus effort on solutions aimed purely at Intranets.**

What should we standardize?

- **Whole protocols?**
  - SRM
  - RMTP-II
  - PGM
  - RMDP/RLC
  - Digital Fountain
  - MFTP
- **Building blocks and profiles?**
  - Standardize common building blocks and abstract APIs.
    - FEC, NACK/ACK formats, Data naming, Security, etc
  - Standardize profiles using these to form complete protocols.
- **This BOF needs to lead to a decision either way.**