

THIRD-PARTY MEDIATED PROTOCOLS

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SOME PROBLEMS RAISED BY GLOBAL NETWORKS

- **There will be many nodes, N^2 will be a big number.**
- **It will be impossible to maintain all nodes at the same version level.**
- **Accurate (and supportable) accounting will be necessary for billing.**
- **Management will be divided among competing, and potentially mistrustful, administrations.**
- **Legal requirements will dictate some routing and privacy decisions, possibly based on the nature of the information to be exchanged.**
- **Distributed directories will be necessary.**

WHAT ARE THIRD-PARTY MEDIATED PROTOCOLS?

- **Nodes exist in a hierarchical structure (of at least two, possibly more, levels.)**
- **End-nodes do not directly establish contact with one-another.**
- **Session establishment is accomplished through the agency of an intermediate entity (a "matchmaker".)**
- **The intermediate entity arranges for a partner best matching the needs and capabilities of the initiating node.**
- **After establishment, the session may be:**
 - **peer-to-peer**
 - **peer-relay-...-relay-peer**
 - **peer type A - translator - peer type B**
- **Third-party protocols may be most useful at application levels, possibly at transport, probably not at lower levels.**

AN EXAMPLE

WHY THIRD-PARTY PROTOCOLS MIGHT BE USEFUL

- **May reduce the complexity of end-nodes.**
- **Reduces the number of nodes which need to exchange routing, directory, and other control information.**
- **May allow limited co-existence of inconsistent protocol sets.**
- **Minimizes the ability of rogue or obsolete end-nodes from disrupting other nodes.**
- **Provides a known focus for management and accounting.**
- **Management and control can be partitioned according to political needs.**

WHY THIRD-PARTY PROTOCOLS MIGHT BE A BAD IDEA

- **End-node to intermediate-node protocols may themselves be more burdensome and complex than true end-to-end protocols.**
- **Net flexibility is reduced, especially when the intermediate nodes become institutionalized.**
- **Session establishment may be slow or even impossible when the intermediate nodes fail or become saturated.**
- **Innovation may become difficult.**

HOW MIGHT ONE DESIGN A REASONABLE THIRD PARTY PROTOCOL SYSTEM?

- **Damn'd if I know.**
- **Isn't that what we're here for?**