Trunking: The Case for In-Band Protocols

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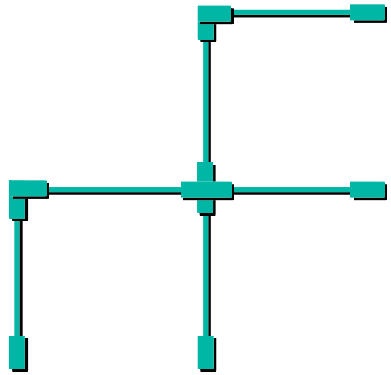
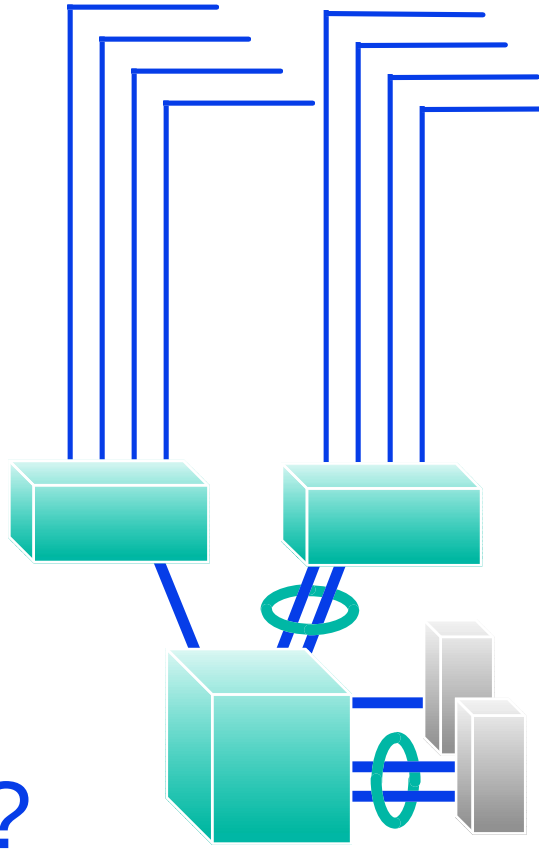
November, 1997



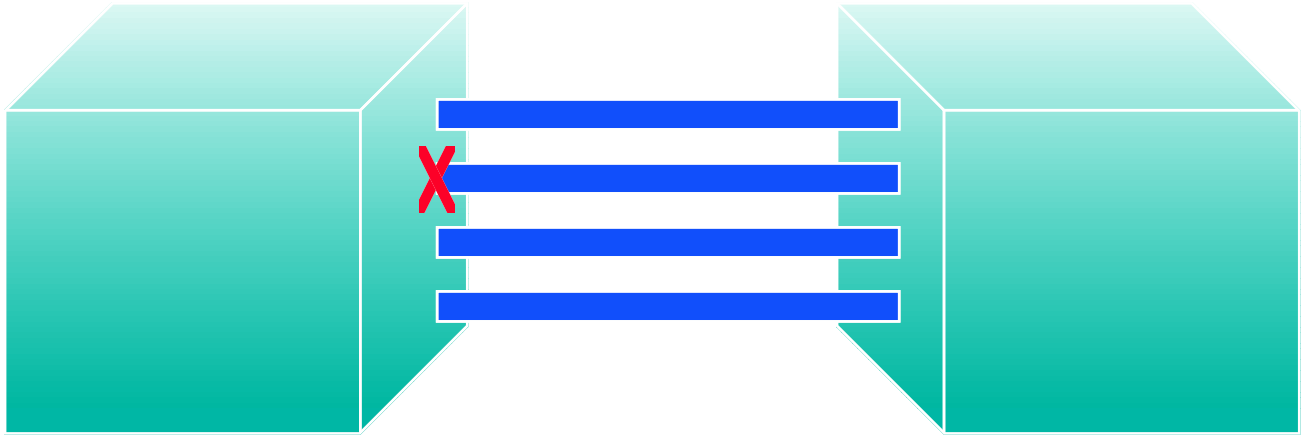
Trunking:
Completing the Migration Story

- Natural extension of existing standards
- Offers many benefits to users
  - Incremental bandwidth
  - Simple migration strategy
  - Low cost
  - Low complexity
  - Extends life of older equipment



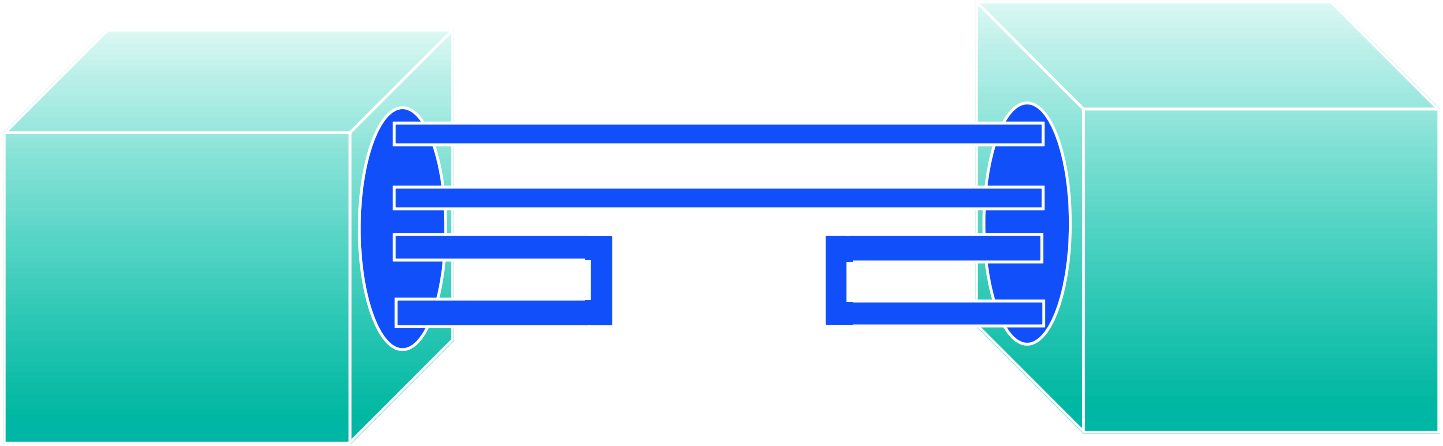
But what else can we expect?

Issue:
Link-Down Detection Failures



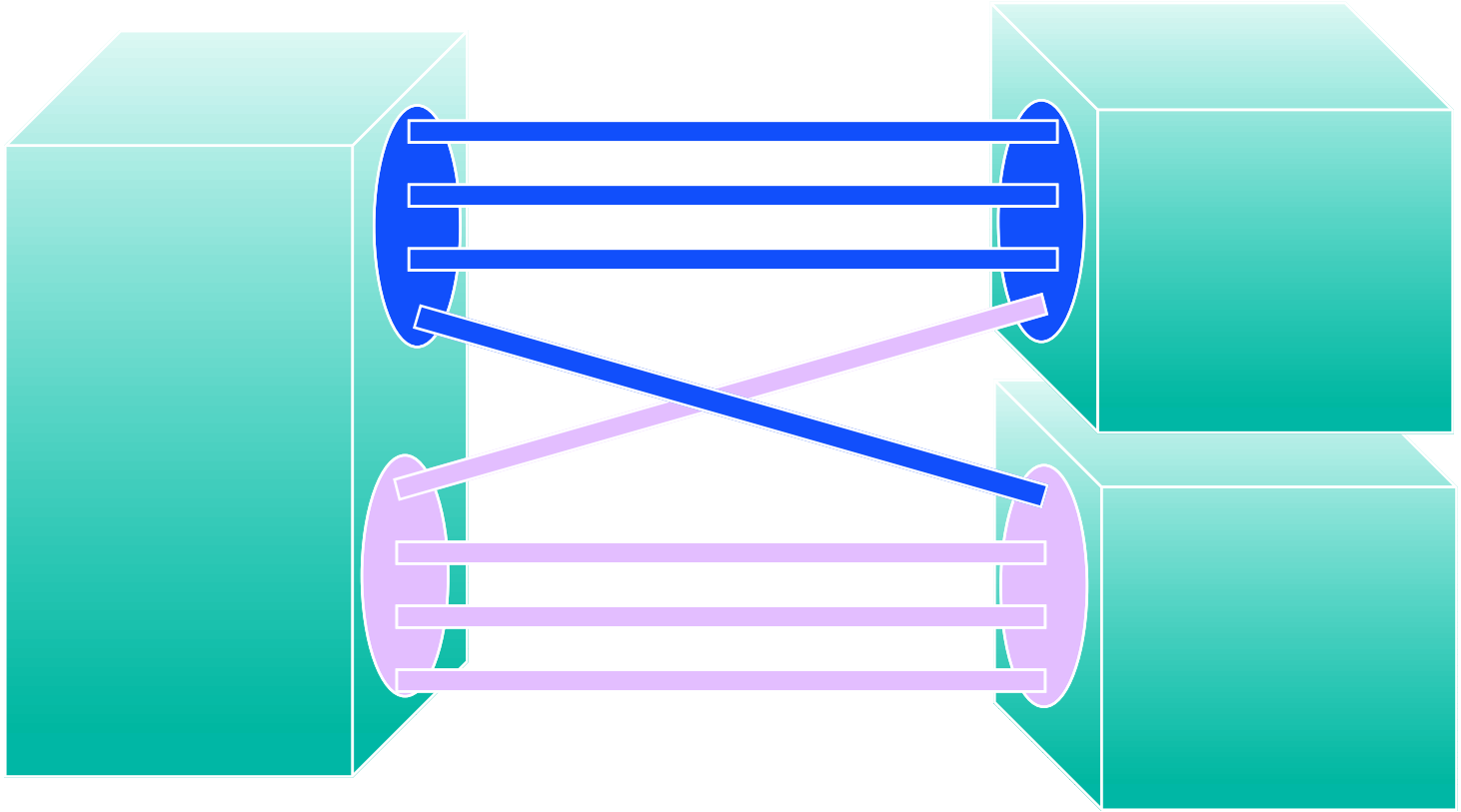
- Link status alone does **not** guarantee detection of link outages
- Stuck transmitter prevents effective use of single link
- **Result:** Some conversations **disappear**
- **Diagnosability: Difficult**

Issue:
Loopback Link Config Errors



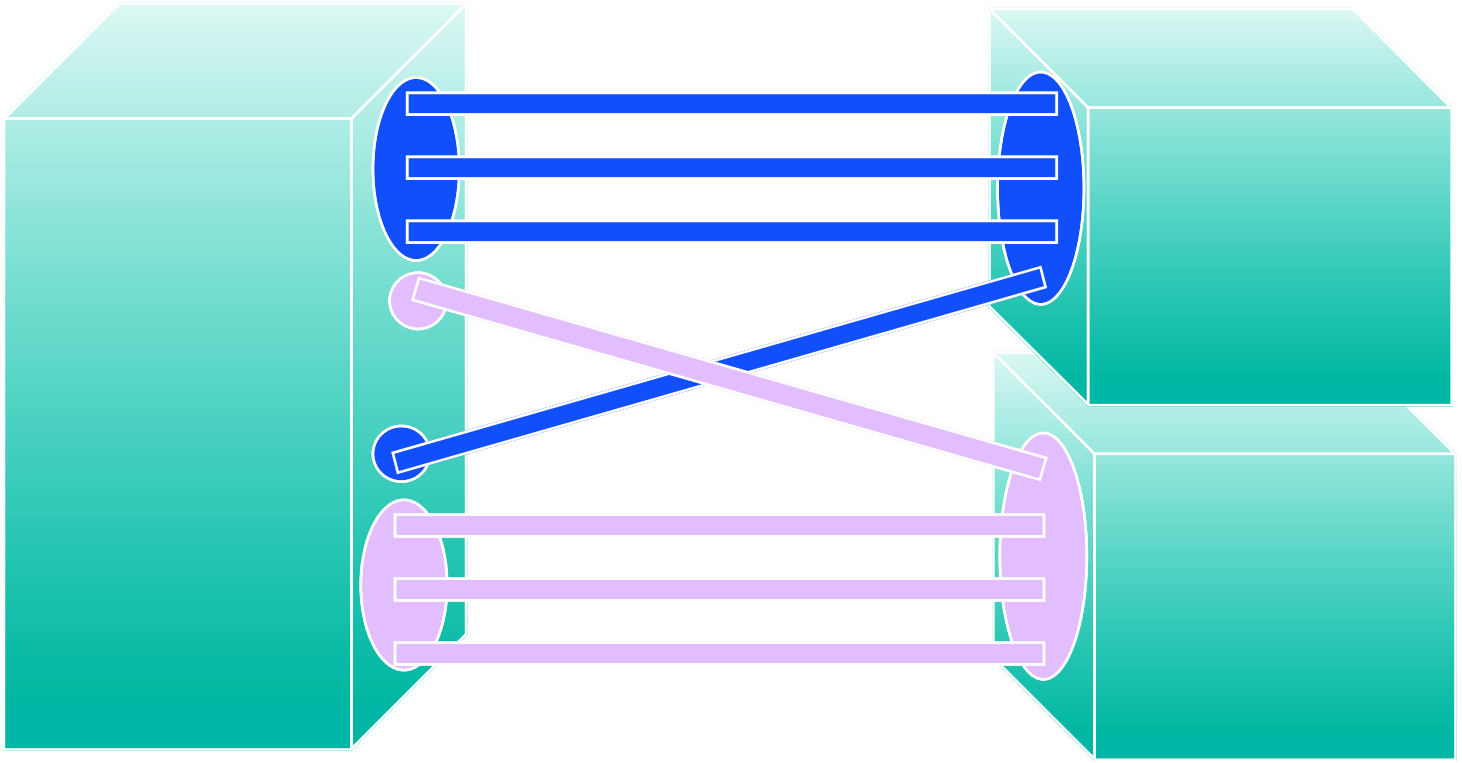
- Loopback links turn trunks back on themselves
- **Result:** Some conversations **disappear**
- **Result**: Excessive flooding
- **Result:** Erroneous & excessive address moves
- **Diagnosability: Very difficult**

Issue:
Split-Trunk Config Errors



- Split trunks caused by crossed wires
- **Result:** Some conversations **disappear**
- **Diagnosability: Very difficult**

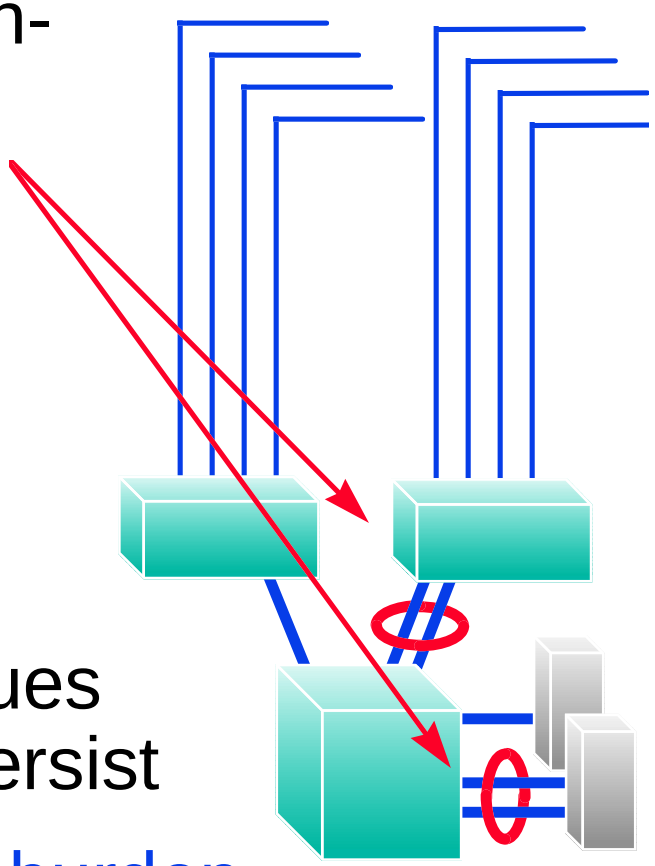
Issue:
Auto-Configuration



- Use protocol exchange to discover potential trunk groupings
- Automatically configure proper trunk groupings based on discovery
- **Result:** optimal use of bandwidth
- **Result:** ease of use

Critical For Any Trunking Standard

- Trunks will be deployed in mission-critical locations
  - Single failure affects many users
- Customers will demand utmost in
  - Reliability
  - Diagnosability
  - Ease-of-use
- Standard must address these issues or interoperability problems will persist



Interoperability issues are a burden to users and vendors!

Trunking Requirement: In-Band Protocols

- Confirmation of proper connectivity of link before using or configuring it
  - More comprehensive link-up & link-down detection
  - Detection & handling of link configuration errors
  - Auto-configuration
- Achievable via simple Hello-Message exchange
- Minimal bandwidth utilization
  - < .01% of 100 Meg Link
- Feasible: Due in Q1’98 product releases