

Link Aggregation: Some Requirements and Considerations

Anil Rijsinghani

Dave Cullerot

Cabletron Systems

4-Feb-98

IEEE 802.3 Trunking Study Group

Requirements

- Support for different “subscribers”: end-station; bridge; router
 - bridge issues: learning; spanning tree; link cost
 - end-station: single MAC address
- Applicable to all 802 LAN technologies
- A single aggregate link consists of multiple links of the same type
- Frame ordering can be preserved across an aggregate link

Requirements

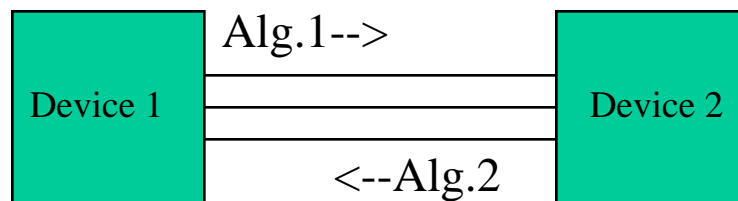
- No change is made to frames during transmission across an aggregate link
- Works with existing high-level applications
- Backward compatible with existing 802.1D bridges
- Uses a well-defined signalling protocol to achieve
 - Negotiation of aggregate link
 - Link failure detection and recovery
 - Protection against simple misconfiguration

Requirements

- Network management methods will provide for:
 - Creation and deletion of aggregate link
 - Addition and removal of interfaces to aggregate link
 - Statistics gathering for aggregate link, as well as its component interfaces

Load Balancing

- Static (eg., port/protocol)
- Pseudo-static (eg. SA/DA; SA; DA; L3)
- Dynamic (eg. Queue depth; load)



Allow inter-working with existing link-aggregation equipment with simple software upgrade.

Signalling protocol compliance is key.