

Line-Speed Publish/Subscribe Inter-Networking

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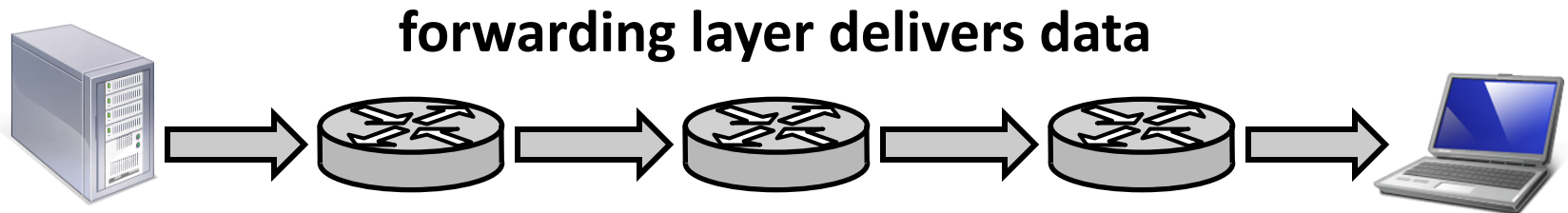
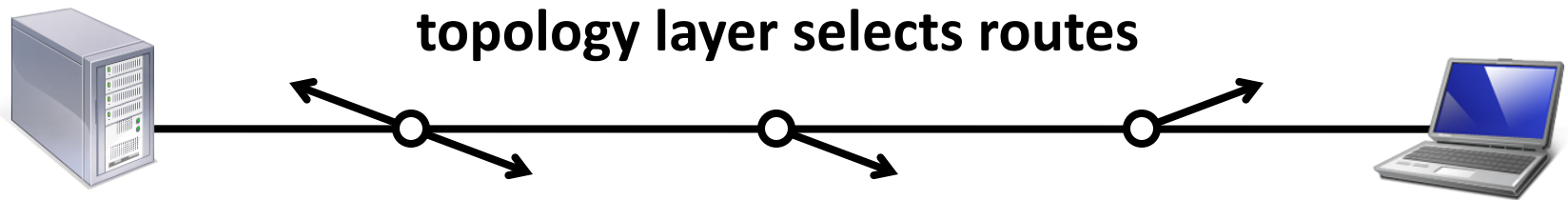
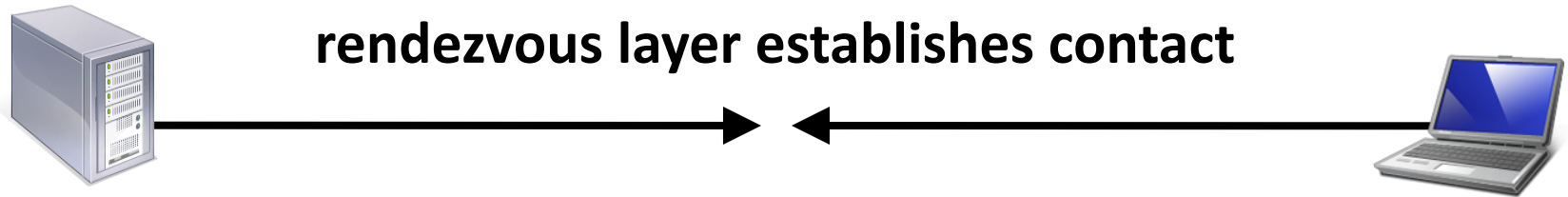
presented by **Christian Vogt**

ISOC Future Internet get-together. Hiroshima, November 2009

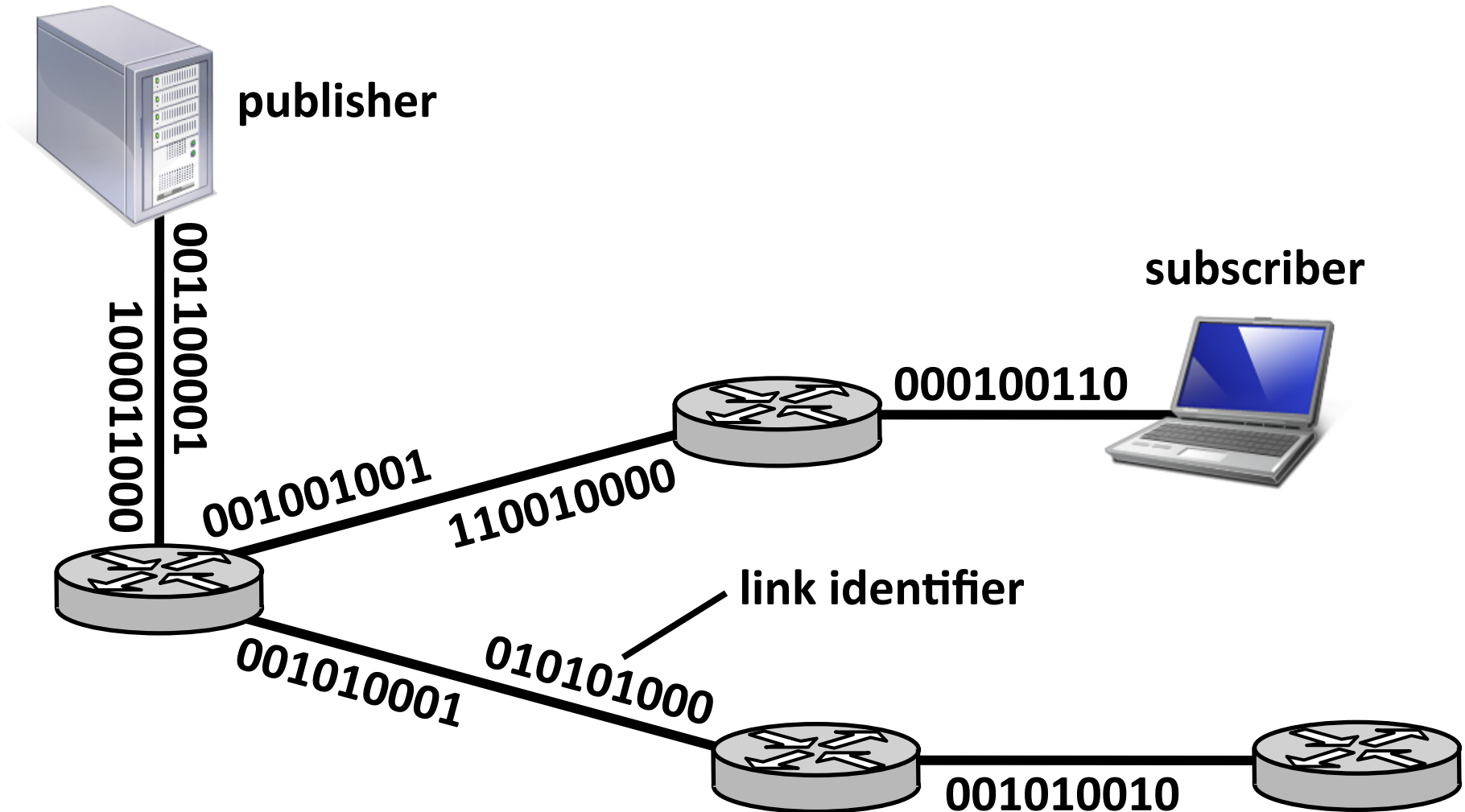
Improving Support For Publish/Subscribe

- many applications do publish/subscribe
 - decouple data creation and consumption
 - multiple consumers simultaneously
- no optimal support in classic Internet
 - data-oriented naming
 - in-network caching
 - efficient and scalable multicast
- focus here on efficient and scalable multicast

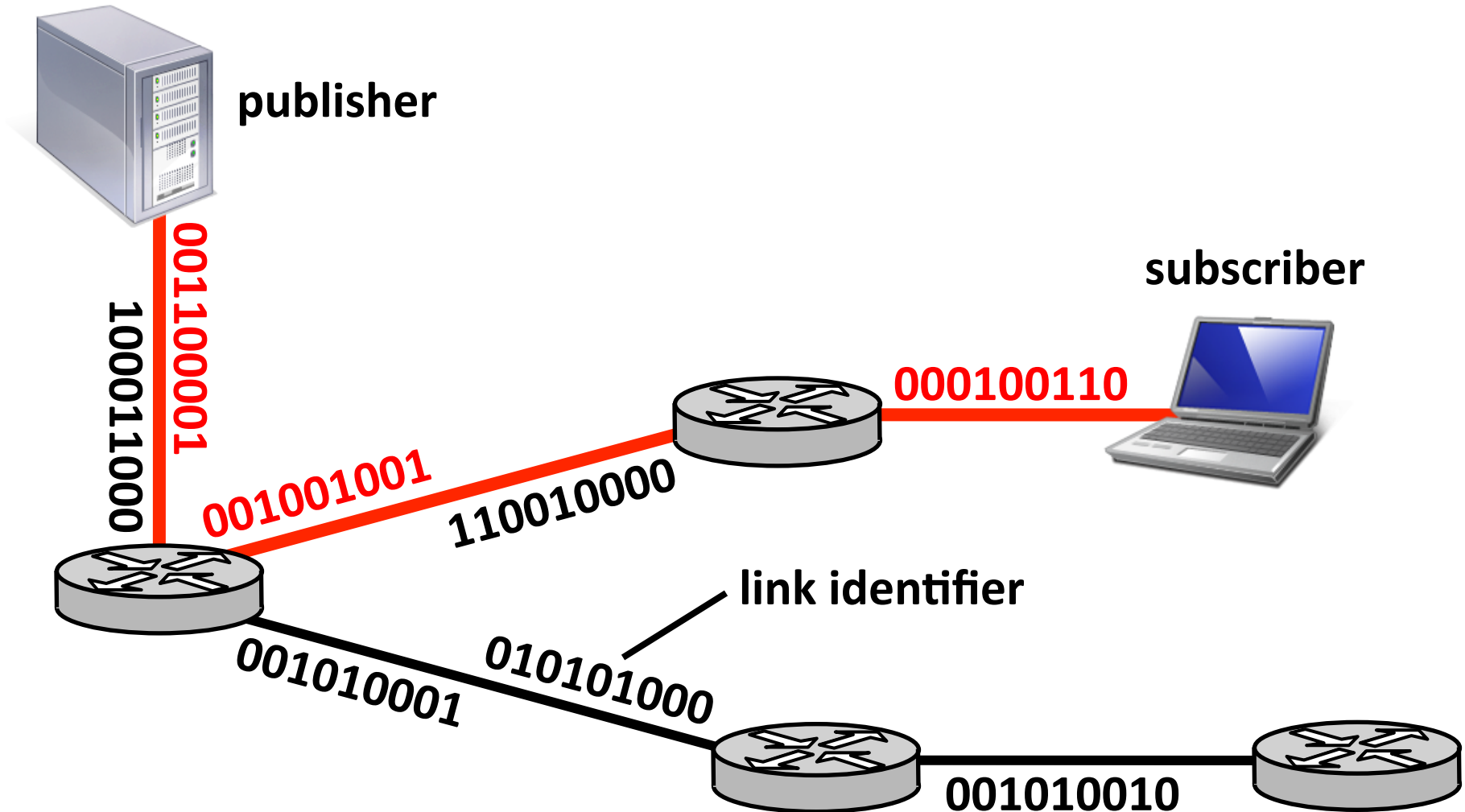
Publish/Subscribe Architecture: 3 Layers



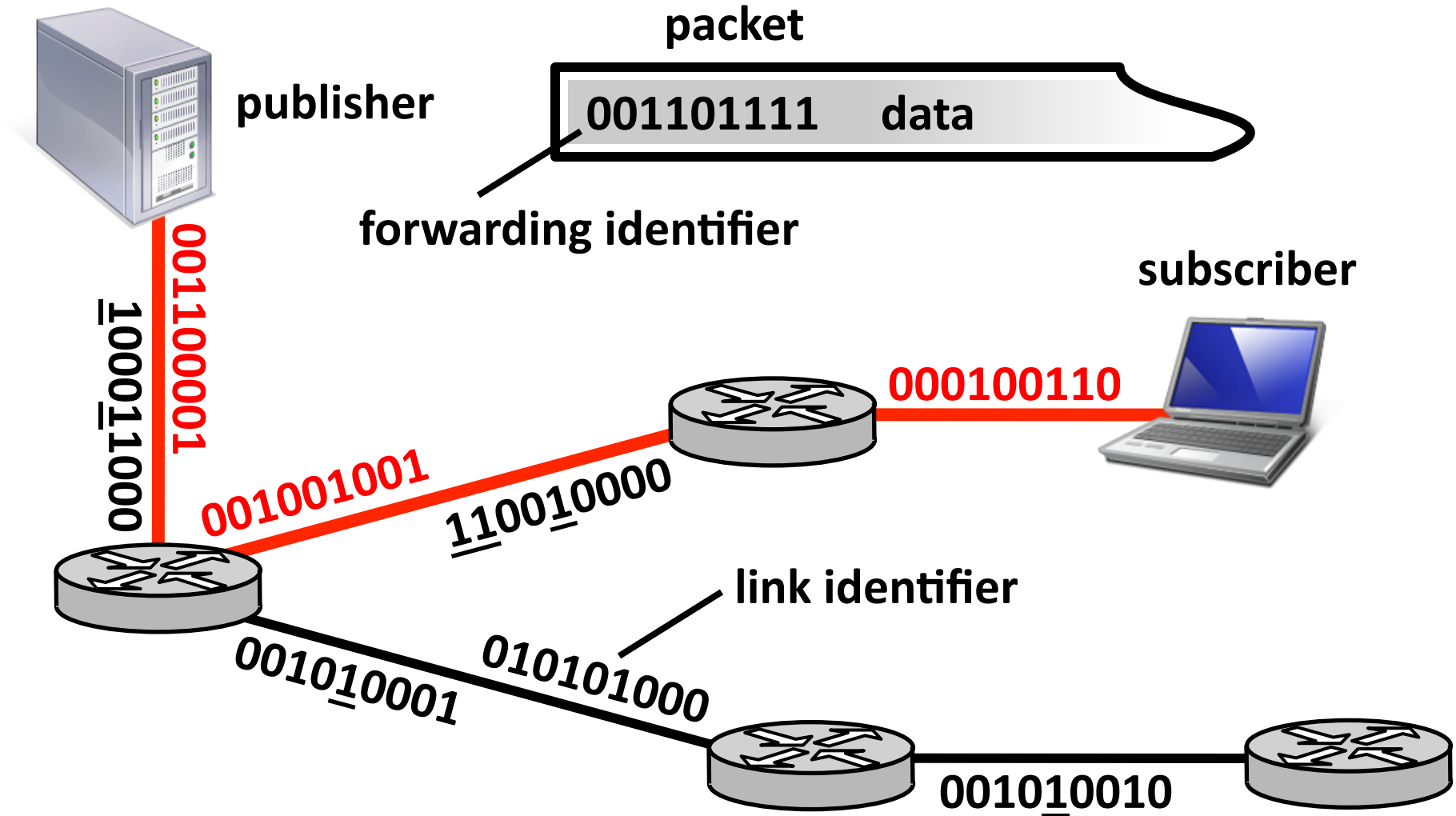
Topology Creation and Forwarding



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Traffic Efficiency Optimizations

- virtual links
 - tunneling with tree/forest support
 - created by topology layer when useful
- alternative link identifiers
 - multiple identifier sets to choose from
 - pick set with least false positives
- do-not-forward link identifiers
 - included in forwarding identifiers
 - requested downstream, created upstream

Conclusion

- efficient and scalable multicast
 - using link identifiers
 - using Bloom-filter-based forwarding
- several components not presented
 - rendezvous
 - loop prevention
 - failure recovery
- could be used today, similar to MPLS