School of Electronic Engineering - DCU

Switching and Systems Laboratory

A proposed architecture for integrating Active Networks and MPLS

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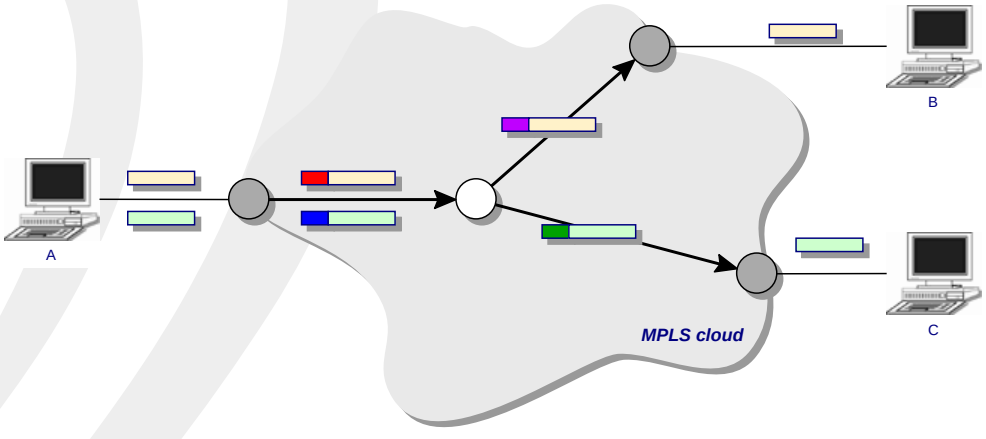
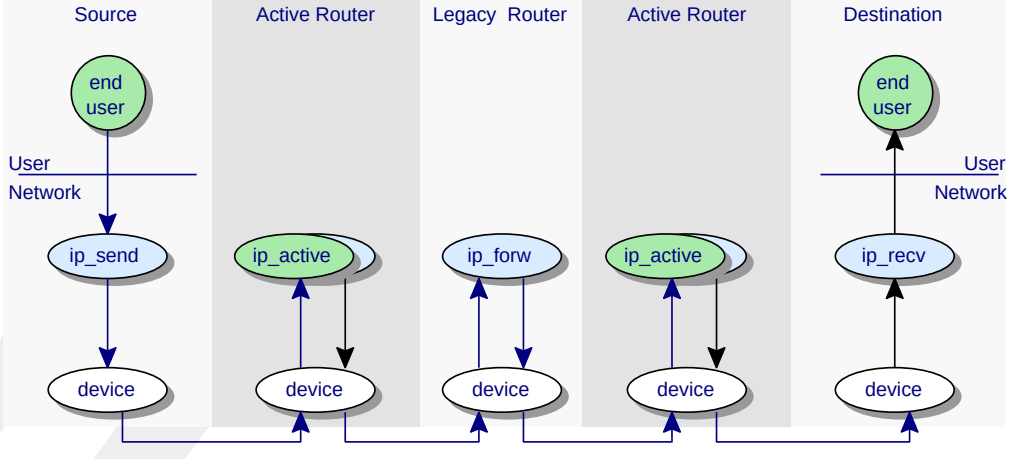
MPLS

Multiprotocol Label Switching is a label-based packet switching technique.



Active Networks

"active" in two ways: - nodes can perform computations;
- users can *program* the network.



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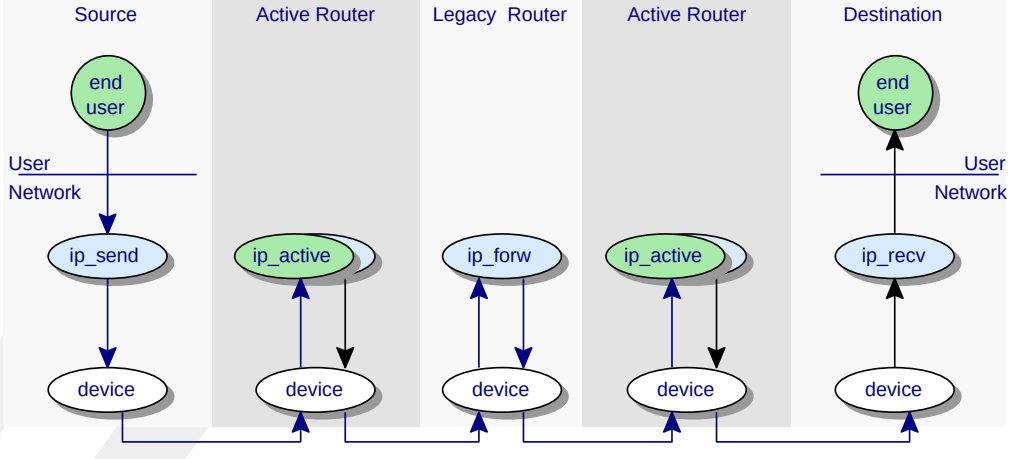

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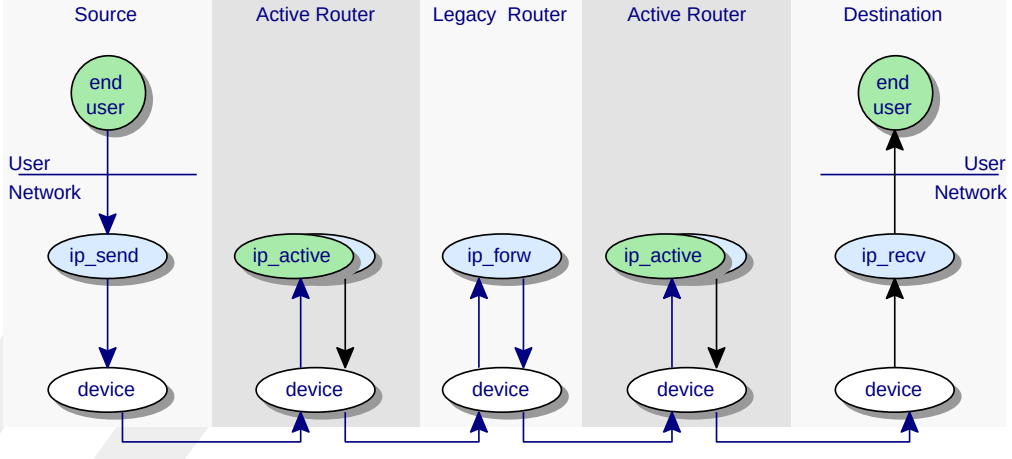

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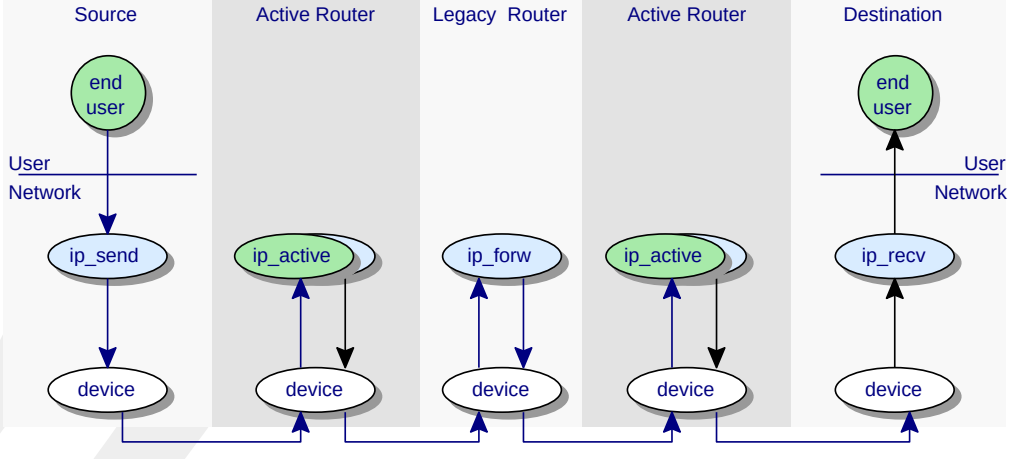

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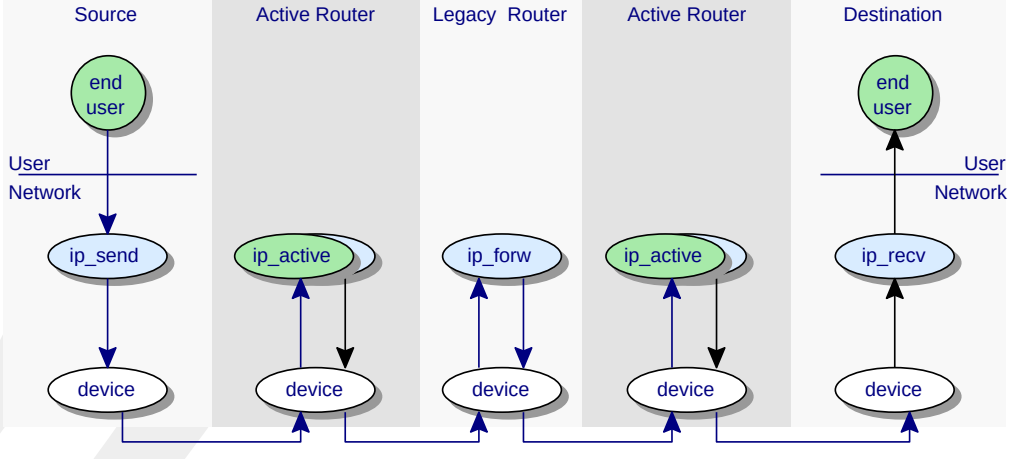

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1. Active Nodes architecture
2. Active Packets architecture
3. Active Packets and Nodes architecture

Integrating Active Networks and MPLS

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Where? In *access networks*.

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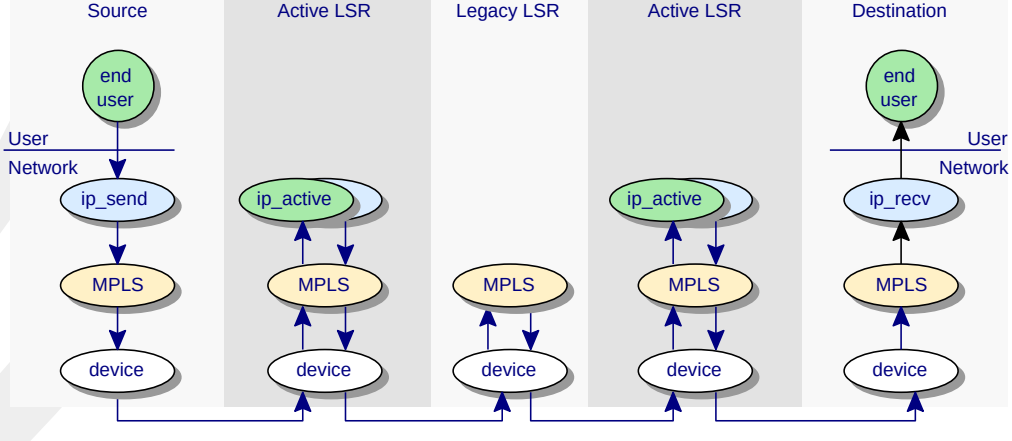

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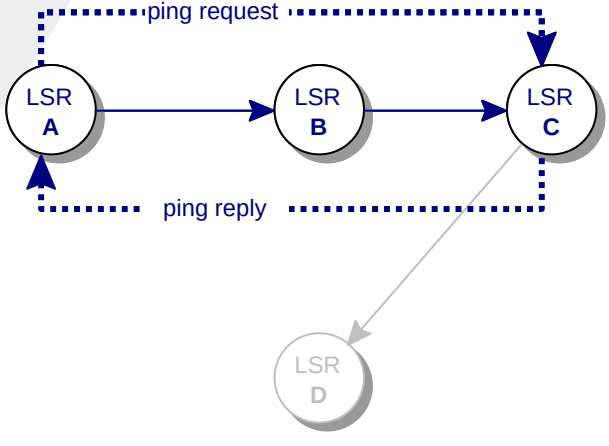

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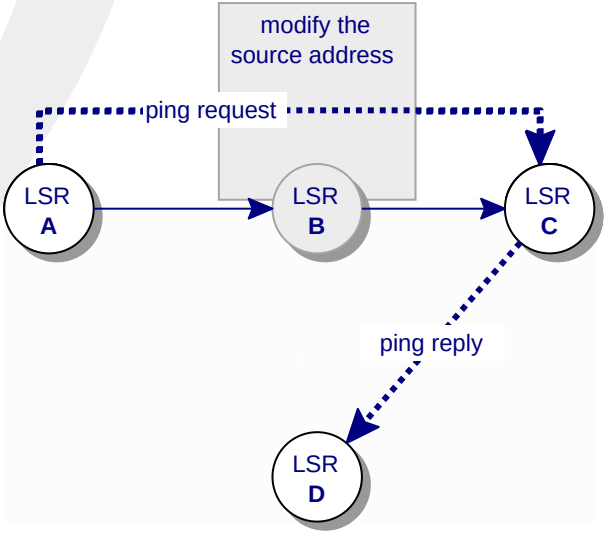
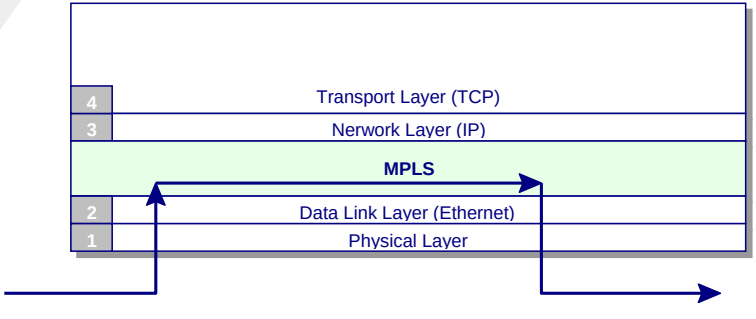


Linux implementation using Netfilter

Netfilter is a framework inside Linux kernel which enables "packet mangling".



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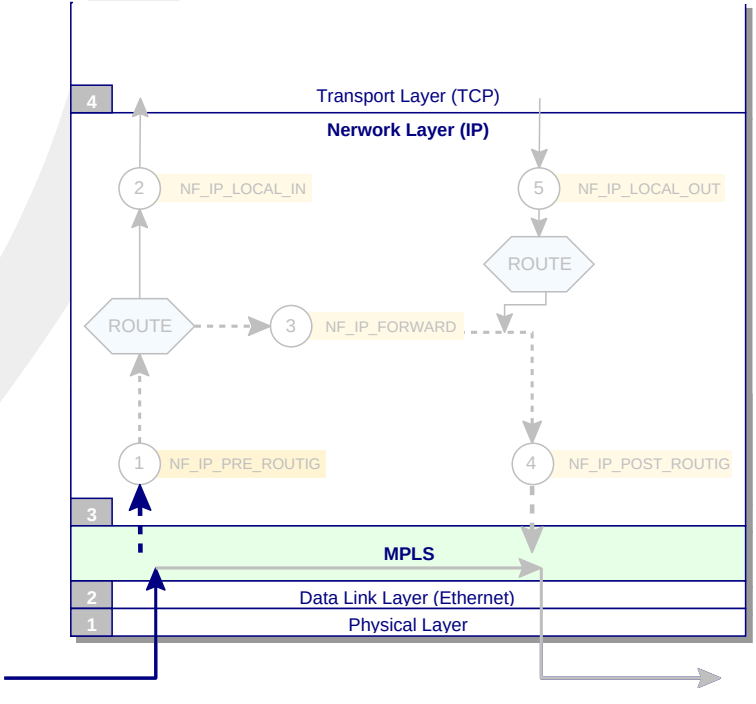

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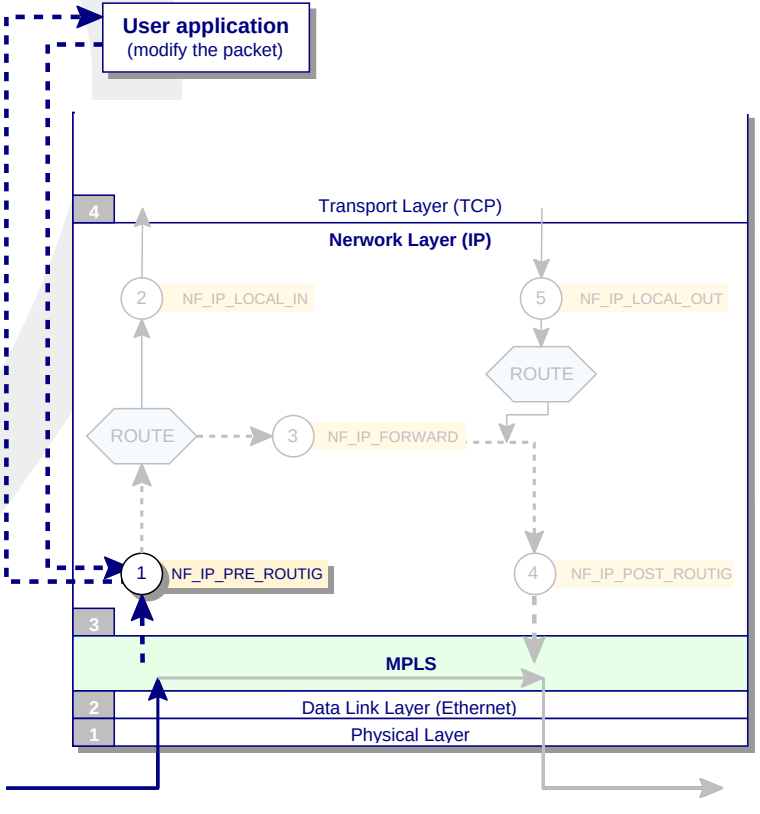

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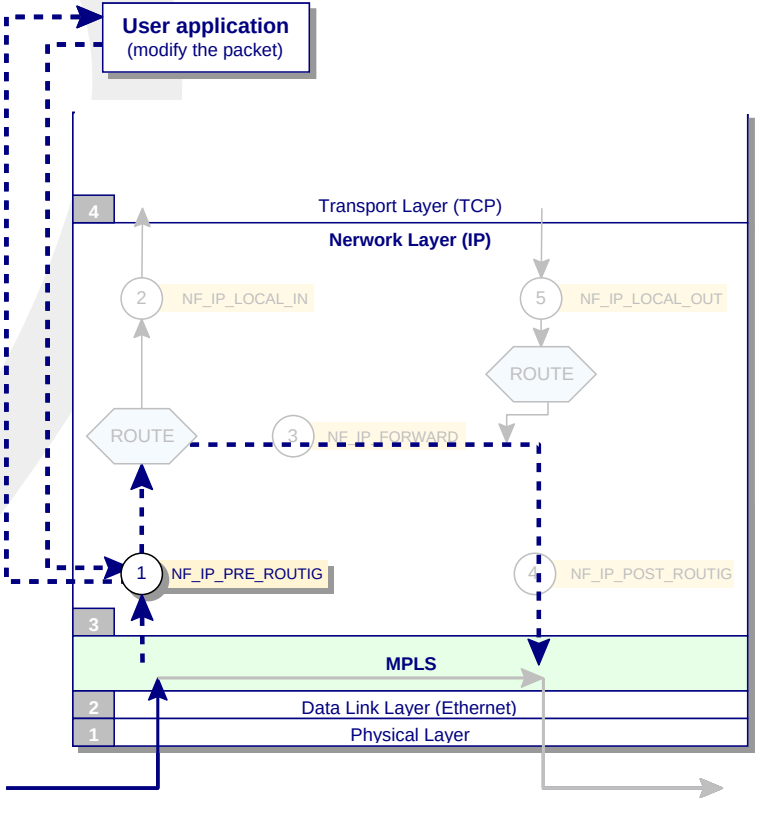

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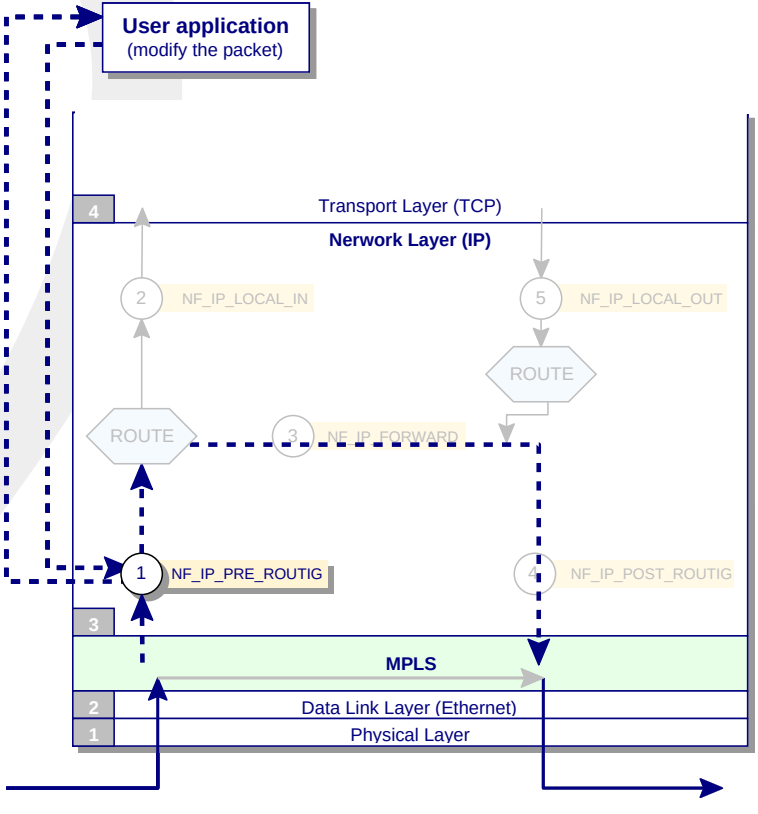
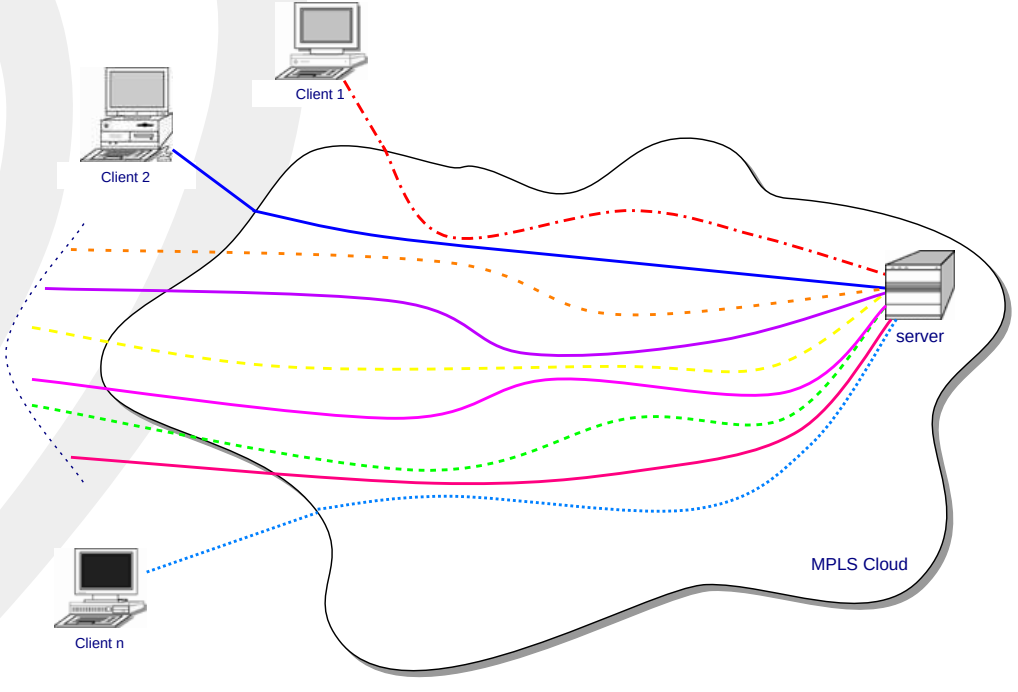


An example

Bid rejection: *web servers hosting online auctions.*



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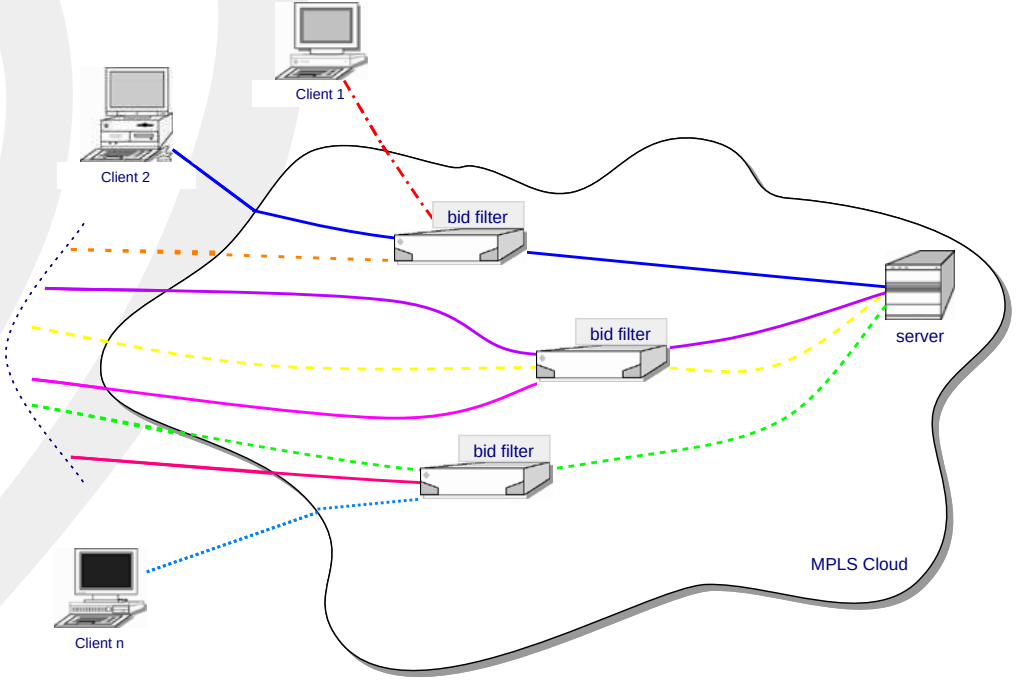

Conclusions

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- example which proves that such integration is possible;
- overcomes the MPLS limitation to perform switching above layer 2;
- offers a flexible network which can control packets;
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