

ENDEAVOUR



Towards a flexible software-defined network ecosystem

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ENDEAVOUR

www.h2020-endeavour.eu

*...bringing **SDN** to the
inter-domain settings...*

Limitations at the Inter-domain level

**WHAT PROBLEMS DO WE
STRUGGLE WITH?**

Static

Contracts are lengthy to setup; long timeframes



Myopic

Limited visibility leads to suboptimal paths



Constrained

When destination-based decisions are not enough...



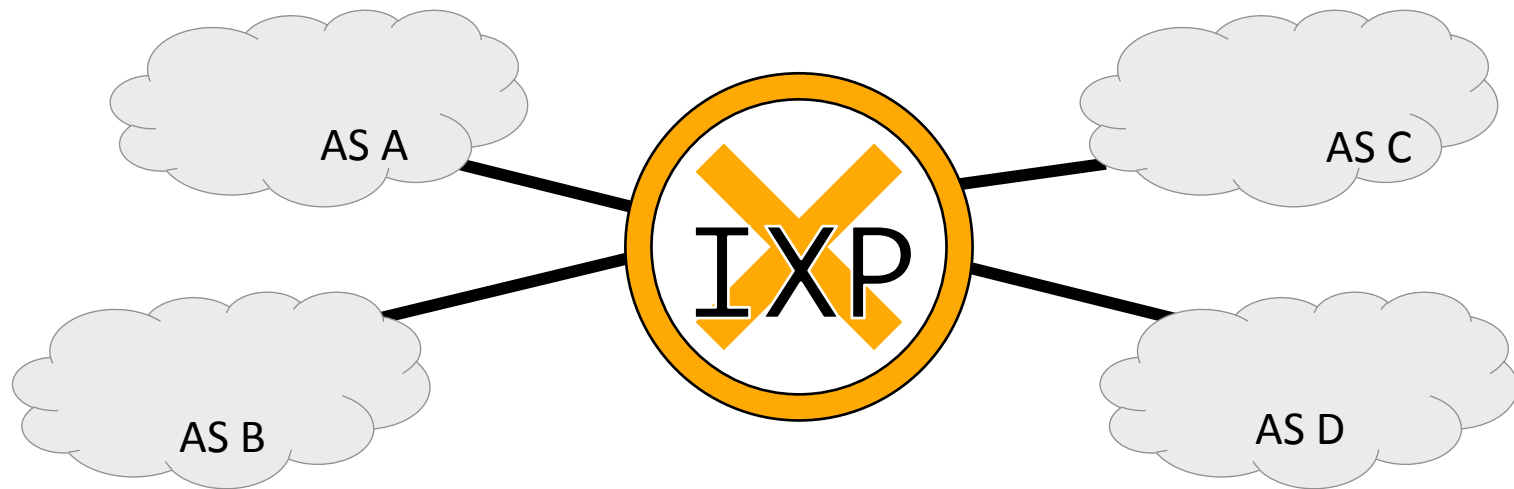
WHAT CAN SDN DO AT THE INTER-DOMAIN LEVEL?

Enhance what we already have

Network Management

Safety and Security

Monitoring



Enable novel services for IXP members

Traffic Engineering

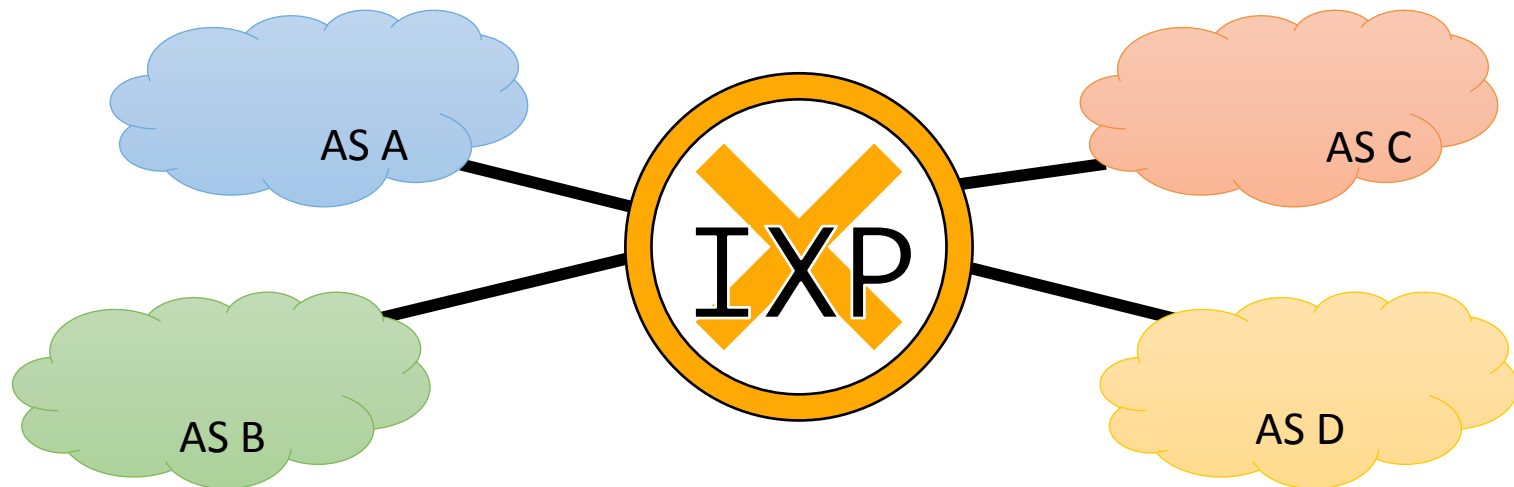
- AS ingress port load balancing
- Dst. AS port congestion awareness

Inbound Filtering

- Dynamic non-peering traffic filtering
- Broadcast/ARP management

Security

- Advanced blackholing based on arbitrary fields



Use case: destination congestion notification

- Routing information limited to BGP
 - No insights on current port load
 - Only end-to-end solutions available
- Binary congestion state (threshold e.g. 95%)
 - Push-based statistics
 - No disclosure of sensitive information
- Providing congestion state
 - Member SDN API
 - BGP community

Use case: port capacity on demand

Which port should you pay for? 1GE? 10GE?

Port capacity as a service:

- Elastic: scalable port capacity
 - Port capacity provisioned by SDN controller
- Flexible pricing:
 - Committed bandwidth (similar to IP transit)
 - Extra bandwidth only for days/weeks

Open questions

- ✓ What are your main inter-domain limitations?
- ✓ Which use-cases would you like to see?
- ✓ Which of our use-cases don't help you?
- ✓ What are red lines for SDN deployment at the IXP?
- ✓ Why are SDN enabled IXPs not a reality yet?

Attend our BoF session on Thu 6pm!!!

Please take our SURVEY

We'd like your help!

<http://goo.gl/forms/tLjAVvkXAM>

Our goal is to understand:

- what are the current limitations at IXPs
- what services do you expect to see at IXPs in the next years

Survey results will be used to drive our efforts

And it's anonymous...