Threat to BGP Policies : limited-scope more specific prefix injection

draft-francois-limited-scope-specifics-01
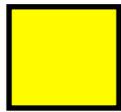
Pierre Francois
UCLouvain
Bruno Quoitin
UMons

Typical recognized BGP community values

- If you are my customer or a customer of my customers, you can tag
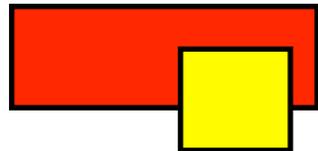
- 65000:XXX : Do not advertise to ASXXX

Legend

A BGP Prefix advertisement for p/P

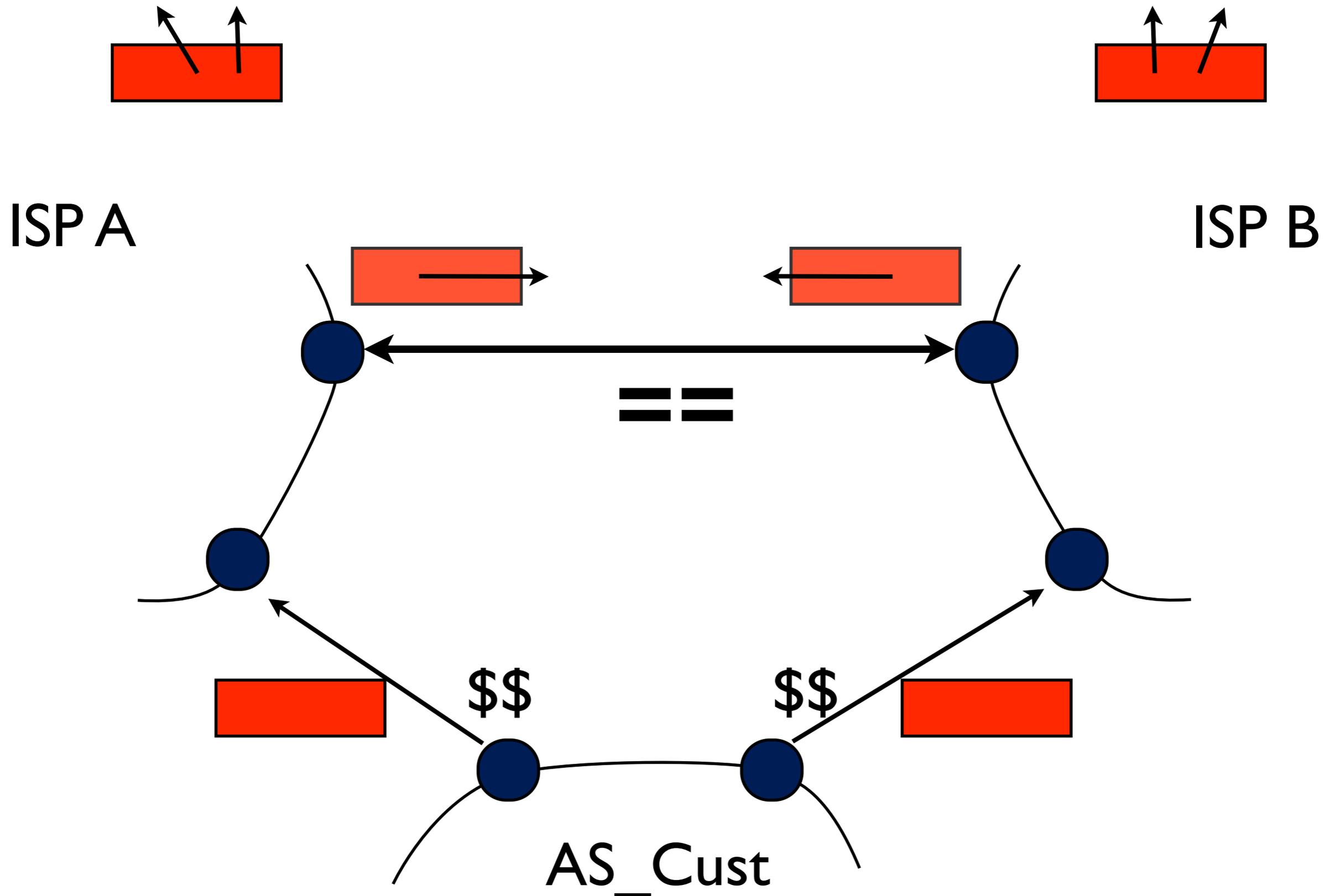An advertisement of a prefix more specific than p/P, say p/P+2

What can you do with these communities ?

- Limit the scope of ▢

- Assume A and B are providers of AS_Cust

- B allows such community tagging

- A and B are peers

- AS_Cust turns "don't advertise to AS X" values into
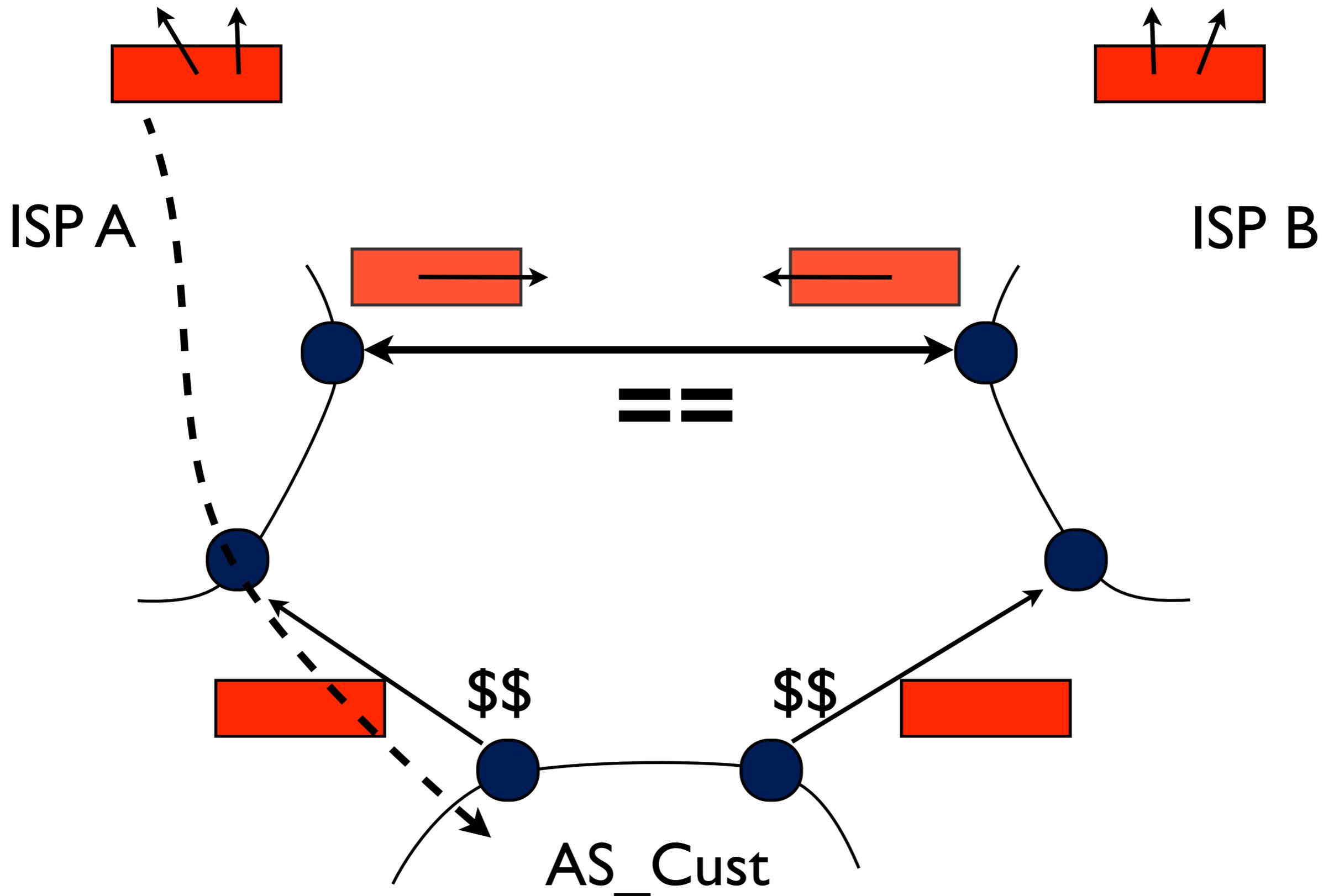 a only "advertise to A"
  Just put them all but A

Initial routing status
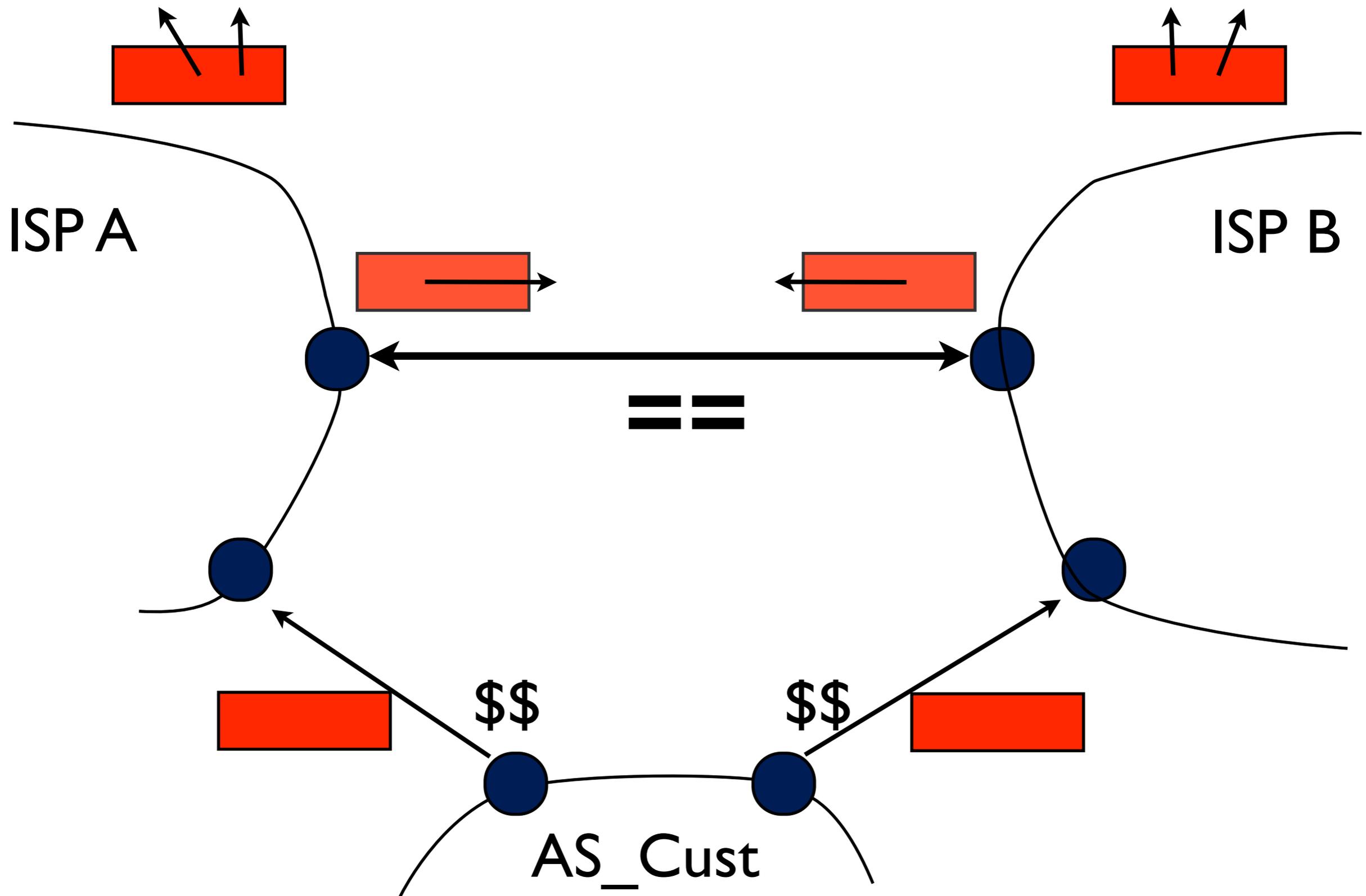## control-plane (only) driven forwarding

ISP A

ISP B
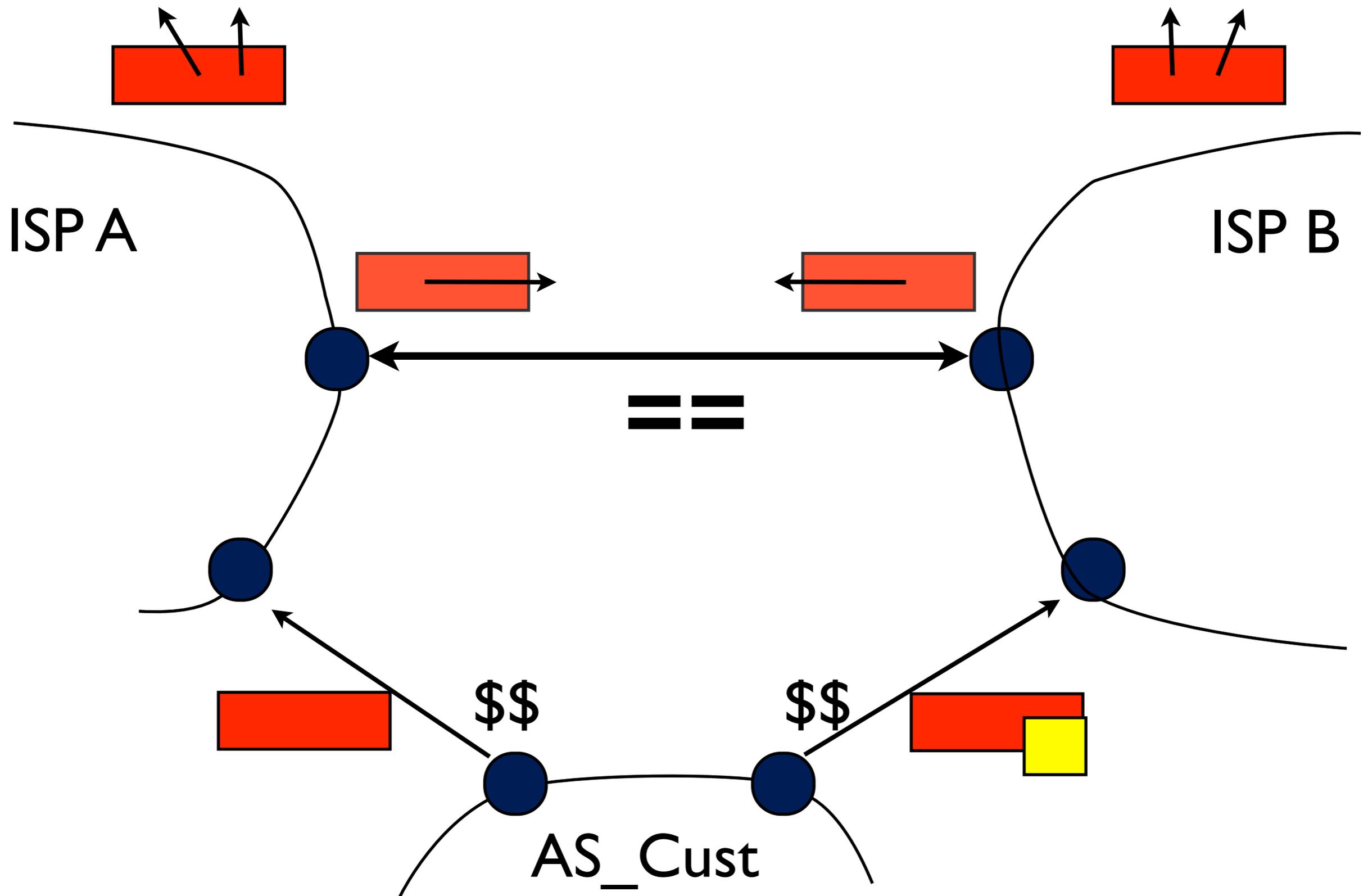
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AS_Cust

Initial routing status
control-plane (only) driven forwarding

ISP A

ISP B

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$$ $$

AS_Cust

Initial routing status
control-plane (only) driven forwarding

ISP A

ISP B

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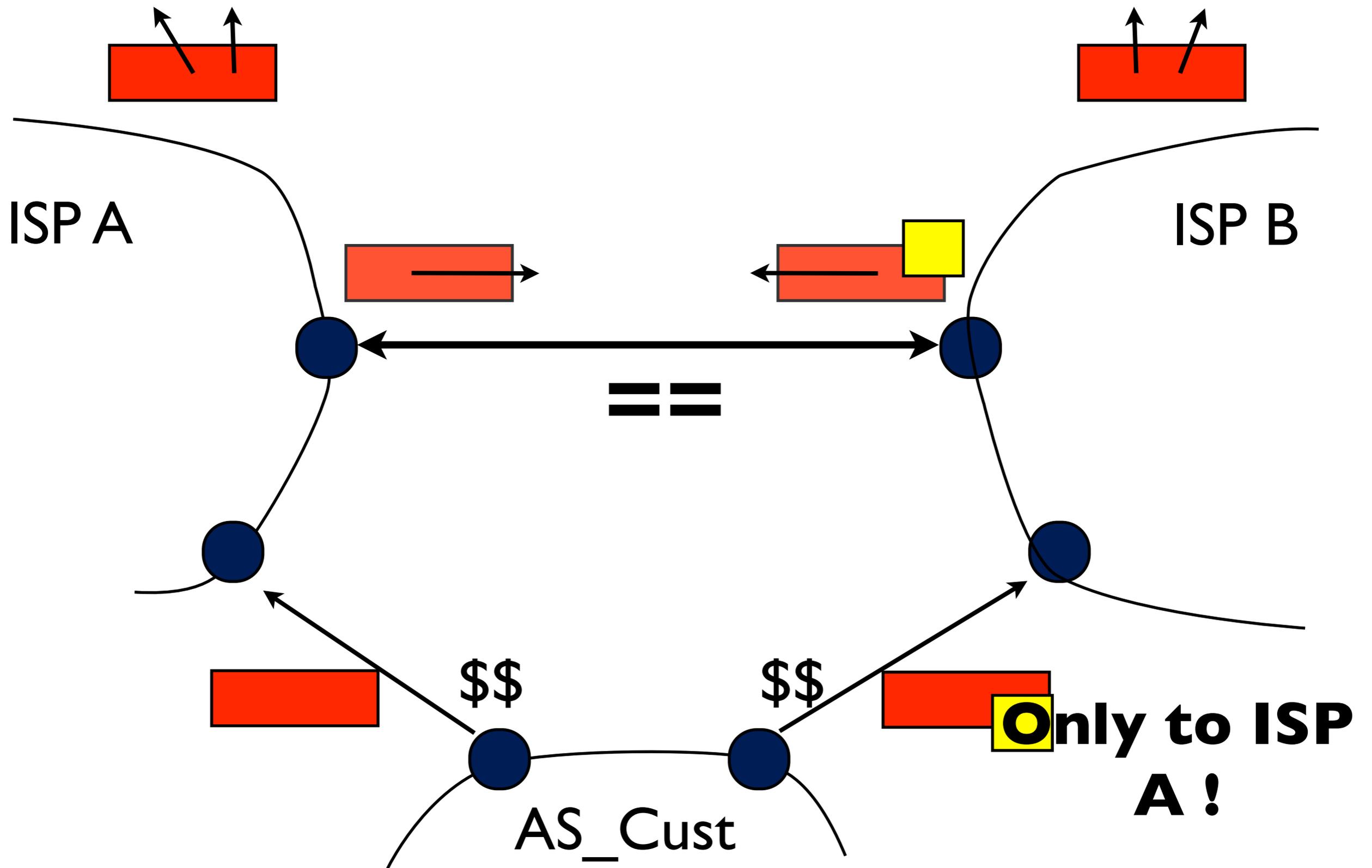$$

AS_Cust

Scope the more specific

ISP A

ISP B

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AS_Cust

Scope the more specific

Scope the more specific

ISP A

ISP B

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$$

Only to ISP A !

AS_Cust

Scope the more specific

ISP A

ISP B

==

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Only to ISP A !

AS_Cust

Scope the more specific

ISP A

ISP B

==

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Only to ISP A !

AS_Cust

Scope the more specific

ISP A

ISP B

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AS_Cust

Only to ISP A !
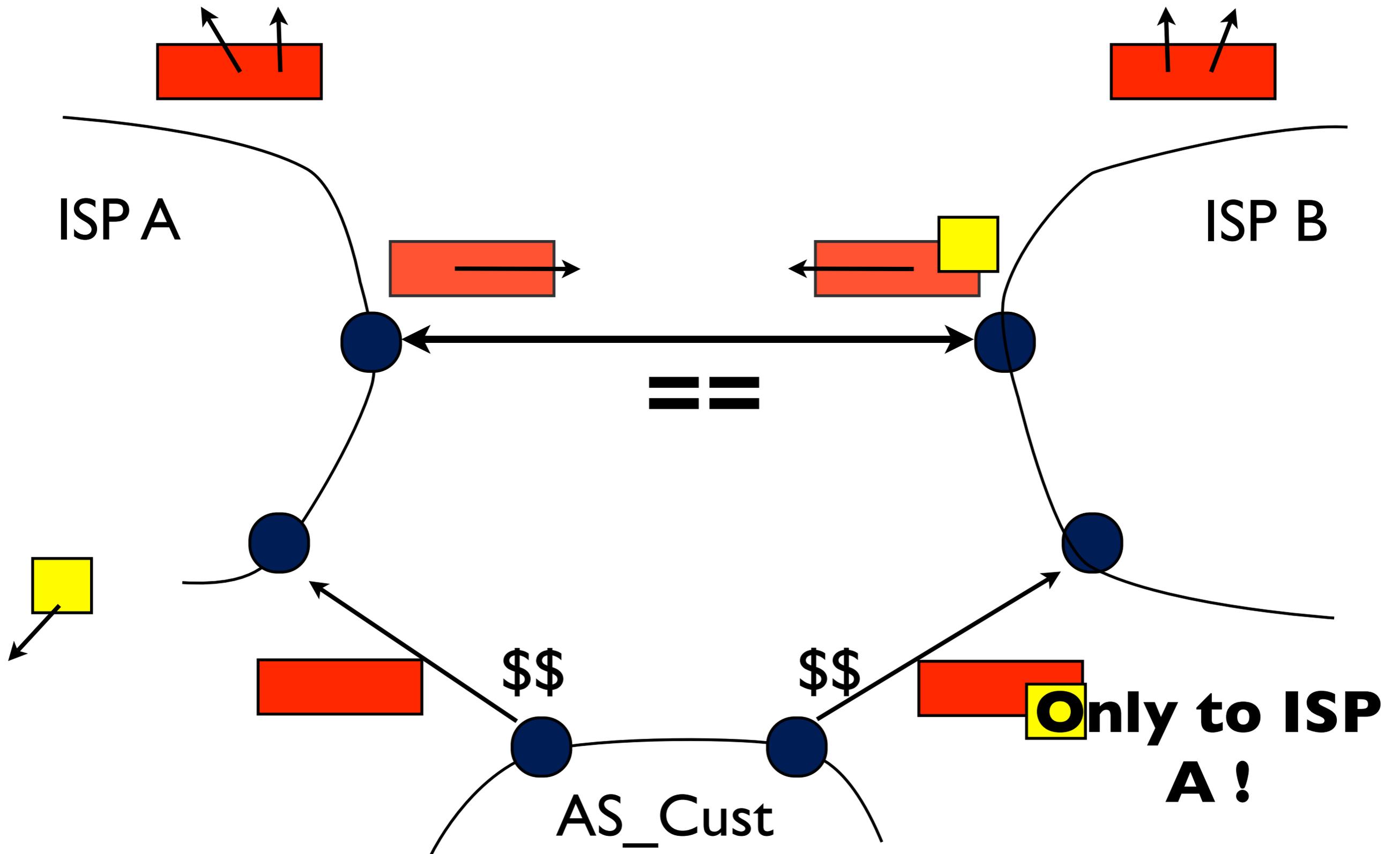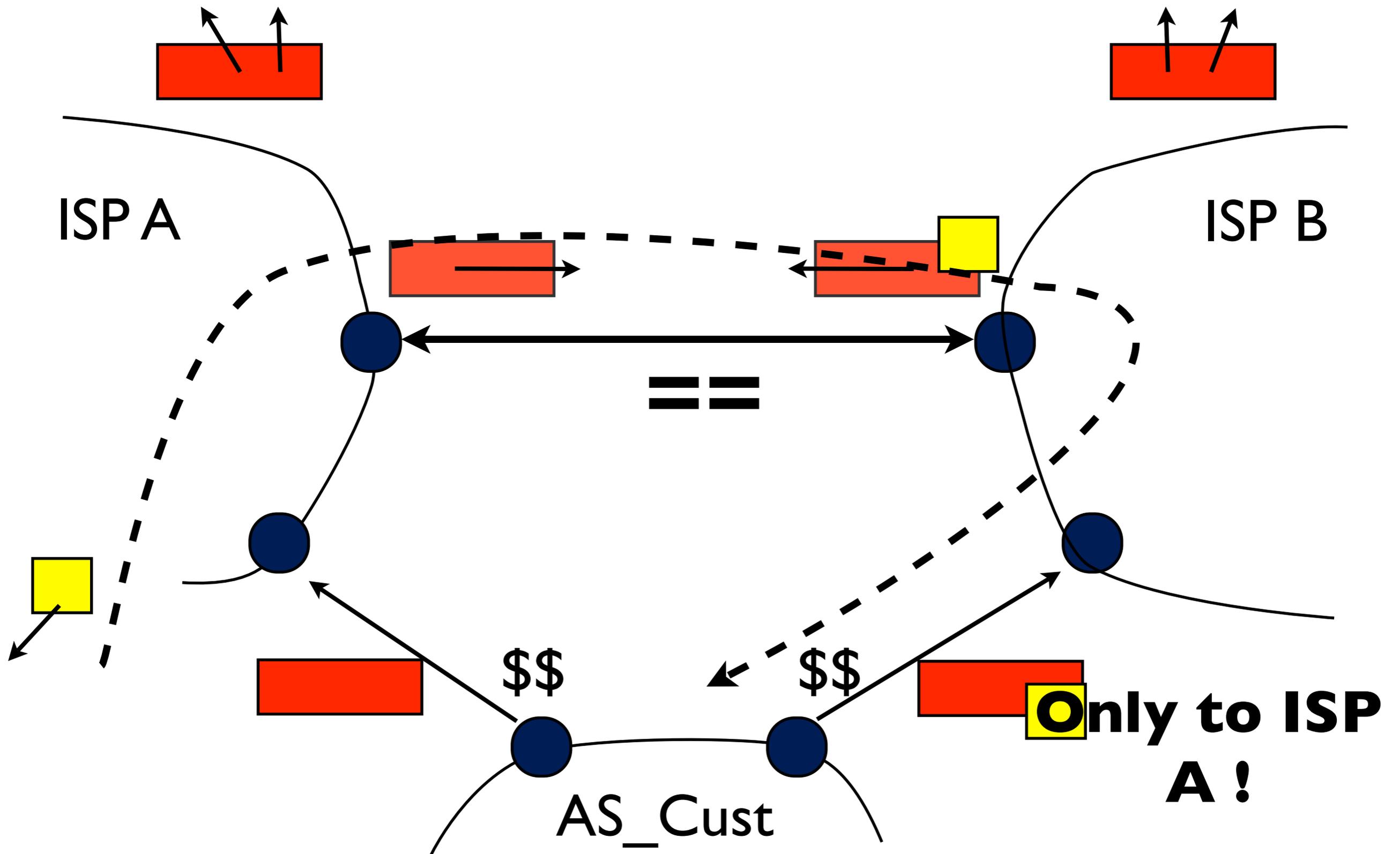
Let's start playing : Scope advertisement of the more specific

ISP A does not propagate BGP paths for 🟨 to its providers and peers

ISP A

ISP B

It still does for 🟥

🟨 is likely to be installed in the FIB !

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Only to ISP A !

Stub AS
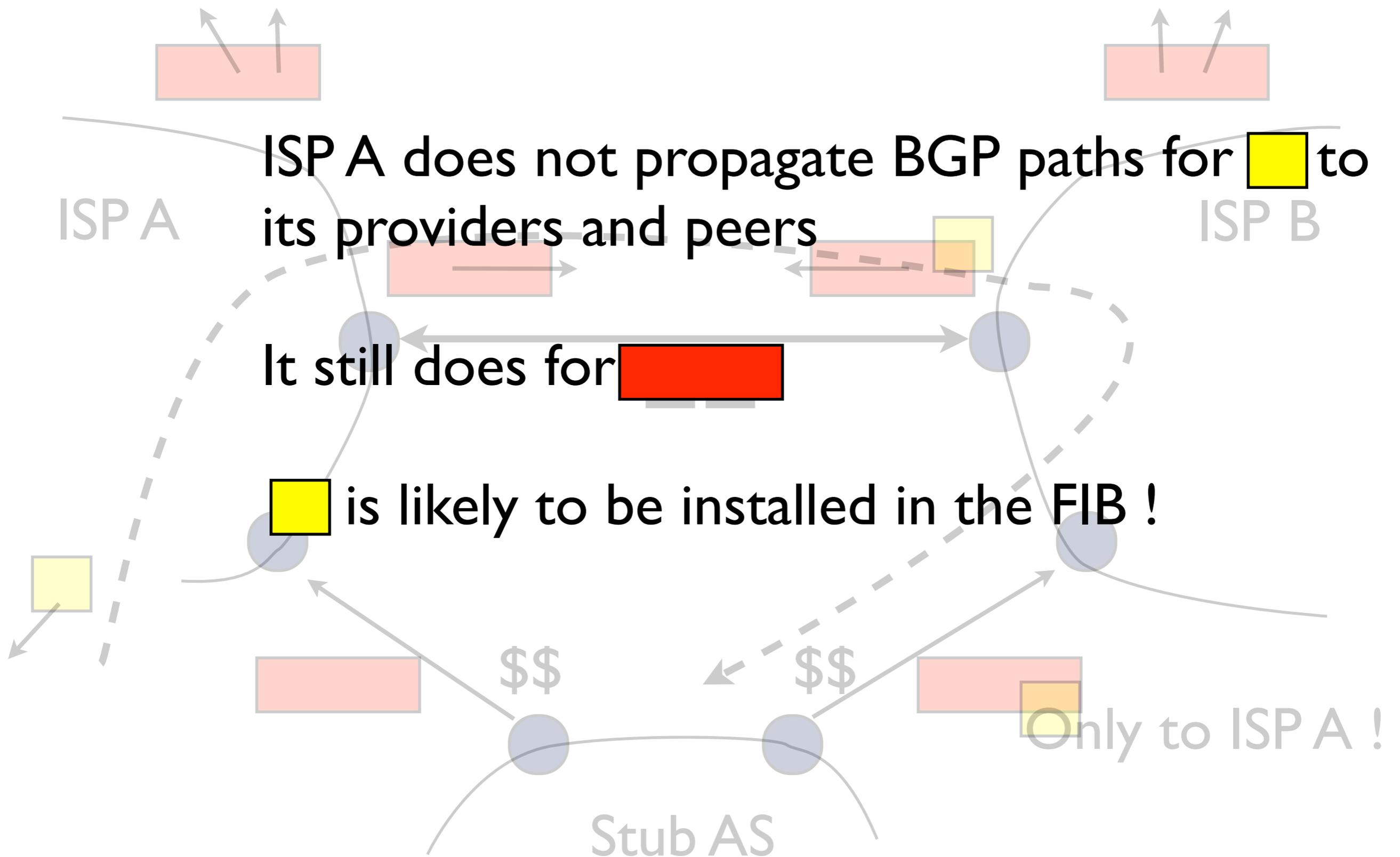
New paths in the network
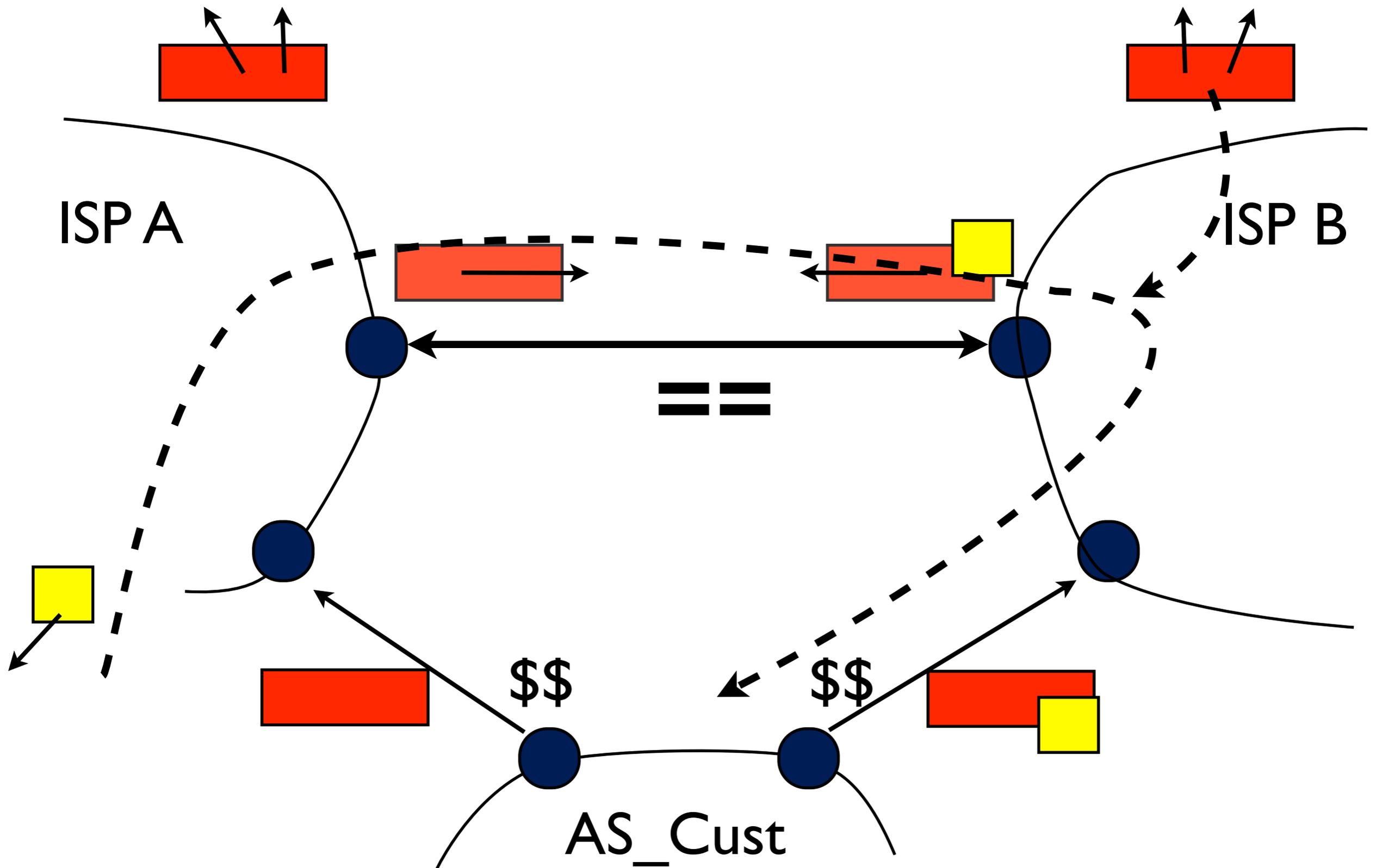
New paths in the network
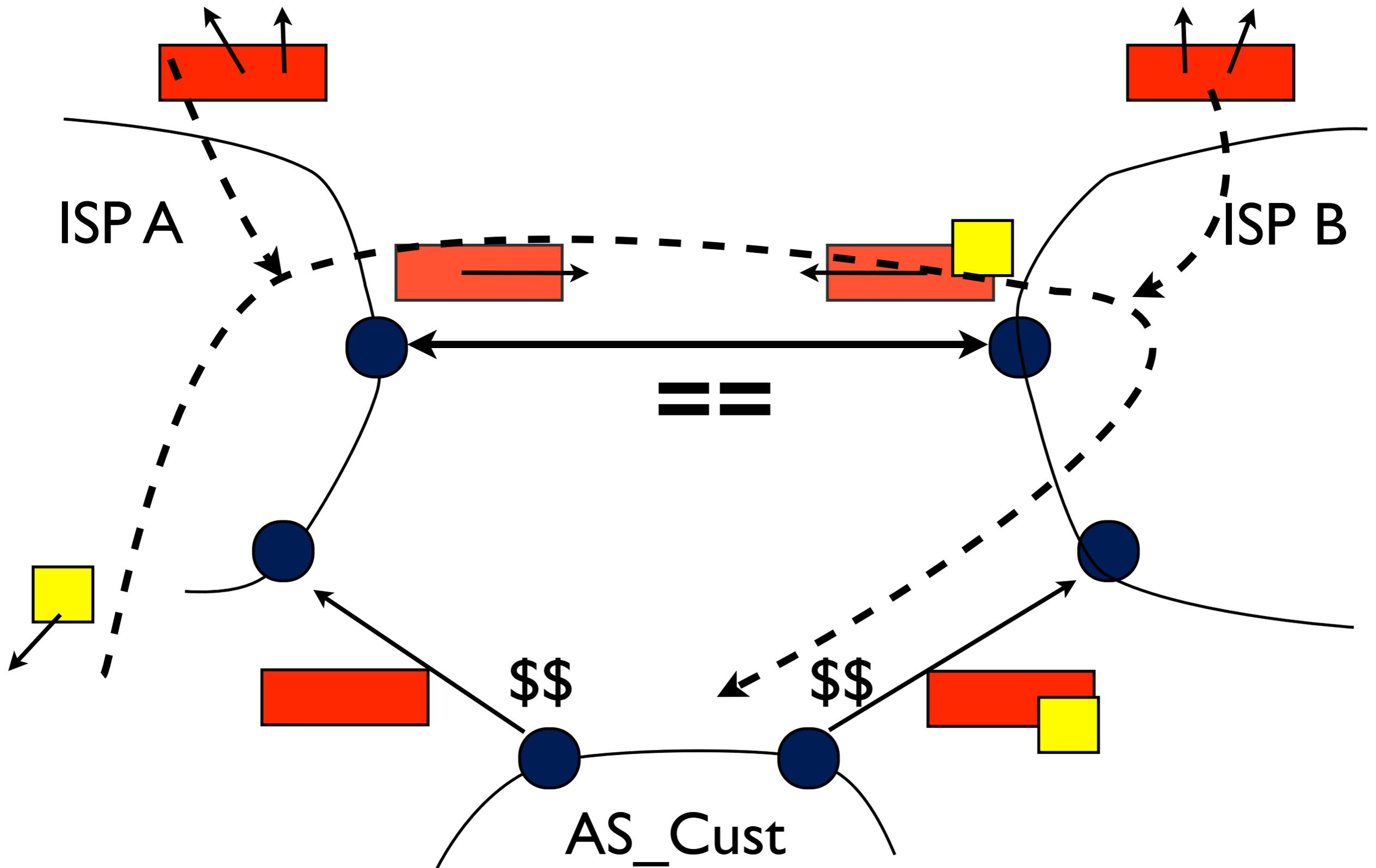
How to detect
Data-plane

- Netflow

  - Am I transiting traffic from X to Y ?

  - Warning upon policy violating (X,Y)

How to detect
Control plane

- Useless ?

How to detect

- Concern about being playing the role of ISP

- Monitor their use