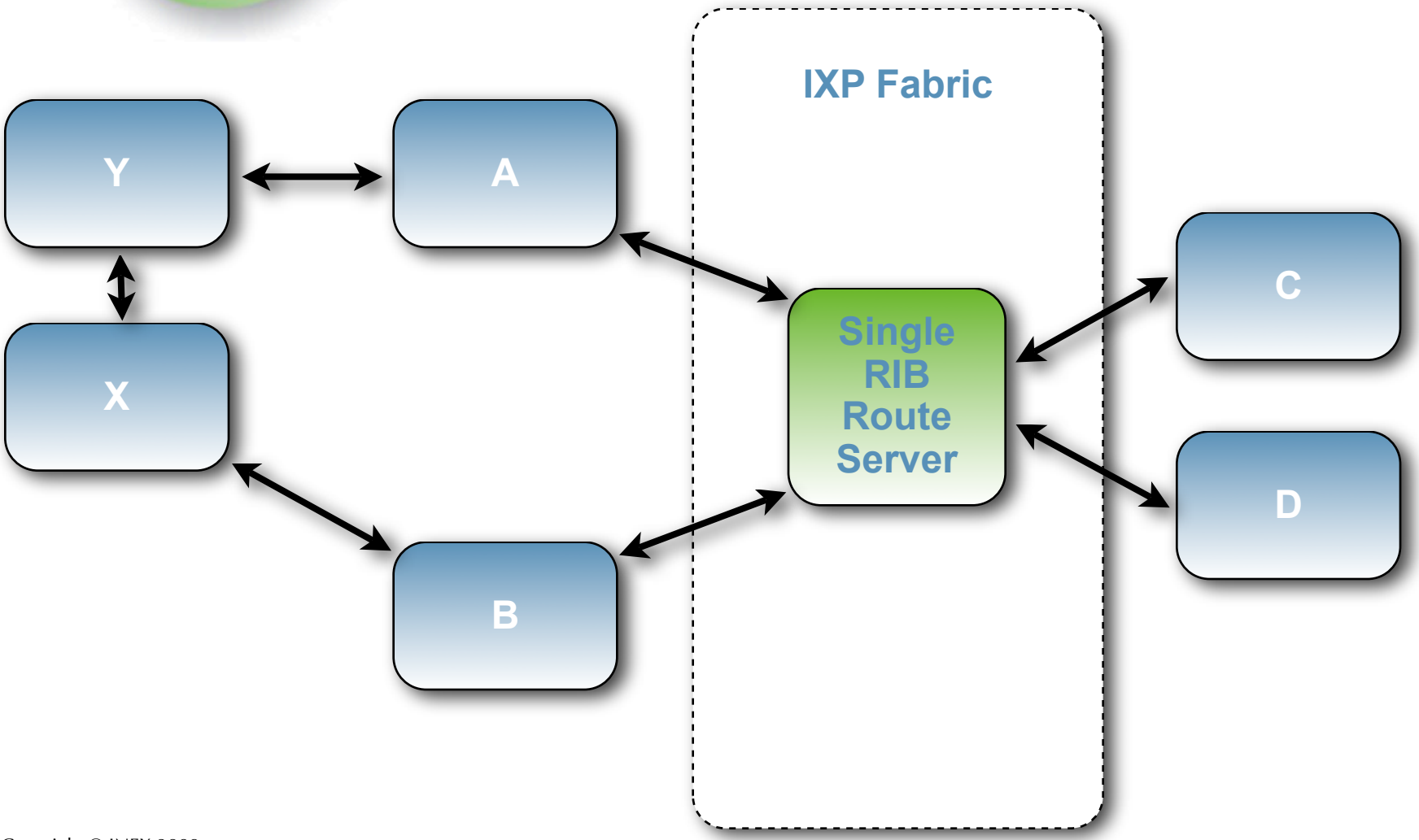
Why use Quagga Anyway?

Nick Hilliard

nick@inex.ie

Single-RIB BGP policy problem



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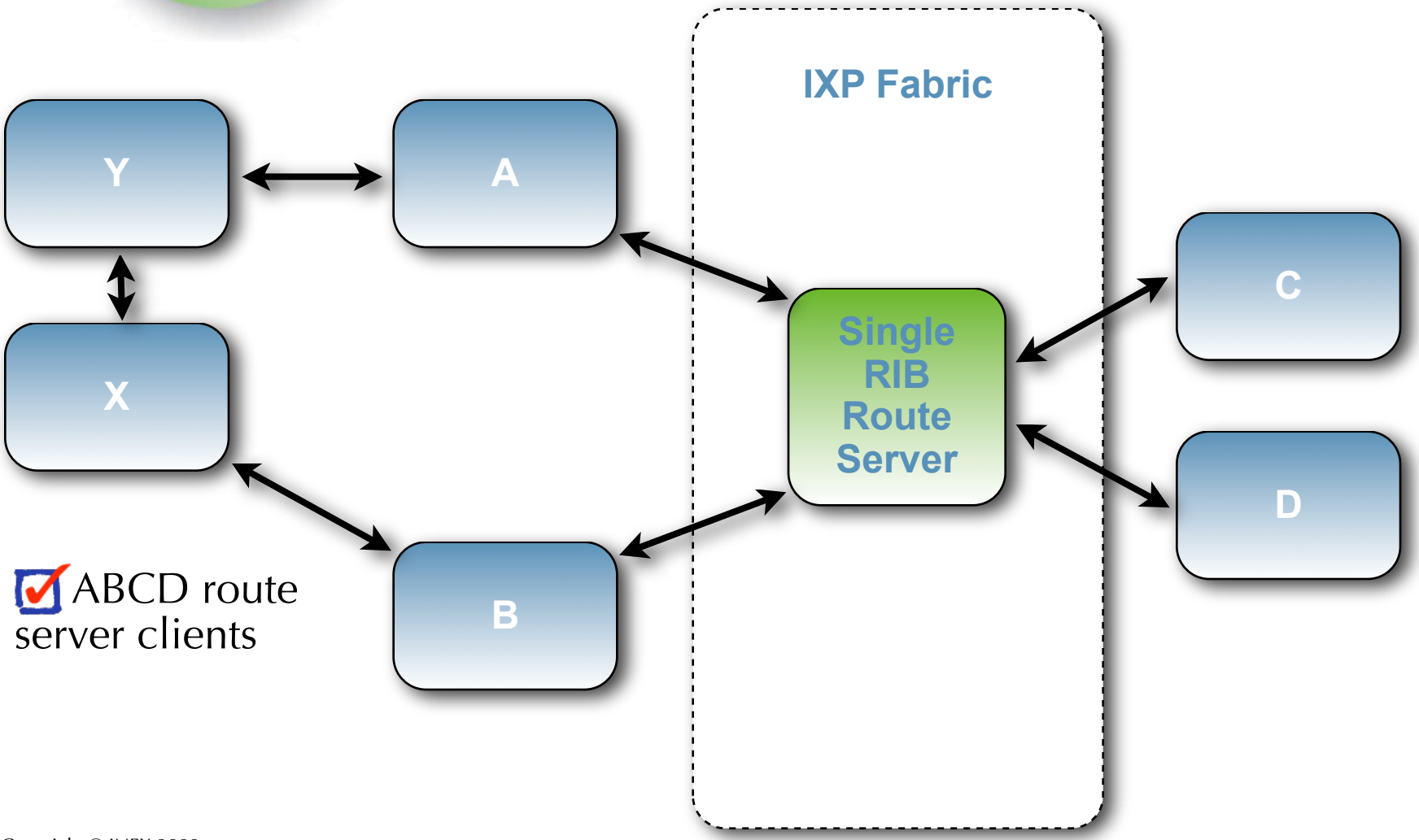

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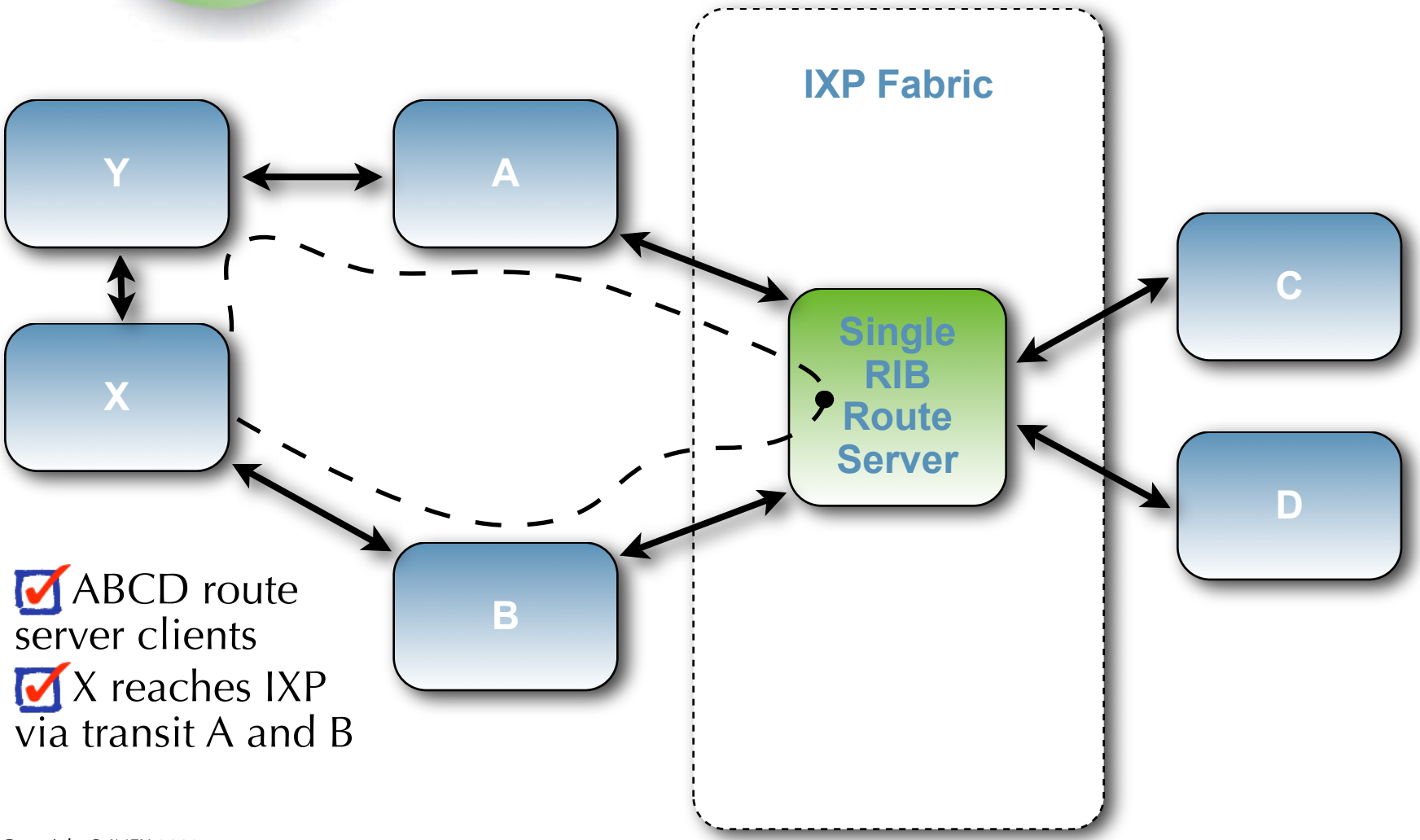

- ABCD route server clients
- X reaches IXP via transit A and B

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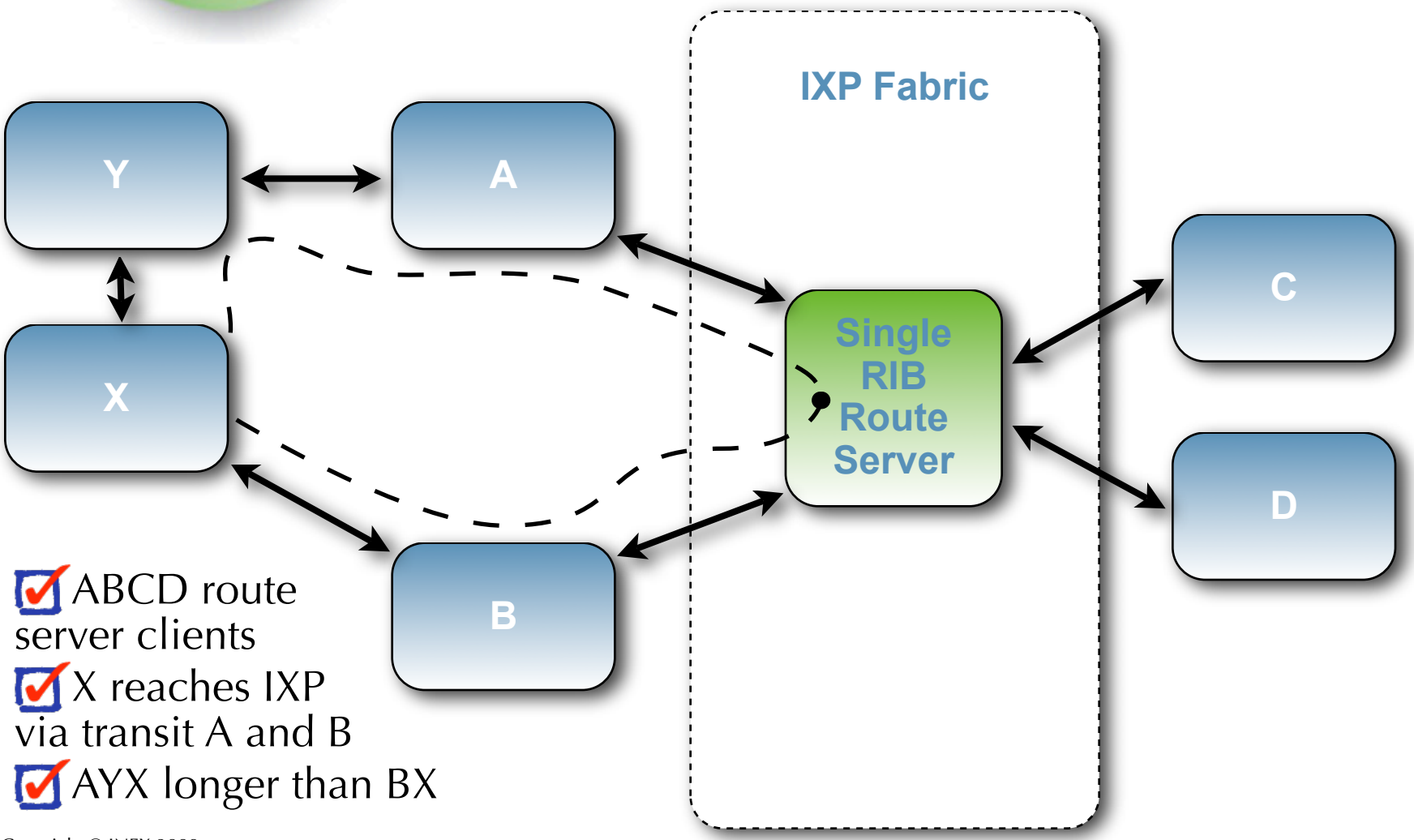

- ABCD route server clients
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- AYX longer than BX

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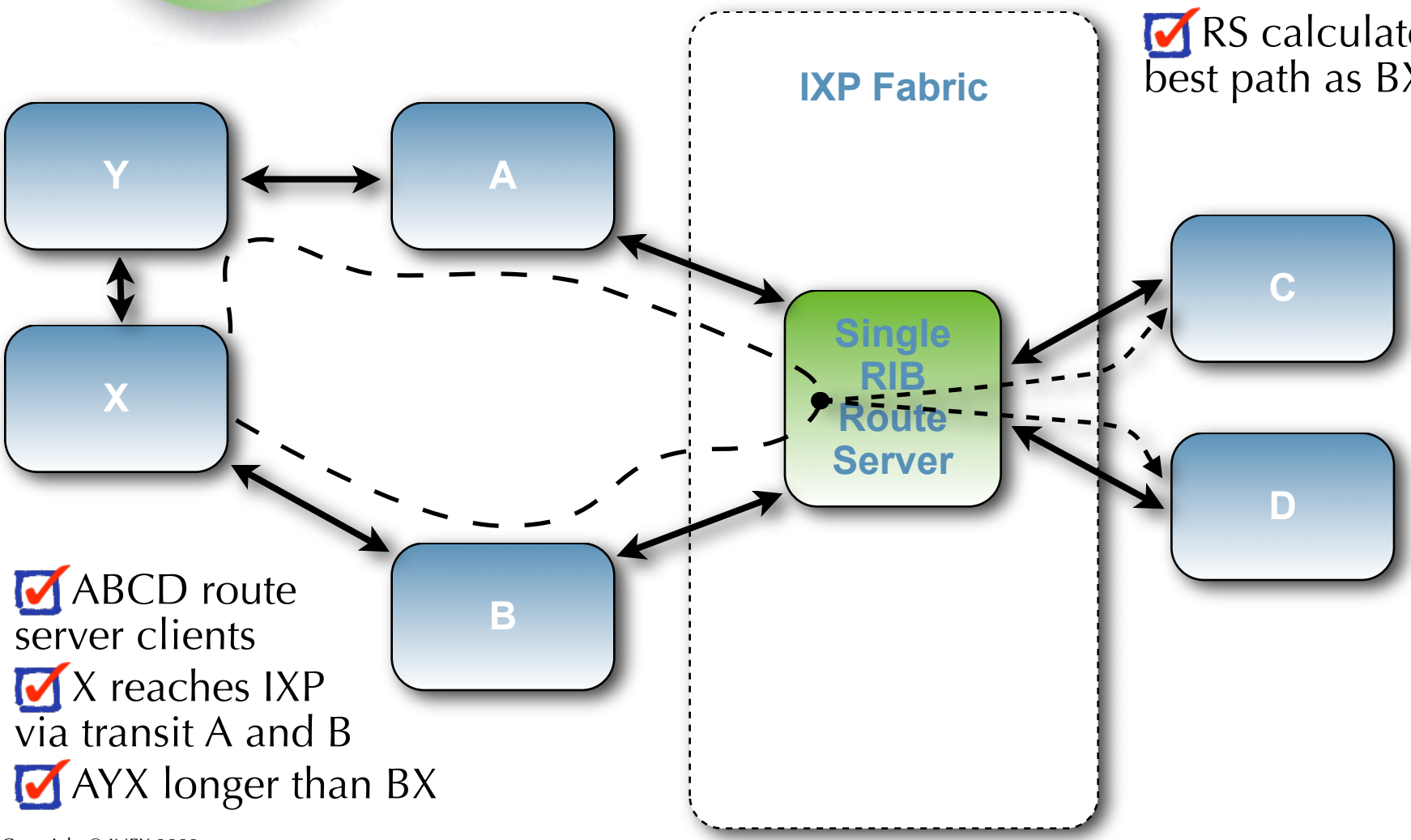

- RS calculates best path as BX
- ABCD route server clients
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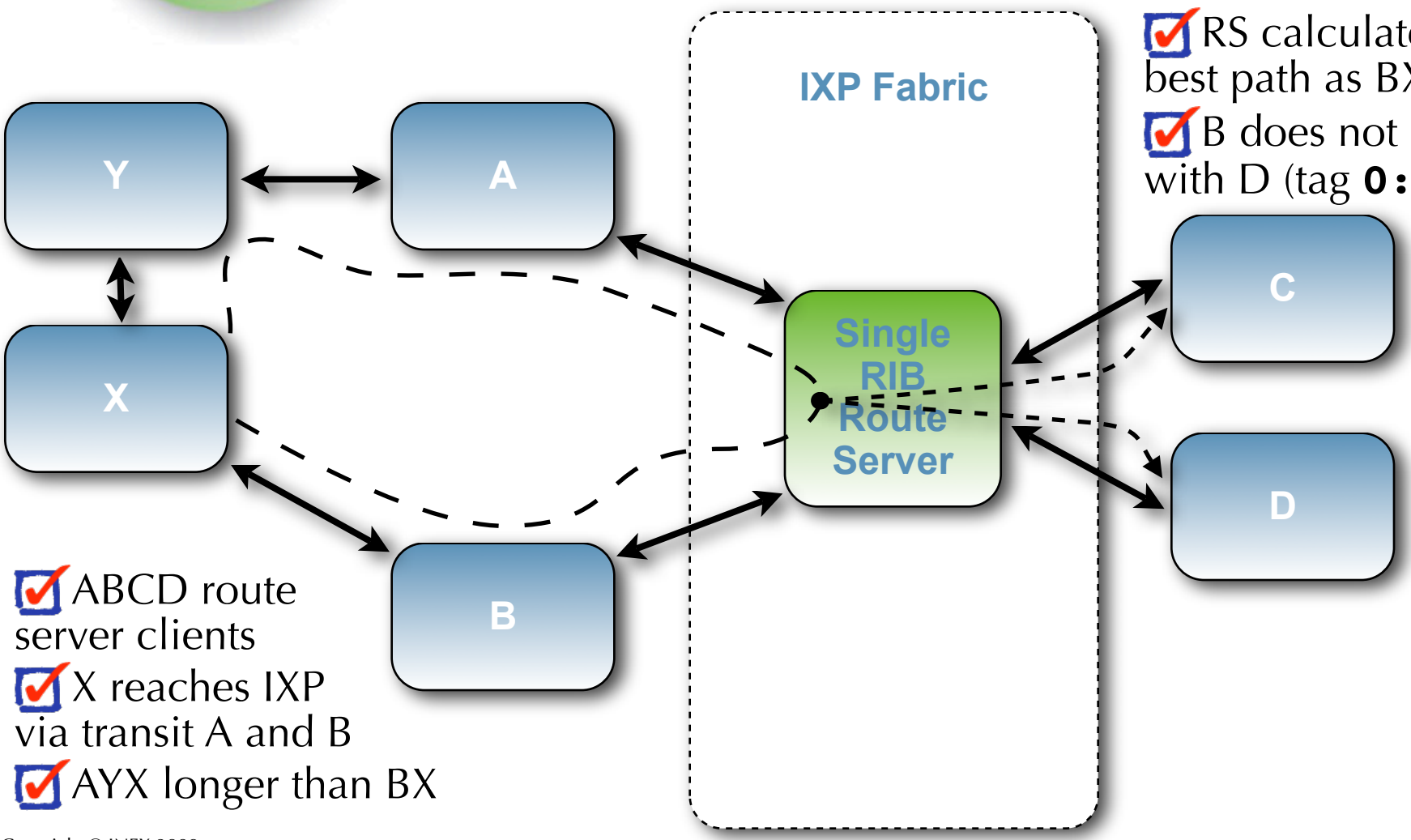
Single-RIB BGP policy problem



- ABCD route server clients
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- RS calculates best path as BX
- B does not peer with D (tag **0:D**)

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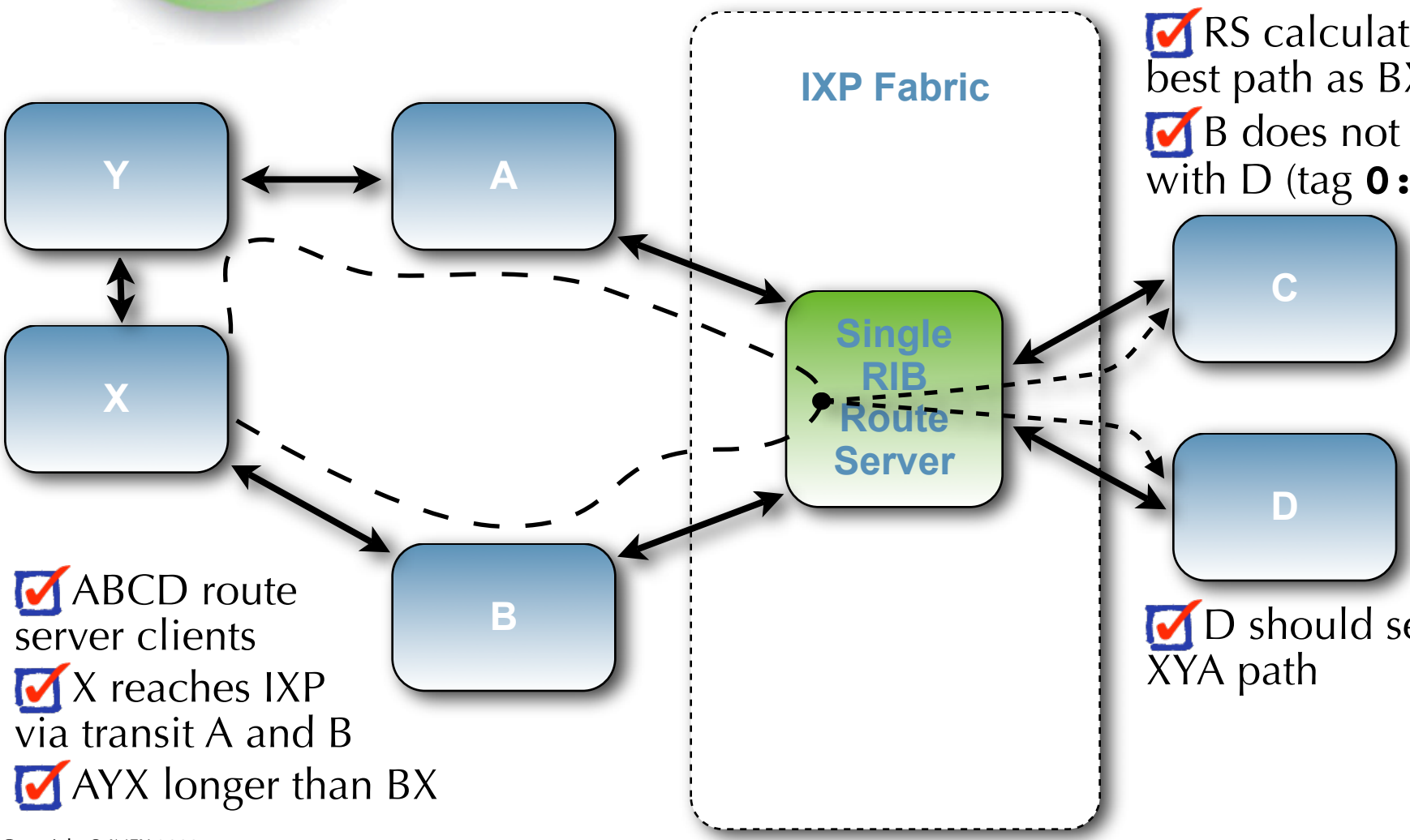

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- D should see XYA path

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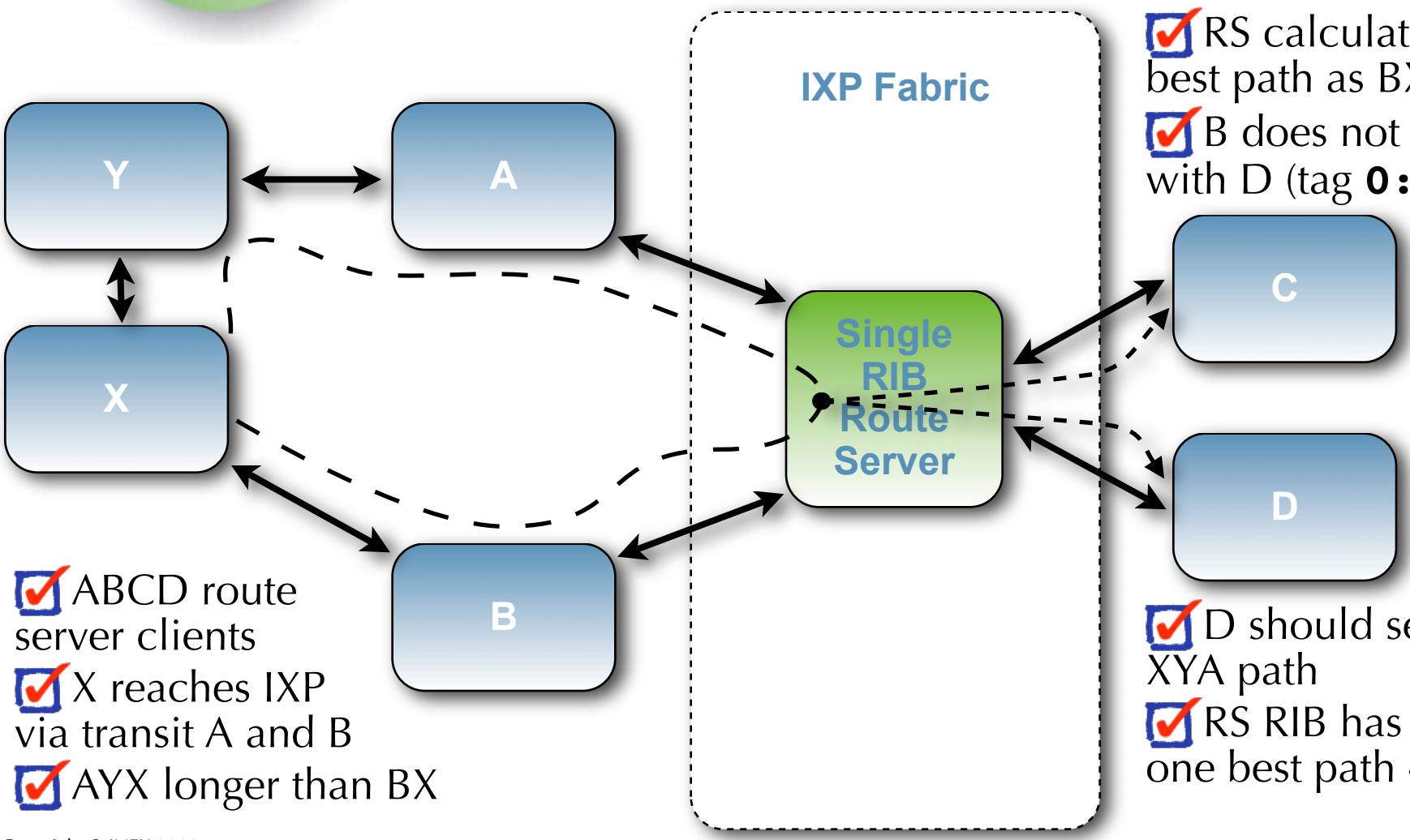

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- D should see XYA path
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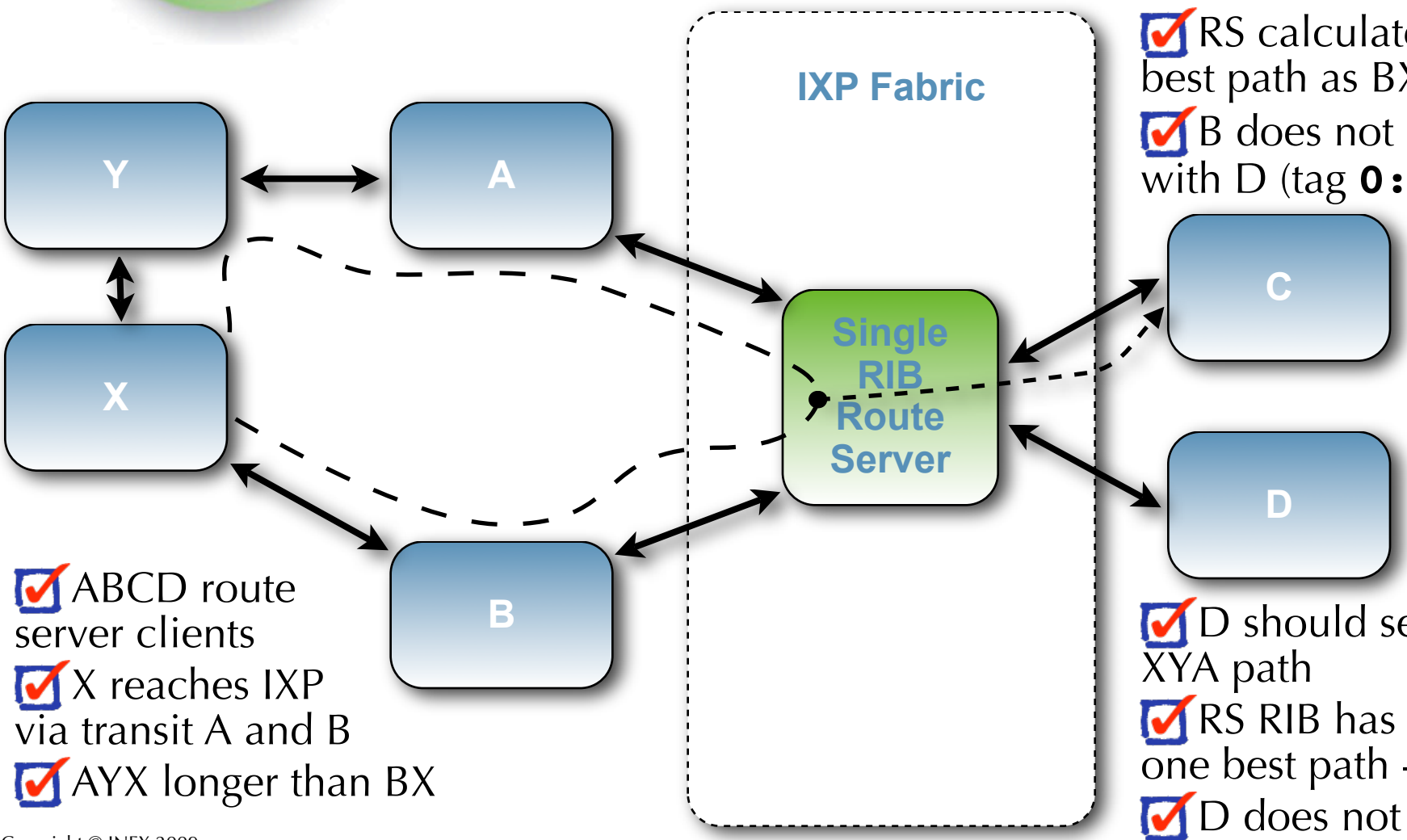

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- RS RIB has only one best path - BX
- D does not see X

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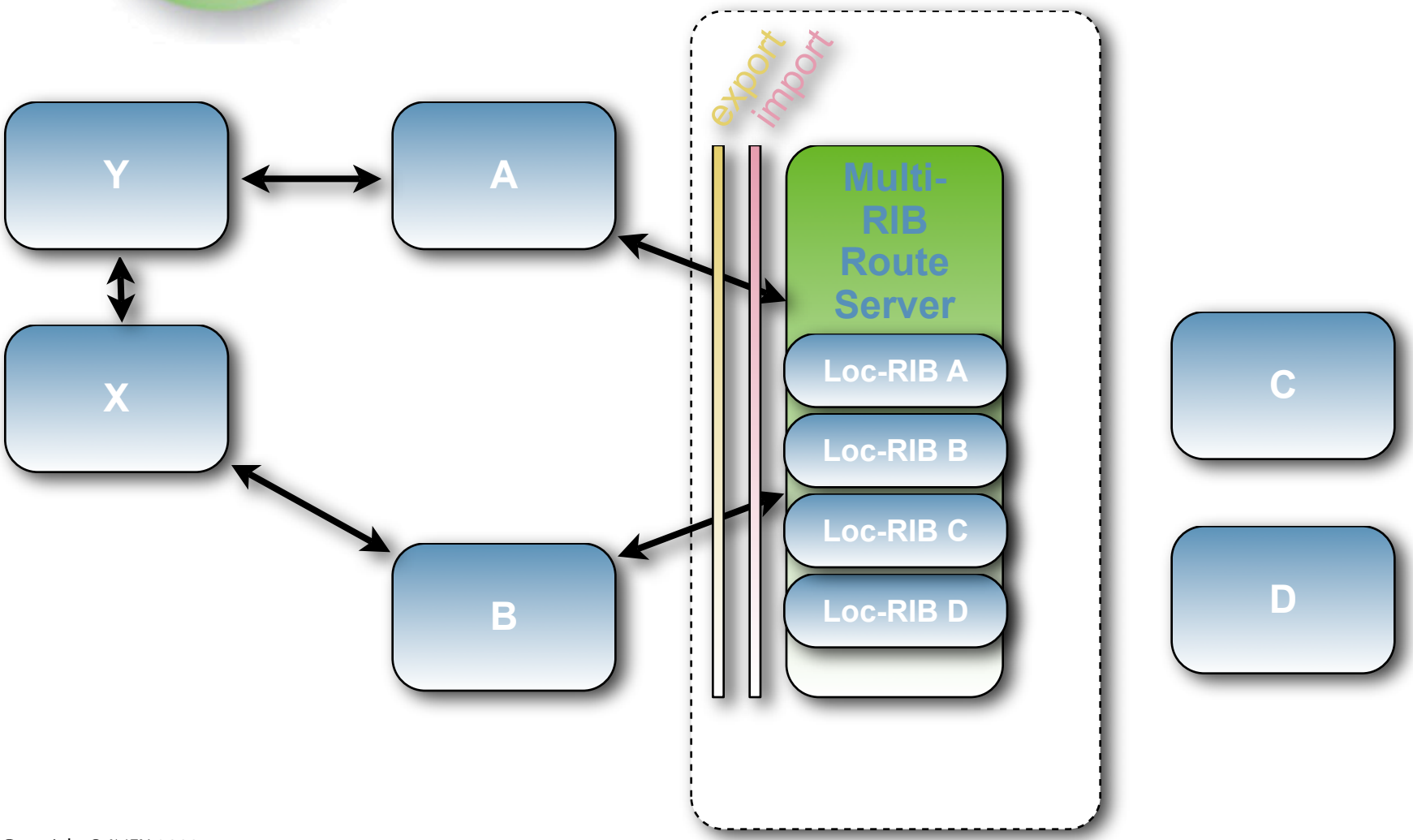
How Per-Client Loc-RIBs Work



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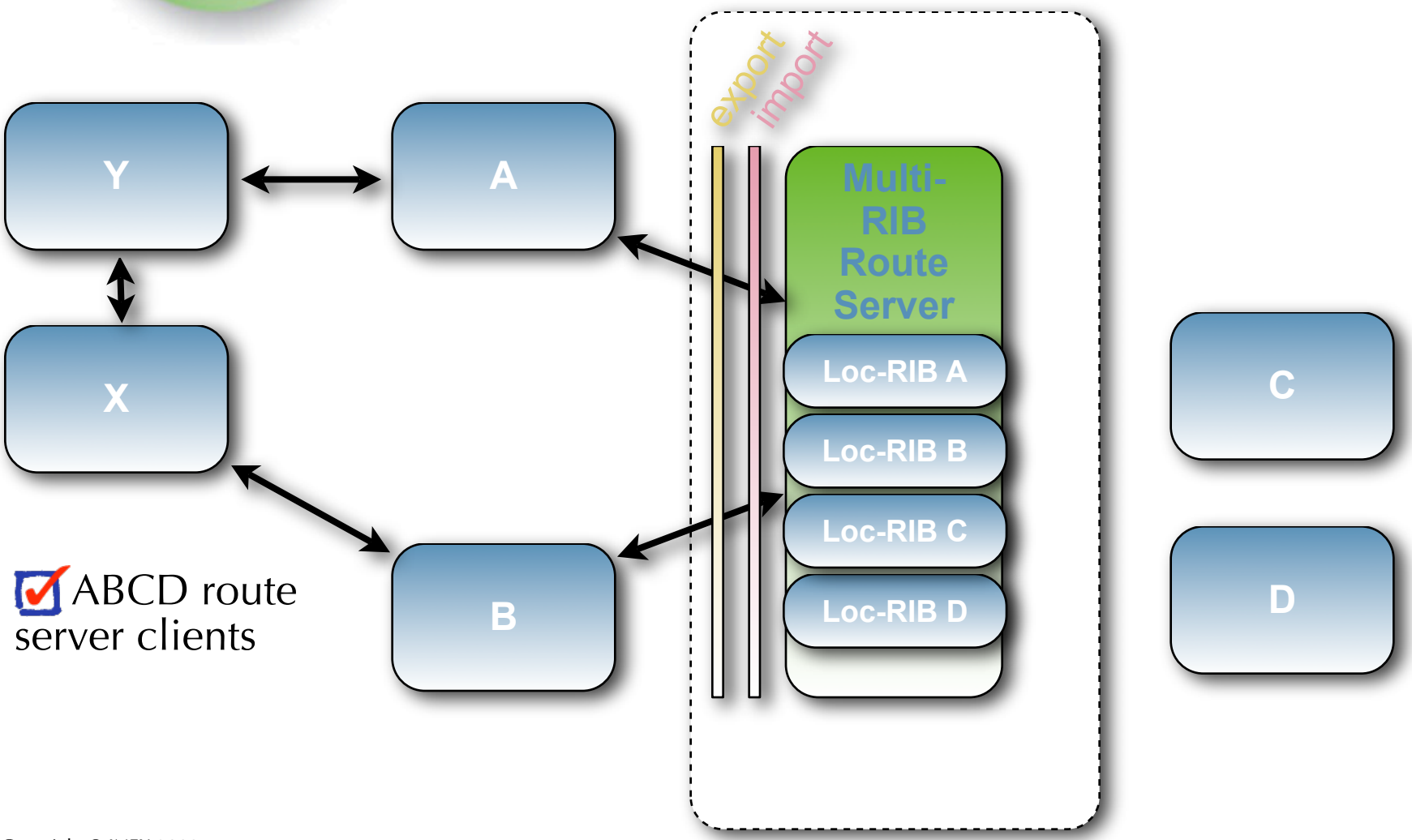

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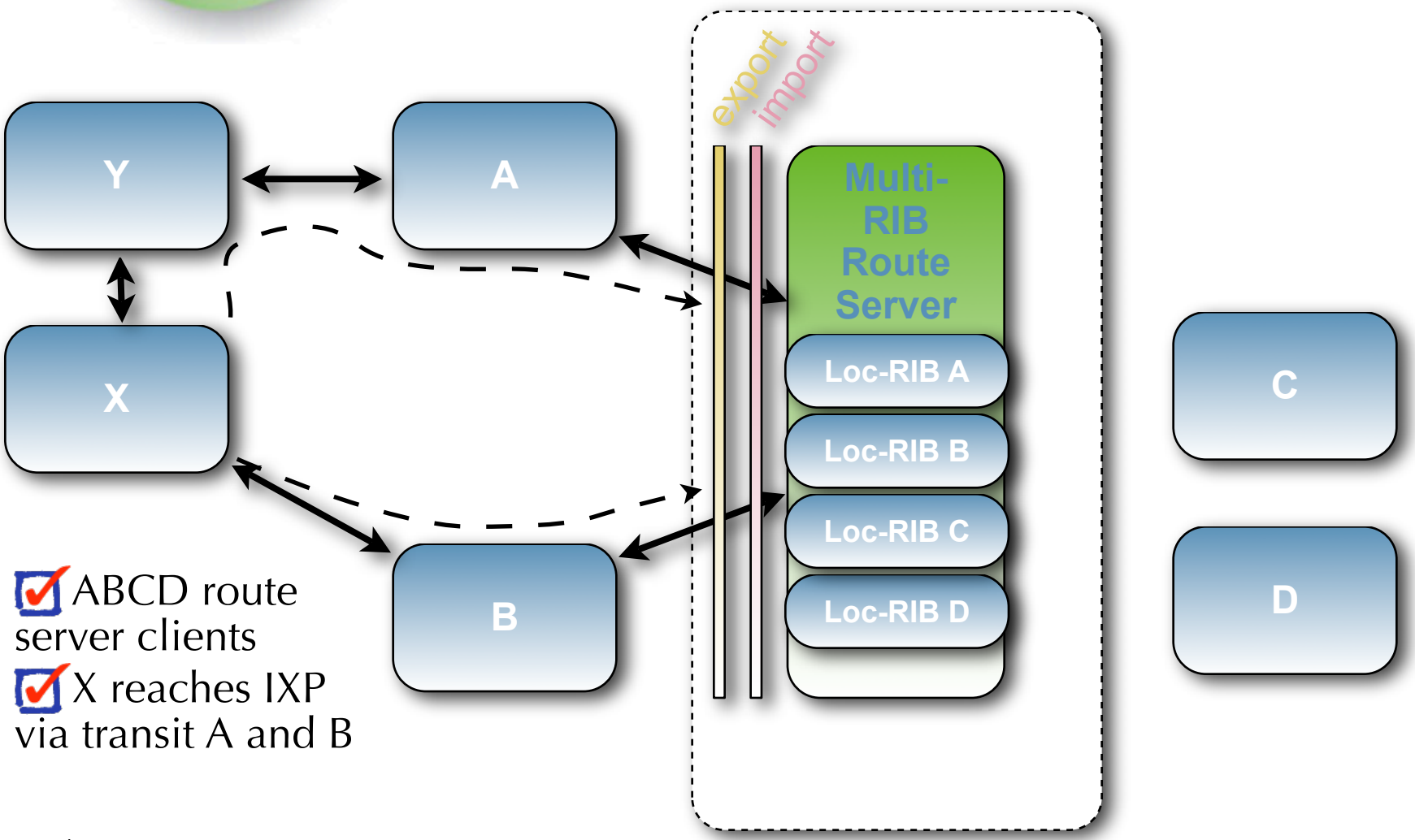

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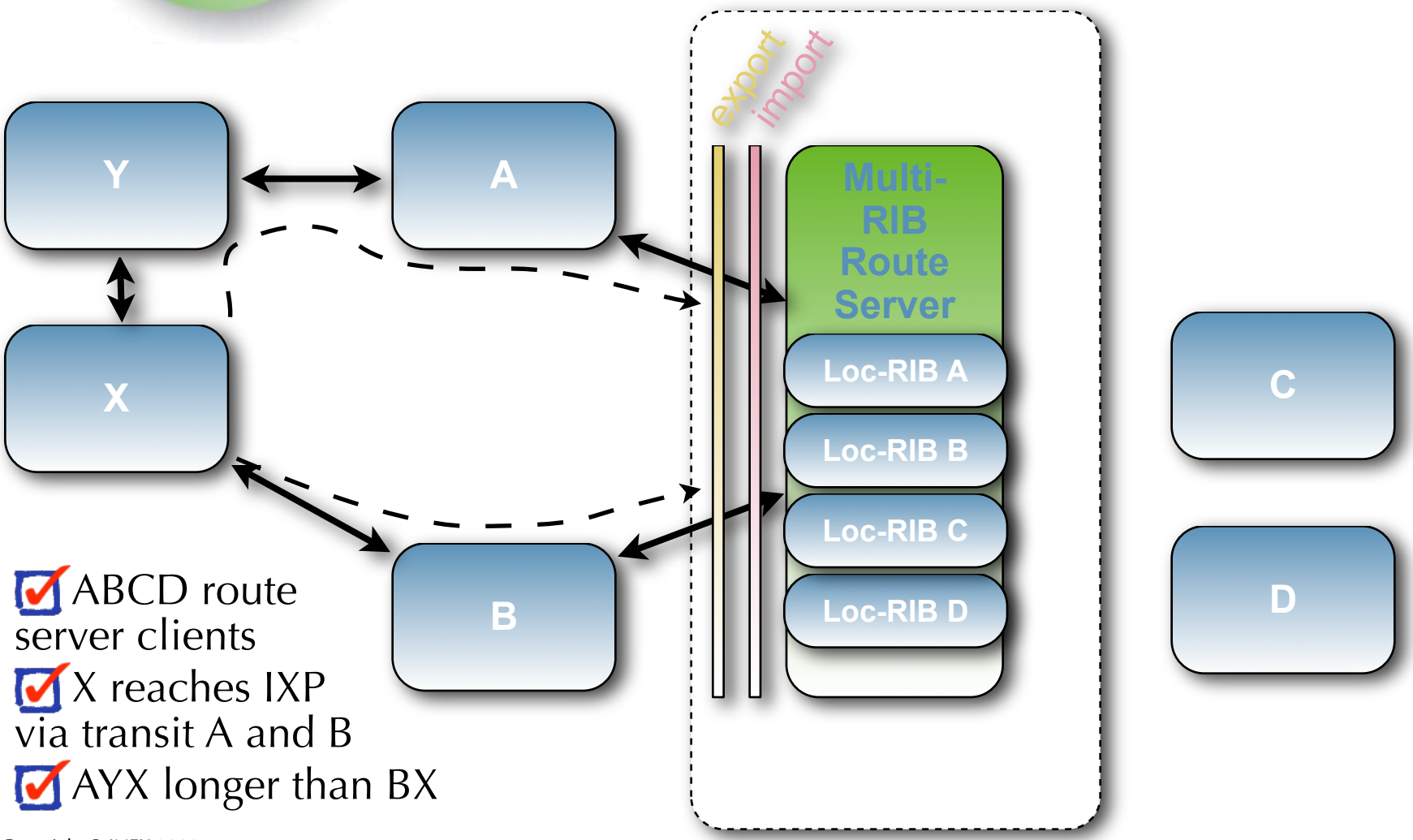

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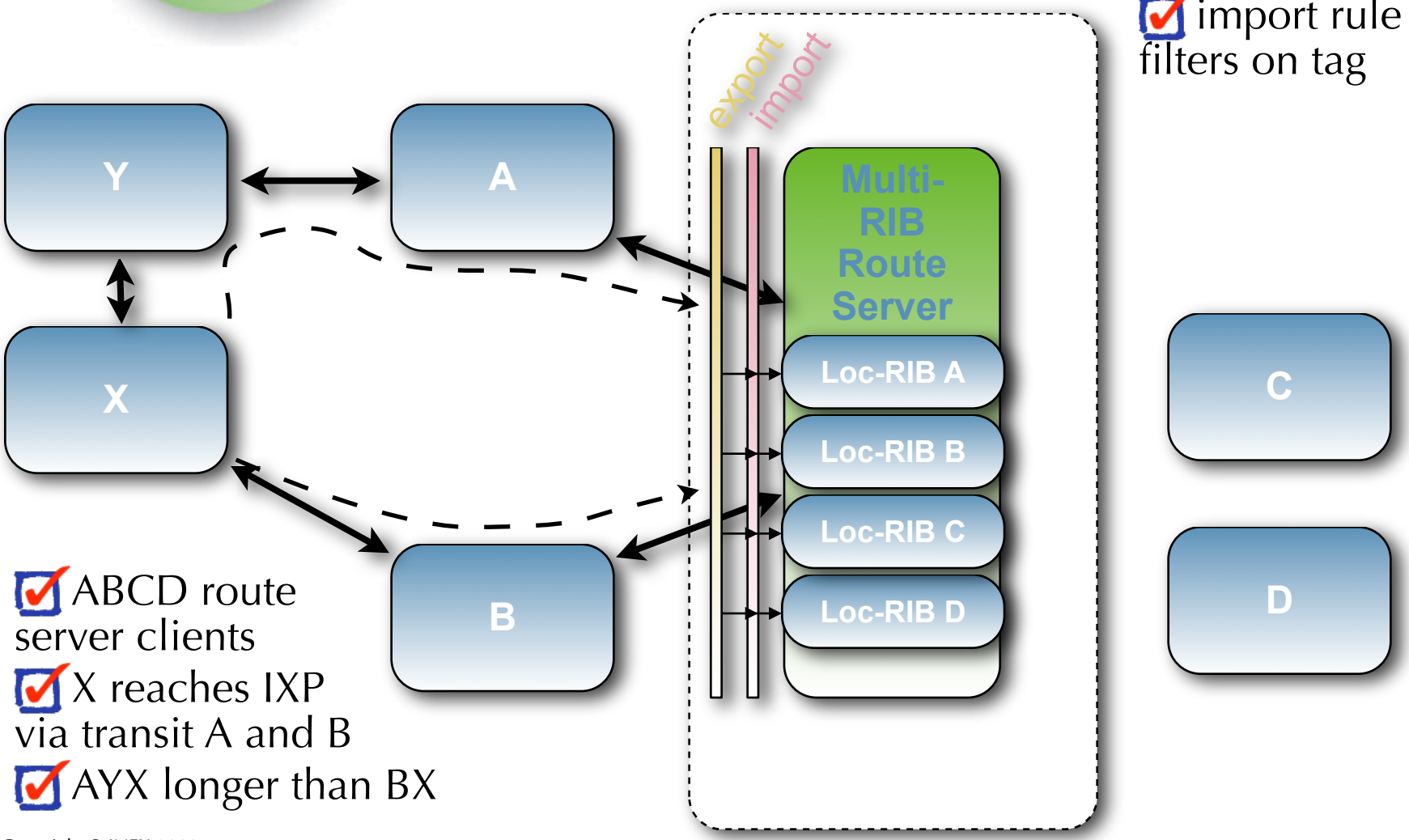

- ☑ import rule filters on tag
- ☑ ABCD route server clients
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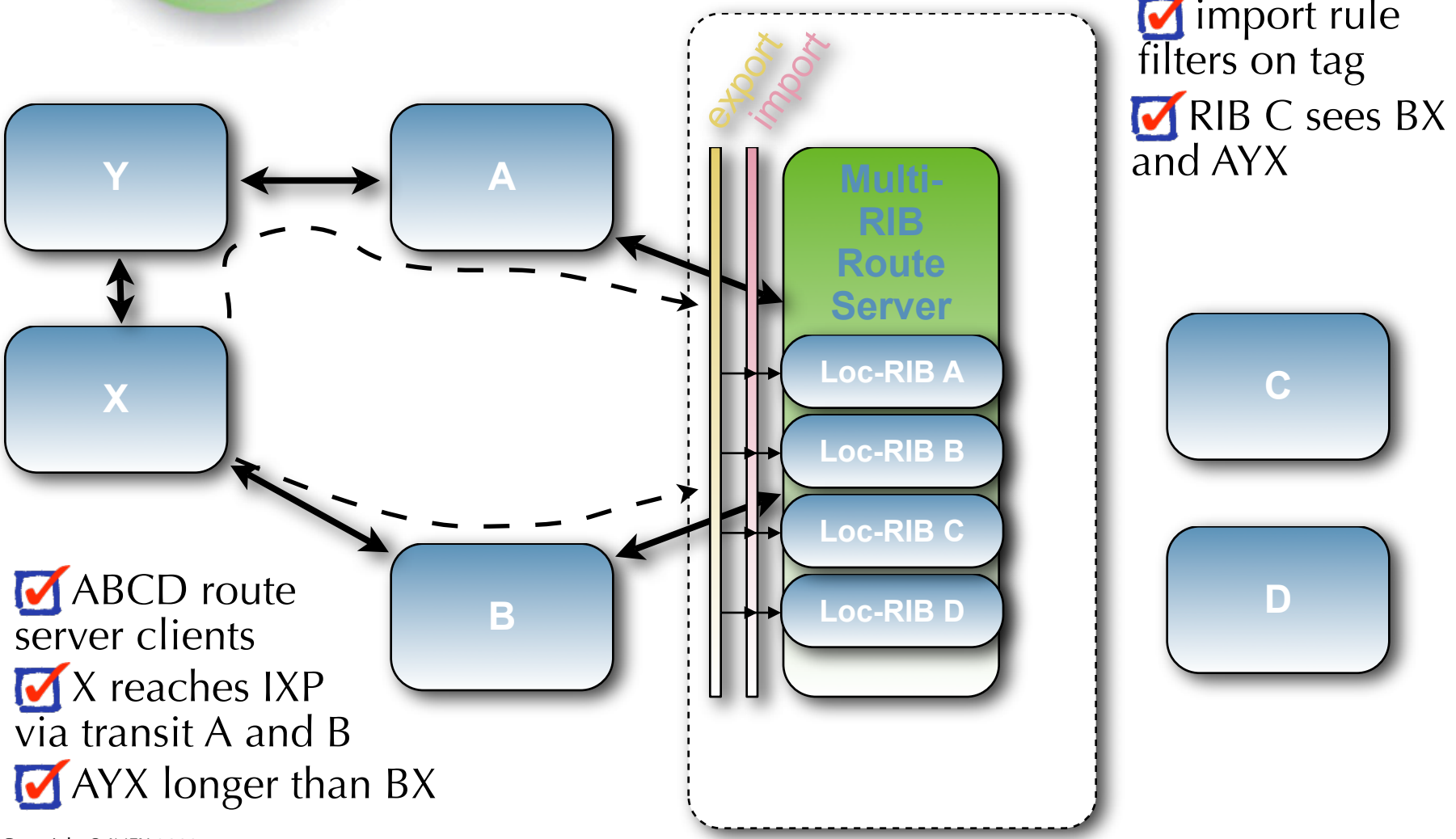
How Per-Client Loc-RIBs Work



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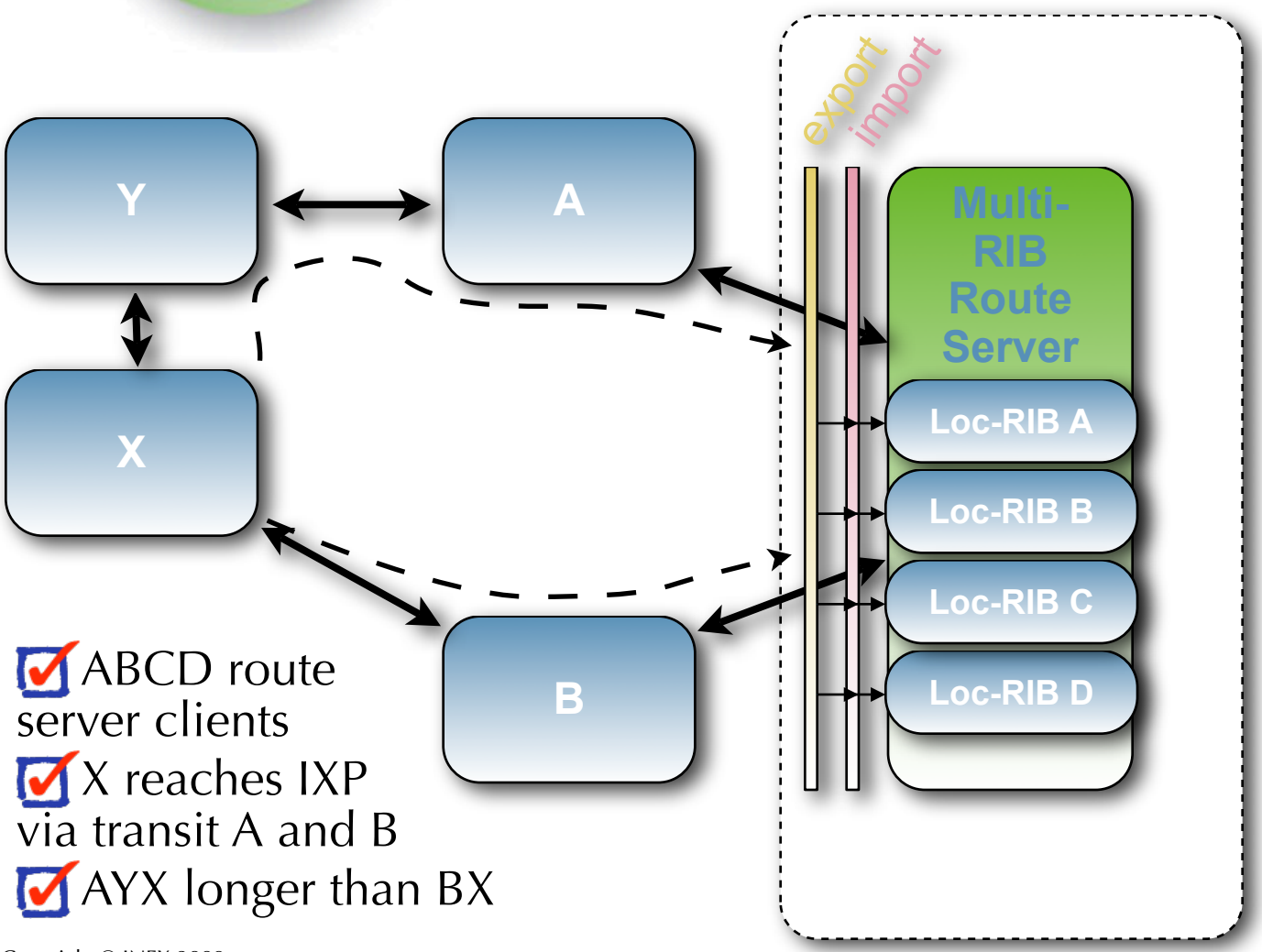

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- RIB D only sees AYX

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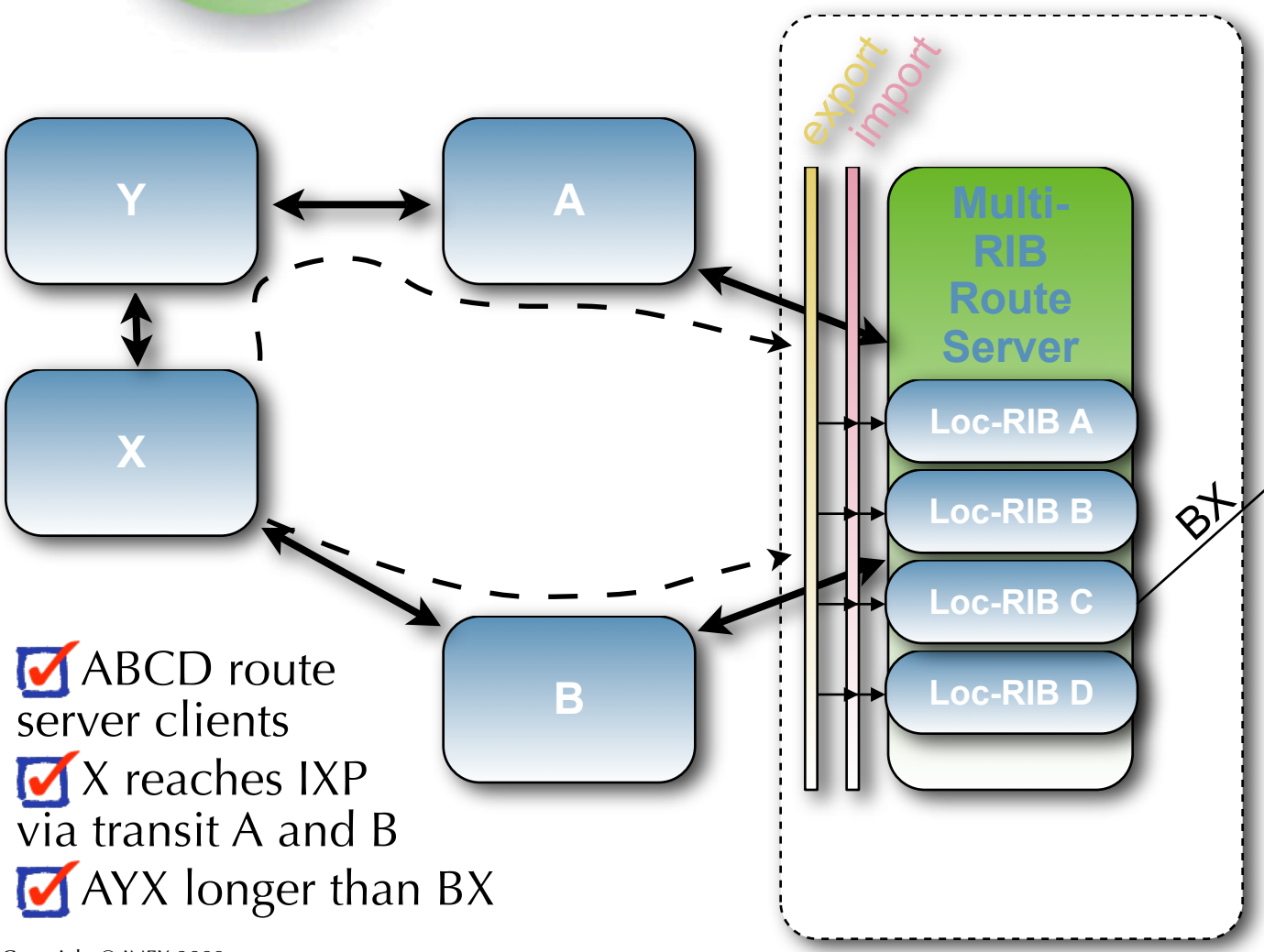
How Per-Client Loc-RIBs Work

inex internet neutral exchange



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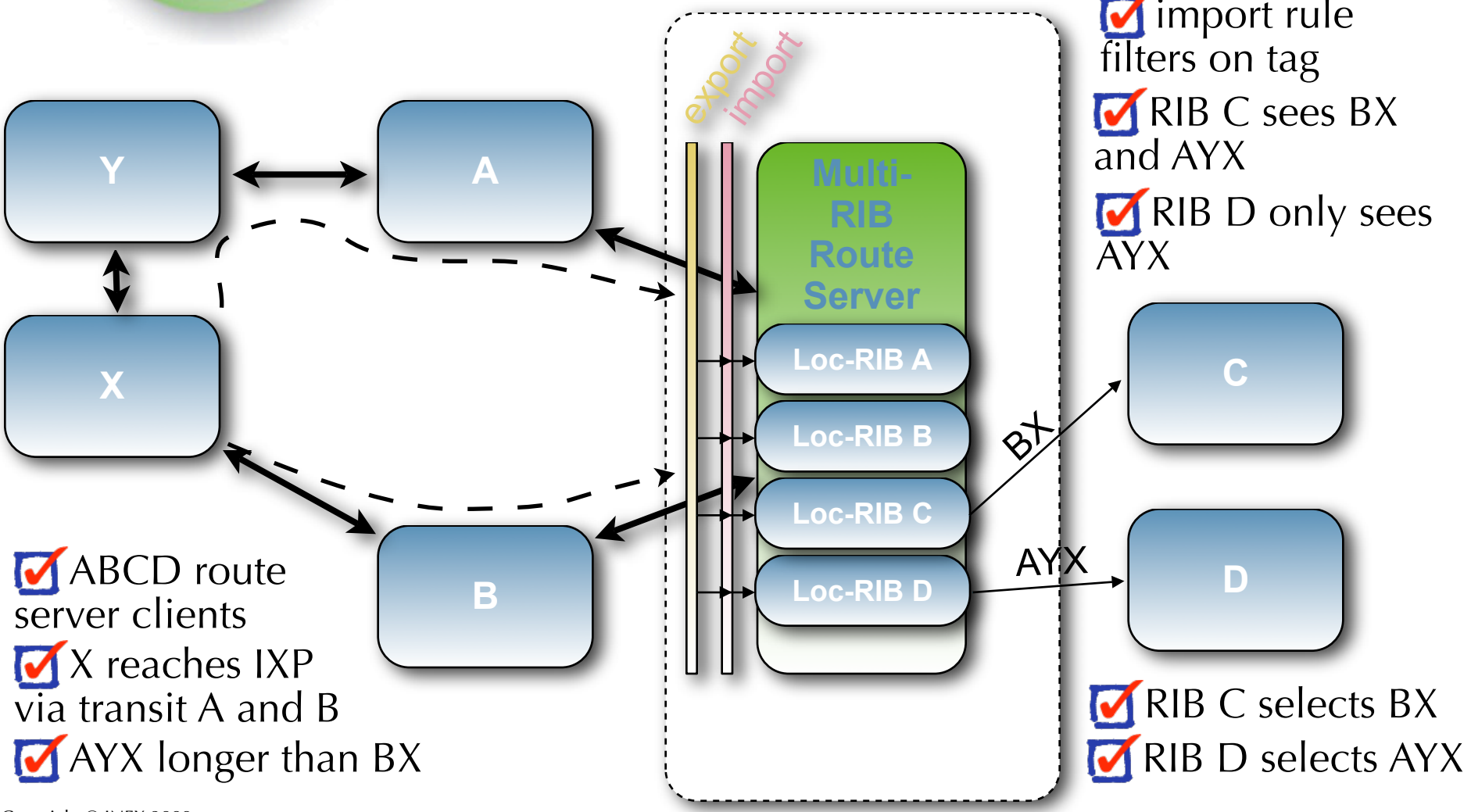

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- RIB D only sees AYX

- RIB C selects BX
- RIB D selects AYX

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Problems with Multiple Loc-RIBs

- Multiple Loc-RIBs also mean:
  - Memory consumption and CPU usage go from O(P) to:

$$\sum_{1}^{N} (P(n) \cdot (n - 1))$$

  - ... where N = number of clients, P = number of prefixes
  - Add a little if "`soft-reconfiguration inbound`" used
- Quagga is single-threaded
  - multiple cores won't help you for CPU
  - but 64 bit images might for memory
  - you can now run separate daemons for IPv4 and IPv6
- All this is fine if you're a small IXP
- Not so good if you have lots of prefixes and route-server clients.

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Thanks for listening!

That's all folks...

...any questions?