



Jak šel čas v síťování

Marian Rychtecký

KKTS Plzeň 2020



NIX.CZ

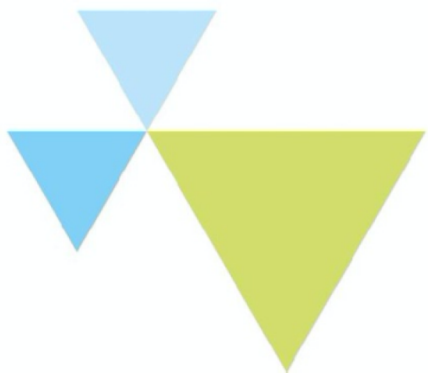


10BaseT2

By © Raimond Spekking / CC BY-SA 4.0 (via Wikimedia Commons), CC BY-SA 4.0



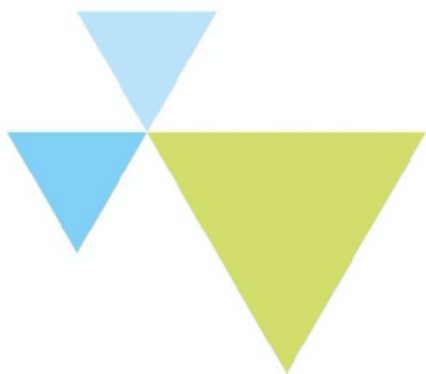
400G-QSFP-DD LR4



Ethernet a jeho důsledky

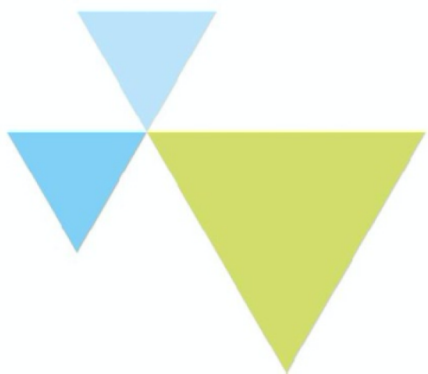
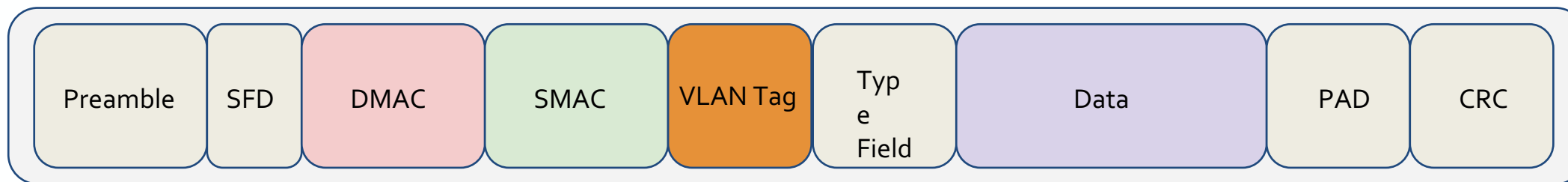
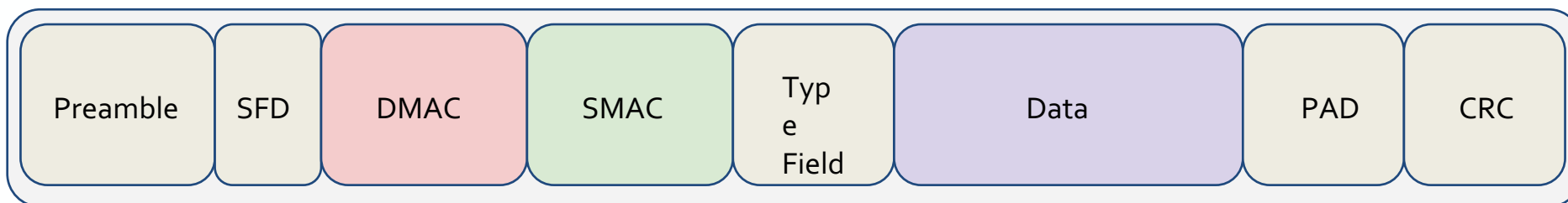


<https://www.amazon.com/splicing-machine-Splicer-Cleaver-KOMSHINE/dp/B073GLSRBX>

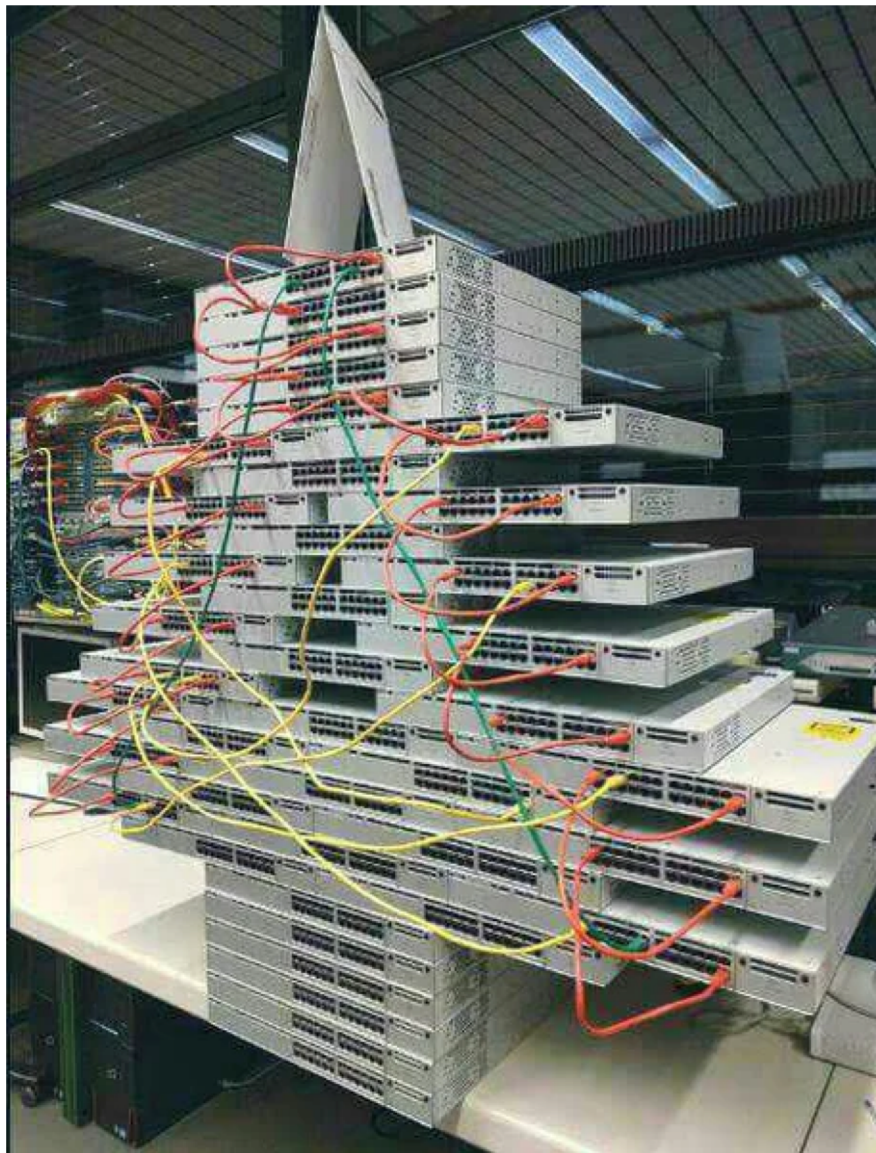


Ethernet a jeho důsledky

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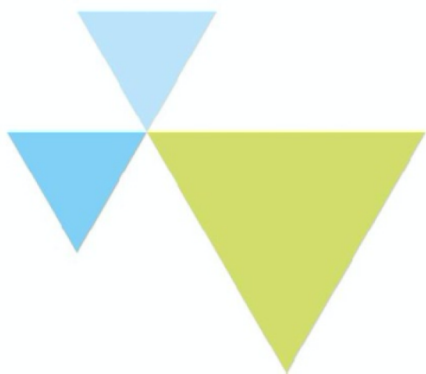
Ethernet a jeho důsledky



Spanning Tree

<https://ggag.com>

Ethernet a jeho lahůdky





TRILL

(TRansparent Interconnection of Lots of Links)

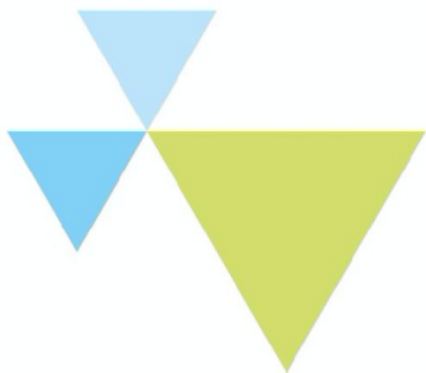
Fabric Path

(Cisco)

Virtual Cluster Switching

(Brocade)

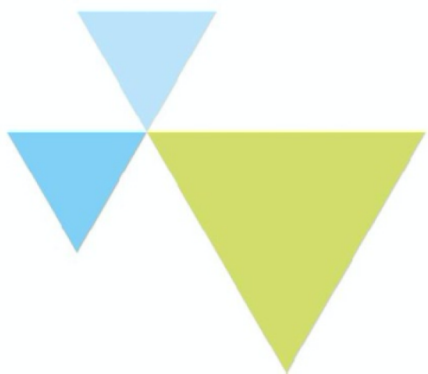
Ethernet a jeho lahůdky





SPB

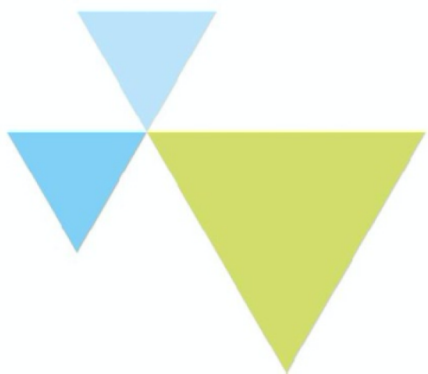
(Shortest Path Bridging)



Ethernet a jeho lahůdky



TRILL vs. SPB



Ethernet a jeho lahůdky



EoIP / GRE / TAP



Ethernet a jeho lahůdky

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MPLS / VPLS

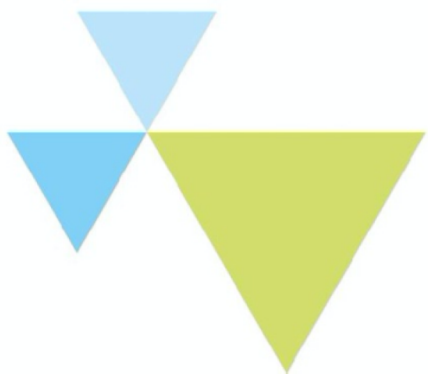
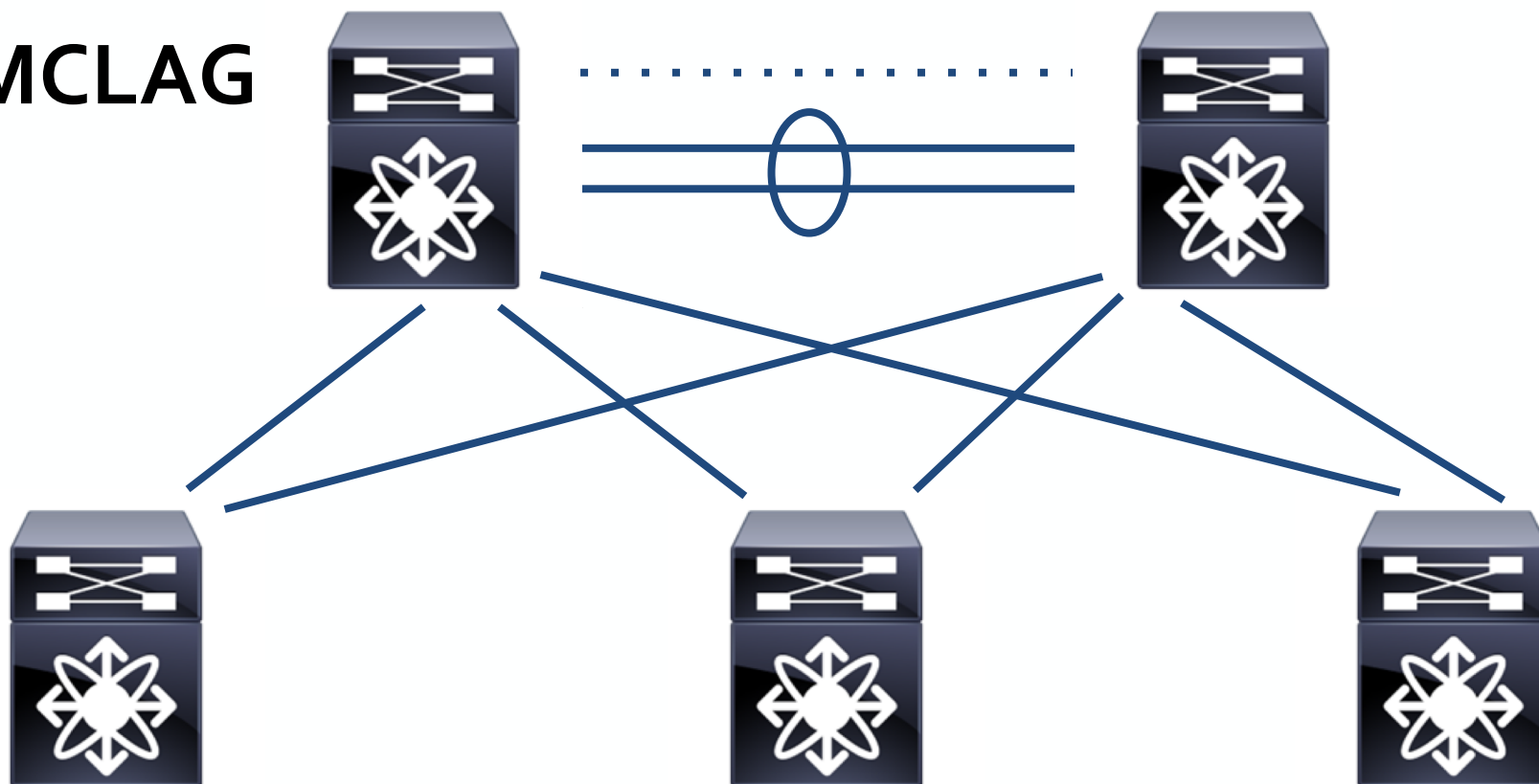


Ethernet a jeho lahůdky

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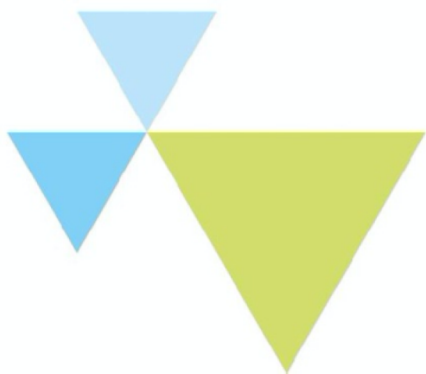
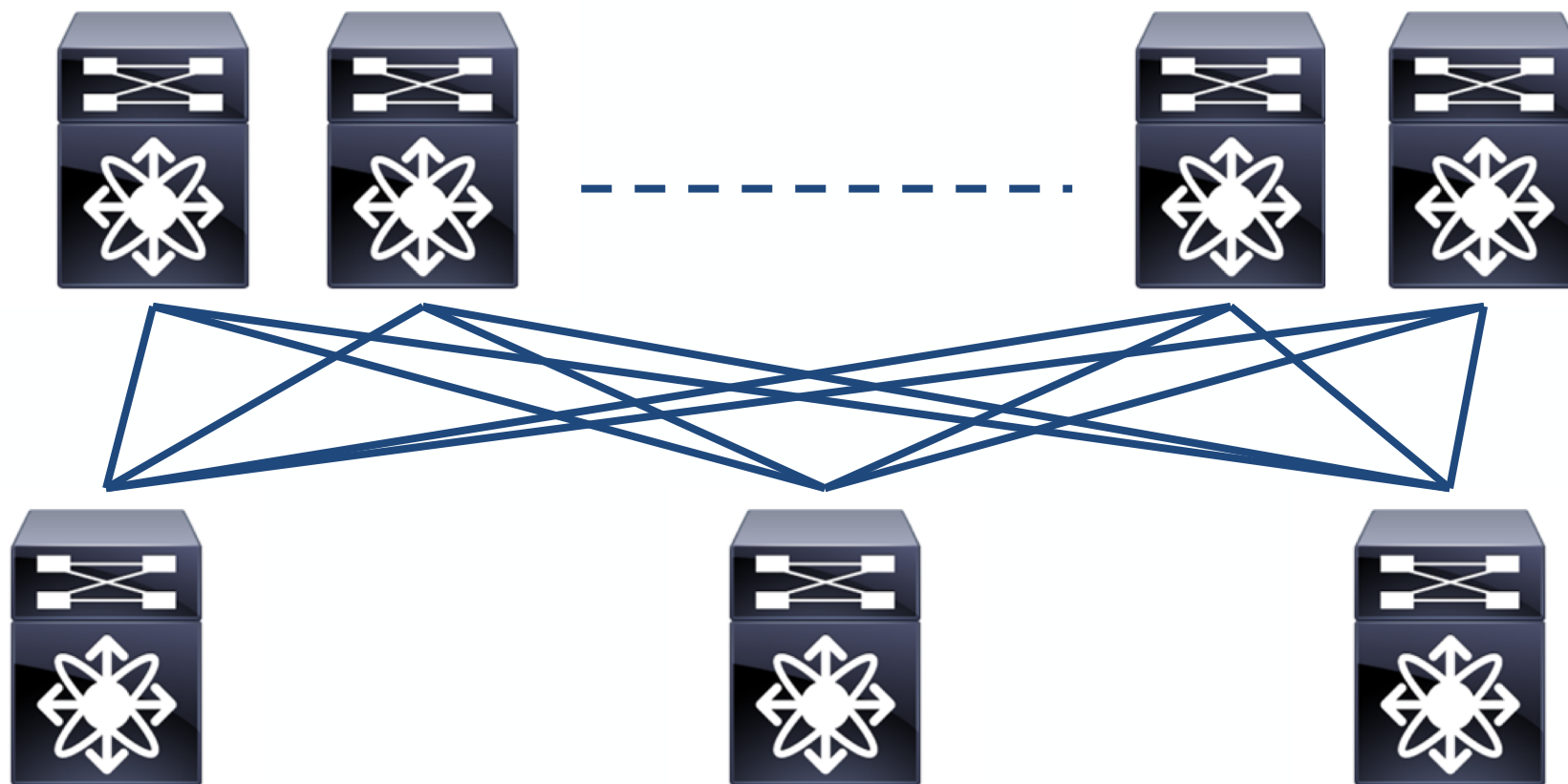


vDC / MCLAG



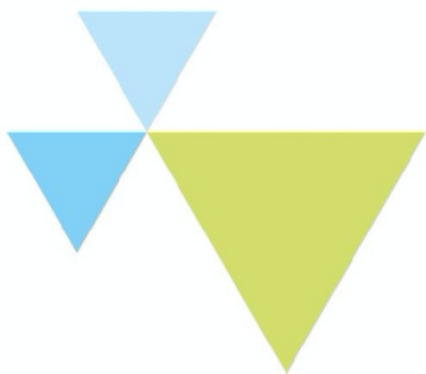
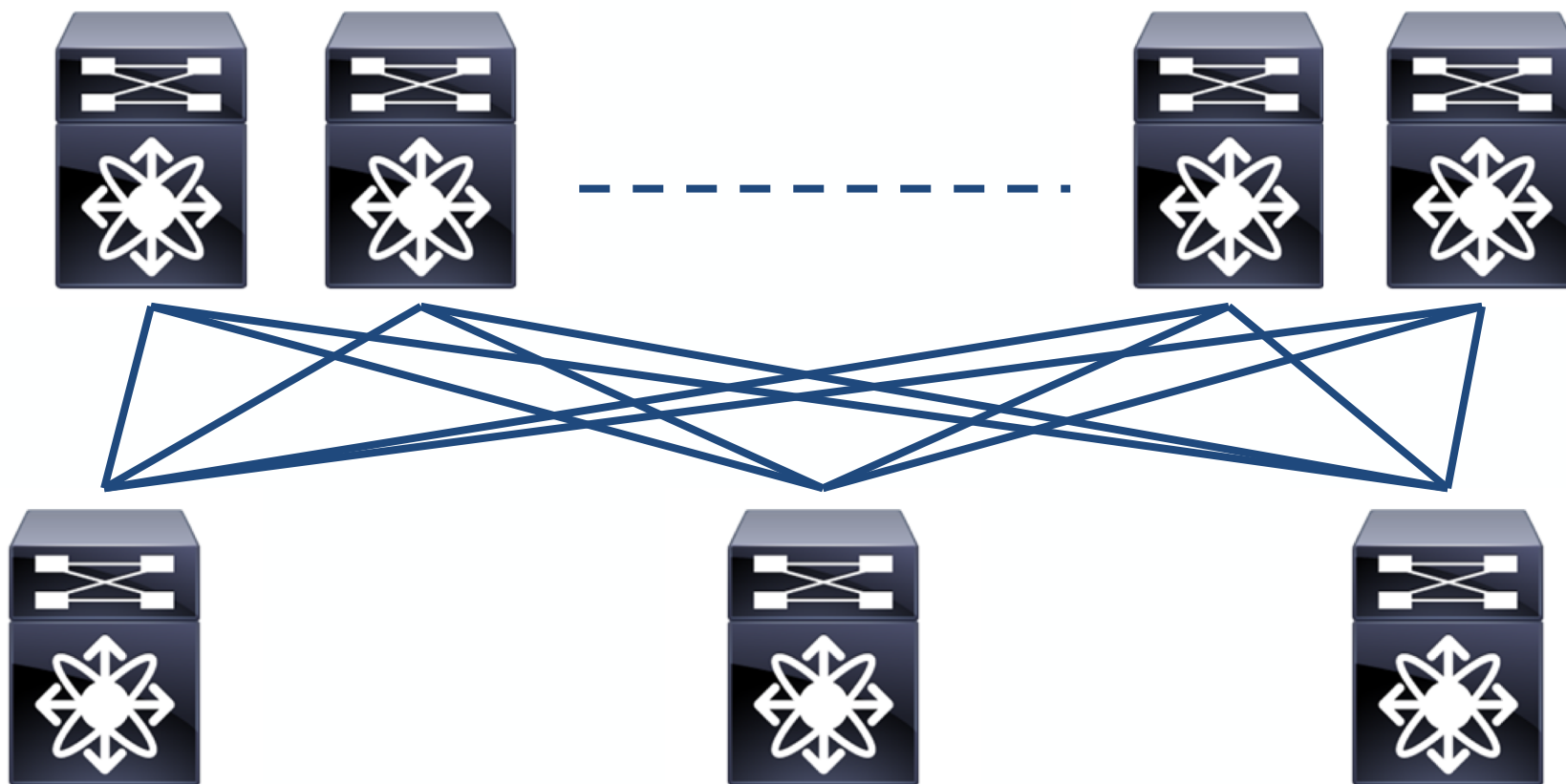
Jak se čas v data centrech

Trill / FP



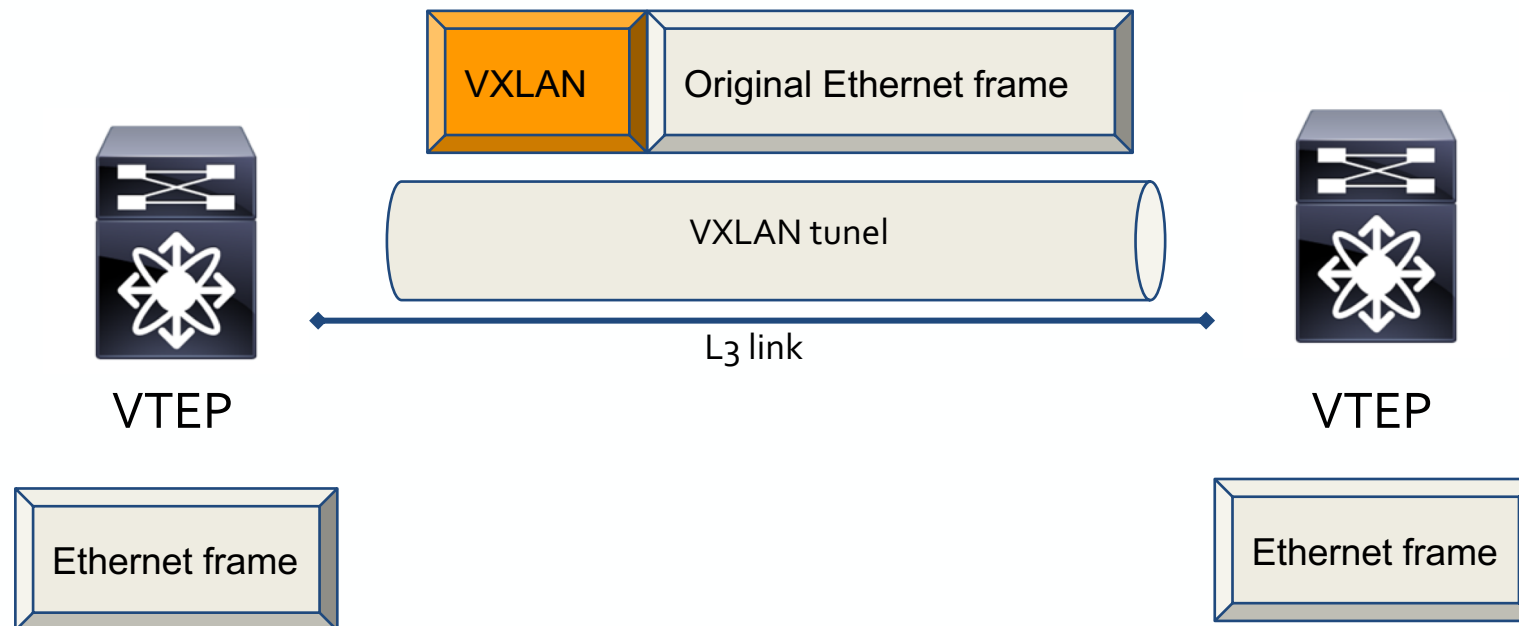
Jak se čas v data centrech

VxLAN



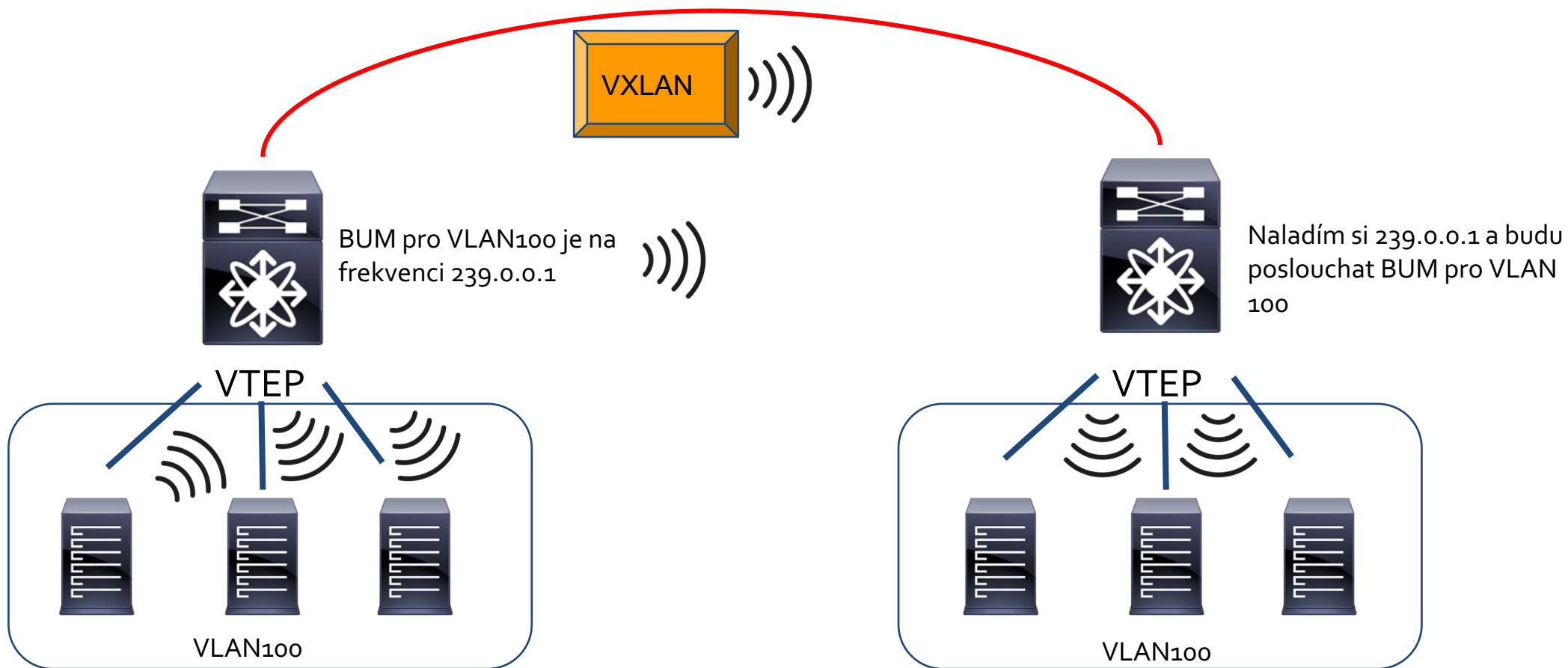
Aktuálně v datacentru

VxLAN



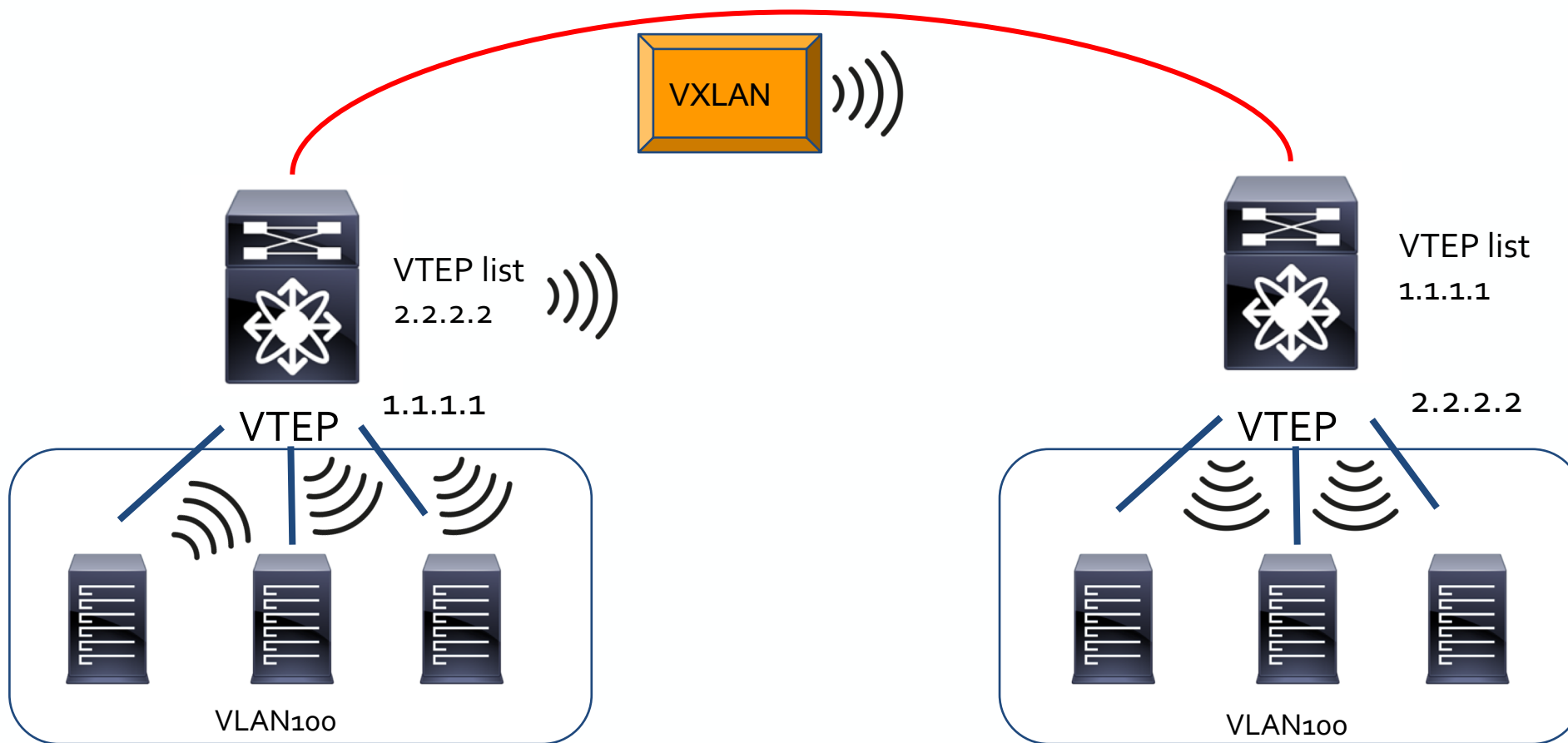
Aktuálně v datacentru

VxLAN BUM F&L



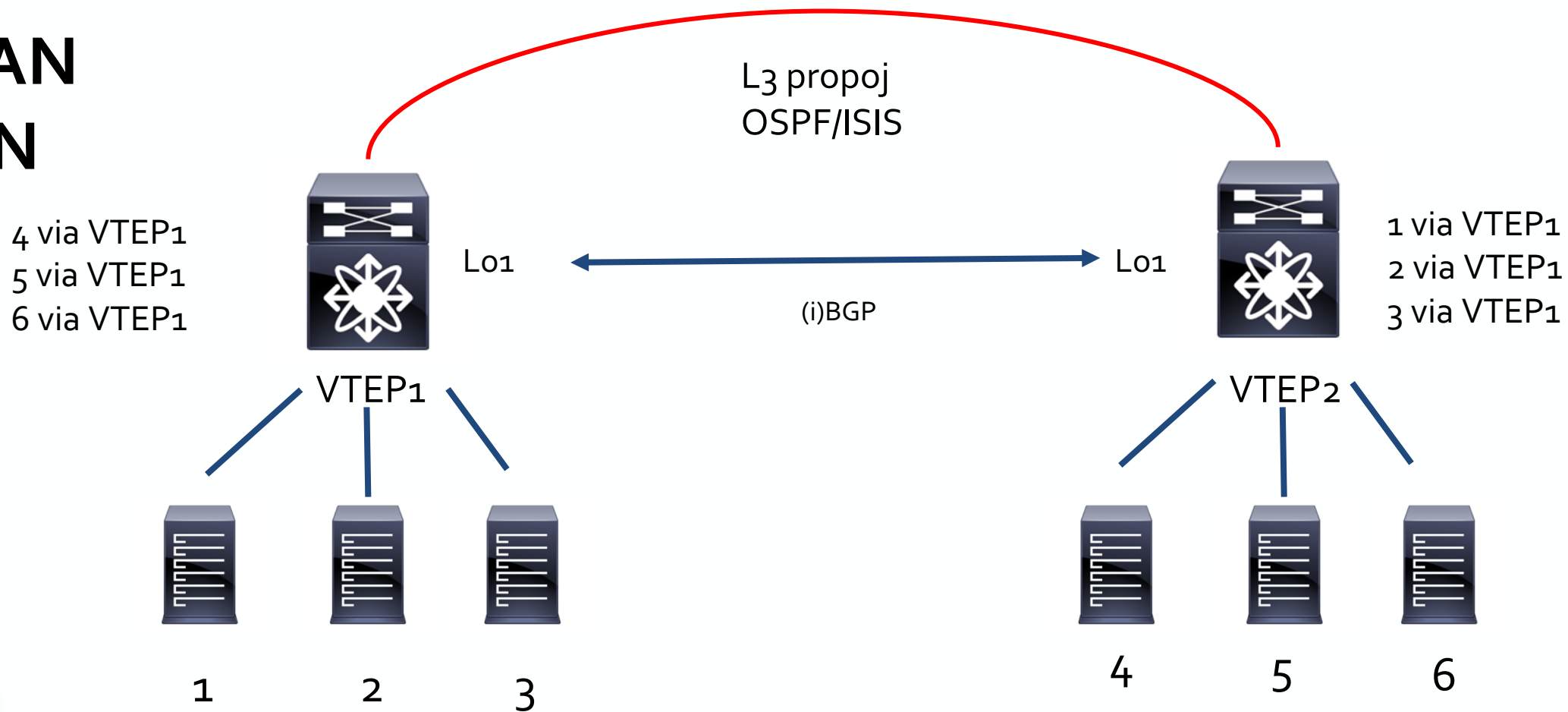
Aktuálně v datacentru

VxLAN BUM HER



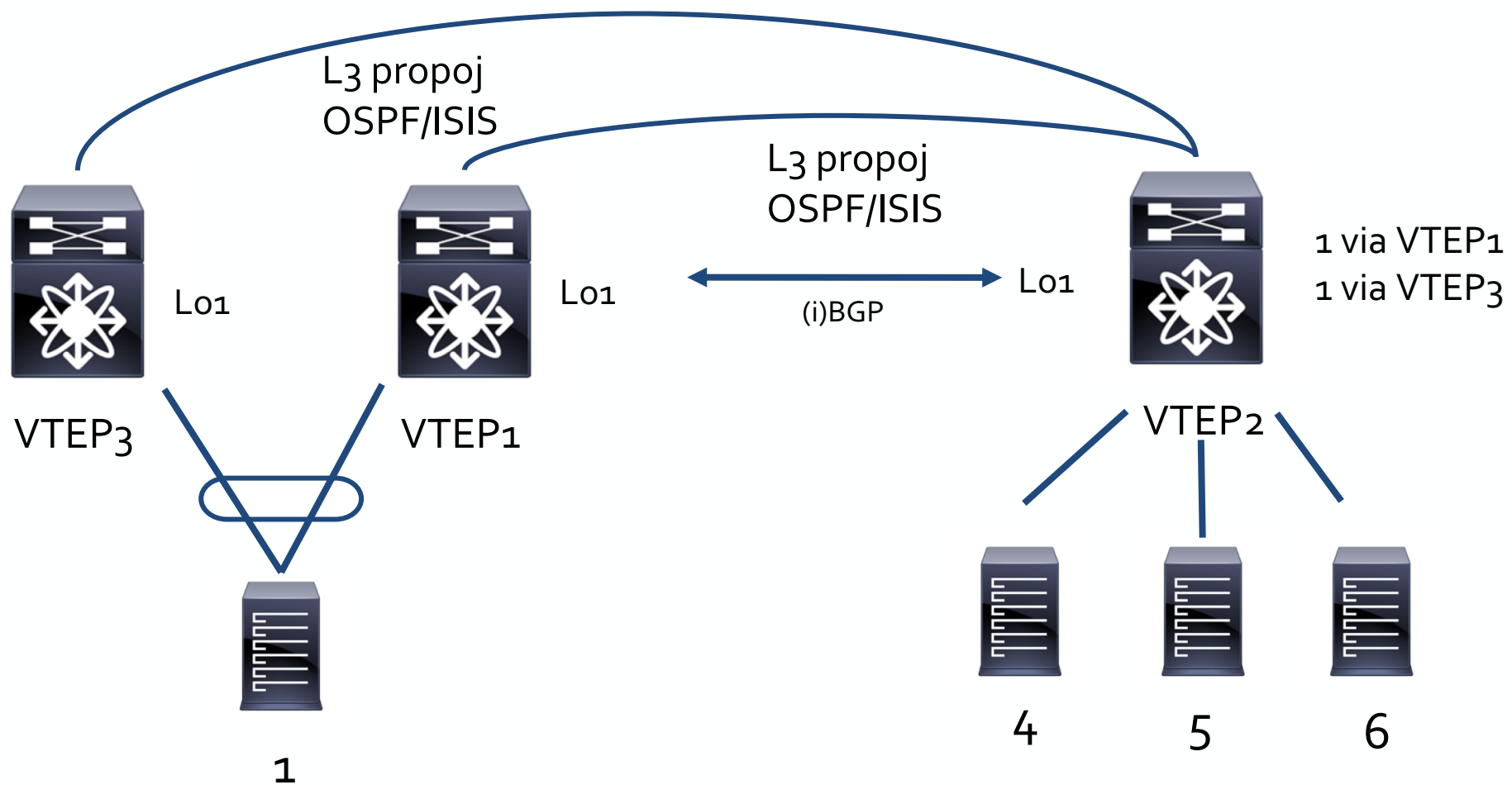
Aktuálně v datacentru

VxLAN EVPN



Aktuálně v datacentru

VxLAN EVPN



Aktuálně v datacentru

VxLAN funguje....

Cisco, Arista, Juniper a další výrobci

Mikrotik také, ale bez EVPN podpory

Linux implementuje VxLAN v jádře, EVPN pomocí
FRR/GoBGP



Podpora VxLAN

Není příliš vhodný pro DC

Zjednodušuje MPLS - někdy také MPLS 2.0

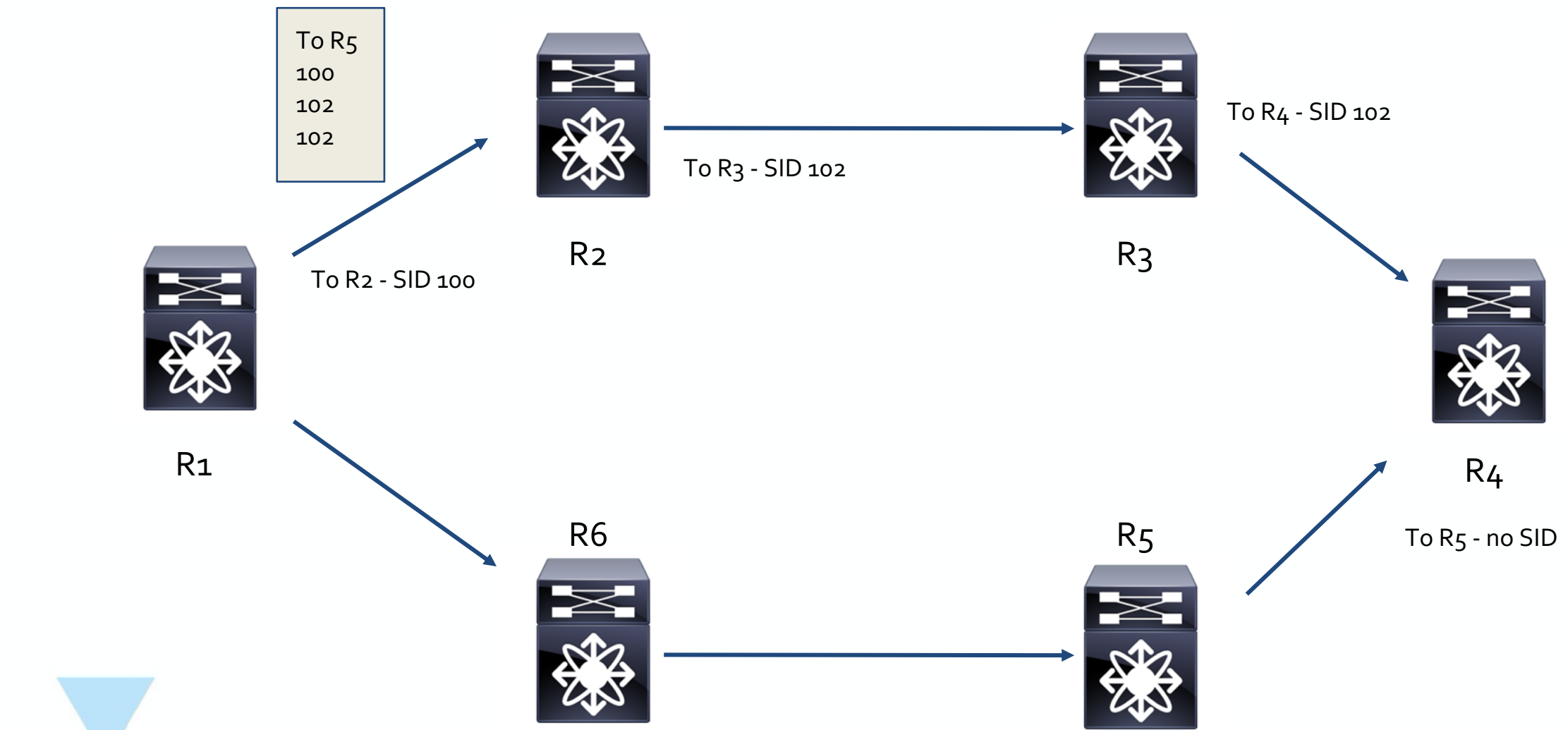
Využívá MPLS stoh (stack) pro své identifikátory segmentu (SIDs)

Šetří zdroje v zařízeních

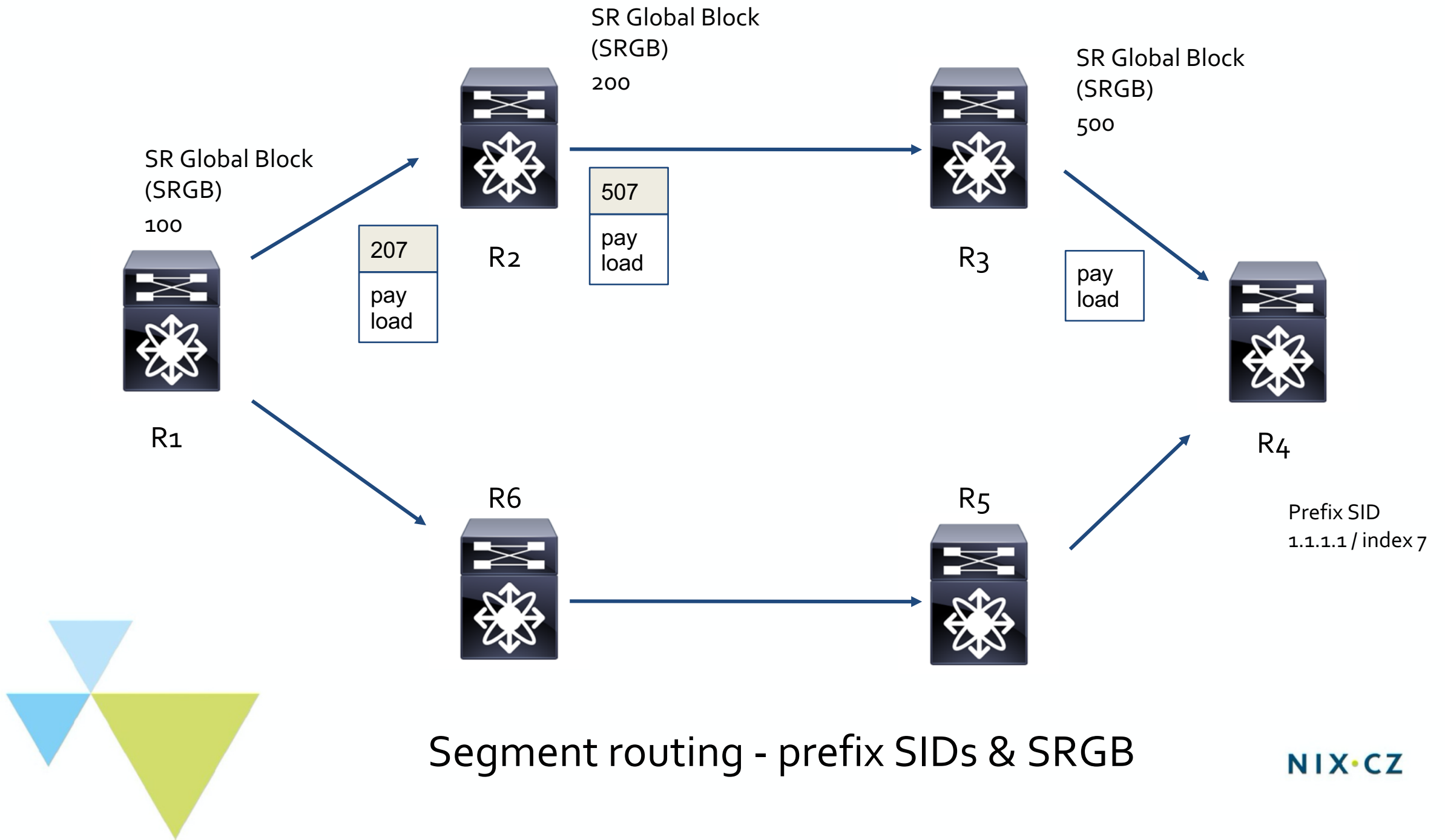
Verze čistě IPv6 - SRv6

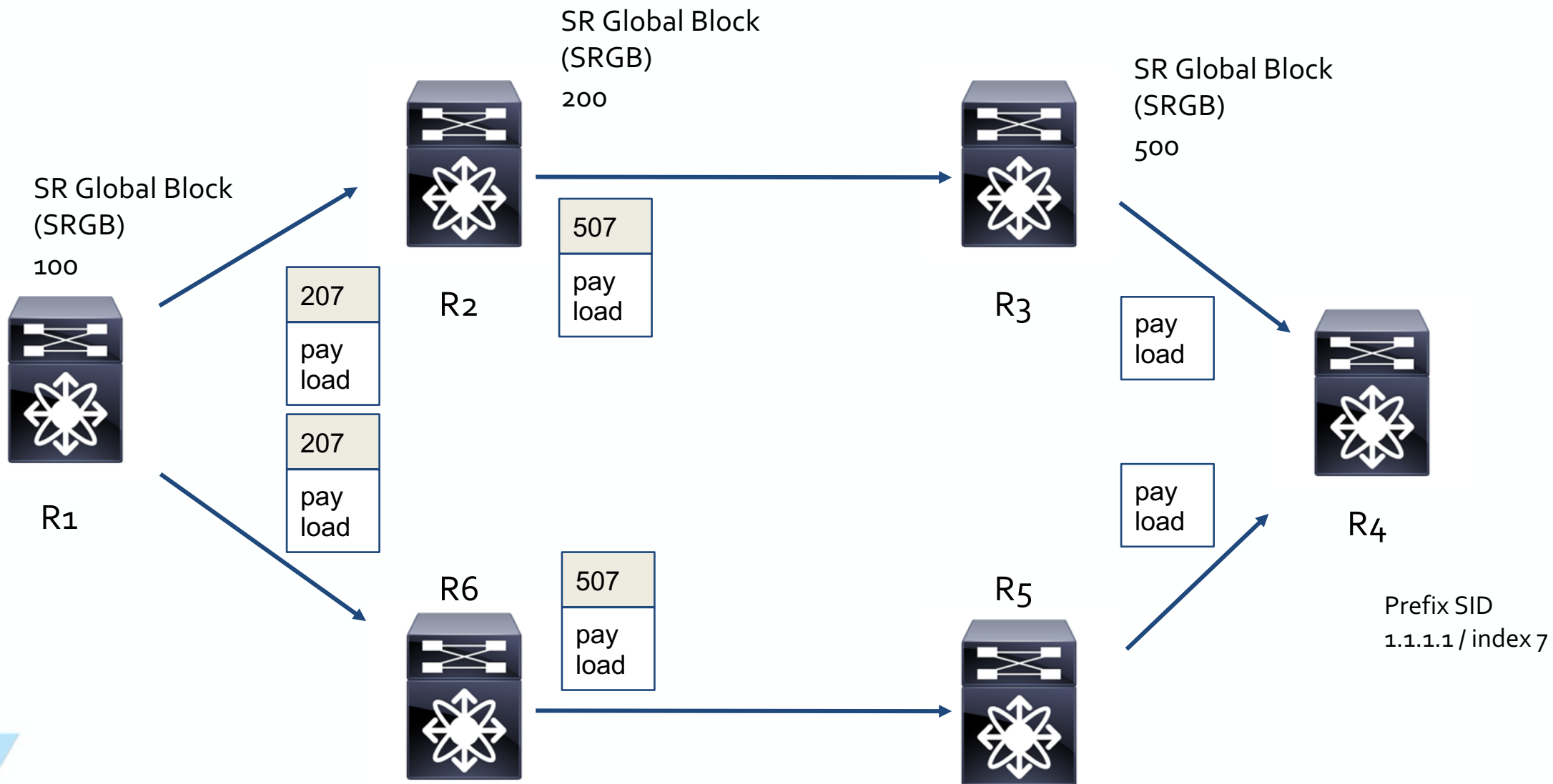
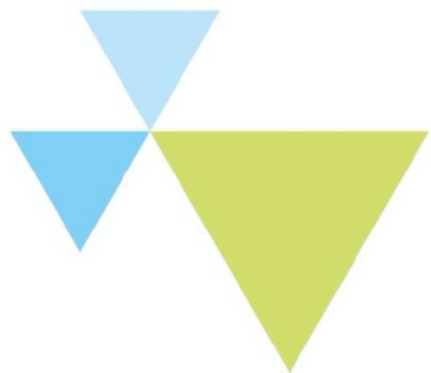


Segment routing



Segment routing - local adjacencies





Segment routing - TE

- Jednoduchost
- Škálovatelnost
- Jednoduché nasazení
- Možnost řízení provozu dle parametrů služeb
- Ochrana proti výpadku



Segment routing

VxLAN

Building Data Centers with VXLAN BGP EVPN

Krattiger, Kapadia, Jansen (ciscopress.com)

Segment Routing

www.segment-routing.net



Zdroje