XCLOUD NETWORKS

Alex Saroyan

*Open-only Networking

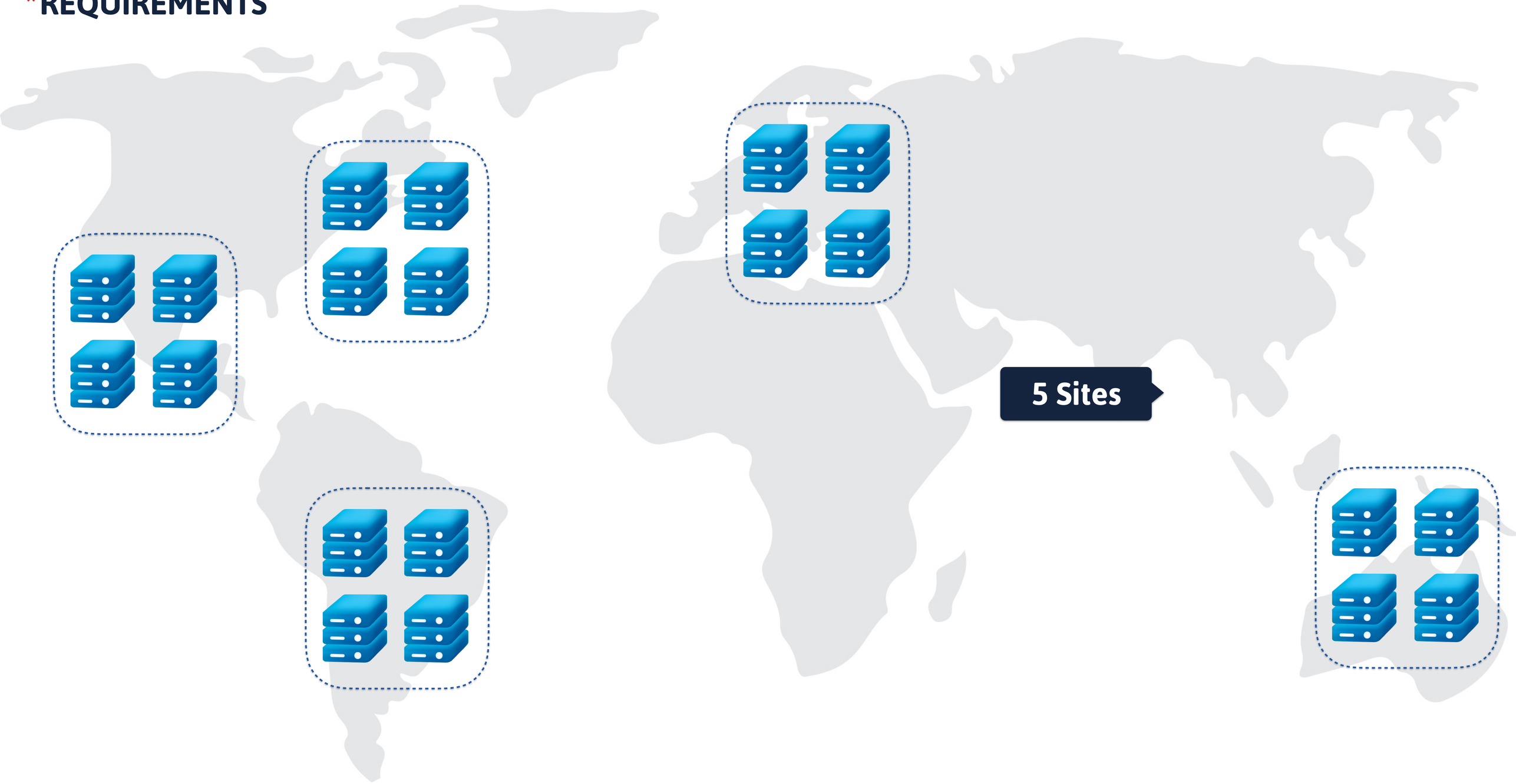
Experiences on practical end-to-end datacenter deployment purely based on open networking gear and software

RIPE

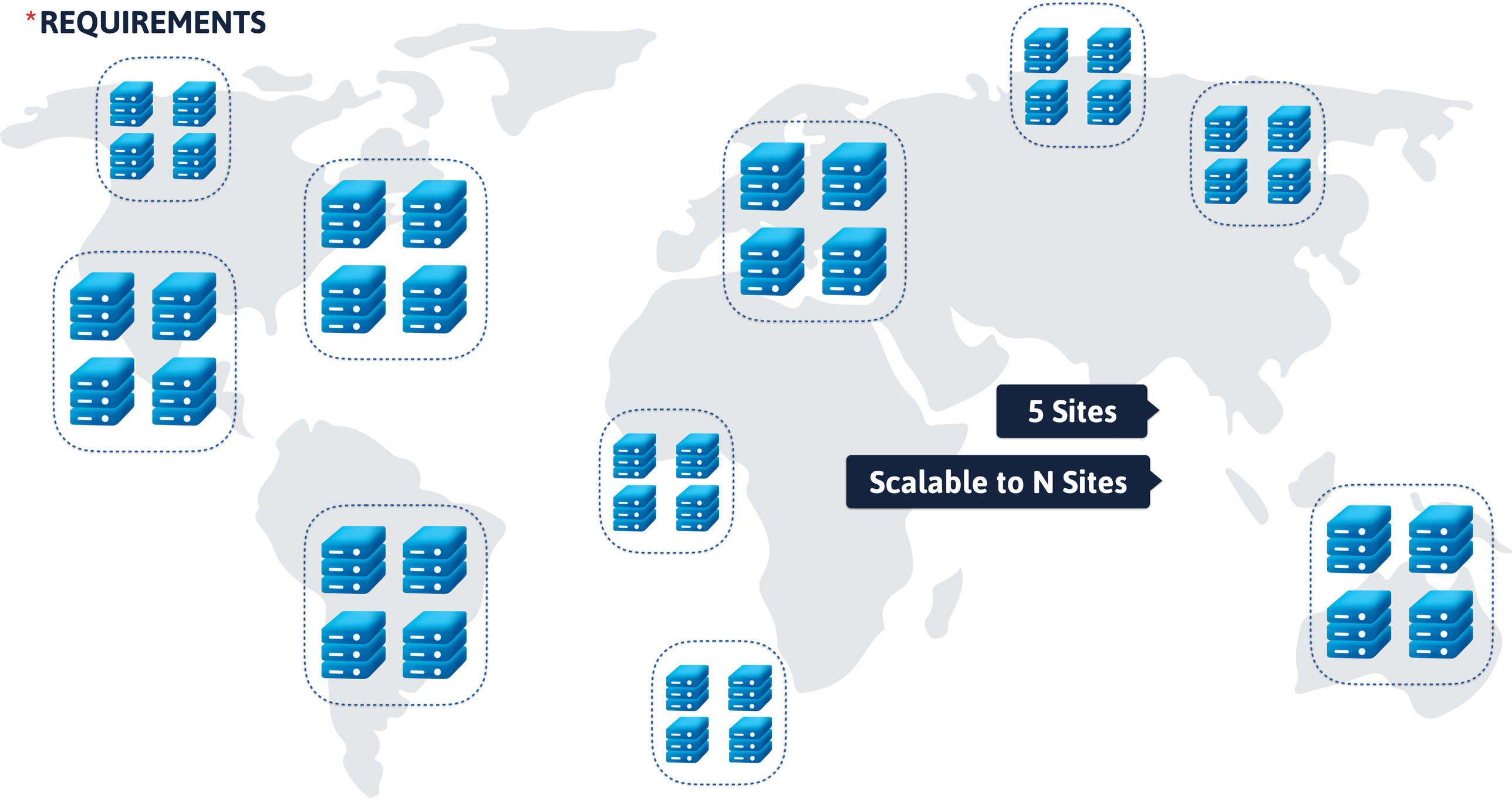
RIPE 76
Marseille, France
14 - 18 May 2018

Addressed requirements

*REQUIREMENTS



*REQUIREMENTS



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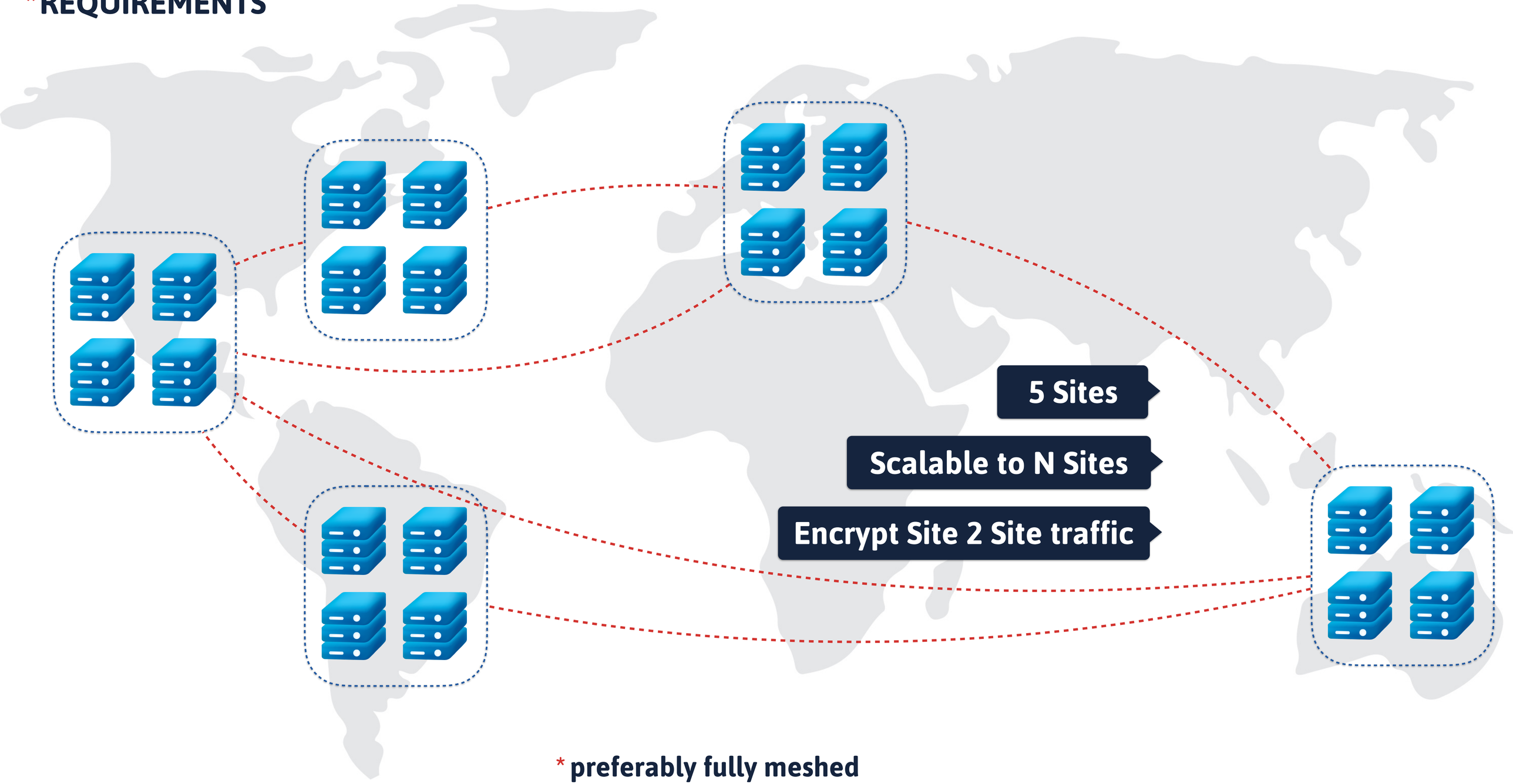
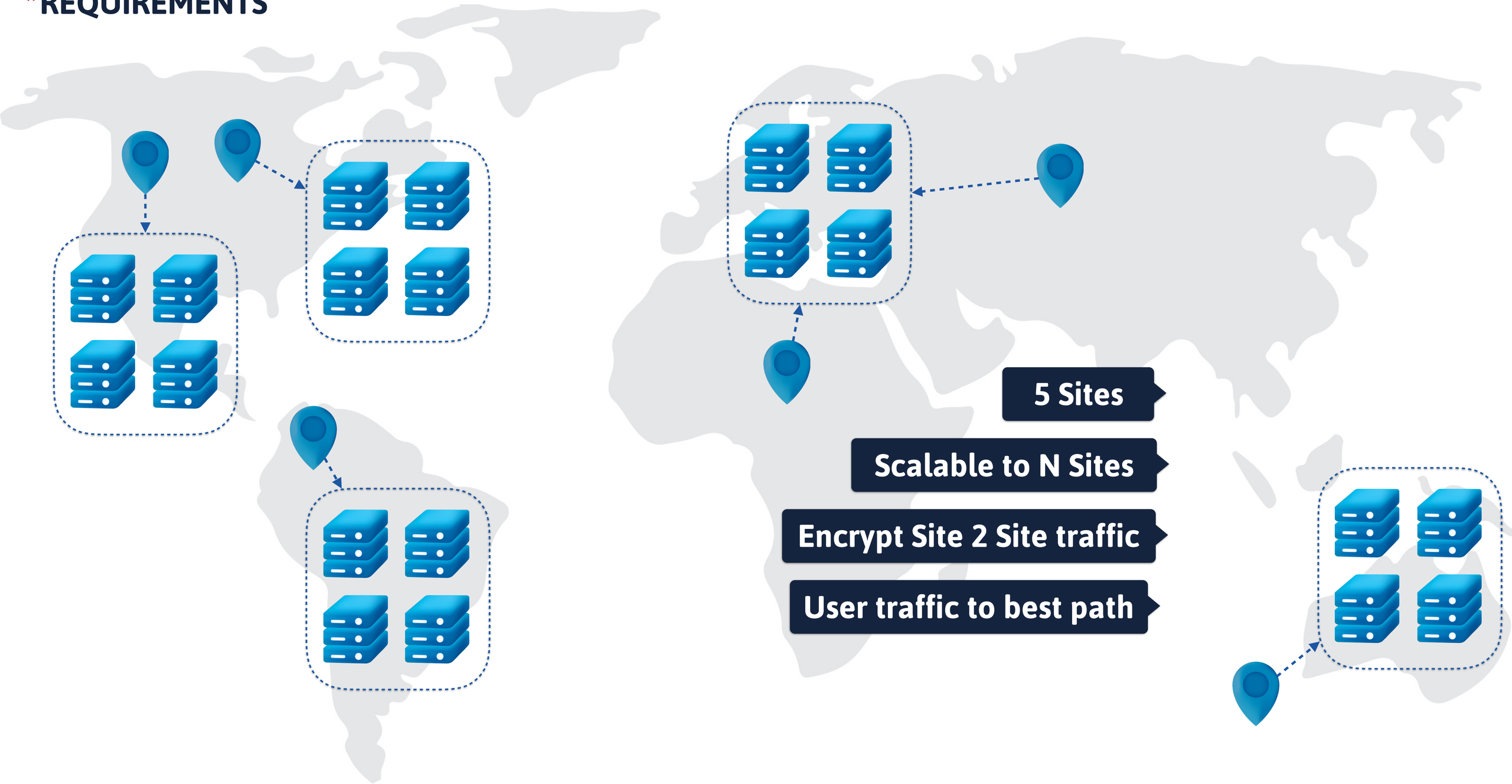


* preferably fully meshed

*REQUIREMENTS



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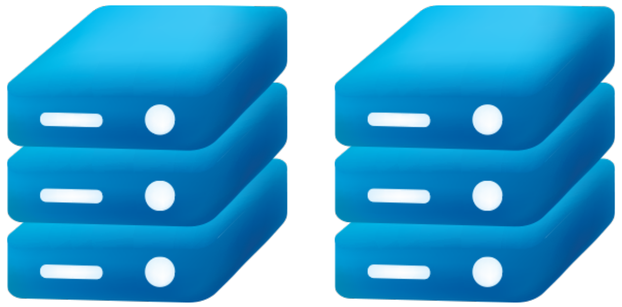
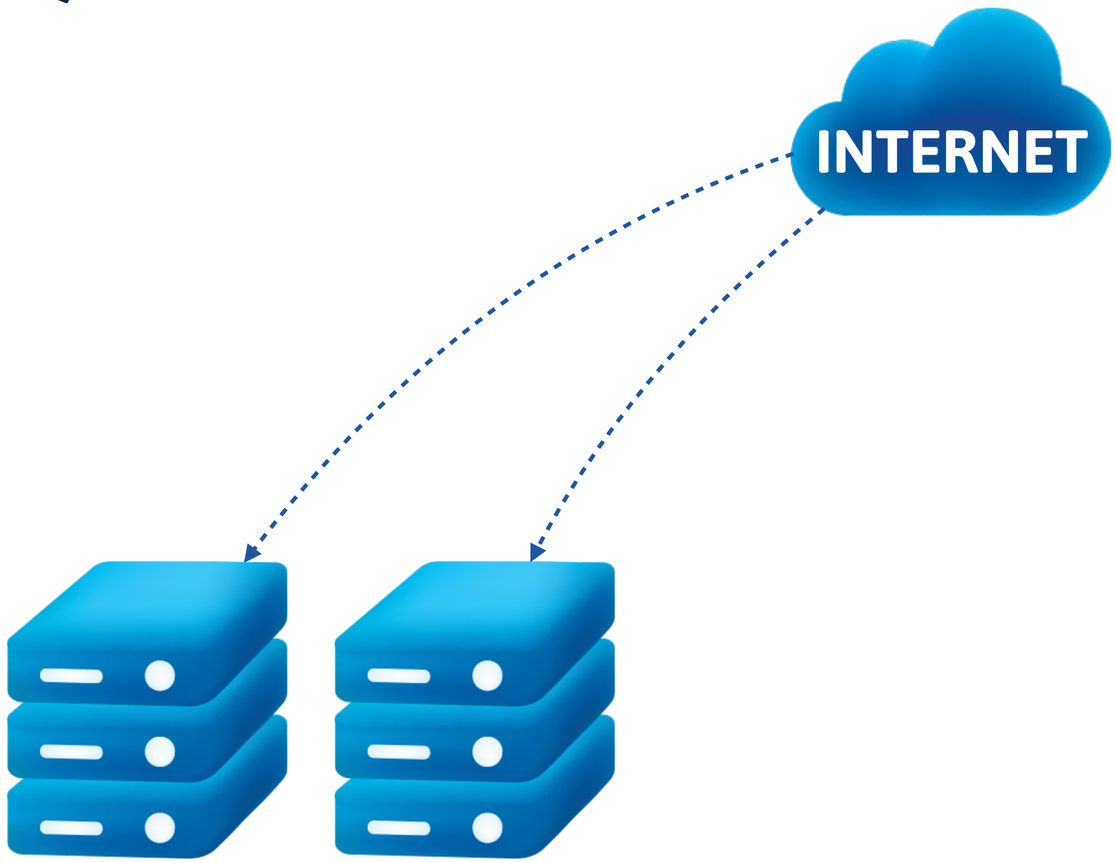


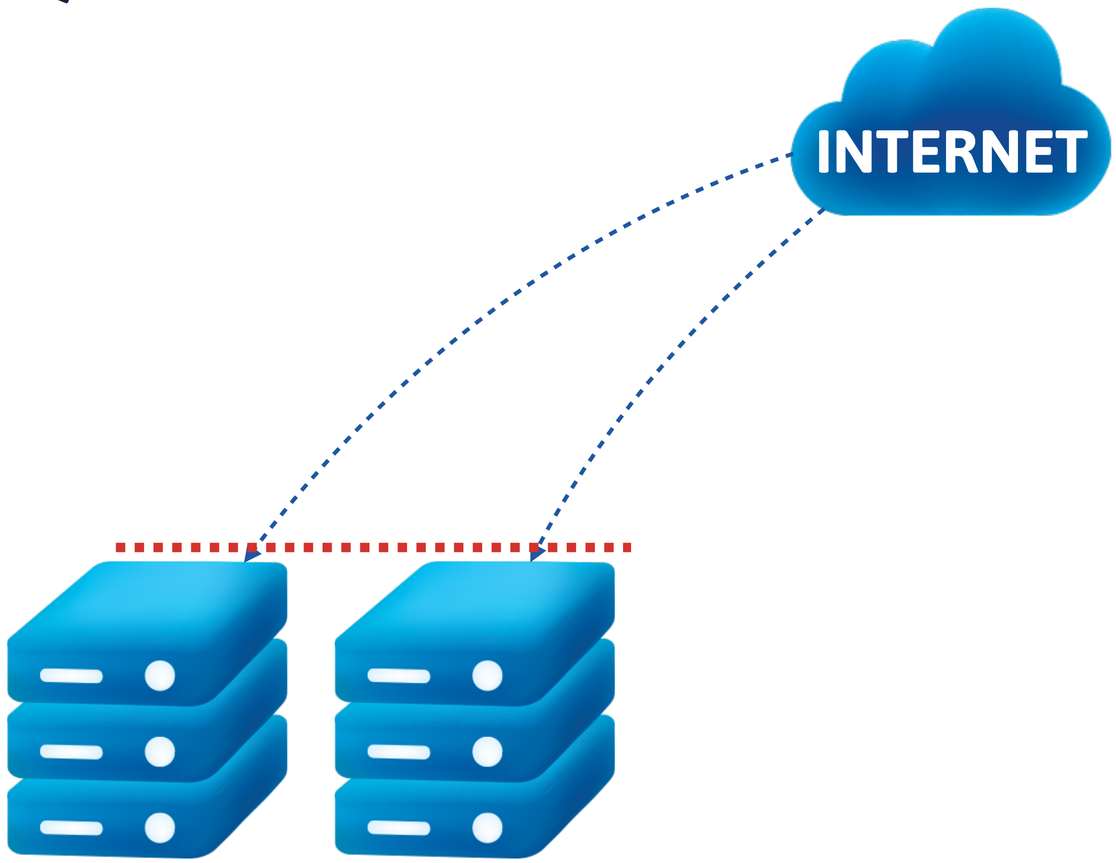
Starting with 2 racks per site

*REQUIREMENTS



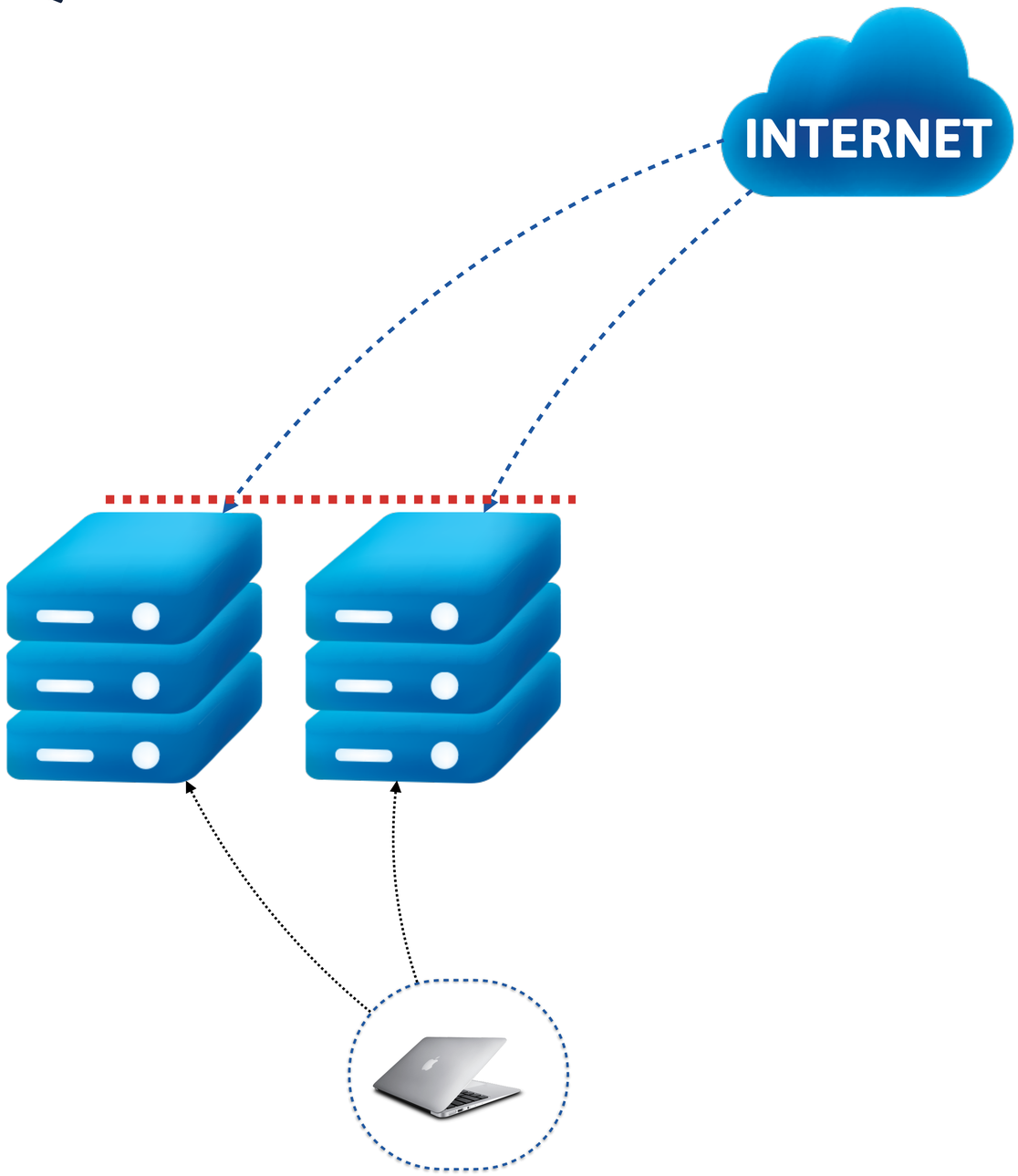
- Starting with 2 racks per site
- Load Balance server traffic

*REQUIREMENTS



- Starting with 2 racks per site
- Load Balance server traffic
- Allow only wanted traffic

*REQUIREMENTS



- Starting with 2 racks per site
- Load Balance server traffic
- Allow only wanted traffic
- Secure remote connection

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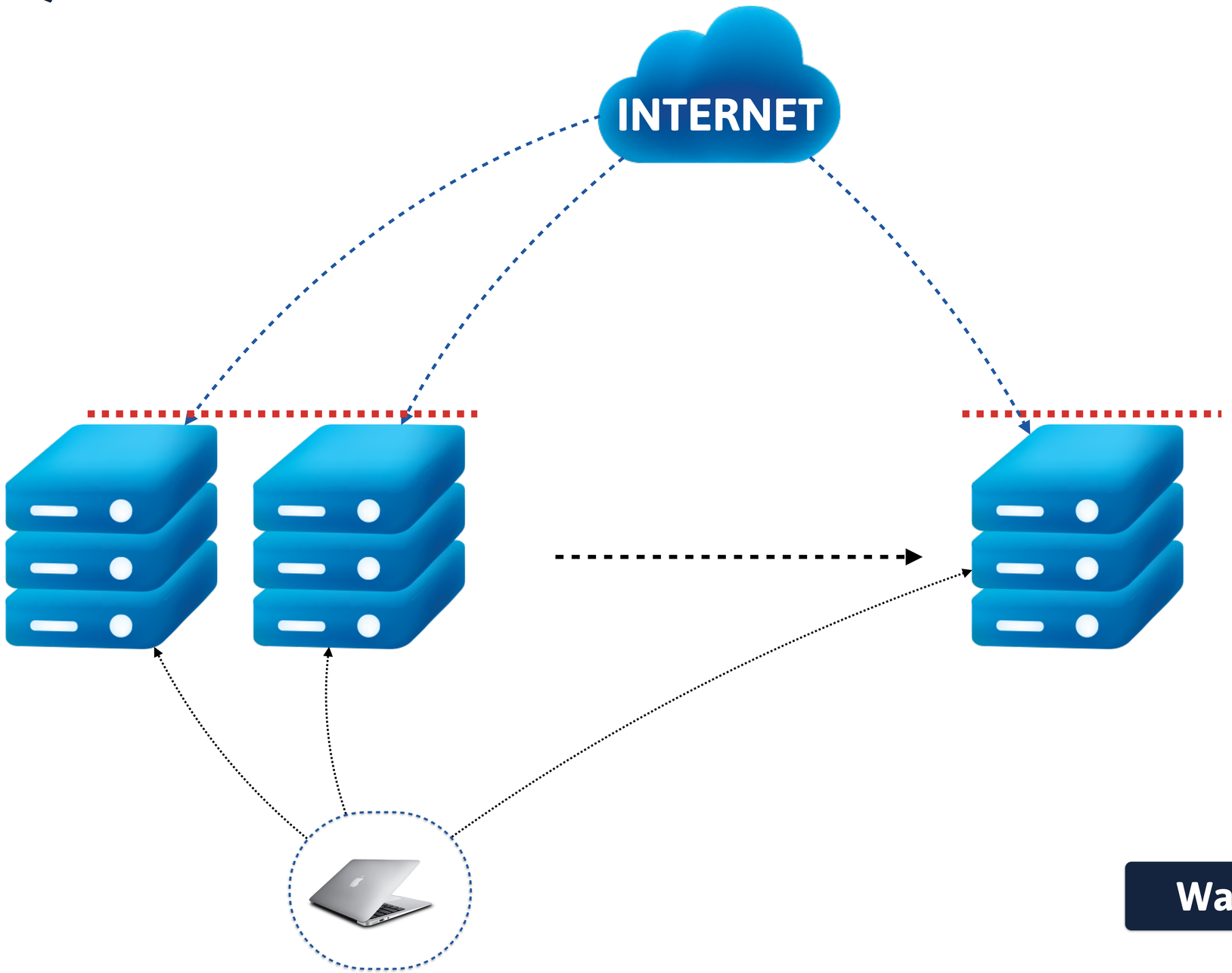
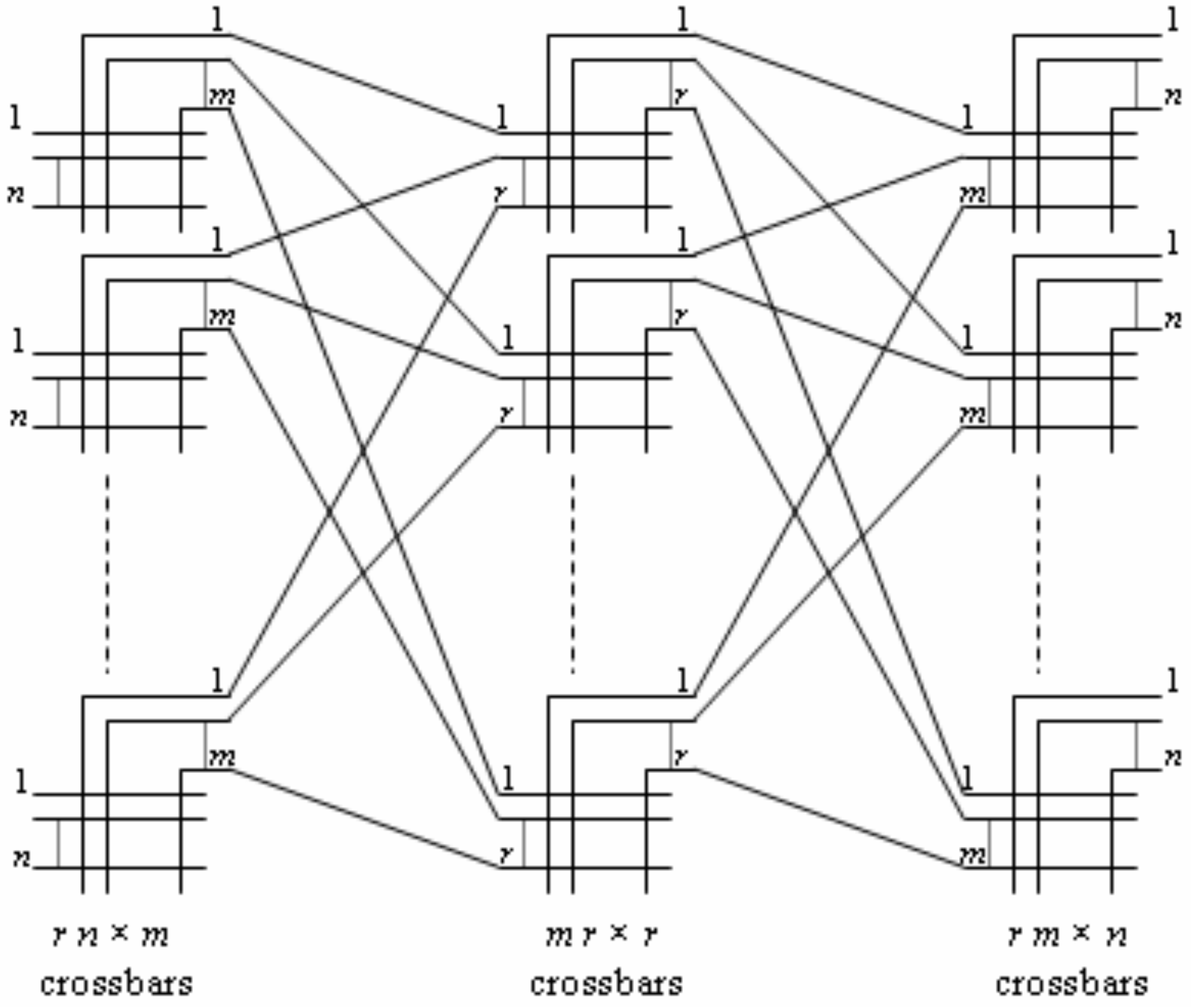


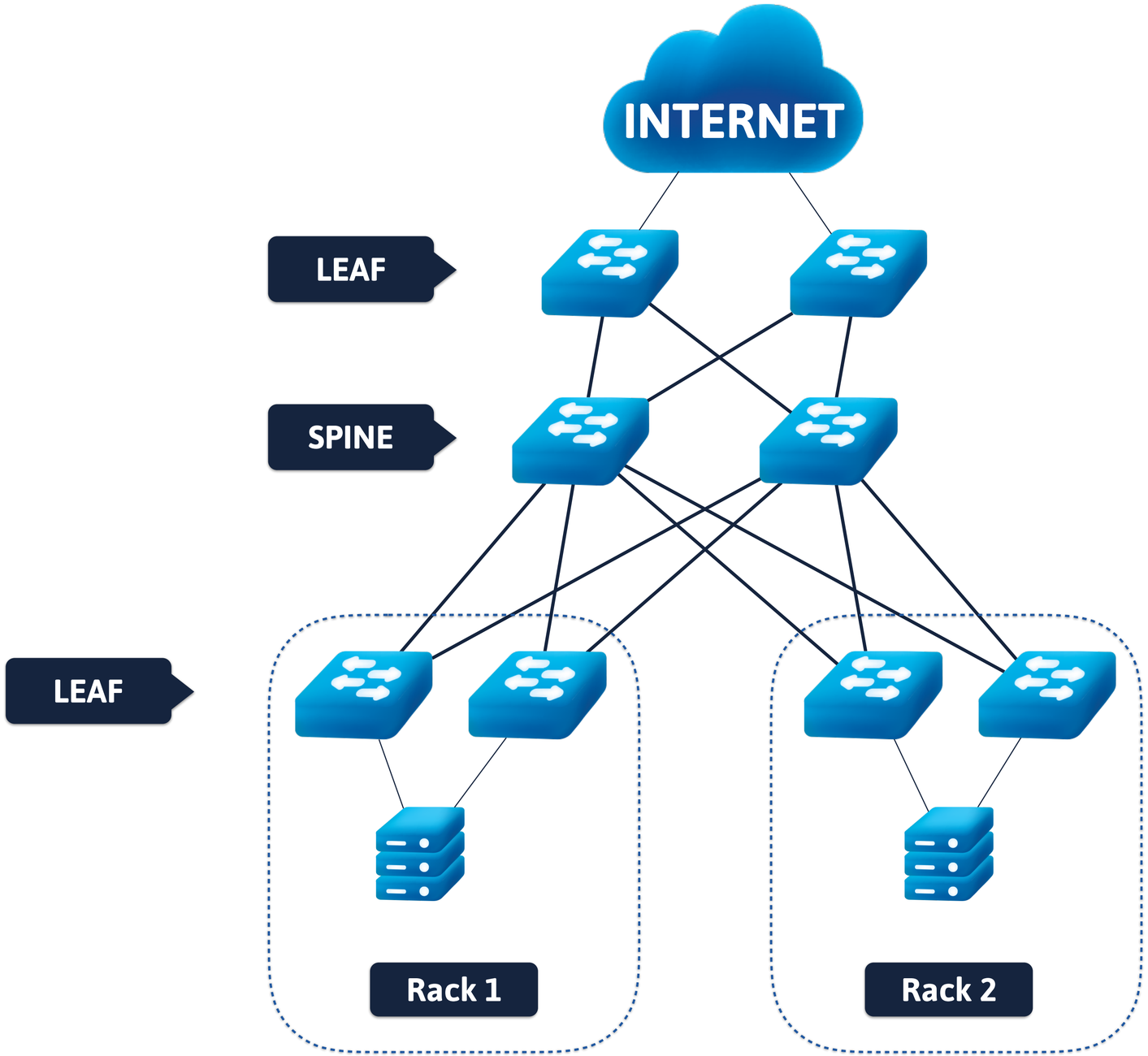
- Starting with 2 racks per site
- Load Balance server traffic
- Allow only wanted traffic
- Secure remote connection
- Wanna whole thing to be scalable

I want it cost-effective, agile and highly scalable



first formalized by Charles Clos in 1952

* FABRIC



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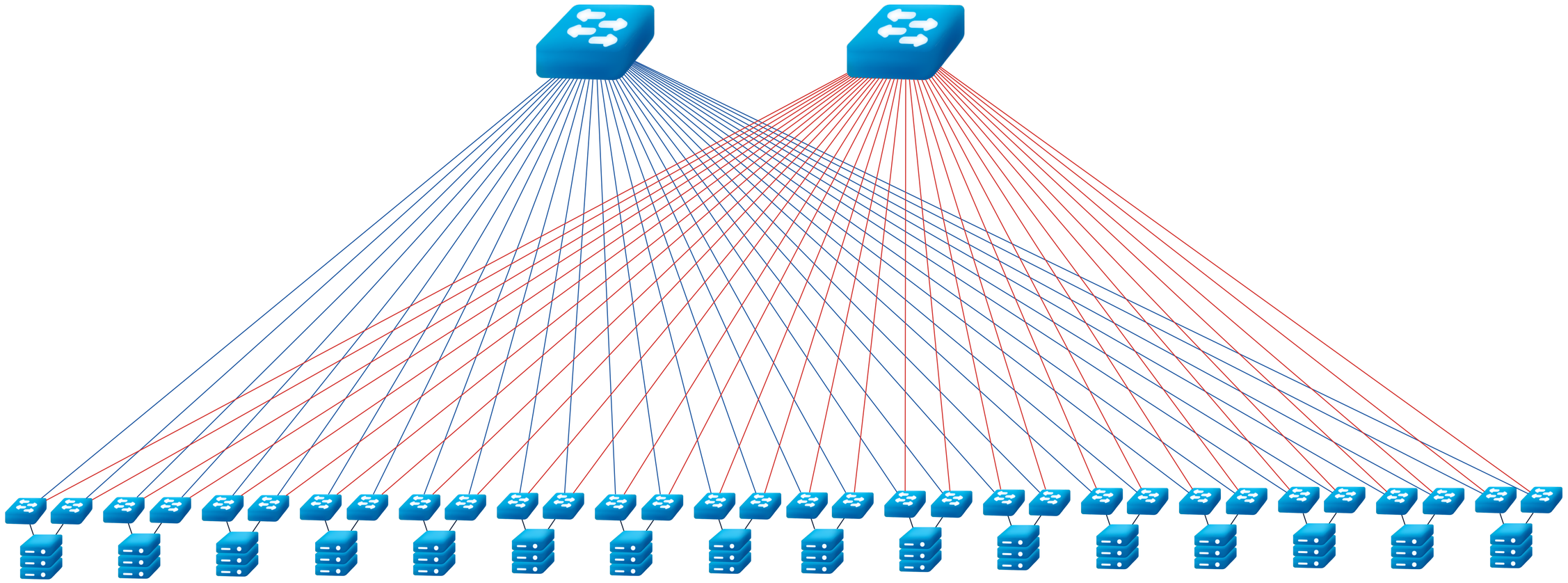

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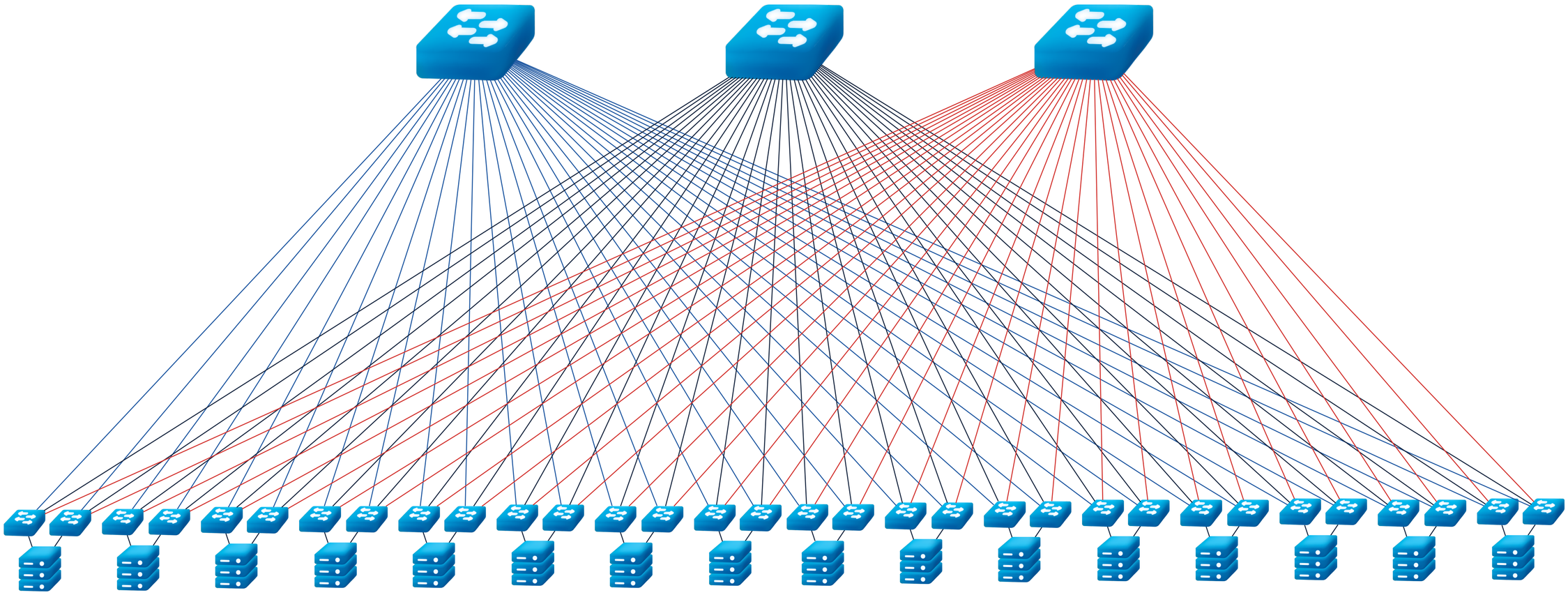

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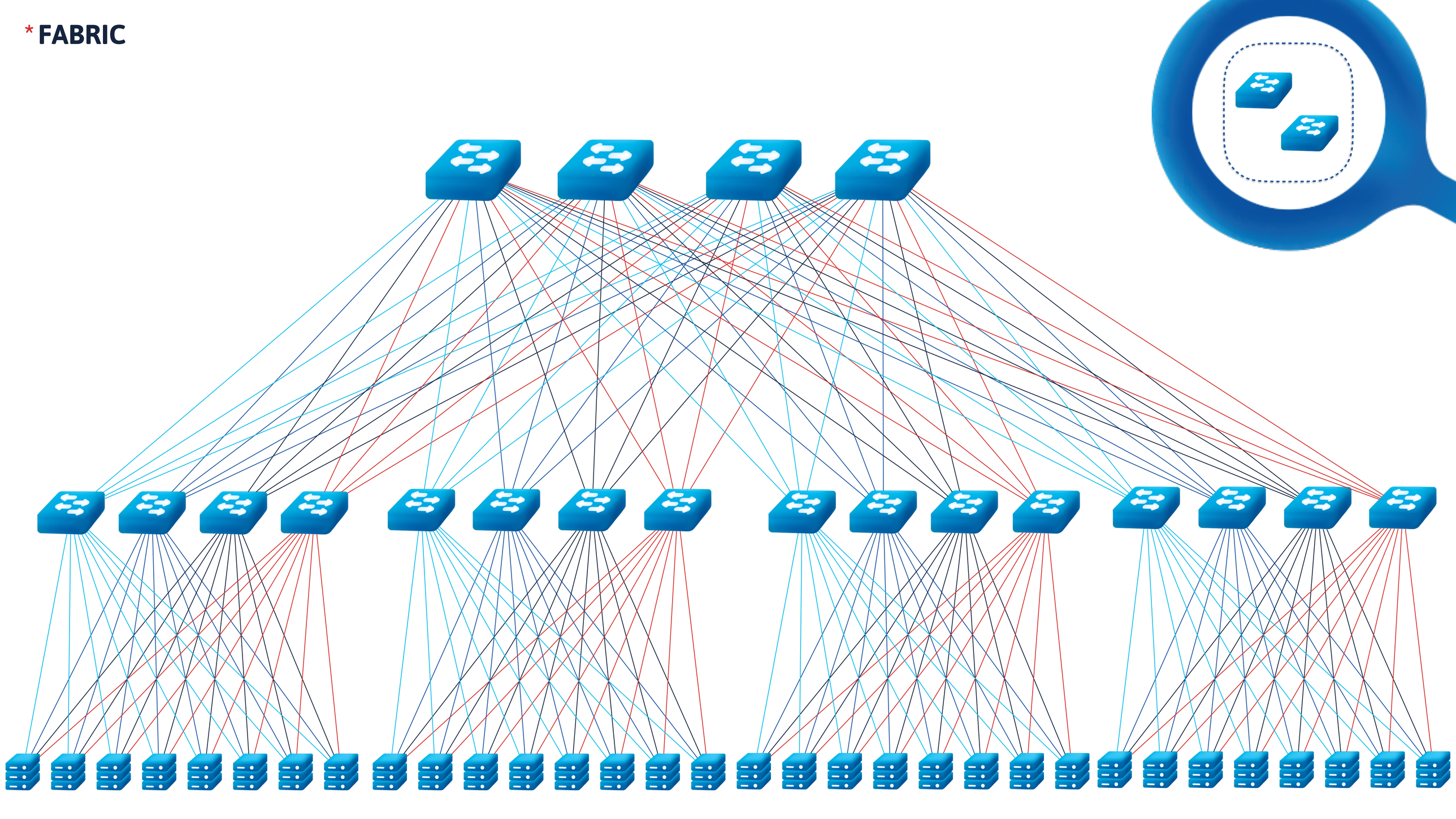

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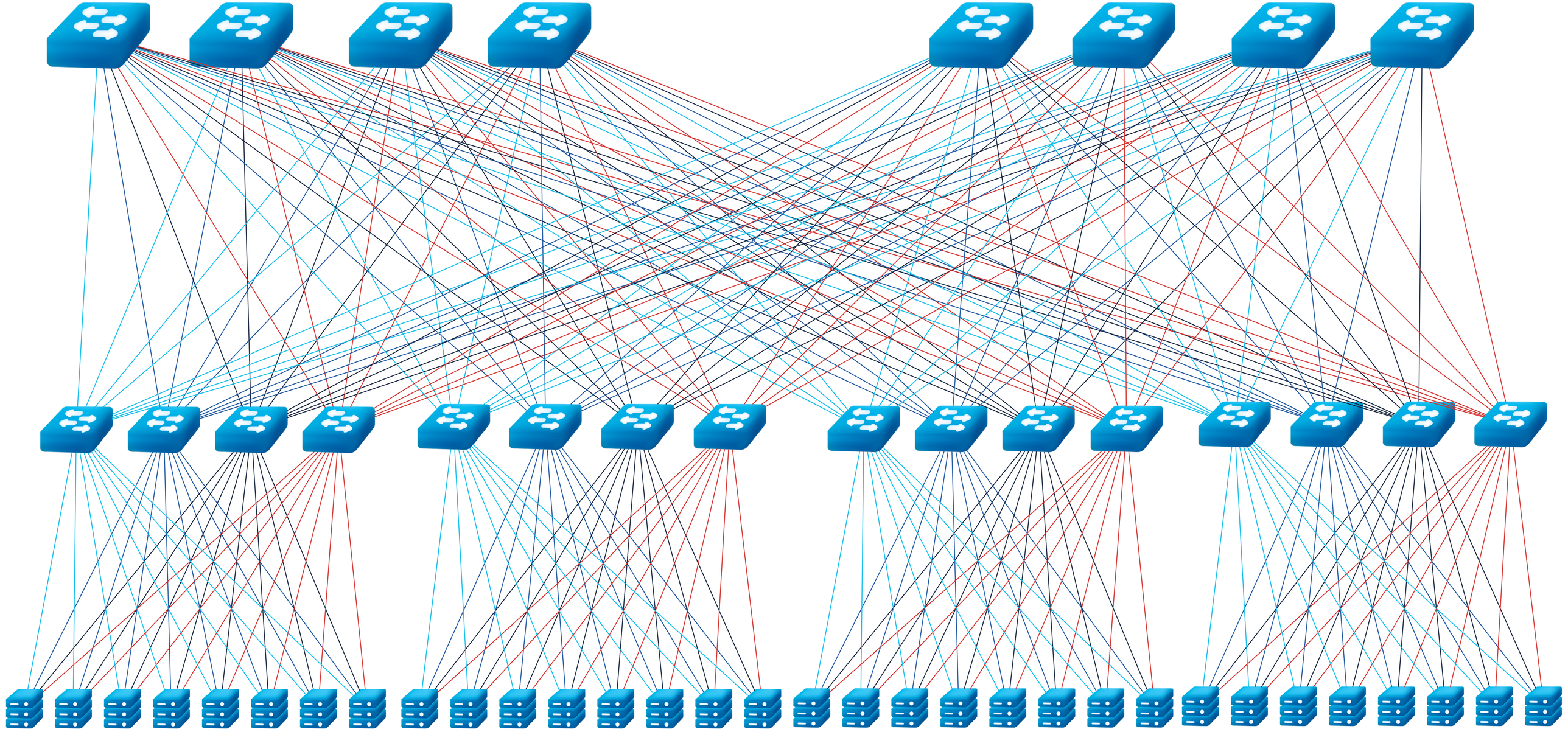
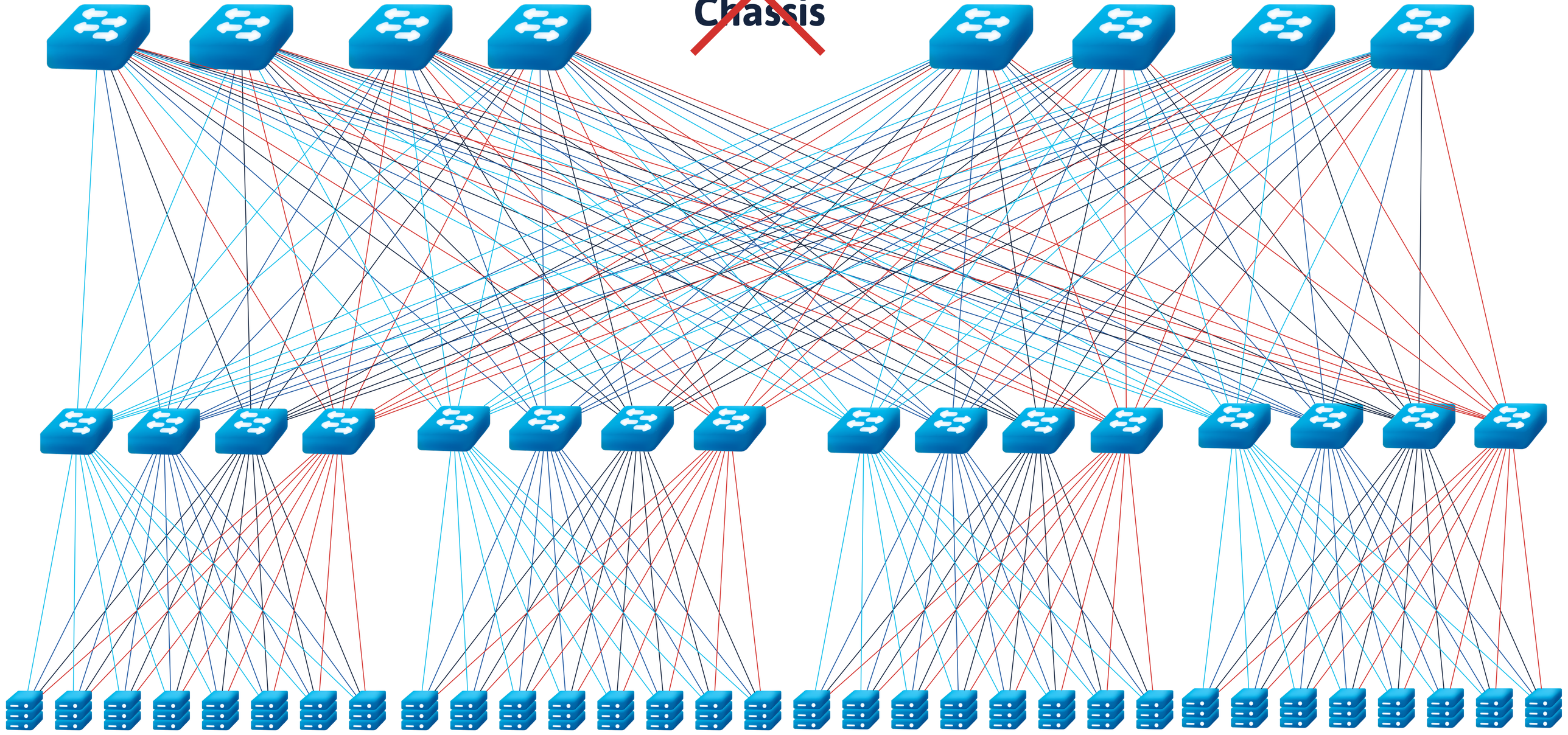


* FABRIC

~~Switch~~
~~Chassis~~



* DIVERSE VENDORS - NO VENDOR LOCK-IN

DELTA

Edge-corE NETWORKS

Mellanox TECHNOLOGIES

DELL

PENGUIN COMPUTING

SUPERMICRO

QCT

Hewlett Packard Enterprise

facebook

OPEN COMMUNITY

* 16/32/128/256 x 100G
* 32 x 40G
* 48 x 25/10G 8 x 100G, 48 x 10/1G 6 x 40G

* SAME GEAR FOR DIFFERENT NOS

cumulus®

ipinfusion™

ONL

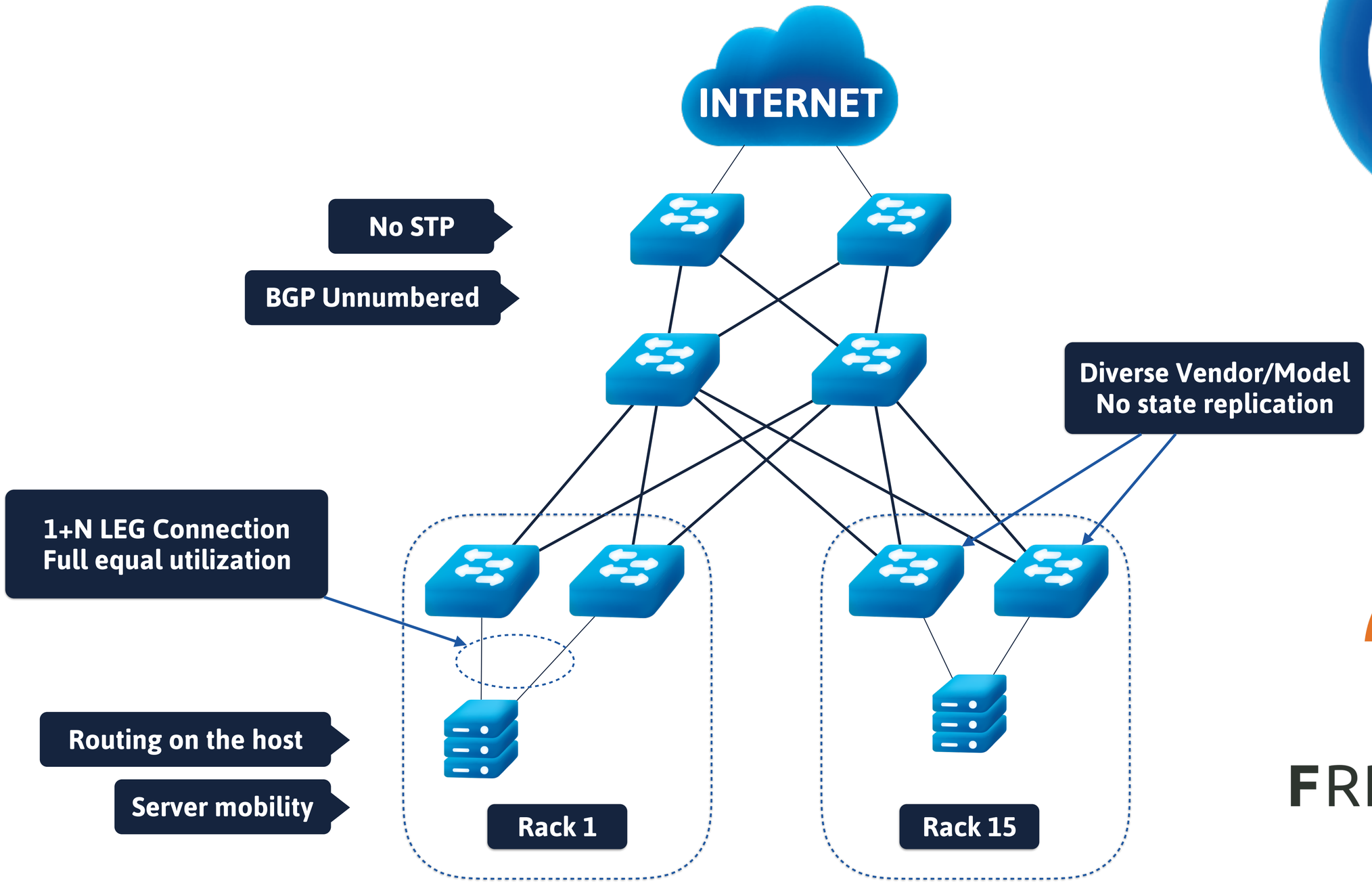
Open Network Linux

switchdev

OPEN™

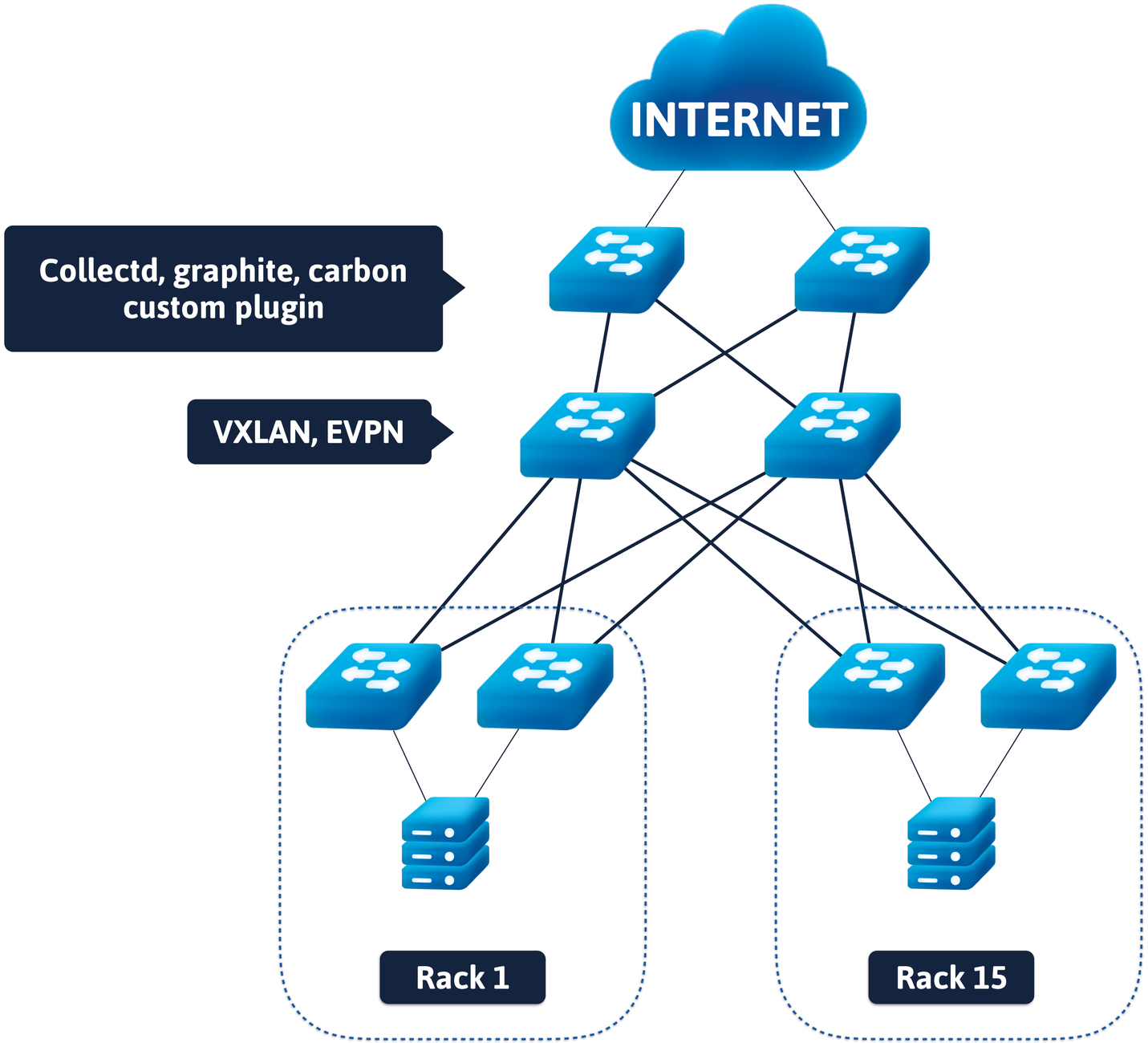
COMMUNITY

* FABRIC



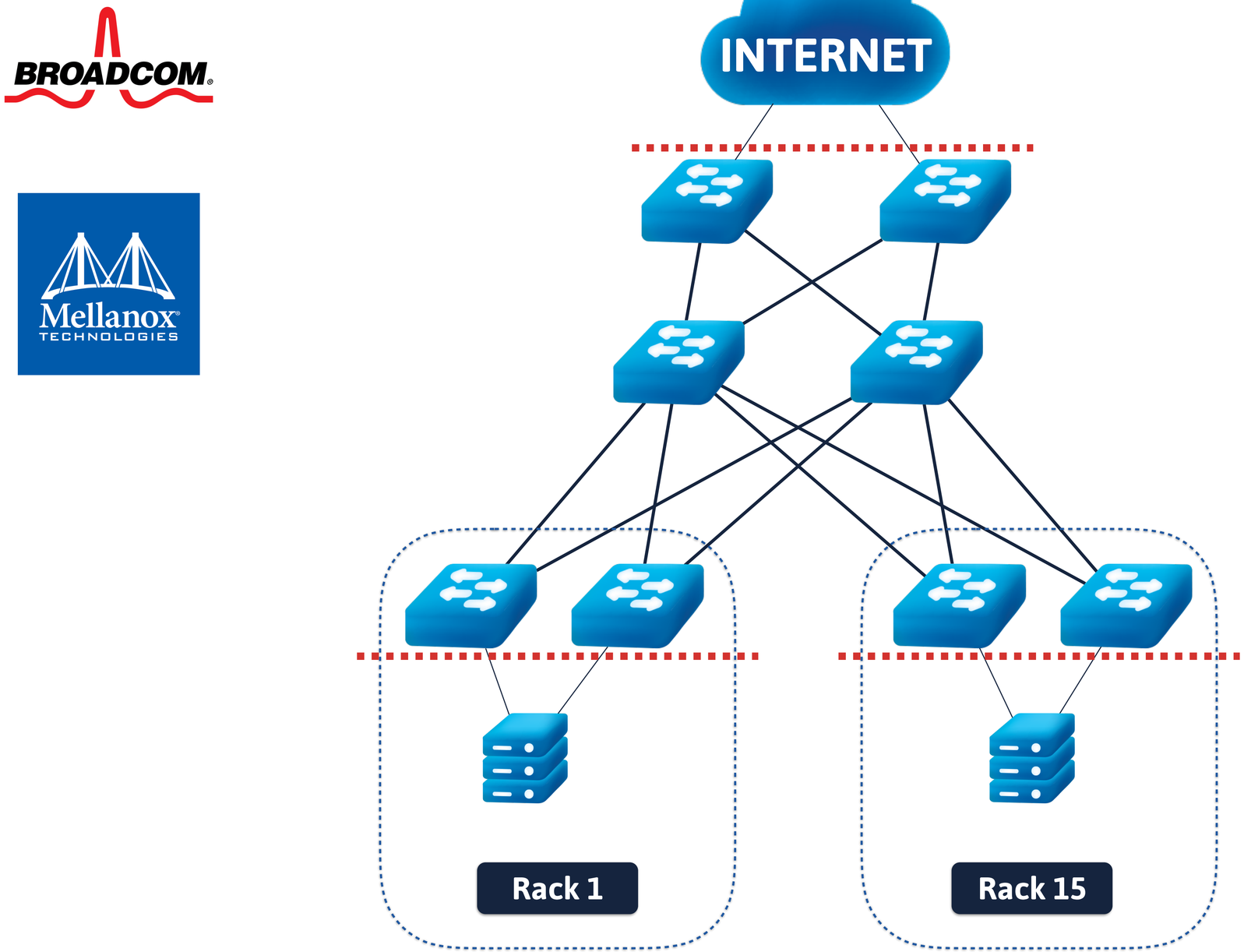
FRROUTING

* FABRIC

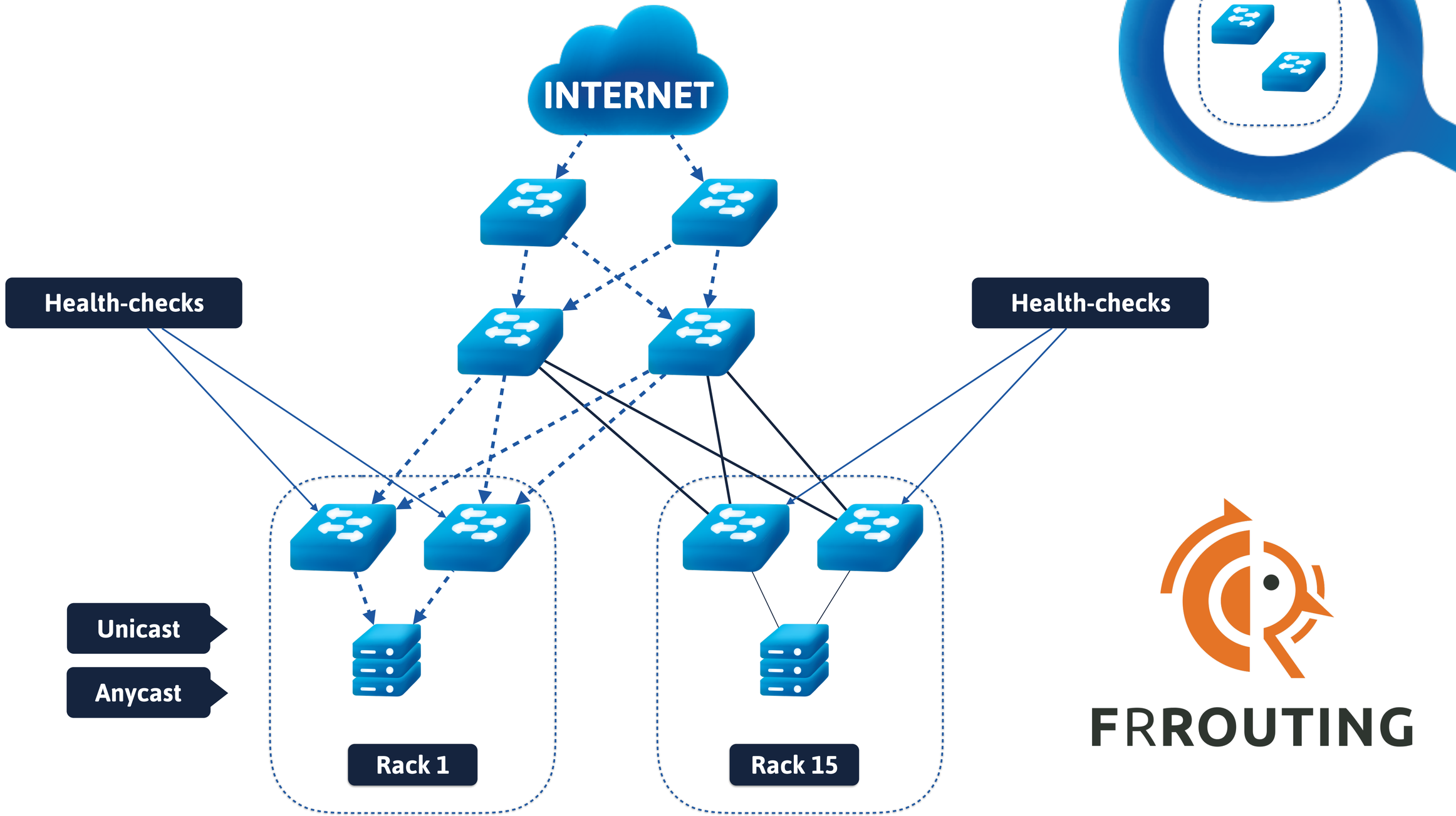


FRROUTING

* ACL ENFORCEMENT, 0 extra cost



* ECMP LOAD BALANCER, zero extra cost



FRROUTING

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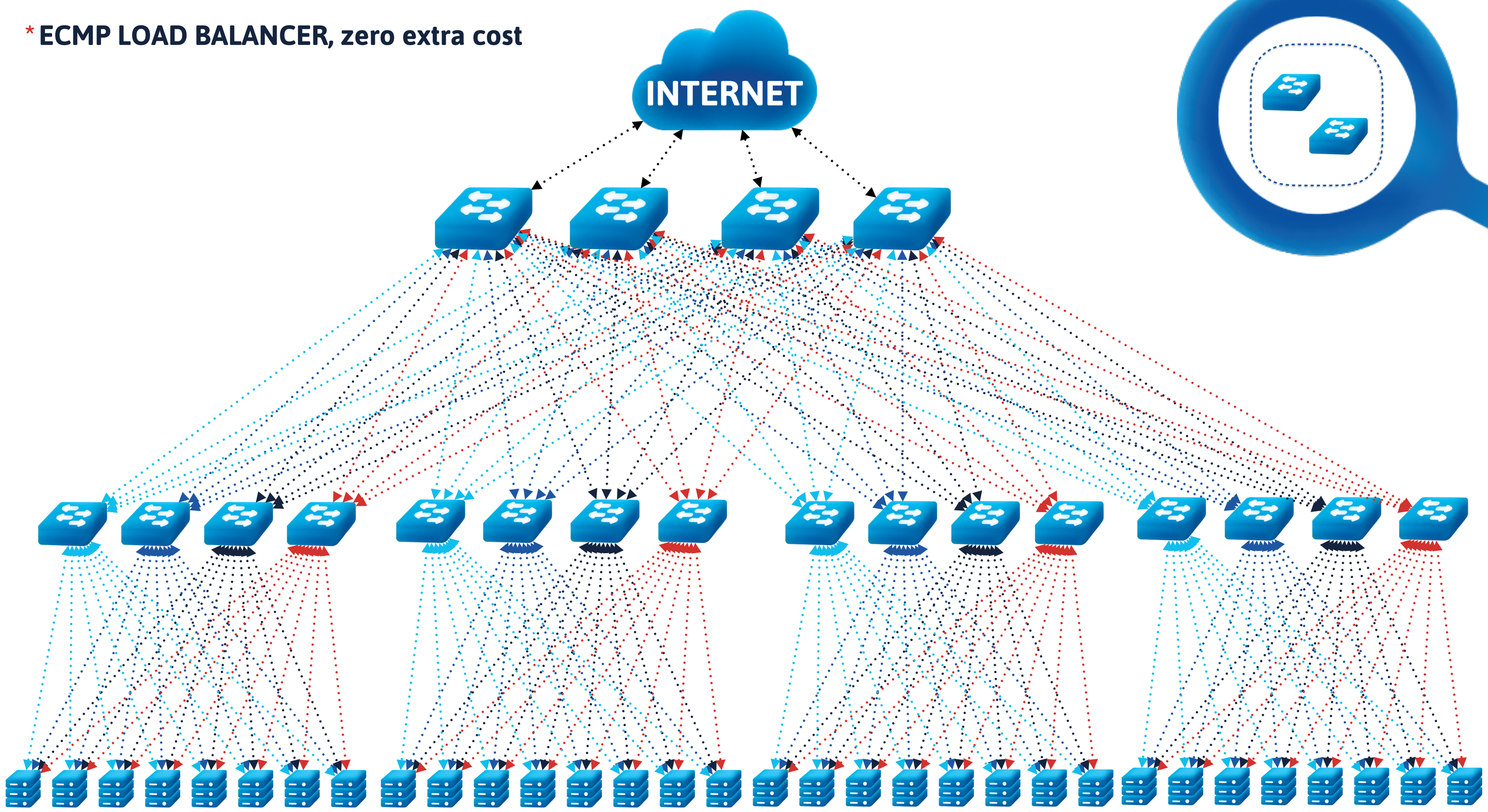
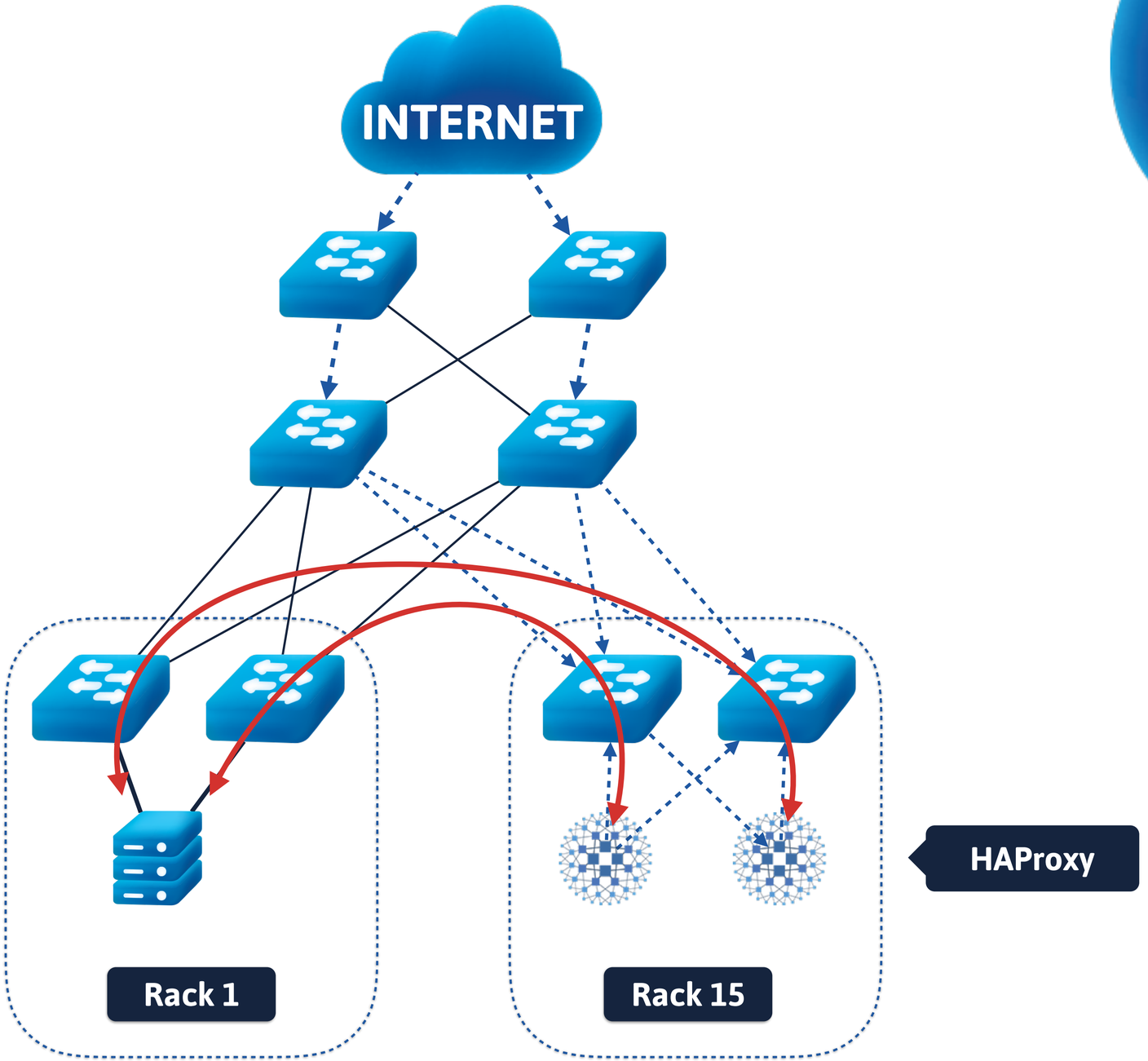


* APPLICATION LAYER LOAD BALANCER



* BORDER GATEWAY

INTERNET

Chelsio Communications
Accelerate

ISP 1

ISP N

swp1

swp2

swp54.4093

FRROUTING

eth0.1
eth0.2
eth0.3
eth0.4093

FRROUTING

ubuntu

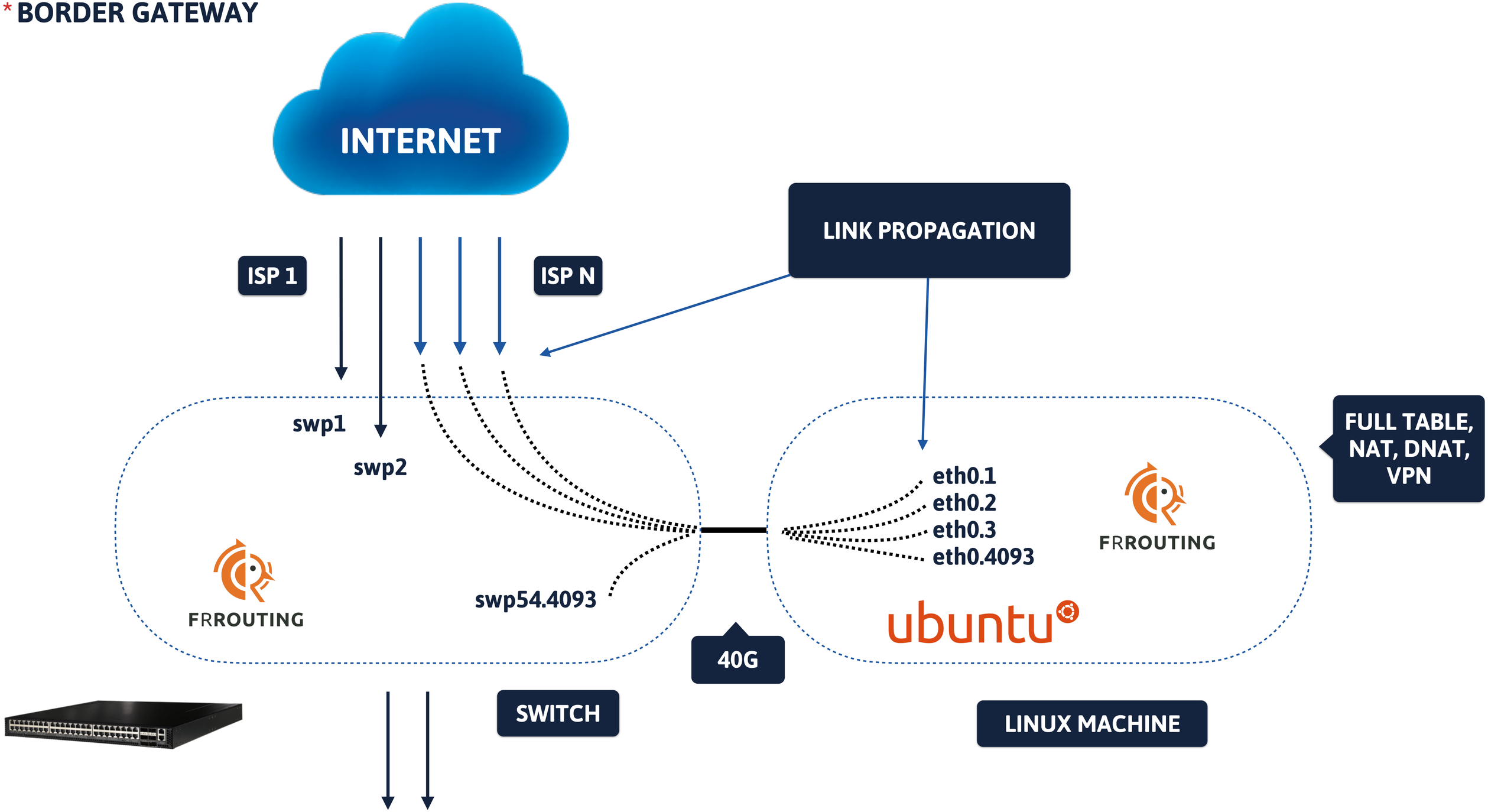
FULL TABLE, NAT, DNAT, VPN

40G

SWITCH

LINUX MACHINE

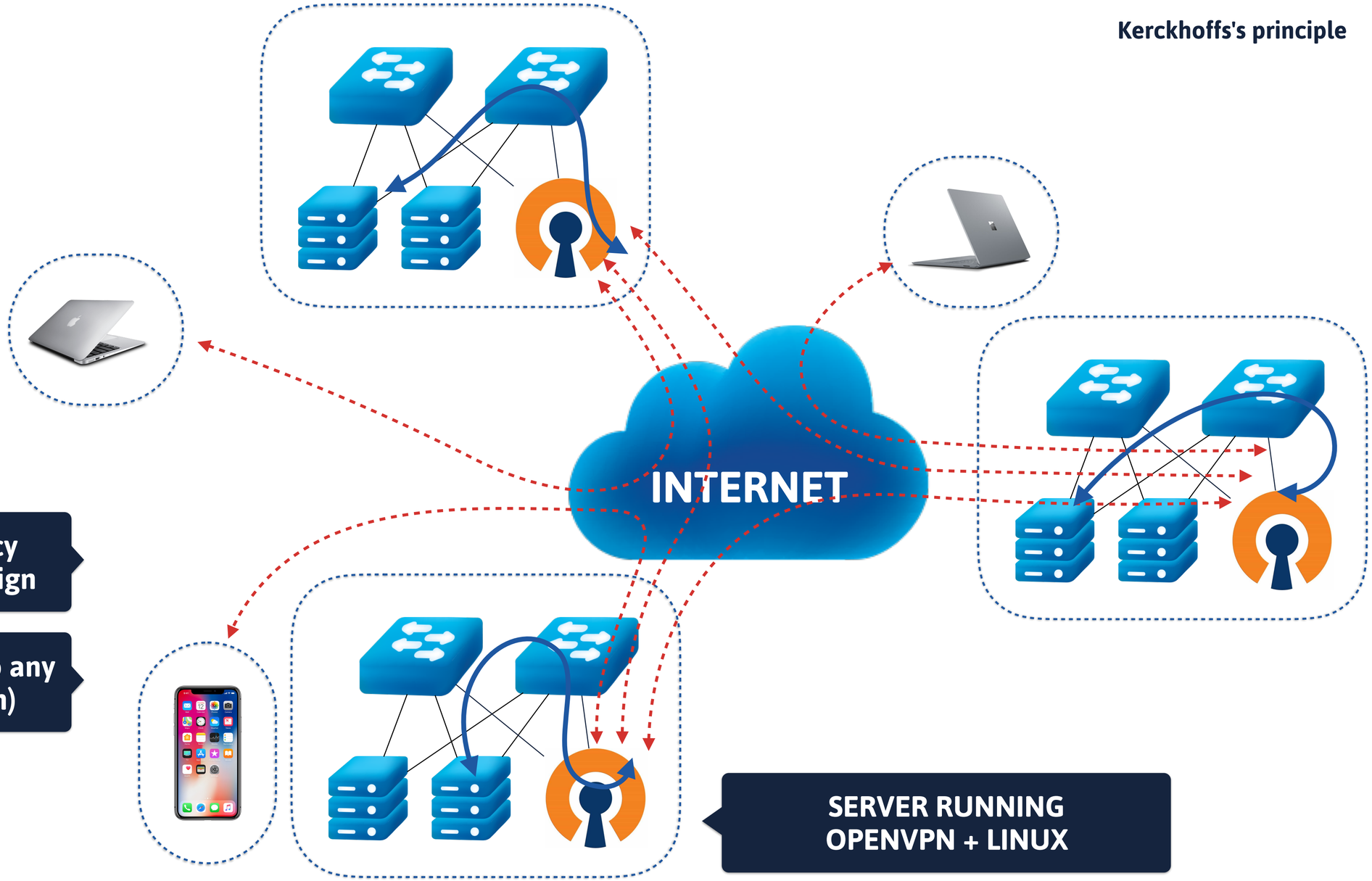
* BORDER GATEWAY



*OPENVPN

A crypto-system should be secure even if everything about the system, except the key, is public knowledge

Kerckhoffs's principle



FULL-MESH low latency redundant dynamic design

Remote users can connect to any site (disaggregated design)

SERVER RUNNING OPENVPN + LINUX

So…

So...

I want it cost-effective,
agile and highly scalable

* **Cost-Effective: up to 30 times**
* **Agile: through automation**
* **Highly-scalable: to Hyper-scale**

QUESTIONS ?

Thanks and welcome to RIPE Dinner

enjoy music supported by XCLOUD NETWORKS

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