Choosing MikroTik Hardware for High-Performance VXLAN Networks

A comprehensive guide to selecting the right MikroTik switches and routers for hardware-accelerated VXLAN deployments—from budget lab setups to terabit-scale ISP cores.

One of the greatest strengths of MikroTik routers, switches, and access points is that nearly every feature is available across the entire product line—no artificial licensing tiers, no paywalls, and no hidden add-ons. But while the features are widely accessible, the level of performance you get from those features depends heavily on selecting the right hardware.

If all you need is basic connectivity, almost any MikroTik device will get the job done. But if you're aiming for serious throughput, low latency, and hardware-accelerated performance—especially with advanced technologies like VXLAN—your hardware choices and configuration decisions will have a dramatic impact on real-world results.

This guide walks you through the most important considerations when selecting MikroTik hardware for high-bandwidth VXLAN deployments, ensuring you can deliver massive, reliable gigabits of service to your subscribers.

Hardware Categories Overview

1. DX8200 / DX4000 — Small 10G Switches

CRS309-1G-8S+IN — Marvell 98DX8208

Ports: 1× 1G RJ45 + 8× 10G SFP+

Throughput: 81 Gbps — **Capacity: 162 Gbps**

HW VXLAN: Yes (L3HW Offload)

CRS312-4C+8XG-RM — Marvell 98DX8212

Ports: 8× 10G RJ45 + 4× 10G combo

Throughput: 120 Gbps — **Capacity: 240 Gbps**

HW VXLAN: Yes

CRS317-1G-16S+RM — Marvell 98DX8216

Ports: 16× 10G SFP+ + 1× 1G RJ45

Throughput: ~161 Gbps — **Capacity: ~322 Gbps**

HW VXLAN: Yes

2. DX8332 / DX3257 — Mid-Size 10G + 40G Switches

CRS326-24S+2Q+RM — Marvell 98DX8332

Ports: 24× 10G SFP+ + 2× 40G QSFP+

Throughput: 320 Gbps — **Capacity: 640 Gbps**

CRS354-48G-4S+2Q+RM — Marvell 98DX3257

Ports: 48× 1G RJ45 + 4× 10G SFP+ + 2× 40G QSFP+

Throughput: 168 Gbps — **Capacity: 336 Gbps**

3. DX4310 — 100G Switches & ROSE Data Server

CRS504-4XQ-IN / CRS504-4XQ-OUT — Marvell 98DX4310

Ports: 4× 100G QSFP28

Throughput: 400.1 Gbps — **Capacity: 800.2 Gbps**

CRS510-8XS-2XQ-IN — Marvell 98DX4310

Ports: 8× 25G SFP28 + 2× 100G QSFP28

Throughput: 400.1 Gbps — **Capacity: 800.2 Gbps**

4. DX8525 / DX8410 — High-End 100G Switches & CCRs

CRS518-16XS-2XQ-RM — Marvell 98DX8525

Ports: 16× 25G SFP28 + 2× 100G QSFP28

~600 Gbps — **1.2 Tbps**

CRS520-4XS-16XQ-RM — Marvell 98CX8410

Ports: 16× 100G QSFP28 + 4× 25G SFP28

~1.68 Tbps — **~3.2 Tbps**

CCR2216-1G-12XS-2XQ — Marvell 98DX8525

Ports: 12× 25G SFP28 + 2× 100G QSFP28 + 1× 1G RJ45

100G Edge/Peering Router **4×25G to CPU**

Quick Cheat Sheet

All MikroTik devices with documented hardware VXLAN offload (RouterOS 7.18+):

Device	Throughput	Capacity
CRS309-1G-8S+IN	81 Gbps	162 Gbps
CRS312-4C+8XG-RM	120 Gbps	240 Gbps
CRS317-1G-16S+RM	~161 Gbps	~322 Gbps
CRS326-24S+2Q+RM	320 Gbps	640 Gbps
CRS326-4C+20G+2Q+RM	~170 Gbps	~340 Gbps
CRS354-48G-4S+2Q+RM	168 Gbps	336 Gbps
CRS354-48P-4S+2Q+RM	168 Gbps	336 Gbps
CRS504-4XQ-IN / -OUT	400 Gbps	800 Gbps
CRS510-8XS-2XQ-IN	400 Gbps	800 Gbps
RDS2216-2XG-4S+4XS-2XQ	~400 Gbps	~800 Gbps
CRS518-16XS-2XQ-RM	~600 Gbps	1.2 Tbps
CRS520-4XS-16XQ-RM	~1.68 Tbps	3.2 Tbps
CCR2116-12G-4S+	DX3255 L3HW	Switch-like for 10G/1G
CCR2216-1G-12XS-2XQ	DX8525 L3HW	12×25G + 2×100G

■ VXLAN Hardware Offload Caveats

As of RouterOS 7.18+, hardware VXLAN offload is only available on devices using Marvell DX8000/DX4000-class switch chips. Important limitations include:

- VTEPs must sit on plain routed interfaces (no ECMP, no bond/bridge/VLAN underlay, no IPv6 underlay, no VRF)
- No VLAN-over-VXLAN tagging, no routing between VNIs
- No IGMP snooping offload; MLAG not supported on VXLAN ports
- Static, one-to-one VLAN↔VXLAN mappings are the sweet spot for offload

Example Lab Hardware Configurations

■ Tier 1: Budget-Friendly / Beginner Lab

Entry-level VXLAN hardware offload testing

CRS309 ↔ CRS309 (8×10G SFP+ each)

The cheapest way to get real hardware VXLAN offload. Quiet, low wattage, easy on a desk. Performance: ~81 Gbps non-blocking per switch. Estimated cost: ~$300 each.

> Use cases: Simple 10G EVPN/VXLAN fabric, L2 extension tests, BFD/OSPF over underlay

CRS317 ↔ CRS317 (16×10G SFP+)

Twice the ports for only a little more money. True line-rate 10G switching. Performance: ~160 / 320 Gbps. Estimated cost: ~$420–$470 each.

> Use cases: Multi-VNI labs, ISP transport ring simulation, offload limit testing

■ Tier 2: Mid-Range / Realistic ISP or MSP Lab

Production-like environments at lab prices

CRS326-24S+2Q ↔ CRS326-24S+2Q (24×10G + 2×40G)

The sweet spot for realistic ISP core/aggregation VXLAN. Performance: 320 / 640 Gbps. Estimated cost: ~$600–$700 each.

> Use cases: WISP/MPLS-to-VXLAN migration, EVPN multihoming, hybrid VLAN + VXLAN with QinQ

CRS312 ↔ CRS312 (8×10G RJ45 + 4×10G combo)

Best HW-VXLAN lab device for 10G copper. Performance: 120 / 240 Gbps. Estimated cost: ~$550–$650 each.

> Use cases: 10GBASE-T server connectivity, top-of-rack simulation, mixed media underlays

■ Tier 3: High-End / Next-Gen ISP Core + DC Fabric

100G-class hardware for serious deployments

CRS504 ↔ CRS504 (4×100G QSFP28)

Cheapest way to get 100G VXLAN offload on MikroTik. Performance: 400 / 800 Gbps (line-rate 100G). Estimated cost: ~$899–$999 each.

> Use cases: Large MTU VXLAN fabrics, DC leaf/spine, ISP NNI handoffs at 100G

CRS518 ↔ CRS518 (16×25G + 2×100G)

Best all-around VXLAN-HW lab switch MikroTik makes. Performance: ~600 Gbps / 1.2 Tbps. Estimated cost: ~$1,299–$1,499 each.

> Use cases: Full EVPN fabric, ISP/enterprise aggregation at 25G, high PPS offload testing

■ Tier 4: Router + Switch Hybrid for Service Provider Labs

Complete ISP VXLAN/EVPN deployment simulation

CCR2216 + CRS518 (Router/Switch Pair)

Closest to a modern ISP VXLAN/EVPN deployment. CCR2216: 12×25G + 2×100G with L3HW + VXLAN offload. CRS518: 600 Gbps throughput class. Estimated cost: ~$2,700–$3,000 for the pair.

> Use cases: MPLS → VXLAN transition, EVPN Type-5 routed overlays, BGP RR + VXLAN leaf/spine

Summary

While any MikroTik device can technically deliver VXLAN traffic, real-world performance can vary dramatically depending on whether the workload is handled by hardware offloading or pushed onto the CPU. This guide helps you choose the right equipment to ensure your VXLAN network performs reliably and at the speeds your services demand.

The key takeaway: match your hardware to your throughput requirements, and always verify that your specific use case falls within the hardware offload capabilities documented for RouterOS 7.18+.