



## Virtual Border Router

### Key features

- ▶ **Linear Scalability**  
(over 800Gbps throughput per single instance)
- ▶ **46Gbps per CPU core**  
(IMIX traffic)
- ▶ **Multiple Full Route**  
(Multiple millions BGP routes)
- ▶ **Fast Route Lookup**
- ▶ **Fast BGP Convergence**

### Benefits

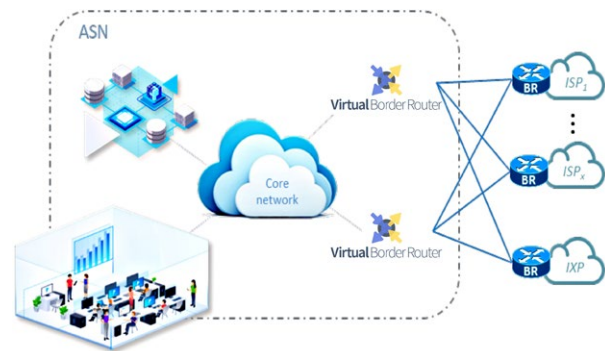
- ▶ Multiple full route support
- ▶ High Performance and Scalability
- ▶ Low convergence time
- ▶ Fast route lookups
- ▶ Multi-tenancy support
- ▶ Support for physical and virtual deployments (PNF, VNF, CNF)
- ▶ Efficiency with reduced operational costs and complexity

## Virtual Border Router (vBR)

The 6WIND vBR is a Peering Router which allows two Internet networks to connect and exchange traffic.

Network operators, ISPs and large Enterprises use peering for greater control over their traffic flows in order to allow optimizing routing decisions and increase performance.

The 6WIND Virtual Border Router (vBR) which belongs to the 6WIND VSR product suite includes all the features and capabilities needed to deliver a Border Router (Peering Router) service.



For instance, the vBR supports multiple full internet routing table and provides the following capabilities:

- ▶ Rich routing protocols (BGP, ISIS, OSPF v2, OSPF v3, RIP and RIPng)
- ▶ Support for access control lists
- ▶ Internet peering scale
- ▶ Device management
- ▶ DDoS protection through BGP flowspec.

Thanks to its optimized design and to its fast route lookup implementation, the 6WIND vBR achieves high scalability, high performance and low convergence time allowing optimal routing decisions.

The 6WIND vBR implements traffic splitting and balancing between multiple links to optimize packet flow, reduce latency and enhance connectivity.

“6WIND VSR solutions have the **best virtual packet processing engine we’ve seen on any virtual routing platform.** No other products we’ve looked at perform anywhere close to 6WIND.”

*Rick Jenssen, Senior Director of Consulting Systems Engineering at Arbor Networks*

**NETSCOUT.**



## Specification

### IP Networking:

- ▶ IPv4 and IPv6
- ▶ IPv6 auto-configuration
- ▶ Multitenancy (VRF)
- ▶ IPv4/IPv6 tunneling
- ▶ IPv4/IPv6 filtering
- ▶ Network address translation

### Routing:

- ▶ BGP4, BGP4+, BGP RPKI
- ▶ IS-IS, OSPFv2, OSPFv3
- ▶ RIPv1, RIPv2, RIPv3
- ▶ Static routes & path monitoring
- ▶ BGP multi-path (ECMP)
- ▶ Policy base routing (PBR)
- ▶ BGP L3VPN, BGP-LU
- ▶ Bidirectional Forwarding Detection (BFD)

### Quality of Service:

- ▶ Rate limiting per Interface
- ▶ Rate limiting per VRF
- ▶ Hierarchical QoS (H-QoS)
- ▶ Class-based QoS
- ▶ Classification:
  - ToS/IP/DSCP/CoS
- ▶ Shaping and policing
- ▶ Scheduling:
  - PQ, PB-DWRR

### Management / Monitoring:

- ▶ SSHv2
- ▶ CLI, NETCONF/YANG
- ▶ SNMP
- ▶ KPIs/telemetry (YANG-based)
- ▶ RBAC with AAA
- ▶ Syslog
- ▶ 802.1ab LLDP
- ▶ sFlow
- ▶ IPFIX, Netflow v9

### L2 and Encapsulations:

- ▶ GRE, mGRE
- ▶ VLAN (802.1Q, QinQ)
- ▶ VXLAN
- ▶ LAG (802.3ad, LACP)
- ▶ Ethernet bridge

### IP Services:

- ▶ DHCP server / client / relay
- ▶ DNS client / proxy
- ▶ NTP

### Security:

- ▶ ACLs (stateless & stateful)
- ▶ uRPF
- ▶ CP protection
- ▶ BGP FlowSpec (IPv4, IPv6)

### High Availability:

- ▶ VRRPv2 (IPv4/IPv6)
- ▶ VRRPv3 (IPv6)

## System Requirements

### Processor:

- ▶ Single or multi-sockets Intel® Xeon® and Atom® processor
- ▶ Arm based processors (Ampere Altra, Graviton2)

### CPU/vCPU cores

- ▶ 2 minimum (one for control, one for data plane)

### Memory:

- ▶ 2GB minimum

### NICs:

- ▶ Intel: 1G, 10G, 40G, 100G (E810)
- ▶ Mellanox: 10G, 25G, 40G, 50G, 100G: CX4, CX5, CX6
- ▶ Broadcom NetExtreme E-Series

### I/O virtualization:

- ▶ virtIO (Linux KVM)
- ▶ SR-IOV
- ▶ PCI passthrough
- ▶ VMXNET3 (VMware ESXi)
- ▶ ENA

## Supported Hypervisors

- ▶ KVM (RH, Ubuntu, CentOS)
- ▶ VMware ESXi (6.5+)
- ▶ Microsoft Hyper-V

## Public Clouds Support

- ▶ Amazon Web Services
- ▶ Microsoft Azure
- ▶ Google Cloud Platform

## Deployments

- ▶ Bare metal, virtual machines, containers (Kubernetes/Docker)
- ▶ Installation: PXE, USB, ISO, QCOW2, OVA
- ▶ Update / rollback support
- ▶ Provisioning: cloud-init, Ansible, ZTP
- ▶ Licensing: Online licensing system for feature and capacity enablement