



# VyOS Platform

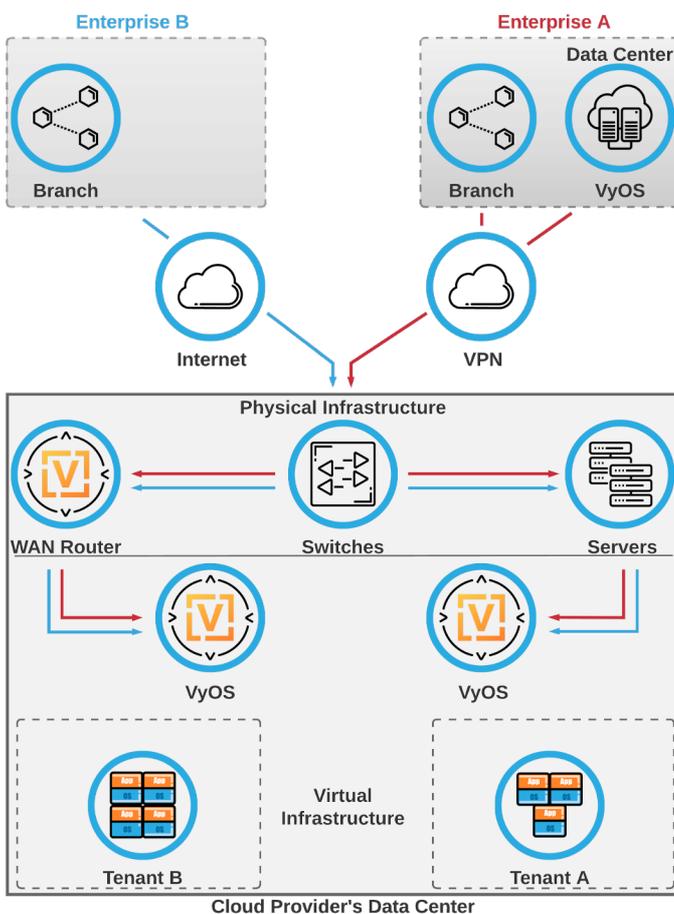
the power of your environment

VyOS is a network operating system which supports most of modern routing protocols and network security features. VyOS runs equally well on bare metal hardware and inside virtual machines, including common cloud platforms.

## OVERVIEW

VyOS is a GNU/Linux-based operating system which ties many popular open source applications under a single, unified command line interface. VyOS offers features that are inherent to the traditional hardware routers: commit and rollback functionality, built-in configuration versioning and archiving, scripting APIs. At the same time it provides VPN and firewalls options.

One of the most popular use cases for VyOS is connecting an existing enterprise network to the cloud infrastructure or connecting networks that hosted at different cloud platform vendors to each other:



### Benefits:

- Open and community-driven nature of development
- Enterprise- and service provider networks oriented
- Adaptable for any network - from a small office to a data center rack
- Arise from the abandoned Vyatta Core system so you can upgrade old Vyatta Core systems to VyOS without reinstallation
- Continues to be actively developed and improved by the community.

### Services offered:

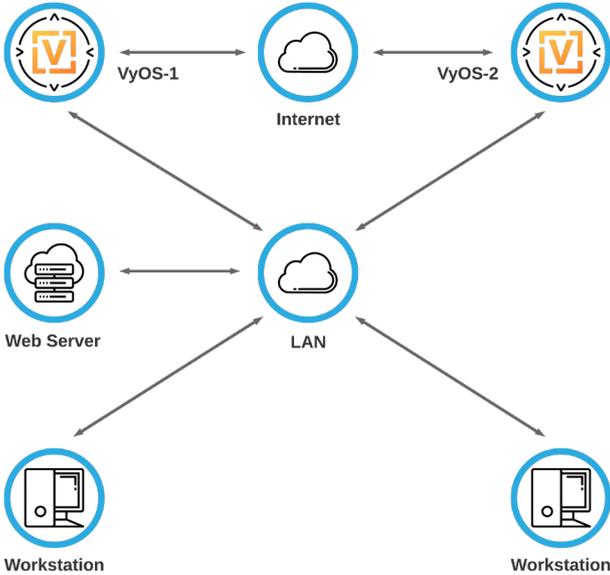
- Commercial support
- Development services on demand
- Private deployments design and configuration for small and medium-sized businesses (ISPs, MSPs and Enterprise users)
- Trainings and workshops

## KEY FEATURES

- Wide range of supported VPN technologies: GRE, IPSec, IPSec VTI, OpenVPN, WireGuard
- API for working with configuration from shell, Python, and Perl scripts
- Physical and virtual hardware supported equally
- Command line interface in the style of JunOS
- Wide range of COTS hardware and virtual platforms supported
- One-step image build process: any users can build custom images for their needs
- Support BGP, OSPF routing protocols
- QoS for traffic prioritization and shaping
- Safe and easy image-based upgrades.



## HOW YOU CAN USE VyOS

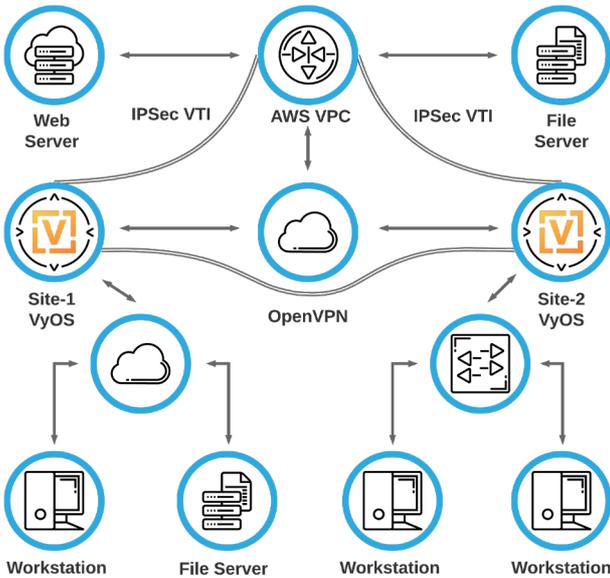
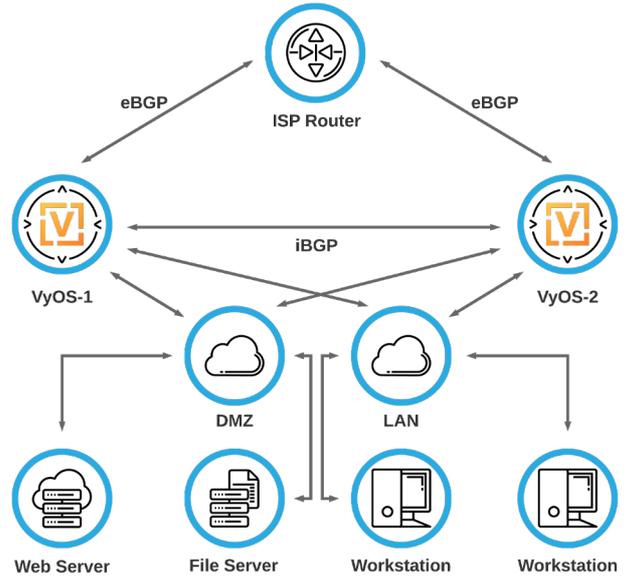


### ◀ SMB Edge

It can serve as an SMB EdgeRouter to ensure more stable and configurable network infrastructure. VyOS supports Network Address Translation (NAT), Dynamic Host Configuration Protocol Server functionality (DHCP), Virtual Router Redundancy Protocol (VRRP) for increasing availability of routing paths via default gateway.

### ▶ Border Router

VyOS can be used as an Enterprise Border Router due to the support of Border Gateway Protocol (BGP) - the most scalable among all routing protocols. For this case VyOS can serve as an exterior and interior BGP-peer, providing high level of network stability and availability.

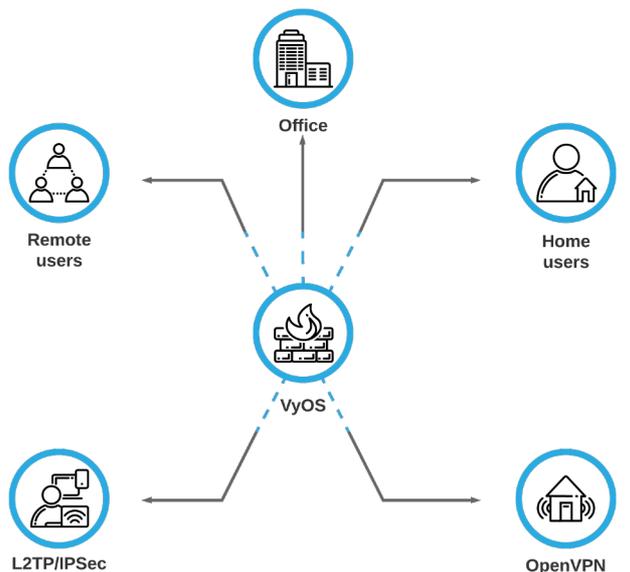


### ◀ VPN Gateway

VyOS offers route-based IP Security (IPsec) VPNs: IPsec/GRE, IPsec VTI, Dynamic Multipoint VPN (DMVPN) and OpenVPN. It allows you to connect distributed sites directly to the cloud deployment enabling your users and servers to connect to a remote private network through the encrypted channel over Internet. VyOS can act as a L2TPv3 router and provide Layer 2 stretching across the distributed sites.

### ▶ VPN RA Server

VyOS can be easily configured as a remote access VPN server. For this tasks you can use common L2TP over IPsec as it has native client for most current operating systems. Another option is to choose OpenVPN solution which is integrated into VyOS. Applying firewall configuration enhances the abilities and allows you to provide granular network access.



*If you would like to get more information on the provided use cases or interested how VyOS could work for your own case, please, contact our sales department.*

FEATURE	DESCRIPTION
Hardware or virtual machine requirements	<ul style="list-style-type: none"> <li>• CPU: single or multiple core 64-bit x86 (depending on throughput and enabled features)</li> <li>• Memory: 512 MB or more (depending on enabled features and size of routing tables)</li> <li>• Network interfaces: minimum one, maximum (according to underlying platform capabilities). For maximum performance use network adapters with hardware offloads and multiple hardware queues</li> <li>• Hypervisors: VMWare ESXi 5.1+, Citrix XenServer, Microsoft Hyper-V for Windows Server, Amazon Machine image on Amazon Web Services, KVM, RHEV, Nutanix AHV.</li> </ul>
Supported interfaces	<ul style="list-style-type: none"> <li>• Physical/Virtual: most of physical network adapters with Linux support, paravirtual network adapters</li> <li>• L2/L3: Ethernet Bridge, 802.1Q VLAN, QinQ, Bonding (LACP and static)</li> <li>• Tunnels: L2TP, L2TPv3, VXLAN, PPTP, GRE, IPIP, SIT, IPIP, IPIP6, IP6IP6, OpenVPN (server and client), WireGuard.</li> </ul>
Addressing and routing protocols	<ul style="list-style-type: none"> <li>• IPv4 and IPv6</li> <li>• Static routing and Policy-Based Routing (PBR)</li> <li>• Dynamic routing: BGP, OSPF, OSPFv3, RIP, RIPng.</li> </ul>
Supported network services	<ul style="list-style-type: none"> <li>• DHCP server and client, DHCP relay, DNS recursive server, Network Address Translation (source and destination, port-address, one-to-many, many-to-many), IGMP-Proxy, NTP server and client, LLDP server and client, mDNS repeater, PPPoE server, proxy server with cache and filtering, TFTP server</li> <li>• Traffic policing: shaping, rate limiting, priority-based queues.</li> </ul>
High Availability	<ul style="list-style-type: none"> <li>• Virtual Router Redundancy Protocol (VRRP), WAN load-balancing, Contrack-Sync, Clustering.</li> </ul>
Security functions	<ul style="list-style-type: none"> <li>• Traffic encryption: IPSec, OpenVPN, WireGuard</li> <li>• Traffic filtering: Zone-based firewall, stateful firewall.</li> </ul>
Management and monitoring	<ul style="list-style-type: none"> <li>• Provisioning and management: Secure Shell (SSH), Cloud-Init, python library for remote management</li> <li>• Monitoring and troubleshooting: Simple Network Management Protocol (SNMP), Syslog, NetFlow, sFlow</li> <li>• Automation with Ansible, SaltStack</li> <li>• Task scheduling, event handling, scripting</li> <li>• Configuration archival with built-in versioning.</li> </ul>
Available distributions	<ul style="list-style-type: none"> <li>• ISO, OVA, and QCOW2 formats.</li> </ul>

### KEY UPSTREAM PROJECTS USED IN VyOS

- |              |              |             |                 |
|--------------|--------------|-------------|-----------------|
| • Debian     | • StrongSwan | • OpenNHRP  | • mDNS-repeater |
| • FRRouting  | • OpenVPN    | • Accel-ppp | • IGMP-Proxy    |
| • ISC-DHCP   | • PowerDNS   | • xL2tpd    | • iPerf.        |
| • Keepalived | • Wireguard  | • Squid     |                 |