VyOS
The universal networking platform

The Universal Networking Platform

PRODUCT DATA SHEET

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VyOS is a powerful, open-source network operating system built on GNU/Linux, designed to unify diverse network functions under a single, user-friendly configuration interface. It delivers a reliable, zero-lock-in networking solution that provides unmatched transparency and flexibility.

Truly Multi-Platform & Multi-Cloud Compatibility

- **Comprehensive Deployment Options:** Supports a wide range of COTS (Commercial Off-The-Shelf) hardware for bare-metal installations, offering users the freedom to choose their preferred hardware.

- **Cloud-Ready:** Fully supported by major public cloud providers: AWS, Microsoft Azure, GCP, Oracle Cloud Infrastructure, Equinix Network Edge, Openstack and Exoscale.

- **Unified Networking OS:** Simplify operations with a single network operating system for all environments: Bare metal, Virtual and Cloud. Multiple network functions in one platform: Edge Router, Firewall, VPN Gateway, Edge IoT Gateway, BNG and Cloud Gateway.
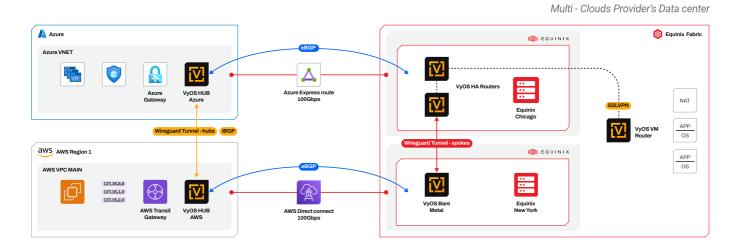
Automation-Ready for NetDevOps

- **Integration with Automation Tools:** VyOS integrates smoothly with popular automation frameworks such as: Terraform, Ansible, Cloud-init, SaltStack, Custom Scripting, Netmiko, Napalm and APIs (HTTP API and internal APIs available).

- **Transparent, Open-Source Architecture:** Full access to source code allows for complete transparency, enabling customization and auditability to meet unique business needs.

Productivity & Reliability by Design

- **Intuitive CLI for Efficiency:** The VyOS CLI is purpose-built for stateful systems, a commit/rollback mechanism, user session separation and versioning/backups to remote servers.
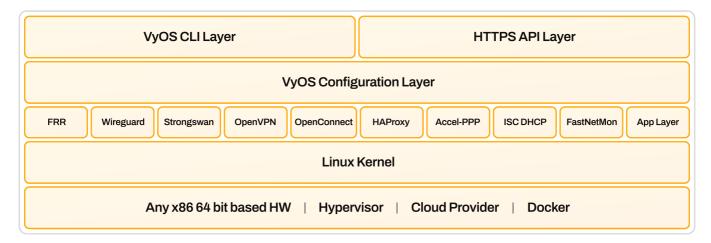
With VyOS, you gain the benefits of zero-lock-in, cost-effective, and transparent networking platform that empowers you to control and customize your network infrastructure on your terms. The VyOS universal router platform is designed to meet the demands of modern IT environments.

Multi - Clouds Provider's Data center

VyOS runs equally well on bare-metal hardware, hypervisors and cloud platforms.

VyOS CLI Layer	HTTPS API Layer

VyOS Configuration Layer								
FRR	Wireguard	Strongswan	OpenVPN	OpenConnect	HAProxy	Accel-PPP	ISC DHCP	FastNetMon	App Layer

Linux Kernel

Any x86 64 bit based HW | Hypervisor | Cloud Provider | Docker

Universal

VyOS is completely unbundled from any hardware or software platform. You can run it on a wide range of bare metal hardware. You can use any AMD or Intel processor and a variety of network cards.

Flexible

VyOS brings you a variety of routing and network security features, from dynamic routing protocols to a zone-based firewall. It offers more VPN protocols than any other solution: you can choose enterprise DMVPN, site-to-site IPsec and plenty of other protocols. It also offers an HTTP API and OpenAPI for developing extensions that will look indistinguishable from built-in features.

VyOS deployment and configuration can be automated and scaled with cloud-init, Terraform, Ansible, or our own HTTP API.

If you need to use VyOS with platform-specific drivers or additional software, you can build a custom installation image and deploy it at a scale.

Cost Efficient

We provide VyOS Software Access Subscriptions, Professional Tech-Support and Cloud Packs that allow you to deploy unlimited numbers of instances for a flat yearly fee. There is no limit for the number of users, tunnels, or anything else—the only limit is your hardware capacity.

SECURITY for your network

Networks keep growing exponentially but also security breaches and cyber attacks grow too.
We care about the confidentiality, integrity and availability of your network.

- Secure your network using VyOS as a stateful firewall.
- Encrypt your data flow between your HQ, Branches, Clouds and Road Warriors
- Ensure your network's integrity by logging all your traffic.
- Enhance your private network safety keeping internal addressing private from the external networks.

SUPPORT for your business

Go hand in hand with VyOS. We'll always be there to help you and your business. There are different tiers of support subscriptions that will fit your needs.

- Up to one hour response   service level agreement.
- Wide Variety of languages are available for you with our support services.
- 24x7 assistance via Remote Session|E-mail|Chat|Web|Phone.
- 30 Days money refund if you don't like our services for any reason.
- 100% discount on our certifications if you have any of our subscriptions.

SUPPORT for your needs

VyOS is a customizable Linux-based platform and brings you features like routing, firewalling, traffic shaping, tunneling, and more! It comes with a powerful toolbox and if a specific feature is needed, we can make it real for you. VyOS can adapt itself into the solution you need.

- Use VyOS as a robust network operating system compatible with a wide range of popular routing protocols such as BGP IPv4/IPv6, OSPFv2/v3, ISIS, EVPN-VXLAN, RIP/RIPng and PBR.
- Deploy VyOS as a VPN Gateway that supports IPsec Route-based/Policy-based, WireGuard, OpenConnect, OpenVPN, L2TP IPsec, IPsec Roadwarrior, VXLAN, PPTP, SSTP, and Tunnel Interfaces (GRE, IPIP, SIT).
- Guarantee High Availability using VRRP redundancy protocols, load balancing with HAProxy and conntrack-sync tracking.
- Prioritize your traffic doing shaping with QoS policies.
- Customized features development to fit your needs.

SECURITY for your growth

With VyOS, you set your own limits. Deploy instances as you grow, manage as much traffic as your need. All features are included free of charge. VyOS only charges the Support Subscription per cluster (2 units in HA)

- Free of charge support for the second unit in HA clusters.
- Easy to deploy as bare metal, at hypervisor, in containers or even in the cloud.
- Forget about licenses per-throughput or per-tunnel, grow with no worries.
- Scale your IoT infrastructure protecting your devices.
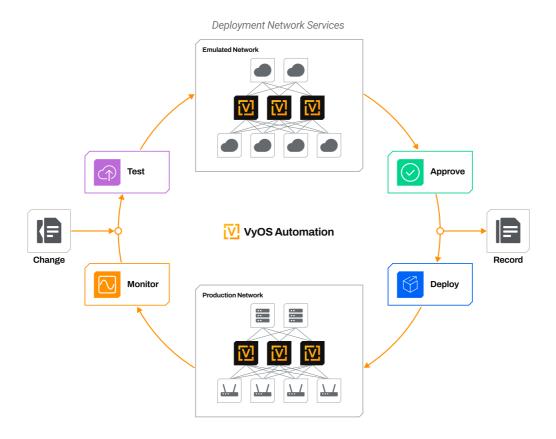- Save time and effort automating deployments with Cloud-init and Terraform tools.

VyOS Automation

VyOS supports a wide range of automation frameworks and tools, ensuring compatibility with modern DevOps and NetOps workflows. This flexibility allows network administrators to easily configure, deploy, and manage network infrastructure, allowing easy integration with a CI/CD pipeline. Key automation capabilities include:Terraform, Ansible, Cloud-init, SaltStack, Custom Scripting, Netmiko, Napalm and HTTP API.

VyOS Monitoring

Effective monitoring is crucial for maintaining network performance and security. VyOS integrates with various monitoring solutions, providing visibility into network health, traffic patterns, and performance metrics. Key monitoring capabilities include:

- **NetFlow / sFlow:** Scalable network traffic sampling and analysis for real-time traffic visibility.

- **Telegraf / Prometheus Client:** Exposes Prometheus-compatible metrics for real-time monitoring and alerting, including FRR exporter for advanced routing protocol monitoring.

- **Zabbix Agent2 / Syslog:** Native integration with Zabbix for comprehensive network event logging and monitoring.

- **SNMP (v2 and v3):** Supports SNMP v2/v3 for device monitoring, data collection, and secure network communication.

VyOS runs equally well on bare-metal hardware, hypervisors and cloud platforms. Using the same network OS on all platforms frees administrators from the need to manage multiple products and allows to have the same feature set everywhere. It also lowers the cost of automation and personnel training.

VyOS system requirements and deployment options:

Requirements	Distributions
CPU: Any 64-bit x86 Intel or AMD	VyOS is Available as: ISO, OVA, RAW, QCOW2, VHD, XVA
RAM: 1024 MB (2048 recommended)	

System requirements and deployment options:

Deployment Option	Supported
Bare Metal	Dell EMC, EdgeCore, Lanner, Supermicro, Equinix Metal (Formerly known as Packet) Generic Images for x86 Compatible Servers
HyperVisor	Optimized Images for: XCP-ng, Citrix HyperVisor, Xen HVM, VMware vSphere, OpenStack, Proxmox, Nutanix, Zededa EVE-OS, Hyper-V, Oracle (OVM v3.x | Oracle Linux KVM v7.6, v7.7, v7.8, v8.x | VirtualBox)
Containers	Docker / Podman
Cloud Provider	Amazon Web Services (AWS), AWS Outposts, Microsoft Azure, Azure Stack Hub, Google Cloud Platform, Oracle Cloud Infrastructure, Equinix Metal, Equinix Network-Edge, Exoscale

Being a Universal Networking Platform not only means being able to be deployed at any instance, it also means to serve as different network devices and solutions.

Below you will find the different features and protocols that VyOS supports:

Note that if you don't find a specific feature or protocol below, does not mean it cannot be supported. VyOS is a highly customizable platform and can be adapted to support a specific feature if needed.

The features below are available for both IPv4 & IPv6 protocols.

Feature	Supported
Supported Interfaces	Up to 100 Gbps interfaces, 802.1q VLAN, 802.1ad QinQ, 802.3ad and other bonding protocols, Software Bridging, Paravirtualized NICs (vmxnet3 & virtio), Virtual Ethernet(veth), Wireless (WiFi & Cellular Networks.
Routing Protocols	BGP IPv4/IPv6, BGP Unnumbered, EVPN-VXLAN, EVPN-MH, RPKI, OSPF (V2 & V3), ISIS, Babel, RIP, RIPng, BFD, BFD Monitoring, Policy Based Routing (PBR), Multicast (MLD, IGMP proxy v2 & v3, PIM-SM), ECMP, Static routes, Failover routes, Open Fabric.
MPLS - Segment Routing	MPLS, LDP, LDP IPv6, LDP label allocation range, LDP sync, Static labels, MP-BGP Labeled Unicast (BGP-LU), MPLS over GRE, SR-MPLS, SRv6, L3VPNv4/v6, IS-IS LFA, OSPF opaque.
Firewalling	Stateful Connection Tracking, Zone Based Firewall, GeoIP matching, address/ports/network groups, interfaces / mac-address groups, Domains groups, Dynamic address group, Synproxy, Firewall bridge and Flowtables.
NAT	Source and Destination NAT (One-to-One, Many-to-Many, One to many), Balancing, Masquerade, Network prefix Translation, NAT Load Balance, NAT44 , NAT66(NPTv6), NAT64.
Tunnels	WireGuard (P2P, RoadWarrior), OpenConnect (Client & Server), OpenVPN (P2P, Client & Server), OpenVPN DCO, GRE, IPIP, SIT, IP6IP6, L2TPv3, IPsec Route-based/Policy-based, VXLAN, SSTP (Client & Server), GENEVE, PPPoE (Client & Server), IPoE Server.
Services	DNS Forwarding, Dynamic DNS, mDNS Repeater, DHCP Server and Relay, IPv6 Router Advertisements, NTP (Client & Server), LLDP (Client & Server), TFTP Server, Web Proxy Server), Event Handler, UDP broadcast relay, Integration IDS/IPS (Suricata), Task-scheduler, HAProxy Reverse-proxy and load-balancer.
QoS	Traffic Shaping and Matching, Rate Limiting, Rate Control (TBF), Traffic Queues (Drop-Tail FIFO, Fair Queue (SFQ), FQ CoDel, Round Robin (DRR), Random Early Detection (RED/WRED), CAKE (Common Applications Kept Enhanced).
Management & Monitoring	SSH, HTTP API, SNMP (V2 & V3), NetFlow, sFlow, Telegraf, Prometheus-client, Zabbix-agent, BGP BMP, Splunk plug-in, Azure data exporter, Syslog, PKI keys.

Feature	Supported
High Availability	VRRP, VRRP Health check scripts, VRRP transition scripts, WAN Load Balancing, Connection State Synchronization, Conntrack Synchronization, Virtual-server load-balancing.
Supported Automation Tools	Ansible, SaltStack, Cloud-init, Terraform, Scripting, VyOS API, Netmiko
Additional Features	Intel QuickAssist Cryptographic Hardware Acceleration (QAT), TACACS+, RADIUS, AWS GLB Tunnels, DDoS Protection Integration with FastNetMon