vFW

Virtual Firewall (vFW)

The need for virtual firewalls arises from the increasing adoption of virtualization and cloud computing technologies in modern IT infrastructures. Virtual firewalls play a critical role in securing virtualized and cloud environments, allowing organizations to maintain a robust security posture while benefiting from the advantages of these flexible and scalable computing paradigms.

The 6WIND Virtual Firewall (vFW) product is designed to meet the unique security needs of modern virtualized infrastructures. As a L3/L4 firewall solution, the 6WIND vFW brings the performance, scalability and capabilities needed to offer a comprehensive and efficient defense for virtualized and cloud environments.

The 6WIND vFW comes with a full routing layer (static and dynamic), a rich multi-tenancy support (network micro segmentation) and an enhanced automation capability.

The 6WIND vFW supports different deployment models from Bare metal to virtual machine to containers on COTS servers (x86 and ARM) in private and public clouds. This deployment flexibility combined with rich features and enhanced management and monitoring capabilities allow designing efficient network security solutions that deliver high performance firewalling combining high throughput, high capacity, and high connection rate.

Features

▶ L3/L4 Firewalling

▶ Stateful firewall, Stateless filters

▶ Application groups, network groups, zones

▶ High capacity, connection rate and throughput

Benefits

▶ Scalable and high-performance routing and stateful firewalling

▶ Deployed as PNF, VNF or CNF on x86 and ARM standard COTS servers.

▶ Enhanced multi-tenancy support for optimized deployments

▶ High efficiency with Optimized hardware resource usage

▶ Low TCO

Untrusted Network

vFW

Trusted Network
(Public & Private Clouds)

APP   DB
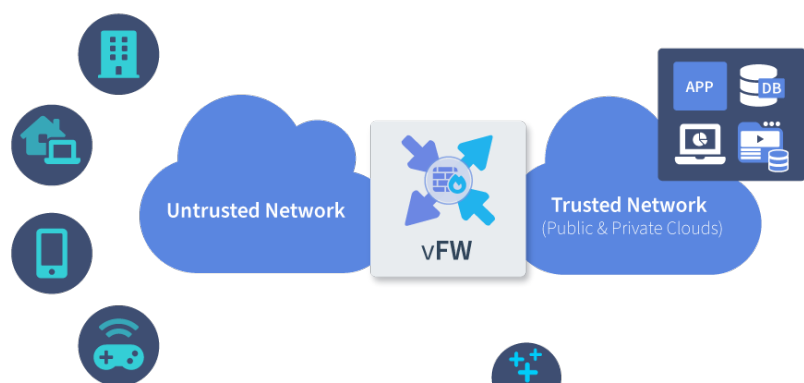
✓ Fully Virtualized
✓ COTS Deployment
✓ High Performance, High CPS
✓ Efficient L3/L4 Firewalling
✓ Statefull & Stateless
✓ Low Latency
✓ Optimized Resource Allocation
✓ Cost Reduction

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vFW

Specification

IP Networking:
- Dual Stack IPv4 and IPv6
- IPv6 auto-configuration
- Multitenancy (VRF/L3VRF)
- IPv4/IPv6 tunneling
- IPv4/IPv6 filtering
- Network address translation

Routing:
- Static routes
- path monitoring
- BGP4, BGP4+, BGP RPKI
- IS-IS, OSPFv2, OSPFv3
- RIPv1, RIPv2, RIPng
- BGP multi-path (ECMP)
- Policy base routing (PBR)
- MPLS
- Segment Routing (SR)

Firewalling:
- L3/L4 Firewalling (Statefull FW, Stateless filters)
- Application and network groups
- DDoS protection

Quality of Service:
- Rate limiting per Interface
- Rate limiting per VRF
- Class-based QoS
- Classification: ToS, IP, DSCP, CoS
- Shaping and policing
- Scheduling: PQ, PB-DWRR

IP Services:
- DHCP server, client, relay
- DNS client, proxy
- NTP
- TWAMP
- Port mirroring

L2 and Encapsulations:
- GRE, mGRE
- VLAN (802.1Q, QinQ)
- VXLAN
- LAG (802.3ad, LACP)
- Ethernet bridge

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

Management / Monitoring:
- SSHv2
- CLI, NETCONF/YANG
- SNMP
- KPIs/telemetry (YANG-based)
- RBAC (Radius, Tacacs+)
- Syslog 802.1ab
- sFlow
- IPFIX, Netflow v9

IPsec*:
- IKE v1/v2 (pre-shared keys or X509 certificates)
- MOBIKE
- Encryption: 3DES, AES-CBC/GCM (128, 192, 256)
- Hash: MD-5, SHA-1, SHA-2 (256, 384, 512), AES-XCBC (128)
- EAP/Radius, EAP-MSCHAPv2
- RSA, DH MODP groups 1,2,5,14) and DH PFS Key Management
- Extended sequence numbers (ESN), large anti-replay windows
- Look Ahead Fragmentation IPv4/ IPv6 (LAF)
- Tunnel, Transport or BEET mode
- Static and Dynamic VTI (SVTI, DVTI)
- Dynamic multipoint VPN (DMVPN)

System Requirements

Processor:
- Single or multi-sockets Intel® Xeon® and Atom® processors

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)

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

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

* Optional – subject to extension license

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