vThunder

SOFTWARE FOR VIRTUAL & CLOUD INFRASTRUCTURE

A10 vThunder® software appliances enable organizations to gain flexible, easy-to-deploy and high-performance secure application services that run on your choice of industry-leading hypervisors or in the cloud for maximum speed and efficiency.

SUPPORTED SOLUTIONS

THUNDER ADC

THUNDER CGN

THUNDER CFW

THUNDER TPS

FLEXIBLE, EASY-TO-DEPLOY SOFTWARE

Continuous streams of new apps and services with demand for digital content continue to stress data networks. To ensure high availability with minimal interruption and downtime, and to support new network architectures, organizations have embraced the move to elastic software implementations that are supported on premise, in the cloud and in hybrid architectures.

A10 vThunder® software appliances are secure application services that serve a wide variety of application requirements and workloads on virtual infrastructure. It supports leading hypervisors, including VMware ESXi, Microsoft Hyper-V and KVM, and public cloud infrastructure, including Amazon Web Services (AWS) and AWS GovCloud, Google Cloud Platform, Oracle Cloud, Microsoft Azure and Azure Government Cloud.

In addition, A10 vThunder software appliances integrate with cloud, software-defined networking (SDN) and network functions virtualization (NFV) orchestration platforms to support your organization's vision of building programmable software networks.

Optimize your network for diverse workloads and dynamically changing bandwidth demands, and monetize your infrastructure by offering new revenue-generating services. Choose between building your infrastructure atop your choice of leading hypervisors in your private cloud or deploy in public clouds.
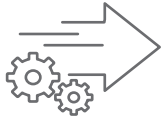
TALK WITH A10

WEB
a10networks.com/vthunder

CONTACT US
a10networks.com/contact

FEATURES & BENEFITS

FASTER TIME
TO OPERATION

Rapidly deploy virtual software images that are highly portable for operational flexibility and greater efficiencies. The software images can be downloaded and installed onto your virtualized infrastructure or in public cloud environments for the fastest deployment-to-operation time.
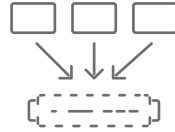
HIGH-DENSITY
MULTI-TENANCY

Application delivery partitions (ADP) enable independently configurable partitions (up to 32) within a single vThunder software instance. In addition, enforce network segmentation policies within each partition with overlay networking (VXLAN, NVGRE) support.
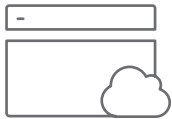
CHOOSE
YOUR CLOUD

Spin up and down software-based secure application services in public clouds, such as AWS, Google Cloud Platform, Oracle Cloud, Microsoft Azure, or on cloud provider-supported hypervisor infrastructure with centralized management and automation.
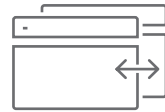
OPEN SYSTEM
INTEGRATION

Dynamically deliver NFV-based application and security services, and per-tenant policies, in private, public or hybrid clouds. Use on-demand provisioning to improve business agility, network automation through cloud platforms integration and operational simplification to reduce costs.

VIRTUAL
FLEXIBILITY

Gain on-demand deployment flexibility of vThunder software instances on leading hypervisors, such as VMware ESXi, Microsoft Hyper-V and KVM. Achieve strong isolation with completely independent vThunder instances (with no shared components). Factors, such as planned maintenance reboots, on one vThunder instance do not affect other virtual machines. Virtual software is portable to another compatible host, as needed.
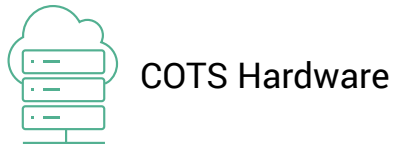
vTHUNDER SOFTWARE OPTIONS

VIRTUAL APPLIANCE

A10 vTHUNDER

Application Service

Advanced Core Operating System (ACOS)

Microsoft Hyper-V | vmware ESXi | KVM

COTS Hardware

CLOUD INSTANCE

A10 vTHUNDER

Application Service

Advanced Core Operating System (ACOS)

aws | Microsoft Azure

ORACLE Cloud | Google Cloud Platform

vThunder software appliances offer secure application services on industry-leading hypervisors such as VMware ESXi, Microsoft Hyper-V and KVM, and in public clouds, including Amazon Web Services (AWS), Google Cloud Platform, Oracle Cloud, and Microsoft Azure.

SOFTWARE SUPPORT ON vTHUNDER

FEATURE PARITY

vThunder software appliances leverage the same high-performance architecture, advanced features and familiar GUI/CLI options that power A10 Thunder hardware appliances to deliver feature parity between hardware and software.

NO FEATURE LICENSES

vThunder software appliances come with all features included for the software version selected. An all-inclusive, full-featured licensing model helps ensure flexibility and simplify operations with predictable CAPEX and OPEX.

HIGH-PERFORMANCE SOFTWARE

Support advanced virtualization techniques (e.g., such as, PCI-PassThrough, SR-IOV, DPDK and OVS), and paravirtualization frameworks (e.g., Virt-IO) to reduce virtualization overhead and accelerate performance. Licensing options for vThunder range from 200 Mbps to 100 Gbps.

API-DRIVEN ARCHITECTURE

Integrate with hypervisor management tools and automate management tasks with easy-to-use, industry-standard CLI, a web user interface and a RESTful API (aXAPI®), which integrates with custom or third-party management consoles. Full RESTful API control enables DevOps and SecOps efficiency, as needed.

FLEXIBLE LICENSING MODEL

Choose between perpetual, FlexPool capacity pooling with subscription based licensing model or pay-as-you-go licensing with rental-billing model (RBM) for fixed bandwidth licensing per hour, and utility-billing model (UBM) for per-byte consumption options for on-premise virtual deployment needs. For cloud deployments, choose between deterministic, subscription-based models with fixed hourly rates or bring-your-own-license (BYOL) plans.
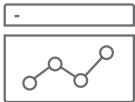
## RICH
ANALYTICS AND VISIBILITY

When deployed in conjunction with the A10 Harmony Controller™, vThunder appliances provide access to dozens of aggregate or per-request metrics in real-time. These include end-to-end response times, traffic profiles including popular URLs, and error and health indicators, including top application threats. This data is analyzed to provide per-app reporting and alerts on availability, security and performance. Administrators gain powerful insights into application services, service groups and servers, ensuring faster troubleshooting and enable the implementation of proactive infrastructure modifications.

COMPREHENSIVE
MANAGEMENT TOOLS

vThunder is supported by the A10 Harmony Controller; this controller is a centralized management platform that coordinates and distributes application centric service policies and configuration files to hundreds of virtual appliances and device cluster infrastructures across multi-cloud environments. Administrators can automatically discover, track and monitor each appliance including key operational metrics such as CPU and disk usage as well as device partitions and users. The controller performs configuration backup and restore operations and schedules software upgrades.

VNF-BASED SECURE APPLICATION SERVICES
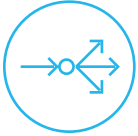
vTHUNDER ADC
### FOR LOAD BALANCING & APPLICATION DELIVERY

Implement virtualized L4-L7 server load balancing with vThunder ADC as a virtual network function (VNF) to optimize, accelerate and secure your applications. Scale your web and infrastructure servers seamlessly to ensure business continuity, accelerate applications for efficient operations and protect infrastructure for uninterrupted operations.

vTHUNDER CFW
FOR CONVERGED FIREWALL

Secure high-value assets from attacks with a data center firewall, encrypt data at massive scale with an IPsec VPN, protect mobile core infrastructure with a Gi/SGi firewall, and uncover threats in SSL traffic with a secure web gateway. Consolidate security and reduce your TCO. vThunder CFW also includes vThunder ADC and vThunder CGN features.
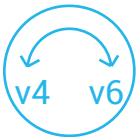
vTHUNDER CGN
FOR CGNAT & IPV6 MIGRATION

Deliver advanced carrier-grade networking with vThunder CGN as a VNF for CGNAT and IPv4-to-IPv6 migration. Automate on-demand provisioning of IPv4 and other L4-L7 tenant services, quickly and efficiently, to avoid business disruptions due to IPv4/IPv6 compatibility issues.

vTHUNDER TPS
FOR DDOS PROTECTION

Detect and mitigate multi-vector DDoS attacks with vThunder TPS as a VNF. Protect your network assets from volumetric, protocol and resource attacks, application-level attacks and IoT-based attacks at the network edge, or on a per-application/tenant basis.

CERTIFICATIONS

SEE ALL CERTIFICATIONS

CLOUD & SDN/NFV INTEGRATION

Software-defined networking (SDN) abstracts the network control and forwarding planes, enabling a programmable network with centralized control, while the NFV architectural framework aims to speed up deployment of new network services through VNF, and accelerates service provisioning.

A10 Networks supports and enables an organization's vision of network architecture based on the foundation of software platforms for innovation and helps reduce vendor lock-in.

vThunder virtual appliances are integrated with cloud and SDN fabrics (e.g., OpenStack, Cisco ACI, VMware and more) to help application deployments with scale, multi-tenancy and security. Enable automation of service chaining and service insertion with A10 virtual, physical and hybrid appliances into a software-defined infrastructure.

BUSINESS AGILITY
On-Demand Provisioning

AUTOMATION
Management and Orchestration (MANO), Openstack & SDN Integrations

REDUCED TCO
Operational Efficiency

SOFTWARE-DEFINED INFRASTRUCTURE (SDI) & ON-DEMAND LICENSING

CISCO   vmware   openstack   OPEN BATON   Open Source MANO   ERICSSON CLOUD MANAGER   RIFT.io

NFV/MANO INTEROPERABILITY

A10 participated in the ETSI NFV plugfest to test end-to-end capabilities, including management of software images, lifecycle management of network services, and VNFs for interoperability with leading NFV MANO platforms and virtual infrastructure managers (VIM). A10 Thunder VNFs are tested with NFV MANOs — including Ericsson Cloud Manager, Cisco NSO, Red Hat and more — to allow network programmability and cloud service orchestration.

USE CASES

Explore popular vThunder use cases leveraged by service providers and enterprises.

USE CASE	NEED	OUTCOME
BUILD A SOFTWARE-CENTRIC NETWORK	Build full-featured virtual secure application services on industry-leading hypervisors.	Deliver highly available and secure applications in traditional data center/private cloud infrastructure on hypervisors, including VMware ESXi, Microsoft Azure and KVM running on commodity hardware.
BUILD A HYBRID CLOUD ENVIRONMENT	Deploy hybrid clouds with vThunder cloud instances.	Organizations can leverage the cloud for specific workloads and for temporary cloud bursting. Integrate and unify vThunder instances with on-premise deployments to create a hybrid environment. Manage workloads and configurations between on-premise infrastructure and public cloud environments.
BUILD TWO-TIERED NETWORK ARCHITECTURE	Leverage software and hardware appliances for flexibility and performance.	Mix and match hardware appliances for performance, and software appliances for scalability and on-demand provisioning of application delivery, networking and security functionality, in two-tier network architectures (e.g., "second-tier" applications behind web servers that need high availability).
RIGHT-SIZE YOUR NETWORK WITH ON-DEMAND CAPACITY	Scale out virtual secure application services in real time on-demand.	Adapt to application demands with on-demand capacity provisioning for periodic usage spikes. Optimize your network by right-sizing capacity and scale-out clusters, as needed, to scale your virtualized network functions.
INTEGRATE WITH CLOUD & SDN ENVIRONMENTS	Stay competitive with faster time-to-market of new revenue-generating services.	Get flexible deployment options with vThunder VNFs and integrate with your preferred choice of vendor SDN and NFV MANO systems. For example, service providers can build innovative networks based on SDN/NFV to offer differentiated services on a per-subscriber basis.

REFERENCE ARCHITECTURE
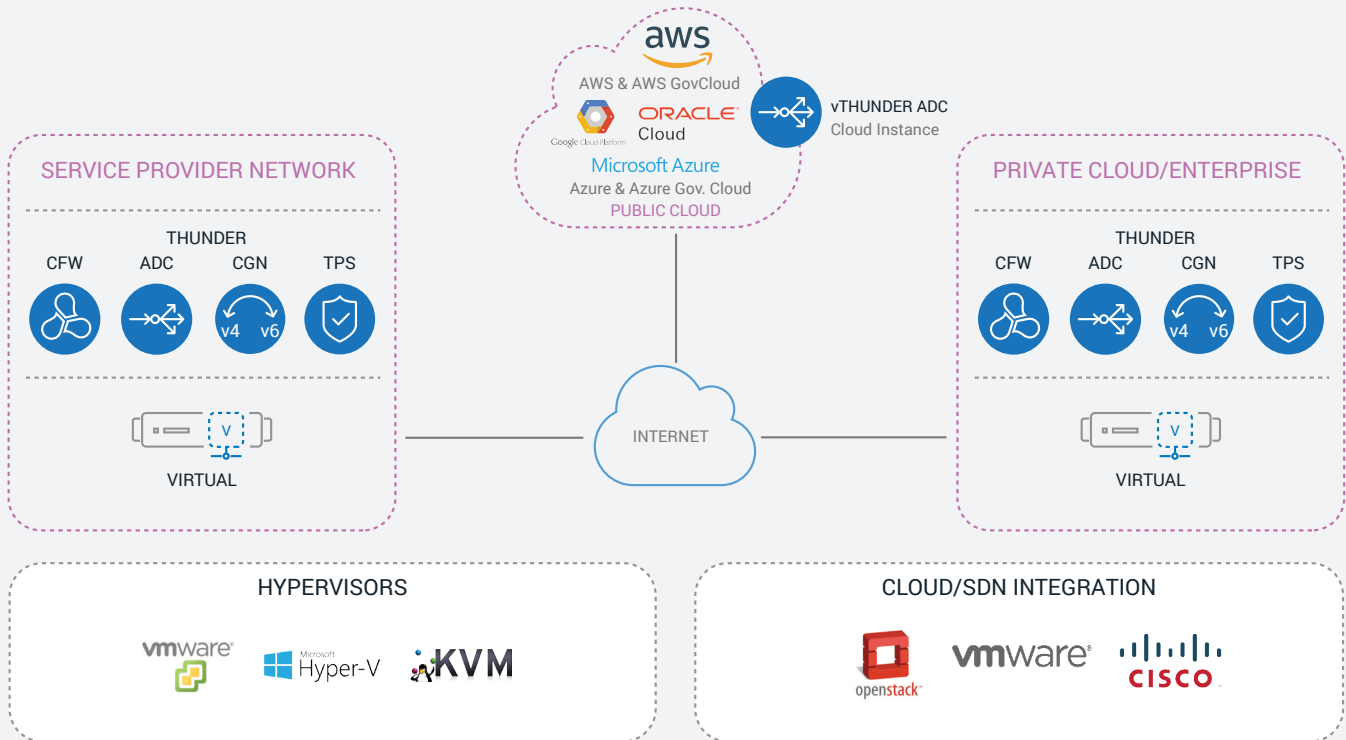
In this scenario, service providers and enterprises deploy vThunder CGN for IPv4 preservation and IPv6 Migration, vThunder TPS for DDoS protection, vThunder CFW for converged firewall capabilities and vThunder ADC for load balancing and application delivery. In addition, vThunder in Amazon Web Services (AWS), Google Cloud Platform, Oracle Cloud, and Microsoft Azure is available.

vTHUNDER SOFTWARE APPLIANCES

vTHUNDER ADC & vTHUNDER CGN

Supported Hypervisors	VMware ESXi 5.0 or Higher KVM QEMU 1.0 or Higher (VirtIO, OvS with DPDK, SR-IOV) Microsoft Hyper-V on Windows Server 2008 R2 or Higher
Hardware Requirements	See Installation Guide
Standard Warranty	90-Day Software

Bandwidth Licenses	Lab	200 Mbps	1 Gbps	4 Gbps	8 Gbps	10 Gbps	20 Gbps	40 Gbps	100 Gbps
VMware ESXi	●	●	●	●	●	●	●[1]	●[1]	●[2]
KVM	●	●	●	●	●			●[1]	●[2]
Microsoft Hyper-V	●	●	●	●	●[+]				

[+] 8 Gbps license not recommended for Microsoft Hyper-V
[1] SR-IOV or PCI Passthrough is recommended
[2] PCI Passthrough is recommended'

vTHUNDER ADC FOR CLOUD

	vTHUNDER FOR AWS	*vTHUNDER FOR* AZURE
Throughput	• Pre-installed License: up to 500 Mbps • BYOL (Bring Your Own License) Editions: up to 1 Gbps	• Pre-installed License: up to 500 Mbps • BYOL (Bring Your Own License) Editions: up to 500 Mbps
Image Format	Amazon AMI	Microsoft VHD
Bandwidth Licenses	vThunder for AWS Pre-installed License: • 10 Mbps • 50 Mbps • 100 Mbps • 200 Mbps • 500 Mbps vThunder for AWS BYOL Editions: • Lab/Developer • 200 Mbps • 1 Gbps	vThunder for Azure Pre-installed License: • 10 Mbps • 50 Mbps • 100 Mbps • 200 Mbps • 500 Mbps vThunder for Azure BYOL Editions: • Lab/Developer • 200 Mbps • 500 Mbps

vTHUNDER CFW

Supported Hypervisors	VMware ESXi 5.0 or Higher KVM QEMU 1.0 and Higher (VirtIO, OvS with DPDK, SR-IOV) Microsoft Hyper-V on Windows Server 2008 R2 or Higher
Hardware Requirements	See Installation Guide
Standard Warranty	90-Day Software

Bandwidth Licenses	Lab	1 Gbps	4 Gbps	8 Gbps	10 Gbps	20 Gbps	40 Gbps	100 Gbps
VMware ESXi	●	●	●	●	●[3]	●[1,3]	●[1]	●[2]
KVM	●	●	●	●	●[3]	●[1,3]	●[1]	●[2]
Microsoft Hyper-V	●	●	●	●[*]				
Feature Basis Throughput Guideline	Licenses are set based on throughput performance and maximum throughput varies depending on each feature regardless of license type. See the performance guideline table below for more details.							

1 SR-IOV or PCI Passthrough is recommended
2 PCI Passthrough is recommended
3 SSL Insight and IPsec not available

Feature Basis Performance Guideline	1 Gbps License	4 Gbps License	8 Gbps License
ADC/CGN	1 Gbps	4 Gbps	8 Gbps
Data Center Firewall	1 Gbps	4 Gbps	8 Gbps
Gi Firewall	1 Gbps	4 Gbps	8 Gbps
Secure Web Gateway (SSL Insight)	500 Mbps	1.5 Gbps	3 Gbps

+ 8 Gbps license not recommended for Microsoft Hyper-V

vTHUNDER TPS

Supported Hypervisors	VMware ESXi 5.5 or Higher Microsoft Hyper-V on Windows Server 2008 R2 or Higher
Hardware Requirements	See Installation Guide
Standard Warranty	90-Day Software

Bandwidth Licenses	1 Gbps	2 Gbps	5 Gbps
VMware ESXi	●	●	●
Microsoft Hyper-V	●	●	●[*]

Lab license is also available | * 5 Gbps license not recommended for Microsoft Hyper-V