

Make your network as nimble as your business needs to be



Virtual Network Functions Bring Cost-Effective Agility to Network Infrastructure Deployments

In today's digital world, business agility means IT agility. That's why companies have invested heavily in cloud computing and server virtualization. Unfortunately, it won't matter how fast you can spin up new applications if required changes to your network infrastructure takes weeks or even months.

In traditional networks, specific functions require specialized hardware, typically proprietary, usually from different vendors. Routers, firewalls, WAN accelerators – each demand unique and costly skill sets to configure and manage. When changes are required, they need to be made manually, box-by-box, often across geographies, which is time-consuming and prone to human error.

But what if you could deploy any combination of these functions on one general-purpose piece of hardware? And you could configure and manage them via software, in a streamlined and centralized manner? That's the idea behind Network Function Virtualization (NFV) technology.

NFV removes a major barrier to business agility by virtualizing key network functions so they can be deployed quickly in software running on industry-standard, high-volume servers. By deploying software-based virtual appliances known as Virtual Network Functions (VNFs), instead of hardware, you minimize the time, labor, and cost associated with buying, installing, configuring, and maintaining separate, physical and proprietary network equipment.

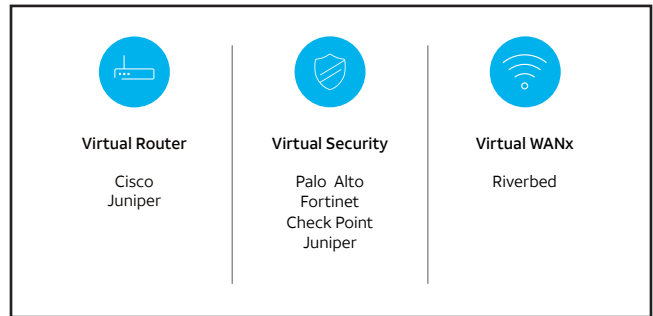
Discover the Real Benefits of Going Virtual

Enabled by NFV and backed by AT&T network cloud platform, AT&T FlexWare solutions will take you to the next wave of networking and help you transform how you manage your network infrastructure by delivering speed, flexibility, simplicity, and a lower total cost of ownership.

AT&T-certified VNFs, known as AT&T FlexWare Applications, run on industry-standard x86 servers that we call the AT&T FlexWare Devices. You can run up to 4 FlexWare Applications on a single medium device and up to 2 FlexWare Applications on a single small device, mix and match applications based on capabilities you need at each location, and logically connect applications together via service chaining and orchestration. This not only simplifies and streamlines deployment and management of your network, but can lower capital expenses, reduce power and cooling requirements, and increase operational efficiency.

Best-in-Class Vendor Ecosystem with Flexible Network Options

AT&T FlexWare Applications are designed to integrate seamlessly with your current network infrastructure. To give you all the choice and flexibility you need, we continue to expand our FlexWare Application offerings and partner ecosystem. AT&T currently supports virtual routers, virtual security, and virtual WAN acceleration from a number of best-in-class vendors.



AT&T FlexWare solutions are network agnostic with the ability to connect to AT&T and third-party Ethernet based or TDM based networks.

Activate New Virtual Routers in Days and Make Changes in

Cisco CSR and Juniper vSRX

You can choose virtualized router network applications from either Cisco or Juniper, with options based on your unique feature, management, and cost requirements. For the AT&T-managed option, our highly experienced professionals will automatically configure your virtual routers on your FlexWare Device to match your company's policies. You can choose from a standard set of templates or build your own, including AT&T-provided configuration, monitoring, fault management, maintenance, reporting, billing, and changes.

CISCO CSR		JUNIPER vSRX	
Model Options		Model Options	
CSR10M CSR50M CSR100M CSR250M CSR1G		vSRX300M vSRX1G	
Management Options		Management Options	
AT&T	Customer	AT&T	Customer

Key Features

- IP Versions (IPv4, IPv6, IPV4 & IPv6)
- Static Routing
- Routing Policy
- RIP, OSPF, IS-IS, BGP, and EIGRP* Routing Protocols
- Class of Service (COS) options
- Network Address Translation (NAT)
- Multicast

- Dynamic Host Configuration Protocol (DHCP) Server and Relay
- Proxy Address Resolution Protocol (ARP)
- VLAN Selection on LAN Interfaces
- Access Control Lists (ACLs)
- Logging, Reporting and Monitoring
- Licensing – AT&T

* Cisco only

Access Robust Portfolio of Virtual Security Applications to Protect Your Network

Palo Alto VM-Series

The VM-Series combines next-generation firewall security and advanced threat prevention to protect your IT environments from advanced cyber threats. The VM-Series natively analyzes all traffic in a single pass to determine the application identity, the content within, and the user identity. Palo Alto virtual security has machine learning capability and scalable architecture.

Fortinet FortiGate

Fortinet FortiGate is a software instance of the Fortinet Unified Threat Management (UTM) platform. This virtual security application handles all the capabilities of hardware-based firewalls, without all the cost – including traffic inspection, malware protection, web browsing control, and application-specific security. Fortinet is well suited for down-market customers due to ease of setup and management and can be deployed as a stand-alone FlexWare Application on a FlexWare Device cascaded behind an existing traditional customer router.

Check Point vSEC

Check Point vSEC delivers multi-layered defenses and transparently enforces security at the hypervisor level and between virtual machines. It automatically quarantines infected machines for remediation, provides comprehensive visibility into virtual network traffic trends and threats, and has PDF scanning capacity of up to 100MB.

Juniper vSRX

The vSRX is the virtual next-generation firewall from Juniper Networks. It provides the same exact features as the physical SRX firewalls but in a virtualized form-factor—delivering robust security services that scale to match demand in the network. The vSRX offers core firewall, robust UTM capabilities, and automated life cycle management.

PALO ALTO		FORTINET		CHECK POINT	JUNIPER
Model Options		Model Options		Model Options	Model Options
VM50 VM100 VM300		VM00 VM01 VM02 VM04 VM08		VE10 VE50 VE250 VE500 VE1G	vSRX10 vSRX100 vSRX1G
Management Options		Management Options		Management Options	Management Options
AT&T	Customer	AT&T	Customer	Customer Only	Customer Only
Feature Set		Feature Set		Feature Set	Feature Set
Essential	Essential	Enhanced	Enhanced	Essential	Enhanced
Enhanced	Enhanced			Enhanced	
Machine learning, reporting and automation, scalable architecture		Well suited to SMB market due to ease of setup and management		Malware threat detection, PDF scanning (up to 100MB)	Routing and security as a package, active/active HA feature

Essential = Basic Firewall + Reporting + Policy Management

Enhanced = Advanced Firewall + Antivirus + UTM

Deploy Virtual WAN Acceleration to Optimize Your Traffic

Riverbed SteelHead

The SteelHead is a software-based WAN Accelerator from Riverbed that, depending upon the options you choose, has all the capabilities of Riverbed's hardware appliance. All traffic is inspected by the virtual WANx so granular policies can be applied based on your specific optimization needs.

Key Features

Basic Service**

- Caching/Compression
- Data Optimization
- Data De-Duplication
- TCP Optimization

Premium Service

- Includes BASIC
- Application Layer Optimization
- SSL Optimization

* VCX1555, VCX5055, VCX7055 will be supported at a later time

** Available only from AT&T

RIVERBED STEELHEAD		
Model Options		
Software*	Throughput (Mbps)	Max Connections
VCX255-U	2	50
VCX255-L	6	75
VCX255-M	6	150
VCX255-H	6	230
VCX555-L	6	230
VCX555-M	10	400
VCX555-H	10	650
VCX755-L	10	900
VCX755-M	10	1500
VCX755-H	20	200
Management Options		
AT&T		Customer

For more information contact an AT&T Representative or visit www.att.com/FlexWare.

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