AT&T Business

Network infrastructure made simple

Networks are catching up to digital expectations. Today's digital economy requires businesses to move fast.

Server virtualization, cloud computing, and software as a service (SaaS) have already gone a long way to give businesses the agility they need, enabling them to spin up new applications and compute resources on demand.

At the same time, the acceleration of network infrastructure deployments hasn't come quite as far. Many organizations still wrestle with the time-consuming task of configuring diverse and proprietary, application-specific networking equipment when adding or changing network functionality. The inability to build and scale network infrastructure quickly has hindered enterprises' need to be more nimble in responding to business and customer demands.
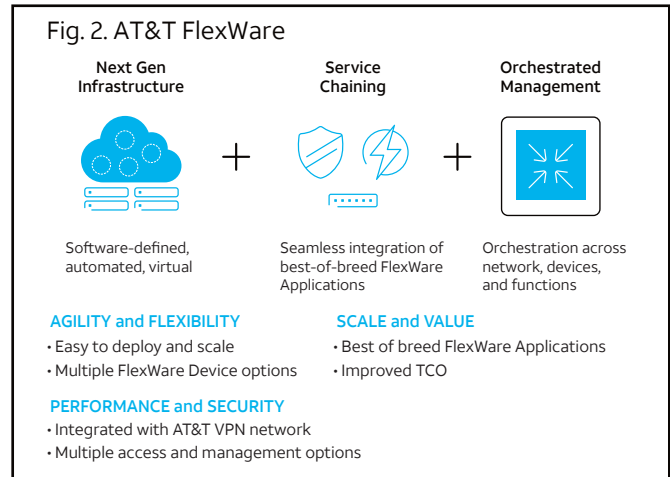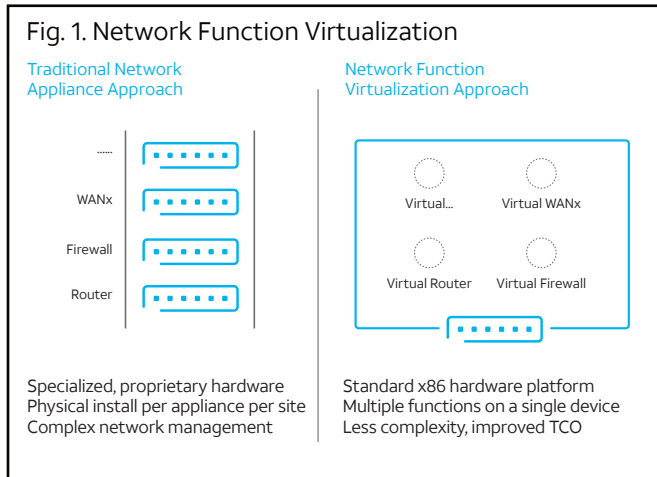
However, that situation is beginning to change.

Like server and application software in data centers, functions that typically reside in wide area networks are now also being virtualized. This approach, based on rapidly maturing network function virtualization (NFV)

technology, is creating significantly faster and simpler ways to deploy and manage network infrastructure. In the future, with industry-standard hardware and a few clicks, you'll be able to deploy routing and other more complex network functions to handle today's rapidly growing volumes of data traffic and dynamically changing IT and business requirements.

Transform how you build and scale your infrastructure of the future

Using NFV-enabled solutions in the enterprise network, you'll no longer have to buy, manage, and maintain a stack of specialized network appliances – such as routers, firewalls, and WAN accelerators. Instead, you can simply run these, and virtually any other network function, as software on industry-standard, high-volume servers. Each virtual network function, or VNF, can be easily deployed, configured, and moved in the network as required.

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Fig. 1. Network Function Virtualization

Traditional Network Appliance Approach

Network Function Virtualization Approach

WANx
Firewall
Router

Virtual...   Virtual WANx
Virtual Router   Virtual Firewall

Specialized, proprietary hardware
Physical install per appliance per site
Complex network management

Standard x86 hardware platform
Multiple functions on a single device
Less complexity, improved TCO

Fig. 2. AT&T FlexWare

Next Gen Infrastructure

Service Chaining

Orchestrated Management

Software-defined, automated, virtual

Seamless integration of best-of-breed FlexWare Applications

Orchestration across network, devices, and functions

AGILITY and FLEXIBILITY
• Easy to deploy and scale
• Multiple FlexWare Device options

SCALE and VALUE
• Best of breed FlexWare Applications
• Improved TCO

PERFORMANCE and SECURITY
• Integrated with AT&T VPN network
• Multiple access and management options

A closer look at NFV

NFV is an industry-standard technology that enables you to quickly add network functions to your infrastructure without having to add specialized equipment for each function. NFV separates software functionality from its underlying hardware and lets you host those functions instead on virtual machines (Fig. 1).

Each software instance that is virtualized becomes a VNF. For example, functions like routing or WAN acceleration, and security services, such as firewalls and intrusion detection, can all be virtualized as separate VNFs. Multiple VNFs can operate on a single industry-standard server, and in the near future, it will only take a few clicks on a management portal to download VNFs onto this server that can be located anywhere in a network. You will have the ability to easily deploy, mix, and match the functions as needed in a centralized and streamlined fashion. Your deployment times can be dramatically improved. And you'll likely be able to reduce your total cost of ownership, too, particularly as the number of VNFs used on each server grows.

AT&T FlexWare

We are providing the benefits of NFV to our customers in the form of AT&T FlexWare, a key component of the AT&T Network on Demand platform (Fig. 2).

Our solution is offered in conjunction with multiple connectivity options, including AT&T VPN, Internet, Switched Ethernet and 3rd Party Internet and MPLS networks. On the application side, it supports a robust eco-system of best-in-class VNF providers, including Juniper and Cisco virtual routers, Palo Alto,

Check Point, Fortinet, and Juniper virtual security, and Riverbed virtual WAN optimization. These AT&T-certified FlexWare Applications can be deployed on both small or medium industry-standard FlexWare Devices and come with flexible AT&T or customer management options (Fig.3).

We install a FlexWare Device on your premises, bring it online and manage it, just as we would a traditional managed network device, except that the FlexWare Device has the flexibility to be virtually any kind of network appliance – or appliances – that you want. Once online and activated, the FlexWare Device connects to the AT&T SDN-enabled cloud to receive the necessary software and thereafter assumes the identity of the installed FlexWare Applications. Because the FlexWare Device can house multiple FlexWare Applications on a single piece of hardware, it replaces the need for multiple specialized hardware appliances, likely reducing your total cost of ownership in comparison to what you would spend to buy and operate traditional proprietary equipment.
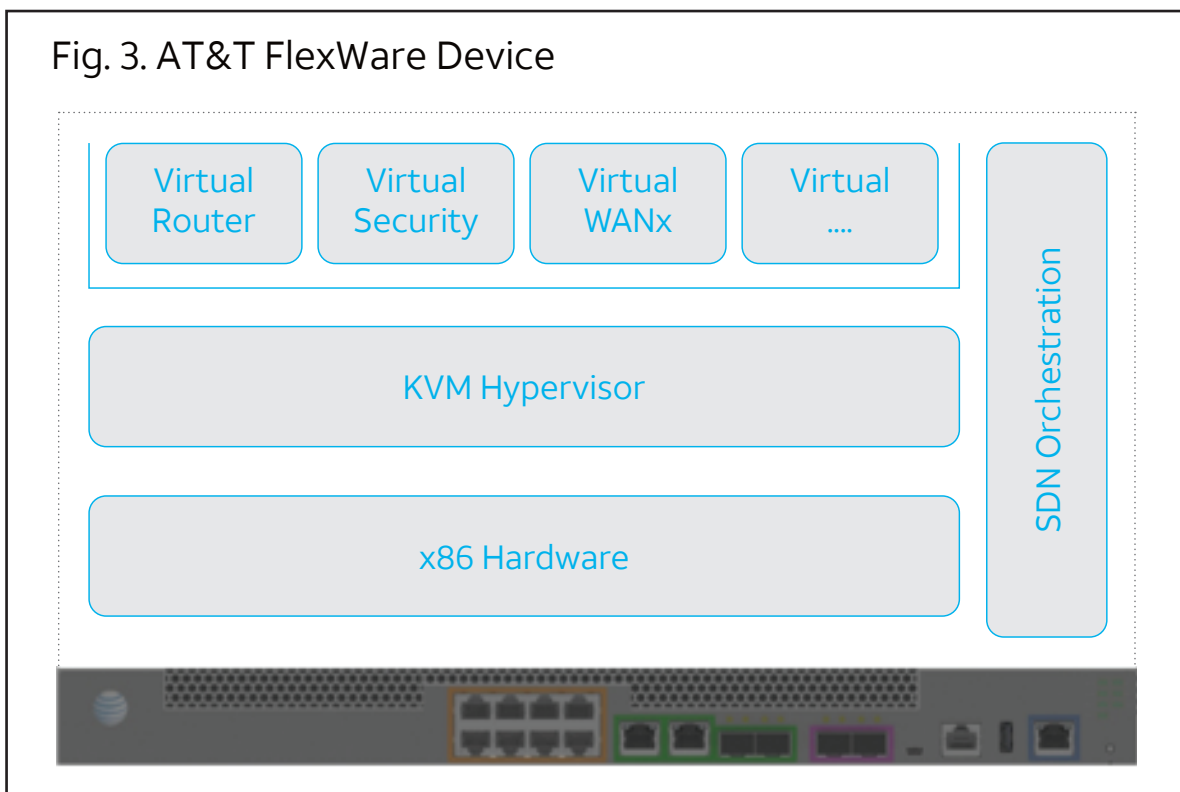
AT&T FlexWare is easy to phase into your network and is equally efficient in both multi-site, mixed-vendor environment and simpler single-site environments than proprietary equipment. Customers who have expiring network equipment contracts at their locations or those who have gone through acquisitions, for example, will benefit particularly from the NFV-enabled FlexWare approach as they attempt to simplify their infrastructures or integrate disparate hardware platforms.

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Open ecosystem delivers technology choice

The FlexWare Applications you choose won't be one-size-fits-all. We are building AT&T FlexWare with an eco-system of best-in-class vendors, so you can pick the technology and features you prefer for the functions you want to run. We have already announced alliances with Juniper, Cisco, Palo Alto, Check Point, Fortinet, Riverbed, and VeloCloud, for example. AT&T FlexWare will continue to expand as we bring more vendors, more functions, and additional connectivity options on board.

The next wave of networking technologies will transform how you manage your infrastructure. With AT&T FlexWare, you'll be able to gain significant benefits that will let you make your business more agile and responsive.

Fig. 3. AT&T FlexWare Device

Virtual Router	Virtual Security	Virtual WANx	Virtual ....

KVM Hypervisor

x86 Hardware

SDN Orchestration

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

To learn more about AT&T FlexWare have us contact you.

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