Together, Juniper Networks and Affirmed Networks offer a complete, high-performance, and open virtualized mobile services solution that leverages best-in-class SDN and Network Functions Virtualization (NFV) technology. This joint solution enables wireless service providers to deploy new services faster, innovating and differentiating through advanced service chaining, dynamic policies, and simplified provisioning. The speed and agility of this solution also allows operators to build profitable new services through finely tiered offerings catered to selected customer groups.

The Challenge

Growth in smartphones and connected devices accessing cloud-based services pressures mobile service provider revenue growth and profitability. The emergence of over-the-top (OTT) providers has resulted in more pressure on operators to create, provision, and launch new services at an accelerated pace. Meeting customer needs requires a faster pace of innovation and agility than what traditional networks permit. Many operators, however, are still using legacy networks and systems that are costly and slow to provision, leading to market delays and missed opportunities.

Mobile operators require a service creation platform that goes beyond legacy service orchestration, automation, and flow-through provisioning tools requiring complex coding. Operators need an SDN-enabled virtualized solution that offers automation and complete configuration management across multivendor virtual and physical network elements and network-wide service instances.

The Juniper Networks-Affirmed Networks Joint Virtualized Mobile Services Solution

Juniper and Affirmed have partnered to develop an integrated, virtualized solution to drive transformation and innovation for mobile service creation. By combining the Affirmed Mobile Content Cloud™ with Juniper Networks® Contrail Cloud Platform, vSRX Virtual Firewall, and MetaFabric™ architecture for data center deployments, operators can truly leverage the telco cloud to create, provision, and launch new subscriber services in minutes, enabling them to capitalize on new market opportunities, while staving off OTT competition.

This joint solution empowers operators to create and implement new service definitions faster with no complex coding. It also liberates operations and business support systems (OSS/BSS) teams from the tiresome task of provisioning each element or virtual instance in the network to support those services. By extending the benefits of SDN-enabled service automation across the entire network, this solution enables operators to reap the full benefits of NFV sooner.

The speed and agility of this virtualized service creation solution means that operators can now build profitable services around selected groups of customers for more finely tiered offerings. Combined with Affirmed’s subscriber segmentation and analytics tools, mobile operators can leverage new customer insights to quickly launch and scale targeted offerings across their entire subscriber base.
Solution Brief

Juniper Networks-Affirmed Networks Joint Virtualized Mobile Services Solution

Juniper Networks Contrail Cloud Platform simplifies building open, elastic, and resilient mobile service networks. Contrail’s virtual router provides dynamic networking that automates the reliable and secure connection of networking functions within the mobile services environment. Contrail also enables the operator to create service chains between the Affirmed Mobile Content Cloud and the Juniper Networks vSRX Virtual Firewall as well as additional third-party virtualized network functions (VNFs), to create rich end-to-end mobility services. In addition, SDN features, including managed network resource allocation, programmatic provisioning, policy-based resource scaling and session prioritization capabilities, accelerate service rollout, enable automated capacity scaling, and help manage better service quality for the end user.

Figure 1 provides an overview of this joint solution.

Features and Benefits

Service Creation

- Support mobile services on a single virtualized infrastructure (consumer/fixed LTE, IoT, and carrier Wi-Fi)
- Provide ETSI Management and Orchestration (MANO)-based life cycle management of VNFs and end-to-end services
- Quickly create new service definitions without complex coding
- Eliminate provisioning and configuration errors that result from manual processes
- Provide rapid onboarding of new customer services instances
- Support end-to-end testing and validation of services before and after production deployment

Network Automation

- Monitor virtualized infrastructure and apply policies to dynamically scale up (or down) virtual service functions and right-size capacity with subscriber growth
- Gain insight through flow and subscriber analytics for service and infrastructure planning
- Simplify service deployment in new regions

Resiliency

- Deploy a high-performance and high availability SDN and NFV infrastructure
- Secure telco cloud environment, RAN-facing and Internet-facing interfaces
- Provide interchassis scaling and high-availability for traffic between virtualized service functions

Solution Components

Juniper Networks Contrail Networking is a simple, open, and agile SDN solution that automates and orchestrates the creation of highly scalable virtual networks. These virtual networks let you harness the power of the cloud—for new services, increased business agility, and revenue growth. Contrail Networking creates virtual networks that integrate seamlessly with physical networks.

Juniper Networks Contrail Cloud Platform is an integrated turnkey cloud management platform that is hardened from open-source technologies including OpenStack. It simplifies building open, elastic, and extremely optimized cloud infrastructures. Contrail Cloud Platform combines the automation capabilities of Contrail Networking with Juniper’s OpenStack distribution for SDN/
NFV and cloud network automation, enabling the creation and management of secure, scalable, and high availability virtualized mobile service networks.

Juniper Networks vSRX Virtual Firewall running on commercial off-the-shelf (COTS) hardware can be deployed in the Gi-LAN service complex providing firewall, Network Address Translation (NAT), and VPN functions which can run standalone or as a part of the same VNF. Additionally, the vSRX can be deployed as a security gateway handling IPSec tunnels from the macro/small cell network protecting user traffic within the access network.

Juniper Networks MetaFabric architecture delivers a simple, open, and smart blueprint for building high-performance, highly reliable data center environments and next-generation central offices. The MetaFabric architecture’s ability to deliver high availability features, such as in-service software upgrades within a distributed model, make it an ideal framework for supporting a distributed telco cloud environment.

The Affirmed Mobile Content Cloud is a virtual evolved packet core (vEPC) solution featuring fully virtualized instances of each key mobile core function and select value-added services. The flexible deployment model supports single or multiple packet core and Gi-LAN elements. For example, a virtualized network element may contain multiple service instances such as the gateway GPRS support node (GGSN), Packet Data Network Gateway (PGW), and Serving Gateway (SGW), or each network function might be deployed in its own virtualized network element. This approach provides the mobile network operator with greater flexibility in terms of deploying and scaling individual or combined network elements. In each scenario, the Affirmed Networks architecture enables scale in and out, based on the demand of a function and the required capacity.

Figure 2 provides an overview of the Affirmed-Juniper virtualized network functions (VNFs).

The Mobile Content Cloud’s native service chaining capabilities and easy-to-use graphical interface enable operators to quickly combine a multitude of value-added services and policies to create innovative, customized, revenue-generating services. The Affirmed Open Workflow features a unique Services Workflow Orchestration framework that provides subscriber classification and functions chaining, allowing operators to construct subscriber-specific services. The Affirmed Acuitas Element Manager allows for simplified, centralized provisioning and management of Mobile Content Cloud functions and services for greater agility and flexibility. It also integrates seamlessly with the Operation, Administration, and Maintenance (OAM) layer to provide unified visibility and control across the entire network.

Summary—Juniper and Affirmed Deliver a Highly Automated, Scalable, and Reliable Virtualized Solution for Wireless Services

Mobile service providers are constantly striving to find new ways to rapidly create and implement new services at lower cost than legacy approaches. Together, Juniper and Affirmed deliver a highly automated, scalable, and reliable virtualized solution which allows wireless service providers to deploy new services faster, innovating and differentiating through advanced service chaining, dynamic policies, and simplified provisioning. With this joint solution, mobile service providers can transition quickly and efficiently to a virtualized mobile architecture; automate new mobile service introduction through policy and business logic-based orchestration; dynamically scale resources to right-size capacity in the network; effectively manage virtual environments and services; leverage new customer insights through analytics to quickly launch and scale targeted offerings; and realize the scale and security benefits of the telco cloud with truly carrier-grade NFV infrastructure.

Next Steps

For more information about how your organization can benefit from the Juniper Networks-Affirmed Networks joint virtualized mobile services solution, or to schedule a demo, please contact your authorized Juniper Networks or Affirmed Networks representative. To learn more about Juniper NFV’s solutions please visit www.juniper.net/us/en/solutions/nfv

About Affirmed Networks

Affirmed Networks has emerged as the leader in the network virtualization domain with more than 25 customers and 40 trials underway with Tier 1 and Tier 2 operators globally. Affirmed’s virtualized mobile core solutions provide a complete, consolidated virtual evolved packet core (vEPC) solution that runs together on a single, virtual hardware instance for better performance, scalability, and cost. The vEPC solution features fully virtualized instances of each key mobile core function. Additional information can be found at www'affirmednetworks.com.
About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at www.juniper.net.