

# Juniper Networks Cloud CPE Solution with Riverbed SteelHead WAN Optimization VNF

Greater choice for dynamically delivering advanced managed services

## Challenge

The ability to rapidly deploy managed services is inhibited by closed, proprietary platforms that restrict scalability and require large up-front investments. Deployment is a time-consuming manual process that does not align with the geographically dispersed cloud facilities required by enterprises.

## Solution

Juniper automates service delivery with a scalable, carrier-grade Cloud CPE solution that, when combined with Riverbed SteelHead WAN Optimization VNF, helps service providers and enterprises intelligently orchestrate and automate provisioning while accelerating data transfer between remote offices and the cloud.

## Benefits

- Automation replaces time-consuming truck rolls with simple mouse rolls.
- Open protocols and APIs automate VNF deployment and management.
- Embedded vSRX provides edge-to-edge encryption and data protection.
- Best-in-class Riverbed SteelHead WAN Optimization VNF accelerates application performance and improves end user experience.



Service providers are dealing with rigid service delivery infrastructures and escalating operating costs that seldom align with revenue, hindering their ability to quickly design and deploy new services. Network Functions Virtualization (NFV) on the Juniper Networks® NFX250 Network Services Platform, working in conjunction with Riverbed SteelHead WAN Optimization VNF, allows users to instantaneously provision new services at remote locations, improving the quality of service of data transfers between geographically dispersed cloud facilities at minimal operating expense.

## The Challenge

Customer premises equipment (CPE) is essential to most managed service delivery models. However, CPE deployment is a time-consuming activity that requires devices be shipped to each location, where they must be configured and provisioned—a complex and manual process that requires highly specialized skills. Any additional functionality requires procurement of new hardware, while ongoing maintenance and operations contribute their own unique challenges. In short, the order and fulfillment process is not compatible with the speed at which businesses must operate.

Network Functions Virtualization (NFV) technologies have broken down many of these barriers, revolutionizing the managed service delivery and life-cycle operation. Enterprise customers can choose from a wide variety of innovative and customized services, available on demand. Thanks to NFV, service providers and enterprises alike are now less dependent on rigid, physical-only network infrastructure, manual workflows, and service silos, making them more relevant to their customers. NFV empowers service providers with a more software-centric approach to service delivery, accelerating innovation that ultimately increases competitiveness, revenue, and profitability.

## The Juniper Networks Cloud CPE Solution with Riverbed SteelHead WAN Optimization VNF

The Juniper Networks Cloud CPE solution is the industry's most dynamic service creation platform. It automates service creation and simplifies the service life cycle, enabling service providers to quickly conceive and create highly customizable services in just minutes. Service performance capacities can be dynamically updated, improving the scalability and flexibility of managed services.

Riverbed SteelHead provides optimized, secure delivery of all applications across all networks for an exceptional end-user experience and maximum utilization of resources. Whether apps are hosted in a branch, data center, or the cloud, SteelHead provides superior application and data acceleration across the entire hybrid enterprise. SteelHead uniquely and completely addresses network performance with patented data, transport, and application streamlining.



The Riverbed WAN optimization VNF addresses not only bandwidth, but also latency to deliver the following benefits:

- Improves application and data transfer productivity up to 100 times
- Reduces bandwidth utilization by up to 95%
- Delivers three-year ROI of 497%
- Reduces network and application downtime by 70%<sup>1</sup>
- Manages the WAN with 19% greater efficiency<sup>1</sup>

The combination of Juniper’s Cloud CPE and Riverbed’s SteelHead WAN Optimization VNF delivers efficient data transfer capabilities in a simple physical form factor between branch offices and the cloud.

Juniper Networks Contrail Service Orchestration automates the provisioning, operations, and management of VNFs enabling rapid instantiation of a service chain that combines Riverbed SteelHead WAN Optimization VNF with Juniper’s vSRX virtual firewall and router.

The Juniper Cloud CPE solution is based on an open standard framework that is easily integrated into existing operations and business support systems (OSS/BSS), providing an open ecosystem supporting best-in-class third-party VNFs.

### Distributed Cloud CPE Model with Riverbed SteelHead WAN Optimization VNF

In a distributed cloud CPE model, Riverbed SteelHead WAN Optimization VNF is deployed on Juniper Networks NFX250 Network Services Platform. The NFX250 leverages IP and virtualization technologies as the cornerstones for automated on-demand branch creation and rapid service delivery. Based on proven Juniper technology, including open architectures and the Juniper Networks Junos® operating system, the NFX250 delivers

high performance and scalability for routing, switching, and security applications.

The NFX250 platform embeds the vSRX virtual firewall to provide the perimeter security required to protect the business-sensitive environment. Working together, the NFX250, Riverbed SteelHead WAN Optimization VNF, and the vSRX simultaneously virtualize IP routing to ensure site survivability and enable firewall security capabilities at the branch, meeting the stringent demands of always-on application availability.

### Solution Features and Benefits

#### Security

The Juniper Cloud CPE solution features vSRX, the industry’s highest performing virtual firewall (up to 100 Gbps) that provides scalable, secure protection across all parts of the network. The vSRX serves as an advanced programmatic platform in a single VNF instance for scale-up and scale-out growth. With the built-in service design capabilities of Contrail Service Orchestration, vSRX can be easily configured to support a myriad of security applications, including next-generation firewall, Network Address Translation (NAT), path performance monitoring, dynamic application-based routing, application detection, intrusion prevention systems (IPS), content filtering, antivirus, and unified threat management (UTM).

#### Revenue Growth

Unlike traditional managed CPE solutions, where service deployment is a lengthy and manual process, Juniper’s Cloud CPE solution drastically shrinks new service delivery time from months to just minutes. This frees service providers to adopt a fast-fail approach toward service creation with very little risk, introducing customized services and a potentially rapid path to revenue for innovative new services and target segments.

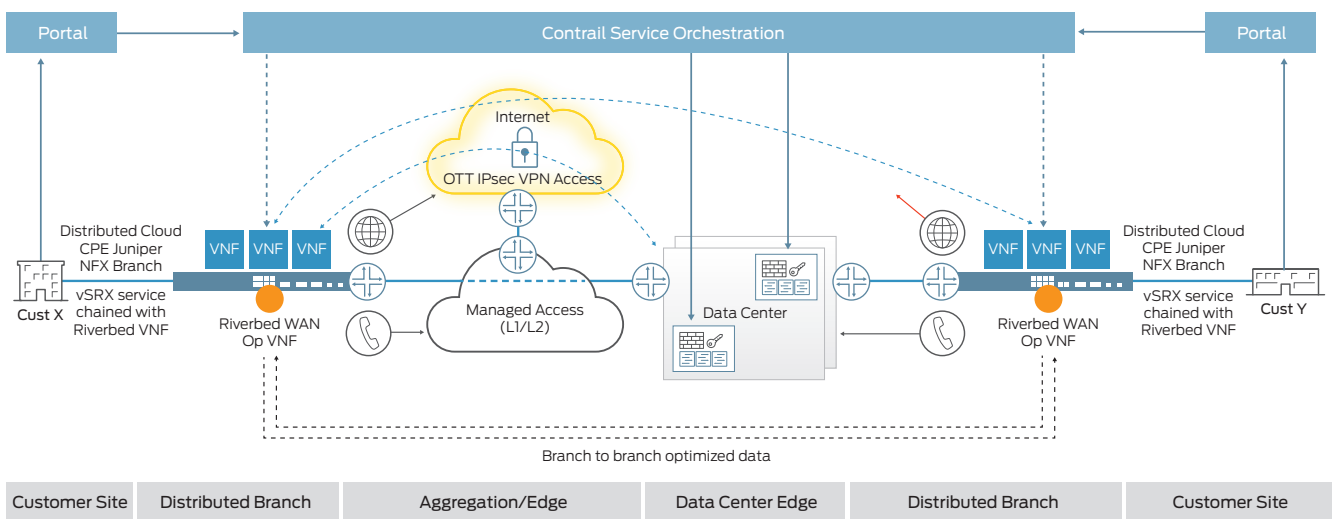


Figure 1: Distributed Cloud CPE model with Riverbed SteelHead WAN Optimization VNF

<sup>1</sup> IDC Whitepaper: The Business Value of Riverbed SteelHead

## Reduced Operational Expenditure

Juniper's Cloud CPE solution reduces OpEx by adopting automation along with centralized service management and orchestration. Automation improves all facets of the service life cycle, simplifies operations, and eliminates extensive manual processes such as provisioning, configuration, equipment installation, service delivery, and back-end database administration.

## Deployment Flexibility

Business requirements often change to reflect market dynamics. Juniper's Cloud CPE solution lets service providers react and respond to these changes in near real time, quickly moving from a one-size-fits-all model to a highly personalized reactive model that transforms service providers into a trusted partner. Riverbed SteelHead WAN Optimization VNF can be deployed in a distributed virtual deployment on Juniper NFX250 or on a physical appliance to peer with the NFX250 NFV instance at the far end.

## Reliability

Juniper's Cloud CPE solution enables highly dynamic multi-deployment models with zero touch provisioning and management that accelerate remote and branch office deployments. End-to-end visibility into network performance enables proactive detection and maintenance of application performance on the premises or in the cloud.

## Summary—Leverage Cloud CPE to Deploy Best-in-Class Riverbed SteelHead WAN Optimization VNF

Juniper Networks Cloud CPE solution with Riverbed SteelHead WAN Optimization VNF lets service providers simplify and cost-effectively deploy managed WAN services. Service providers can quickly and easily integrate best-in-class WAN Optimization VNF into their managed service offering without integrating and deploying new hardware platforms.

Juniper's Cloud CPE revolutionizes traditional managed services, overcoming the challenges associated with service deployment, management, and evolution by simplifying and

automating customizable service creation and delivery from a comprehensive, vertically integrated, open NFV solution. Juniper's Cloud CPE solution supports flexible deployment models with unprecedented scale for expanding onsite and scaling up in the cloud with advanced routing, comprehensive security capabilities, and an open ecosystem for additional third-party VNFs. By focusing on simplified service creation, automated service delivery, and an open framework supported by a highly scalable end-to-end NFV solution, the Cloud CPE solution enhances network performance, lowers costs, and delivers differentiated services that elevate customer satisfaction and ultimately lead to increased profitability.

## Next Steps

For more information about Juniper Networks Cloud CPE, please contact your Juniper representative, or go to [www.juniper.net/us/en/solutions/nfv/cloudcpe/](http://www.juniper.net/us/en/solutions/nfv/cloudcpe/).

## About Riverbed

Riverbed, at more than \$1 billion in annual revenue, is the leader in Application Performance Infrastructure, delivering the most complete platform for the hybrid enterprise to ensure applications perform as expected, data is always available when needed, and performance issues can be proactively detected and resolved before impacting business performance. Riverbed enables hybrid enterprises to transform application performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. Riverbed's 27,000+ customers include 97% of the Fortune 100 and 98% of the Forbes Global 100. Learn more at [www.riverbed.com](http://www.riverbed.com).

## About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at [Juniper Networks](http://Juniper Networks) or connect with Juniper on [Twitter](https://twitter.com/juniper) and [Facebook](https://www.facebook.com/juniper).

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