

# Move Faster with an On-Demand Hybrid Cloud IT Platform

Unite application, infrastructure, and security policy and orchestration

## Challenge

Enterprises must master multicloud management, adopt a hybrid operations model, and assimilate a plethora of IT technologies in order to build—and realize the full benefits of—a unified hybrid cloud IT platform.

## Solution

Juniper helps build hybrid clouds, where you can interconnect any clouds with secure high performance, realize unified policy seamlessly stitched in and across your cloud software stacks, and advance your hybrid cloud to a true unified IT platform.

## Benefits

- Future-proofed flexibility allows for change and growth
- Streamlined operations accelerate application time-to-value
- Simple, secure, and scalable components work across public and private clouds

**unite**  
Cloud Enabled Enterprise

Cloud is the new computer, and hybrid cloud is the new IT platform. According to a number of recent surveys, including [RightScale's State of the Cloud Report](#), enterprises see hybrid cloud as their ideal IT platform across business use cases like digital transformation, IoT, and big data-led research and business insight. These surveys show that the number of enterprises making the transition to hybrid cloud is on the rise, up from 75% in 2015 to 82% in 2016.

A hybrid cloud spans at least one public and one private cloud. You might also have a private, on-premises virtualized environment (such as virtualized VMware data centers) connected to a public cloud. Most enterprises started with such virtualized data centers, and have seen the need to modernize them to keep up with developers embracing simplicity and speed of building atop public cloud platforms.

While the promise of an elastic, automated infrastructure was the main reason for moving to public cloud platforms through 2015, recently we have seen open-source innovation and the democratization of automation tooling, virtualization runtimes like kernel-based virtual machine (KVM) and containers, and orchestration platforms like OpenStack and Kubernetes. Now widely regarded as enterprise-ready and mature, network infrastructure and operations teams leveraging these innovations can build private clouds that attract developers in the same way as public cloud, setting the stage for a hybrid cloud IT application platform that benefits from the flexibility of both private and public cloud.

## The Challenge

While private and public clouds may seem simple on the surface, merging them into a single platform presents a significant multicloud management challenge. Today's challenges extend even beyond that task because IT organizations are not only realizing hybrid cloud, but a veritable hybrid everything. They're managing and mixing choices for hybrid cloud, hybrid operations models, and hybrid IT or technologies. And these hybrid forces are pulling IT leaders away from their steadfast values of standardization and consolidation.

In the face of these changes, IT leaders must make the most of the flexibility of both public and private cloud and managed and in-house operations, while reducing the variables when it comes to technology choices. Technology invariants that span models of public/private or managed/in-house will create parity that facilitates manual training, manual task-context switches, and the integration of management tools spanning cloud and operational models.

To use hybrid cloud as the foundational platform, IT must unify, standardize, and ensure compatibility in three ways. First, functional requirements must be the same or made compatible across clouds; these include APIs, infrastructure and platform primitives, and configuration structures or at least semantic behaviors. Second, nonfunctional aspects like availability, performance, and quality of service (QoS) must be equal. Third, there must be close economical value parity in resource costs, consumption metrics, and compatible accounting.



## The Juniper Unite Cloud Solution

Juniper Networks has long been an innovator in data center networking and security—both critical components for building reliable, high-performance clouds of any kind. Looking beyond the individual data center use case to hybrid cloud, consider using multiple clouds in combination. The Juniper Unite Cloud philosophy targets the value of uniting private and public clouds as one platform using Juniper’s broad product portfolio working in conjunction with partnerships to conquer three areas. Fast-moving enterprises pursuing the Unite Cloud approach may embrace all solutions at once to immediately realize the benefits of a united hybrid cloud platform, or they may adopt pieces of the portfolio to proceed on the journey to hybrid clouds incrementally. Regardless of the approach selected, Juniper Unite Cloud ensures that you enjoy seamless interoperability with existing investments, letting you make future-proofed choices as you evolve to a united hybrid cloud platform.

### Features and Benefits

**Interconnecting Clouds:** An indispensable requirement of building an enterprise hybrid cloud platform is connecting the public and private clouds. Committed to open innovation, Juniper employs its Juniper Networks® MX Series 3D Universal Edge Routers and SRX Series Services Gateways to interconnect data centers and clouds with open, industry-standard, interoperable federation, not syndication. Technical aspects and benefits include:

- Interconnectivity by Ethernet VPN (EVPN) Layer 2 LAN extension and Layer 3 IP routing or MPLS QoS-assured paths
- Multisite per-tenant or multitenant high-performance encrypted path security
- Fast, simple, and scalable deployments with full-featured virtual routers or firewalls and optional SD-WAN orchestration
- A choice of physical or virtual bookended devices, as well as interoperability with mixed cloud gateway devices and gateways at large public clouds such as AWS, Azure, GCP, and more

**Unified Policy:** Managing policy for applications and software-defined infrastructure in and across public and private clouds requires software systems that can be deployed in any cloud, public or private. These systems need to manage policy equally well with the same functional, nonfunctional, and economic characteristics in any cloud. The Juniper Unite Cloud solution includes the following software products and features that unify policy in public and private clouds alike:

- AppFormix intent-driven infrastructure policy software for managing automated operations, and for passive visibility and reporting for machine learning-based smart monitors, application and software-defined infrastructure analytics, alarms, and chargeback accounting

- Juniper Networks Contrail Networking SDN policy for automating virtual networks, Network Functions Virtualization (NFV) services, and network analytics
- Contrail Networking multisite software for united multicloud SDN policy coordination
- Juniper Networks Junos® Space Security Director for managing unified security policies across SRX Series hardware and vSRX virtual firewalls

**Seamless Integration:** A common assumption about clouds is that they are orchestrated as single, integrated systems. Additionally, hybrid clouds demand management systems that span clouds. Thanks to Juniper’s commitment to innovation in open standards, open source, and open APIs, combined with extensive partnerships for providing managed and professional services, the Juniper portfolio seamlessly integrates with private and the most popular public cloud Infrastructure as a Service (IaaS) stacks and APIs, as well as multicloud management platforms. The Juniper Unite Cloud software products also integrate with the most popular Infrastructure-, Container-, and Platform as a Service (IaaS, CaaS, and PaaS) stacks sitting on top of your cloud infrastructure. Example integrations up and down the stack include, but are not limited to:

- Virtually all virtualization runtimes, operating systems, and automation tooling support within and underpinning Juniper Contrail Networking, AppFormix, vSRX virtual firewalls, and vMX virtual routers
- OpenStack IaaS integrations and certifications via alliances with partners such as Red Hat, Mirantis, and Canonical with products such as Contrail Networking, AppFormix, vSRX, and vMX
- Kubernetes CaaS and OpenShift PaaS integrations and support with AppFormix and Contrail Networking via alliances with Red Hat and appOrbit
- VMware Software-Defined Data Center (SDDC) stack integration with Contrail Networking, vSRX, and vMX
- Amazon Web Services (AWS) cloud integration with AppFormix, AWS support for Contrail Networking, and AWS marketplace availability and certification of vSRX and vMX
- Multicloud and managed cloud services with partners such as IBM

### Solution Components

Much of the Juniper portfolio contributes to a unified hybrid cloud solution. The software components in particular play a critical role for integrating into a wide variety of cloud technologies up and down the stack, while providing the same experience across public or private cloud. These include:

- Contrail Networking SDN platform for cloud network automation

- AppFormix smart operations management platform
- vSRX virtual and cSRX containerized next-generation firewalls
- vMX virtual router

Additionally, for building on-premises, collocated, or hosted data centers in service of any cloud, the hardware and software portfolio elements for Juniper Unite Cloud data centers include:

- MX Series routers or vMX virtual routers for cloud gateway routing
- Junos Space Network Director management software and Juniper Networks QFX Series switches for Ethernet or IP fabrics
- Junos Space Security Director management software and SRX Series or vSRX next-generation firewalls
- Contrail Cloud Platform or Contrail Networking
- AppFormix smart operations management platform

## Summary—More Than Hybrid. United.

Hybrid cloud is your IT platform of the present. Juniper Unite Cloud helps you win the race to the hybrid cloud because it offers the flexibility of hybrid cloud and hybrid operations models while effectively confronting and addressing the overabundance of variables in hybrid IT technologies. Juniper's product portfolio offers the ultimate flexibility, so that you can seamlessly integrate cloud stacks and unify policy in and across today's and tomorrow's private and public clouds.

### Next Steps

Contact your Juniper Networks representative to learn more about this hybrid cloud solution.

### 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](#) or connect with Juniper on [Twitter](#) and [Facebook](#).

#### Corporate and Sales Headquarters

Juniper Networks, Inc.  
1133 Innovation Way  
Sunnyvale, CA 94089 USA  
Phone: 888.JUNIPER (888.586.4737)  
or +1.408.745.2000  
Fax: +1.408.745.2100  
[www.juniper.net](http://www.juniper.net)

#### APAC and EMEA Headquarters

Juniper Networks International B.V.  
Boeing Avenue 240  
1119 PZ Schiphol-Rijk  
Amsterdam, The Netherlands  
Phone: +31.0.207.125.700  
Fax: +31.0.207.125.701



Copyright 2017 Juniper Networks, Inc. All rights reserved. Juniper Networks, the Juniper Networks logo, and Junos are registered trademarks of Juniper Networks, Inc. in the United States and other countries. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

**JUNIPER**  
NETWORKS