

SIMPLIFY OPENSTACK NETWORKING

Streamline operations and boost scalability with Red Hat and Big Switch Networks

SOLUTION BRIEF



Red Hat and Big Switch Networks provide a network fabric solution for OpenStack that simplifies your network and streamlines complex setup and management operations for better efficiency, uptime, and scalability while reducing costs.

The Red Hat and Big Switch Networks solution speeds OpenStack networking installation and activation by

16x

and reduces total cost of ownership by

70%

according to a study by ACG Research.¹

OPENSTACK ADOPTION IS ACCELERATING

Many organizations are turning to cloud technologies to help improve business, from driving cost efficiencies and enabling workforce mobility to improving customer and partner alignment and gaining better insight from their data.² OpenStack® has become the cloud platform of choice, with 84% of U.S. enterprise organizations planning to adopt OpenStack.³

However, setting up an OpenStack-based cloud can be a complicated process that may involve custom development. The combination of box-to-box connections and operational workflows that cross physical and virtual networks makes OpenStack networking setup a challenge. Getting the configuration right is critical—errors can lead to poor performance, security issues, inefficient operations, and overall delays.

Red Hat and Big Switch Networks deliver an open, integrated fabric solution for OpenStack that reduces network complexity and streamlines operations. With simplified OpenStack networking, you can improve operational efficiency, increase uptime, reduce costs, and boost scalability.

ELIMINATE NETWORK COMPLEXITY WITH A FULLY INTEGRATED SOLUTION

Combining Red Hat® Enterprise Linux® OpenStack Platform and Big Switch Networks' Big Cloud Fabric™ (BCF), the Red Hat and Big Switch Networks solution simplifies OpenStack network design and operations. The turnkey solution uses software-defined networking (SDN) and hyperscale principles to set up a unified, programmable network fabric for your OpenStack cloud environment. This SDN approach disaggregates networking hardware and software and centralizes network control and management for a drastic decrease in complexity. BCF's SDN controller automates network operations, including policy creation and enforcement, switch installation and provisioning, and network monitoring. Open Ethernet switches provide high-bandwidth layer 2 switching, layer 3 routing, and layer 4-7 service insertion and chaining.

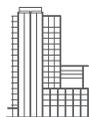
STREAMLINE DEPLOYMENT WITH A TURNKEY INSTALLER

Within the solution, Red Hat Enterprise Linux OpenStack Platform provides the open, secure, and reliable cloud foundation, while BCF delivers a scalable, resilient, and unified network fabric. The Red Hat Enterprise Linux OpenStack Platform director automates installation of cloud components, and supplies system-wide health checks and complete life cycle management. Integration with the BCF networking installer adds seamless, predictable network configuration workflows and ensures cloud stability after system upgrades. The network infrastructure is programmed and automated using Big Switch Network-specific plugins for Neutron, enabling link detection of compute nodes and fabric formation without manual intervention. This lets you dynamically provision isolated tenants and layer 2 networks to meet changing IT and business needs. The resulting network is agile, scalable, easy to administer, and deploys up to 16 times faster than other private cloud technologies.¹

¹ ACG Research, "The Economic Advantages of Open SDN Fabrics," November 2015.

² KPMG, "2014 Cloud Survey Report: Elevating Business in the Cloud," January 2015.

³ IDG Connect, "OpenStack: The Platform of Choice for Cloud," 2013.



ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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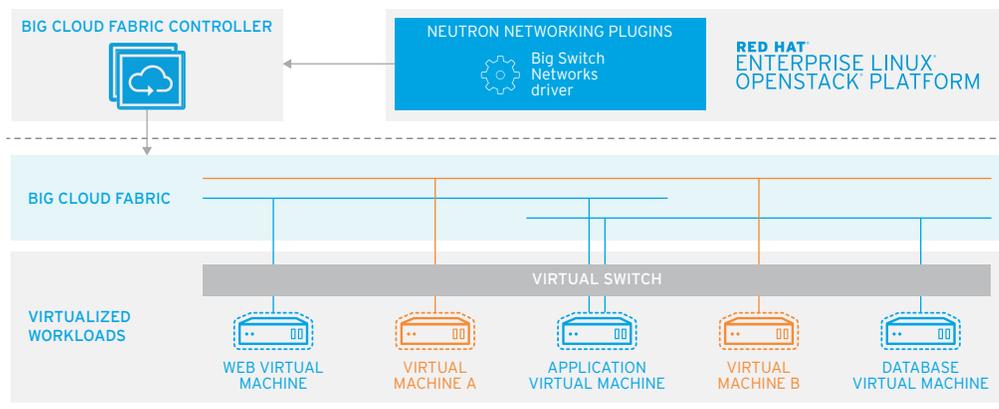


Figure 1. The Red Hat and Big Switch Networks solution automates and simplifies OpenStack networking.

SIMPLIFY NETWORK OPERATIONS AND REDUCE DOWNTIME

Traditional networks are managed on a switch-by-switch basis—a time-consuming, error-prone, and costly process. Conversely, the Red Hat and Big Switch Networks solution streamlines operations and increases network uptime. Automatic fabric configuration reduces setup errors and speeds provisioning. Zero-touch installation and plug-and-play scalability allows you to add more network capacity on demand without configuring each switch manually. Centralized SDN fabric management improves consistency and simplifies operations. Deep network visibility and monitoring with built-in analytics lets you track packets through every level of your network, physically and logically. Built-in redundancy throughout the solution lets you confidently run critical workloads in your OpenStack environment. No-downtime upgrades keep your infrastructure up to date with the latest features and functionality without service interruptions. Finally, a large ecosystem of certified hardware and software technologies lets you easily customize your cloud deployment.

IMPROVE TOTAL COST OF OWNERSHIP

The Red Hat and Big Switch Networks solution can reduce OpenStack total cost of ownership by up to 70%.⁴ With an open, software-centric design, the solution lets you use industry-standard hardware for your cloud deployment, reducing capital costs. Simplified, efficient operations decrease operational expenses. With a lower total cost of ownership, you can redirect your budget to strategic projects.

CONCLUSION

OpenStack can provide many business benefits, but building an OpenStack environment is complicated, especially when setting up the underlying network. Red Hat and Big Switch Networks offer an integrated, turnkey fabric solution for OpenStack that simplifies and automates network installation, configuration, and management. With this solution, you can deploy network connectivity faster, streamline operations, reduce costs and downtime, and increase the scalability of your OpenStack environment. Visit bigswitch.com/sdn-products/big-cloud-fabric or contact your Red Hat or Big Switch Networks sales representative to learn how you can take advantage of operational simplicity in your OpenStack cloud environment.

⁴ ACG Research, "The Economic Advantages of Open SDN Fabrics," 2015.