

# On-Demand Data Center Reduces Business Costs and Speeds Deployment with Auto-Scaling and Pay-As-You-Go Flexibility

## HIGHLIGHTS

- Lower operational cost: An on-demand data center with Brocade Network Subscription lowers upfront capital requirements and deployment complexities while providing pay-as-you-go flexibility.
- Supported turnkey solution: Mirantis and Brocade install and scale networks with OpenStack in days, not months.
- Seamless automation and protection: The OpenStack networking plug-ins from Brocade provide seamless automation and functionality, broad hardware compatibility, and network protection through the familiar Fuel interface.
- Proven and future-proof design: The proven Mirantis and Brocade® solution architecture eliminates the complexities of using OpenStack and is fully-updatable with new releases of Mirantis OpenStack, keyed to OpenStack releases.

With the IaaS market growing 100 percent annually, public cloud competition is intensifying. Service providers need to differentiate their offerings without ceding control of their roadmap to proprietary commercial technologies. OpenStack's extensibility helps achieve real vendor independence and deeper roadmap control. But keeping pace with the scalability, availability, performance, security, and topology demands are becoming increasingly challenging.

## Key Challenges

For a typical service provider, creating a data center that delivers cloud services is a significant investment in capital outlay and ongoing costs. With increasing demand for cloud-based solutions from service providers, there is incredible pressure to scale these data centers quickly. Complex and lengthy initial deployments or time and resource-intensive scale-ups form a significant impediment to closing new business and keeping existing customers satisfied.

As the complexity grows with scale, the cost of ongoing support can quickly dwarf even the initial investment. For this reason, it is critical to design an efficient cloud architecture based on automation to minimize costs, while maximizing functionality, manageability, adaptability, and business value while scaling.

The key challenges to hosting modern cloud-based data centers include:

- **Barriers to innovation:** Solutions entailing vendor lock-in are transient and can strand customers with proprietary offerings that no longer meet their needs.
- **Lack of automation:** Service providers require automation in order to efficiently and cost-effectively scale and manage modern cloud-based data centers.
- **Deployment resource requirements:** Service providers need to reduce the complexity, time, and personnel needed to deploy, manage, and scale their environment to meet their customers' needs—while avoiding service disruptions.
- **Ongoing high costs:** Each significant jump in scale means a significant jump in costs.

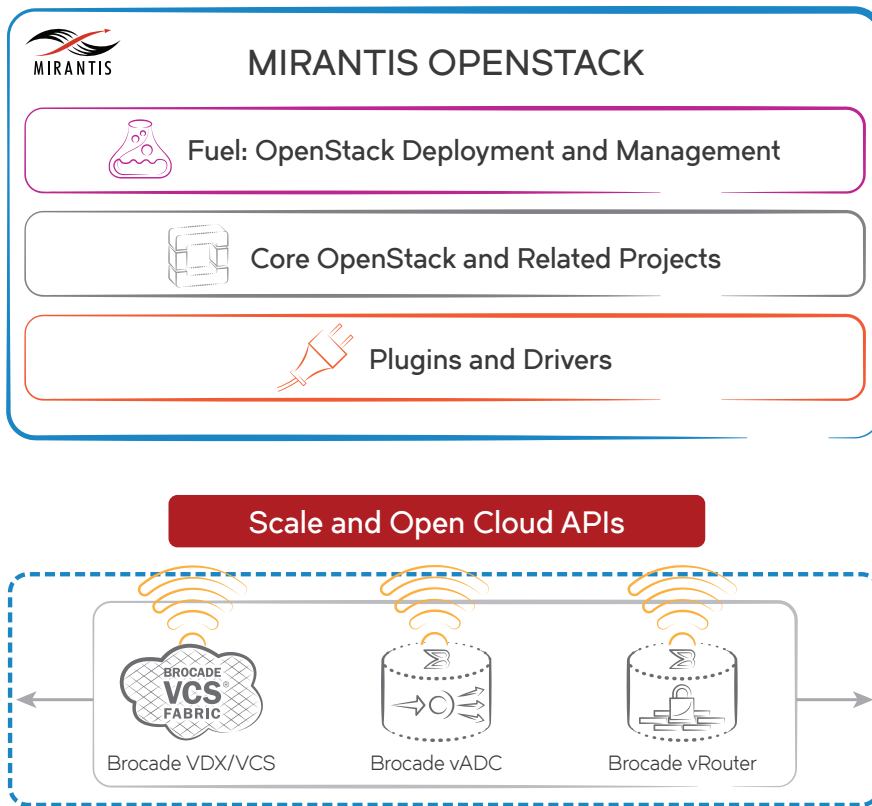


Figure 1: The Mirantis and Brocade On-Demand Data Center Solution.

## The Brocade and Mirantis Solution

To deal with these challenges, Mirantis and Brocade have partnered to provide an on-demand data center solution for cloud service providers based on the Mirantis OpenStack distribution and the Brocade networking infrastructure. Together, Mirantis and Brocade deliver a turnkey private cloud solution that is automated, efficient, and elastic—allowing service providers to deploy a dense, robust, and cost-effective OpenStack cloud.

## Solution Architecture

The solution features Mirantis' standard OpenStack-based deployment model (included with Mirantis OpenStack), which automates node discovery, offers a convenient and simple Web interface for cloud configuration, deploys clouds automatically, and tests them for viability. Network integration is provided by a series of Brocade OpenStack plugins, as shown in the On-Demand Data Center solution in Figure 1. Servers, storage appliances and subsystems, host and guest OSs,

hypervisors, applications, metrics and management tools, service orchestration, and other integrated systems can be selected freely from among hundreds of compatible products in the vast OpenStack ecosystem.

## Mirantis OpenStack Value

Mirantis OpenStack, the original zero lock-in distribution, gives service providers the combination of speed-to-market and vendor independence required to succeed with IaaS initiatives.

Mirantis has taken years of experience with scores of real-world OpenStack production deployments and packaged them up into the Mirantis OpenStack distribution that features Fuel, a single control plane for deploying and scaling the service provider's entire cloud platform.

Mirantis provides:

- **OpenStack-based IaaS environment:** Using Mirantis OpenStack with Fuel, a production-grade OpenStack-based IaaS environment built with proven OpenStack deployment configurations can be swiftly deployed. Its end-to-end automation ensures correct deployment, without compromising compatibility with the upstream code base.
- **OpenStack platform tuning:** Mirantis can help tune OpenStack platforms or integrate them with billing or authorization systems.
- **Employee training:** Mirantis offers staff training through Mirantis' proven best-selling OpenStack training curriculum.

## Brocade for Network Functions Virtualization Value

Brocade offers two powerful solutions for software-based networking: the Brocade vRouter and the Brocade vADC.

Brocade adds network functionality to the On-Demand Data Center solution through plugins that allow the network to be managed through the Fuel interface. The Brocade OpenStack plugins for the Brocade VDX® Switch, Brocade vADC, and the Brocade vRouter all integrate seamlessly with the Fuel management interface. This allows the Brocade infrastructure and its functionality to be orchestrated directly through Fuel for simplified management and automation.

Brocade products offer a variety of benefits for a cloud-based solution. The Brocade VDX Switch with Brocade VCS® Fabric technology enables seamless and simplified network automation and build out. Network flexibility and scalability are provided by the Brocade vADC, which is a software-based application delivery switch that provides the core ADC feature set in a simplified form factor for on-demand environments looking to deploy load balancing and deliver it as a service. Advanced software-based routing and security functionality is provided by the Brocade vRouter for physical, virtual, and cloud networking environments.

## Solution Advantages

This On-Demand Data Center solution allows service providers to quickly build and deploy a proven, supported, highly scalable, and non-proprietary cloud services infrastructure that gives them complete roadmap control.

## Easy

As an open, commercially supported, turnkey solution, cloud service providers deploy an OpenStack cloud hosting environment in days, not months, and configure its design and level of support specifically for their needs. The deployment automation in Fuel greatly simplifies the deployment process by allowing the use of a library of proven reference architectures with hardened configurations.

This is coupled with Brocade network automation technology that reduces operation costs, increases business agility, and removes the complexities of scaling, VM migrations, and service delivery.

## Flexible

As OpenStack grows in popularity and everyone is innovating within the OpenStack framework, the number of options available for implementing it grows along with it.

But some vendors have a vested interest in making OpenStack work with only their own components. Mirantis OpenStack comes from the only pure-play OpenStack vendor in the market and is driven by vendor agnosticism and pluggability, from well-tested core packages to key related projects and commercially supported third-party plug-ins, giving organizations the freedom to tailor a solution to their business needs.

Brocade also supports both platform independence and a single virtualized routing and security solution to be installed on VMware, Microsoft Hyper-V, Citrix Open Xen/Xen/XenServer, and Red Hat KVM virtualization hypervisors.

## Reliable

With Mirantis OpenStack, stability and reliability are paramount and codes are tested and proven.

The Mirantis Support SLA delivers proven, reliable support 24 hours a day, seven days a week, 365 days a year. Mirantis also provides legal indemnification for OpenStack usage.

In addition, for Brocade technologies, Brocade Premier Support offers service providers a dedicated Technical Assistance Center (TAC), providing accelerated access to advanced levels of Brocade Technical Support and a team of dedicated senior support engineers with strong expertise in service provider environments, whose services include proactive monitoring and 24x7 access to comprehensive support and flexible hardware SLAs.

## Scalable

Mirantis and Brocade understand that scalability is key for cloud service providers given their rapid growth curve. For example, Brocade VCS Fabric technology has enabled cloud service providers to build networks that scale without disruption. This highly automated Ethernet fabric technology reduces network complexity and enables services on-demand and reduces the costs associated with network changes and additions. The Brocade VDX Switch provides more bandwidth per port for critical traffic, simplified management, auto-scaling, and automated VM port-profile migration.

## Affordable

Brocade Network Subscription is a flexible, open-ended acquisition model that allows increases or decreases in network capacity without upfront investment or long-term commitments. The benefits include:

- **Pay-as-you-go flexibility:** Eliminates term commitments and depreciation cycles.
- **Unlimited upgradability and scalability:** Upgrades and increases capacity according to business needs.
- **Cost and benefit alignment:** Streamlines time to profitability by enabling cloud, hosting, and other managed service providers to deliver new services over cloud-optimized network infrastructures by aligning network infrastructure costs with revenue.
- **Predictable cash flow:** Balances OpEx and CapEx with fiscal certainty to manage cash flow.

Service providers can tailor their networks to their needs without penalties, hidden fees, or term commitments.

## Protecting Innovation

Brocade and Mirantis are both active members of the OpenStack foundation. As strong supporters of open solutions and architectures, both companies believe that an open development model is critical for the success of cloud solutions.

OpenDaylight, OpenStack, and the contributions from Brocade and Mirantis work to provide an open source platform for products and technologies that expand the intelligence of underlying network infrastructure to make it more responsive to overall IT and service provider demands.

## Learn More

Brocade and Mirantis partner with companies of all sizes to deliver innovative solutions that help organizations maximize the value of their most critical information. To learn more, visit [www.brocade.com/alliance](http://www.brocade.com/alliance) and [www.mirantis.com/partners](http://www.mirantis.com/partners).

## About Brocade

Brocade networking solutions help organizations transition smoothly to a world where applications and information reside anywhere. Innovative Ethernet and storage networking solutions for data center, campus, and service provider networks help reduce complexity and cost while enabling virtualization and cloud computing to increase business agility. Learn more at [www.brocade.com](http://www.brocade.com).

## About Mirantis

Mirantis is the number one pure-play OpenStack Company. Mirantis delivers all the technology, integration, training, and support required for companies to succeed with production-grade open source cloud. More customers rely on Mirantis than any other company to scale out OpenStack without the compromises of vendor lock-in. A bench of over 400 open source infrastructure experts helped make Mirantis one of the top five contributors to OpenStack's upstream codebase. To learn more, visit [www.mirantis.com](http://www.mirantis.com).

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