# Maxta Storage Platform

Maximize the Promise of Hyper-Convergence

Solution Brief

# Cumulus® Linux® and Hyper-Converged Maxta Storage Platform


## Partnership Enables a Software-Defined Datacenter with Open Networking and Hyper-Converged Systems on Industry Standard Hardware

## Key Solution Benefits

Hyper-converged solutions are a rapidly growing segment of the IT market, with analyst surveys showing significant interest across the mid-market and enterprises. The combination of Cumulus Linux and hyper-converged Maxta Storage Platform provides a cost-effective yet powerful solution. This solution delivers high performance for a range of virtualized workloads, is easy to manage and scales flexibly to meet current and future needs.

Important benefits include:

- **Dramatically Simplified IT:** The combined solution enables a VM-centric approach for managing compute, storage, and networking at scale
- **Automation-readiness:** The solution delivers rapid deployment of application-centric complex solutions
- **Future-proofing:** Maxta's MaxDeploy Appliances and the Cumulus Networks open networking approach eliminate hardware vendor lock-in and enable independent hardware and software refresh cyclesSimplify virtual desktop management
- **Maximized Cost Savings:** Hardware agnostic, software implementation of both products maximizes CapEx and OpEx savings

# Components of the Solution

## Cumulus Linux

Cumulus Linux provides the first full-featured Linux operating system for networking hardware and fills a critical gap in realizing the true promise of the software-defined data center. Just as Linux completely transformed the economics and innovation on the server, Cumulus Linux is extending the openness and flexibility of Linux from the server world to networking. This disaggregated model helps simplify deployment and scale.

Cumulus Linux has several innovations built in. The behavior of network devices can be remotely programmed at first boot using the Open Network Install Environment (ONIE) to install a network operating system on bare metal network switches and zero touch provisioning (ZTP) for self-configuration. Open source tools like Ansible, Chef and Puppet allow administrators to replace failed equipment asynchronously, thus avoiding downtime and valuable time wasted troubleshooting hardware. The Cumulus Linux hardware compatibility list (http://cumulusnetworks.com/hcl) provides a definitive list of ONIE-enabled hardware, eliminating any guesswork for customers.

## Maxta Hyper-Convergence Solutions

Maxta provides its solutions in twoform factors: Maxta MaxDeploy™ Appliances and Maxta Storage Platform (MxSP™). Maxta's MaxDeploy Appliances deliver an easy and flexible way of deploying hyper-converged solutions for the virtual data center by combining Maxta Storage Platform (MxSP) along with hardware and other infrastructure software platforms. This removes interoperability and performance guesswork and simplifies the ordering process. MaxDeploy appliances are available for all major server vendors and white box server platforms. The versatility of these solutions provide the ability to scale capacity and performance independently, on-demand, and without having to over-provision resources. Maxta solutions are hypervisor-agnostic, and fully integrate with server virtualization at all levels from user interface to data management, while supporting all possible deployments of virtual data centers, including private, public and hybrid clouds.

MxSP is a highly resilient, scalable, distributed Software-Defined VM Storage Platform that turns industry standard servers into a converged compute and storage solution, leveraging server-side flash and disk drives to optimize performance and capacity while delivering enterprise-class services and CAPEX as well as OPEX savings. MxSP provides VM-level storage abstraction and full integration into the server virtualization management scheme and user interface. MxSP intelligently maps VMs to storage resources, optimizing data layout for virtual workloads and leverages SSDs for read/write caching.

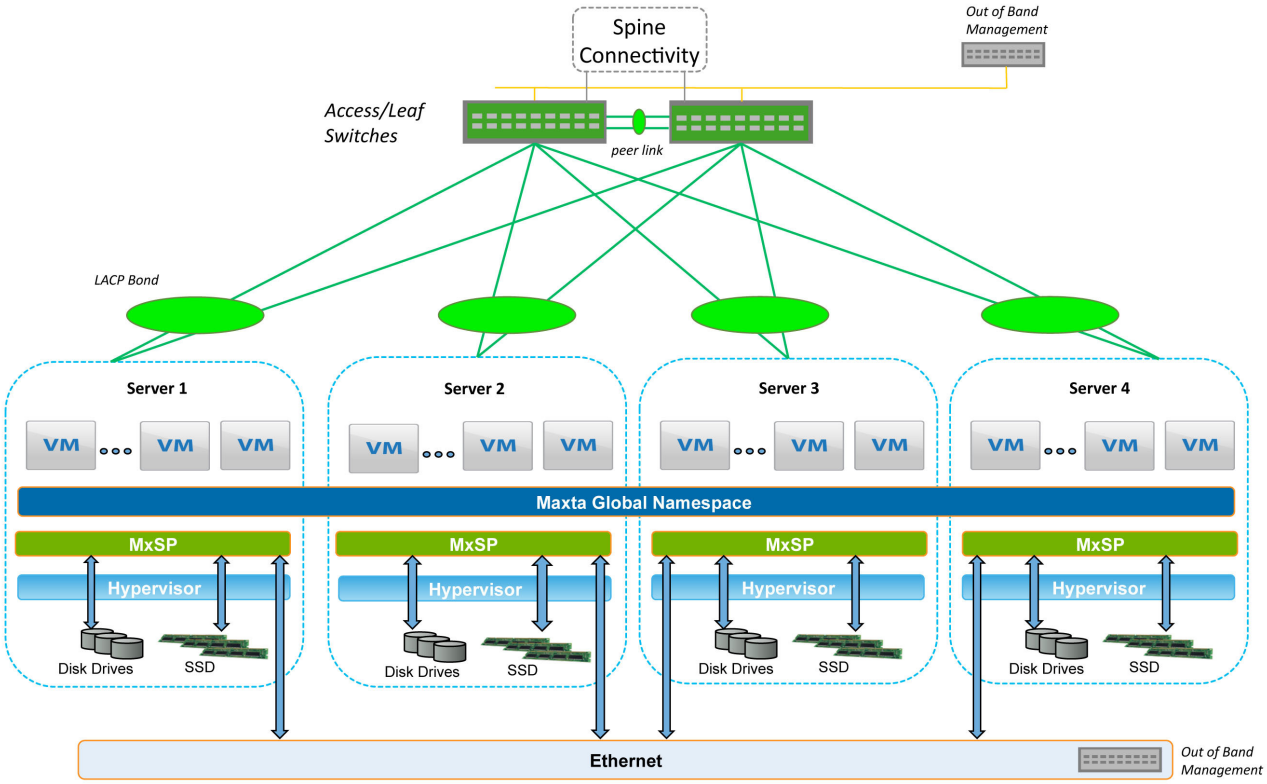
The MxSP distributed architecture enables shared storage with enterprise-class data services such as snapshots, clones, thin provisioning, compression, de-duplication, replication and full scale-out without performance degradation. Additionally, Maxta supports advanced capabilities such as live migration of virtual machines, dynamic load balancing, high availability, data protection, and disaster recovery. This results in dramatic simplification of IT and significant cost savings by enabling the elimination of costly and complex storage arrays.

# Solution Overview

The combined solution targets enterprises and managed service providers that need highly redundant and resilient infrastructure. The following design choices of the solution deliver significant cost savings, predictability, and flexibility:

- Eliminate silos and proprietary hardware for storage and networking
- Well-understood enterprise-grade technologies for storage and networking redundancy
- Full end-to-end automation with advanced APIs
- Choice of hardware and software technologies for compute, storage and networking in the data center

**Figure 1:** Maxta Storage Platform and Cumulus Networks configuration




As shown in Figure 1, an instance of the MxSP software is installed on each of the servers that are part of a server virtualization cluster. MxSP creates a Maxta global namespace, which all the virtual machines that are part of the cluster can access. MxSP automatically maintains copies of data on different servers to provide data redundancy for protection. Each server has a dual 10G network port, which is connected to each Cumulus Linux switch. The Cumulus Linux switches are configured with multi-Chassis Link Aggregation (CLAG). CLAG enables a server or switch with a two-port bond (such as a link aggregation group/LAG, EtherChannel, port group, or trunk) to connect those ports to different switches and operate as if they are connected to a single, logical switch.

This redundancy at the network level, combined with data resiliency provided by MxSP across the hyper-converged hosts offers customers a great mix of enterprise-grade availability with Web scale IT capabilities.

## Benefits of the Solution

### Dramatically Simplifying IT

The combined solution eliminates the need for managing proprietary hardware for compute, storage and networking technologies. A VM-centric approach for compute, storage and networking considerably minimizes complexity and simplifies day-to-day operations. With advanced APIs, customers can automate the deployment and management of applications, significantly simplifying operations.

### Future Proofing Your Investment

The approach of Maxta's MaxDeploy Reference Architecture and Cumulus Networks open networking future proofs IT investments. It eliminates hardware and software vendor lock-in across compute, storage and networking technologies in the data center. Customers have their choice of hypervisor technology, such as OpenStack, VMware, KVM or another solution.

### Maximizing Cost Savings

Deploying compute, storage and networking on industry-standard hardware enables significant capital savings without compromising performance or scalability. The simplification of operations reduces the overall TCO. Since the solution is an end-to-end Linux-based environment, operational expenses (OpEx) can be further reduced by adopting automation and a DevOps approach.

## Conclusion

Customers across enterprises, mid-markets and service providers will find that Cumulus Linux and Maxta hyper-convergence offerings create a complementary solution that can help accelerate their journey towards a software-defined data center and hyperscale technologies. Redundancy at the network level, combined with data resiliency provided by MxSP across the hyper-converged hosts offers customers a great mix of enterprise-grade redundancy with Web-scale IT capabilities. The combined technologies deliver cost efficiencies by leveraging industry-standard hardware for all major technologies in the data center. Customers can build a public cloud infrastructure on premise with the combined Maxta and Cumulus Networks solution's advanced APIs and automation.

**Get Started!**

- Try out Cumulus Linux on our Cumulus Workbench: http://cumulusnetworks.com/cumulus-workbench/
- Download the latest version of Cumulus Linux: http://cumulusnetworks.com/downloads/
- Learn more about Maxta MxSP: http://maxta.com

**About Cumulus Networks**

Unleash the power of open networking with Cumulus Networks. Founded by veteran networking engineers from Cisco and VMware, Cumulus Networks makes the first Linux operating system for networking hardware and fills a critical gap in realizing the true promise of the software-defined data center. Just as Linux completely transformed the economics and innovation on the server side of the data center, Cumulus Linux is doing the same for the network. It is radically reducing the costs and complexities of operating modern data center networks for service providers and businesses of all sizes. Cumulus Networks has received venture funding from Andreessen Horowitz, Battery Ventures, Sequoia Capital, Peter Wagner and four of the original VMware founders. For more information visit http://cumulusnetworks.com or follow @cumulusnetworks.

**About Maxta**

MaxDeploy Appliances and MxSP software solutions provide companies the choice to hyper-converge on standard x86 servers, the ability to run on any compute abstraction layer, and the flexibility to support any combination of storage devices (hybrid and all flash) eliminating the need for complex and expensive storage arrays. The simplicity of Maxta's VM-centric solutions reduce IT management and lowers cost, all while delivering hyper-scale, enterprise-level data services and capacity optimization. With Maxta, service providers and enterprise customers can build private and public clouds based on any cloud orchestration software. Think outside the storage box. For more information visit www.maxta.com.

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