# Increasing Business Agility with Cumulus Linux and MidoNet Network Virtualization

MidoNet

MidoNet is a software-based, highly distributed, network virtualization system that allows enterprises and service providers to build, run, and manage virtual networks with increased control and flexibility. Using industry standards and leveraging existing physical infrastructure, MidoNet reduces costs and improves stability, scalability and performance of networks.

- **Highly distributed architecture provides scalability, resiliency and avoids single point of failure**

- **Connect virtual networks with physical networks using VTEP/L2 bridging**

- **Build, run, and manage virtual networks independent of the physical network**

- **Works with pre-configured network infrastructure and with existing hardware**

- **Provides layer 4 load balancer as a service to customers - helps improve the performance of networks**
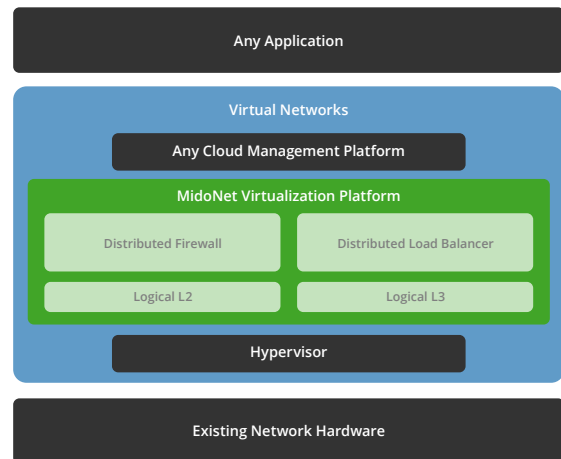
Cumulus Linux

Cumulus Linux empowers the customer to build a modern, scalable data center while bringing the same paradigms of manageability, clustering, monitoring and orchestration.

- **The first full-featured Linux OS for data center networking running seamlessly over bare metal switches.**

- **Enables a large ecosystem of native Linux applications and automation tools on standard networking gear.**

- **Delivers new levels of innovation and flexibility to the data center.**
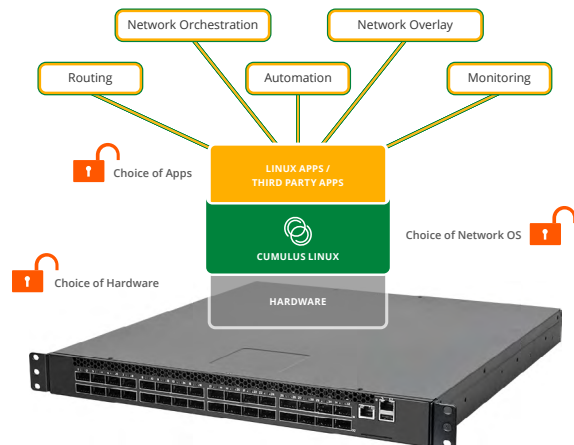
Challenges

- Inability to virtualize all workloads either due to incompatibility with x86 architecture or business reasons for relying on bare metal

- Strive to manage and scale the majority of the highly virtualized networks in the organization

- Lack of programmability to run compute, storage and networks through a single pane of glass

- Provisioning of workloads in minutes to efficiently support business growth

- High costs to meet the desired functionality and flexibility desired of Network Systems similar to the Server/Compute Infrastructure

Cumulus + MidoNet Solution

Cumulus Linux: Cumulus Linux runs on a top of rack physical switch, and provides the Layer 2 gateway functionality using the VXLAN technology now supported in merchant silicon.

Virtual networks are terminated in hardware using a VXLAN tunnel end point (VTEP) implemented within Cumulus Linux software, enhancing scale compared to the software gateways.

MidoNet: MidoNet runs a virtualized network, registers the gateway services, enabling traffic to flow between virtual ports and physical ports on the physical switch.

Joint Solution: With the integration of MidoNet and a Cumulus Linux-enabled switch, network traffic flows from virtual machines attached to a virtual network through the VTEP into a server connected to the switch running Cumulus Linux.
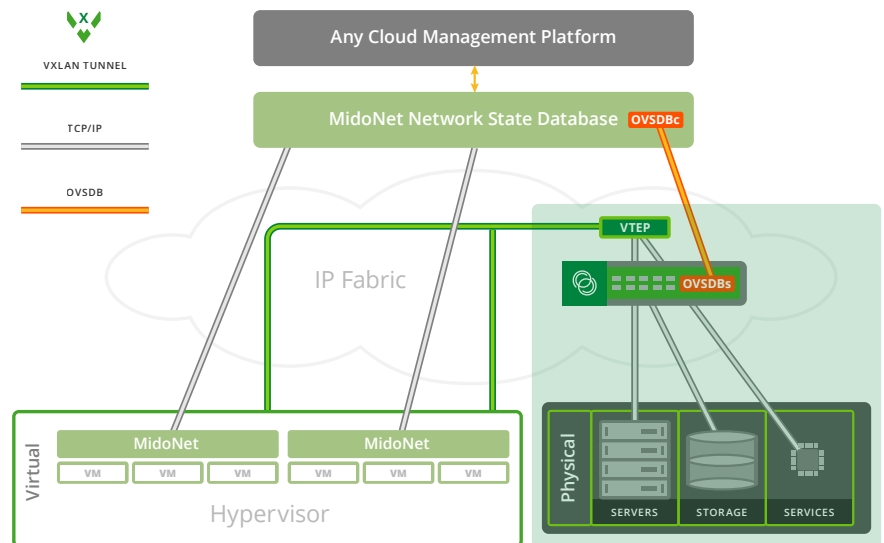
Conclusion

Power of Choice — Customers have been benefiting greatly from the disaggregation on the server side of IT infrastructure and now can leverage the same with the dramatic changes occurring in networking. It's time for customers to become the decision makers to deploy and experience the true value of networking without constraints.

Virtual networks now span across both virtual and physical workloads — Having a workload running on a physical server should not prevent you from creating a flexible virtual network. By integrating workloads across physical and virtual networks, you run the applications in the configurations that are most appropriate for your business needs.

About Cumulus Networks

Cumulus Networks is bringing the Linux revolution to networking. 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 a software-defined data center. For more information visit **cumulusnetworks.com** or follow us on Twitter **@cumulusnetworks**.