Pluribus NETWORKS
The Network Matters™.

Pluribus Networks Snapshot

Simplifying the Software-Defined Data Center

Pluribus Networks is simplifying the Software-Defined Data Center with its simple, dynamic and secure Adaptive Cloud Fabric™ architecture, enabling organizations to build scalable private and public clouds that improve service velocity, performance, and reliability. Pluribus Networks' innovative Netvisor® software virtualizes open networking hardware to build a holistic, distributed network that is more intelligent, automated and resilient. This radically simplified architecture enables organizations to bridge the operational models of DevOps and NetOps to overcome the growing skill gaps that exist in many IT organizations. The result is dramatically simplified administration through automation, while enabling consistency across the network without compromise. The Pluribus Insight Analytics™ platform leverages embedded telemetry of the fabric and other data sources to deliver pervasive visibility across the network to reveal network and application performance that speeds troubleshooting and improves operational and security intelligence.

Key Use Cases

- Software-Defined Data Center
- Data Center Interconnect
- Hyper-Converged Infrastructure Scale-Out
- Data Center Security and Traffic Segmentation
- Multi-Tenant and Hosting
- As a Service Deployments
- Network Performance Management and Analytics

Adaptive Cloud Fabric

The Pluribus Adaptive Cloud Fabric empowers organizations to speed their transition to a Software-Defined Data Center with a simpler and non-disruptive architecture that makes it easier to deliver, manage and secure service delivery across clouds and devices. The Adaptive Cloud Fabric operates without a controller and delivers a more dynamic and elastic network that adapts to change and a wide-range of deployment scenarios to streamline operations, improve efficiency and lower costs.

The Pluribus Adaptive Cloud Fabric can be deployed across the data center, or targeted to specific racks, pods, server farms or Hyper-Converged Infrastructure, such as Nutanix™, vSAN and VxRail™. Multiple geographically distributed data centers can be interconnected into a seamless fabric over any WAN or dark fiber to optimize performance and resource availability, improve resiliency and support disaster recovery requirements without special protocols or reengineering.

The dynamic, scale-out architecture delivers multi-terabit capacity with predictable performance and latency and supports millions of concurrent connections, enabling organizations of any size to build a next-generation private or public cloud that is optimized to support mission-critical environments such as virtualized applications, hybrid IT, Internet of Things (IoT) and Virtual Desktop Infrastructure.

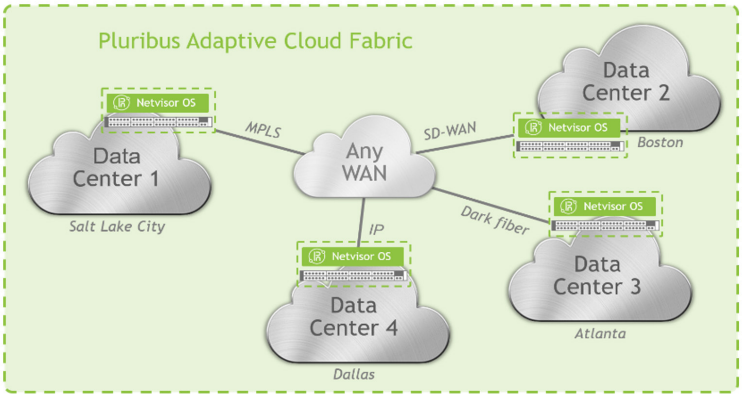

Figure 1: The Pluribus Adaptive Cloud Fabric can build a seamless fabric network that interconnects many data centers over any WAN infrastructure.

The Adaptive Cloud Fabric is a peer-to-peer distributed fabric that clusters all switches into a unified operating domain, enabling them to operate and be managed as a single virtualized switch. All switch-to-switch communications, configuration, policies and state information is dynamically updated across the fabric. The deployment of an Adaptive Cloud Fabric can be implemented in a single data center, or distributed geographically to support Data Center Interconnect (DCI) requirements over any existing WAN or dark fiber connections to support stringent loss-less high availability or disaster recovery scenarios.

Netvisor Network Virtualization Software

The Pluribus Adaptive Cloud Fabric is built on the innovative and deployment-proven Netvisor software running on open networking switch hardware. Netvisor is a virtualized Network Operating System (NOS) that provides a best-in-class layer 2 and layer 3 networking foundation, distributed fabric intelligence and virtualizes the switch hardware (see Figure 2), similar to how VMware® virtualizes a bare metal server. Switch virtualization decouples network resources from the underlying hardware to create multiple network containers on a single device that can be dynamically allocated. A single switch can instantiate multiple network containers, each with their own virtualized router, to support granular east/west and north/south network segmentation, strict multi-tenant services and the integration of virtualized network services and functions.

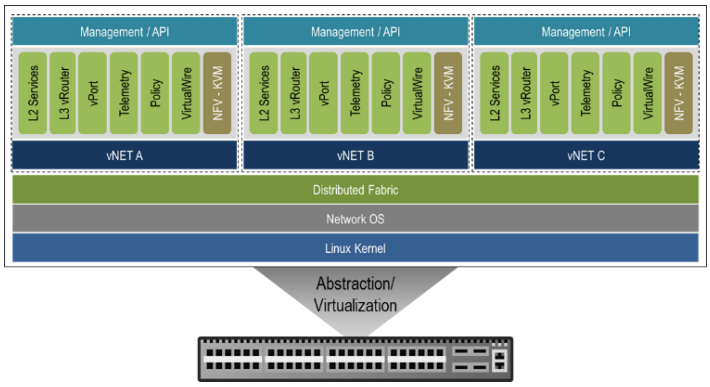

Figure 2: The Netvisor OS abstracts and virtualizes the underlying switch hardware to enable multiple containers that support different personalities and tenants using a single hardware device.

Embedded Telemetry

The Netvisor OS contains embedded telemetry enabling pervasive visibility across the entire fabric to monitor at the speed of the network with wire-speed coverage for all 10, 25, 40 and 100 Gigabit interfaces without dedicated network probes. These integrated real-time sensors monitor every individual TCP connection to measure east/west and north/south traffic flows, and virtualized workloads to expose network and application performance characteristics. The Netvisor telemetry generates rich performance related metadata that is accessible through an open API, as well as being consumed by the Pluribus Insight Analytics™ platform.

Insight Analytics Performance Management Platform

Pluribus Insight Analytics is a network performance management and analytics platform that leverages the embedded Adaptive Cloud Fabric telemetry and other network data sources to enable true pervasive visibility. Insight Analytics monitors both network flow and wire packet data to enable a comprehensive end-to-end view of network traffic and application flows and interactions. The platform provides real-time actionable information and support for historical analysis and forensics to streamline troubleshooting, pinpoint performance issues, support optimization and planning activities and improve security awareness and incident response.

An easy-to-use dashboard enables rapid visualization of network and application performance. Extensive filtering and correlation capabilities enables users to quickly drill-down to visualize connections for detailed analysis. Users can tag specific assets, such as IP addresses, VLANs, MAC addresses, and switch ports, with context to easily filter and aggregate flows. Integrated alerting provides notification of critical events as they occur. With Insight Analytics, the IT Operations team can understand how users and services are consuming the infrastructure and conversely how the infrastructure is supporting the users and services.

Insight Analytics can be leveraged to monitor existing networks. A Netvisor enabled open networking switch can be deployed as a high-density network monitoring probe to provide visibility into existing network deployments by leveraging TAP or SPAN capabilities.

Figure 3: Pluribus Insight Analytics dashboard with historical connection timeline showing excessive RST/SYN and Nutanix traffic flows.

Runs on Open Networking Hardware

The Pluribus Netvisor OS software runs on Open Compute Project (OCP) and Open Network Install Environment (ONIE) hardware compliant switches, including devices from Dell EMC, Edgecore Networks and the Pluribus Freedom™ series network switches. This flexibility allows organizations the choice of hardware to scale-out networks with any combination of 10, 25, 40 or 100 Gigabit interfaces, enabling an entire data center to be built with only 2-3 physical switch models — driven only by the type and speed of interfaces required — improving operational consistency, lowering costs, and simplifying sparing.

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