PLEXXI HCN™ FOR VMWARE VSAN™

SOLUTION BRIEF

Hyperconverged Network Fabric for VMware vSAN Solutions

FEATURED BENEFITS:

- » Fully automated network configuration, based on VMware, drastically reduces operating costs and increases time-to-value of vSAN powered HCI solutions.

- » Automatically discovers and isolates vSAN cluster workload traffic to keep clustered storage operating at peak efficiency

- » Integrated network "awareness" of virtualized components, in which all vSAN cluster elements are visible within network operations, accelerates policy management and aids in troubleshooting/debugging

- » Significantly improves TCO by lowering physical switch and cabling costs, improving network efficiency, and reducing operating expenses through ease-of-use and automation

- » Incrementally scale network resources as more capacity is needed

The explosive growth in public cloud consumption is driving IT organizations to modernize their on-premises datacenters to be more synergistic with agile cloud delivery models, while streamlining their IT infrastructure to lower capital costs, eliminate complexity and reduce operating expenses. Most organizations today realize that to achieve their cost objectives, they can no longer take the complex, traditional DIY approach of collecting, integrating, and managing disparate infrastructure components piecemeal across functional stovepipes. Instead, they are turning to Hyperconverged Infrastructure (HCI) solutions, like those powered by VMware vSAN, that offer consolidated and tested systems that are much simpler and cost-effective to deploy, manage, and scale.

VMware vSAN powers many of today's leading HCI solutions to help customers realize the benefits of reduced IT complexity, lower infrastructure costs, and incremental scaling to meet the needs of the business as it evolves. By pooling together server-attached storage, vSAN offers a highly-efficient and resilient shared datastore to meet the needs of virtualized workloads for host of applications, including: core business applications, virtual desktop infrastructures (VDI), distributed IT, and disaster recovery.

Plexxi HCN for VMware vSAN

Plexxi HCN™ is the HyperConverged Network that customers can rely on to deliver the ease-of-use, efficiency, and scalability for vSAN solutions that traditional networking products simply can't match.

Plexxi HCN offers vSAN customers a network that integrates tightly into their VMware environment and automates many network operations based on its VMware "awareness."

Plexxi HCN achieves this tight level of integration via Plexxi's VMware vSphere Integration Pack. This pre-packaged, pre-tested, fully-supported VMware integration enables Plexxi to automatically discover managed elements (i.e. physical nodes, VMs, VLANs, LAGs, vmKernel adapters) in the VMware environment, and provide workflows to automate operations, such as dynamic network provisioning for VM Lifecycle events, and storage path optimization, all managed through vSphere.

Plexxi's integration with VMware makes Plexxi's centralized control software "aware" of the customer's specific VMware environment, including VMware data services, vSAN storage, and application VMs. The VMware awareness Plexxi HCN gains through integration enables Plexxi HCN's centralized control software to understand the nature of various application workloads, their endpoint participants ("affinities"), and their relative importance and priority. This awareness enables Plexxi HCN software to automatically and dynamically configure the network to provide connectivity to these endpoints with minimal-to-no user intervention. More importantly, VMware administrators can configure (dynamically or explicitly) "fitted connectivity" in the Plexxi network fabric that is aligned to the needs of each workload. Workload "fitting" is a unique capability of Plexxi HCN that allows the network to provide a specific topology or set of fabric paths that meet the key workload criteria for performance or security. As workloads are added, changed, or deleted, the fabric continuously adjusts to match their new demands.

For VMware vSAN, Plexxi's VMware integration automatically discovers VMKernel Adapters that participate in the vSAN configuration and creates an "Affinity Group" that is then automatically isolated from other workload traffic to ensure this critical storage traffic is not impacted by other workloads. Storage typically creates a "noisy neighbor" problem when integrated onto a common network. This is why many vendors recommend creating separate dedicated networks for storage traffic, which adds unneeded cost and complexity. In contrast, Plexxi provides a single network fabric that is logically separated and controlled through Plexxi software.

Plexxi HCN—Solution Overview

Plexxi's award winning network solution is fully-integrated with VMware vSphere and vSAN to create a complete compute, storage, and network infrastructure stack for VMware vSAN customers.

Plexxi HCN™—One Smart Fabric
Complete Workload-Driven Network
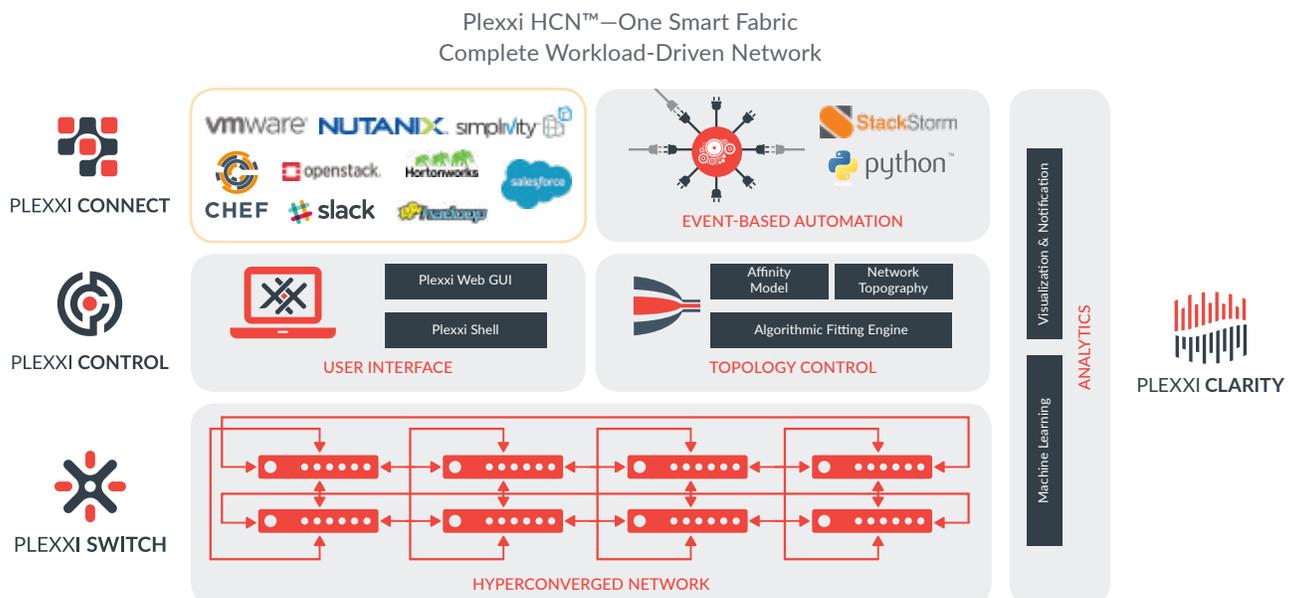
The Plexxi HCN solution leverages the **Plexxi Switch** fabric, **Plexxi Control** software, and the **Plexxi Connect** Open Integration Platform to build a network fabric that scales-out directly as VMware and vSAN resources scale. It allows for powerful automated and manual control over how multiple workloads are given access to network resources to achieve business objectives at the lowest possible cost.

With the Plexxi Connect Open Integration Platform and the VMware Integration Pack, VMware vSAN customers gain access to a turnkey, full-stack, automated, hyperconverged infrastructure solution that includes compute, storage, *AND* networking.

Plexxi Connect Open Integration Platform

Plexxi Connect, combined with network orchestration from Plexxi Control and a dynamic network fabric comprised of Plexxi Switches, creates a complete solution for VMware vSAN customers looking to easily build, deploy, operate, and scale their vSAN hyperconverged infrastructure.

Workflow Automation

Plexxi Connect and the VMware vSphere Integration Pack enables Plexxi HCN to automate workflows based on the included sensors, actions and triggers for VMware vSphere. Plexxi Connect can dynamically provision, configure and optimize one or many Plexxi network fabrics in real time, by reacting to events from vSphere without the need for user intervention. For VMware customers, these workflows can automate network functions based on specific VMware events.

Plexxi Connect includes a suite of Plexxi-oriented workflow automations for completing many day- to-day operations within the Plexxi HCN fabric, including standard configuration tasks such as:

» Adding and deleting VLANs, assigning VLANs to ports

» Creating and deleting Link Aggregation Groups (LAG)

» Enabling/disabling LLDP/CDP on the vSwitch

In addition, Plexxi Connect provides automation actions for advanced Plexxi fabric operations such as:

» Visualization of 3rd-party connected elements (to the Plexxi fabric)

» Automatic, on-demand network fabric optimization

» Automatic traffic isolation by using specific paths across the Plexxi fabric

Plexxi Connect includes events, triggers and orchestration rules that understand the state of the Plexxi HCN fabric and can be presented to business logic, which allows a closed-loop automation with many third-party tools.

VMware vSphere Integration Pack

For vSAN users, the VMware vSphere Integration Pack provides the integration required for Plexxi Control to automatically discover VMware and vSAN components, including: vSAN cluster nodes, VMKernel storage workloads, and other associated VMs, and dynamically configure and provision the Plexxi HCN fabric to optimally support them.

Plexxi HCN's tight integration into VMware enables users to manage their environment from their native vSphere management console and ultimately creates a full stack hyperconverged solution that is:

» Simple: Automates discovery and dynamic configuration and provisioning of IT infrastructure

» Transparent: Creates an invisible infrastructure, using the native orchestration tool UI, vSphere, as the primary user interface

» Efficient: Streamlines processes with workflows that span storage, compute and network

» Application Defined: Understands data, storage and application workload relationships as well as SLA requirements, while orchestrating the IT infrastructure for multi-purpose workloads
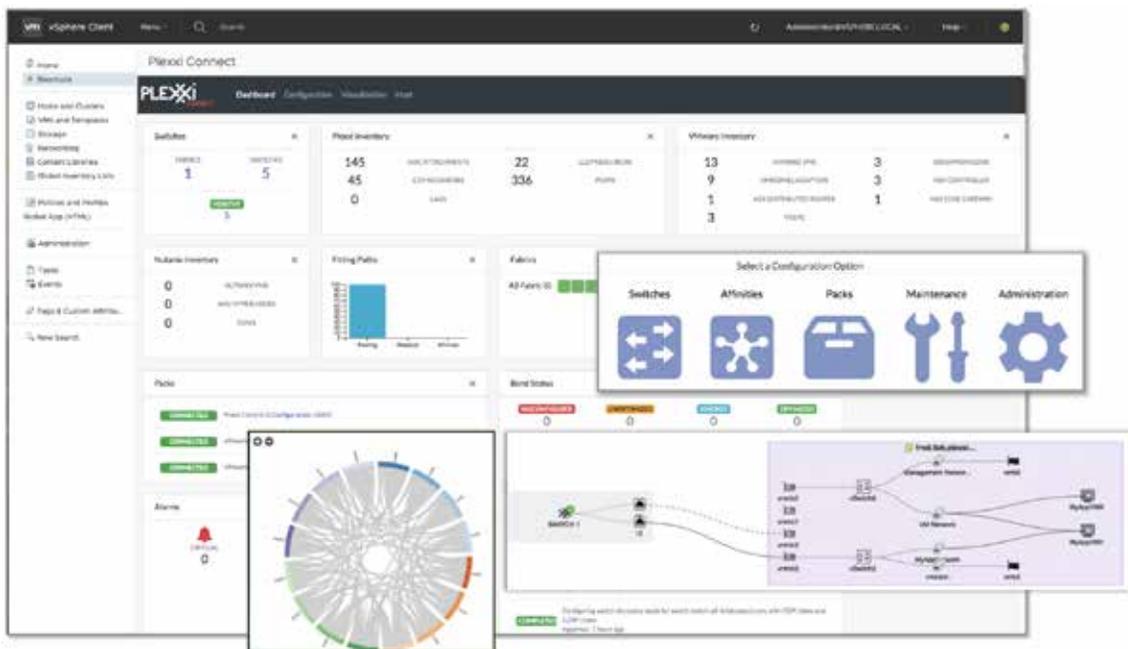
Plexxi HCN Integrated UI and Visualization with VMware

Summary of Features

Plexxi HCN together with the Plexxi VMware vSphere Integration Pack delivers the following features:

» Harvests Virtual Machine (VM) and Host data including: name, interface, MAC, VLAN and virtual distributed/standard Switch/port group

» Populates Plexxi Control for visualization, troubleshooting and other use cases

» Monitors ESXi host CDP/LLDP frames for automatic host/switch/port locality

» Optionally configures vCenter CDP/LLDP vSwitch setting

» Configures switch-side VLAN assignments based on CDP/LLDP data

» Monitors vCenter events for adds/moves/changes, and updates Plexxi Control

» Manages VM transitions in the vMotion use case

» Installs both vSphere Web Client and HTML5 based vSphere Client Plug-in

» Collects VMware VMKernel storage workload information from vSphere

» Automatically creates an isolated path for vSAN storage workloads to ensure performance and integrity for storage traffic

» Populates Plexxi Control with VMware storage objects

» Detects cluster communication between vSAN storage nodes

» Builds a multi-purpose fabric path for VMware vSAN workload traffic

Plexxi HCN Solution Components

The Plexxi HCN solution for VMware vSAN includes:

» Plexxi Switch 2 Series and 3 Series switches

» Plexxi Control Software (2.4.1 and above)

» Plexxi Connect Software (2.1 and above)

» Plexxi Connect VMware vSphere Integration Pack

Learn More

To learn more about Plexxi networking solutions and Plexxi HCN™ for VMware vSAN™ send an email to info@plexxi.com.