Extreme™
Customer-Driven Networking

Plug n Play Network for Nutanix Enterprise Cloud with Extreme Networks SLX Switch

Extreme Networks' SLX switches make it easy to provision a high-performance network underlay for a Nutanix's Hyper-Converged Infrastructure (HCI) Cluster running VMware ESXi. This simplifies deployment of business-critical workloads, VDI and big data analytics. Customers can use VMware vCenter to provision networks automatically, using the Zero Touch Provisioning (ZTP) feature available in Extreme Networks' SLX switching platform in combination with Extreme's Extreme Management Center (XMC) software.

The data center is the heart of the enterprise and the engine that powers new applications and business capabilities to accelerate the digital transformation. The design and implementation of the data center is a complex and challenging task to adapt and scale, requiring management of a wide range of functions, skill sets, and vendors. Nutanix's HCI Platform and Extreme Networks' Agile Data Center solutions deliver the automation, visibility, and flexibility needed to make digital transformation a reality. This combination will help customers deploy business-critical workloads, as well as VDI implementations and big data analytics, in a simple yet effective and efficient manner. In addition to realizing significant performance and efficiency gains, organizations using Extreme Networks' SLX switching platform – built upon the SLX-OS – and XMC can seamlessly scale out their networks with a simple, flat, Layer 3 fabric-based architecture.

SOLUTION ARCHITECTURE: HOW ZTP PROVISIONING WORKS

SLX switches are managed by XMC which offers a single pane of glass for wired and wireless network – datacenter to campus to edge. XMC integrates with VMware vCenter to receive data about instantiation and vMotion of VMs to facilitate the dynamic assignments of VLANs necessary to provide Zero Touch Provisioning. In addition to XMC, the SLX Switching platform can leverage Extreme Workflow Composer (EWC) to improve IT agility by automating the entire network lifecycle —including initial provisioning, configuration, validation, and troubleshooting/ auto-remediation—with event-driven automation.

Nutanix Acropolis Clusters based on VMware ESXi hypervisor and vCenter Management Server utilizes Standard vSwitch and Virtual Distributed vSwitch technology to create the virtual network necessary for the cluster to perform. The Standard vSwitch is used for internal communication between Nutanix Control VM (CVM) and ESX. For external communication, it is possible to use either the standard vSwitch or Virtual Distributed Switch. In either case, port groups can be created with appropriate number of VLANs.

Nutanix provides an option to monitor and manage multiple clusters through a single web console. The multi-cluster view, known as Prism Central, is a centralized management tool that runs as a separate VM. From the Prism web console, you can either register the cluster with an existing Prism Central instance or deploy a Prism Central instance and register the cluster with it. The Prism Central instance should also be registered with vCenter management Server for necessary network provisioning and network policy definitions.

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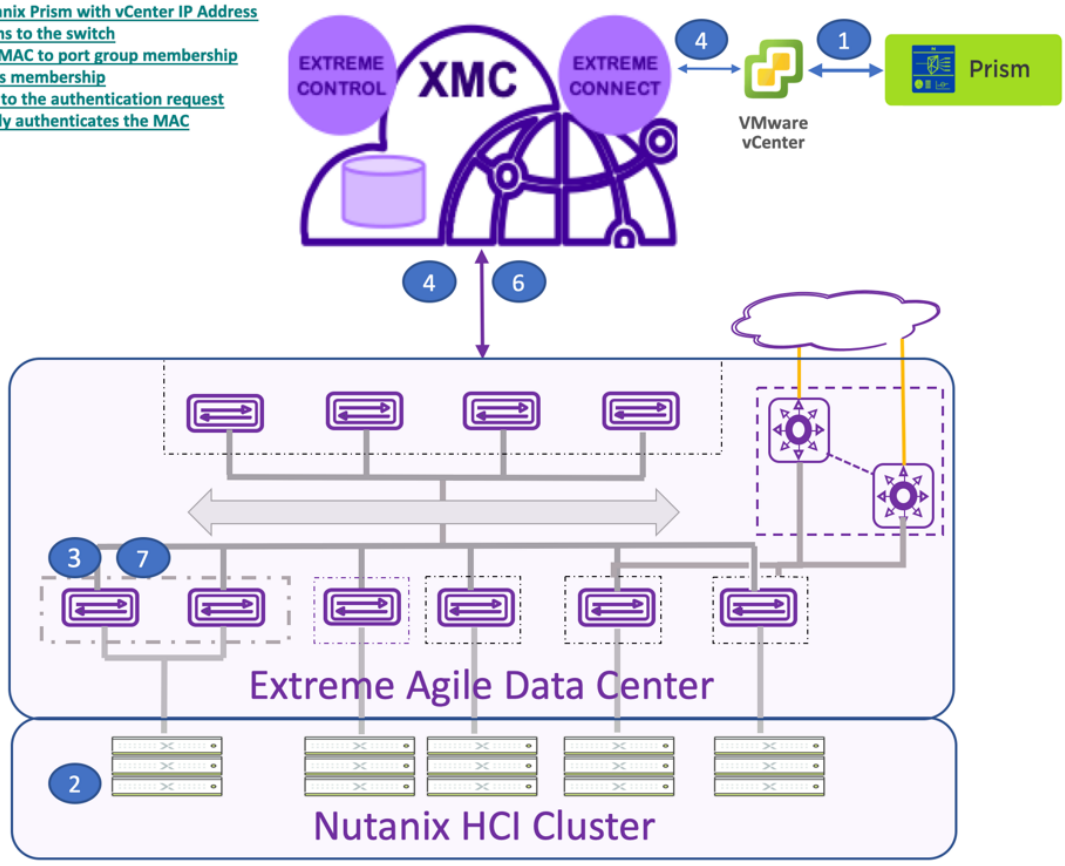
1. Configure Nutanix Prism with vCenter IP Address
2. New MAC logins to the switch
3. XMC requests MAC to port group membership
4. vCenter returns membership
5. XMC responds to the authentication request
6. SLX Dynamically authenticates the MAC



CONSISTENT NETWORK SECURITY FOR VIRTUAL MACHINES

Today, most IT workloads, which are not business critical are virtualized. One of the major barriers to virtualizing business-critical workloads has been the difficulty of consistently aligning network connectivity and services with VMs, a major factor for on-demand VM mobility.

The current best practice in a VMware environment, is to assign VMs to a port group created on the VMware distributed virtual switch (dVS), thus defining the VLAN membership for those VMs. This manual process of assigning VM port groups and configuring the VLAN on the vSphere host port takes good amount of time. This is not a viable option, since vMotion between two hosts requires these configuration changes take place in real time. To accomplish this, networking best practices for virtual infrastructure recommends configuring all the vSphere server uplinks to the physical network as a trunk port allowing all VLANs. This opens a security hole on the network, by allowing all VLANs on a set of ports for multiple VLAN-based network attacks. In order to mitigate this in a typical data center network, Extreme Networks, has introduced a feature “End Point Tracking” on the SLX switches. In conjunction with XMC and its API integration with VMware vCenter, it dynamically authenticates and authorizes every VM based on its MAC address and port group membership. This provides a very simple, flexible yet secure manner, in which the VMs are securely and seamlessly connected to the physical network.

ZERO TOUCH PROVISIONING

XMC's enablement of Zero Touch Provisioning (ZTP) to automatically provision a network using the features described above, lets you quickly bring new infrastructure online. A granular view of users, devices and applications with an easy-to-understand dashboard lets you manage inventory and network topology efficiently. Policies and new data center services are enabled and enforced through the integrated interface of XMC. ZTP is hypervisor agnostic, providing basic VM alignment capabilities that match the reality of most data centers.

Nutanix Prism Central is integrated with VMware vCenter Server to manage underlying virtual infrastructure based on VMware vCenter and ESXi. That solution leverages the Zero Touch Provisioning feature available in Extreme SLX switching technology, achieving the benefits listed below.

KEY SOLUTION BENEFITS

An underlying network based on Extreme Networks SLX switches has the following advantages:

- Delivers embedded automation for a plug-n-play network fabric with unmatched simplicity and resiliency
- Maximizes network resiliency with built-in redundancy at all network layers
- Supports automated fabric configuration along with VM discovery and mobility
- Delivers high-speed replication performance in and between data centers
- Improves visibility for faster troubleshooting

NUTANIX READY VALIDATION

- Extreme Network SLX 9540 Validated on VMware ESXi
- Extreme Network SLX 9030 Validated on VMware ESXi

RESOURCES AND GETTING STARTED

1. https://www.nutanix.com/resources/
2. https://www.extremenetworks.com/solution/agile-data-center/
3. https://www.extremenetworks.com/resources/video/automation-to-match-the-speed-of-your-business/
4. https://www.extremenetworks.com/resources/video/path-to-migration-steps-toward-innovation/
5. https://www.extremenetworks.com/resources/video/pervasive-visibility-for-real-time-insight/

ABOUT EXTREME SOFTWARE

Extreme Networks, Inc. (EXTR) delivers software-driven solutions from the enterprise edge to the cloud that are agile, adaptive, and secure to enable digital transformation. Our 100% in-sourced services and support are number one in the industry. Even with 30,000 customers globally, including half of the Fortune 50 and some of the world's leading names in business, hospitality, retail, transportation and logistics, education, government, healthcare and manufacturing, we remain nimble and responsive to ensure customer and partner success. We call this Customer-Driven Networking™. Founded in 1996, Extreme is headquartered in San Jose, California.

ABOUT NUTANIX

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix enterprise cloud platform leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on Twitter @nutanix.

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