Network Monitoring and Analytics with VMware SD-WAN by VeloCloud

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Agenda

VMware SD-WAN Overview

Network monitoring
- Network availability
- Predictive Application Performance
- Alerts and Notifications
- Troubleshooting

DEMO
Let’s make this real

Please connect to

SSID: Velocloud2019
Key: Velocloud2019

By connecting to this WIFI service, you agree to have your browsing monitored and reported on during this vForum session.
VMware SD-WAN by VeloCloud

Overview
Traditional WAN Challenges
Expensive, Complex and Inefficient

- Expensive Private Lines, Capex and Opex
- Backhaul for Cloud Services
- Slow Deployment Times
- Applications Run Slow

Branch Data center

Private Line (MPLS)

100s to 1000s
SD-WAN Network Benefits

- Use Multiple Transports, Reduced costs
- Optimized Cloud Access
- Ease of Deployments
- Assured Application Performance

Branch 100s to 1000s

Apps move to cloud

Data center

MPLS+Broadband+LTE
Cloud-Delivered Network for Today’s Cloud Era

The Cloud is the...

Data Center
- Microsoft Azure
- Equinix
- Amazon Web Services

Application
- Office 365
- Salesforce
- Workday

Storage
- Box
- Google Drive
- Dropbox

Network
- VeloCloud

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VMware SD-WAN by VeloCloud Benefits

**Software Defined WAN Overlay**

**Simplified WAN Management**
Zero-touch deployments, simplified operations, one-click service insertion

**Assured Application Performance**
Transport independent performance for the most demanding apps, leverages economical bandwidth

**Managed On-ramp to the Cloud**
Direct cloud access with performance, reliability and security

**SD-WAN Overlay**
Private / MPLS | 3G/4G LTE
Internet Broadband

**Branch Edges**

**Cloud Gateways**

**SaaS / IaaS**

**Datacenter Edges**

**VMware SD-WAN Or orchestrator**
How do I know my SD-WAN is working?

• Network availability
• Predictive Application Performance
• Alerts and Notifications
• Troubleshooting
Enterprise Network Overview

Real-Time Network Stats Summary

- Update timer can be changed
- Sums of Network Status:
  - Edges status with Quick view of Tops per category
  - Links status with Quick view of Tops per category (coming)
  - VNF status
  - HA (Active Standby Pair) status
  - IPSec tunnels (via GW) status
- Sums of Configurations:
  - Profiles usage
  - Segments usage
  - Software Version
VMware SD-WAN Network Monitoring

VMware SD-WAN Network State

- Site/Edge monitoring landing page:
  - Map sites to physical locations and obtain site status by color code
  - Obtain Edge details (SW version, link status, HA status, profile assigned, etc.)
  - Use search tool to sort and find Edges with common state
VMware SD-WAN Network Monitoring

SD-WAN site Overview

- Per site Network Status
- Two sections under overview tab
  - Link Status:
    - Cloud and VPN state
    - WAN Interface
    - Link Status
      - BW capacity
      - Throughput
      - Quality Metrics: Latency, Jitter, Packet Loss
  - Enable/disable alert notifications
  - Bandwidth Usage:
    - Top Applications
    - Top App Categories
    - Top Sources (Users)
    - Top OS (Requires DHCP server role)
  - Statistics can be analyzed across time (last 60 minutes up to 2 weeks)
  - Enable “Stay in live mode” for real-time monitoring
VMware SD-WAN Network Monitoring

VMware SD-WAN Quality of Experience – predictable app performance

- Quality of experience (QoE) score for voice video and transactional traffic
- QoE score calculated for transport links as well as VeloCloud Enhanced Overlay tunnel
- At a glance view of ISPs not meeting SLAs (Before) and whether user experience is being affected (After)
VMware SD-WAN Network Monitoring

Measure and Report per Transport Link

- Detailed link metrics
- Ability to run measurements in real-time or historical trends
- Show TCP and UDP details in “Live Monitoring” to understand protocol data usage
- See top applications per link
VMware SD-WAN Network Visibility

Identify top applications

- L7/Application level visibility
- Obtain top applications based on data usage
- Click an application to see top users, top destinations and which transport group
- Change viewing time range to see up to 2 weeks of application usage trends
VMware SD-WAN Network Visibility

Top Talkers and their applications

- Obtain per device application usage trends
- Devices identified by IP address, MAC address or hostname (manually assign a hostname if DNS resolution not available)
- Each client device identified by a color on the graph
- Identify anomalous network usage and pin point the culprit source
VMware SD-WAN Network Visibility

Analyze SD-WAN Top Destinations

• Visualize traffic to destination server(s) for a given application
• View destinations stats by domain, FQDN or IP address
• Quick insights on destination data usage based on color coded measurements
• Click a destination to see served application and top users
VMware SD-WAN Network Monitoring

System Level Health

• Edge health stats across time
• CPU, Memory, Tunnel count, Flow count and Handoff Queue drops.
• Min, Max and Average value over an 8 hour period by default
Centralized Route Monitoring

- Single pane enterprise view for routing
- Both underlay and overlay routes
- Quickly identify incorrectly learned routes
- Identify, click and fix
- Monitors dynamic, locally connected and static routes
VMware SD-WAN Network Monitoring
Notifications and Alerts
## VMware SD-WAN Monitoring

### System Events

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Segment</th>
<th>Edge</th>
<th>User</th>
<th>Severity</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon Jul 15, 03:09:54</td>
<td>New client device seen</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Notice</td>
<td>New or updated client detected</td>
</tr>
<tr>
<td>Sun Jul 14, 15:10:38</td>
<td>Link alive</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Info</td>
<td>Link GE3 is no longer defined</td>
</tr>
<tr>
<td>Sun Jul 14, 15:09:54</td>
<td>Edge Interface Up</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Info</td>
<td>Interface GE3 is up</td>
</tr>
<tr>
<td>Sun Jul 14, 15:09:53</td>
<td>Link alive</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Info</td>
<td>Link GE3 is no longer defined</td>
</tr>
<tr>
<td>Sun Jul 14, 15:09:47</td>
<td>Link dead</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Alert</td>
<td>Link GE3 is now DEAD</td>
</tr>
<tr>
<td>Sun Jul 14, 16:09:41</td>
<td>Edge Interface Down</td>
<td></td>
<td>610-home</td>
<td></td>
<td>Info</td>
<td>Interface GE3 is down</td>
</tr>
<tr>
<td>Sun Jul 14, 01:10:51</td>
<td>Link alive</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Info</td>
<td>Link GE3 is no longer defined</td>
</tr>
<tr>
<td>Sun Jul 14, 01:07:43</td>
<td>Link dead</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Alert</td>
<td>Link GE3 is now DEAD</td>
</tr>
<tr>
<td>Sat Jul 13, 23:08:35</td>
<td>Link alive</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Info</td>
<td>Link GE3 is no longer defined</td>
</tr>
<tr>
<td>Sat Jul 13, 23:07:53</td>
<td>Link dead</td>
<td></td>
<td>510-home</td>
<td></td>
<td>Alert</td>
<td>Link GE3 is now DEAD</td>
</tr>
</tbody>
</table>
VMware SD-WAN Network Monitoring

Service Alerts

- Enable alerting for service disrupting events
- Alerts sent to admins via SMS and/or email
- Send Alerts to SNMP trap collector/incident response system
Troubleshooting
VMware SD-WAN Network Monitoring

Troubleshooting

- Edge Remote Diagnostics
- Ping
- Traceroute
- DNS lookup
- Real-time Interface status
- List active flows
- List Clients (DHCP server)
- List Paths
- System Health stats
- VCRP, BGP and OSPF
- Bandwidth test
- PCAP capture
- Diagnostic bundle for advanced support
VMware SD-WAN Network Monitoring

Summary

- VMware SD-WAN platform delivers enterprise wide monitoring and short-term analytics
- Fast notifications of service impacting events
- Centralized advanced troubleshooting capabilities
- SD-WAN platform offers open Interfaces to integrate to external monitoring tools (API, NetFlow IPFIX, SNMP*, Syslog*) for advanced long-term analytics
Thank You!
Join the conversation

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