How To Lay The Keystone of Network Modernization

Capture and Monitor Network Data When You Want, How You Want

The keystone is the most important component of any arch construction project. This one stone is what will hold together an arch and make it strong. A poor design, or poor implementation, will lead to failure. For any network modernization project, network visibility is the keystone. This is because the visibility architecture captures key pieces of data that help secure the network, reduce operational costs, and improve performance. Without this information, IT modernization projects will struggle to achieve stated goals and cost targets.

Simply put, data is the lifeblood of modern networks. Terabytes, and possibly exabytes, of data traverse the network every day. This amount of data is forcing IT to acquire an even better insight and understanding of the network to ensure maximum uptime and performance of applications. Any lack of visibility will create blind spots and jeopardize the network modernization initiative.

The Heart of Network Modernization Solutions — Network Visibility

Network modernization must deliver performance, troubleshooting, and cost reduction improvements. Here are five fundamental actions to consider, along with some example use cases per category:

1. **Position yourself to collect data when you want, how you want**
   - Insert taps, which are passive network data access points, to give you access to data anywhere across the network. This gives you the right type of data that is a complete copy of the data, not a summarized excerpt. A full copy of data allows you to get the whole story and see degradations as they start to occur before an impairment happens. Pre-incident data can be extremely valuable in helping to diagnose the root cause of problems and save you a significant amount of troubleshooting time.
   - Network packet brokers (NPBs) are another core visibility component. NPBs allow you to aggregate data from across your network, perform general Layer 2-4 packet data filtering to optimize data monitoring and management, replicate data to as many tools as needed, remove unnecessary duplicate data, and remove unnecessary packet headers and content.
2. **Turn the data you collect into actionable information**
   - Use an NPB that supports Layer 7 data filtering to improve data filtration.
   - Deploy NPBs to look at application and bandwidth usage to prevent network overload.
   - Troubleshoot issues on the live network to remote locations faster and easier with load testing. IP-based tools can be installed in the core and used along with application intelligence to troubleshoot problems as fast as possible, all the way to the edge of the network.

3. **Modify your infrastructure so that it is agile enough to support the speed of business**
   - Equipment usability is one of the most important factors contributing to the total cost of ownership (TCO) of a purchase. Consider NPBs that employ a drag and drop user interface that is simple to understand and use. This reduces the OPEX spent on overhead tasks.
   - Deploy set and forget orchestration with predetermined actions that reduce complexity and the need for Change Board approvals.
4. **Optimize your network for telecommuting**
   - To ensure that your network can support remote workers, deploy taps for data access, test your VPN capacity, test the network capacity, and measure performance on an ongoing basis.
5. **Deploy new technologies to realize performance and cost savings**
   - Improve efficiency and lower monitoring costs/maintenance efforts by offloading NetFlow and IPFIX generation from traditional switches to an NPB.
   - Support public and private cloud environment monitoring to reduce costs while optimizing performance and troubleshooting activities.
   - Support hybrid (cloud + physical on-premises) environments to perform data capture and filtration in cloud environments and backhaul data to physical on-premises tools to reduce costs.
   - Troubleshoot issues on the live network to remote locations faster and easier with load testing. Synthetically generate and measure real-world network and application traffic to identify vulnerabilities in your network before they emerge in your production environment.

How to Modernize Your Network

To implement use cases relevant to government agencies, Keysight Technologies offers an easy to use, yet powerful set of network visibility solutions that include:

- Taps with a vast array of interfaces including copper (10/100/1000 MB) and optical (1/10/40/100 GE). Keysight also has a large portfolio of tap split ratios including 50/50, 60/40, 70/30, 80/20, and 90/10 splits.
- Vision series NPBs with zero packet loss for full featured, non-blocking monitoring up to 100GE. Keysight's patented GUI interface saves significant programming time and cost.
- AppStack application intelligence feature for the Vision series NPBs that offloads NetFlow and IPFIX information from traditional switches to substantially reduce programming costs and eliminate performance impacts to your production routers and switches.
- AppStack application intelligence feature for the Vision series NPBs that delivers empirical data to identify bandwidth usage by application, trending, and growth needs.
- Proactive monitoring with synthetic traffic simulations to anticipate issues.
- Cloud and virtual visibility sensors that support packet data capture and monitoring.

Reach out to Keysight and they can show you how to modernize your network and make the quantum leap from reactivity to proactivity.

Learn more at: www.getnetworkvisibility.com

Keysight sponsors GetNetworkVisibility.com, a thought leadership website dedicated to the importance of packet-based visibility to power security, performance, and network monitoring tools. For more information, contact us at:

www.getnetworkvisibility.com/contact-us/