Provisioning and Troubleshooting Tips for the Data Center

3 of 3 part series

By Andrew Froehlich

There's a misconception that AEM's line of cable testers are solely built for cable installation professionals. In fact, the test tools are also incredibly useful for network operations (NetOps) staff from a provisioning and troubleshooting perspective. A perfect example of the TestPro and NSA's multipurpose capabilities can be found in the private data center. Let's look at a handful of real-world use cases where NetOps can leverage test and troubleshooting tools within and between the racks of servers you manage today.

Network visibility

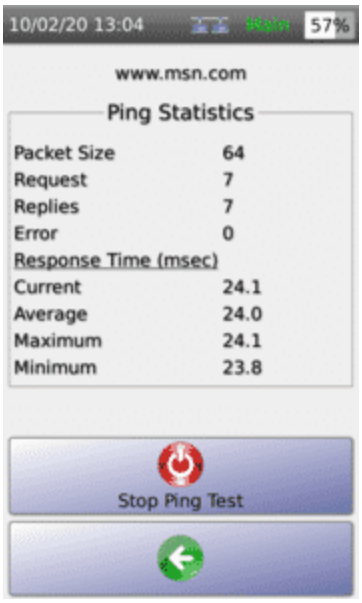
As data centers become increasingly automated to adapt to the need for faster server and application provisioning, the bottleneck in this process has become the time it takes NetOps staff to identify, verify and properly test cabling and connectivity that a new application or service will use. Much of the time spent to do this revolves around identifying the relevant cables in the data center and determining which network switches and switchports they connect to. From here, operations staff must be able to identify what VLAN the specific ports are currently configured for, and if any adjustments need to be made.

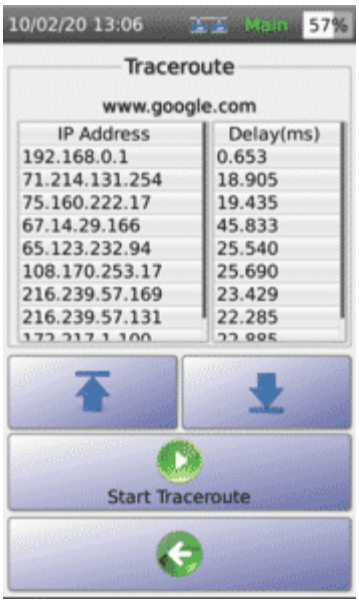
Traditionally, this process required that NetOps staff perform the painstaking task of manually tracing cables back to a particular data switch and switchport. From here, they would return to their desk to login to the identified switch to determine the port specific information already configured including switch name, VLAN, port number, port type/capabilities and IP address information.

Instead of spending precious time using manual processes to identify pertinent provisioning information, putting an AEM TestPro or NSA multifunction tester in the hands of your NetOps staff can significantly speed up this process. By leveraging the standards-based Link Layer Discovery Protocol (LLDP) or Cisco's proprietary Cisco Discovery Protocol (CDP) along with link-based information gathering, NetOps staff can leverage the portability of AEM's test equipment to immediately identify all relevant information required to complete the provisioning task in a single trip. The following TestPro/NSA screen capture shows an example of the type of information that can be obtained in just a few seconds:

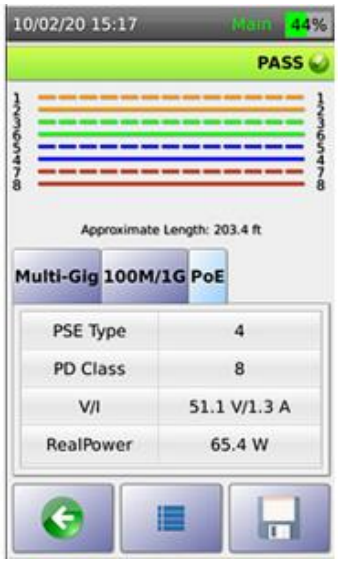
Troubleshooting cabling and switch equipment within the data center

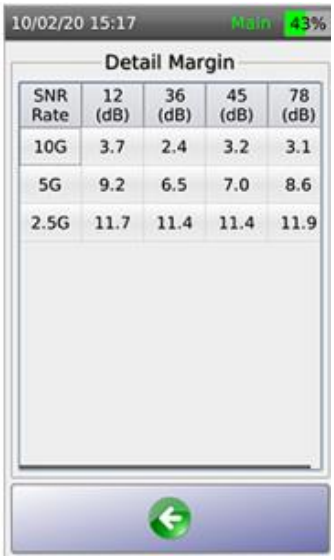
While speeding up the process of data center provisioning is great, the NetOps role is not centered solely on this task. When existing applications and services experience outages or performance degradation, it's the duty of the NetOps team to quickly identify and remediate any physical layer issues related to the switch or cabling. Often this involves the use of common test functions such a network ping, traceroute and packet generation tests. Prior to the TestPro and NSA's ability to run these natively on the multifunction test tool platform, most NetOps admins required the use of laptops or individual test tools to complete these tasks. This often led to situations where administrators did not have the proper tools on hand, forcing them to retrieve the equipment. When seconds count – as is often the case with mission-critical applications running in the data center – this can lead to lost revenue to the business. The following screen captures illustrate some of the many network test functions available at your fingertips:





If a twisted pair copper or fiber cable issue is suspected during the troubleshooting process, it's nice to know that the same tool used to conduct network troubleshooting tests can also be used to perform cable-specific troubleshooting. This includes tasks such as identifying cable faults, exceeding distance limitations and out of balance signal-to-noise readings on copper connections. Additionally, properly equipped test sets can inspect fiber connectors and termination points for dust/debris that can impede performance. The following screen captures depict examples of these types of cable-specific tests:





Don't forget about the Wi-Fi

While Wi-Fi is rarely (if ever) used for server connectivity in the data center, it is an important transport medium for supplemental DC services including IoT and physical security technologies. Both the TestPro and NSA can identify Wi-Fi networks in the data center, perform network ping, traceroute, and throughput tests in addition to identifying areas where signal strength is below recommended dBm

values. Looking at the following example, the TestPro/NSA can connect to a specific Wi-Fi SSID and display the following information in real-time:

A great asset for any data center

As you can imagine, these types of add-on test capabilities highlight the value of AEM's multifunction test tool portfolio and show the broad range of use-case situations where these tools can be used in the enterprise. For the utmost in speed and accuracy when it comes to provisioning and troubleshooting cabling and network switch components in the data center, outfitting your NetOps teams with the AEM TestPro or NSA is a wise investment that will undoubtedly pay for itself in no time.

To learn more about AEM and our testing solutions, visit us at AEM-Test.com.

Inquiries Sales@AEM-Test.com