LXI Version 1.6 Conformance Testing with TSEP Kerberos

When developing a network-based test system, a variety of challenges arise when using test equipment from multiple vendors. The LXI Standard has been used for over 15 years by LXI Members to create devices that can be easily used to develop multi-vendor network-based Automated Test Systems (ATS).

To ensure multi-vendor interoperability of LXI devices used within network based ATS solutions, the LXI Consortium requires all LXI devices to be tested for conformance to the LXI Standard. Until recently, LXI Member companies had to set up their own test environment to test that their device was conformant to the LXI Standard using the LXI Conformance Test Suite. The test environment included several specific software and hardware components that were occasionally difficult to get working together properly. In this test environment, most of the tests were manual and required a certain level of understanding of the test environment and the LXI Standard to test devices correctly. After the device was developed, a certified LXI Test House was then hired to certify the device conformed to the LXI Standard, which increased the overall development cost and time of the device.

Efficient Test Environment

In April of 2019, a more efficient and streamlined LXI Conformance solution was introduced. Unlike the previous LXI Conformance Test environment with its complex setup, the Kerberos is the only solution needed for LXI Conformance testing. The Kerberos is an LXI Conformance test solution that includes all the required test-specific hardware and software components integrated into a single device. Simply install the Kerberos client software on your computer, plug the computer and the LXI device into the network ports on the Kerberos, and the test environment is ready. The Kerberos client is used to define the testing parameters, control the testing process, and analyze and capture the test results.

When testing for LXI Conformance with the Kerberos, a majority of the tests are automated decreasing user interaction, development time, and user error. During development, the Kerberos can run any number of tests at any stage of development, expanding the development and troubleshooting possibilities. The Kerberos also has an available automated regression testing option that can be beneficial during the development of LXI devices.

TSEP Kerberos 2.0

LXI Self-Certification

The TSEP Kerberos solution has been officially adopted as the LXI Conformance Self-Certification solution for conformance to LXI standard versions 1.5 and beyond. Once qualified, LXI member companies that own a Kerberos are allowed to self-certify their own LXI devices to the LXI Standard. When using a Kerberos, LXI Self-Certification can be planned directly into the development schedule of the device, eliminating the time and cost of using an LXI Test House.

LXI Version 1.6

LXI Version 1.6, released in June 2022, added security to the LXI standard through the addition of the Security and API Extended Functions and updates to the existing LXI standards. The LXI Version 1.6 security additions expanded the number of rules from 150 to 400 when compared to LXI Version 1.5. These additional rules create more secure devices but significantly add to the complexity of LXI device development and LXI Conformance testing. The LXI Consortium made the decision to not enhance the LXI Conformance Test Suite and only use the Kerberos for LXI Conformance Testing for LXI Version 1.6 and future LXI Standard versions.

The highlights of TSEP Kerberos:

- ✓ Automated testing
- ✓ Integrated single box test solution
- ✓ Minimizes errors
- ✓ Testing during development
- ✓ Complete LXI Test Solution
- ✓ Reduces time and cost investment
- ✓ Testing diagnostics
- ✓ Only LXI Self-Certification testing solution
- ✓ Only LXI Version 1.6 Conformance testing solution

Summary

Verifying LXI Conformance is a critical component in ensuring LXI-compliant devices support multi-vendor interoperability in ATS solutions. The TSEP Kerberos is the LXI compliance test solution for LXI Version 1.6 and LXI Self-Certification. With automated tests in a stand-alone device, the Kerberos increases efficiency in development, testing, and certification.

https://tsep.com/en/products/kerberos/

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