Streamline Lab Management and Teaching

With PathWave BenchVue Lab Management and Control Solution

Problems in a Traditional Teaching Lab

In a traditional teaching lab, instruments are not interconnected, and controls are only from the front panel of each instrument. There is also zero automation which means only a single measurement can be performed at a time.

Therefore, in a lab session an educator typically needs to:

- Manually set up and check each instrument status.
- Individually configure parameter settings for each instrument.
- Manually track all the lab assets for calibration, loan, and repair.

For a large lab, it is time-consuming to set up and track dozens of test instruments (e.g. 6 instruments per bench x 16 benches = 96 instruments!)

PathWave BenchVue Lab Management and Control Solution

PathWave BenchVue Lab is a network-based application software that enables all instruments to be interconnected via LAN or WLAN and provides centralized control for educators to seamlessly connect and monitor all the instruments within the teaching lab.

Lab management and control software

1. **PathWave BenchVue Lab Manager** – Main software application installed on admin's or lecturer's PC to provide lecturer with centralized control and management.

2. **PathWave BenchVue Lab Client** – Software application runs on students' bench PCs and connects all the instruments at individual benches.

3. **PathWave BenchVue Complete Control Collection Apps** – Consist of 20+ application software for various types of test instruments to provide both lecturer and students with integrated control, auto logging and easy report generation and sharing.

PATHWAVE

PW9111EDU Lab Management and Control Solution Software

PathWave BenchVue Lab Manager App

PathWave BenchVue Lab Client App

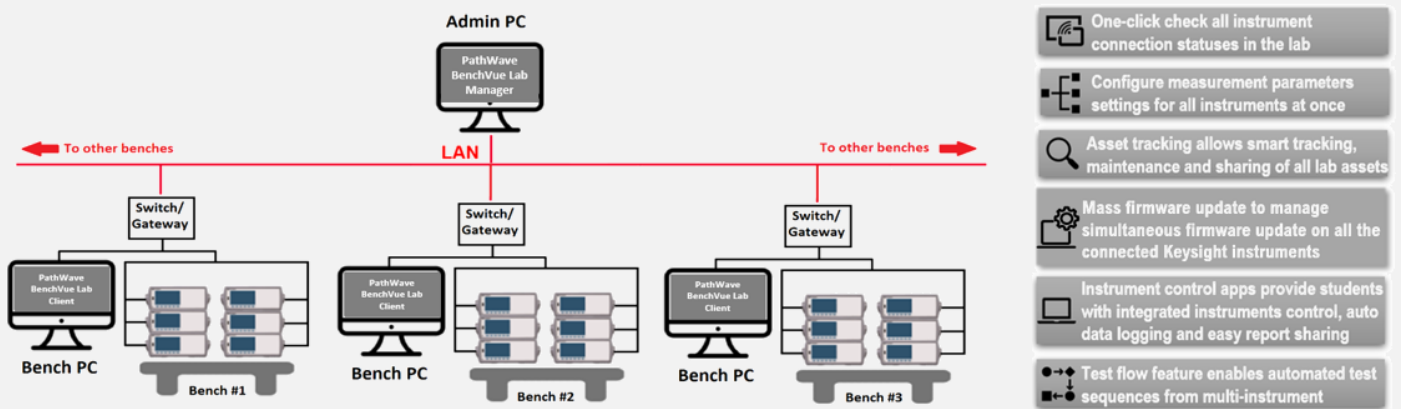PathWave BenchVue Complete Control Collection App

KEYSIGHT TECHNOLOGIES

Figure 1. Setup and Benefits of PathWave BenchVue Lab Management and Control Solution

Features Overview

1. Check Instruments statuses
2. Configure instruments all at once
3. Asset tracking
4. Instruments mass firmware update
5. Multiple instruments integrated control
6. Test flow for automated sequence measurements (selected model)

Check instruments statuses

One-click to check all instruments connection statuses in the lab. The lecturer can easily identify and troubleshoot which instruments are not correctly connected.

Configure instrument all at once

The lecturer can configure measurement parameters settings for all instruments in the lab at once just by simply select a state file and click send. Therefore, this feature enables the lecturer to easily switch to the next measurement lesson seamlessly.

Asset tracking

Asset tracking allows smart tracking, maintenance and sharing of all lab assets. This feature also comes with an auto-email notification to remind lecturers of the upcoming instrument calibration schedule or time to collect back loaned-out assets.

Instruments mass firmware update

Mass firmware update enables the lab manager to view and manage all the instrument types and firmware versions with the option to detect the latest firmware automatically or manually. This feature allows simultaneous firmware update on all the connected Keysight instruments in the teaching lab with a single click and therefore saves the lab manager's time.

Multiple instruments integrated control

PathWave BenchVue Complete Control Collections apps provide lecturers and students with integrated instrument control, auto data logging, data remote access and easy report sharing, all on one PC. The 20+ instrument control apps support over hundreds of Keysight instrument models of various types including DMM, oscilloscope, power supply, function generator, signal generator, network analyzer, signal analyzer, source measure unit, data acquisition and more.
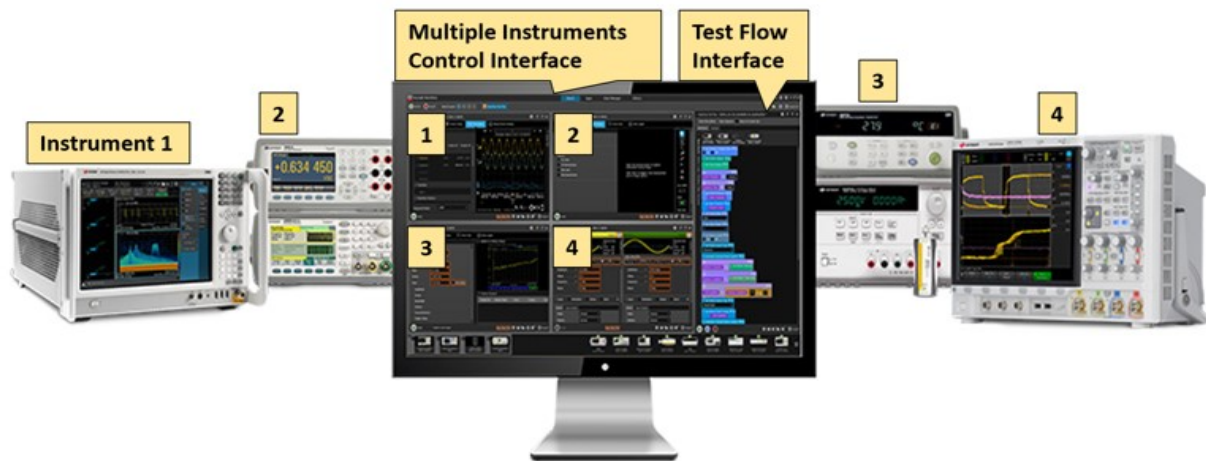

Figure 2. Multiple instruments integrated control with PathWave BenchVue Complete Control Collection Apps.

Test flow for automated sequence measurements

Test flow feature enables automated test sequences from multiple instruments. It has an easy-to-use drag-and-drop graphical user interface to create measurement blocks without the need for programming. There are functional blocks to add various instructions, math functions, advanced tools and more, for a truly automated measurement system. Results tab to preview test flow sequence or to automatically logs and store actual measurement data. Test flow sequences can be saved in a file for reuse or easy sharing in the lab. A prerequisite to using BenchVue Test Flow is to have all the instruments apps running within the legacy BenchVue platform.

Figure 3. Test Flow Feature Graphical User Interface

Conclusion

Hands-on learning using real, industry-standard bench instruments is one of the most valuable experiences universities and teaching institutes can offer students, ensuring that the next generation of engineers get practical knowledge using the same industry-grade equipment that they would use when they graduate and are out in the industry.

Now, with Keysight PathWave BenchVue Lab Management and Control Solution, educators can spend less time on manual setup and tracking but focus on what really matters – providing high-quality teaching. This solution is built upon the PathWave BenchVue software platform, leveraging its strengths such as easy control, data capture, logging and report generation, all without requiring programming. Consisting of the PathWave BenchVue Lab application and the PathWave BenchVue Complete Control Collection, Keysight PathWave BenchVue Lab Management and Control Solution is a lab management solution that not only provides centralized control for educators to seamlessly connect and monitor all the instruments within the lab, but also serves as a powerful teaching tool for instruction laboratories.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications, or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

KEYSIGHT TECHNOLOGIES