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Streamline Lab Management and Teaching
With 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 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!)

BenchVue Lab Management and Control Solution

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.
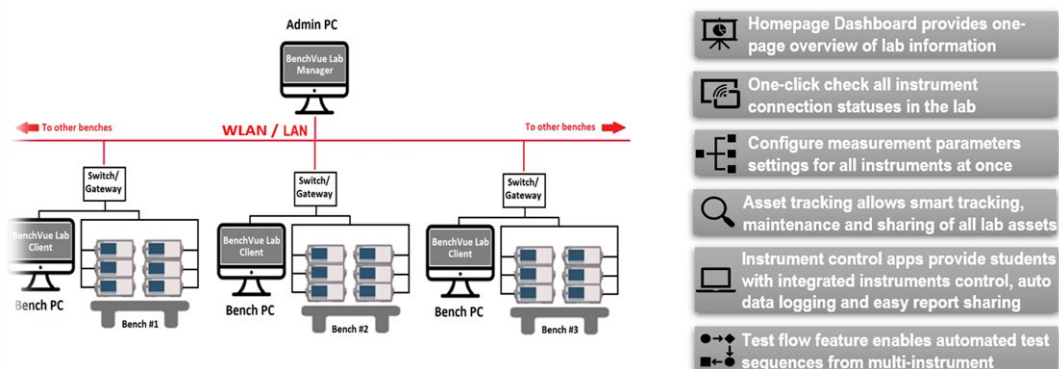

Figure 1. Setup and Benefits of BenchVue Lab Management and Control Solution

BV9111EDU lab management and control software

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

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

3. *BenchVue 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.

Features Overview

1. Homepage dashboard

2. Check Instruments statuses

3. Configure instruments all at once

4. Asset tracking

5. Multiple instruments integrated control

6. Test flow for automated sequence measurements

7. Keysight Instrument mass firmware updates (Manager App add-on)

BV9111EDU Lab Management and Control Software

BenchVue Lab Manager App

BenchVue Lab Client App

BenchVue Control Collection Apps

Homepage dashboard
Homepage dashboard provides one-page overview of lab information at the lecturer's PC. The information is widget-based and can be optionally added/removed and are also customizable according to customer's preference or use cases.

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

Configure instrument all at once
Lecturer can configure measurement parameters settings for all instruments in the lab at once just by simply selecting a state file and click send. Therefore, this feature enables 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 auto email notification to remind lecturers of upcoming instrument calibration schedule or time to collect back loaned out assets.

Multiple instruments integrated control

BenchVue Control Collections apps provide lecturer 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 500 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 BenchVue 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 of 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.

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