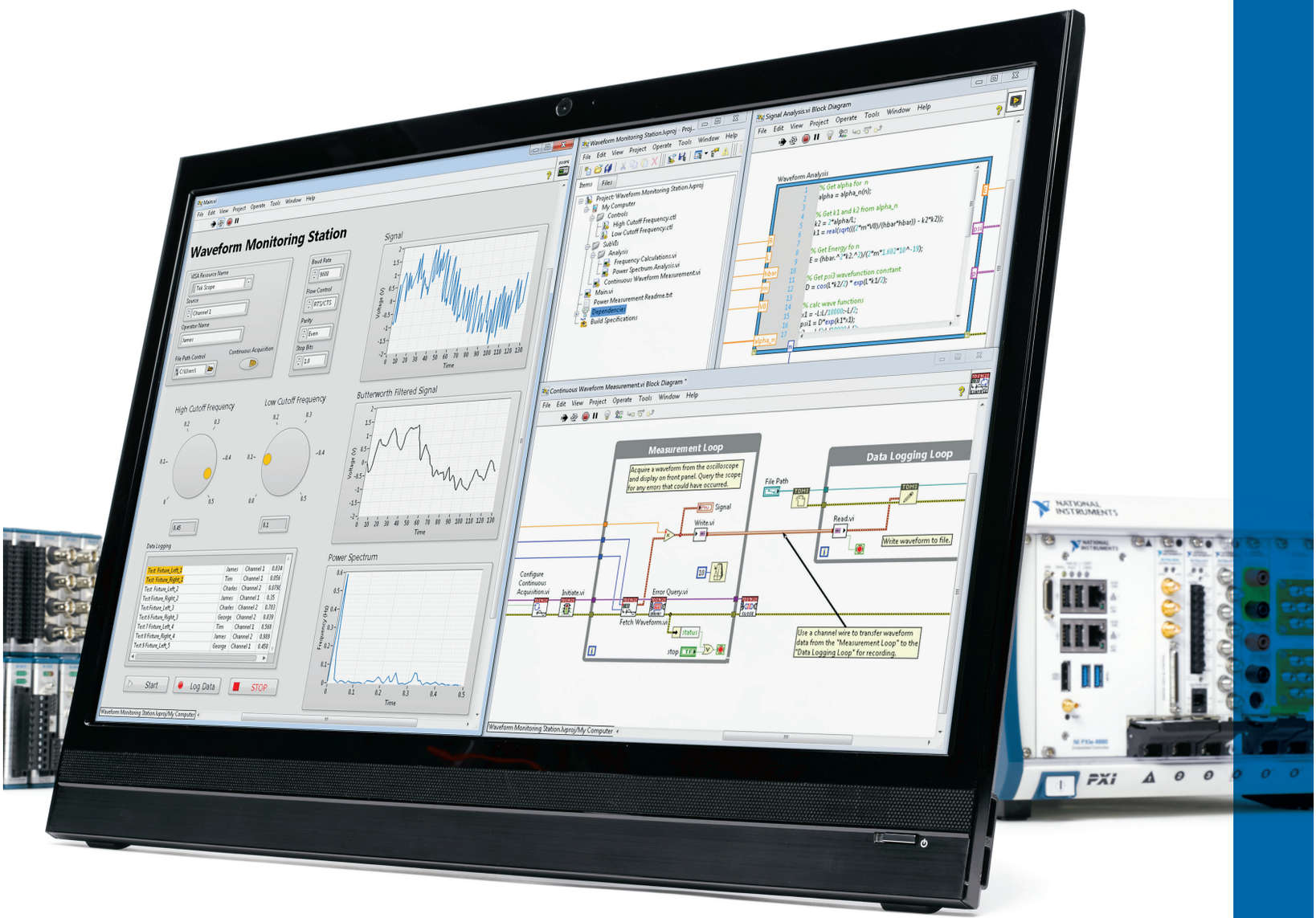
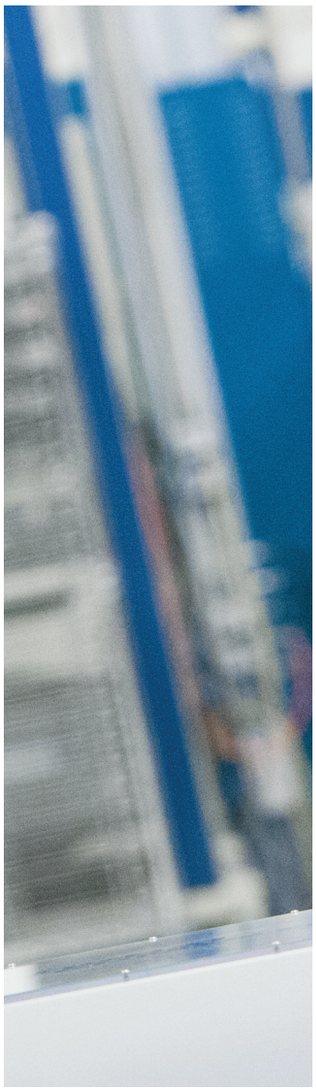
NATIONAL INSTRUMENTS™

LabVIEW




Factory Dashboard
Vision
Weight
Digital Bus
802.11

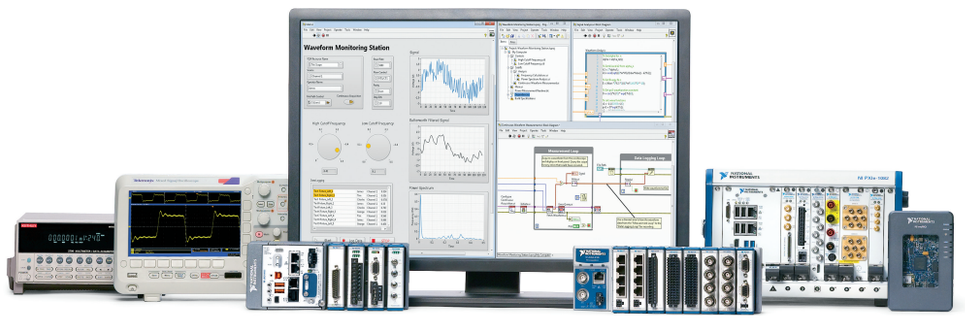


Why Choose LabVIEW?

LabVIEW system design software is the tool of choice for engineers of all stripes, whether they're building production test systems, automating benchtop measurements, prototyping wireless algorithms, or designing stand-alone systems. And though other software tools limit a user's ability to fully customize systems to meet specific requirements, LabVIEW is uniquely designed to be both open and flexible.

LabVIEW not only provides a native programming language for graphically mapping logical architecture into functional code but also helps companies realize better business results. Engineers can use it to acquire measurement data from any hardware device, perform inline signal processing for real-time results, integrate other software tools and languages, and make high-performance computing targets, such as multicore processors and FPGAs, approachable and programmable without deep architecture-specific knowledge.

Join the thousands of companies worldwide that are already improving the quality of their results, lowering costs, and increasing manufacturing throughput by turning to LabVIEW.



The LabVIEW platform offers unprecedented integration with all measurement hardware, existing legacy software, and IP to help you solve today's problems faster and more effectively. It also provides the capacity to evolve to meet your future challenges.

Program the Way You Think

A virtual instrument (VI) is the main building block of any LabVIEW application in automating measurements, building test systems, or designing stand-alone systems.

1 Drag-and-Drop Engineering UI
Quickly create professional engineering UIs to control systems and display measurements for any application.

2 Dataflow Programming
Use a paradigm that resembles how people think to better understand your code.

3 Analysis Libraries
Make decisions faster with inline processing using built-in engineering-specific analysis and signal processing libraries.

4 File Management
Organize project files, hardware targets, and documentation with the Project Explorer to save time and maintain applications.

5 Software Distribution
Streamline distributing software with integrated tools that implement executables and installers to shorten the build process.

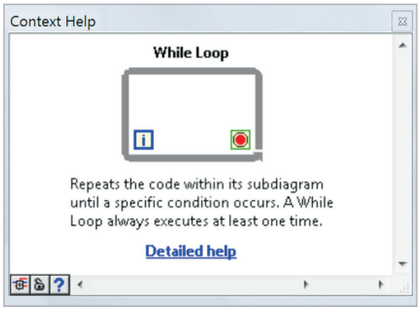
6 Native Timing
Use the only tool with built-in functionality to control how timing is implemented and ensure code executes efficiently.

The VI combines a user interface (UI) to interact with and visualize data with code that integrates with hardware, acquires data, and processes data. The front panel houses the customizable graphical UI, which is built using engineering-specific UI objects so you can configure your applications and visualize data.

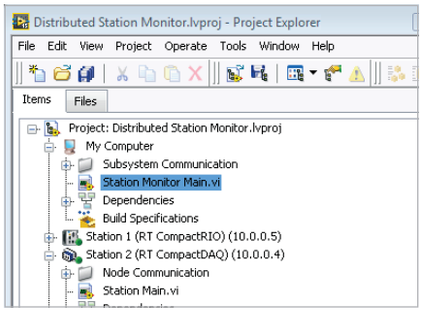
The code that controls the UI on the front panel is contained in the block diagram in the graphical G language. By using dataflow programming with the G language, you can visualize how information moves naturally. With graphical programming, low-level programming syntax and memory allocation are diminished to help you be more productive when building control and measurement systems. In a simple development environment, you can focus on results while LabVIEW continuously compiles to check for errors or valid syntax.

Hardware Integration

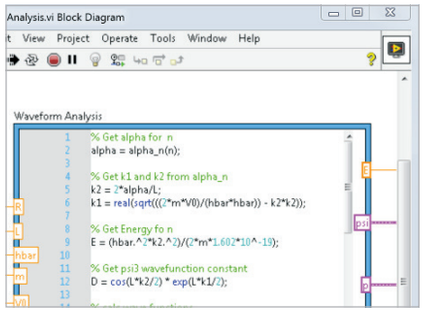
With LabVIEW, you can use all of your measurement and control hardware in a single development environment. Minimize time connecting I/O from any instrument or device, both NI and third party, with consistent APIs for all hardware.



Integrated Help and Examples
Don't start from scratch. Get started fast with shipping examples and help documentation.



Deployment Targets
Simplify deployment with a single development environment featuring a compiler that optimizes for multiple processor architectures, including PCs and real-time and FPGA hardware.

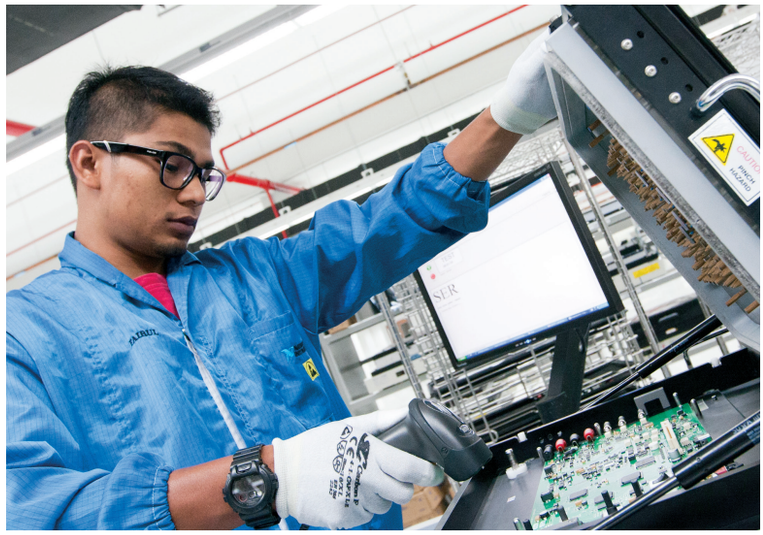


Models of Computation
Maintain your software investment by reusing your existing .m files, C code, or Python scripts in LabVIEW.

"By integrating the latest technology and leveraging the power of the LabVIEW RIO architecture, FireFly developed a 'smart' ProSlab 155 turf harvester that increases harvesting speed 20 percent and reduces diesel fuel consumption 50 percent."

Steve Aposhian, FireFly Equipment

Photo courtesy of Subaru



Subaru Advances Vehicle Testing Through Simulation

Using a verification system with FlexRIO and LabVIEW, Subaru makes automatic execution of all test patterns possible and replicates the most severe test environments to ensure the highest level of driver safety.

Airbus Improves Production Quality With Factory of the Future

Airbus leveraged CompactRIO and LabVIEW to rapidly validate its ideas, move from prototype to deployment, and build smart tools that provide real-time data to operators for improving production quality.

China Steel Builds Air Leakage Detection System

China Steel used an acoustic pressure microphone based on air noise with PXI and LabVIEW to immediately detect sintering pallet air leakage. This helped conserve energy, reduce carbon, increase output, and enhance quality.

National Grid UK Prepares Today for the Grid of Tomorrow

National Grid UK used CompactRIO and LabVIEW to create and deploy an advanced grid measurement system that can be upgraded in real time without the need for downtime. National Grid UK is keeping the lights on for nearly 20 million people.

Photo courtesy of National Grid

Photo courtesy of Hyundai

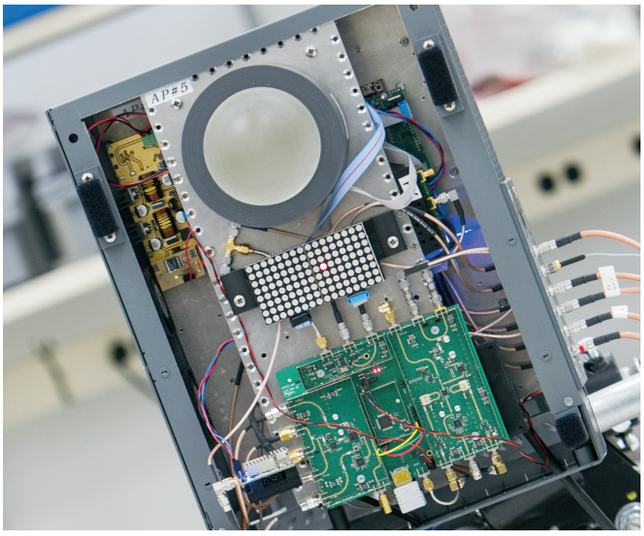


Photo courtesy of Nokia Networks

Hyundai Develops Smart Robotic Exoskeleton 4X Faster

Hyundai used the advanced control and data visualization capabilities of CompactRIO and LabVIEW to rapidly iterate on its complex control algorithm, expand its sensing capabilities, and significantly reduce its development time.

Nokia Networks Rapidly Prototype 5G Proof of Concept

Using PXI and LabVIEW to facilitate a unified design flow in the development process, and account for the mmWave challenge Nokia Networks prototyped for mmWave mobile access in a fraction of the time of typical design approaches.

ITM Significantly Lowers Development Time With NI Solutions

ITM decreased development time to design and build custom high-performance data acquisition using CompactDAQ and LabVIEW. These test systems can be wirelessly monitored for customers in the transportation and in-vehicle space.

Qualcomm Atheros Improves Tests Speeds

Using the Vector Signal Transceiver and LabVIEW, Qualcomm Atheros was able to customize it's WLAN device test systems, keep costs low, optimize test accuracy, and deliver a 200X reduction in test time compared to previous rack-and-stack instruments.

Focus on Execution, Not Integration

LabVIEW is a complete development environment built specifically to make you more productive and ensure you have all the tools you need to design, prototype, and build measurement and control systems. Additionally, you can take advantage of LabVIEW's compatibility with existing hardware and software to ensure you're deploying the right approach to reduce development time.

Connect to Any Instrument
Leverage seamless LabVIEW integration with thousands of different measurement and control I/O hardware devices from both NI and third parties.

Integrate With Any Software
Combine LabVIEW with your existing code or applications using built-in constructs for interprocess or network communication, inline C or .m code, and external library calling.

Do More With Your Data
Access the IP you need with nearly 1,000 built-in engineering-specific analysis and signal processing algorithms, plus export them in any format for further analysis.

Incorporate Open-Source Tools
Build your systems by combining LabVIEW with open-source software tools, including Python and Linux, to use the IP and functionality available in these communities.

Complete Your System Rapidly
Reduce development time by connecting to any instrument or device and using ready-to-deploy run-time support for desktop computers, embedded processors, and FPGAs.

Leverage the LabVIEW Ecosystem
Use domain-specific IP from the LabVIEW ecosystem in your application with nearly 400 add-ons developed by NI and third parties through the LabVIEW Tools Network.

With the powerful NI LabVIEW system design environment, you can build any measurement or control system in dramatically less time.

An Ecosystem for Ensuring System Success

Take advantage of the contributions made by other members of the LabVIEW community, including code libraries and add-on software and hardware. This ecosystem features a growing network of technology partners, comprehensive services and support offerings, and IP and applications used by individual engineers and teams alike.

Software	Hardware	Partners	User Community
10,000+ Example Programs	**50 Million+** DAQ Channels Deployed	**350+** NI and Third-Party Add-Ons	**225,000+** Online Members
12,000+ Instrument Drivers	**1,500+** C Series and PXI I/O Modules	**1,000+** NI Alliance Partners	**100+** Registered User Groups
500,000+ Students Using LEGO® MINDSTORMS®	**1,000+** IP Blocks for Processors/FPGAs	**30,000+** Users Training per Year	**18,000+** Certified LabVIEW Users

NI Software Standard Service Program

Maximize your software investment and ensure continued success with the NI Software Standard Service Program (SSP). Every purchase of LabVIEW includes a one-year SSP membership renewable, so be sure to take advantage of the benefits outlined below to maximize your investment in LabVIEW.

Stay Up to Date With Software
Receive the latest software version with automatic upgrades as soon as software is released. Maintain your systems for the long term with access to previous versions of NI software.

Get Help When You Need It
Receive troubleshooting help to get your system up and running faster with access to degreed engineers by phone or email for technical support.

Access the Training You Need
Learn the skills you need at your own pace to be successful with 24/7 access to both introductory and advanced online training courses.

Get an early look at conceptual software capabilities with access to the NI Software Technology Preview.

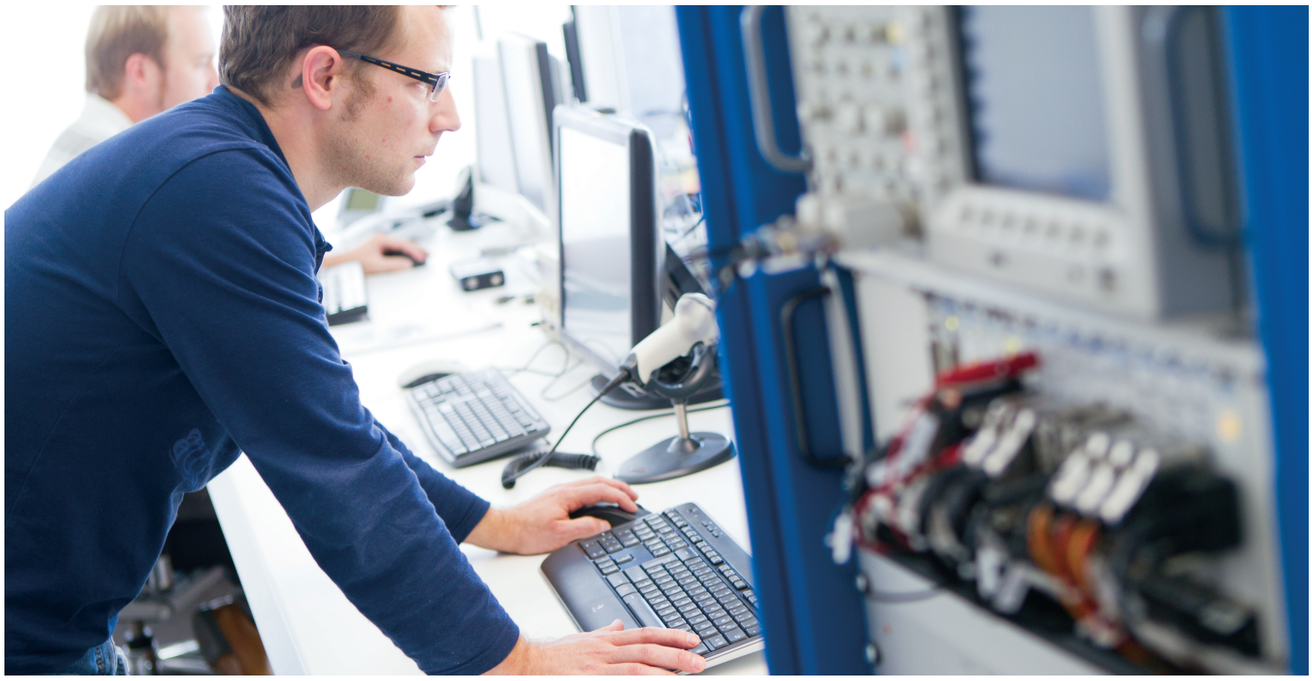


Photo courtesy of Goepel

"Within one year of developing and implementing this solution, we estimate that we now analyze up to 95 percent of our data and have reduced our test cost and number of annual tests because we do not have to rerun tests."

Simon Foster, Jaguar Land Rover

Make a Sound Investment With the Right Purchasing Option

The LabVIEW software portfolio offers a variety of options to ensure you are using the best edition for your needs. Its three core development systems are designed to scale from basic data acquisition to professional software development. Additionally, its three software suites aggregate the most popular add-ons and other application software typically combined to build test, design, and control applications.

Base Edition
Intuitive graphical programming, with extensive hardware integration, and drag-and-drop user interface development.

Full Edition
Complete data exploration and analysis with nearly 1,000 mathematics and signal processing algorithms.

Professional Edition
Professional development with application distribution, code validation, and source code control.

Which LabVIEW is Right for Me?

LabVIEW
BASE EDITION

- Graphical development environment
- Drag-and-drop UI libraries
- PC-based data acquisition

LabVIEW
FULL EDITION

- Graphical development environment
- Drag-and-drop UI libraries
- PC-based data acquisition
- 950+ built-in analysis libraries
- Core edition for add-ons

LabVIEW
PROFESSIONAL EDITION

- Graphical development environment
- Drag-and-drop UI libraries
- PC-based data acquisition
- 950+ built-in analysis libraries
- Core edition for add-ons
- Building and distributing EXEs
- Unit testing and code validation
- Source code control integration

NI SOFTWARE SUITES COMBINE RECOMMENDED SOFTWARE SOLUTIONS FOR KEY APPLICATION VERTICALS

NI AUTOMATED TEST SOFTWARE SUITE

Includes LabVIEW Professional Edition, LabWindows™/CVI Full Edition, Measurement Studio Enterprise Edition, TestStand, Switch Executive, and additional software.

NI EMBEDDED CONTROL AND MONITORING SOFTWARE SUITE

Combines LabVIEW Professional Edition, LabVIEW Real-Time, LabVIEW FPGA, and additional software.

NI HIL AND REAL-TIME TEST SOFTWARE SUITE

Includes LabVIEW Professional Edition, LabVIEW Real-Time, LabVIEW FPGA, VeriStand, and additional software.

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NI Services and Support

Hardware Services

Minimize downtime, save on maintenance costs, and simplify logistics with world-class service programs for hardware.

Training and Certification

Develop 50 percent faster and spend 43 percent less time on code maintenance with NI training courses. Also validate your expertise with NI certifications.

Technical Support

Get started with NI products faster or troubleshoot tough issues by contacting NI applications engineers who are ready to help via phone and email.

Consultation and Integration

Leverage our extensive network of Alliance Partners and NI systems engineers for assistance with prototyping, feasibility analysis, consulting, and systems integration.

Software License Programs

Streamline NI software management by accessing multiple levels of training, technical support, and tools through your software license.

Technical Resources

Access volumes of self-help information at ni.com including application tips, example programs, and developer communities.