SystemLink Overview

SystemLink Targeted Outcomes

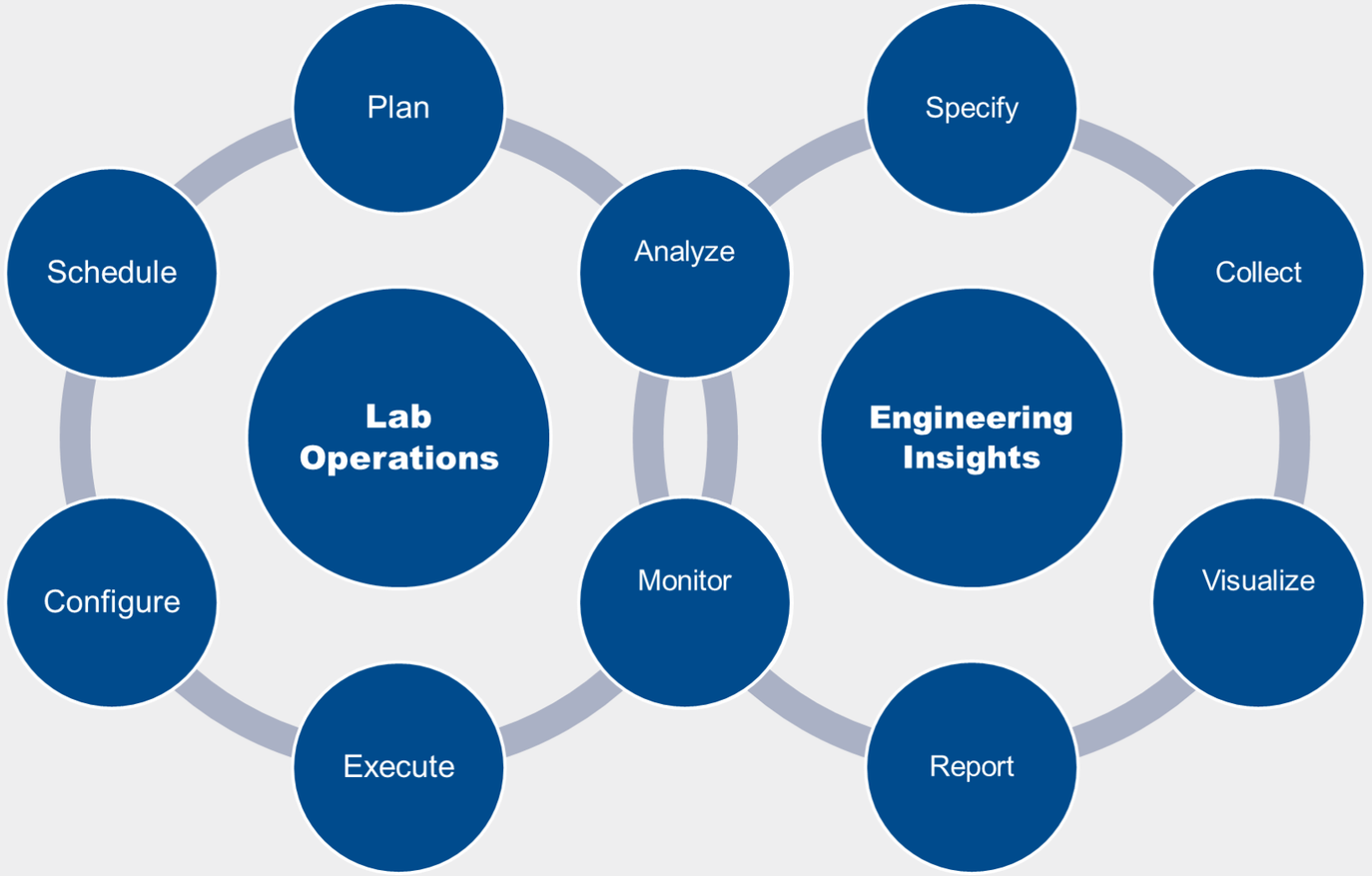
Streamline lab operations & amplify engineering insights

Optimize Lab Operations

Coordinate and schedule test plans to increase lab throughput and increase the visibility for all stakeholders.

Increase Lab Efficiency

Automate software deployment, track and manage assets/DUTs, and monitor system health to maximize asset utilization.



Improve Test Coverage and Compliance

Elaborate product specifications, limits, and conditions. Link to test data to ensure product requirements are adequately tested and in compliance.

Accelerate Product Insights

Monitor and analyze test results to quickly discover test and product issues and decrease design/test iteration time.

SystemLink Architecture Fundamentals

Standards-Based

Developed with industry-leading technologies, IP best practices

Scalable

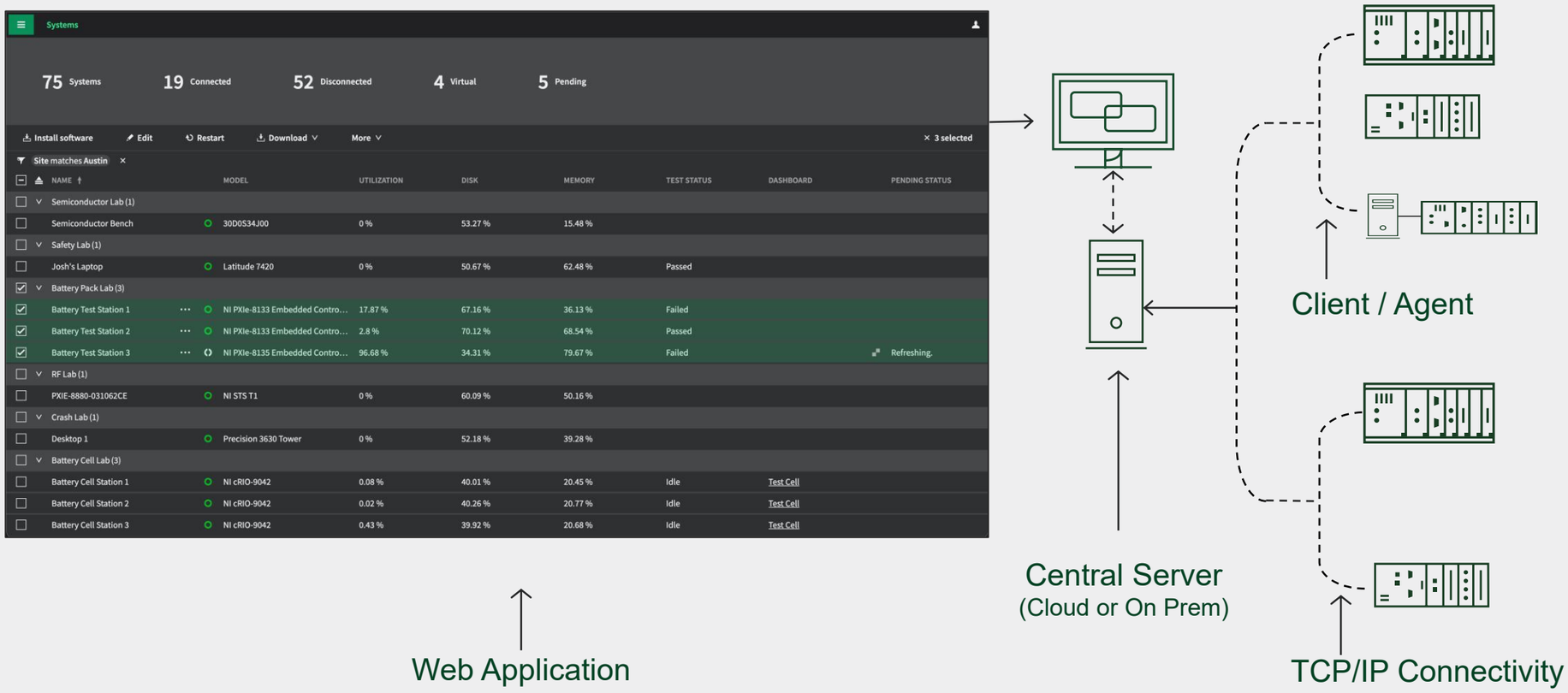
Megabytes to Petabytes of data from 1000s of data sources

Extensible

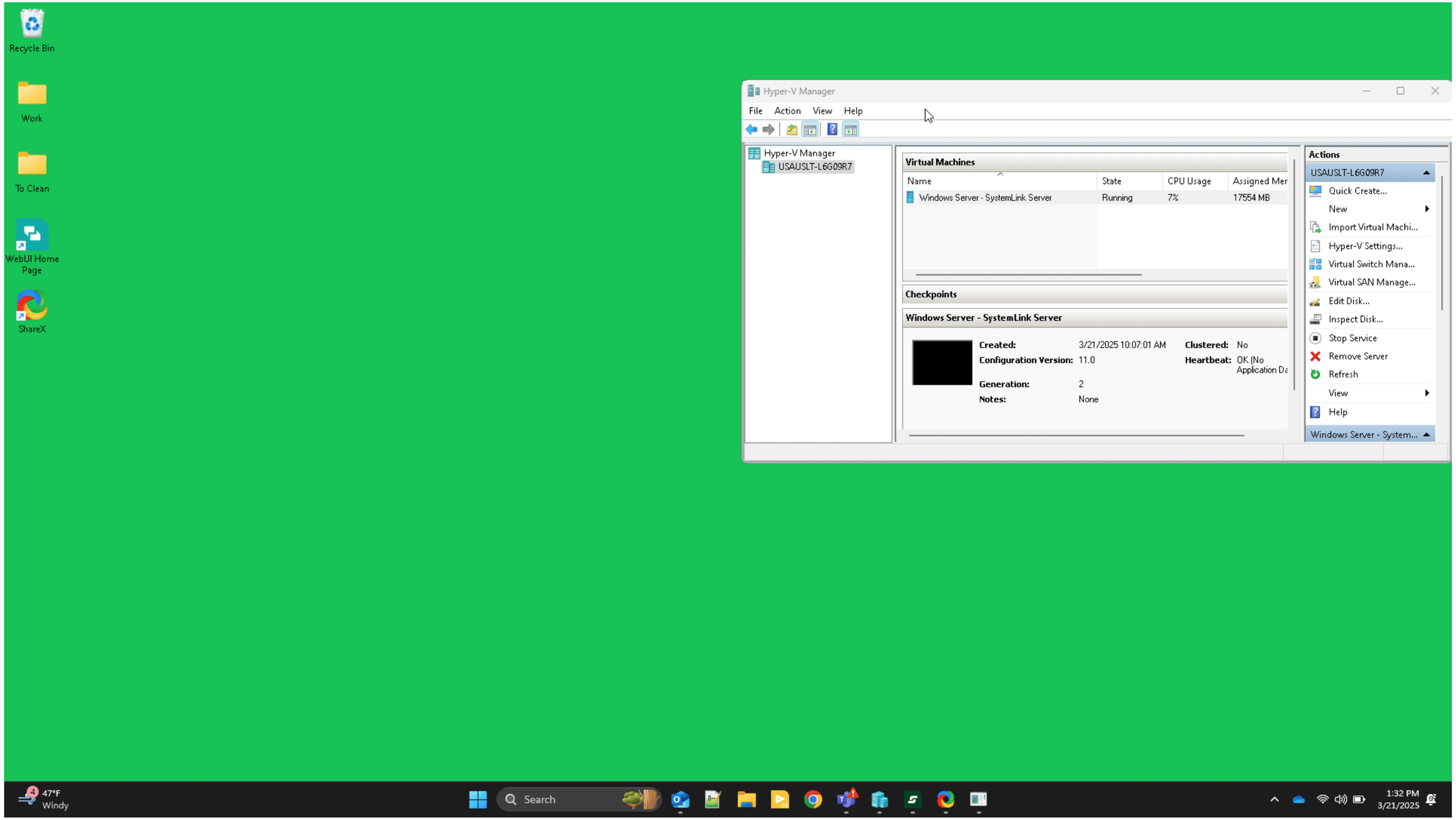
Config-based dashboards, plug-in applications, open APIs, partners

Secure

HTTPS / TLS data encryption; authentication & access control

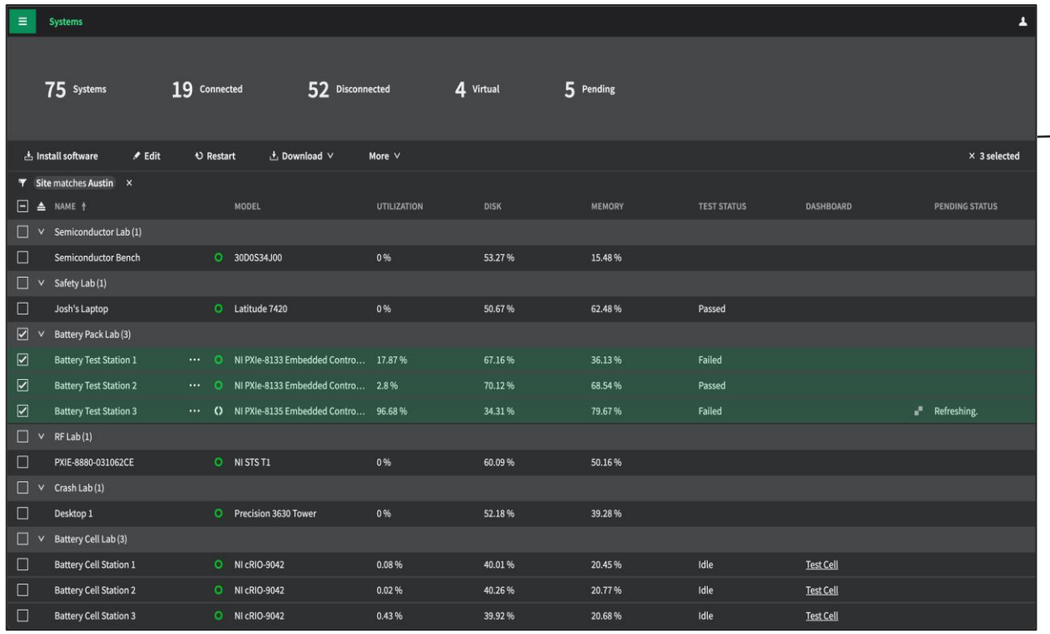


Demo: Virtual Machine Server Setup

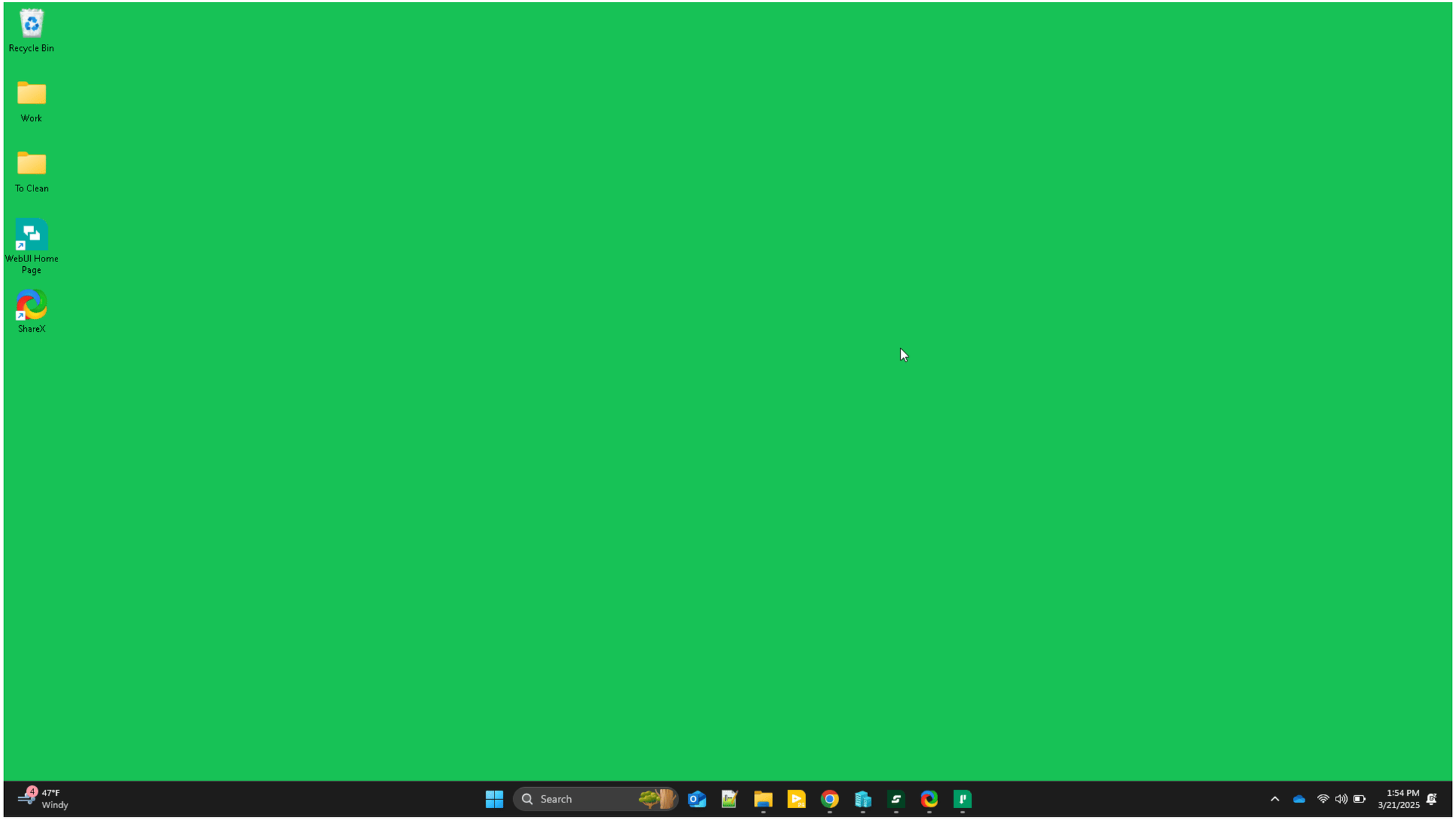


Summary: Virtual Machine Server Setup

- SystemLink is hosted on a Server computer
- All interactions are Web-based
  - Native web pages
  - Native web APIs

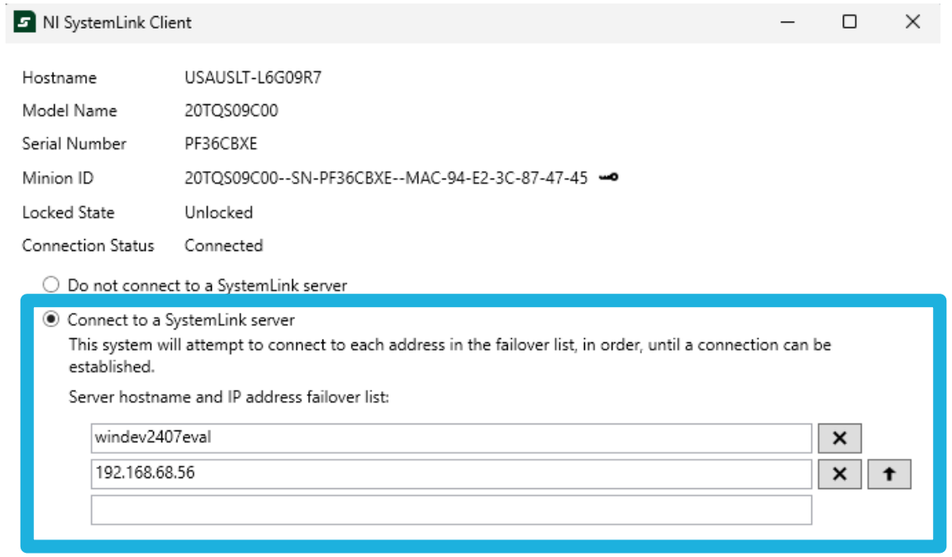


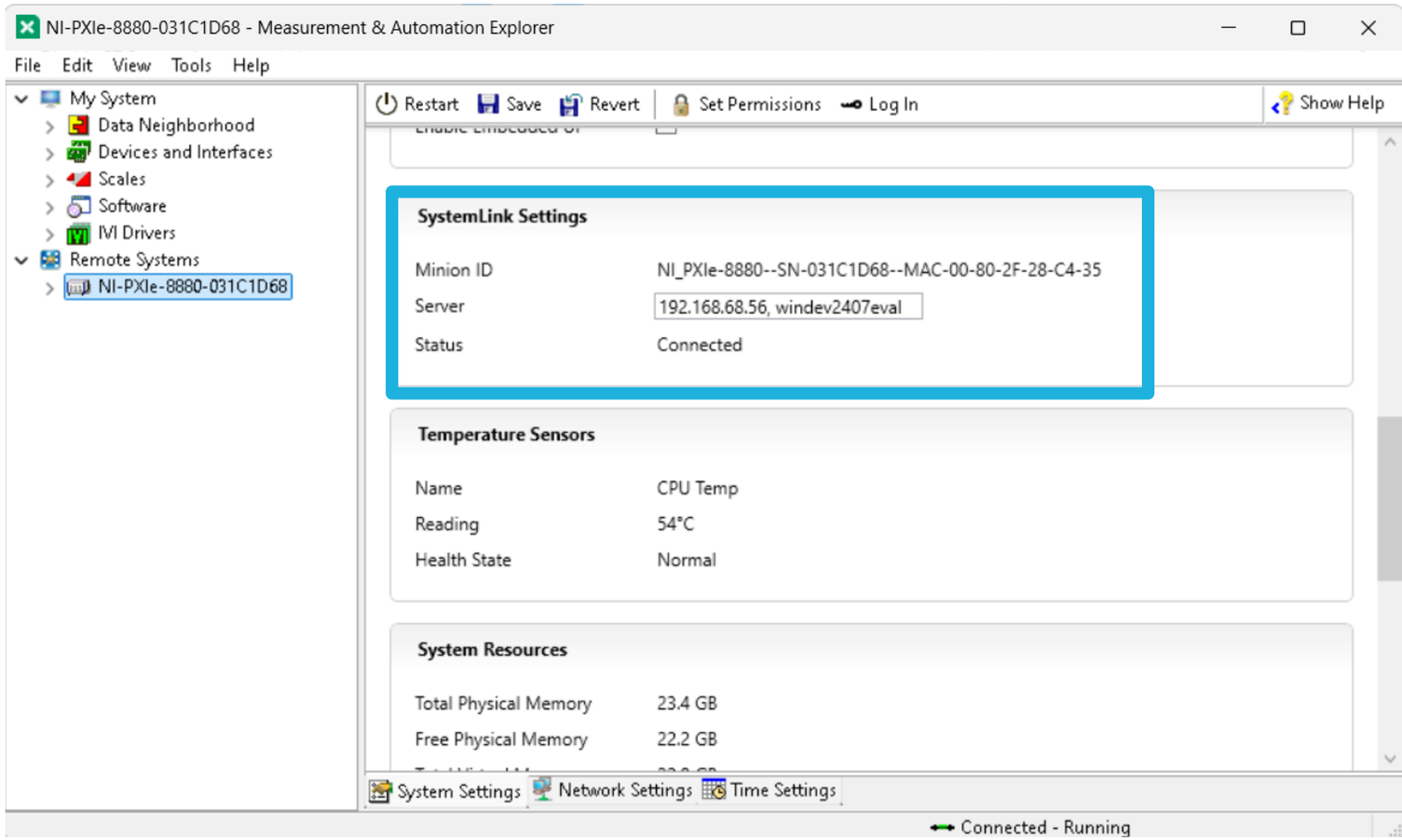
Demo: SystemLink Client Setup

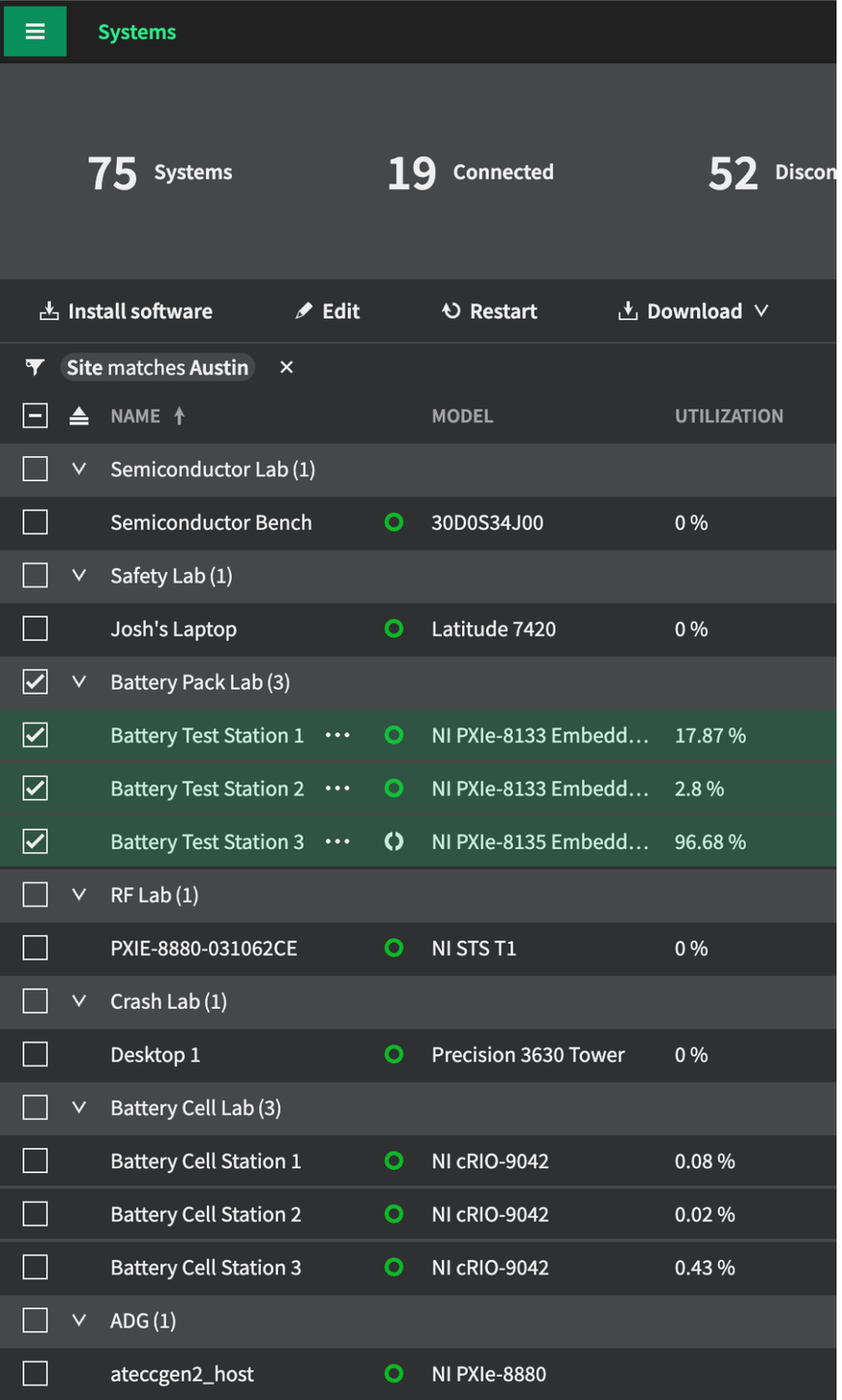


Summary: SystemLink Client Setup

- Client install available for any Windows PC (open)
- Client supports multiple addresses
- NI RT systems come w/ client pre-installed
  - Enter server addresses in NI MAX



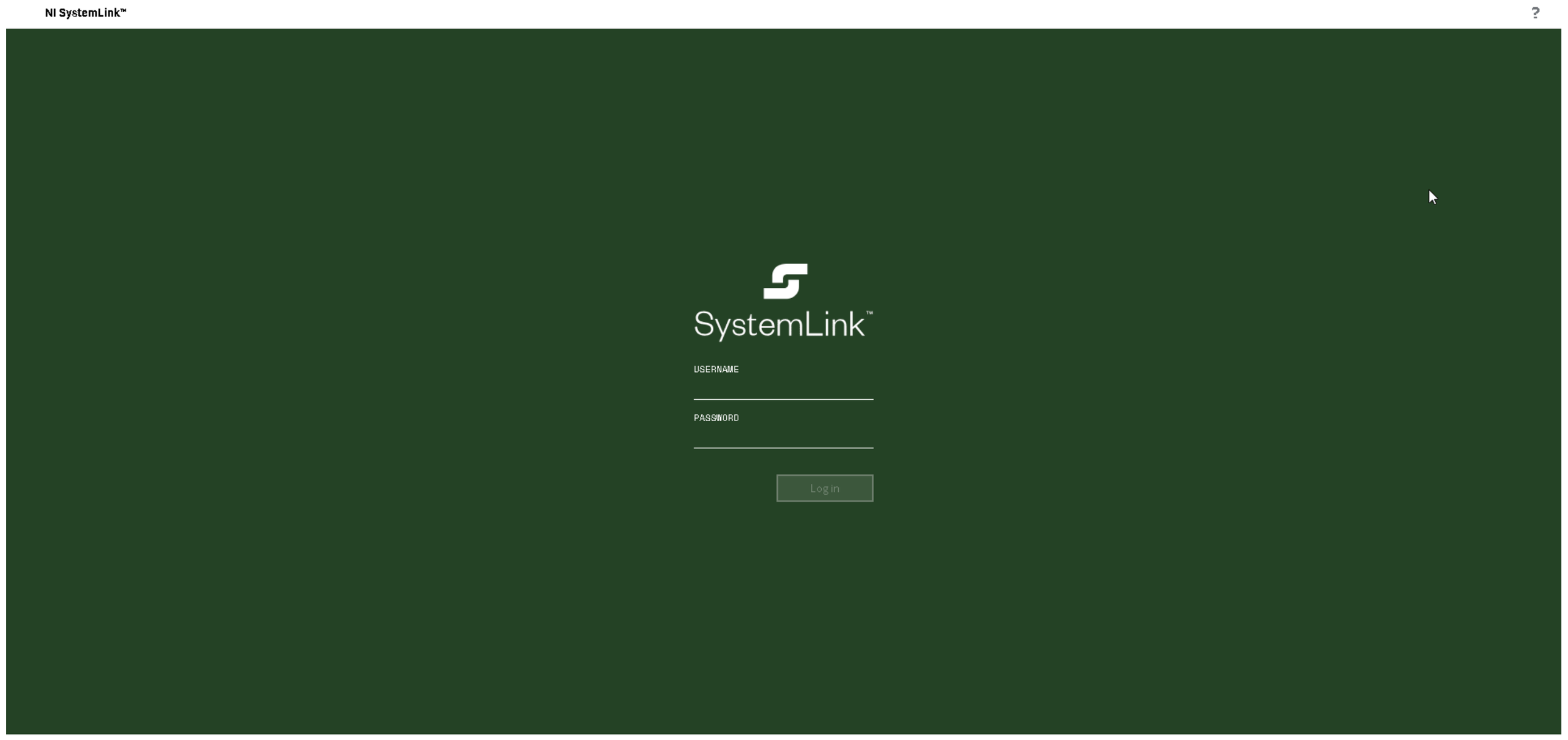




Increase Lab Efficiency

- Mass deploy NI and test software for your entire fleet from a central web interface
- Monitor test systems and assets health with alarms and notifications as well as customizable dashboards
- Manage and track the assets calibration status, calibration history, and location history
- Track utilization for DUTs, assets, systems, and the entire lab

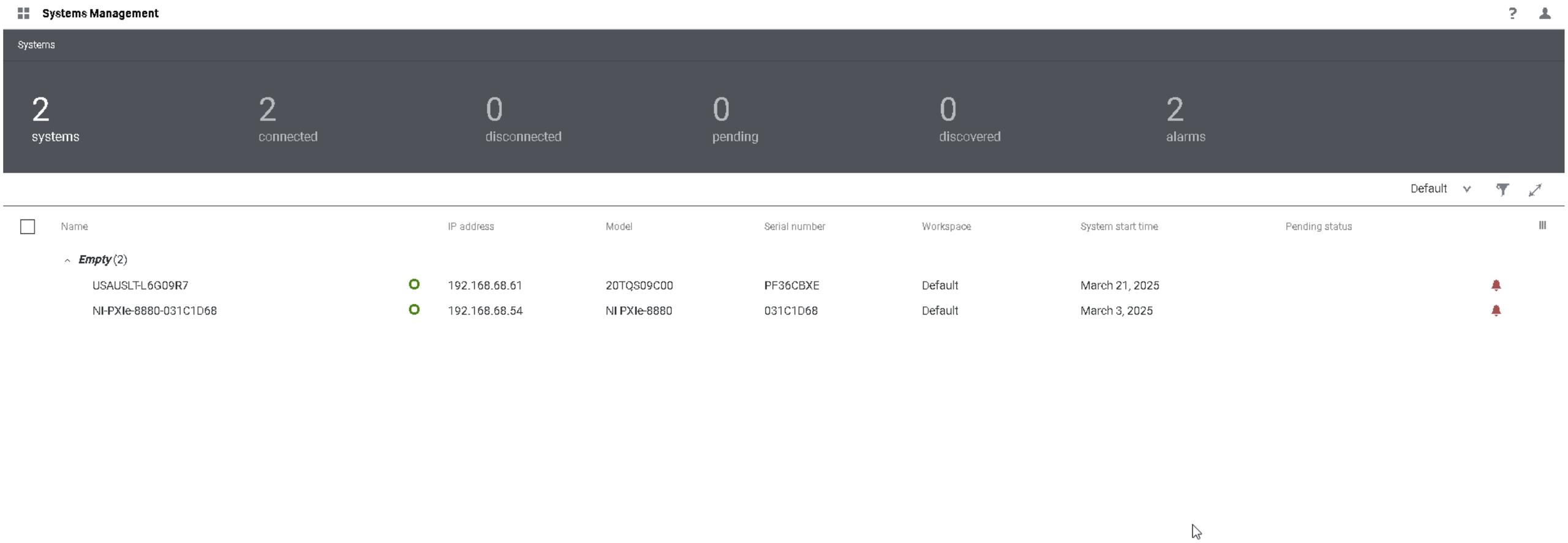
Demo: Overview of Systems



Summary: Overview of Systems

- View and manage any number of NI & third-party systems
- Systems contain:
  - Software
  - Tags
  - Alarms
  - Assets
  - Measurement Hardware
  - Files
- Software version management (including installation) through feeds and packages
- Tags enable live and historical data viewing

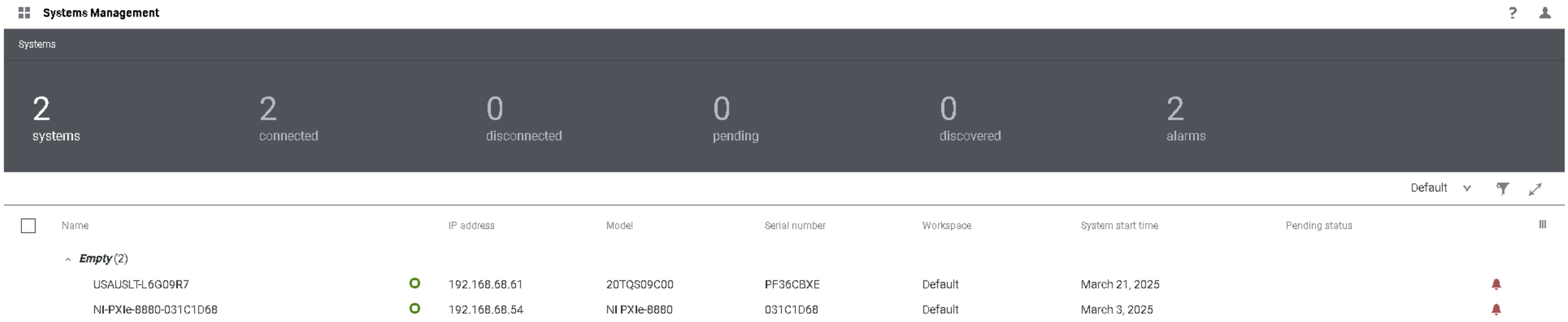
Demo: Create & Subscribe to your own Software Feeds



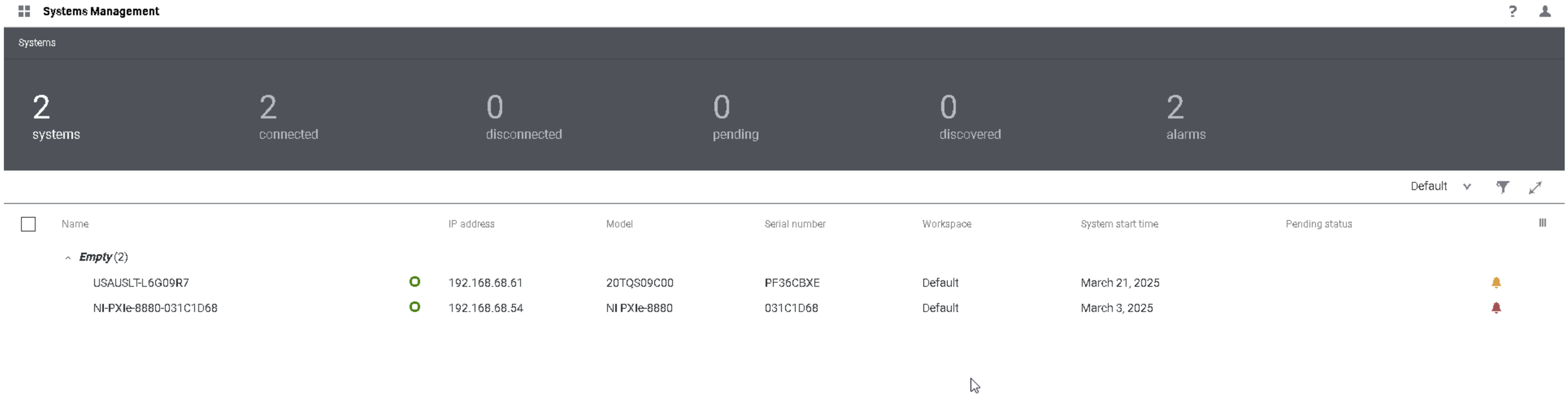
Summary: Create & Subscribe to your own Software Feeds

- Create package-based feeds
  - Packages can contain anything (third-party drivers, test files, etc)
- Create system subscriptions to feeds
- Install software to any number of NI & third-party systems
  - Including installing multiple softwares on multiple systems in one action

Demo: Create State for System Duplication



Demo: Apply State for System Duplication

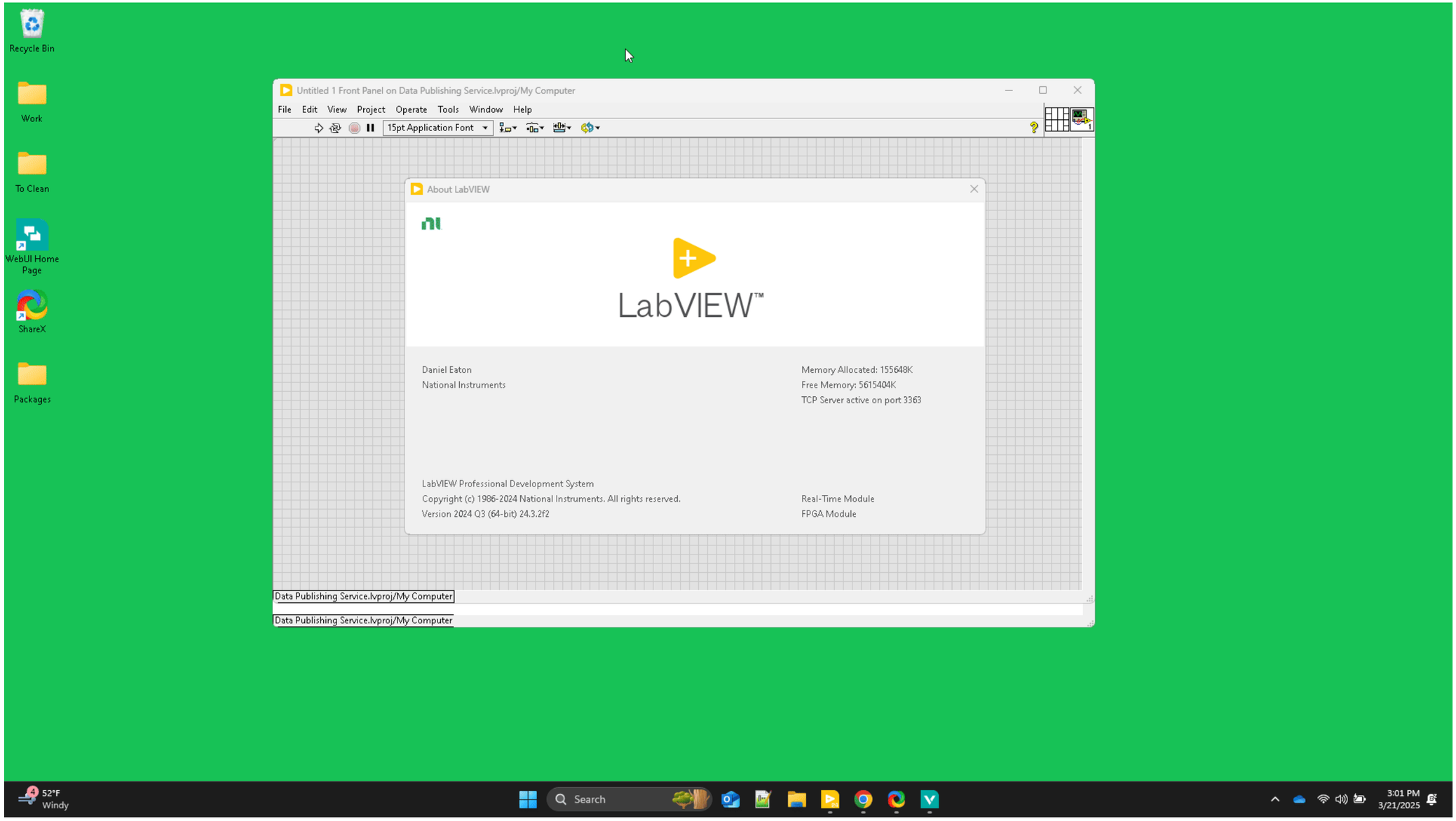


Summary: Create and Apply State for System Duplication

- State is a versioned image / snapshot of a system
- Install on multiple systems in a single action

- Common example: Create “golden image” from a single RT target; install on multiple deployed systems

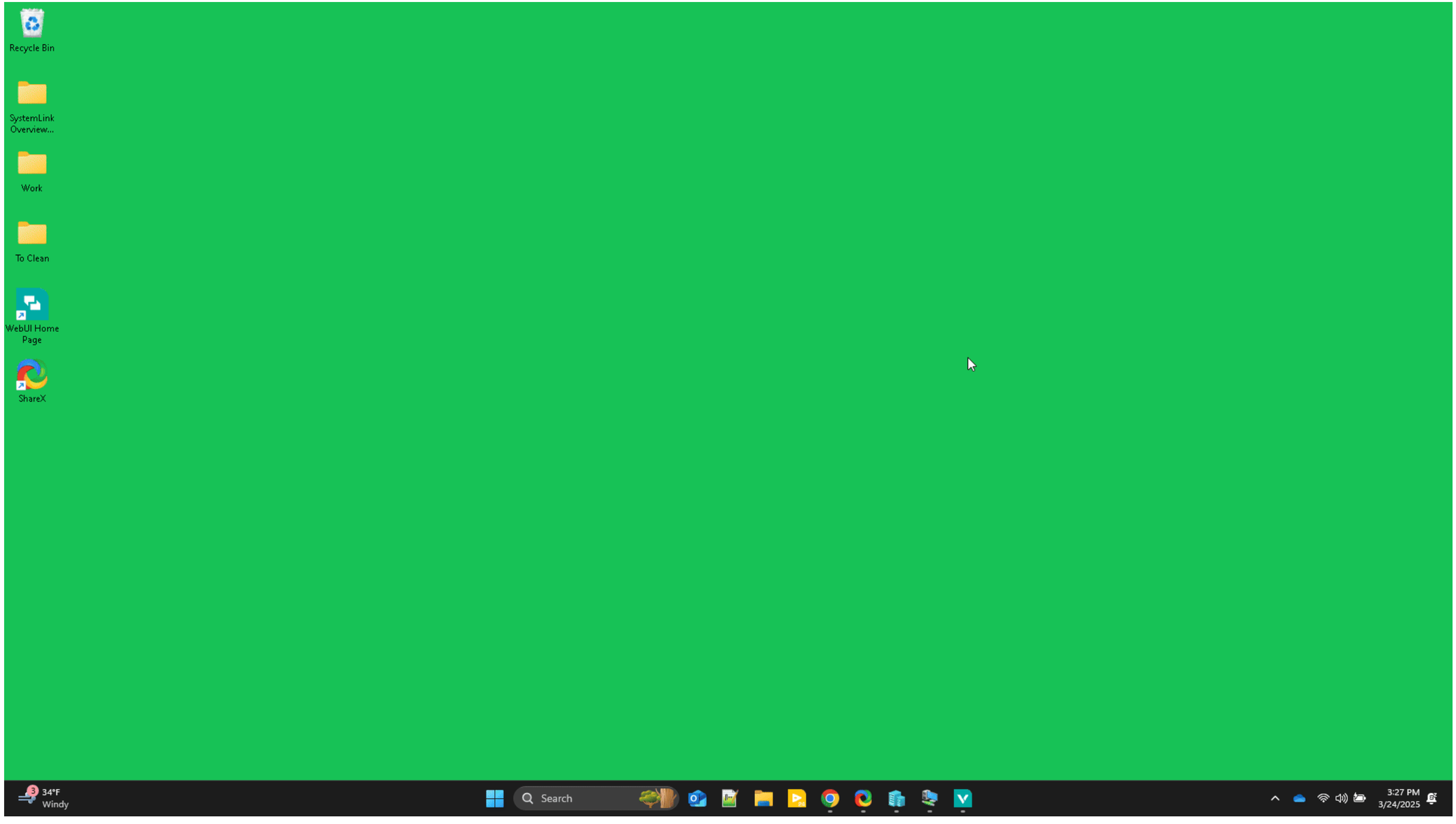
Demo: Connecting Third-party Software



Summary: Connecting Third-party Software

- Connect any software / system to SystemLink through APIs

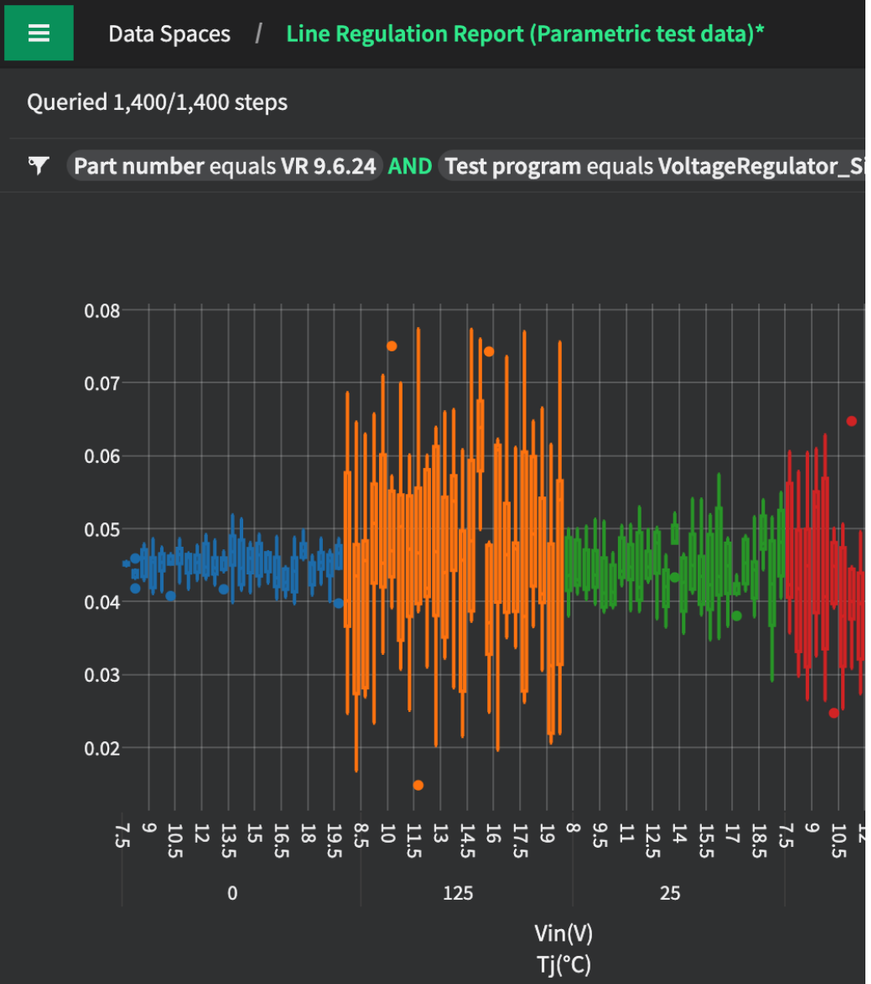
Demo: Custom WebGUIs



Summary: Custom WebGUIs

- Create web-based GUIs in webpage by linking to tags

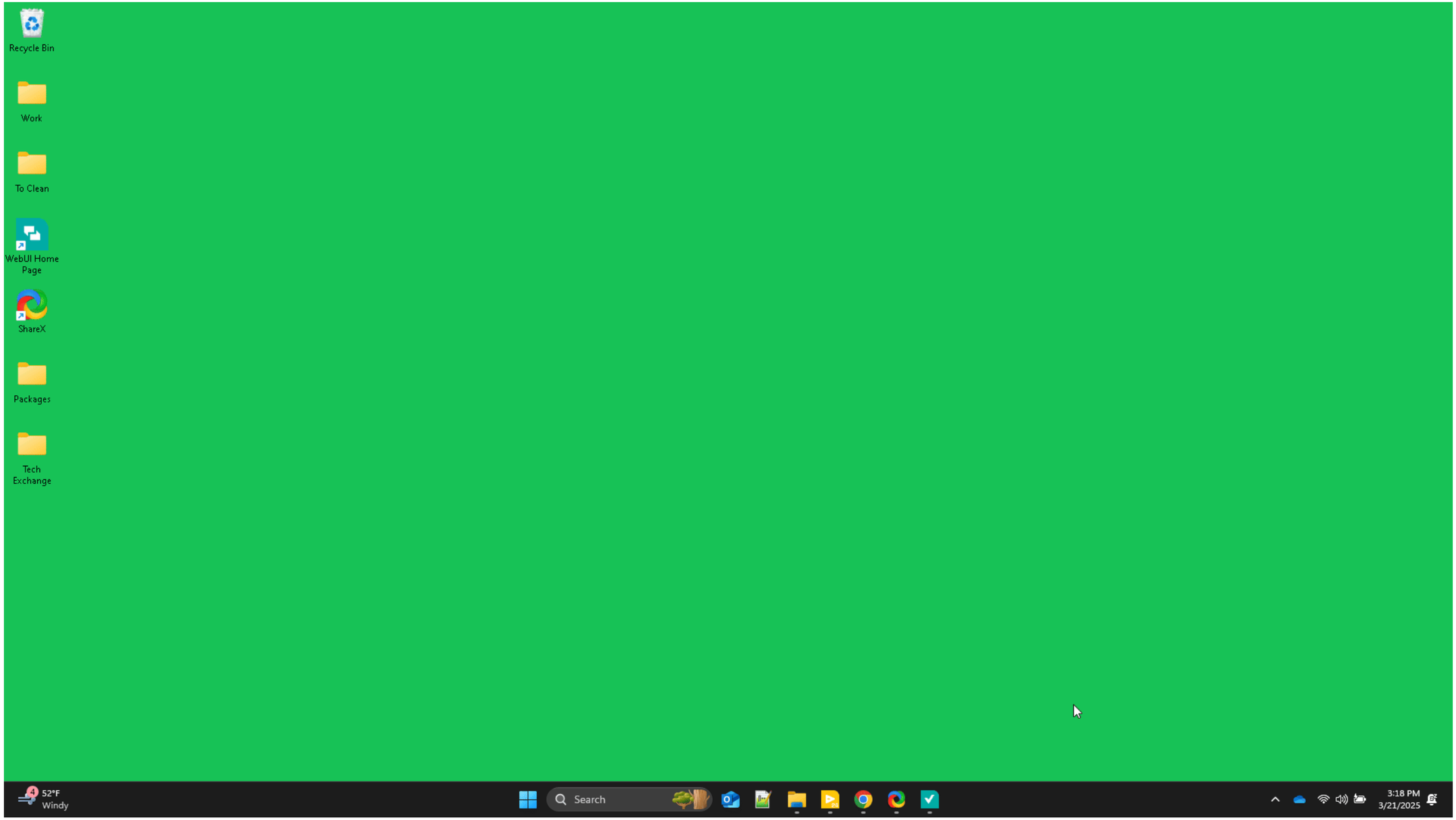
- (Not Shown) In tool support for Grafana allows complex GUIs



Accelerate Product Insights

- Collect, store and view test results, files, parametric and waveform data from LabVIEW, TestStand, FlexLogger and 3rd party test software
- Quickly search and filter data to analyze past results and gain additional insights
- View waveform and parametric measurement data from a web-based user interface
  - Plot and group measurement data across different conditions
  - View distributions using box and violin plots as well as histograms

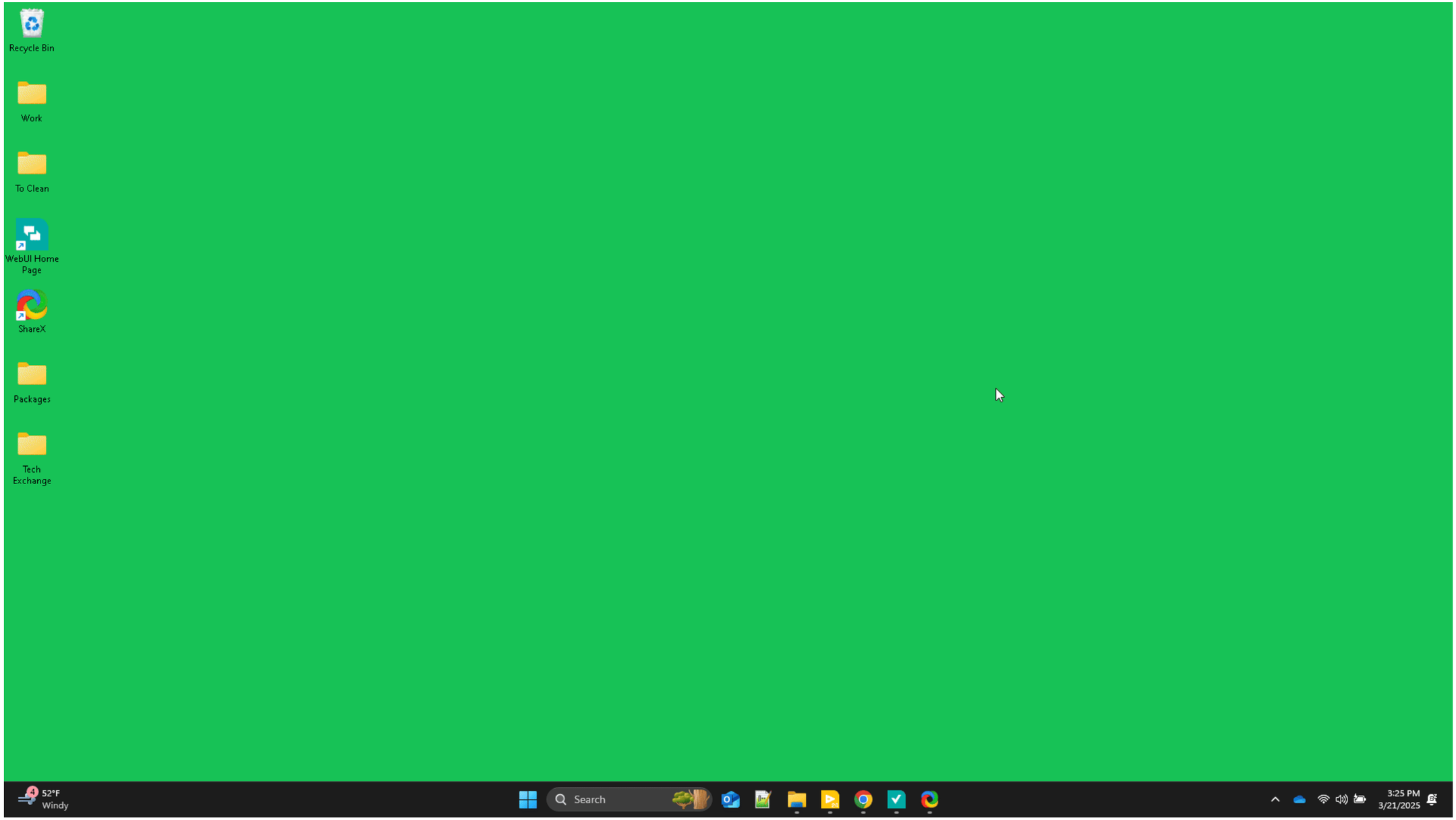
Demo: Enable SystemLink TestMonitor in TestStand



Summary: Enable SystemLink TestMonitor in TestStand

- SystemLink TestMonitor for TestStand includes:
  - Web-based test reports
  - Live step execution status
  - Automatically uploaded results and reports
  - TestStand functions for attaching files (including TDMS data file)
  - Basic analytics for querying results, yield, etc
- Enabled through a simple CheckBox

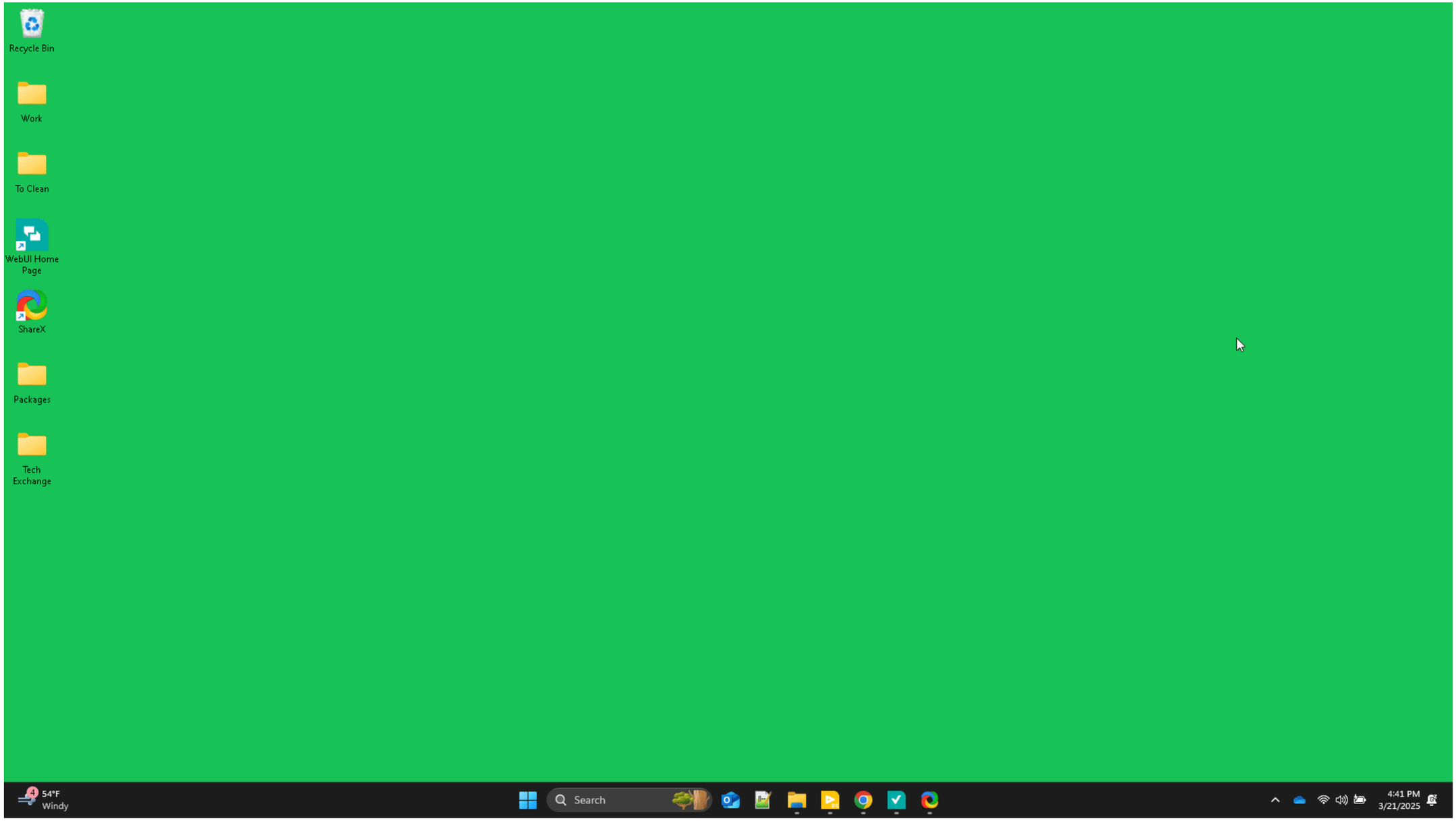
Demo: Monitoring Automated Test from SystemLink



Summary: Monitoring Automated Test from SystemLink

- SystemLink TestMonitor for TestStand includes:
  - Web-based test reports
  - Live step execution status
  - Automatically uploaded results and reports
  - TestStand functions for attaching files (including TDMS data file)
  - Basic analytics for querying results, yield, etc
- Support for third party automation and reports supported through APIs

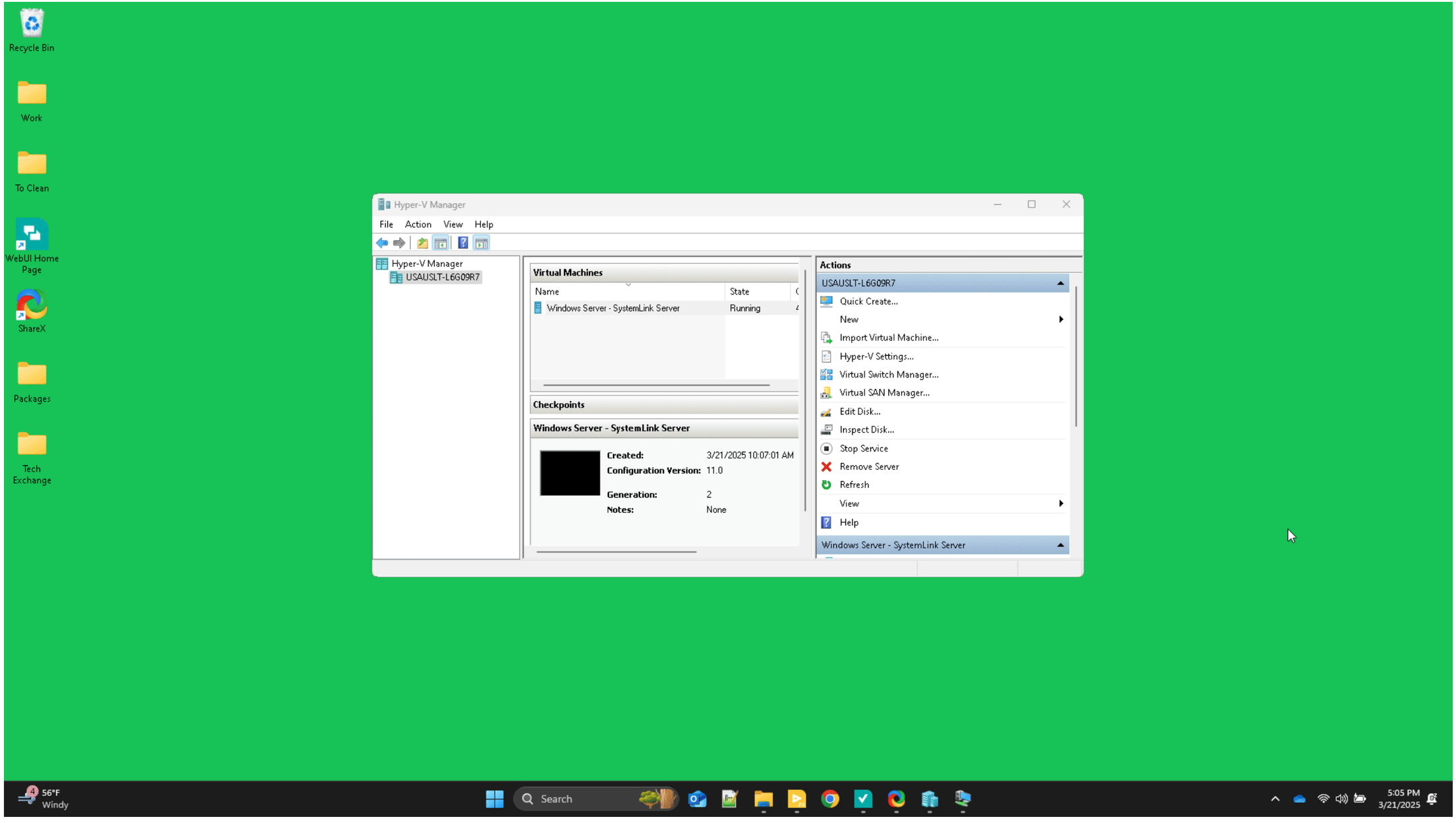
Demo: Review Automated Test Data from SystemLink



Summary: Review Automated Test Data from SystemLink

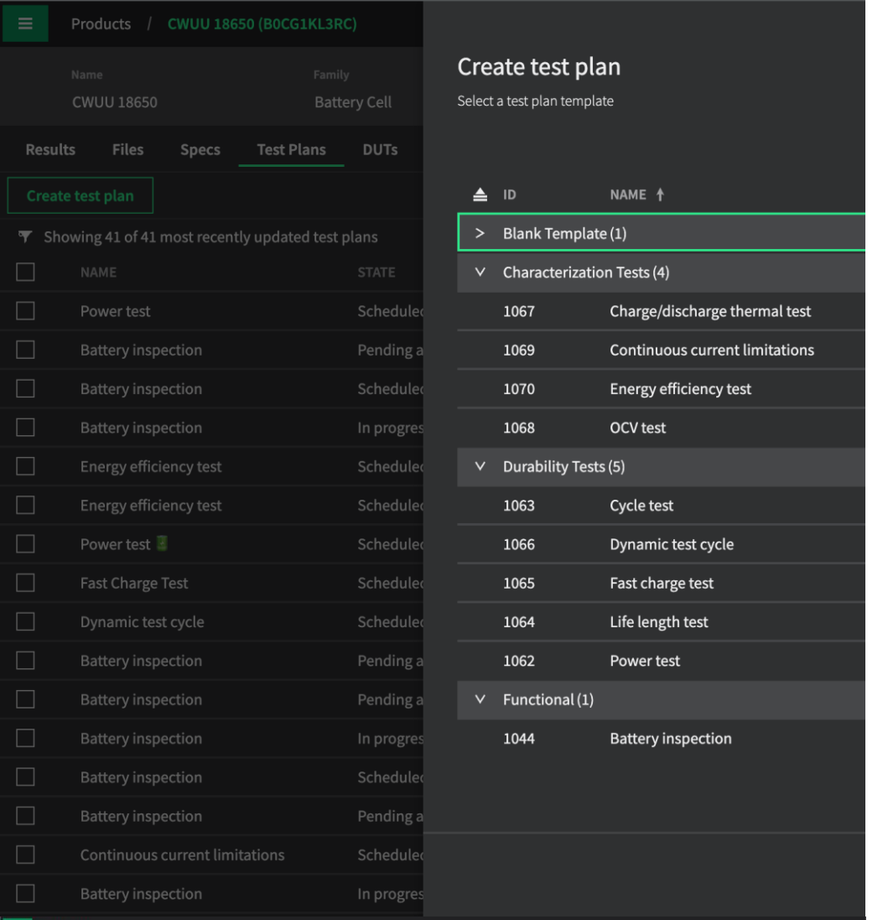
- Access all your test reports from anywhere
- View test data in the web page
- Download test results to your local machine for analysis
- (Not shown) In web analysis options are available as well
- (Not shown) Data can be ingested from any system / software (not just TestStand)

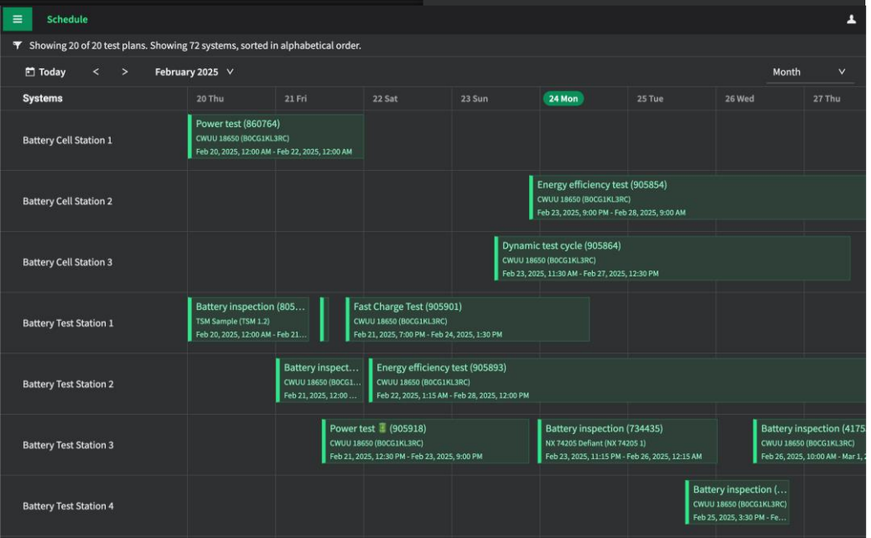
Demo: Download Test Data and Process in Diadem



Summary: Download Test Data and Process in Diadem

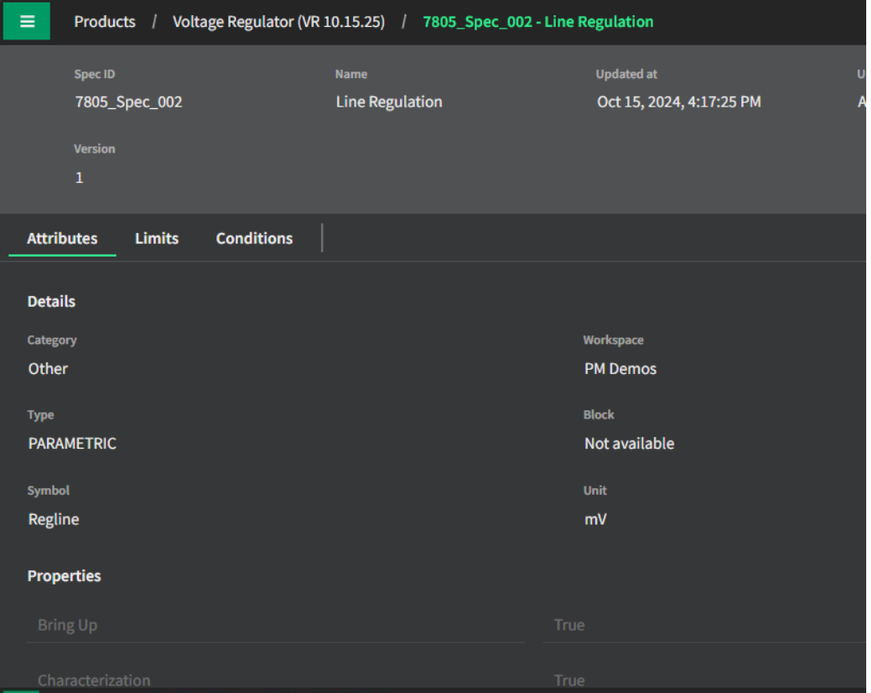
- Diadem allows:
  - Quick plotting for massive data sets
  - Data interrogation
  - Comprehensive analysis functions
  - Quick report building
  - Python based automated scripts / analysis
- (Not shown) In web analysis options are available as well

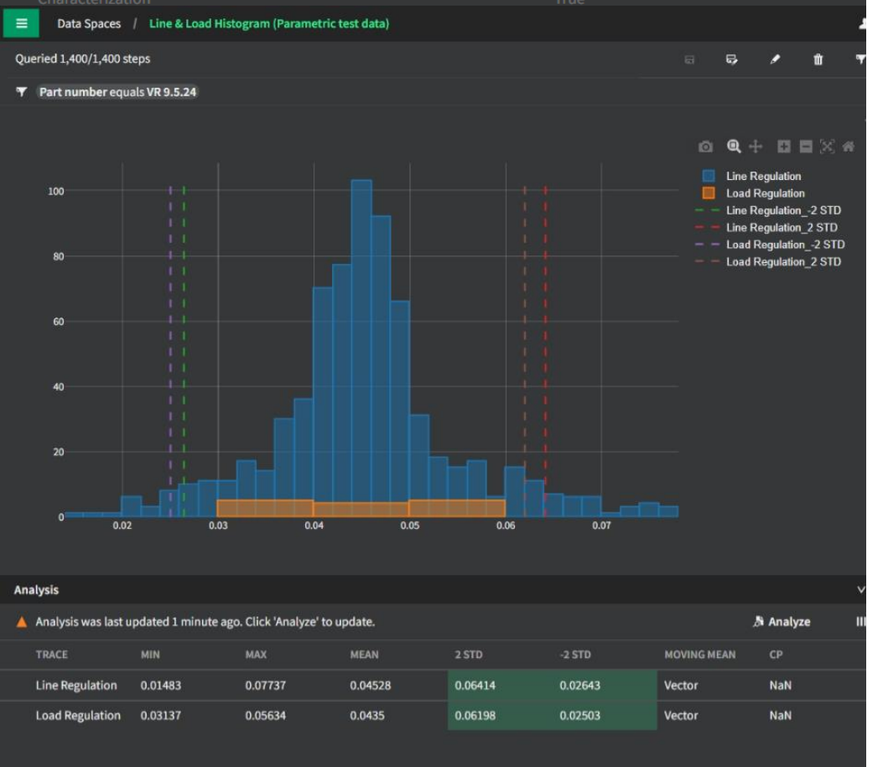




Optimize Lab Operations

- Plan and schedule systems, assets, and DUTs to be used for testing
- Define customizable test parameters and custom actions that can be integrated with both NI and 3rd party systems
- Define, manage, schedule, deploy, remotely start, and monitor tests
- Monitor test execution and measurements in real-time and get immediate updates as test result data is available





Improve Test Coverage and Compliance

- Import and store product specifications in a central repository with a web UI
- Map specs to measurement data stored in SystemLink parametric and waveform stores.
- Compute compliance and coverage using Specifications + Test Data
  - Compliance: Did the product behavior match specifications?
  - Coverage: Did I test enough unique DUTs to be confident moving to production?
- Customize specification compliance statistics and measurement analysis